

## Section C75-WA-1 Wing Skeleton

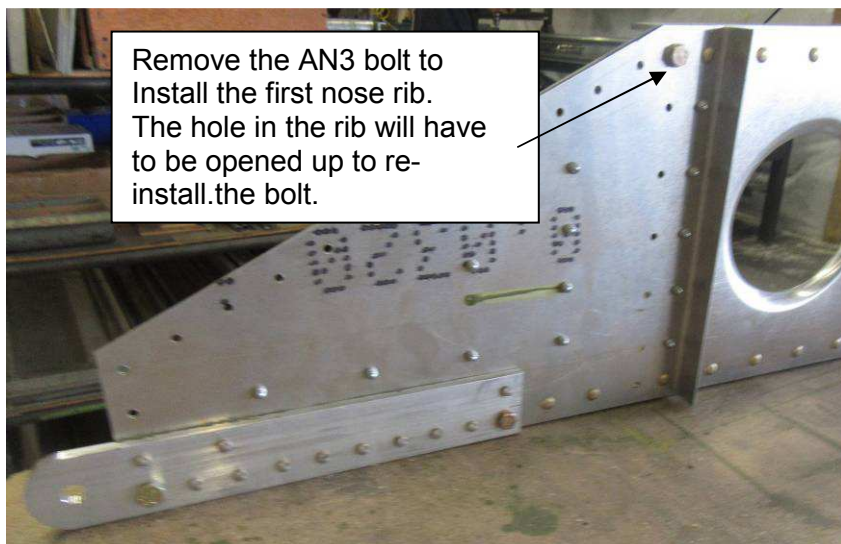


This manual has been prepared for assembly of the wing skeleton supplied with match drilled parts. This photo assembly manual is intended as a supplement to the drawings. If there is any discrepancy between this manual and the drawings, the drawings supersede this manual. For more information on building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

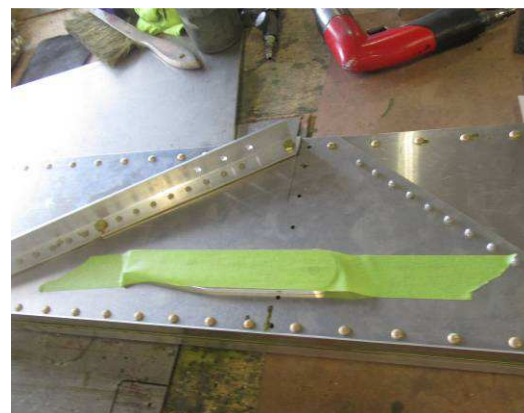


**P/N: C75W2**  
Wing Spar  
(factory assembled)

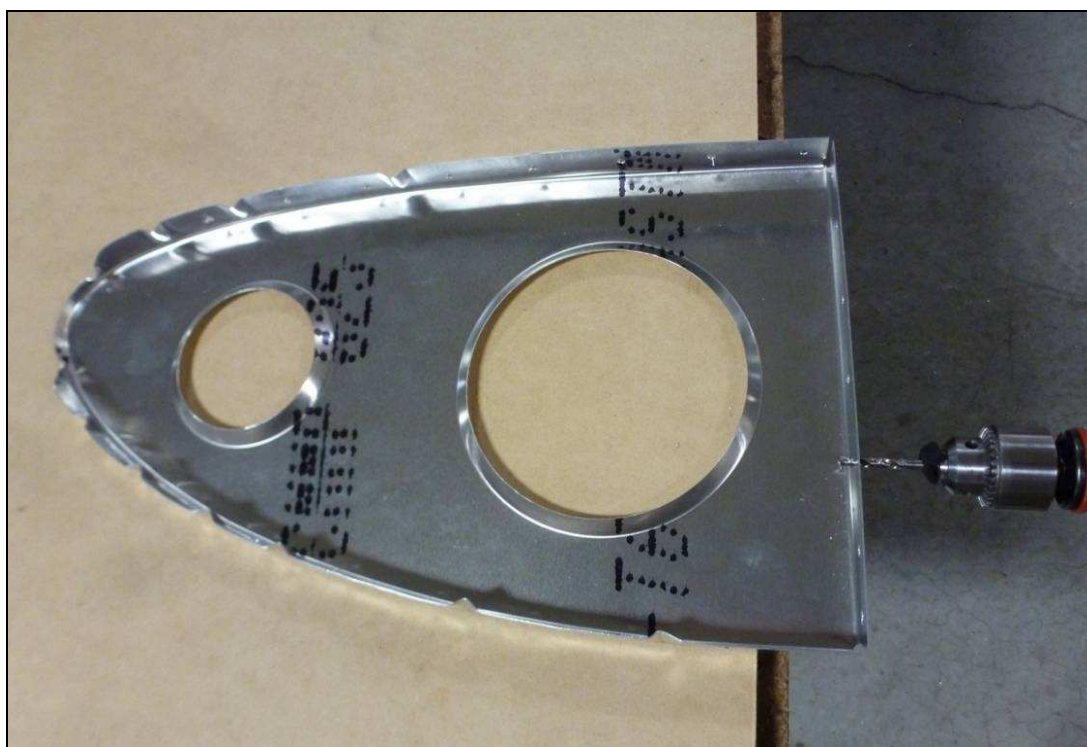
Separate the left and right spar.



Remove the AN3 bolt to  
Install the first nose rib.  
The hole in the rib will have  
to be opened up to re-  
install the bolt.



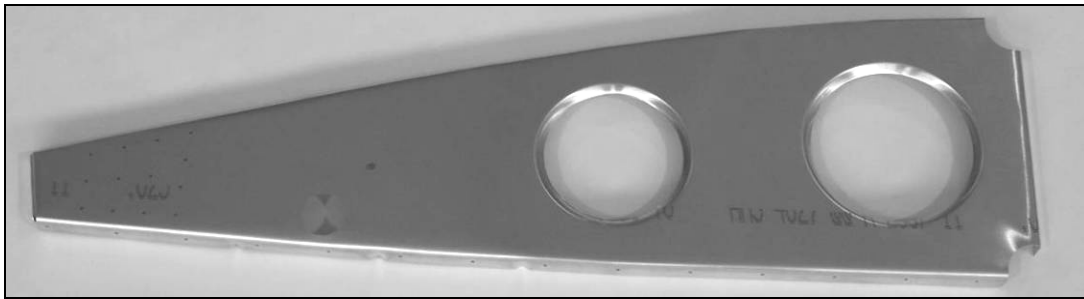
The Front upper strut fitting C75W2-5 is  
supplied taped to the spar. Keep the  
part with the appropriate spar and mark  
it left or right.



**P/N: C75W1-1**  
Nose Rib

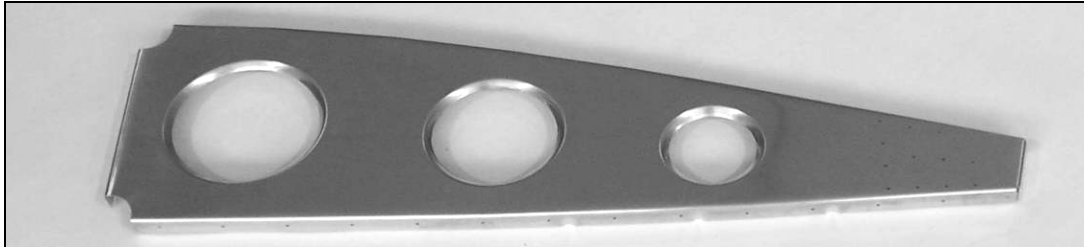
First expand the holes in the flanges with a #30 drill bit. Then expand the holes to #20.





**P/N:** C75W1-2K  
Wing Tank Rear Rib

First expand the holes in the flanges with a #30 drill bit. Then expand the holes to #20.



**P/N:** C75W1-2FB  
Wing Rear Rib  
(FB refers to being  
predrilled for the  
Flaperon Bracket,  
75W3-5)

First expand the holes in the flanges with a #30 drill bit. Then expand the holes to #20.

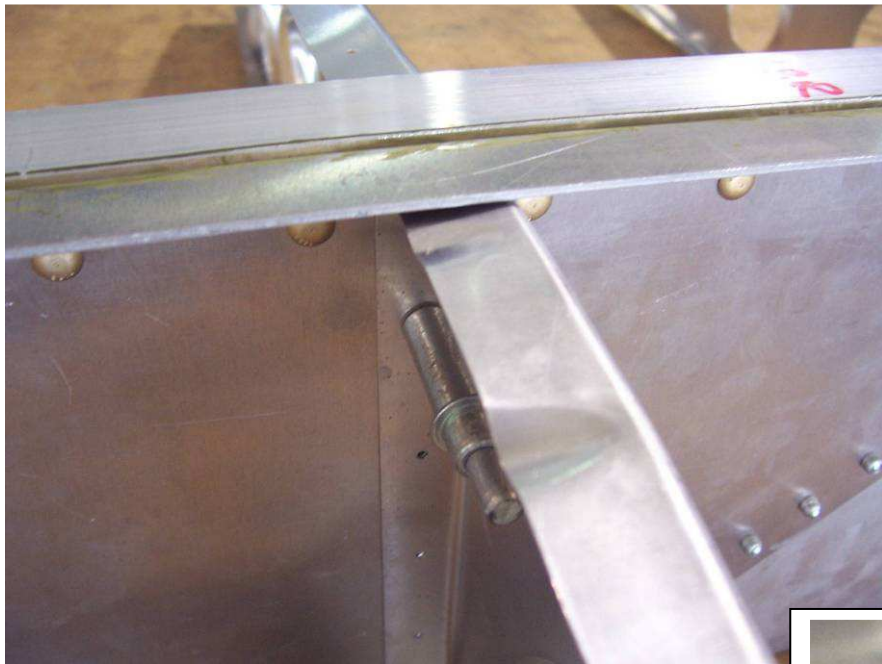
**P/N:** C75W1-2  
Wing Rear Rib



Cleco the Wing Tank Rear Rib at Strn. 280.

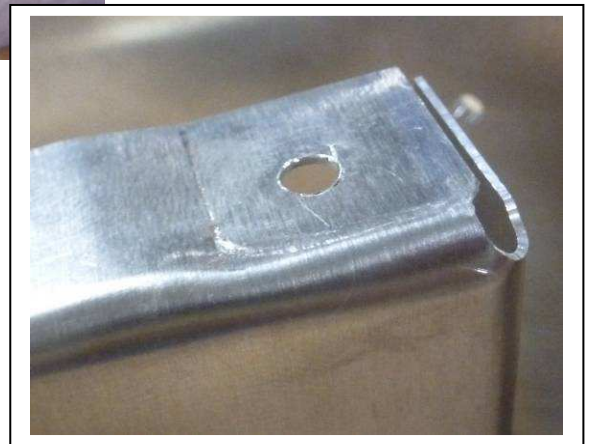
**Orientation:** The Wing Tank Rear Rib flanges should point inboard.

**Orientation:** The Spar Cap flanges point aft.



**P/N: C75W1-1**  
Nose Rib

Nose rib at station 2040, the top flange overlaps underneath the spar web doubler. To close the gap, add a small joggle to the rib flange. Remove the rib to gently tap on the flange to flatten the radius.







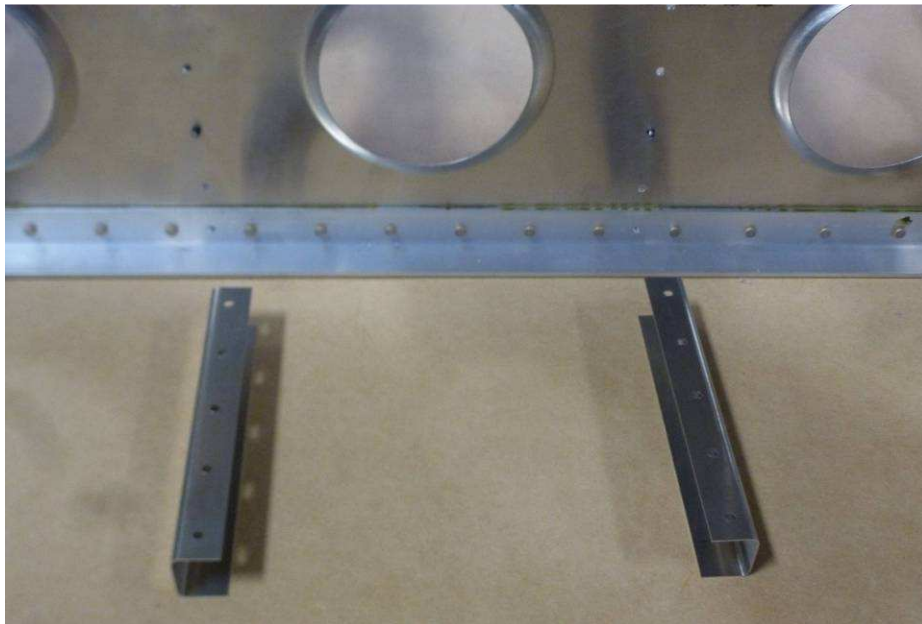
**P/N: C75W1-1S**  
Strut Nose Rib

Nose Rib at station 2434

This rib has a cutout in the top flange to make room for the strut angle extrusion.



Cleco the nose rib to the rear rib.



**P/N:** C75K1-3  
Web Channel



Cleco the Web Channels to the Spar with the Nose Ribs at Stations 500 and 720.





Flaperon brackets:

**C75W1-2FB &  
C75W1-1:**  
Stn. 280 (C75W1-2K)  
Stn. 1640  
Stn. 2040  
Stn. 3400

**C75W1-2 &  
C75W1-1:**  
Stn. 500 (C75K1-3)  
Stn. 720 (C75K1-3)  
Stn. 960  
Stn. 1300  
Stn. 2434(C75W1-1S)  
Stn. 2720  
Stn. 3060

Cleco the Nose Ribs and Rear Ribs to the Spar. See the table to the right for stations for ribs with brackets.

**Orientation:** All rib flanges point outboard, with the exception of C75W1-2K.



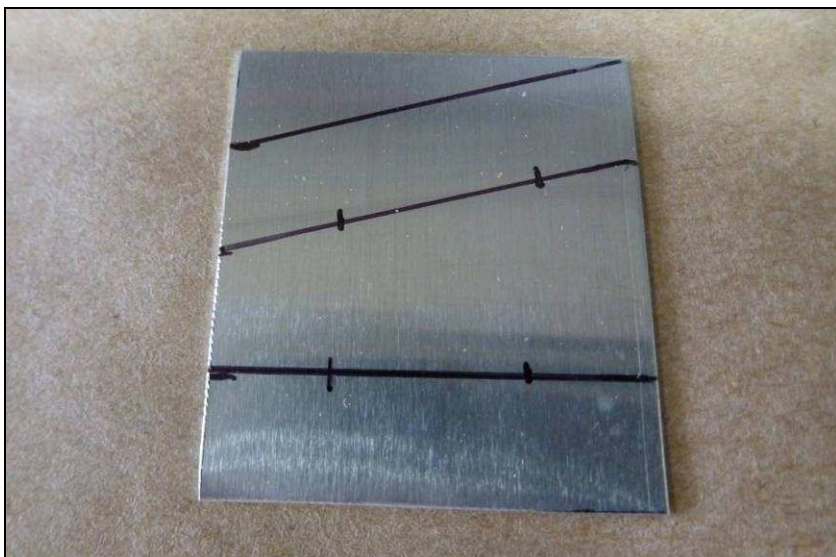
**P/N:** C75W4-1  
Root Nose Rib



**P/N: C75W4-2**  
Root Rear Rib



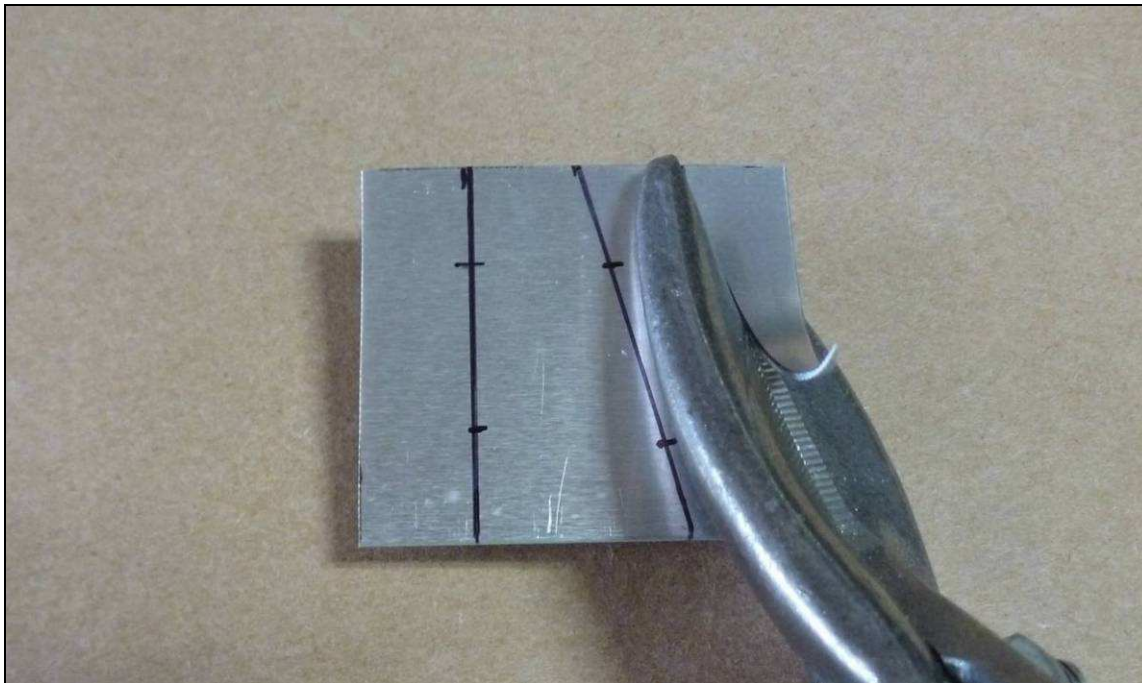
Cleco the Root Nose Rib to the Spar and Root Rear Rib. Then expand the holes with a #20 and finally a #12 drill bit and cleco.



**P/N: C75W4-3**  
Root Rib Doubler

Put a mark 10mm from the top of the Root Rib Doubler. Draw a line between the rear top corner and the mark. Draw a line 10mm from the bottom of the doubler and a line 10mm offset from the line at the top.





Trim the excess material along the line across the top of the Root Rib Doubler.



Mark 4 rivet locations 9mm from the front and back edge on the lines. Position the Root Rib Doubler on the root ribs.

**Check:** Make sure there is sufficient edge distance for the rivets in the root ribs.

Clamp the Root Rib Doubler to the Root Ribs. With a #40 drill bit, drill the Root Rib Doubler, Root Nose Rib, and Root Rear Rib and Cleco. Expand the holes with a #20 drill bit.



**P/N: C75W3-5**  
Spar Root Angle



Position the Spar Root Angle on the Spar so the outboard end is level with the top of the Spar Cap and the inboard end is even with the Root Nose Rib. Use a #40 drill to back drill through the Spar into the Angle and cleco. Expand the holes to a #20 and cleco.

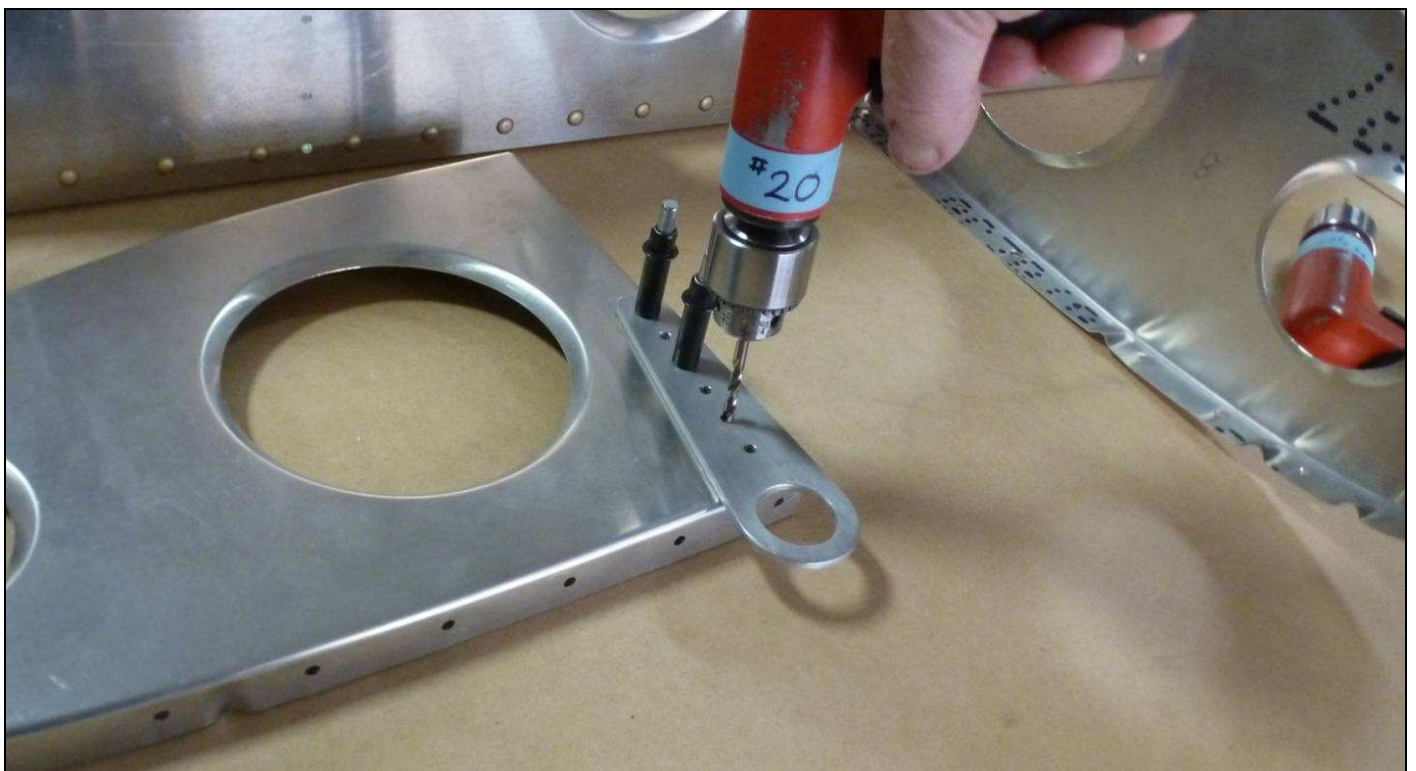




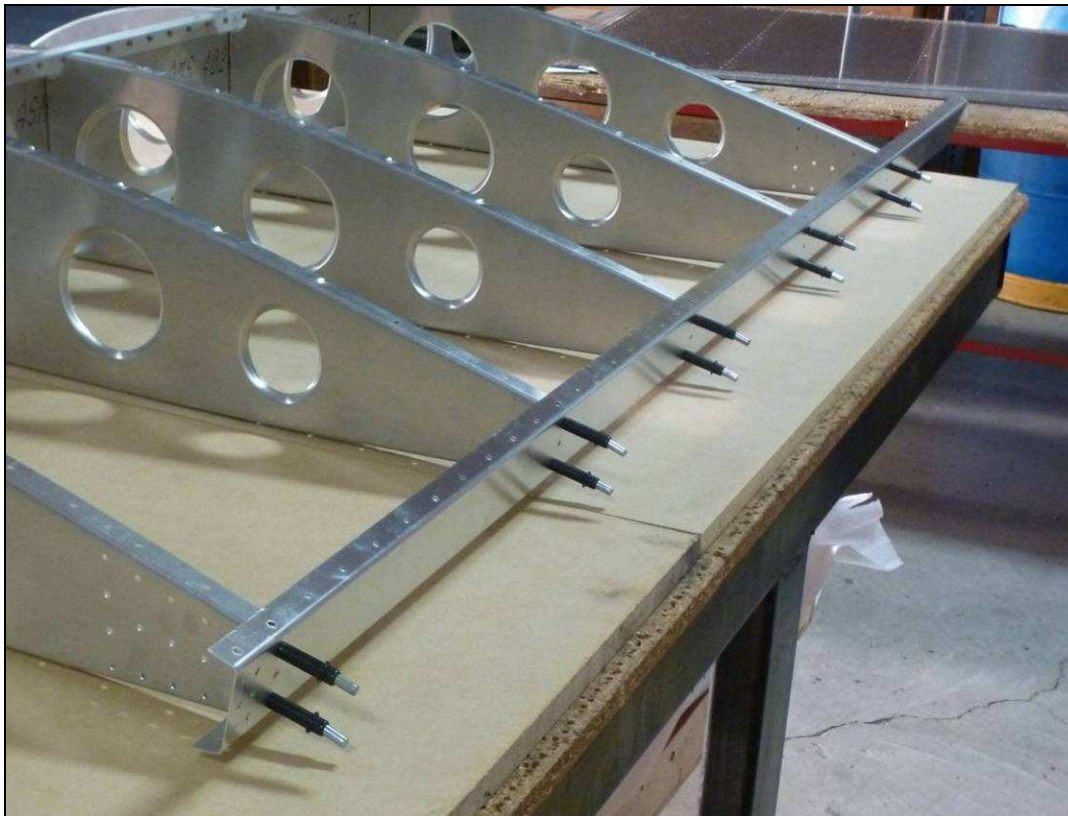


**P/N: C75W6-7**  
Tie Down Ring

Remove the Nose Rib at Stn. 2720. Position the Tie Down Ring on the Nose Rib. The Tie Down Ring should be flush with the back flange of the Nose Rib. The top of the hole in the Tie Down Ring should be flush with the bottom flange of the Nose Rib. Clamp the Tie Down Ring to the Nose Rib.



With a #40 drill back drill and Cleco the Tie Down Ring to the Nose Rib. With a #20 drill expand the holes and Cleco the Tie Down Ring to the Nose Rib. Reinstall the Nose Rib to the Spar at Stn. 2720.



**P/N: C75W4-5**  
O/B Rear Channel

Cleco the O/B Rear Channel to the Rear Ribs.



**P/N: C75W4-4**  
I/B Rear Channel

Cleco the I/B Rear Channel to the Rear Ribs.





**P/N: C75W3-4**  
Rear Root Doubler



Slide the Rear Root Doubler between the Root Rear Rib and the I/B Rear Channel. The Rear Root Doubler should lap on top of the rear flange of the Wing Tank Rear Rib. Cleco the Doubler to the Rear Channel.



**P/N: C75W4-6**  
Rear Channel  
Doubler

Cleco the Rear Channel Doubler to the I/B and O/B Rear Channels.



**P/N: C75W4-7**  
Top Rear Channel  
Angle

**P/N: C75W4-8**  
Bottom Rear Channel  
Angle





Cleco the Top and Bottom Rear Channel Angles to the I/B Rear Channel.



Cut a piece of L angle 50mm long and draw a center line on one flange. Mark a line 10mm from one end of the L angle and drill a hole with a #40 drill bit on the marks.

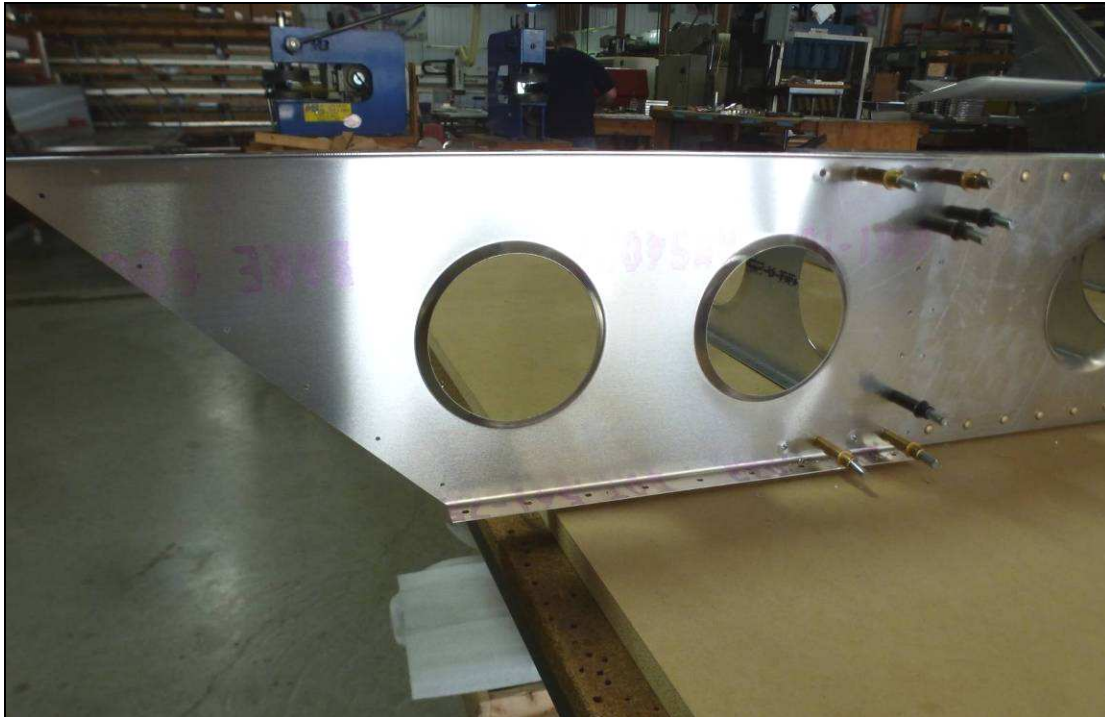


Cleco the L angle to the O/B Rear Channel at the tip. Rotate the L angle until the line is visible through the predrilled holes in the Rear Channel and clamp it in place. Use a #40 drill to back drill into the L angles and Cleco. Then expand the holes with a #30 drill bit.



**P/N: C75W3-2**  
Spar Tip





Cleco the Spar Tip to the Spar. Use a #40 drill to back drill through the Spar Tip into the Spar Caps and cleco. Then expand the holes with a #20 and finally a #12 drill bit and cleco.

**Note:** The holes in the Spar Web do NOT need to be expanded.



Cut a piece of L angle 270mm long and draw a center line on one flange. Mark a line 10mm from one end of the L angle and drill a hole with a #40 drill bit on the marks.



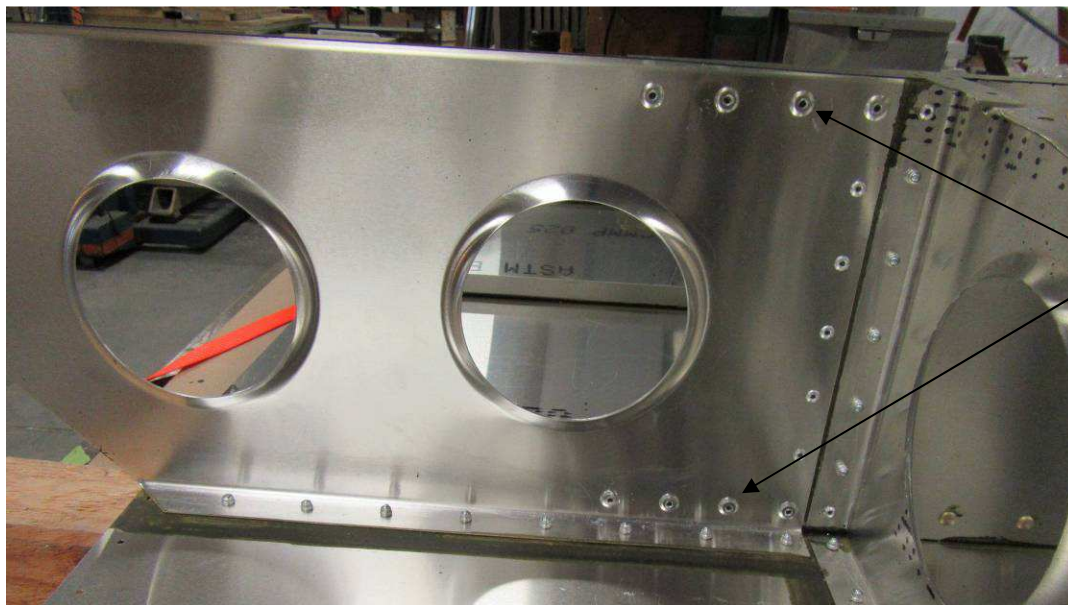
Cleco the L angle to the Spar Tip. Rotate the L angle until the line is visible through the predrilled holes in the Spar Tip and clamp it in place. Use a #40 drill to back drill into the L angles and Cleco. Then expand the holes with a #30 drill bit.



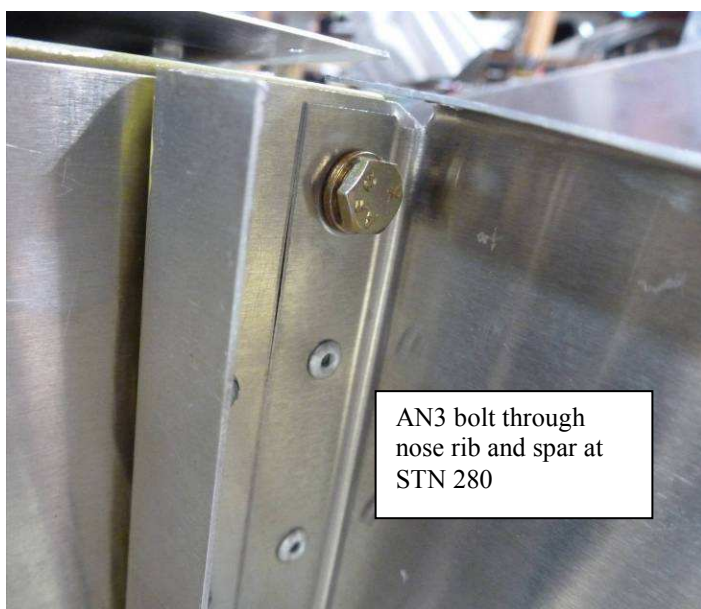
Disassemble, deburr the holes, reassemble, and rivet the Wing Skeleton together.

**Reference:** See drawing C75-WA-1 for rivet and bolt diameter information.





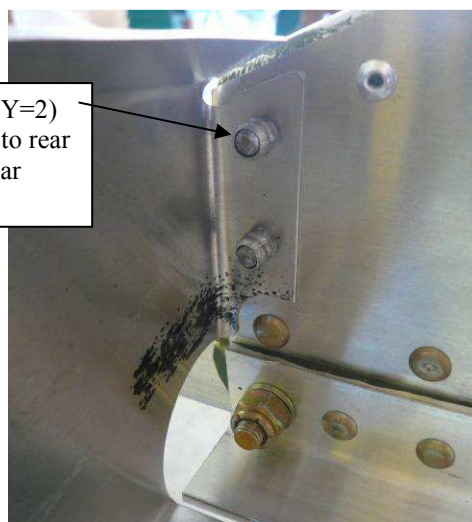
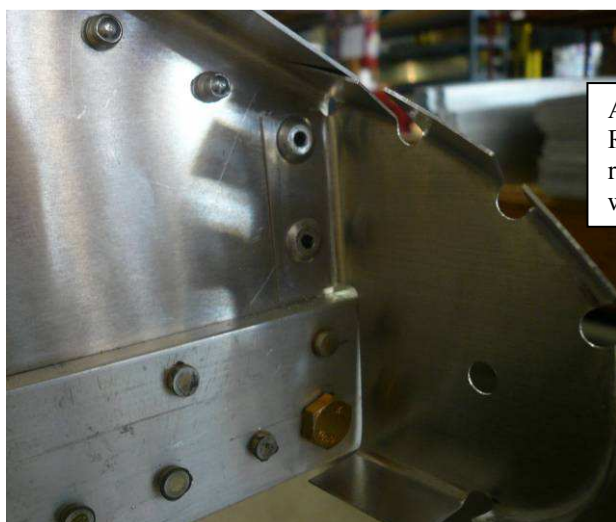
A6 rivets (QTY=8)  
Spar tip to upper and  
lower spar extrusions

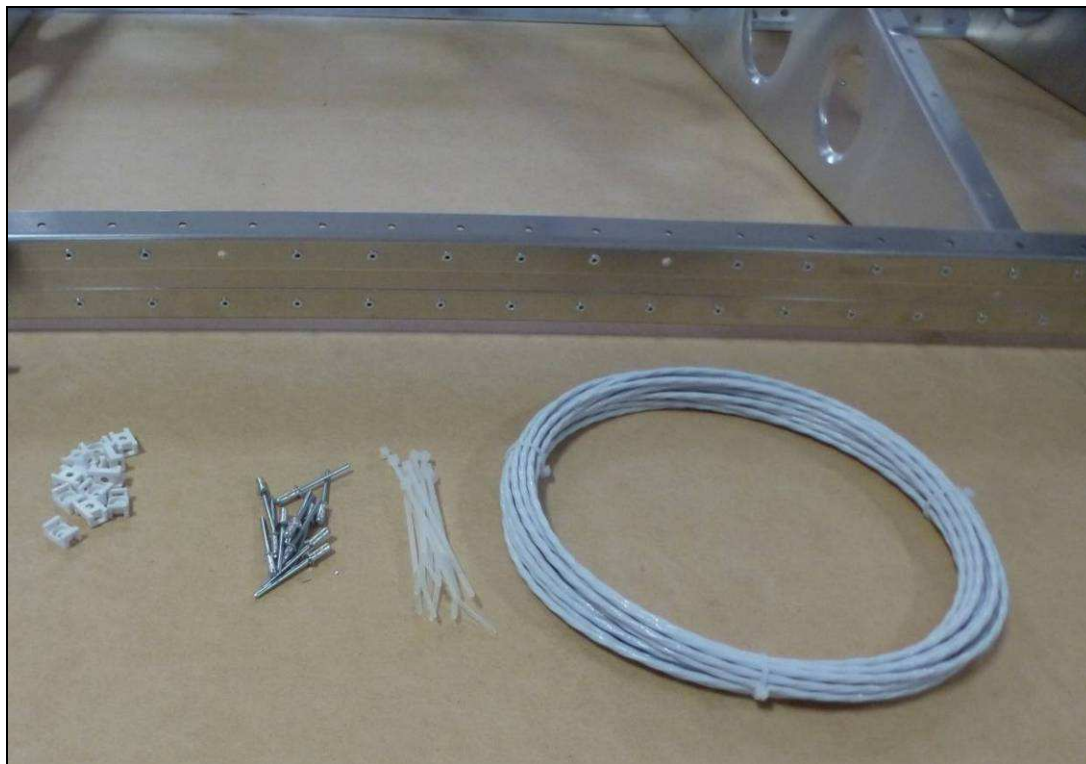


AN3 bolt through  
nose rib and spar at  
STN 280



A6 rivets (QTY=2)  
Root nose rib to rear  
rib through spar  
web.





**Nav/Strobe Option:**

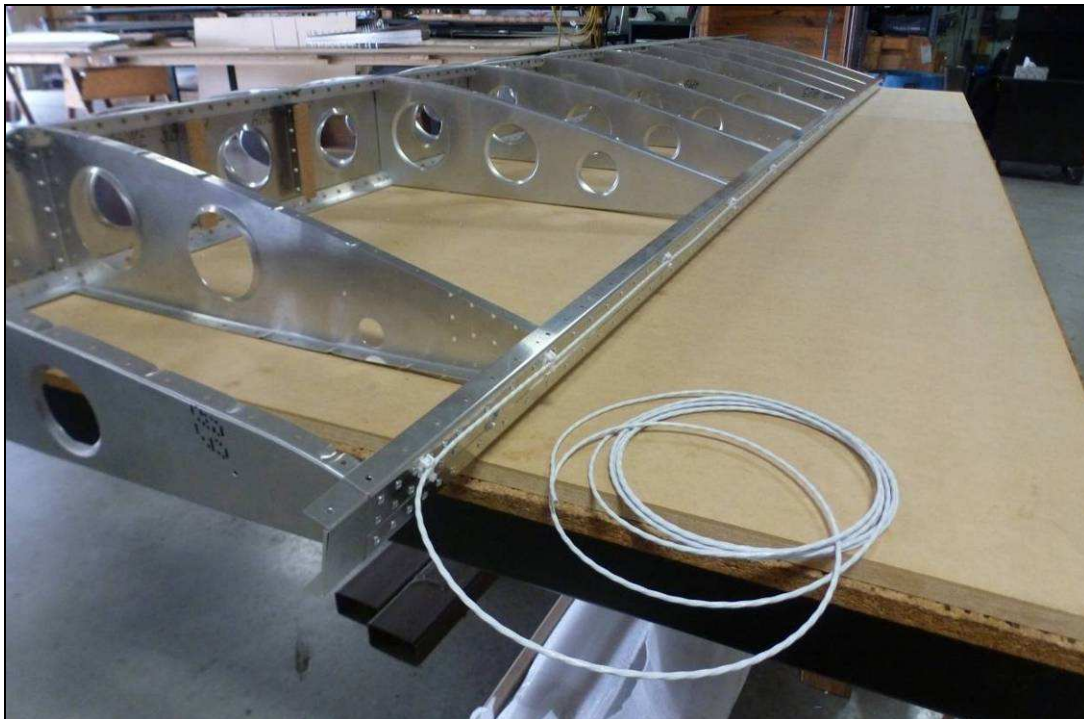
**P/N:** 11-03987  
Cradle Cable Tie  
Mounts

**P/N:** MS27500-  
20TE3T1  
3 Wire Shielded  
Electrical Cable

**Note:** These parts are included in the Nav/Strobe Option Kit.







Evenly space 13 Cradle Cable Tie Mounts along the Rear Channel. They will be riveted with the existing rivet holes. Mark the holes on the Rear Channel so that you will remember to rivet the Cable Mounts when riveting the Wing Skeleton. **Note:** The wire will be routed in a later step.



**P/N:** RD452ND  
7/16" Grommet

Route the Wire along the Rear Channel, securing it with the Cable Tie Mounts and Tie Wraps. A hole has been predrilled on the outboard end of the Rear Channel. Expand the hole to 5/16" and insert the Grommet. Route the Wire through the Grommet and leave enough Wire to connect the Nav/Strobe Light at the tip.