



**FRONT SPAR
6T1-3 (pre-drilled)**



Pilot holes for rib 6T1-2
outboard of the doublers
6T1-5HD.

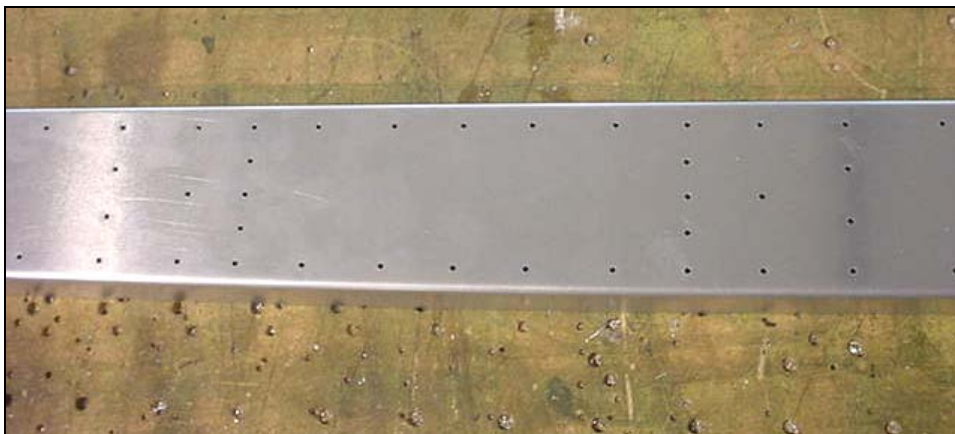


2 holes for L angles.

Take a minute to familiarize yourself with the layout of the predrilled holes. It is a good idea to identify the pre-drilled rivet lines.

Also refer to 6-T-1 and 6-T-2.

Photo of the 3 end holes at the ends of the doublers 6T1-5HD (top and bottom) and of pre-drilled pilot holes for rib 6T1-2.



CHECK: Maximum distance between rivets is 40mm, the left and right sides are mirror image about the aircraft center line.



Rivets lines:

5 holes = 6T2-1 Attachment
3 holes = 6T2-2 Double
4 holes = 6T1-2 Rib



Deburr the pre-drill holes: Run your hand over the holes to determine if there is a burr, at this point only the inside of the spar needs to be deburred (to assure a good fit of the doublers 6T1-5HD).



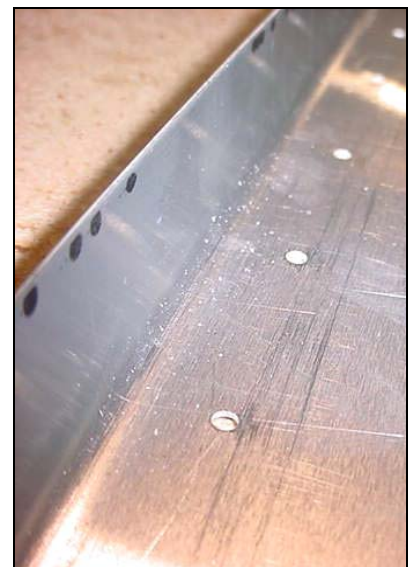
File: Round off the front corner of the file to prevent scratches.



Typical burr build up around a #40 pilot hole.



Deburr using a flat file: lay the file flat on the spar and push forwards the full length of the rivet lines. One pass is usually sufficient to knock off the burrs.



Deburring: also see section 6-T-4 page 12 of 13 rudder assembly.



**FRONT SPAR CAP
DOUBLERS 6T1-5HD
Qty: 2**

Position the doublers inside the spar, line up center lines, clamp the side flanges together.

Mark the aircraft center line on the spar and on the doublers.



Turn the spar over and mark the doublers through the pre-drilled holes. Mark one or two holes.

Trace the end of the doublers on the spar.



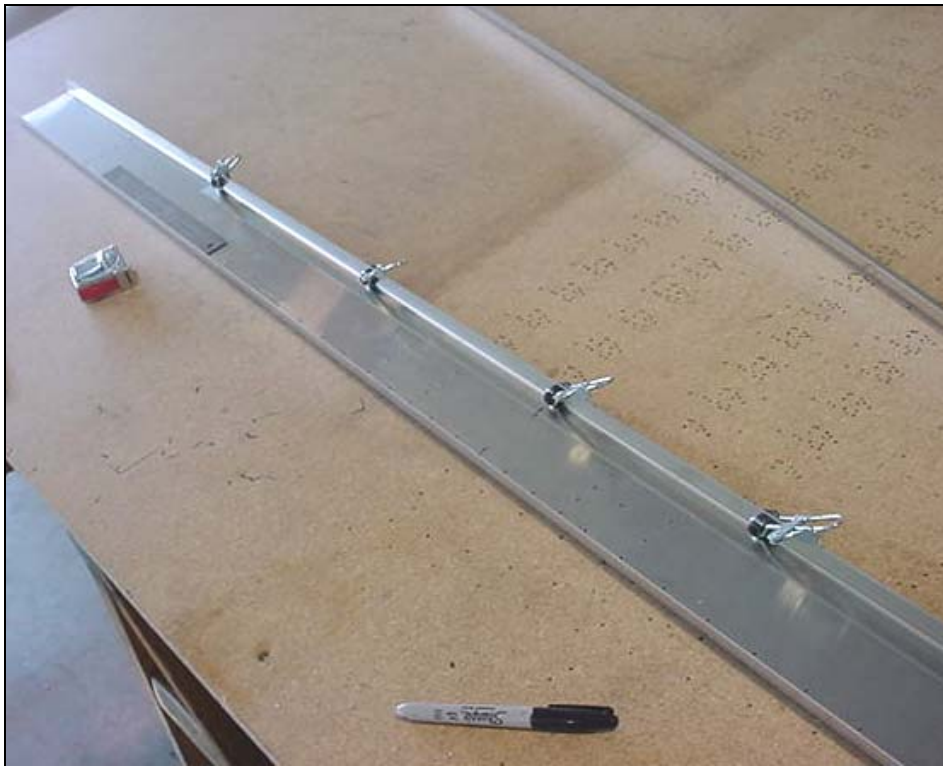
Remove the doublers and check the location of the marked holes. Acceptable edge distance, approximately 8 to 9mm.



Checking edge distance.



End holes: Distance from end of doubler to first hole = approximately 8 to 10mm.



Reinstall the doublers inside the spar, line up center line. Clamp the side flanges together.



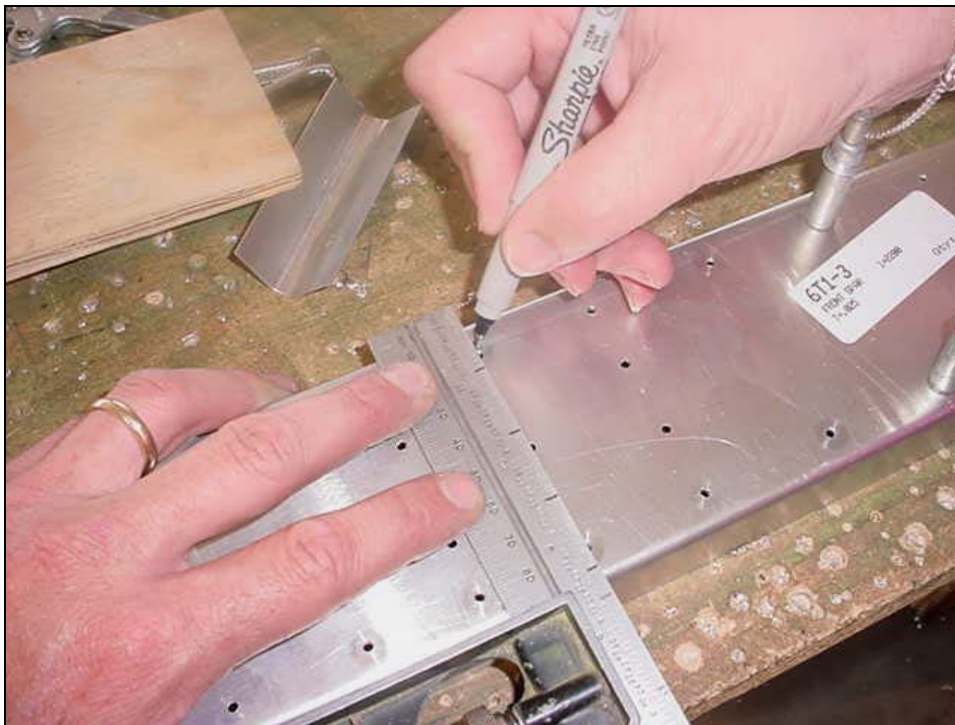
Support the spar on short pieces of 2x4 turned on edge.



SUGGESTION: First drill underside holes, either #40 or #30. After the skeleton is assembled, the holes will be opened to #20 for the A5 rivets.

When the doublers are drilled, remove the clamps.

Turn the spar over and drill.
The purpose of the 2x4 boards is to keep the clamps raised above the workbench.
Start in the middle, drill and cleco every other hole.



Reference lines to the top and bottom flange. Line is to check the position of the rivet line on the doubler 6T2-1.

With a square on the top flange, extend the rivet line for the attachment doubler 6T2-1.



CHECK: Lay a straight edge along the top edge of the template to check if it is straight.

PLYWOOD TEMPLATE BLOCK

Length = 233mm Ref. top right diagram on drawing 6-T-2

width = approximately 85mm

thickness = approximately 3/8" plywood

Make the above template.

Mark the center line square to the top edge.



CHECK: Check that both ends are square.

CHECK: The ends template is square to the top edge.



Position the template on the front side of the spar.
CHECK: The top edge of the template is flush with the top of the spar;
 the ends of the template are square to the top of the spar.



Line up center lines and clamp in place.



Check both ends.



Clamp the Attachment Doubler 6T2-2 at the end of the plywood template.
 Drill & Cleco.
CHECK: Edge distance with the rivet reference lines (top and bottom).



ATTACHMENT DOUBLER
6T2-2
Qty: 2
t=.025"

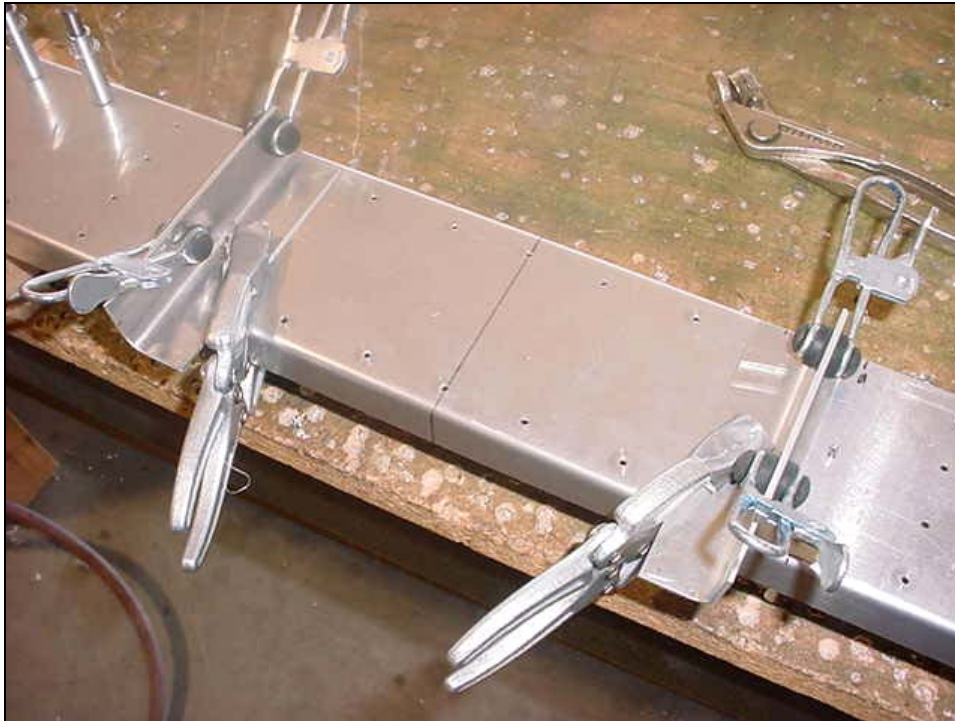


CHECK: Center the doubler on the spar; equal distance to the top and bottom.

Clamp the Doublers along the ends of the plywood template.

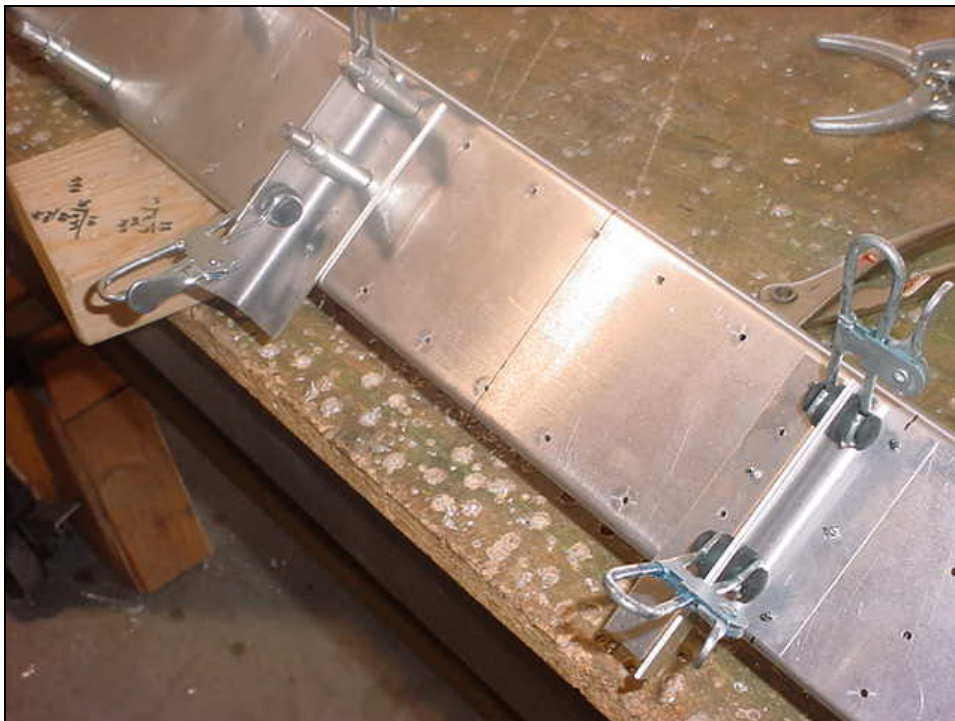


Drill & cleco through the pre-drilled holes in the spar. Drill #40 or #30 undersize pilot holes.



**FRONT SPAR
ATTACHMENT 6T2-1**
Qty: 2
t=.063"

Clamp the Front Spar Attachment 6T2-1 to the side of the Attachment Doubler 6T2-2



CHECK: Top of the spar attachment 6T2-1 is even with the top of the doubler 6T2-2.

Back drill & Cleco the Attachments through the pre-drilled holes in the spar.



3 RIVETS A5
6T2-1 to 6T2-2

Drill & Cleco the two flanges together.



Next section is the installation of the doublers and rear spar attachment to the rear spar 6T1-4.