



**7R3-1 Rear Skin
or
75R2-6 Rear Skin**

Handle the skin carefully to avoid damage, and be careful of the sharp edges and corners.

Section 2 of this manual is the Installation of the Rear Skin and the Nose Skin to the rudder skeleton (Section 1).

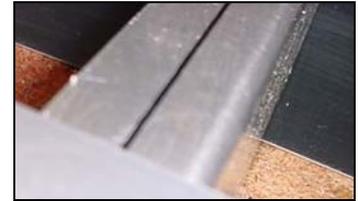


File the edge to remove any slivers or jagged edges and burrs. The final test is to run your finger over the edge, do not attempt this before filing.

File to a smooth finish removing any sharp edges.



Square 2x2 steel beams (4ft long). Straight wood boards, such as a 2x4, can also be used instead of the steel beams.
Only one end of the beam is raised with the 3/4" spacer.



CHECK that you have marked the rib flange rivet line on ribs 2 to 4: left and right flanges.

IMPORTANT:
The spacer is always positioned under the bottom trailing edge of the rudder assembly.



REFERENCE LINES: Extend the rivet line through the rib flange to the edge of the spar, for ribs #2, 3 and 4.



Rib station reference line on spar.

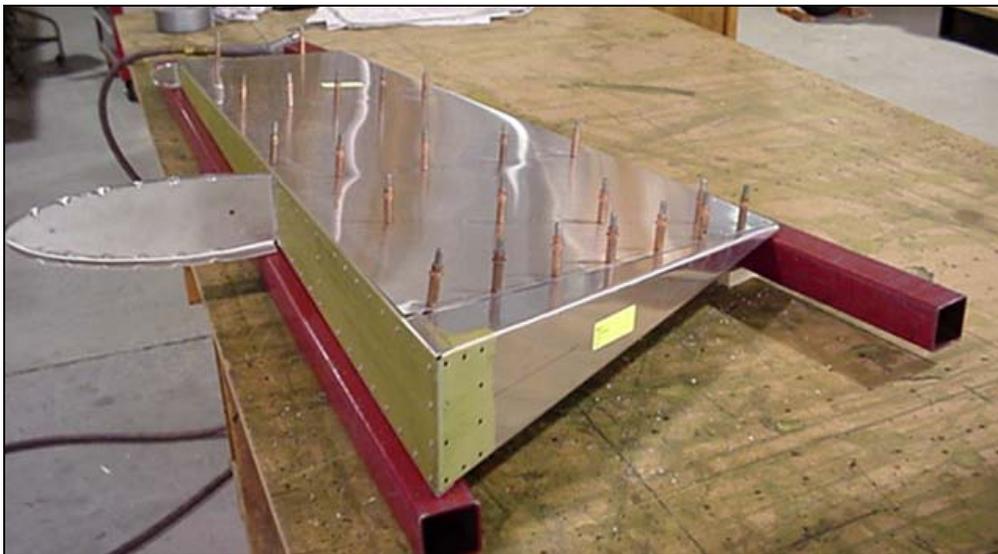


Position the skeleton inside the skin; line up the reference lines, adjust the front of the skin flush with the spar.

Duct tape the skin to the Spar along the **top side only**.
Check that the rudder is flat on the beams; the beam under the trailing edge is to keep the trailing edge straight.



Remember always have the 3/4" spacer block under bottom trailing edge.



All holes #30 drill bit.

To align the rib center line over the pre-drilled hole: lift up on the nose rib and reach underneath the spar to adjust the rib position.

Drill the last hole (trailing edge) in Ribs 4, 3, 2, and 1. Then drill every other hole and cleco, finish drilling the in between holes without adding more clecos.

Drill one side then the other side.

When drilling the holes through the spar into the rear ribs, be careful not to push too hard. The rib flanges aren't supported and will bend easily.



The end of the tip rib may not be supported on the beam, be careful not to push down too hard.

Check that the trailing edge is on the center line of the rib.

Don't forget to move the 3/4" spacer block when turning the Rudder over.



**7R3-2 Nose Skin
or
75R2-7 Nose Skin**

Note: Do not squeeze the bend radius excessively as this may damage it.

CHECK: There is no gap between the nose of the Tip Rib and the radius of the Nose Skin. Also check that the center of the radius of the Nose Skin is in line with the center of the Tip Rib.

Slide the Nose Skin in between the Spar and the Rear Skin: Insert the left and right top tip corners of the formed Nose Skin between the Rear Skin and the Spar and gradually insert the Nose Skin toward the bottom. Adjust the Nose Skin so that the top aft corner is in line with the top edge of the Rear Skin.



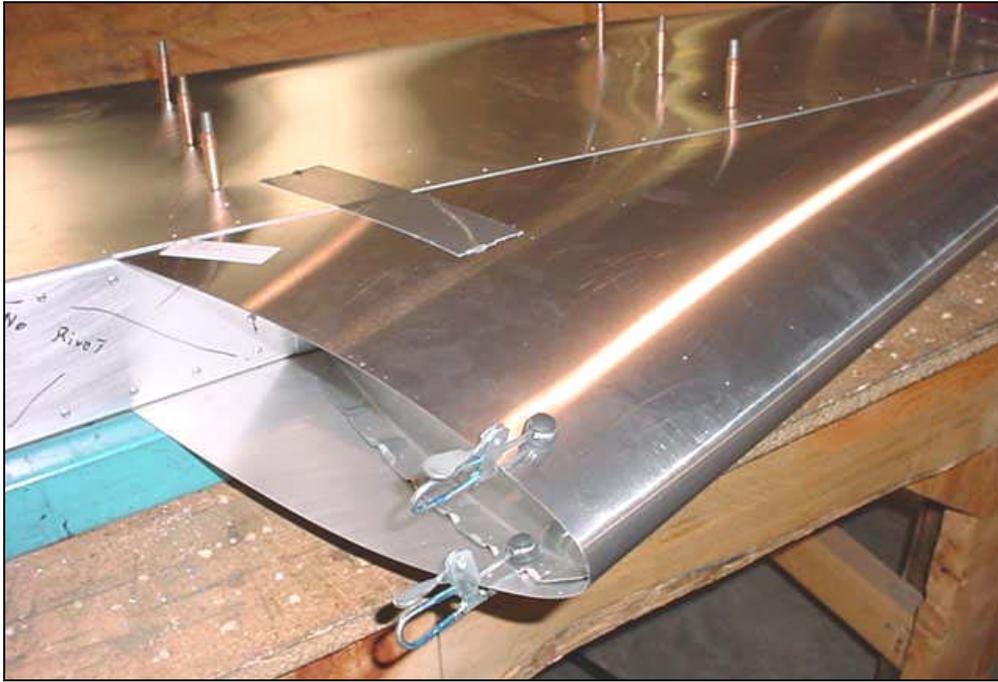
The Nose Rib is at 90 degrees to the Spar. Verify that the center of the Nose Skin radius lines up with the center of the Nose Rib radius.



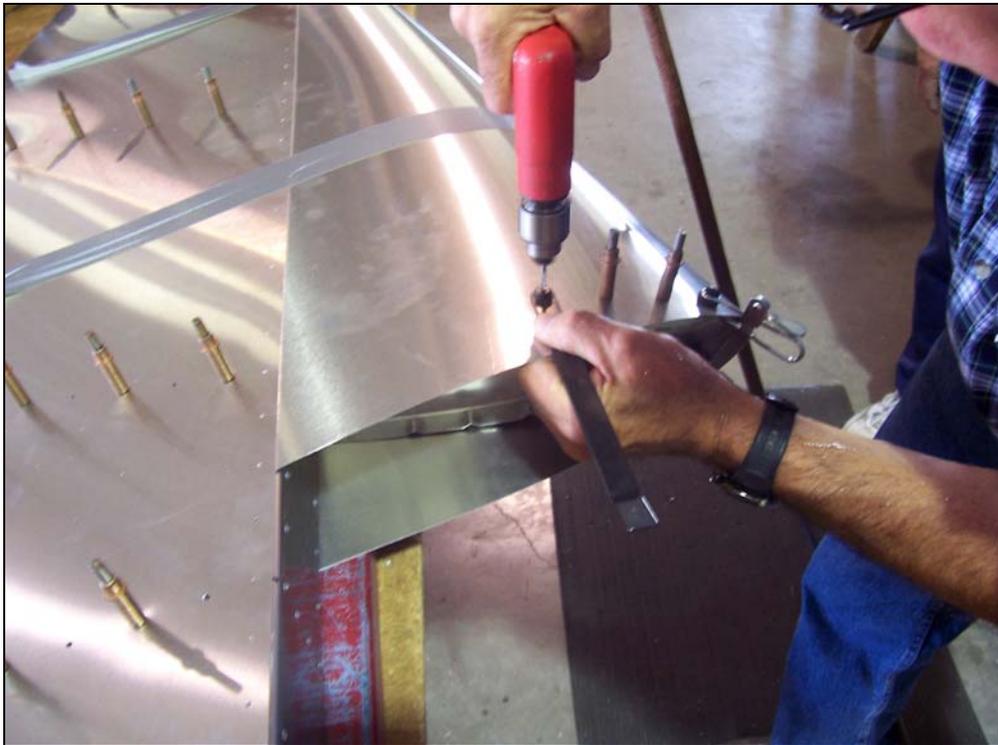
CHECK: Make sure there is no gap between the leading edge of the ribs and the nose skin.



Rib is square to the spar



To keep the nose rib from slipping down, CLAMP the side flanges to the skin.



Use a hole finder to drill the Nose Skin to Nose Rib rivet line. Slide the Nose Skin and the flange of the Nose Rib between the halves of the hole finder. Push the hole finder against the web of the Nose rib. The hole finder will center the hole on the flange of the Nose Rib. Drill a hole between each crimp and two holes between the last crimp and the Spar. Cleco each hole before drilling the next.



Before drilling make sure the Rudder is correctly positioned on the boards or beams with the spacer under the bottom trailing edge. Start drilling from Nose Rib working towards each end and Cleco every other hole. Drill both sides.



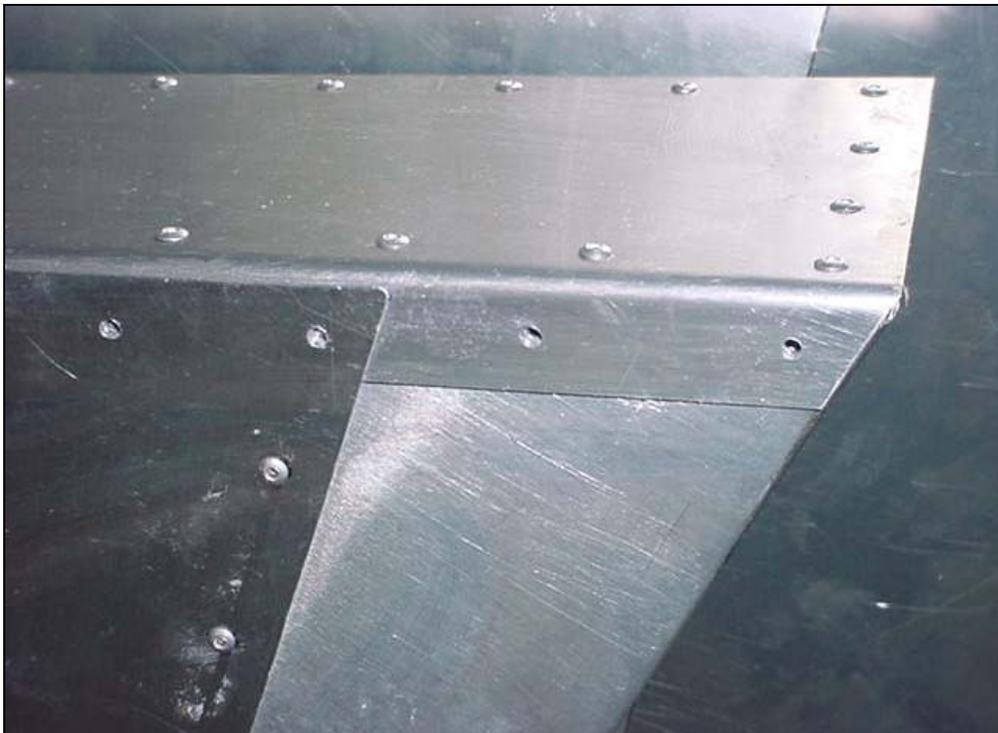
**7R3-2 Nose Skin
or
75R2-7 Nose Skin**

Trace around the Tip Rib as tight as possible to mark the overhang. This area will be trimmed when the skin is removed.



CHECK RIVET HEADS:

If there is a gap or separation between the rivet head and the skin, then the rivets should be replaced. Use a #30 drill bit to drill out A4 rivets.



Finish the spar rivet line through the side flange of the bottom rib. First rivet is 10mm up from the bottom of the spar, center the next rivet.



To replace a rivet, first drill off the head; then push the rest of the rivet through.



Drilled-out rivet heads. Pull a new rivet in the hole.



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HINT: Handle the .016" skin with care.
To remove a crease, push the inside of the skin with the backside of spoon.

Un-cleco the Leading Edge Skin.

The distance from the edge of the skin to the center of the holes may be more than 10mm (as shown above). The distance may also be uneven at the top and bottom (the skin is supplied slightly oversized to assure proper edge distance).

Layout a 10mm line from the center of the rivet.



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Trim off the excess material from the Nose Skin. Finish by filing to straight smooth line.



“Red” Snips



Cut the top of the Nose Skin flush with the Tip Rib. First do a couple of rough cuts to practice holding the snips “up side down” to work around the leading edge.

SUGGESTION: Hold the Snips upside down to make it easier to continue to trim around the leading edge.

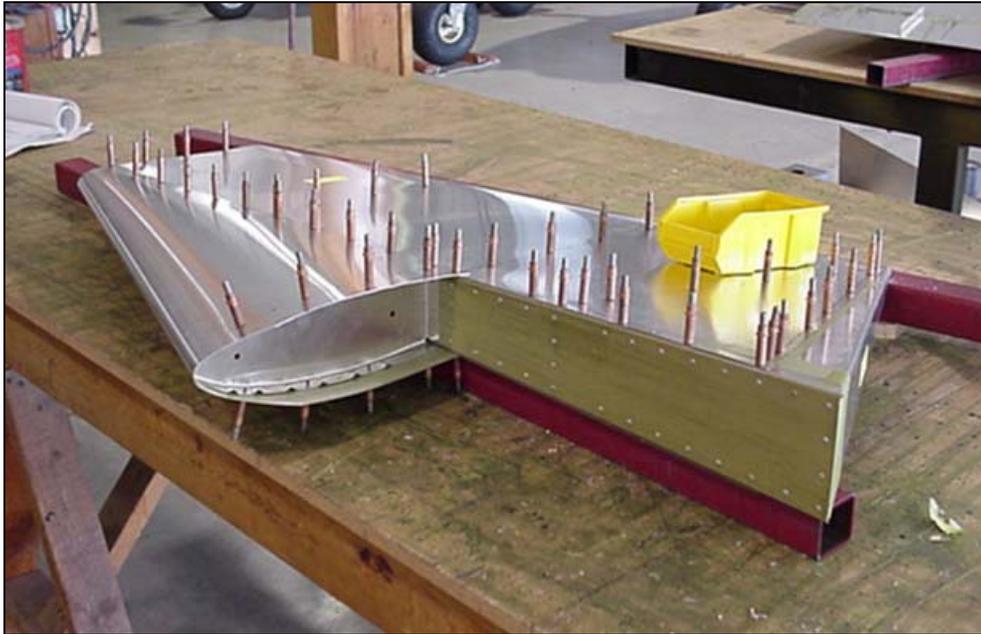


Cut to remove the line.



Looking down at the nose skin.

File to remove any sharp edges.



Un-cleco the Rear Skin and deburr the rib flange and skins.



FILE CORNERS:

With a file, touch up (radius) the front bottom corner of the rear skin and the top and bottom of the nose skin. Run your hand over the edges to make sure there are no burrs or sharp edges.

A4 PITCH 40

Cleco both sides of the Rear Skin to the ribs. Cleco one side of the Nose Skin, then Cleco the other side of the Nose Skin to the Spar.

Cleco every 3rd hole.

Rivet the assembly with A4 rivets.

Don't rivet the lower section below the Nose Skin on the Spar, just cleco.

This will be done later when fitting the Spar Fairing (7R3-3 & 7R3-4 or 75R2-8 & 75R2-9).



The finished STOL rudder assembly installed to the aircraft

Note: the swept-up bottom angle on the rudder is for ground clearance for short field take-off and landing.