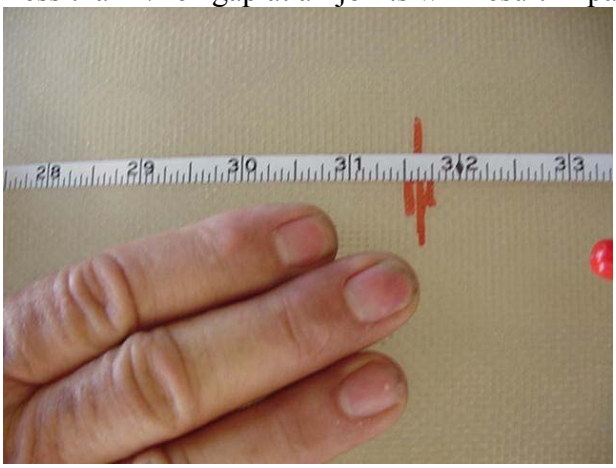
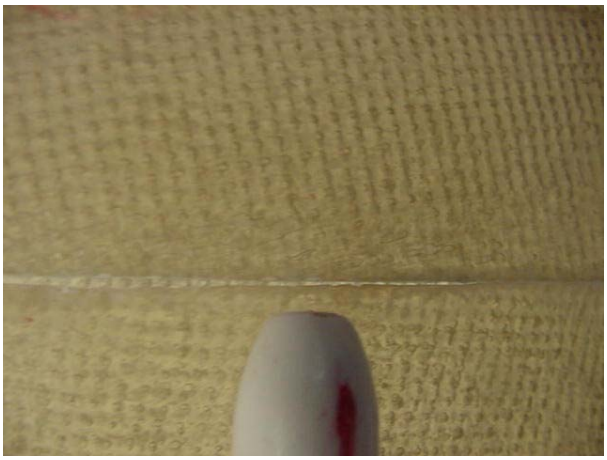
PITTS MODEL 12
ENGINE COWLING INSTALLATION

The following series of photos depict the process of fitting the composite Pitts Model 12 cowling to the airframe. Prior to fitting the cowling, the firewall must be assembled and installed complete with 2" wide cowl joining strip and nut plates. All firewall aft aluminum sheet metal skins should be fitted and installed as well to hold the firewall in its proper location. The engine must be installed on the engine mount and bolted to the fuselage. The engine is used as a reference to properly locate the cowling.

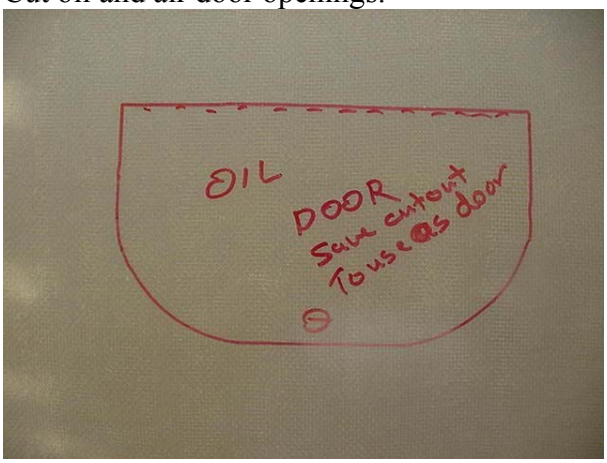
Use a marking pen to hi-light the scribe lines in the cowl. These lines show the rim point for a HP model 12, approx openings for the carb, exhaust, oil cooler, air and oil doors.

Find the center top of the upper cowl at the rear edge or at the scribe trim line. Sand the edges where the top and bottom cowl halves join on each side. Try for a very nice fit with 1/16" gap. Less than 1/16" gap at all joints will result in paint chipping later.

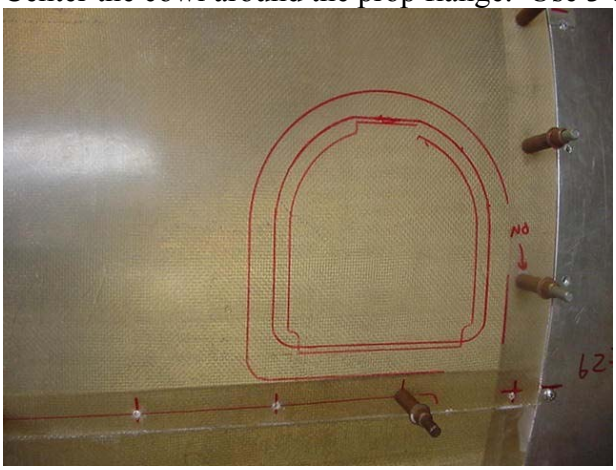


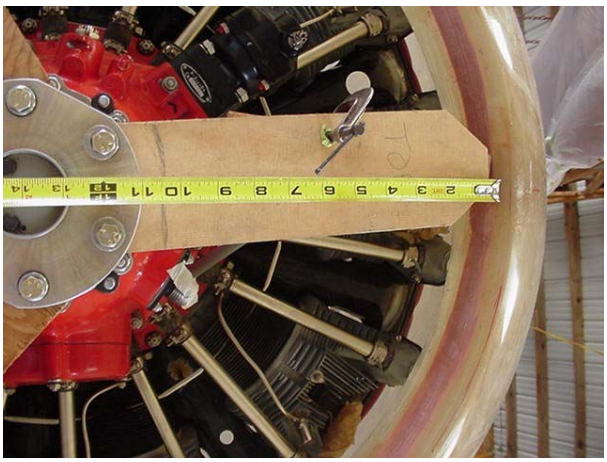


Cut oil and air door openings.

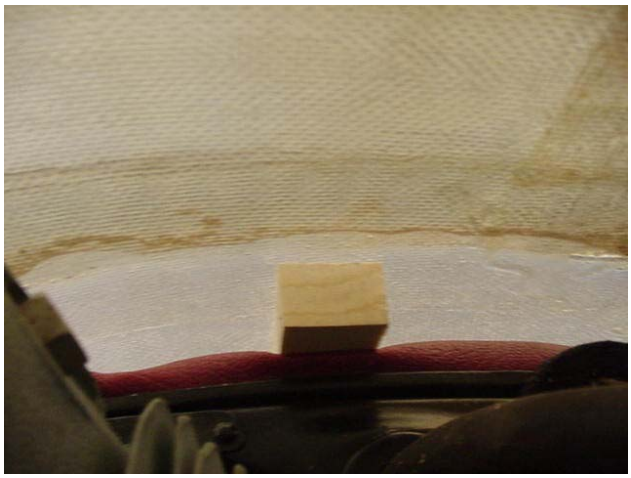


Center the cowl around the prop flange. Use 3 or 4 pieces of wood hold the cowl centered.

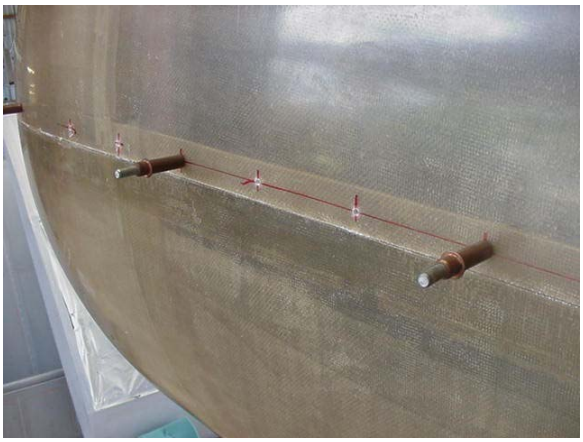




The cowl leading edge should not extend forward for the rear face of the prop flange. One side at the joint will be even with the rear face of the flange while the other will be back ½" or so. This is do to the left thrust. Use wedges at the baffles to help center the cowl on the engine. The inner cuff should not contact the engine.

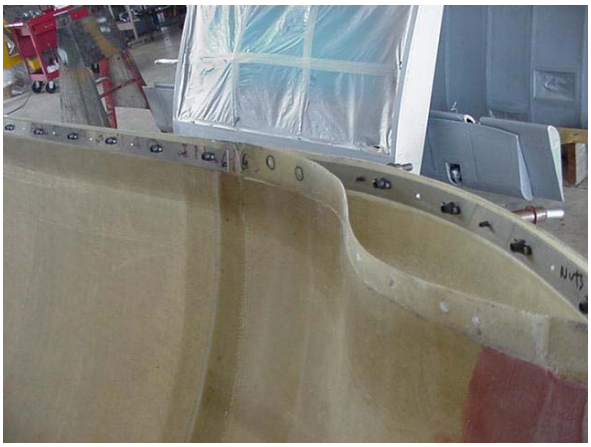


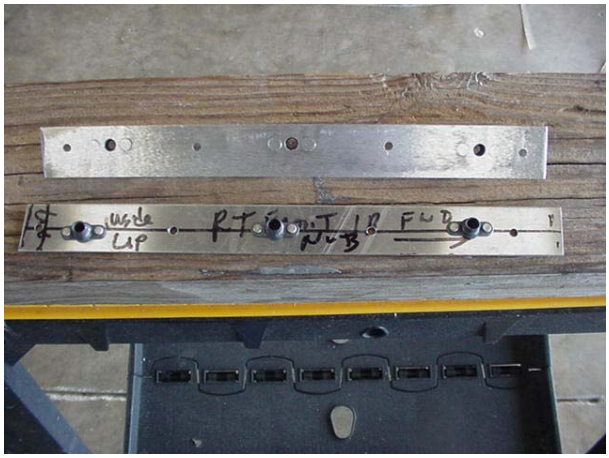
Hold the cowl halves together with straps while drilling the holes at the side joints and firewall that match the nut plates already in the firewall strip. Screw spacing is 3-3.5” as needed.



The screw locations at the joint in the inner cuff are located at 3”, 6”, 9” from the leading edge of the cowl. .032” x ¾” wide Aluminum strips are used to reinforce the joints in the cowl. 10-32 nut plates are riveted to the strips and then the strips are epoxied and riveted into the cowl as the following photos show.

Cleco the strips in place. Note that 6 strips are used. From the inner cuff rear edge aft to the firewall each side, from the leading edge to the rear of the cuff on the outer joint, and the inner cuff. Strips are flush riveted 1 rivet between each nut plate.





Fit oil cooler duct such that it lines up with the cooler and the opening. Screw holes as shown.

Locating scoop. On centerline at rear and must be aligned to look forward even though the cowl is off set.

Use 3” screw spacing on the scoop with a screw in each corner. Rear screws are the same as duct mount screws. Screen is installed after painting with 8 8-32 screws and nuts. A vertical brace from top to bottom of the screen at the center is a good idea for strength.

Following these steps, cut the remaining holes for exhaust, oil tank, air bottle access, intake drain, etc. Adjust these openings to fit your parts. We suggest that the oil and air doors and frames are made of .050” aluminum. Make sure you have ½” clearance around exhaust pipes and carb intake tube. The cap between the inner surface of the cowl and the baffles is to be sealed with a foam strip tie wrapped to the baffles. Do not operate the engine without this seal in place.