

### Fitting the Cowling

1. Prep the top and bottom cowl

This will include;

Trim cooling inlets.

Cut out a hole in the front of the cowling for the prop flange.

Block Sand the horizontal edge where the top and bottom meet.

2. Fit the top cowl to the bottom cowl, use a good tape or spring clamps to hold them Together.

3. As in the picture at right, Drill 1/8" pilot holes The length of the matting flange. The first hole is 2" back from the inlet, the rest have 6" spacing. Do not drill the last hole yet, the cowling will be trimmed some and it may end up where the cowl gets trimmed. Use 1/8" cleco's to hold the cowl together as you go.



4. Run a strip of wide masking tape around the joggle where the cowl meets the fuselage.

5. Measure back from the joggle 1" the entire length of the joggle, this will provide a reference point when trimming the cowl.



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6. Temporarily mount the spinner back plate to the prop flange, there must be a 3/16" to 1/4" gap between the cowl and spinner, this can be measured or a shim made to keep the cowl from sliding forward while fitting.



7. Set the top cowl in place, it must be up against the shim spacer or no closer than 3/16".

8. The air-inlets must be level and the spinner back plate matches the cowl.

9. Using the reference marks made for the joggle, transfer these to the top cowling.

10. When satisfied with the fit find the center of the cowl and drill a 1/8" pilot hole thru the cowl and joggle in the fuselage, that hole should be 5/8" from the edge of the cowl.

11. Work the rest of the way around each side of the cowl from the center out, use a 1/8" pilot hole and cleco to hold in place, there are 5 points total.

12. Reattach the bottom cowl to the top cowl with 1/8" clecos.

13. Trim the bottom cowl the same way the top cowl was trimmed.

14. The bottom will have 4 equally spaced holes on each side for attach points, use 1/8" clecos to hold in place.





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**Required Items:** Oil cooler NACA scoop, Oil cooler, 1/8" rivets, Aluminum piano hinge, 1" by 1" angle that's is 1/8" thick, 5 minute epoxy, 24 hour epoxy, cotton flox. AN3-5A bolts ,AN3 nuts.

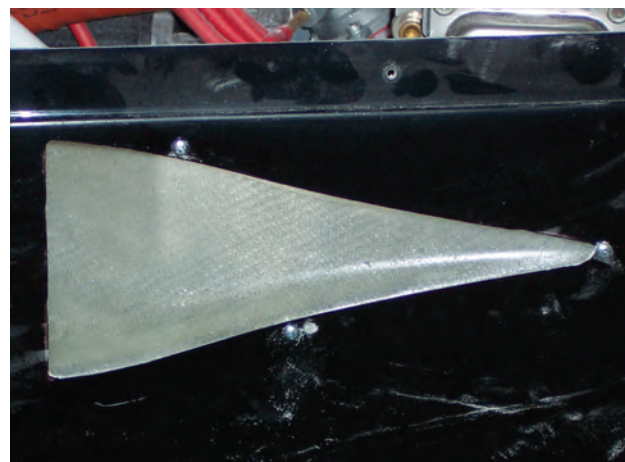
1. Assemble the Oil cooler NACA scoop as seen in the photo, sand all gelcoat from the areas to be bonded. 5 min epoxy and flox can be used to assemble the scoop halves.
2. When bonding the rear flange on, use 5 min epoxy and flox to tack it in place than use 24 epoxy



3. and flox to make a fillet along the joint.
3. Cut out the inside of the flange to match the scoop use a drum sander to match the edges.
4. Mount the cooler to the NACA scoop using either #8 nut plates and screws, or if you like aluminum hinge, this works very well but takes a little more time.
5. Remove the cooler from the Scoop.
6. Mark the position for all of the scoops to be installed in the cowling.



7. Cut out the scoop hole, but make the holes 1/8" smaller than the actual out line.
8. Use pilot holes and clecos to mount the scoops in the correct positions.
9. Use a drum sander to match the scoop to the hole, this is the best way to do this and get a good fit.
10. Remove the scoops, sand the mounting flanges and the cowl to provide a good bonding surface.
11. Mix up some 24 hour epoxy and flox.
12. Before putting the scoop in wet out the area to be bonded with epoxy alone, this provides a good bond.
13. Put a bed of epoxy flox on the flanges and glue the scoops in, use self tapping sheet screws to hold them in over night.



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14. Reinstall the oil-cooler.



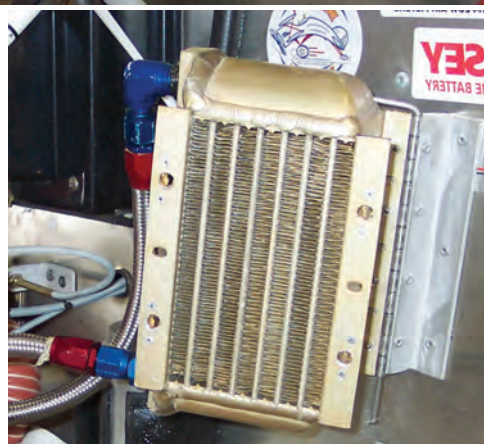
15. Fabricate the cooler to firewall mount using some 1" by 1" angle aluminum and a steel piano hinge.

16. Use the photo as a reference for the installation.



17. Install a 3/8npt to AN6 90 degree fitting on in the top of the cooler and a 3/8npt to AN6 45 degree fitting in the bottom. Use some #2 gasket sealer on the threads.

18. **Important:** The front outlet on the oil cooler adapter plate under the oil filter must go to the bottom fitting in the cooler. This will fill up the cooler instead of allowing the oil to run down the inside of the cooler.





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15. Install the NACA scoops in the cowling as per the drawing and the pictures.



Pilot side

16. Install camloc recepticals in the horizontal flange that mates the top and bottom cowl's together.

17. The 3 pilot holes that are for the top cowl in the fuselage must also use camloc recepticals.

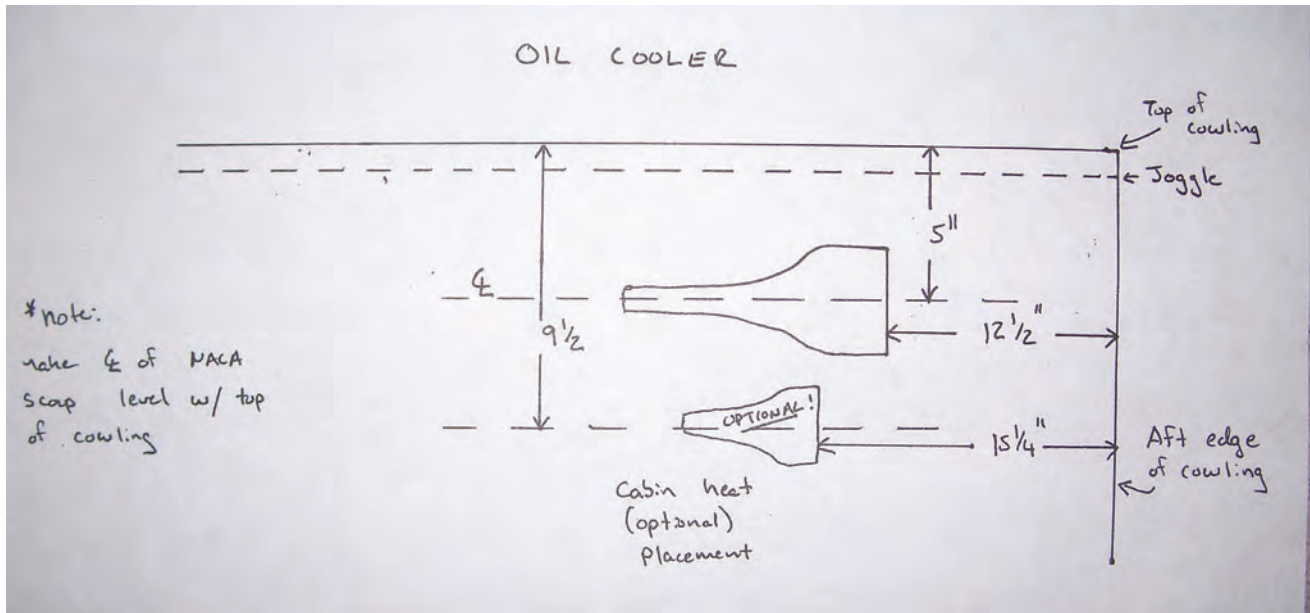
18. The remaining holes along each side (5 per side) must use #8 nutplates.

19. The oil door consists of an aluminum piano hinge and 2 counter sunk #4 camloc's. It is possible to use a hartwell style latch if you want but one is not provided with the kit.

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1. The drawing below is of the pilot side of the cowling (left side).
2. Use the measurements below to install the naca Scoops.
3. The second Small scoop shown is to be used if the cabin heat box is install on the co-pilots side of the firewall, this is an optional placement.



1. The drawing below is of the co-pilot side ( right side ) of the cowling.
2. The cabin heat scoop standard postion is on this side of the cowling.
3. Refer to the pages before for proper install of the scoop.

