

# UL Power UL350 Series Engine Installation

## Section # 6 TOP AND BOTTOM COWL



UL Power aircraft engines are manufactured and supported by UL Power Aero Engines of Belgium. Read and understand the UL Power manuals completely before starting with the engine installation, as they contain important engine installation, operation and maintenance information. Follow all of the important safety information provided in the UL Power manuals regarding the installation, operation and maintenance of the UL Power engine. Read and understand the UL Power Operating Manual before starting the engine.

Make sure that your engine is registered with UL Power or an authorized distributor so that the factory warranty is in effect. In the United States, the UL Power distributor is UL Power North America: <http://www.ulpower.net>. Contact a UL Power distribution or service partner if you do not understand the instructions or if you have any additional questions. Maintain copies of the manuals with the aircraft in case of sale. Obtain current versions of the manuals from the official UL Power website, as well as current service and maintenance information: [www.ulpower.com](http://www.ulpower.com)

If a discrepancy arises between the information provided by UL Power and the following pages, the UL Power manuals and/or service information and instructions take precedence. Zenith Aircraft Company does not manufacture or directly support engines.

**Note:** Different engines will affect performance, specifications, and flight characteristics of the aircraft. Also, the weight and balance of the aircraft will be affected by different engines and the fuel system per the drawings may not be adequate or suitable for some engines.



P/N: 350-COWL

Check that the top and bottom cowl match each other before fitting. The inlets flanges may need to be trimmed to fit proper.



Locate the center and mark 130mm circle for the cutout for the Propeller Flange.



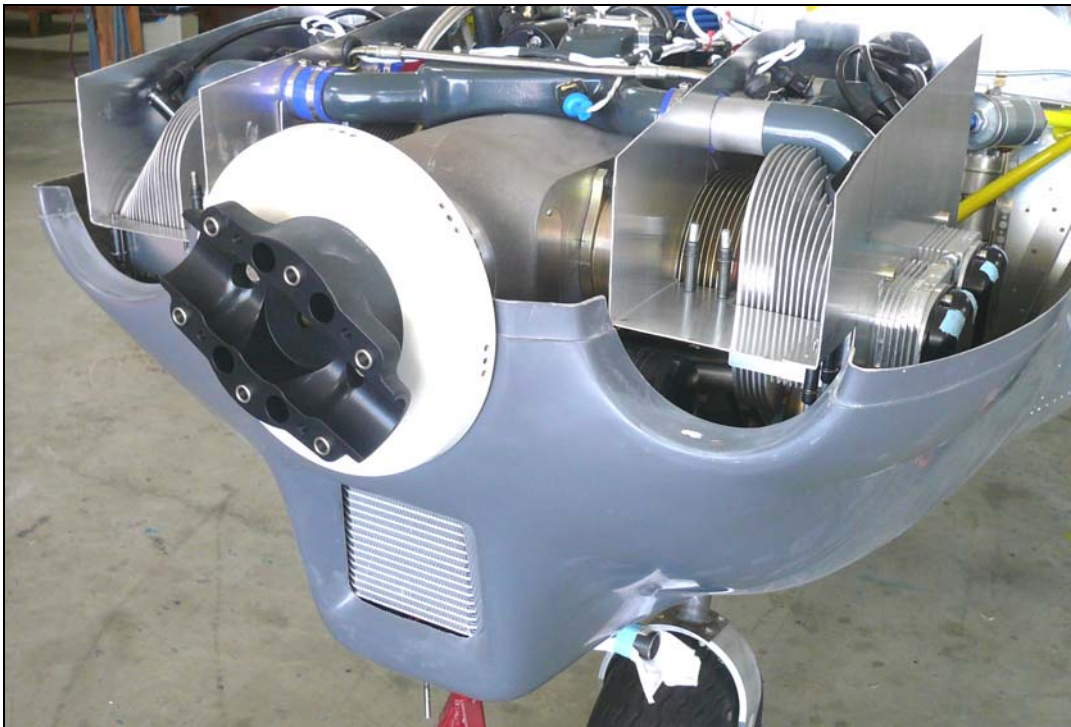
Make a rough cut using the red and green snips.



Finish cutting and cleaning the hole using a die grinder with a sanding drum.



Final cut



P/N: Spinner  
Backing Plate

Lift the lower cowl in place and hold in place using a stand on the bottom cowl. Position the front of the cowl with the Spinner Backing Plate and temporarily attach the rear cowl using tape. Adjust the cowl to match the Backing Plate and Oil Cooler opening. There should be a minimum of 1/8 gap between the spinner backing plate and the top and bottom cowl.



Center the top and bottom cowl to the fuselage and secure in place using tape. For the upper cowl to fit proper. Pull tightly over the bottom cowl. Trimming may be necessary on each side if it over laps the bottom cowl lip. The cowling trailing edge may be to long and will require some trimming.



The distance from the Spinner Backing Plate and the Cowl should not be less than 1/8".



Once the top and bottom are position, drill and cleco the inter flange by the spinner with # 40 drill bit.



Evenly layout 6 screws holes on each side, 5 on the top, and 3 on each side on the bottom. Drill with # 40 and cleco. Before drilling the trailing edge make sure that there is proper edge distance on the fuselage skin for the nut plate.

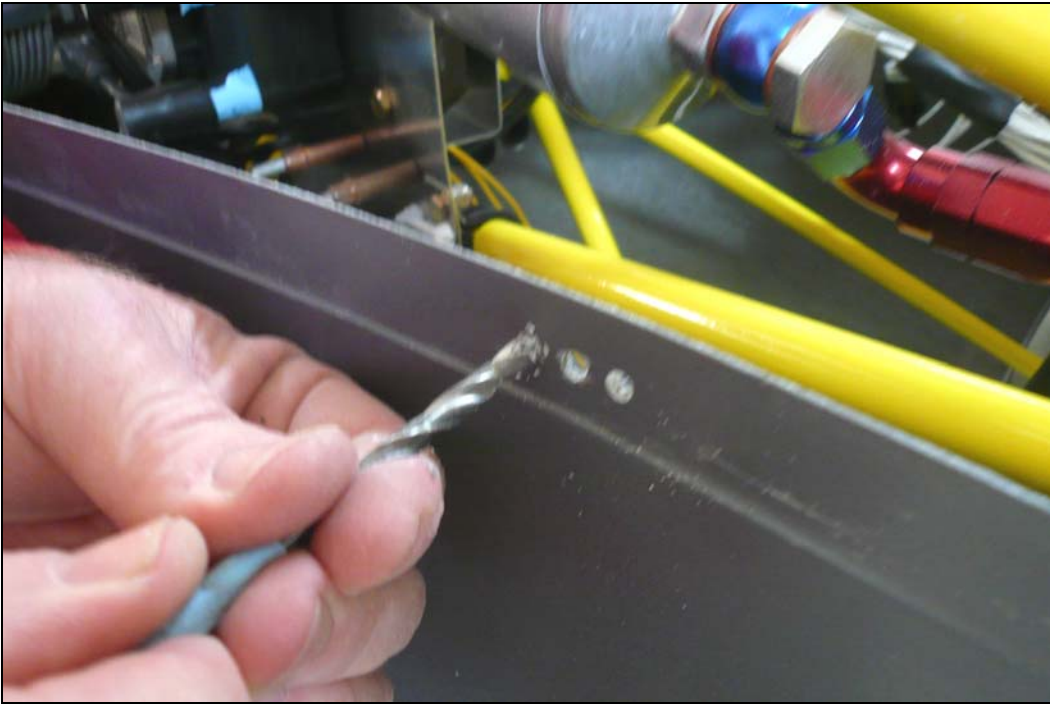


Open each hole to 8/32" for the nut plate and screws.



**P/N:** MS21047-08  
Nut Plates

Position the nut plate on the outside for drilling only. Use a screw to hold the nut plate in place. Drill and cleco with #40 drill bit on each side of the nut plate.

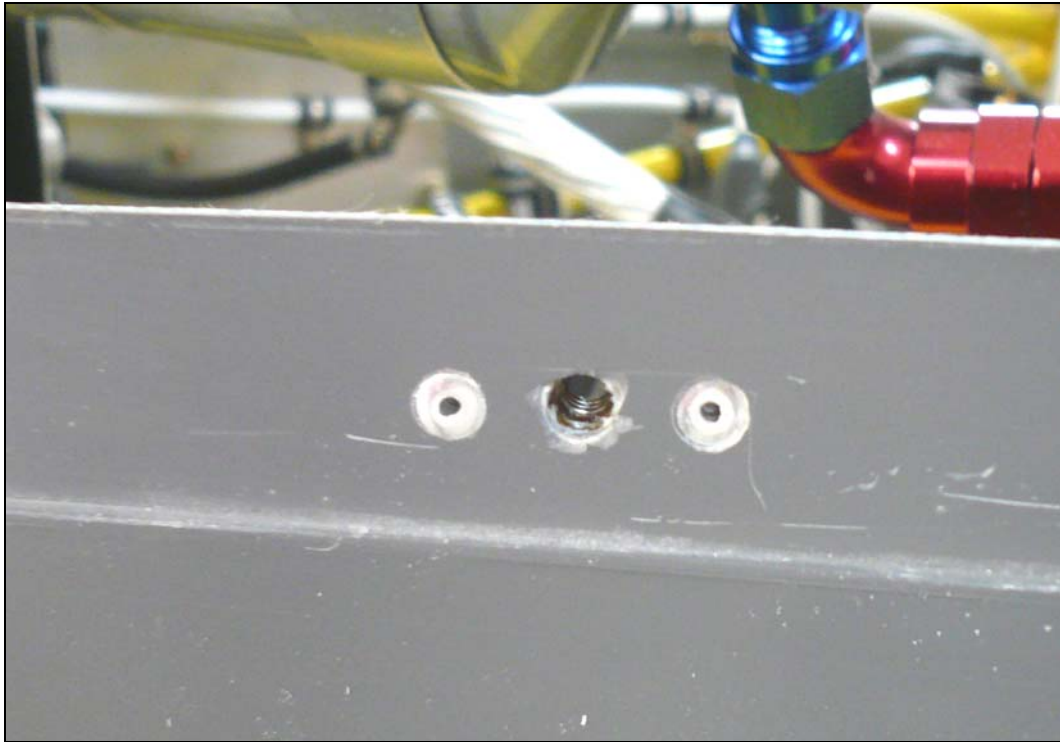


Counter sink the two outboard holes, so that the A3 rivets will sit flush. When the top cowl is on.

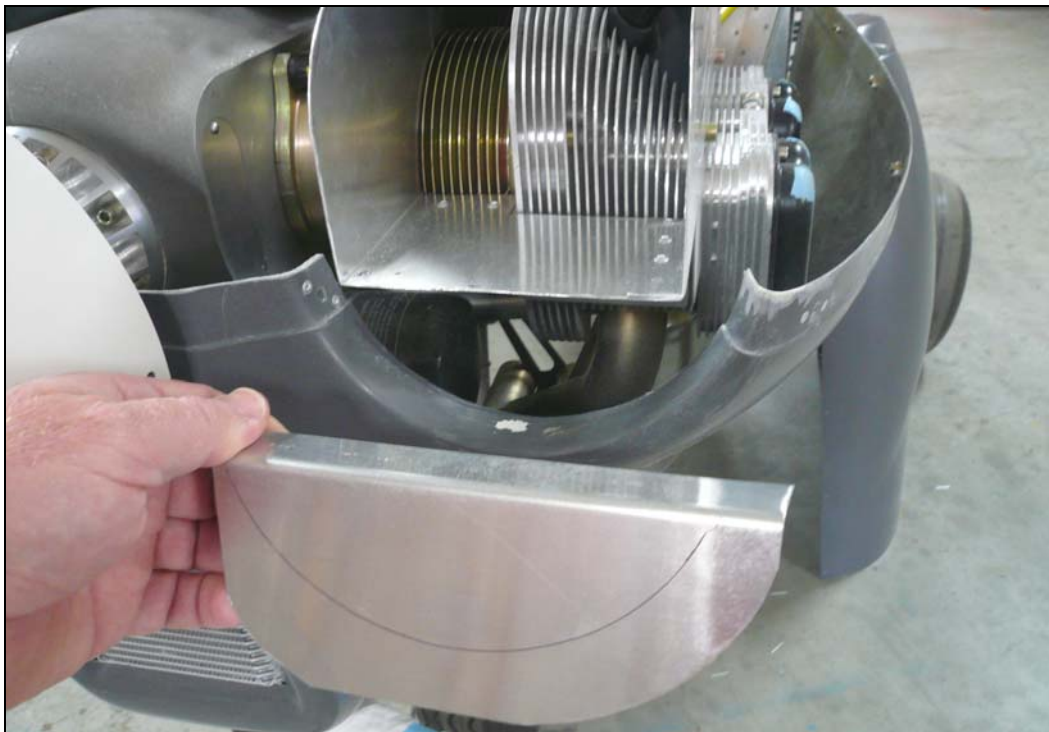


Rivet the nut plate using A3 rivet. Remember to change your head to a flush head on the riveter.





Nut plate riveted using A3 flush rivets. You may need to file down the rivets to make it flush with the cowl.

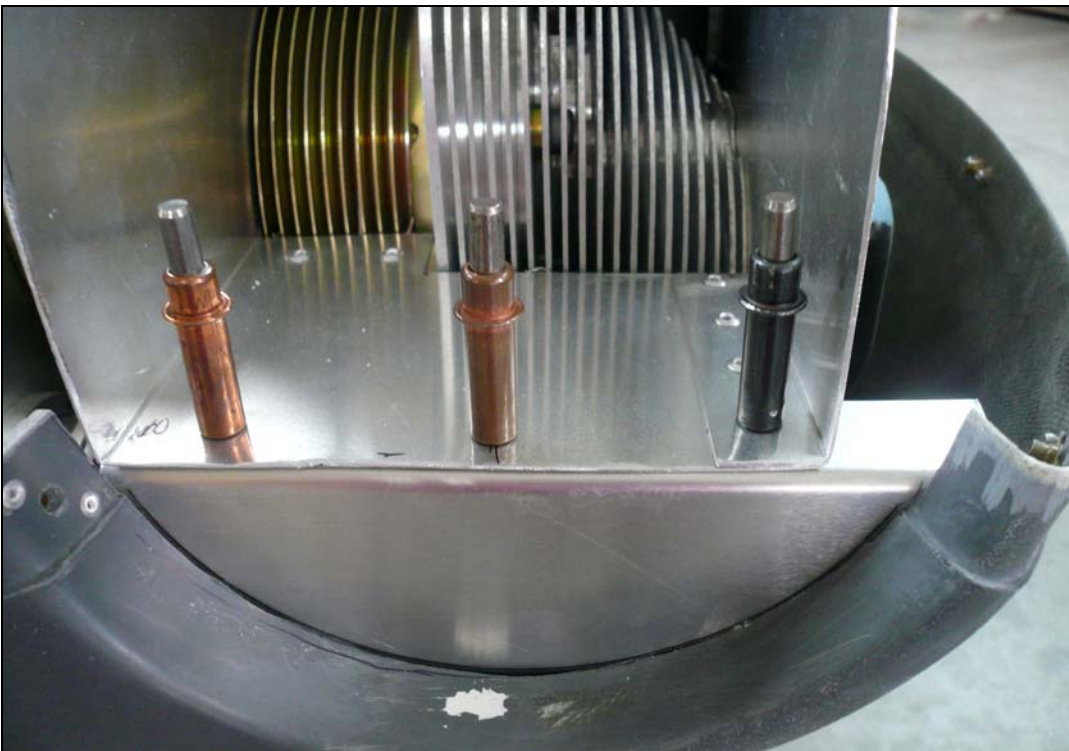


**P/N:** 350-ABF  
Alum Baffle

Rough cut the front alum baffle on each side to position in the cowl front opening area.



Position the baffle on each side and trim.



Drill and cleco the alum baffle in place using two A4 and one A5 rivet.



You will need to close each side off the same as the bottom. Drill and rivet the side baffle using 2 A4 rivets.



**P/N:** 350-ABF  
Alum Baffle

Finished Alum Baffle Front and Side



**P/N: TA-8071**  
**Baffle Material**

Cut a length of Baffle Material for each side on the Alum Air Baffle. Before attaching the Baffle Material, check to make sure that the material will seal the top cowl from any air leaks.

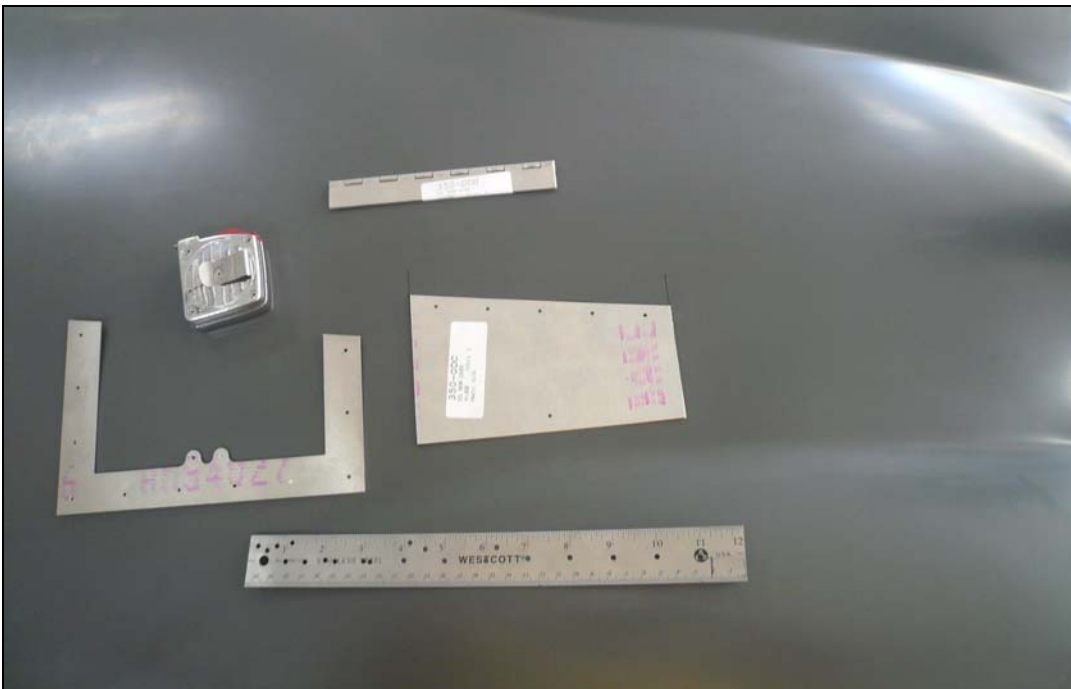


**P/N: BFK-10**  
**Baffle Fastener**

Drill with a # 20 and attach the Baffle Fastener. It is recommended using Loctite on the threads of the Fasteners to hold in place.



Finished Air Ducts with Baffle Material.



**P/N:** 350-ODC  
Oil Door Cover

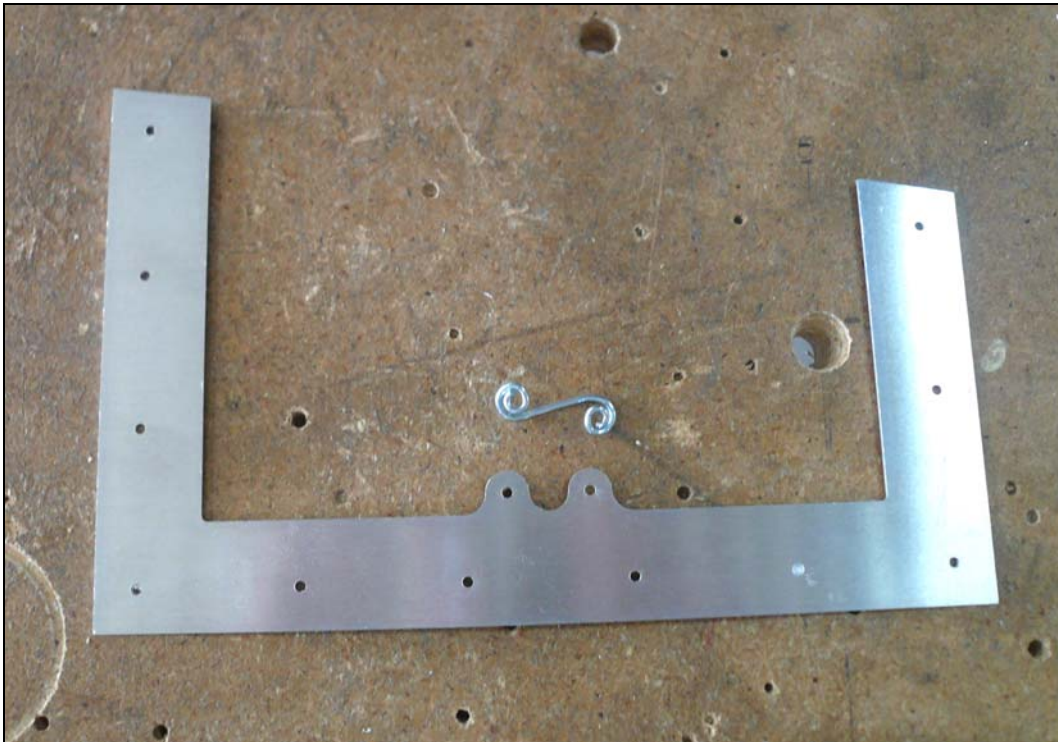
**P/N:** 350-ODH  
Oil Door Hinge

**P/N:** 350-ODP  
Oil Door Backing Plate

Layout the Door on the top cowl on the right side, over the Oil Dip Stick area.



Cut out the opening for the oil door using thin cutting wheel or snips.



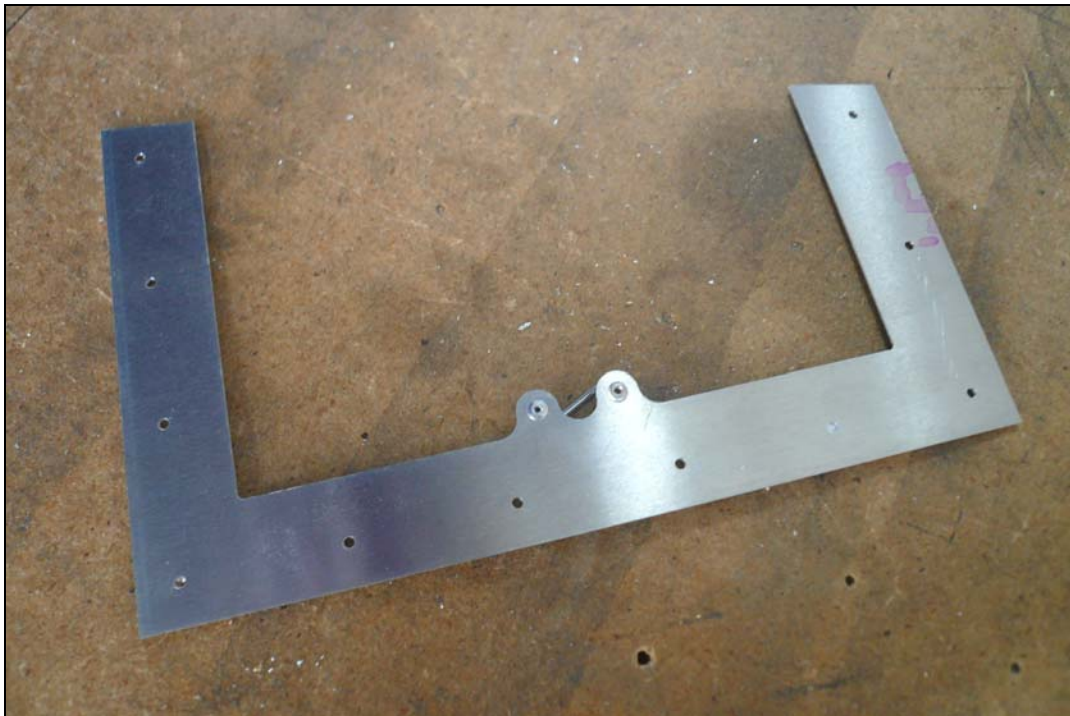
**P/N:** 350-ODP  
Backing Plate

**P/N:** S4-200  
Dzus Spring

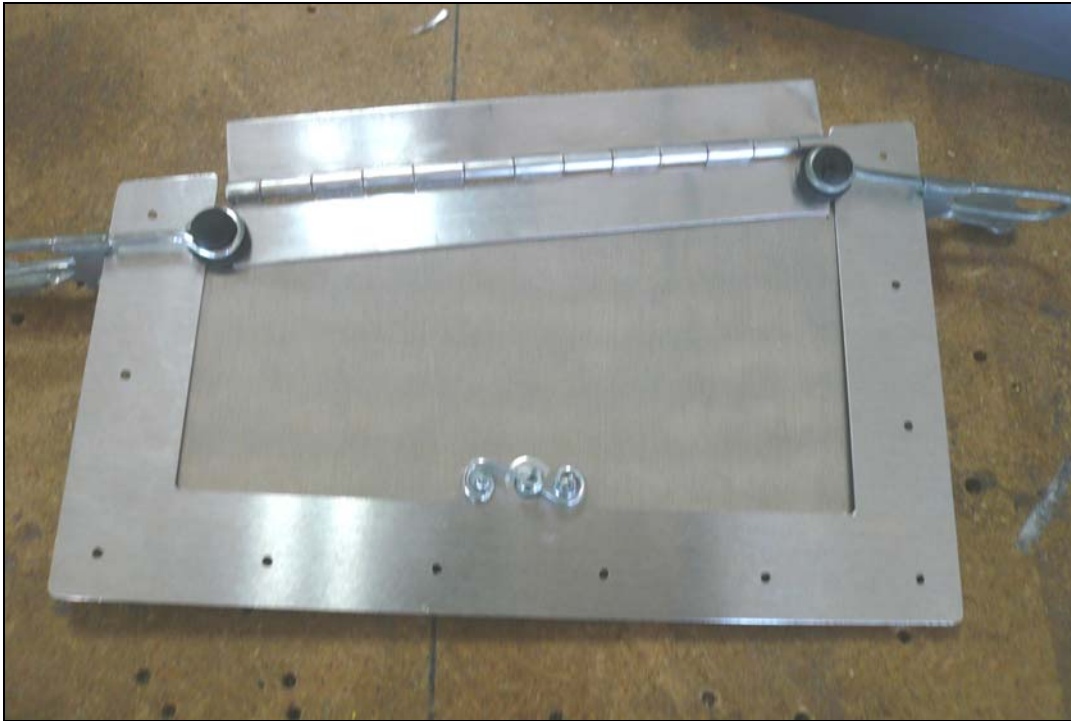
Attaching the Dzus Spring to the Oil Door Backing Plate



Cleco the Dzus Spring to the Oil Door Backing Plate using A3 rivets



Dzus Spring riveted to the Backing Plate.



**P/N: 350-ODH**  
Oil Door Hinge

**P/N: 350-ODC**  
Oil Door Cover

Trim the hinge to fit Oil Door and clamp in place. Attach the Oil Door Cover to the Oil Door Backing Plate using the Dzus Fasteners. Special tools are needed to set the Dzus Grommet to the Oil Door. See Wicks Aircraft for special tool to set the grommet.



Turn the unit over and drill the door to the hinge.

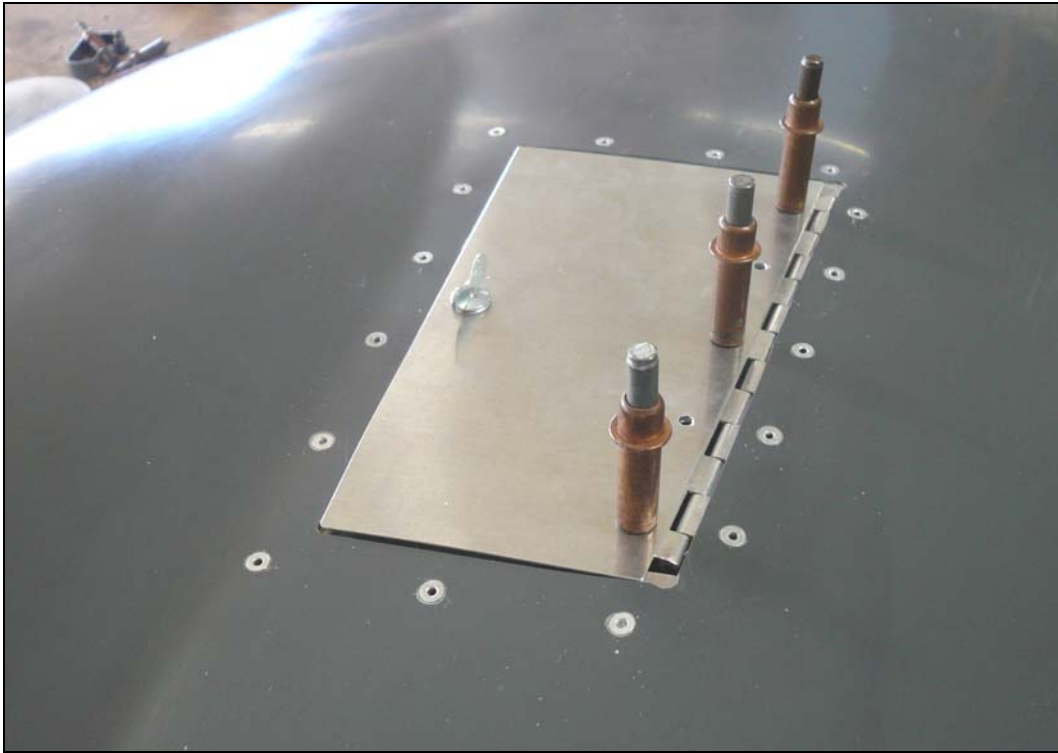




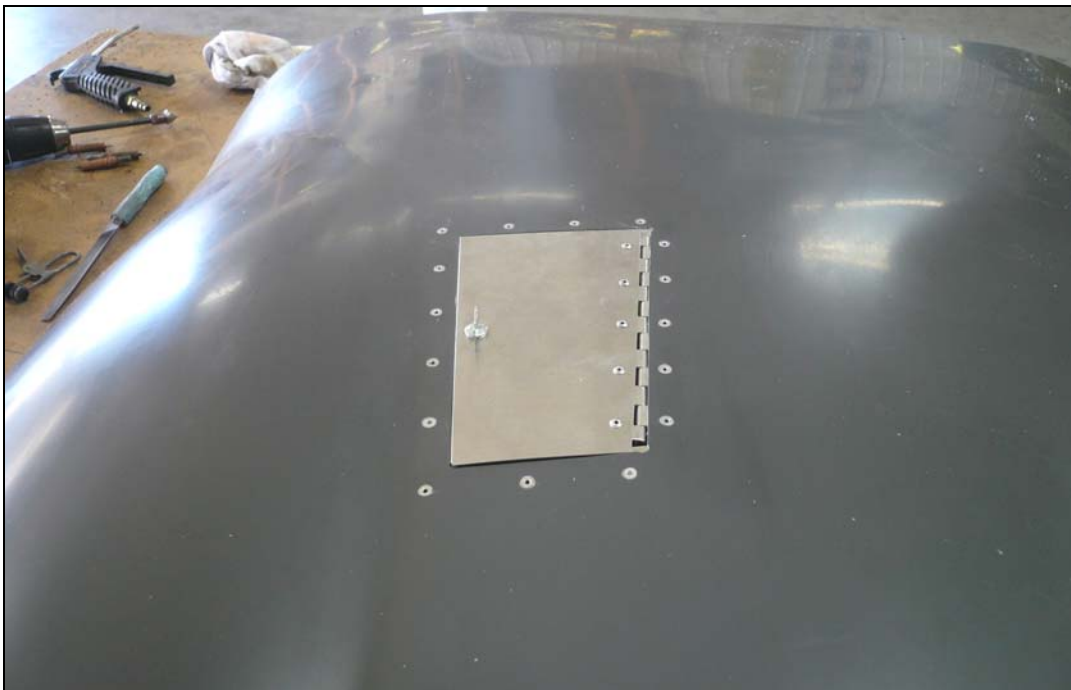
Drill the Backing Plate to the top Cowl from the inside. Before drilling check to make sure that the Oil Door fits proper.



Finish drilling the Backing Plate and open all holes to A4 rivets. All holes in the cowling need to be counter sunk to make the rivets flush.



Rivet the Oil Door to the Hinge using A4 rivets.



Completed Oil Door Assembly on Cowl