

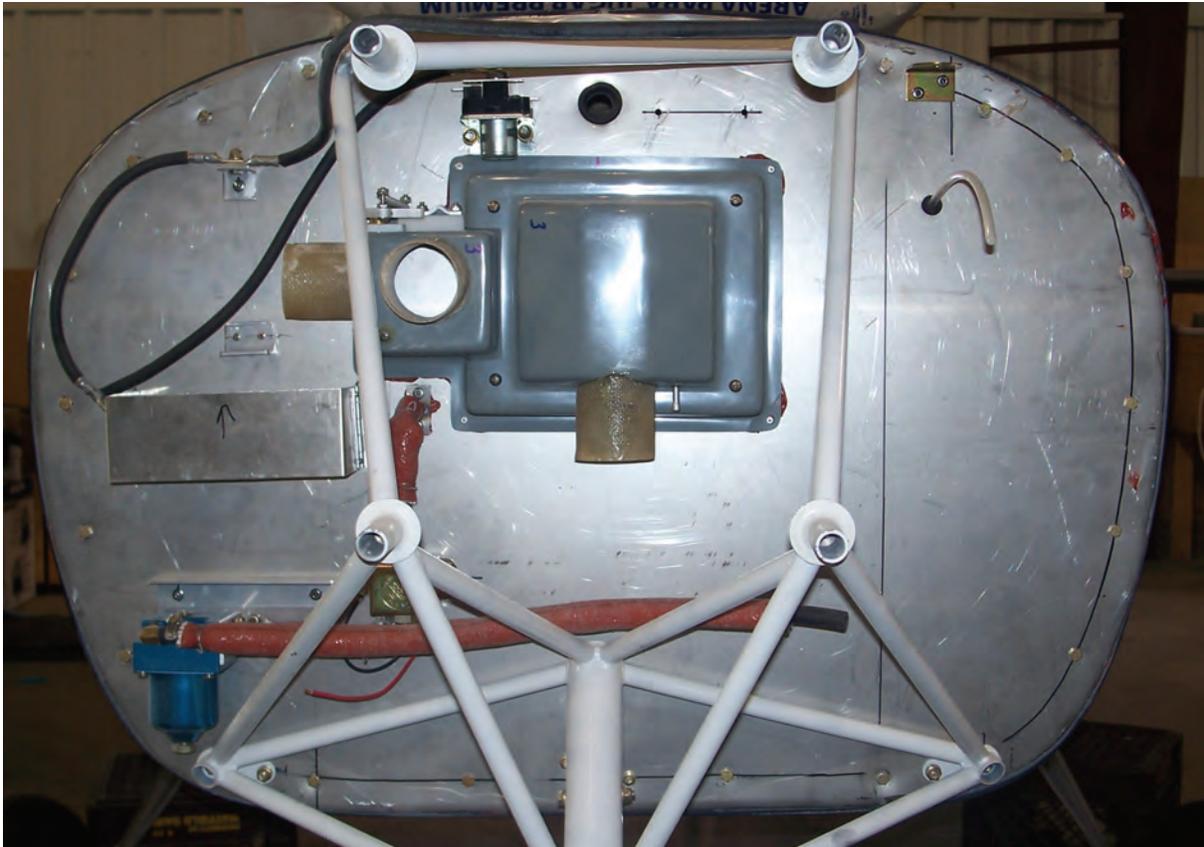
36. Firewall Forward Installation



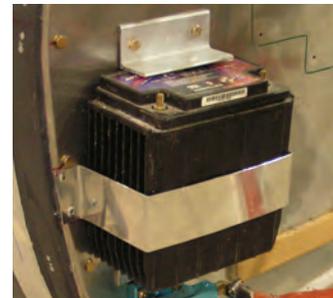
Note:

Use the following photos to layout and install the systems on the firewall. This is how Arion aircraft suggests laying out the firewall forward items. However every installation is different and the builder may choose to install the items differently.

Required Items: Airbox, Battery Box kit, Oil recovery kit, Oil Cooler, Electric Fuel pump, Gascolator, Regulator rectifier, starter solenoid, Brake fluid reservoir.



1. The engine **Airbox** must be installed so that the down tube to the carb is inline with the carburetor, **The airbox is not on the firewall centerline due to engine offset.** The airbox must be low enough to allow activation of the carb heat arm, generally the top of the airbox is 4.5" down from the fuselage flange.
2. When installing the **Battery assembly** by yourself, it is helpful to make a template of the battery from thick cardboard or lite-plywood.
3. The only consideration here is that the battery does not interfere with the inlet to the airbox, and there is sufficient room to install the gascolator below it. The upper hold down must be installed with nutplates to allow removal of the battery.



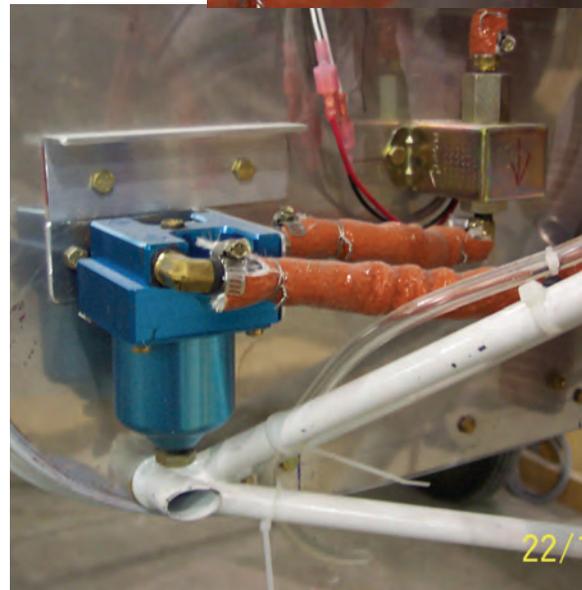
36. Firewall Forward Installation



- 4. Using this picture and the full firewall picture on the previous page to finish the firewall side of the fuel system.
- 5. Install the **Fuel bulk-head fitting** just below the carb-heat inlet of the airbox, it helps to us a tubing bender and put a 90 in the firewall side of it.
- 6. Install the **Electric fuel pump** directly below the bulk-head fitting, use a straight fitting in and a 90 fitting out pointing to the co-pilots side of the firewall. **Note the pump has a direction of flow stamped on it this is important.**
- 7. Install all fuel line with hose clamps and cover with fire-sleeve. It is good practice to safety wire the end of the fire-sleeve closed.



- 8. A bracket must be made to mount the **Gascolator** to the firewall. A piece of 4" by 1" by 1/8" thick aluminum stock is adequate.
- 9. Bend the bracket over 90 to mount the gascolator to on face and the other to the firewall. **This too has a direction of flow stamped on it.**
- 10. The gascolator drain must clear th emount to be used properly.
- 11. Use a straight fitting in, a plug in top, and a 90 fitting out pointing inward towards the motor mount.



- 12. Mount the **Brake Reservoir** to the outboard side of the flute tube support that is behind the firewall. The bracket that is supplied should be reversed as in the picture and mounted as high on the firewall as possible.
- 13. Use a 90 fitting on the bottom and determine the location for the hole in the firewall. Although not supplied with the kit, use of rubber grommet is recommended for the brake line pass thru.



36. Firewall Forward Installation



- 14. The **Oil Recovery Bottle** can be mounted on the pilot side of the firewall as in the photo.
- 15. Mount with 3/16 counter sunk screws or rivets.
- 16. The most important part of the installation is that the oil line from the dip-stick tube runs up hill along the motor mount and than down into the bottle.
- 17. Run the exit tube for the recovery bottle out the bottom of the cowling.



- 18. The installation of the **Oil Cooler** is covered in section 34 pages 3-6.



- 19. When installing the **Cabin Heat kit** refer to section 34 page 6 for the NACA scoop location. This location can be either left or right side. The scoop must be on the opposite side of the firewall from the mixer box .
- 20. Use a 2.25" holes saw to cut the stainless firewall , it is best to drill a pilot hole in the center of the location, than drill the firewall from the inside of the cockpit.
- 21. Mount the mixer box with the included .125" rivets and foam gasket.
- 22. Fabricate an angle bracket to hold the cable end adjuster in the correct location from the mixer activation arm.



- 23. The **Regulator Rectifier** supplied with the engine can be mounted above the airbox and equally spaced between the centerline and motor mount.
- 24. The **Starter Solenoid** supplied with the engine can be mounted above the airbox and equally spaced between the centerline and motor mount.
- 25. On the centerline of the firewall between these items drill a 1" hole and install a grommet for wire pass thru.



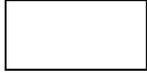
36. Firewall Forward Installation



26. This photo shows an optional way of installing the battery box assembly.



27. Fabricate short pieces of hinge at the base of the strap to allow it to be removed easily.



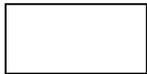
28. The angle brackets can then be permanent parts with no need for nut plates.



29. The next to pictures show an optional oil pan cooling plenum. No material is provided in the kit but can be built from aluminum or stainless steel.



30. This is a good mod for high temperature climates.



31. During testing we found up to a 25 degree drop in oil temp over stock setup.

