



Part Number: <u>14817</u>	Revision: <u>D</u>	Effective Date: <u>12/15/11</u>	By: <u>J. INGERSLEV</u>
Document Type (indicate):			
◦ Bill of Material	• Drawing (may be attached)	◦ Specification	
• Assembly Instructions	◦ Operating Procedure	◦ Other	

Heater/Defroster Installation Instructions

I. Parts Included in Kit:

14816	HEATER DEFROSTER ASSEMBLY	EA	1.00
14817	HEATER DEFROSTER INSTRUCTIONS	EA	1.00

II. Tools required:

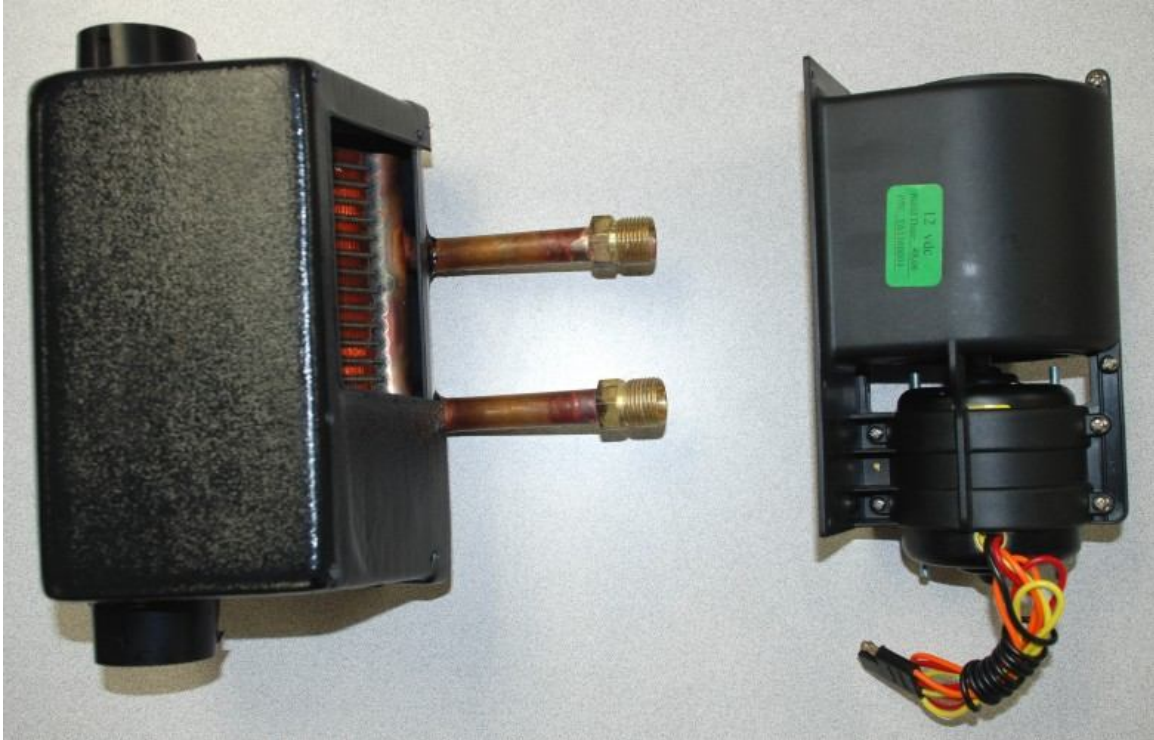
- Philips head screwdriver
- Flat head screwdriver
- 1/8", 9/64", 5/32", 1/4", 3/8" Drill bits
- 1 1/4" Hole saw
- 1" wrench
- Tin snips
- Marker
- Ruler
- Pen
- Masking Tape
- Scissors or a razor knife
- Tube of High temp Black RTV Silicone
- Jig saw or hacksaw blade
- 5/16" wrench

Note:

- **If windshield wipers are to be installed, position the wiper motor after the heater is installed so that it is to the outside of the heater and the tube goes over the heater.**
- **If the firewall has not been installed yet, all of the holes can be drilled with the firewall off the frame.**
- **Disassemble the heater and check the template hole locations compared to the actual heater. Sometimes the factory holes are off slightly. Mark the locations on the template.**

III. Installation Instructions

1. Take the heater unit apart so that the blower motor is separate from the rest of the heater box by removing the six Philips head screws holding the motor onto the heater box.

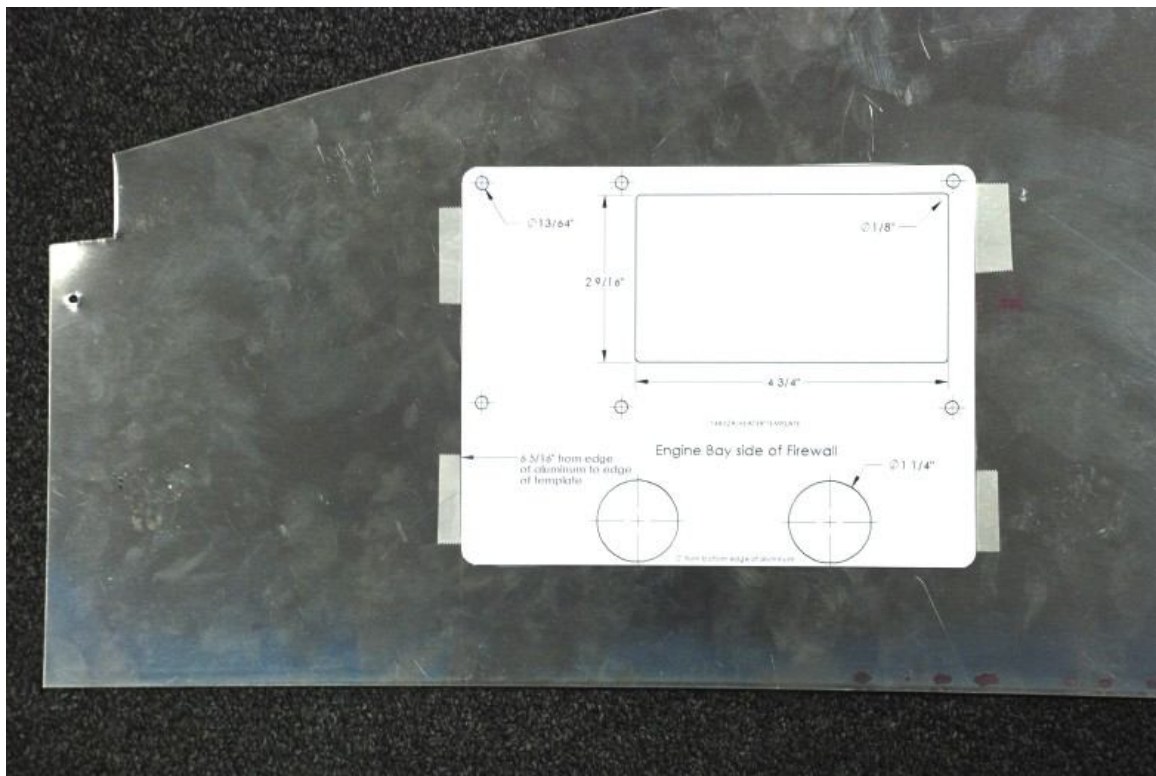
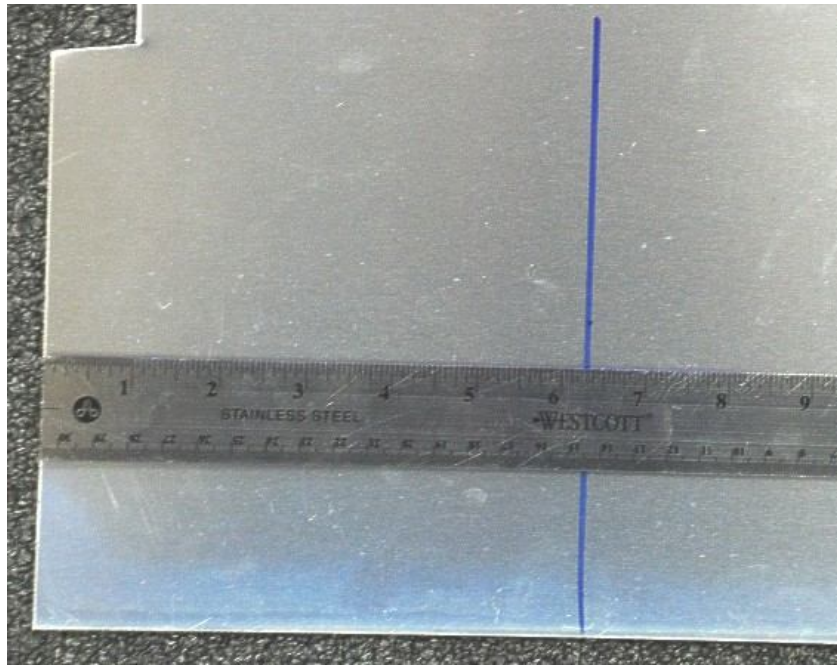


2. Cut the outside of the attached template using scissors or a razor knife.
3. Cut the large rectangular hole in the template using scissors or a razor knife.

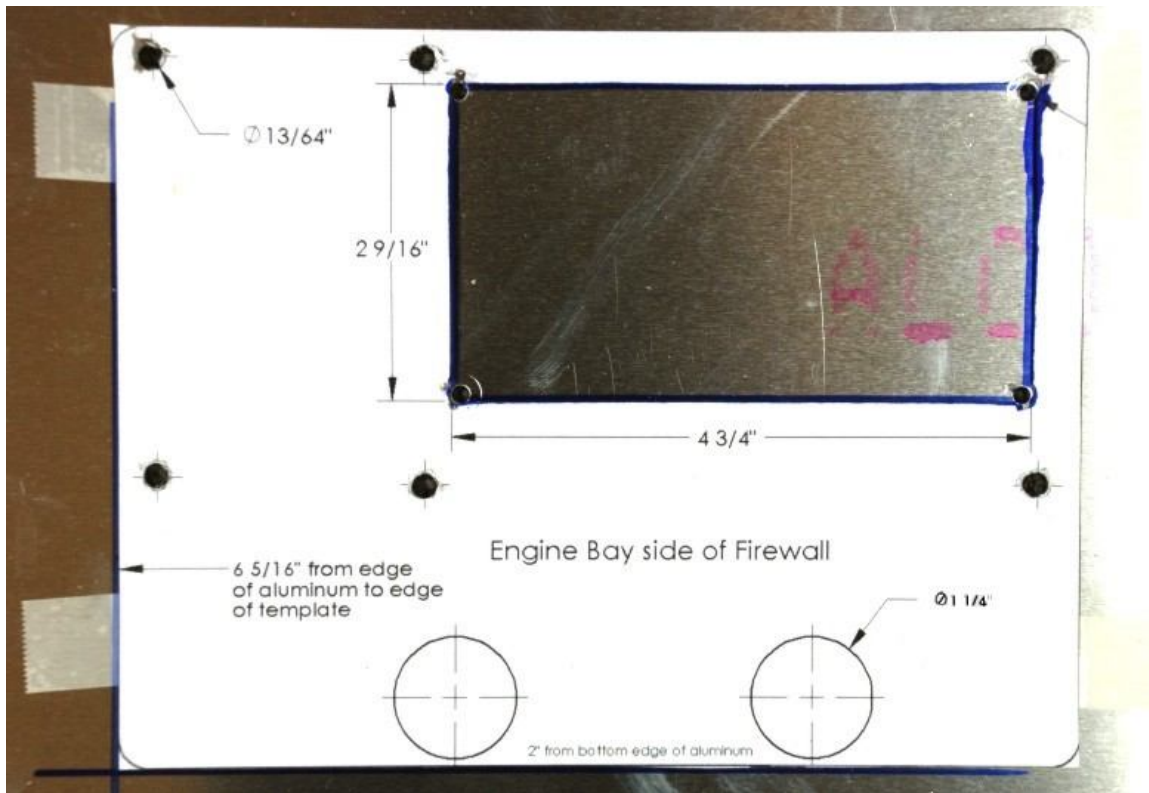


The template matches the hole locations on the blower. The heater core location can move slightly when the unit was manufactured. Position the template on the heater box and check the location of the heater core tubes. Mark the template accordingly.

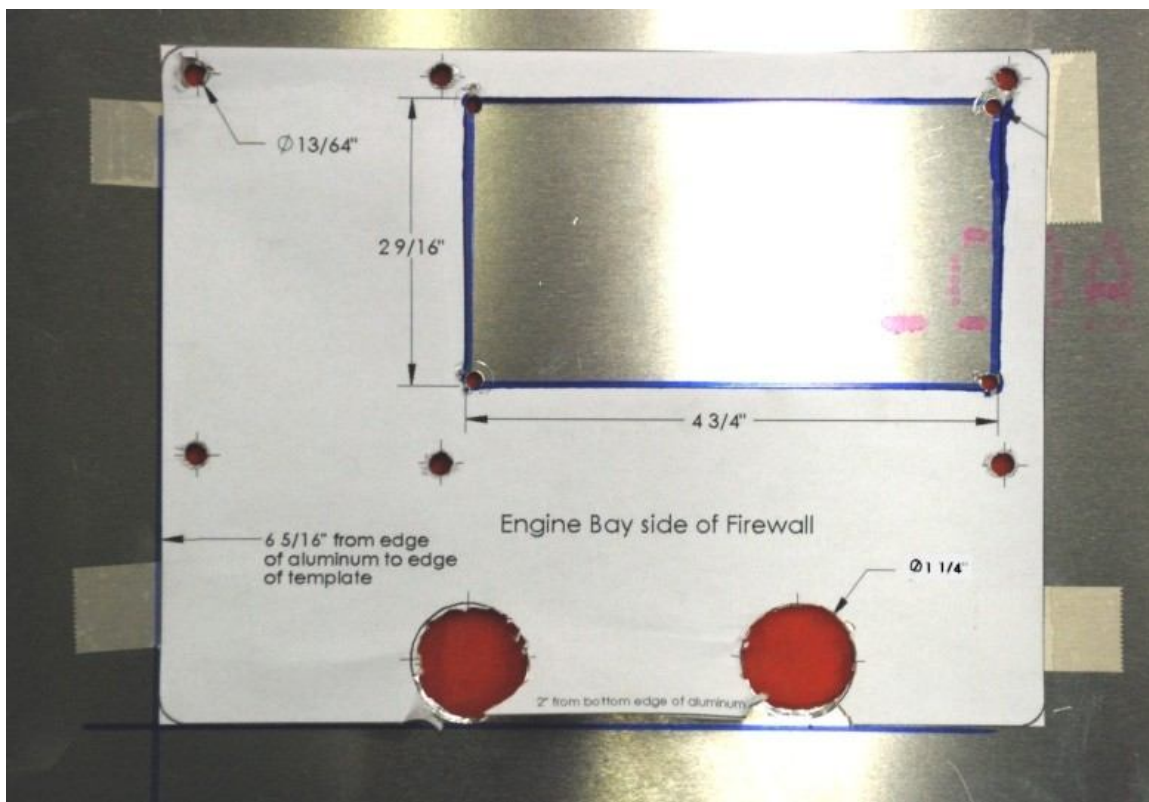
4. Attach the template to the engine side of the firewall with tape at the location indicated on the template.



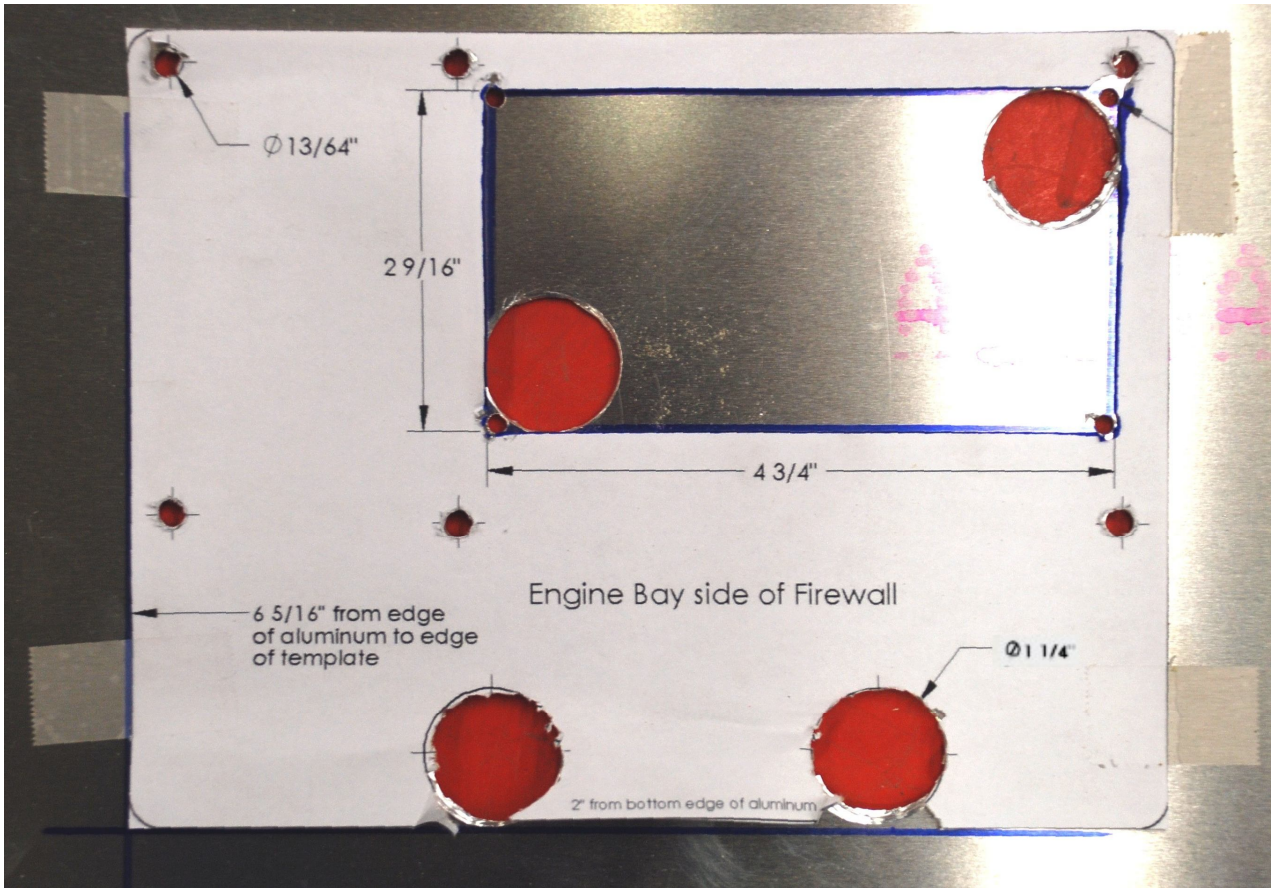
5. Mark the edge of the large hole using a marker.
6. Drill all of the holes indicated and $\frac{1}{8}$ " holes in the corners of the large rectangular hole.



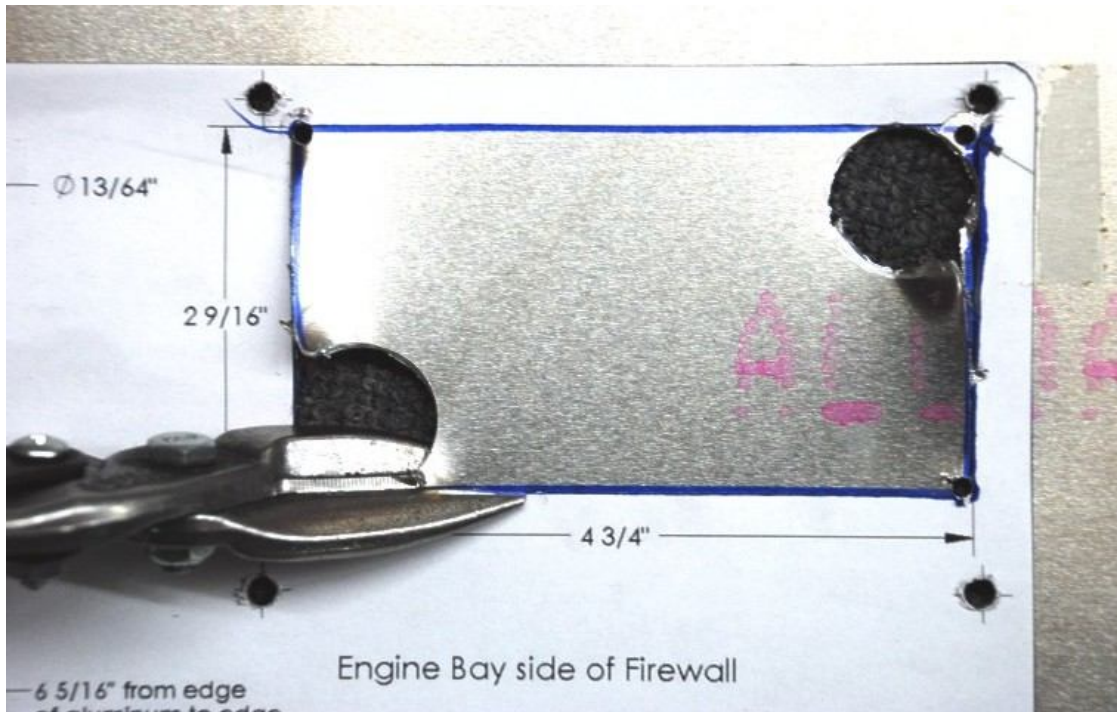
7. Use a 1/4" hole saw to cut the two 1.25" holes marked.



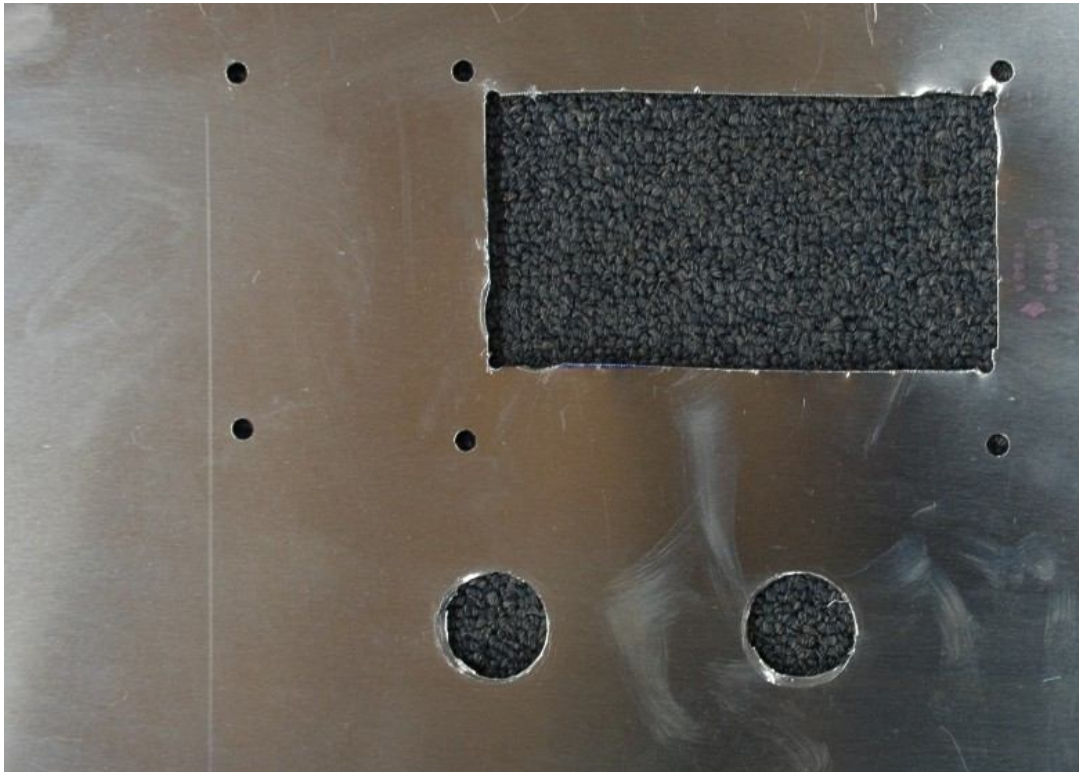
8. Use the 1/4" hole saw in two opposite corners of the large rectangular hole so that the edge of the saw lines up with the two sides.



9. Cut the large hole with tin snips.



10. Remove the remaining template from the firewall and use some brake or Carb cleaner to remove the marker lines.



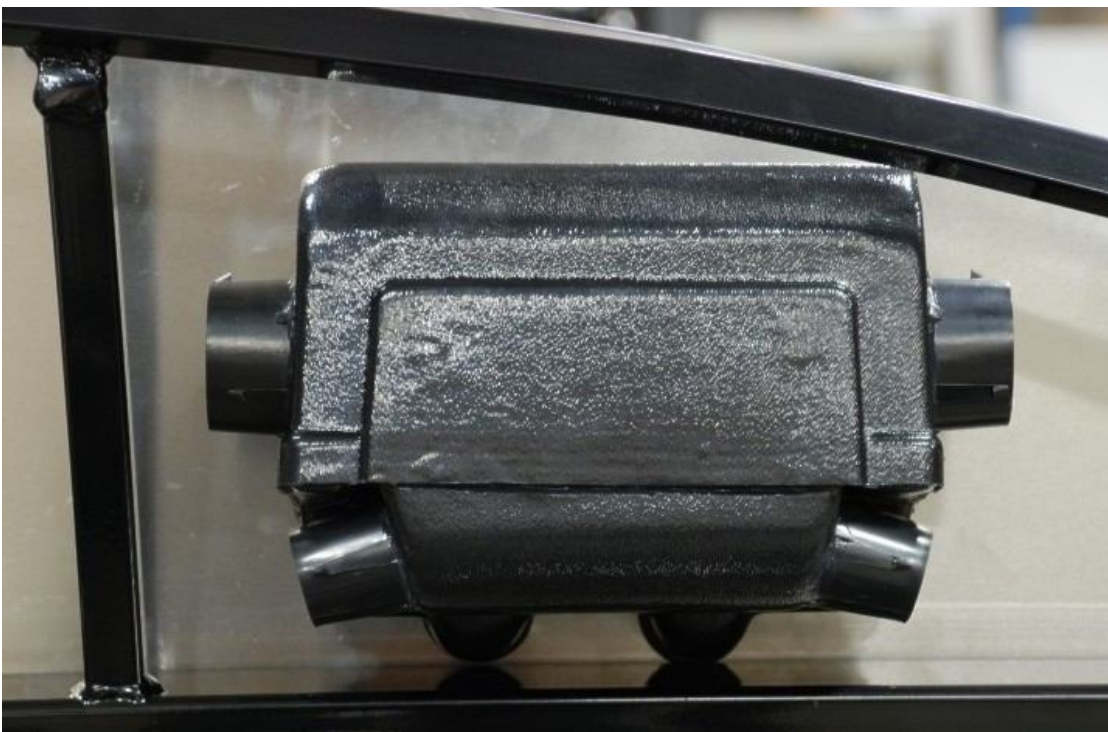
11. Push the large grommets over the heater core connection nuts onto the tubes. Some WD40 on the grommets may help.



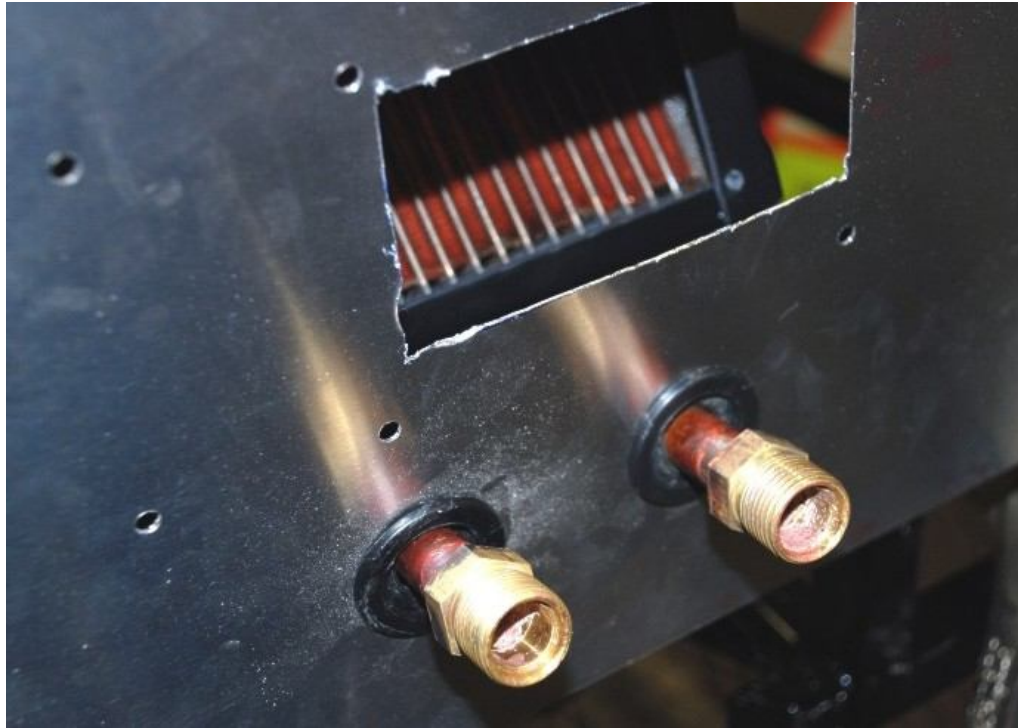
12. To prevent any air leakage between the heater box and the firewall, use some high temp RTV silicone just above the heater core tubes as shown in the picture below. Make sure you use enough so that it will seal against the firewall.



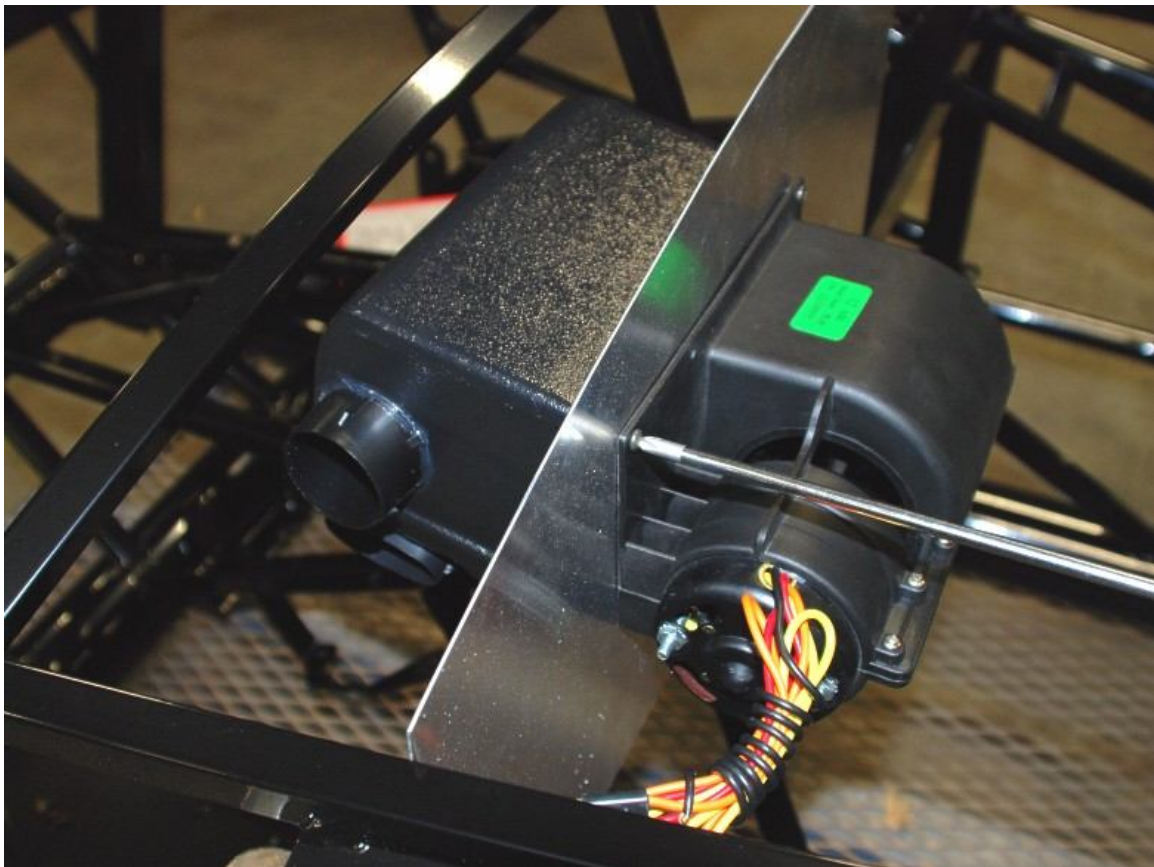
13. From the passenger compartment side of the firewall with the heater oriented so that the duct mounts are on the bottom of the unit.



14. Insert the heater core tubes into the small holes and push the grommets into the holes.



15. Re assemble the heater with the blower motor in the engine bay and the heater core in the passenger compartment using the screws taken off before.



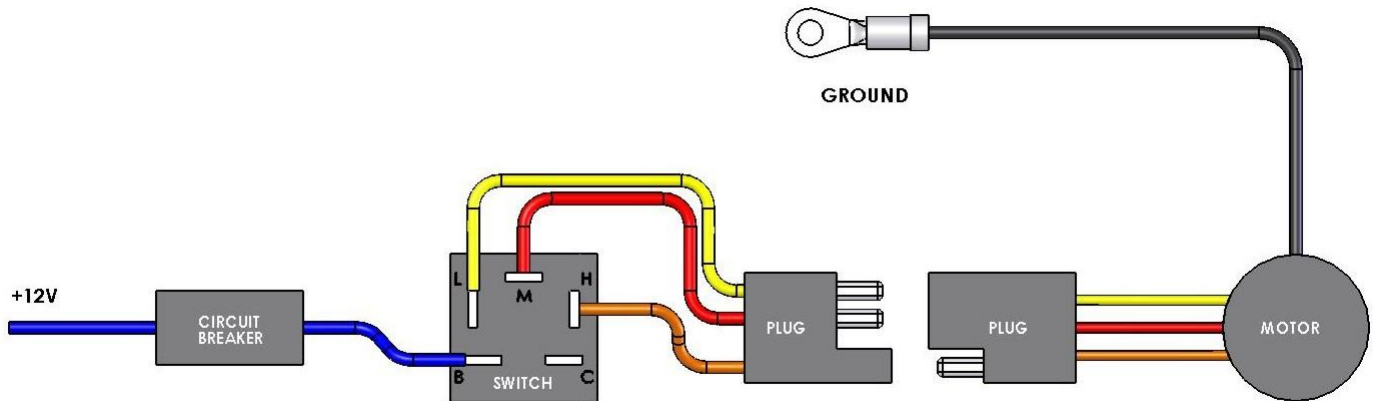
16. Attach the 90° elbows to the heater core tubes on the heater.
17. If necessary drain some of the coolant out of the engine to allow removal of the heater core bypass hose.
18. Run $\frac{5}{8}$ " heater hose from the left heater fitting to the intake manifold heater connection behind the engine that is the heater core send line.
19. Drill a $\frac{3}{8}$ " hole for the switch mounting hole in the center of the dash in line with the other switches. If another location is desired, keep in mind that the heater control cable works best with a large radius bend.
20. Drill a $\frac{3}{8}$ " hole in the firewall for the heater control valve cable so that the cable is straight.
21. Push the small grommet onto the control cable.
22. Mount the heater control switch in the dash making sure that the knob is pushed in all the way and the cable goes through the firewall hole.
23. Insert the control cable grommet into the hole in the firewall.
24. Attach the heater control cable to the mechanical valve.
 - a. Push the mechanical valve to the off position.



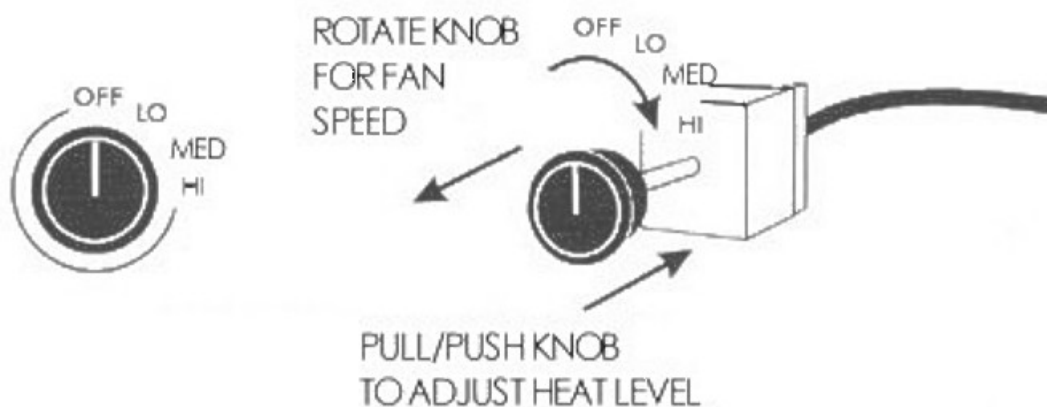
- b. Place the loop end of the heater control cable on the control valve actuator arm post.
- c. Swing the cable holder bracket over onto the cable.
- d. Make sure the valve is all the way off and that the knob is pressed in then tighten the screw with a flat head screwdriver.
- e. Check the valve operation with the knob.



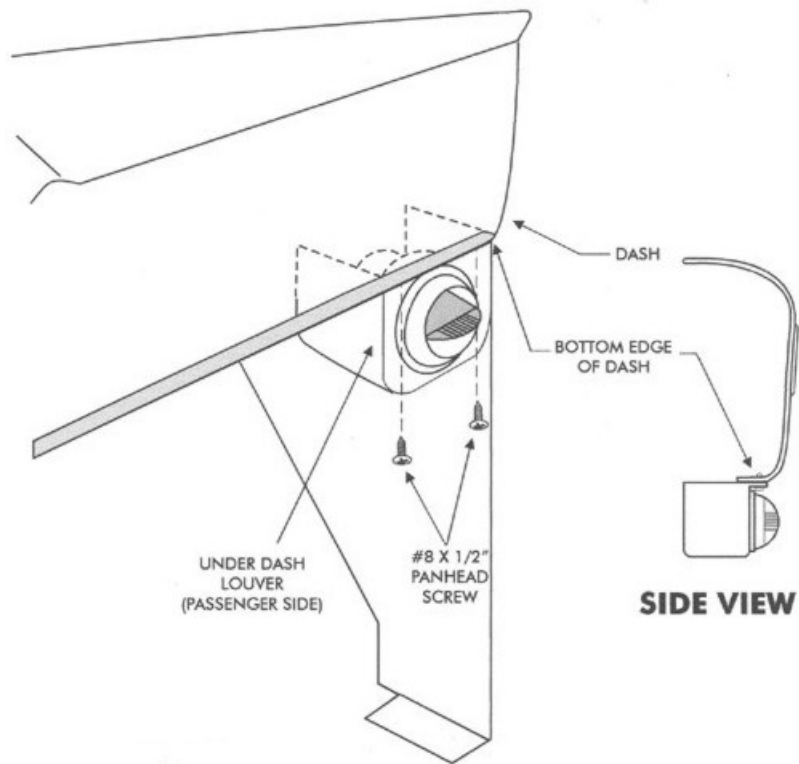
25. Move the heater control valve so that it is located next to or on top of the heater hose going to the heater core and so that the arrow on the valve is pointed towards the heater core.
26. Mark the points where the hose should get cut to install the valve.
27. Install the mechanical heater control valve in the hose going to the heater using the hose clamps provided. Make sure that the arrow is pointed towards the heater (with the flow).
28. Install the 5/8" heater hose from the right fitting to the engine heart core return line.
29. Connect the power wire shown below to an open +12v switched power source in the fuse panel.



30. Cut a notch in the passenger side firewall extension or pass the motor wires through the slot where the windshield post will go and into the passenger compartment. Make sure that you put some of the flexible serrated grommeting from the kit on the edge of the aluminum where the wires will be so that the wires will not chafe.
31. Silicone around the wires to seal the hole.
32. Attach the ground wire to either an existing ground wire in your wiring harness or to the 2"x 2" frame member. If attaching it to the frame and the frame is powder coated, make sure to sand the area to ensure a good ground.
33. Attach the plug from the motor to the plug on the switch.
34. Check the operation of the switch. Full counter clockwise is off.



35. Locate and attach the under dash vents to the frame or dash. They can get located either to the underside of the dash so they are pointed towards the passenger and driver or on the front side of the 2"x 2" frame behind the dash pointed down for the driver and passenger feet.



* DRIVER SIDE LOUVER WILL BE INSTALLED SAME WAY.

36. Attach duct hoses for the under dash vents to the oval shaped mounts on the bottom of the heater unit.
37. Run the hoses over to the under dash vents.
38. Cut the duct hose and push the hose onto the under dash vents.
39. Once the body has been mounted and the windshield is in place, locate on the body where the defroster vents will be attached.
 - a. Sit in each side of the car and place masking tape directly in front of the seat just behind the windshield.
 - b. Use one of the plastic defroster ducts and place it upside down on the masking tape in front of the driver. The end of the duct will hit the windshield. This is also the center location where the heater air will also hit the windshield.
 - c. Move the heater duct so that the center of the duct end is centered in your line of sight looking out of the car.



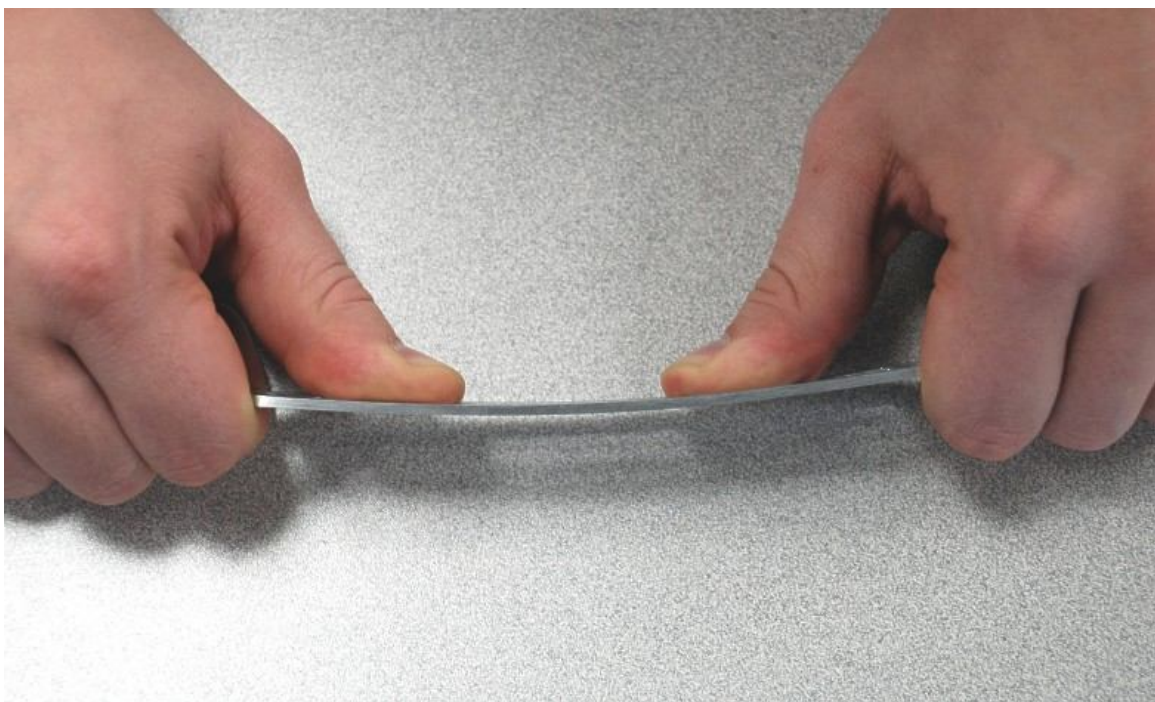
- d. Use a pen to lightly draw around the outside of the duct and remove the duct.



40. Remove the windshield from the car.
41. Cut only the outside of the defroster vent template out.
42. Locate the Defroster Vent Template on the cowl using the pen marks and tape it in place.



43. Drill the two $\frac{9}{64}$ " holes and the four $\frac{5}{32}$ " holes in the four corners of the center hole.
44. Remove the template and cut the center of the template out.
45. Relocate the template on the cowl and use a marker to mark the inside hole on the masking tape.
46. Cut the marked center area out using a jig saw or hacksaw blade. If necessary drill a $\frac{3}{8}$ " hole in opposite corners similar to the way the firewall hole was cut for easier cuts.
47. Carefully take each of the defroster vent and, hold it upside down (countersunk screw area on the back side) using both hands with your thumbs on the slotted area and push slightly on your thumbs to bend the vent slightly so that it will match the curve of the cowl.

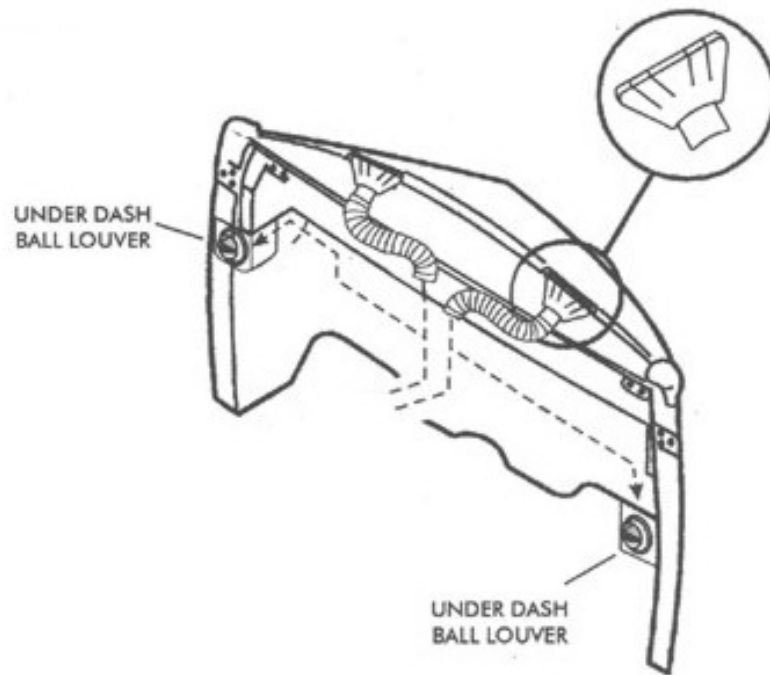




48. Place the vent trim over the area cut to make sure it sits flat on the cowl.
49. Bend or unbend the vent trim if necessary.
50. Remove the tape from the top of the cowl carefully especially if the body is painted.
51. Tape a Defroster template to the plastic defroster ducts to locate the $\frac{9}{64}$ " screw holes needed.



52. Drill the $\frac{9}{64}$ " mounting holes in the plastic ducts.
53. Put the screws through the vent trim and test fit the plastic duct on the screws. If necessary, enlarge the holes in the plastic vent slightly.
54. Place the defroster vent trim on top of the body and pass the enclosed screws through the vent, and body.
55. Put a bead of black RTV silicone around the mounting flange on the plastic defroster duct.
56. Push the defroster duct up onto the screws so the duct is touching the body.
57. Attach the lock nuts included to the screws using a $\frac{5}{16}$ " wrench and carefully tighten them until the duct and vent trim are snug and do not move. Do not over tighten and crack the plastic. The RTV will harden and help hold the duct in place.
58. Attach duct hose to the round vents on the heater unit.
59. Route duct hose up to the defroster ducts and push them onto the plastic defroster ducts.



60. Refill your cooling system up with coolant and water.
61. Cycle the engine up to operating temperature two or three times allowing the coolant thermostat to open and purge the system of air. Check the coolant level between cycles and top off if necessary.
62. Congratulations, you have now installed your heater.

