



## Factory Five Racing, Inc.






Part Number: 14817	Revision: G	Effective Date: 9/16/22	By: J. INGERSLEV
Document Type (indicate):	◦ Bill of Material	• Drawing (may be attached)	◦ Specification
	• Assembly Instructions	◦ Operating Procedure	◦ Other

# Heater/Defroster

## INSTALLATION INSTRUCTIONS

### Table of Contents

Prep .....	2
Assembly .....	7
Templates .....	18

-  Philips head screwdriver, Flat head screwdriver, 1/8", 9/64", 3/16", 13/64", 25/64" Drill bits, 1 1/4" Hole saw, 1" wrench, Tin snips, Marker, Ruler, Pen, Masking Tape, Scissors or a razor knife, Black RTV Silicone, Jig saw or hacksaw blade.
-  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.
-  If using a glovebox, the heater will have to be moved towards the center of the car so that it will not hit the glovebox.



If running a Coyote engine, the cable 2-port control valve cannot be used. A 4-port control valve is needed. This is available from Factory Five. Coolant needs run through the tube for the engine and the 2-port valve does not allow this when off.

## Prep



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.

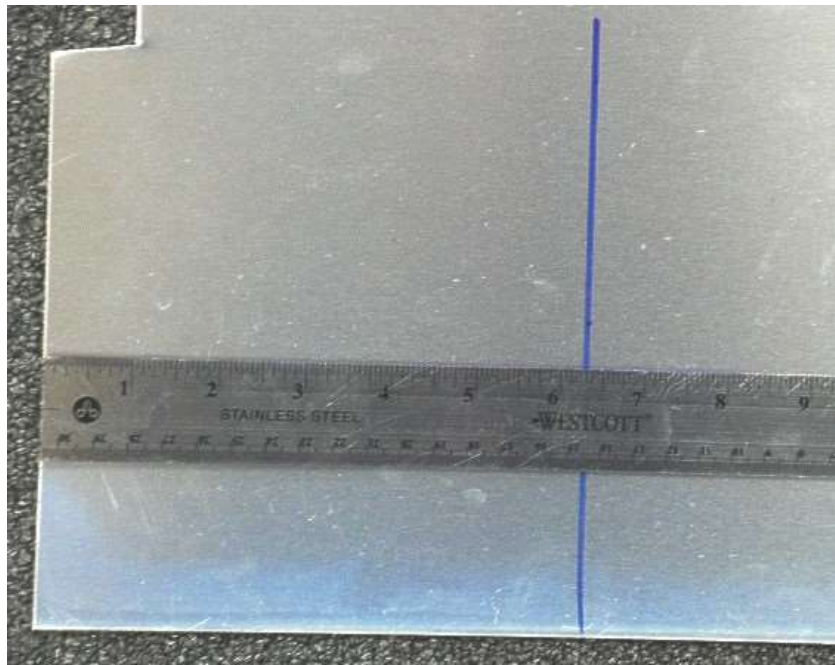
Cut the outside of the attached template using scissors or a razor knife.  
Cut the large rectangular hole in the template using scissors or a razor knife.



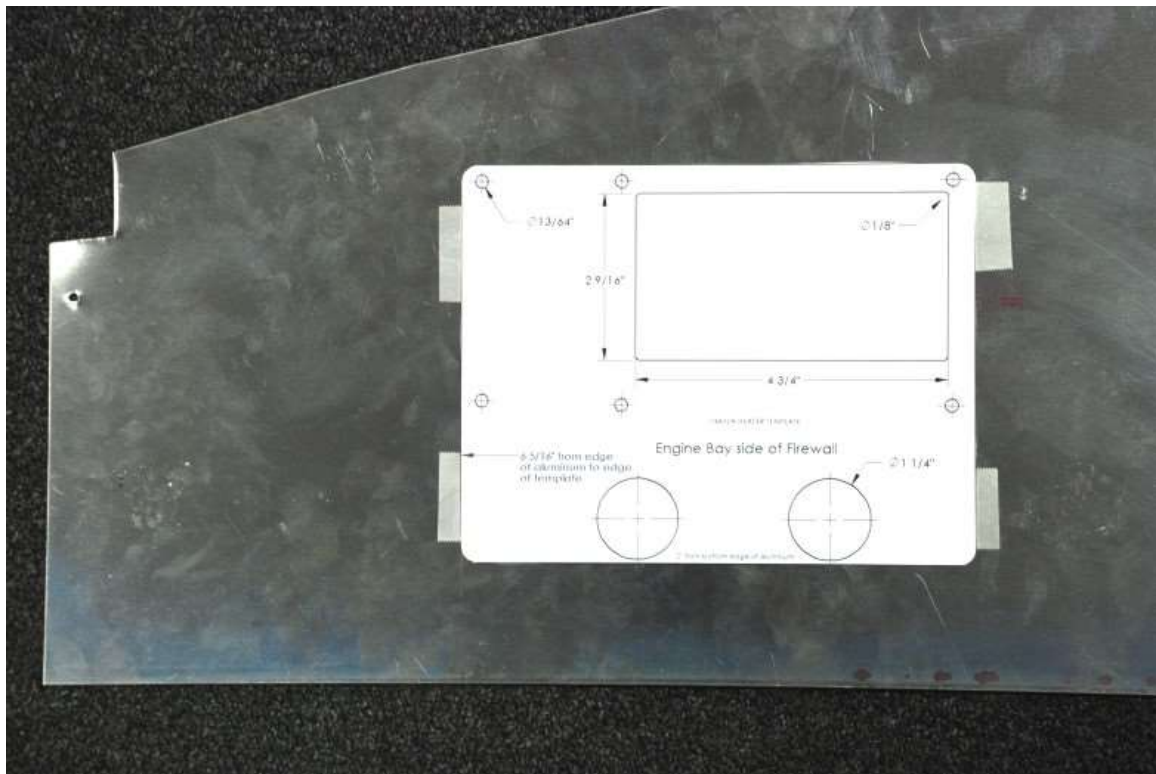
If using a glovebox, **the heater will have to be moved** towards the center of the car so that it will not hit the glovebox.



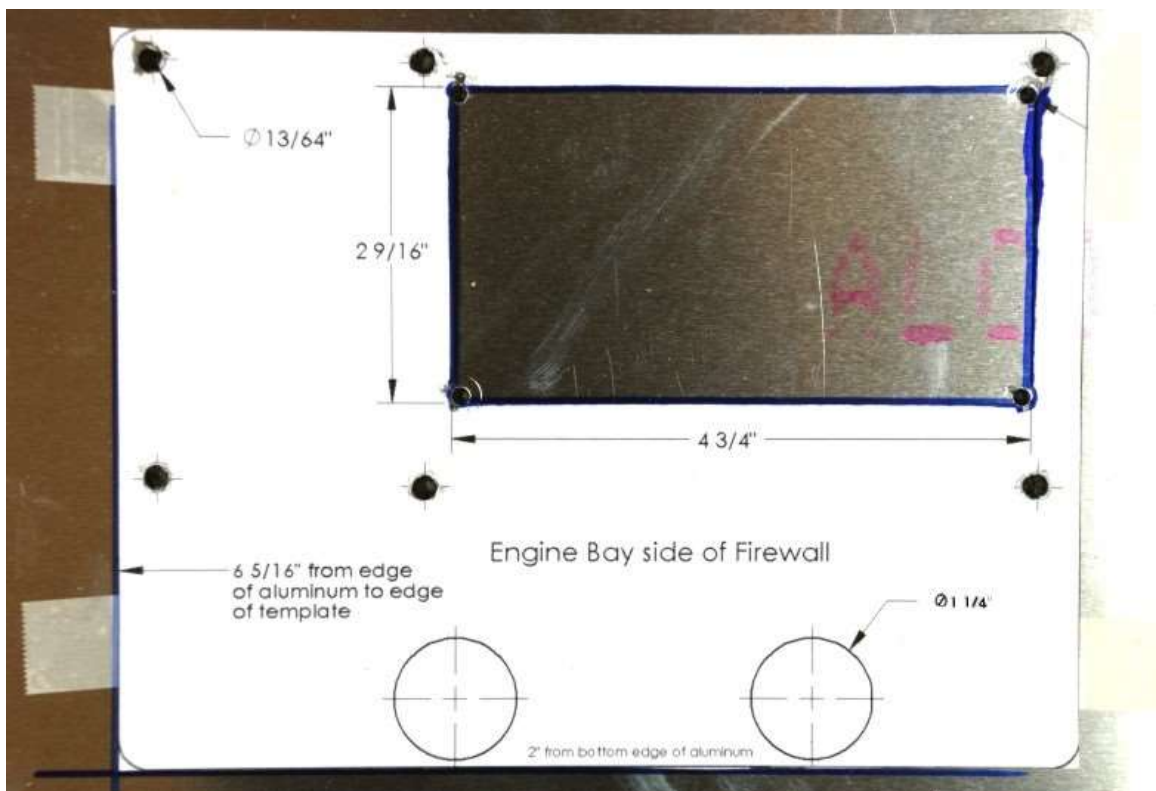
The template matches the hole locations on the blower. The heater core location can move slightly when the unit was manufactured. Position the template on the heater box and check the location of the heater core tubes. Mark the template accordingly.



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



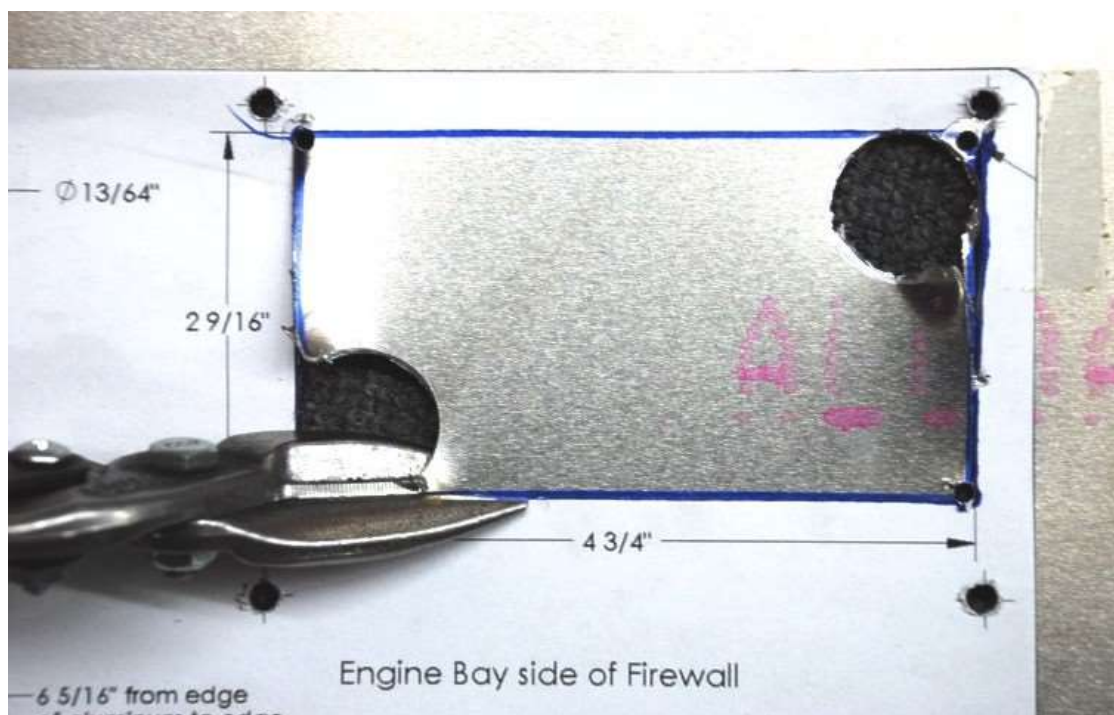
Mark the edge of the large hole using a marker.



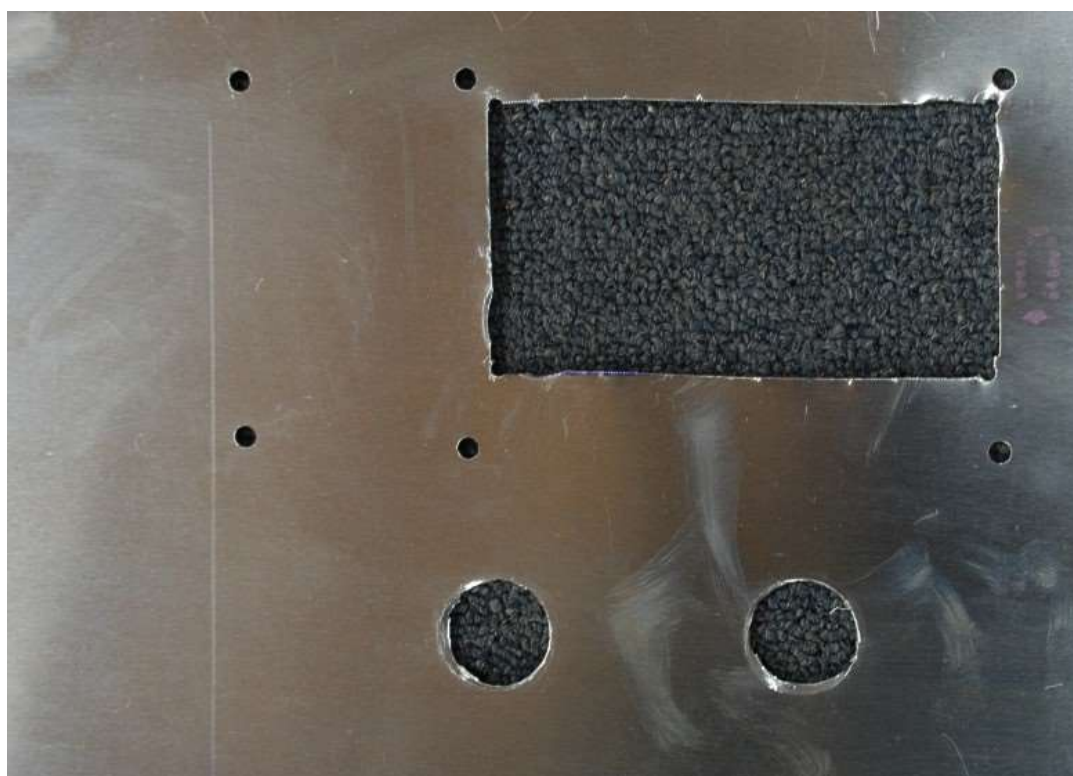
Drill all of the holes indicated and  $\frac{1}{8}$ " holes in the corners of the large rectangular hole.







Cut the large hole with tin snips.



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



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

## Assembly

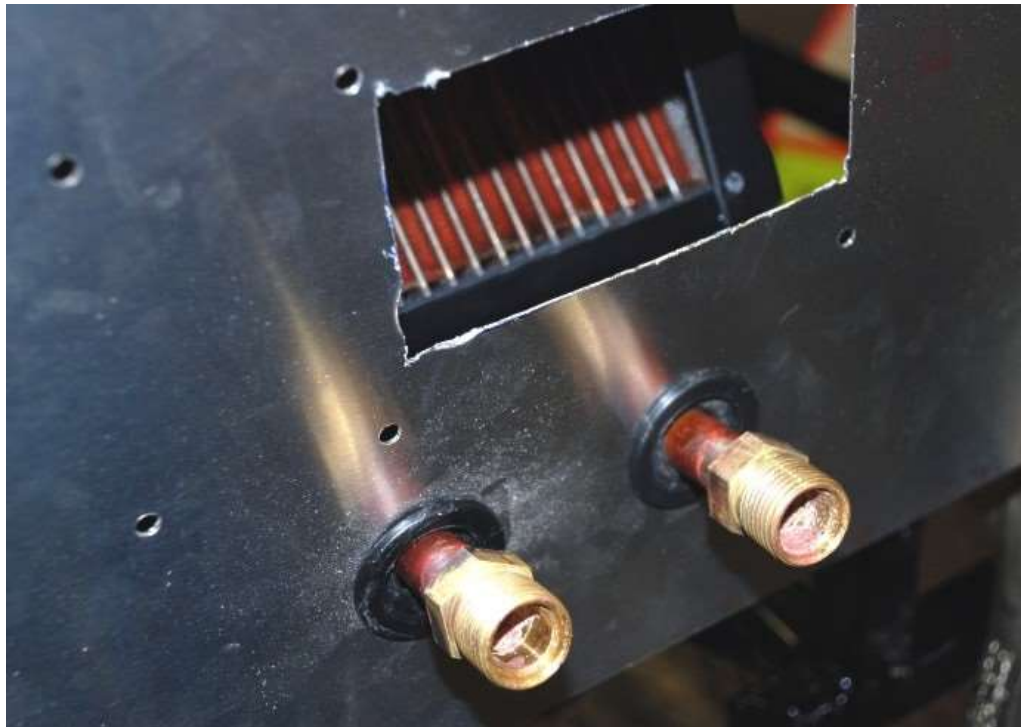


To prevent any air leakage between the heater box and the firewall, use some high temp RTV silicone just above the heater core tubes as shown in the picture below. Make sure you use enough so that it will seal against the firewall.



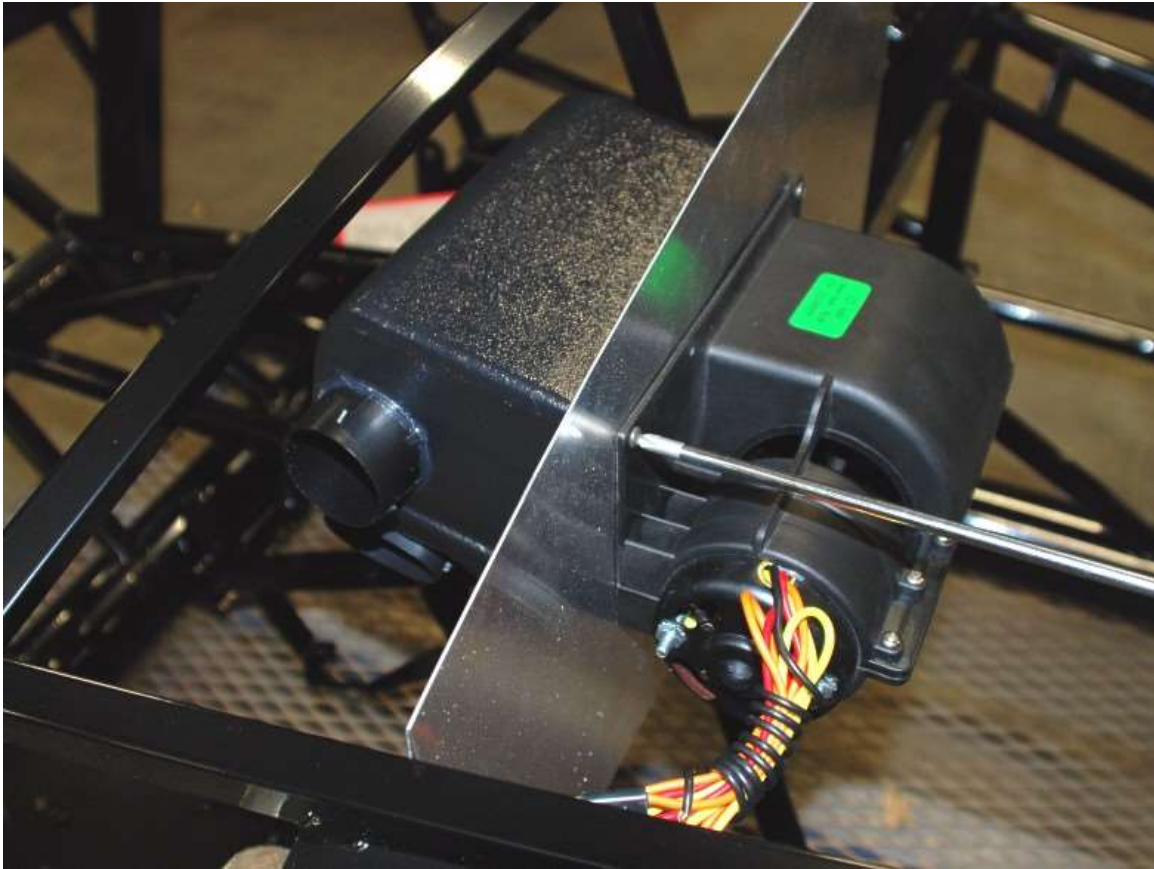


From the passenger compartment side of the firewall with the heater oriented so that the duct mounts are on the bottom of the unit.



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





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.

Attach the 90° elbows to the heater core tubes on the heater.

If necessary drain some of the coolant out of the engine to allow removal of the heater core bypass hose. 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.

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. Drill a  $\frac{3}{8}$ " hole in the firewall for the heater control valve cable so that the cable is straight.

Push the small grommet onto the control cable.

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.

Insert the control cable grommet into the hole in the firewall.



Push the mechanical valve to the off position.

Attach the heater control cable to the mechanical valve by placing the loop end of the heater control cable on the control valve actuator arm post.



Swing the cable holder bracket over onto the cable.

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.

Check the valve operation with the knob.

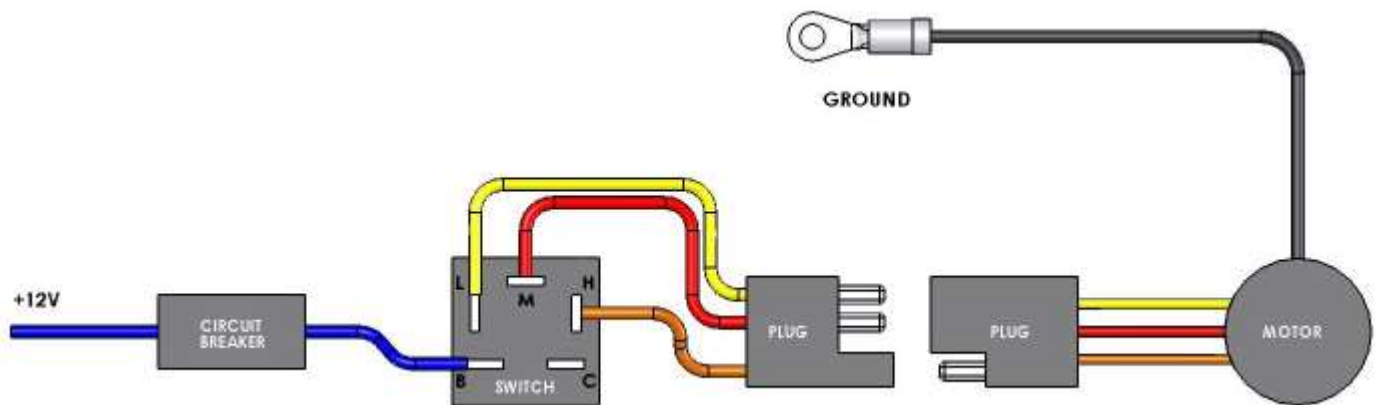
Move the heater control valve so that it is located next to or on top of the heater hose going to the heater core and so that the arrow on the valve is pointed towards the heater core.

Mark the points where the hose should get cut to install the valve.

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).

Install the  $\frac{5}{8}$ " heater hose from the right fitting to the engine heart core return line.



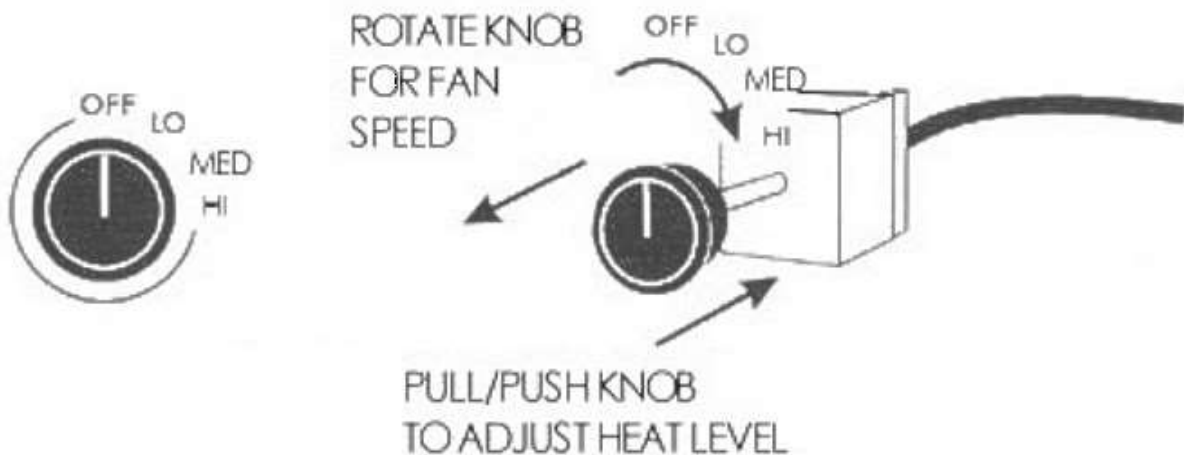
Connect the power wire shown below to an open +12v switched power source in the fuse panel.

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.

Silicone around the wires to seal the hole.

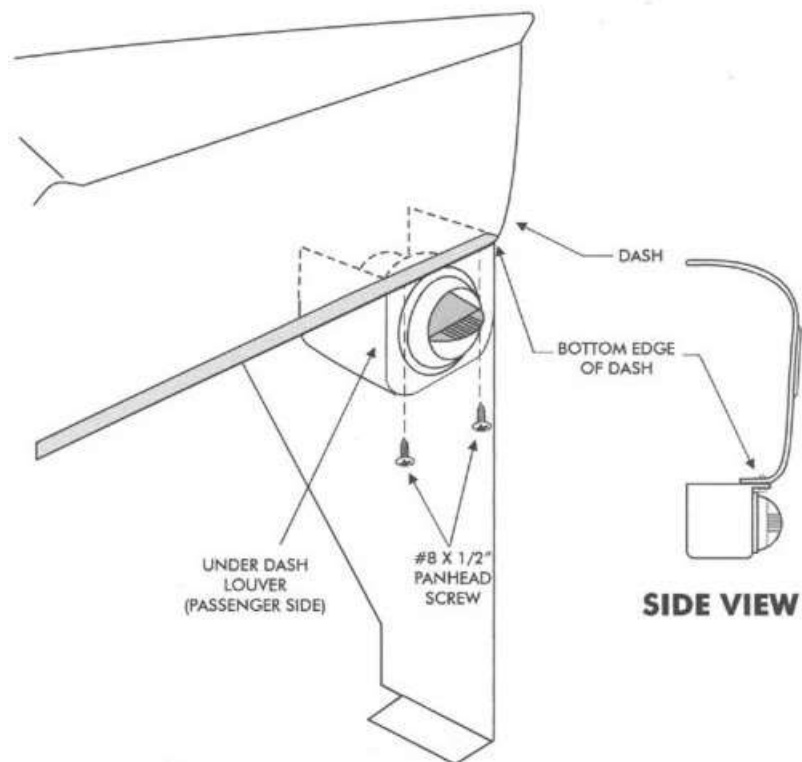
Attach the ground wire to either an existing ground wire in your wiring harness or to the 2"x 2" frame member. If attaching it to the frame and the frame is powder coated, make sure to sand the area to ensure a good ground.

Attach the plug from the motor to the plug on the switch.



Check the operation of the switch. Full counter clockwise is off.





\* DRIVER SIDE LOUVER WILL BE INSTALLED SAME WAY.

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.

Attach duct hoses for the under dash vents to the oval shaped mounts on the bottom of the heater unit. Run the hoses over to the under dash vents.

Cut the duct hose and push the hose onto the under dash vents.

Once the body has been mounted and the windshield is in place, locate on the body where the defroster vents will be attached.

Sit in the left side of the car and place masking tape directly in front of the seat just behind the windshield.



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 hit the windshield.



Move the heater duct so that the center of the duct end is centered in your line of sight looking out of the car. This is approximately 11" from the inside of the windshield side bar.

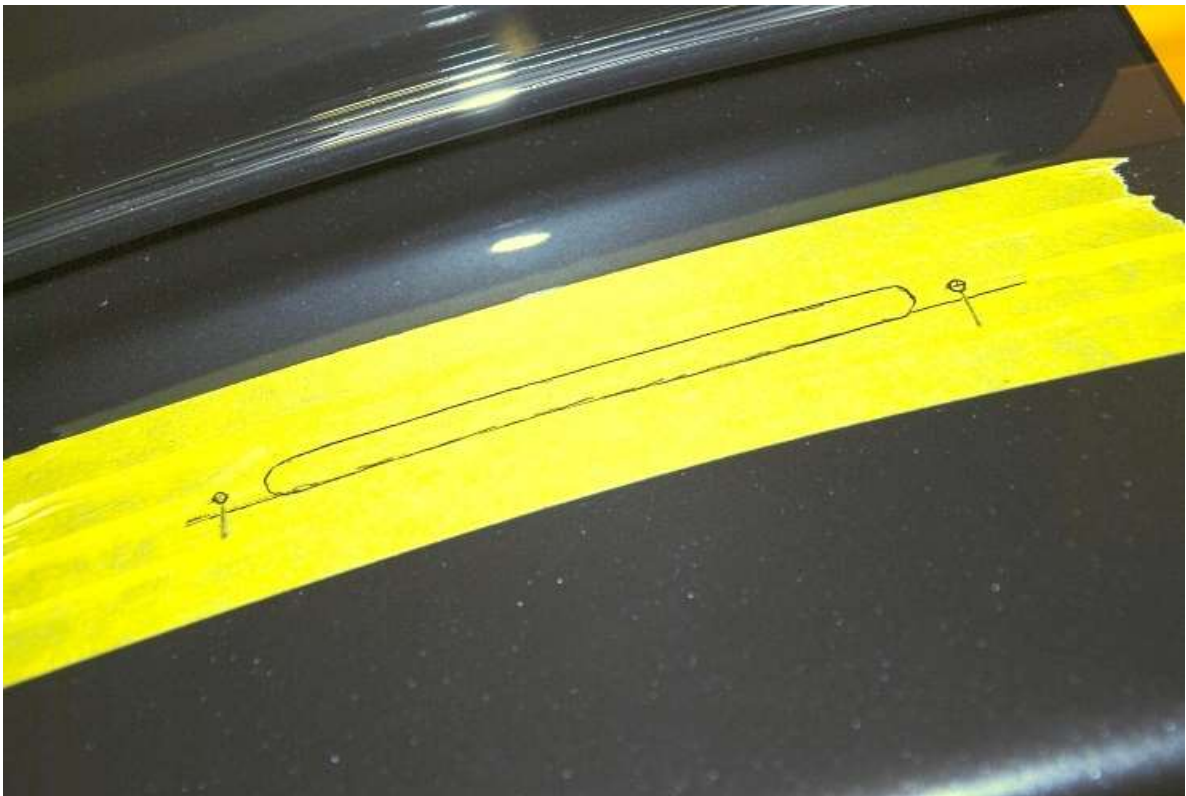
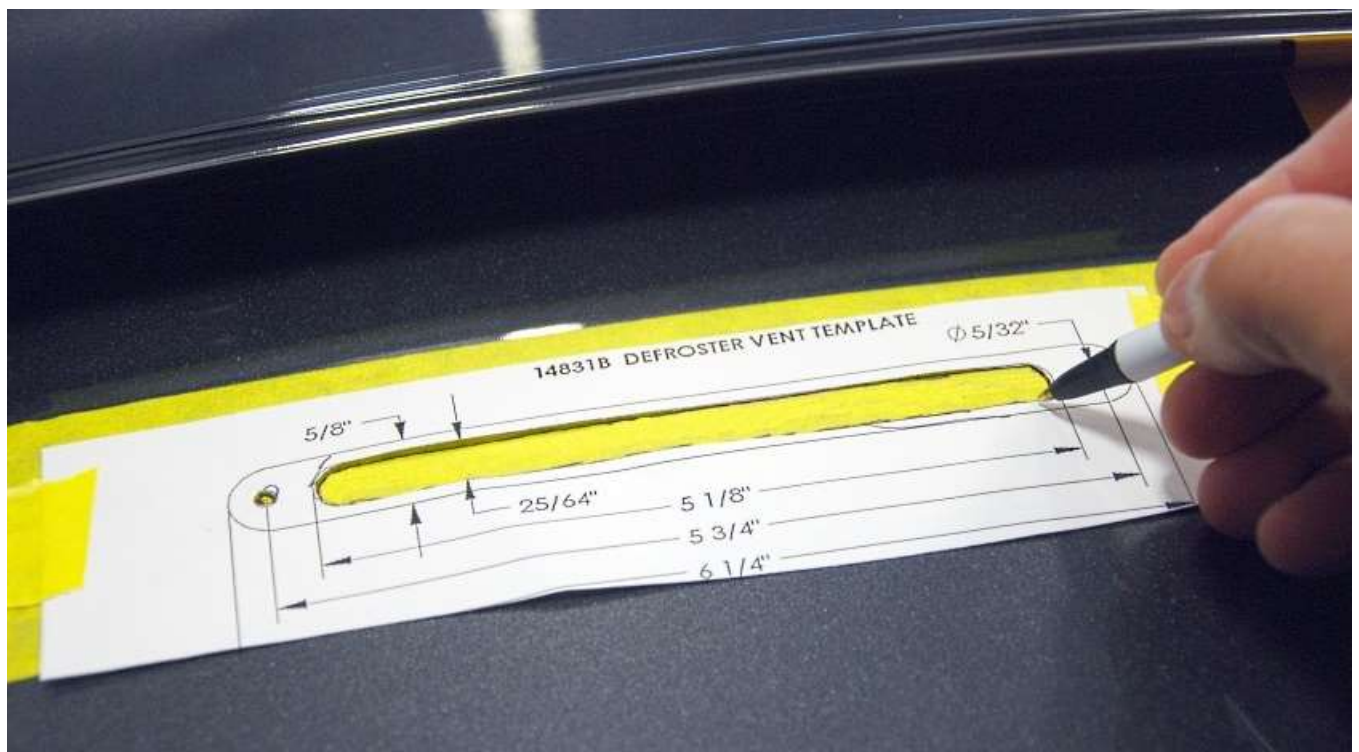


Use a pen to lightly draw a line on the side of the duct closest to you and where the mounting holes are.



Remove the duct and extend the mount location lines forward.





Cut the center of the template and screw holes out then tape it onto the body so that the close side of the hole is on the duct line drawn before and at least one of the screw holes is on the mounting hole line drawn then use a pen and mark the screw holes and duct hole.

Repeat these steps for the right side of the car.

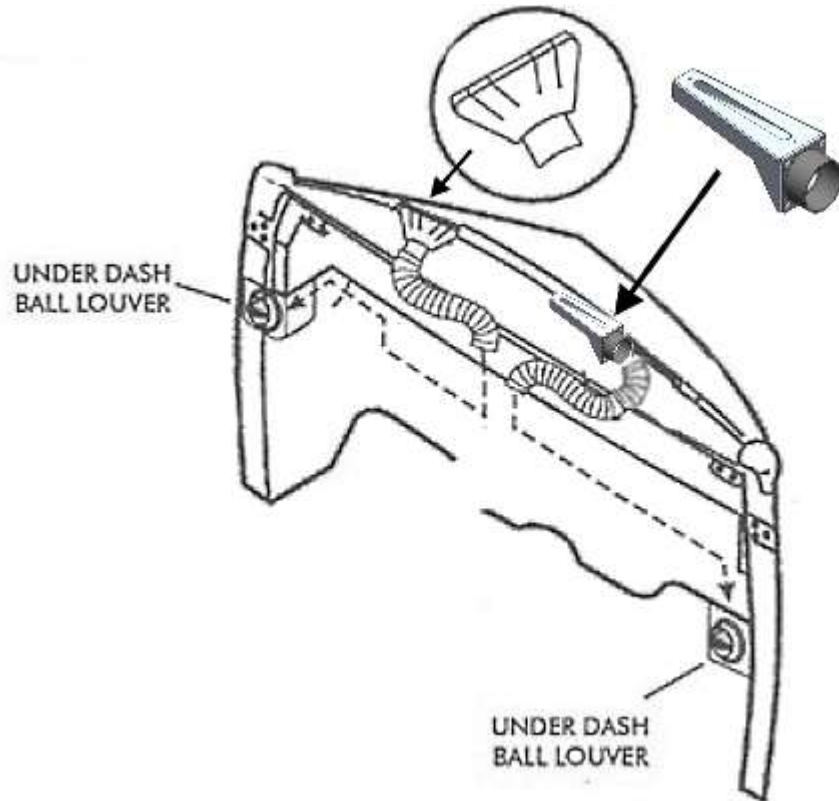
If necessary, remove the windshield from the car so that holes and the slots can be cut.

Drill the two  $\frac{3}{16}$ " screw holes and  $\frac{25}{64}$ " holes at each end of the slot.

Cut the marked center area out using a jig saw or hacksaw blade.

Remove the tape from the tope of the cowl carefully especially if the body is painted.

Screw the vent trim screws into the duct so that they make threads in the duct holes.



Put the screws through the vent trim and test fit the plastic duct on the screws.

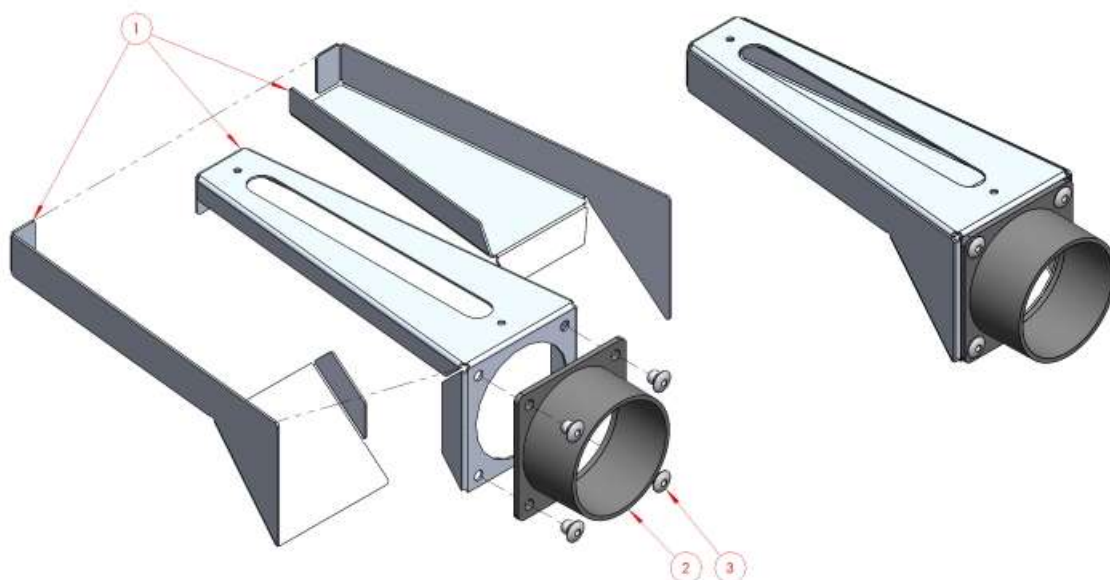
Once the duct location is finalized put a bead of Silicone around the mounting flange on the plastic defroster duct so that it will seal against the body.

On the left (driver) side push the defroster duct up onto the screws so the duct is touching the body.

Carefully tighten the screws until the duct and vent trim are snug and do not move. Do not over tighten and crack the plastic.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	17062	ALUMINUM DEFROSTER VENT	1
	17027	DEFROSTER VENT TOP	1
	17030	DEFROSTER VENT SIDE	1
	17031	DEFROSTER VENT SIDE + BOTTOM	1
2	17028	2" HOSE ADAPTER w/FLANGE	1
3	25799	3/16" SHORT RIVET	4

REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/14/21	



**PROPRIETARY AND CONFIDENTIAL**  
THE INFORMATION CONTAINED IN THIS  
DRAWING IS THE SOLE PROPERTY OF  
FACTORY FIVE RACING, INC. ANY  
REPRODUCTION IN PART OR AS A WHOLE  
WITHOUT THE WRITTEN PERMISSION OF  
FACTORY FIVE RACING, INC. IS  
PROHIBITED.

ROADSTER	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL ±0.005 FOUR PLACE DECIMAL ±0.001	NAME	DATE	 <b>Factory Five Racing, Inc.</b> TITLE: <b>DEFROSTER VENT COMPONENTS</b>
		DRAWN JI	1/14/21	
		COMMENTS:		
	MATERIAL F6061			SIZE DWG. NO. <b>A 17029</b>
USED ON APPLICATION		PRINTED	1/14/2021	REV <b>A</b>
			SCALE: 1:2	WEIGHT:
				SHEET 1 OF 1

Take the 17062 aluminum duct apart then silicone the flanges and temporarily reassemble the duct with the self-tapper screws. Drill and use kit 1/8" short rivets to holde the aluminum parts together then remove the self-tappers and put 1/8" rivets in the screw holes.

Silicone and attach the duct adapter to the aluminum using the included 3/16" rivets.

On the right (passenger) side, orient the aluminum duct so the hose will attach from the outside (right side) of the car.

Attach duct hose to the round vents on the heater unit.

Route duct hose to the defroster ducts and push them onto the plastic defroster ducts.

Use the zip ties to attach the hoses to the heater and ducts.

Refill your cooling system up with coolant and water.

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.

Congratulations, you have now installed your heater.



Templates

