

Maverick Trail/Sport CAB HEATER KIT INSTALLATION INSTRUCTIONS

Please read all instructions before beginning installation. When working on cooling systems always allow vehicles to cool to avoid being burned or scalded by hot coolant.

Before working with any electrical system on your vehicle, ALWAYS remove the negative battery cable and secure it away from the battery terminal.

Part #	Qty	Description
1	1	Firestorm Underdash Heater
2	1	36" Red/Yellow/Orange Harness
3	1	36" Red Wiring Harness
4	1	36" Black Wiring Harness
5	1	HT_CU_443-1 Heater Bracket
6	1	HT_CU_443-2 LH Defrost Bracket
7	1	HT_CU_443-3 RH Defrost Bracket
8	10ft	5/8" Coolant Hose
9	1	5 Pin Black Connector
10	2	Insulation Displacement Crimps
11	2	M6-1.0 x 12mm Hex Head Screws
12	4	#16 Stainless Steel Hose Clamps
13	6	#10 Stainless Steel Hose Clamps
14	1	Plastic Shutoff Valve
15	4	2" Vents

16	1	2" x 9" Compressed Duct Hose
17	3	2" x 6" Compressed Duct Hose
18	1	Hole Saw Pilot Bit
19	1	2" Hole Saw
20	1	1 1/4" Hole Saw
21	2	1" Rubber Grommet
22	20	Zip Ties
23	2	1" Aluminum Y
24	3	1/4" Self-Drilling Screws
25	1	Garden Hose Adapter
26	1	3 Position Switch
27	1	4 Pin White Connector
28	4	1/4" x 1" Serrated Flange Bolt
29	4	1/4" Serrated Flange Nut

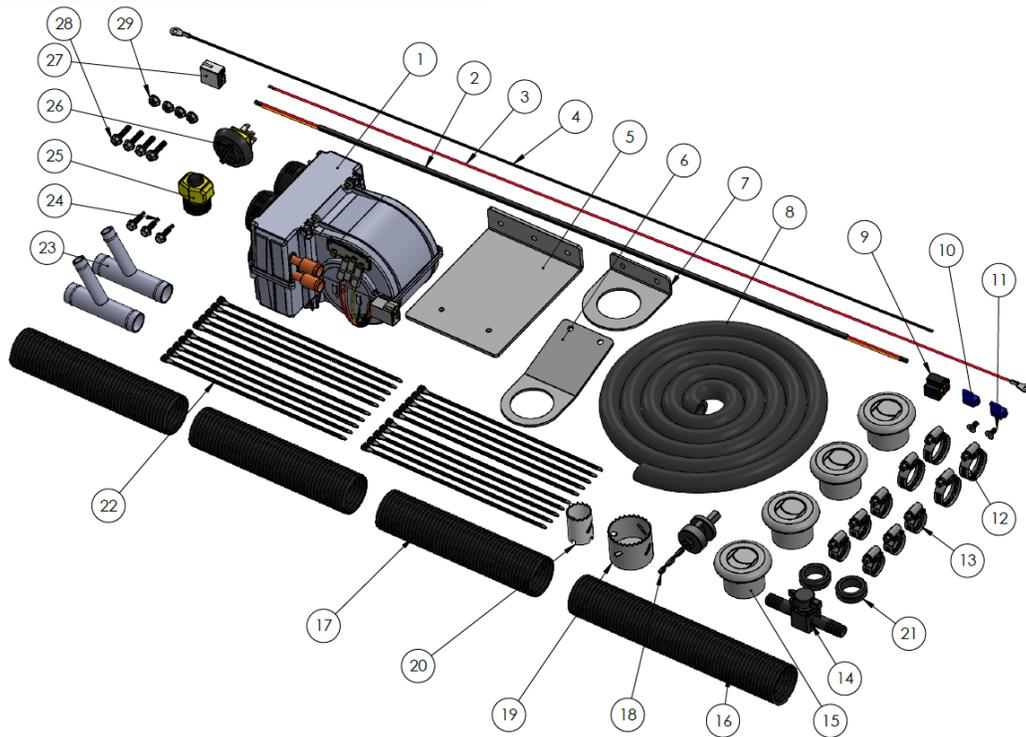


Figure 1

Firestorm Maverick Trail Cab Heater HT_CU_443

22000 Industrial Blvd
Rogers, MN 55374
866.527.7637

Please note: Before drilling holes, check area behind the firewall panel to make sure no damage will occur by drilling holes.

Important Tip: Raise the front of the vehicle on jack stands or ramps before draining cooling system. This will help in preventing air locks.

Preparation

1. Remove the front hood and set it aside.
2. Remove front bumper bars and set aside as shown in **Figure 2**.
3. Remove front grill and remaining hood plastics and set aside as shown in **Figure 2**.



Figure 2

4. Remove firewall plastic guards and set aside. These will not be put back as shown in **Figure 2**.
5. Remove glove box as shown in **Figure 3**.



Figure 3

6. Attach the heater core to the bracket using the M6-1.0 x 12mm Hex Head Screws as shown in **Figure 4**.

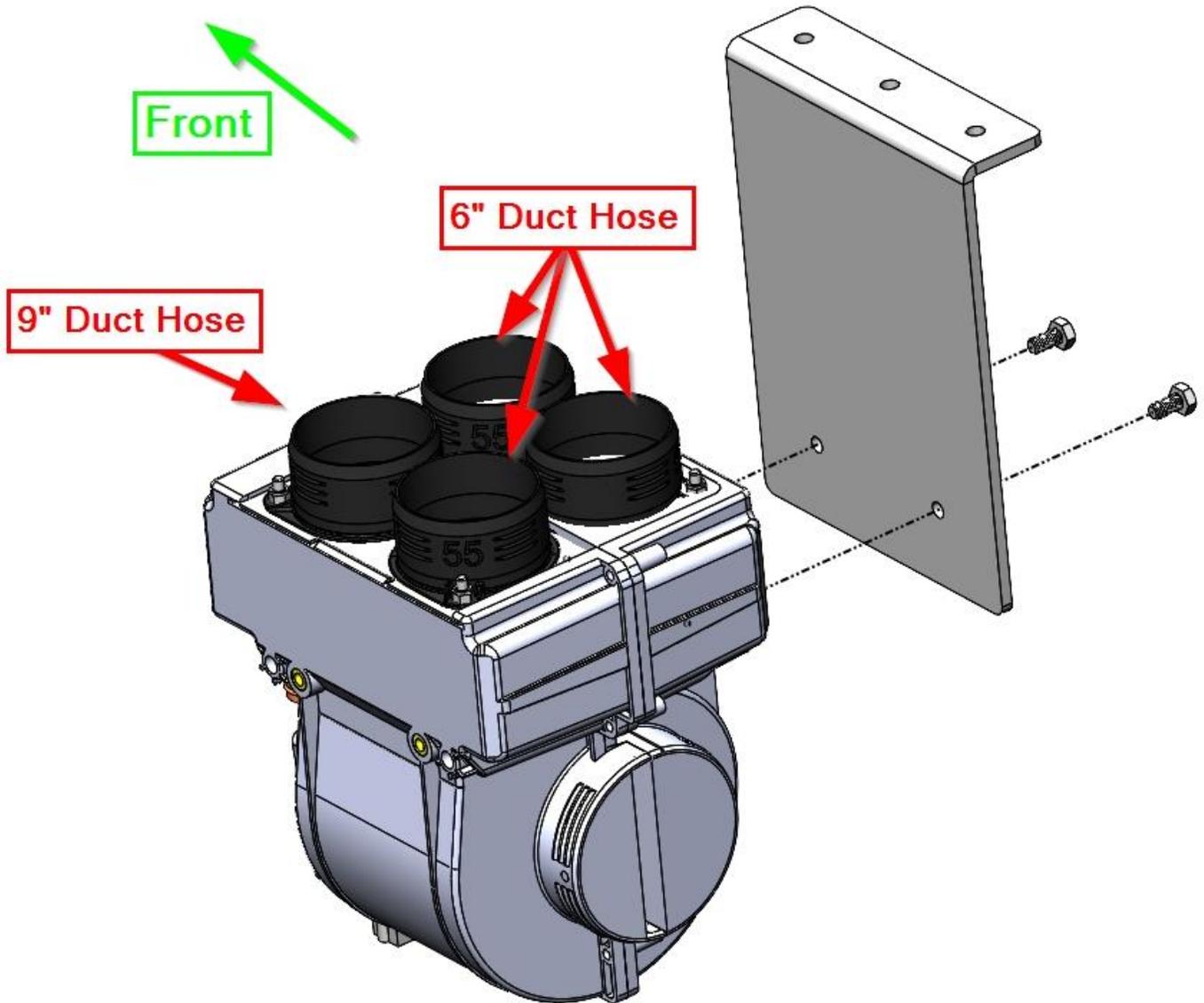


Figure 4

7. Hold the heater up to the left side support bar of the glove box and using the bracket as a template mark your three holes.
8. Use a 1/8" drill as a pilot hole for the 1/4" Self-Drilling Screws.
9. Attach your dust hose as shown in **Figure 4**.
10. Use the provided 1/4" Self-Drilling Screws to mount the main mount plate to the left side support bar for the glove box as shown in **Figure 5**.

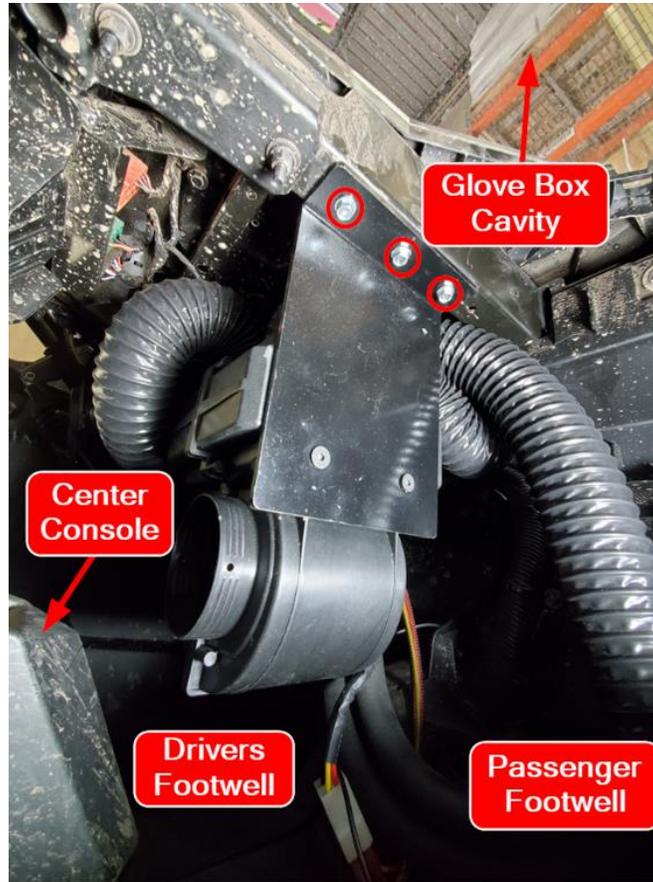


Figure 5

11. Cut out your templates from your heater instructions.
12. Use tape to attach Template 1 to the fire wall of the passengers footwell as shown in **Figure 6**.
13. Attach Template 2 to the drivers side dash directly to the right of the steering wheel as shown in **Figure 6**.

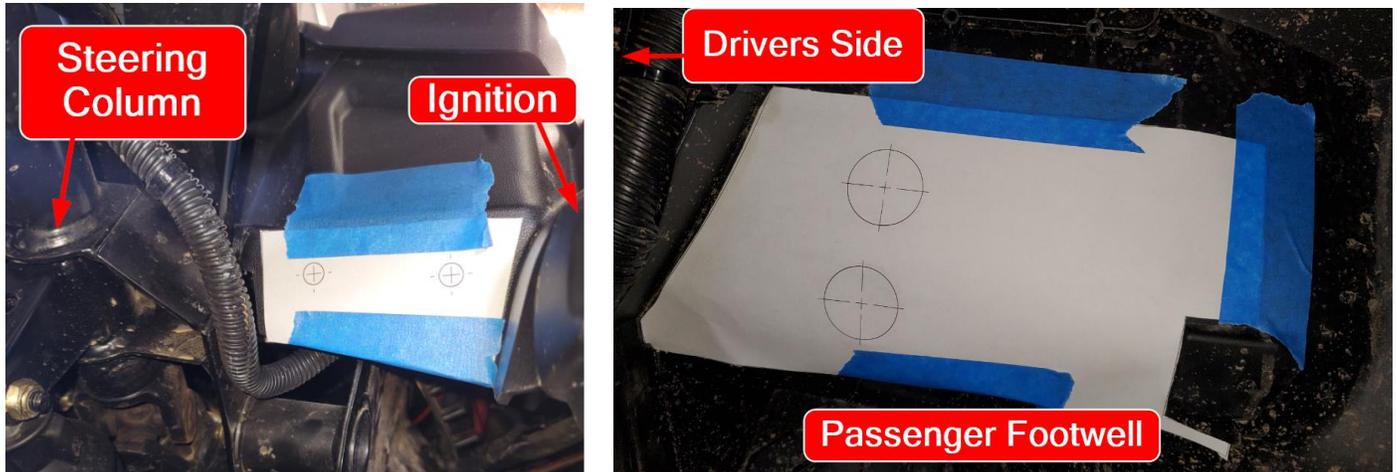


Figure 6

14. Locate the center of the dash where the defrost vents will be going as shown in **Figure 7**
15. Drill the defrost holes with the supplied 2" hole saw as shown in **Figure 7**.

NOTE: Verify nothing is behind the drilling area before making the cut.



Figure 7

Note: We did remove the warning label from the center of the dash.

16. To left of the steering wheel find the spot for your 3 Position Switch as Shown in **Figure 8**.
17. Using the Switch Bezel as a template mark the center of the hole.
18. Use a 7/16" drill bit to drill out a hole for the switch armature.

NOTE: Verify nothing is behind the drilling area before making the cut.



Figure 8

Switch Wiring

19. Locate the 36" **Three** Conductor wiring harness and insert the Yellow, Red, and Orange wires into the Black Five Pin Connector as shown in **Error! Reference source not found.** If installed properly the terminal will snap into place. If the terminal does not snap into place flip it 180 degrees and try again.
20. Locate the 36" **Single** Conductor Red wire and insert it into the lower left corner of the Black Five Pin Connector as shown in **Error! Reference source not found.**
21. Connect the Black Five Pin Connector to the Five Pin Switch included in the kit.

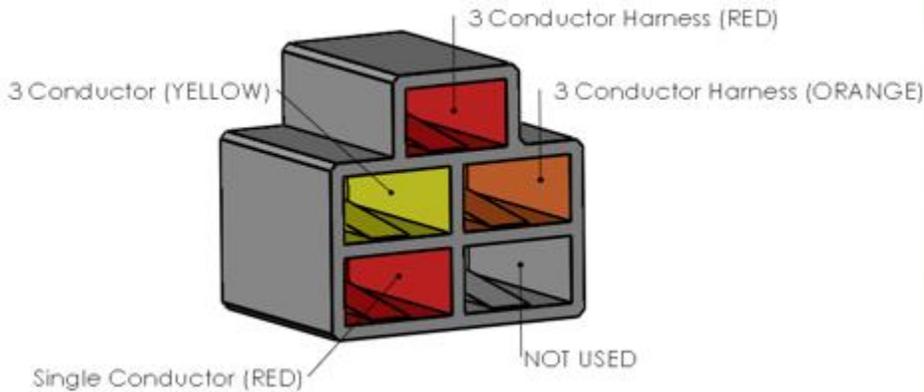


Figure 9

22. Insert the switch armature from the rear of the 7/16" hole drilled in the front dash and secure using the low-profile hex nut included in the switch bag. Disregard the flex lock washer.
23. Prior to pressing the switch bezel on, use a pair of pliers to remove the two nubs on the back of the switch bezel as shown in **Error! Reference source not found..**



Figure 10

24. Place the bezel over the switch so that the 0,1,2,3 markings are oriented in a desirable way.
25. Press the switch dial on to the switch until it is seated firmly.
26. Locate the White Four Pin Connector included in the kit. Insert the other end of the 36" **Three** conductor harness, Orange, Red, and Yellow wires into the White Four Pin Connector in the orientation shown in **Error! Reference source not found..** The metal terminals will snap into place if installed properly.
27. Insert the 36" Single Black Conductor wire in the orientation shown below in **Error! Reference source not found.** ensuring it snaps into position.

28. Insert the assembled connector into the White Terminal Housing on the Heater Unit.

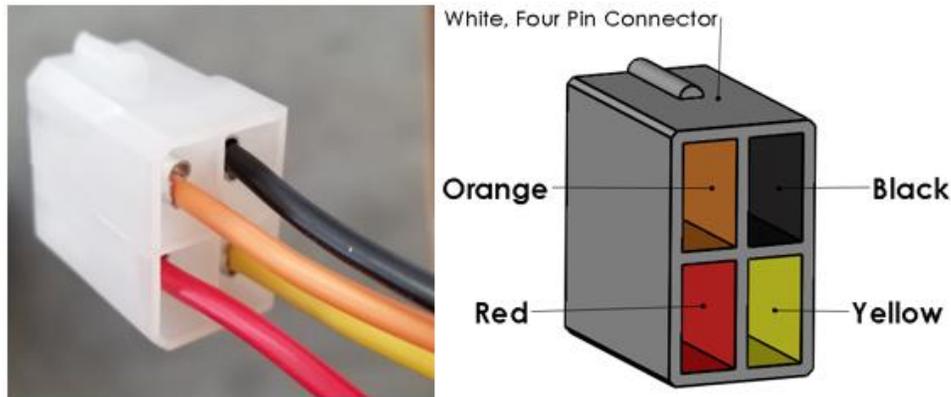


Figure 11

29. Use the Blue Insulation Displacement Crimps to connect the non-terminated end of the 36" Red single conductor wire to accessory power wire (White w/ Black Stripe) shown in **Error! Reference source not found.** It may be necessary to peel back some of the sheath covering the wires.

30. Use the Blue Insulation Displacement Crimps to connect the non-terminated end of the 36" Black single conductor wire to the Ground wire (Green).

31. Test that the switch controls the fan speed in all three positions.

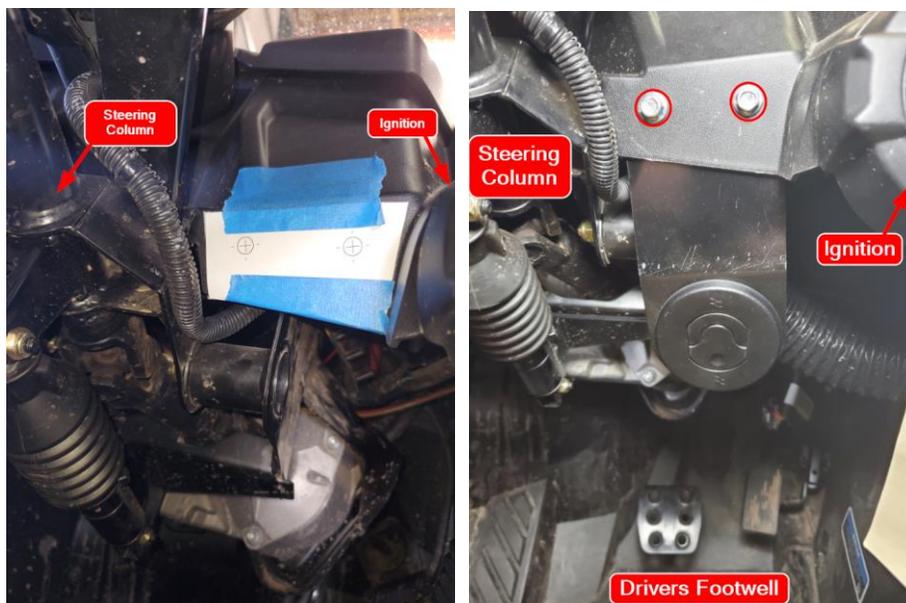


Figure 12

32. Drill Template 2 with a 7/16" drill bit as shown in **Figure 12.**

33. Attach HT_CU_443-2 LH Defrost Bracket with qty 2 ¼ x 1" serrated flange bolts and nuts as shown in **Figure 12**.

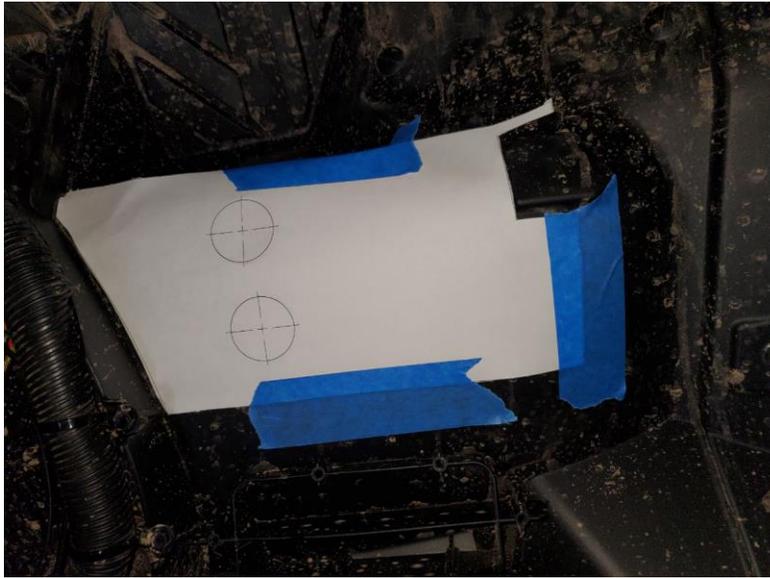


Figure 13

34. Use the 1 ¼" hole saw to drill out the radiator hose template as shown in **Figure 13**.
35. Using HT_CU_443-3 RH Defrost Bracket as a template drill ¼" holes in the left side of the bottom of the glove box.
- Note: This is the suggested location, depending your setup you this can vary slightly.**
36. Attach HT_CU_443-3 RH Defrost Bracket with qty 2 ¼" x 1" Serrated Flange Bolt and nuts as shown in **Figure 14**.



Figure 14

37. Route the two 6" duct hoses closest to the front of the machine to the two holes for the defrost vents.
38. Route the 9" duct hose to the driver's side vent.
39. Route the rear passenger side 6" duct hose around the front side of the main heater bracket to the passenger side and let it hang there.

Coolant Hose Routing

40. Cut the supplied 5/8" Coolant Hose in half.
41. Attach one hose to each of the copper tubes on the side of the heater.

Note: Verify that the rubber shipping plugs have been removed if present.

42. Secure with the supplied #10 Hose Clamps
43. Route the hoses through the 1 ¼" holes and grommets and out to the front of the machine as shown in **Figure 14**.

44. Route one hose to the inlet side of the radiator and one hose to the outlet side of the radiator as shown in **Figure 14**.

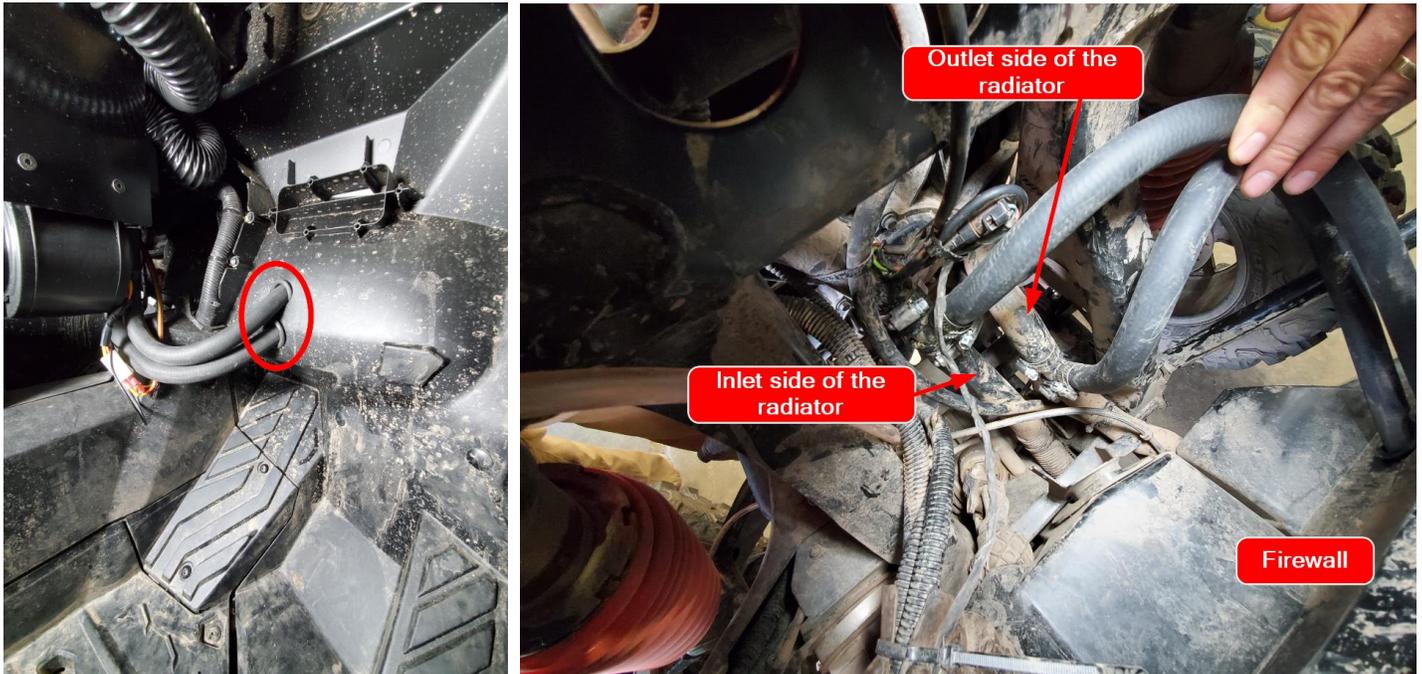


Figure 15

45. Choose an accessible location along the inlet of the 5/8" Coolant line to install the 5/8" Plastic Shutoff valve. Cut the 5/8" Coolant Hose, insert the Plastic Shutoff, and secure it using two of the #10 Hose Clamps.

Duct hose mounting

46. Attach the duct hosing to the defrost vents.
47. Attach duct hosing to the driver's side vent. See figure 15
48. Place the glove box back in its cavity.
49. Attach duct hosing to the passenger side vent. See figure 15

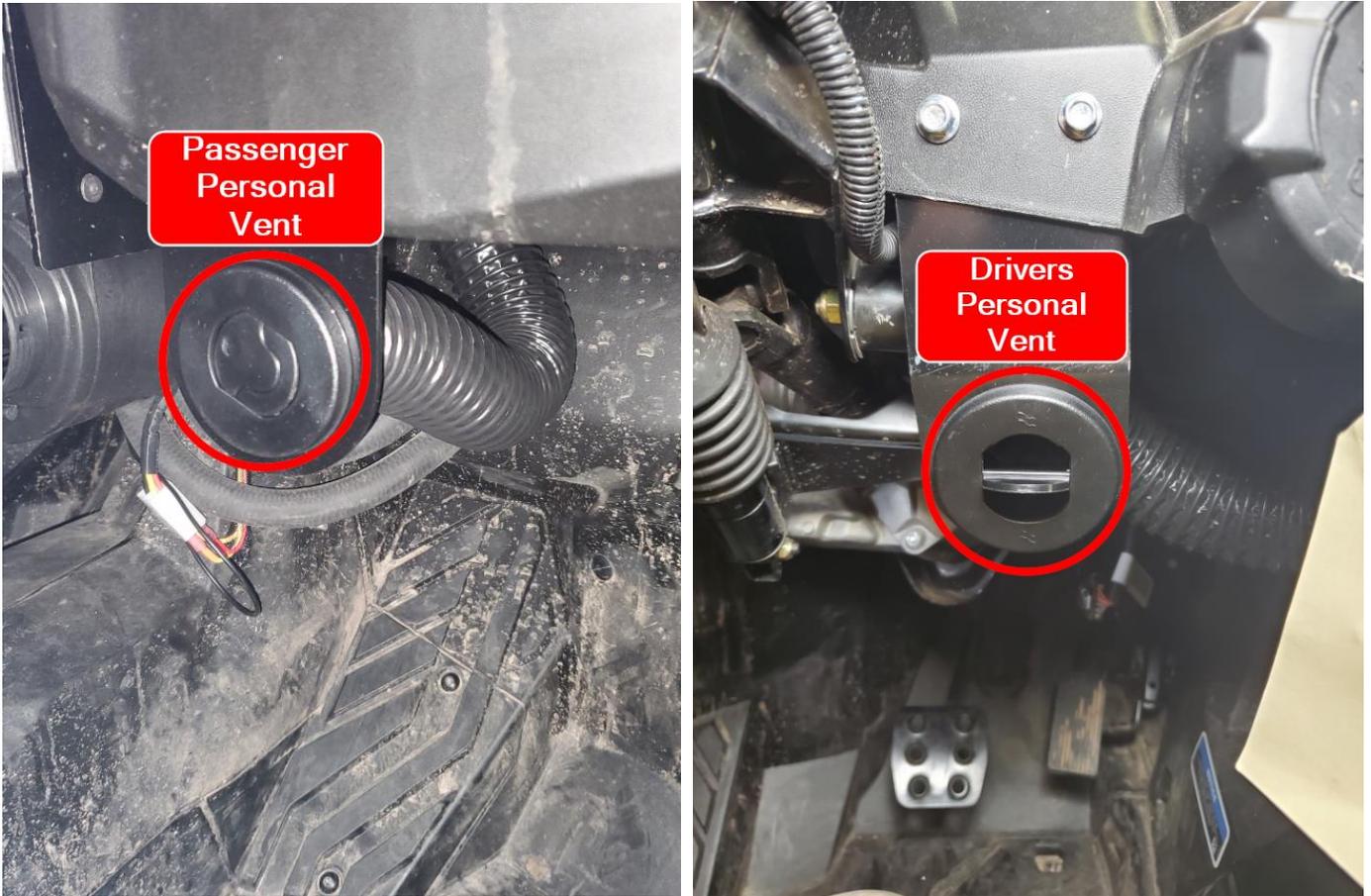


Figure 16

Radiator Y Installation

50. Locate the Aluminum Y locations shown in **Figure 16**.

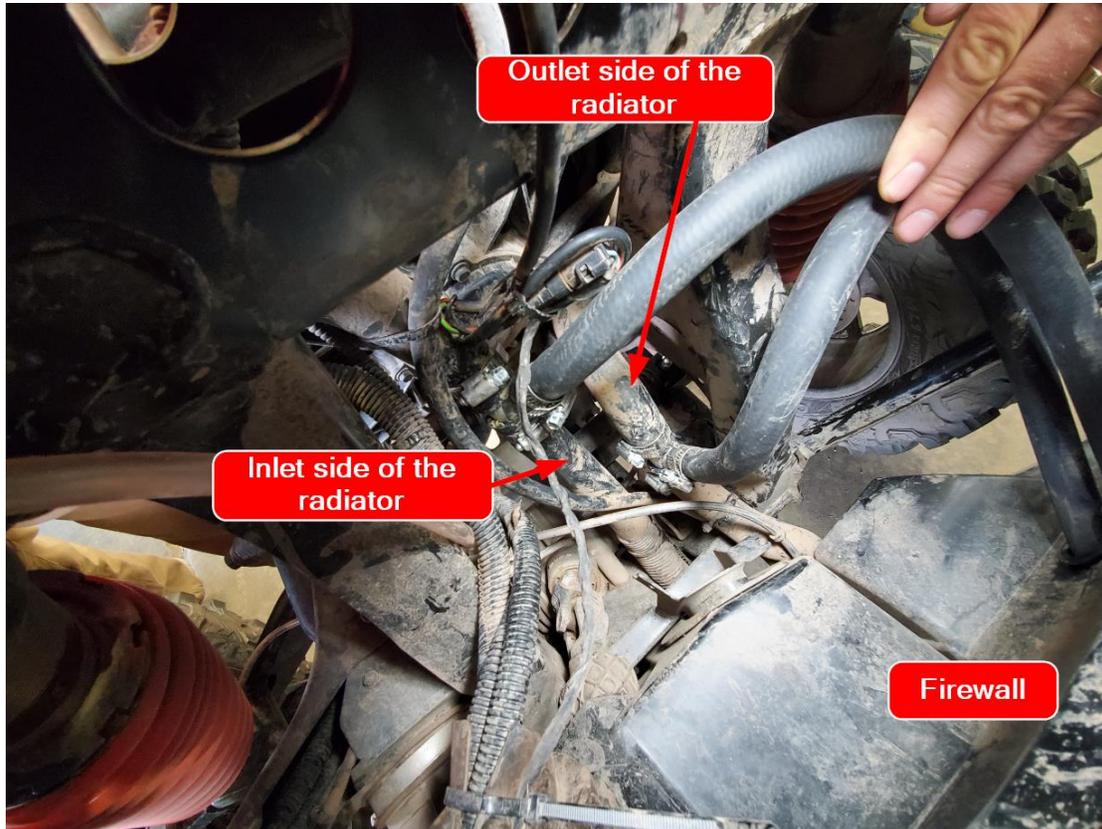


Figure 17

51. Verify that the Ys will fit as shown, and cut the radiator hose.

NOTE: If you have hose pliers, use them to shutoff the hose to eliminate coolant lose. If pliers are not available, let the coolant drain in to a bucket.

52. Install the Ys as shown, with the “top” of the Ys pointing toward the radiator and away from the engine.

53. Secure with the provided #16 hose clamps.

NOTE: Do NOT attach the 5/8” hose from the heater to the Y at this time. The heater will be attached the Ys after we flush it with the garden hose.

System Flush & Final Attachment

Note: The Cab Heater System has air trapped inside and will need to be removed to produce heat for the vehicle. The following steps are important to perform prior to the bleeding process.

1. Attach the Garden Hose Adapter to a garden hose.
2. Remove the Colored cover plates (2 screws) from the Garden Hose Adapter.
3. Insert the barbed end of the Garden Hose Adapter into one of the 5/8" Heater Hoses located by the Aluminum Y's
4. Place a bucket under the opposite end of 5/8" Heater Hose.
5. Verify that the 5/8" Shutoff Valve installed earlier is in the open position. The valve should be turned such that the handle is parallel to the 5/8" hose. See **Figure 18**.

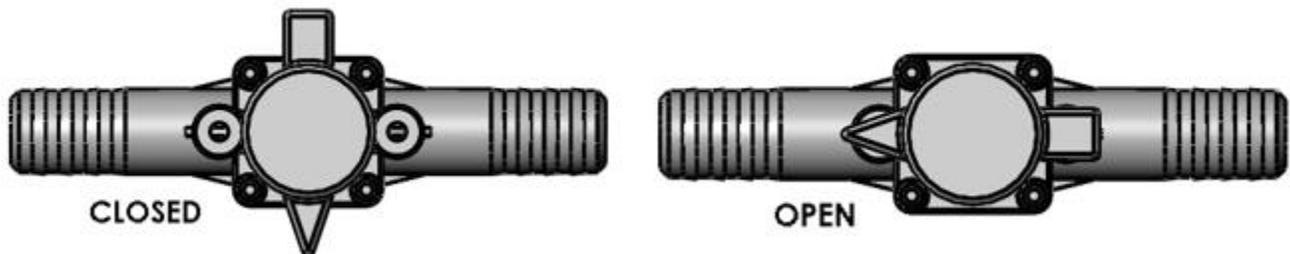


Figure 18

6. Fully turn on the garden hose and run water through the cab heater system for at least 1 minute. Empty the bucket as necessary. By running water through the system the inner walls are wetted and will make bleeding air out of the system much easier.
7. Turn off the Garden Hose, remove the Garden Hose Adapter and allow any residual water to drain from the hoses.
8. Connect the 5/8" Heater Hoses to the 5/8" Ports of the 1" Aluminum Ys. Secure using #10 hose clamps.



Bleeding the Coolant System – Read entire section before proceeding

IMPORTANT NOTE: Some amount of air will have made its way into the coolant system. The following bleeding procedure must be performed to eliminate the air and obtain heat. The following procedure is most easily accomplished with the help of a partner.

1. Move the vehicle to an area where it can be run. If possible, place the front end of the vehicle on ramps.
2. Open the radiator cap and add as much 50/50 premix coolant as allowable (only add coolant that is rated for your vehicles make and model).
3. Turn on the machine and run the engine at 3,000-4,000 RPMS until the radiator fan turns on. During this time, continue to add coolant to the radiator as needed. It is normal for coolant to overflow at times as bubbles move through the system.
4. When the radiator fan turns off, release the accelerator. **If the temperature reaches 205 degrees, turn off the engine and allow the system to cool down.** Once the engine temp reaches approximately 180 degrees, perform the previous two steps again. As air moves out of the system the vehicle's ability to cool itself improves to the point where the radiator fan is able to mitigate the heat generated by the engine. Perform this step for two cycles of the radiator fan. Depending on how much coolant was lost during installation, a third or fourth cycle may be necessary.
5. Close the radiator cap securely. Fill the coolant overflow reservoir to the full line.
6. Again, rev the engine at 3,000-4,000 RPMs until three radiator fan ON/OFF cycles. Turn off the machine and let it completely cool down.
7. In a few hours, check the reservoir level and fill accordingly. Verify that the engine is cold and then open the radiator cap. Fill as necessary. Close the radiator cap.
8. Repeat the heat up & cool down procedure until there is no longer a drop in the coolant overflow reservoir and the heater produces heat in the cab after the first radiator fan cycle.
9. Verify there are no coolant leaks.

Before Your Next Ride:

Verify that no leaks have occurred and that the radiator fluid level is per the manufacturer's specifications.