motoalliance

FIRESTORM

CAB HEATERS

Polaris Ranger 570 Cab Heater

HT_CU_403

INSTALLATION INSTRUCTIONS

motoalliance
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Rogers, MN 55374
866.527.7637

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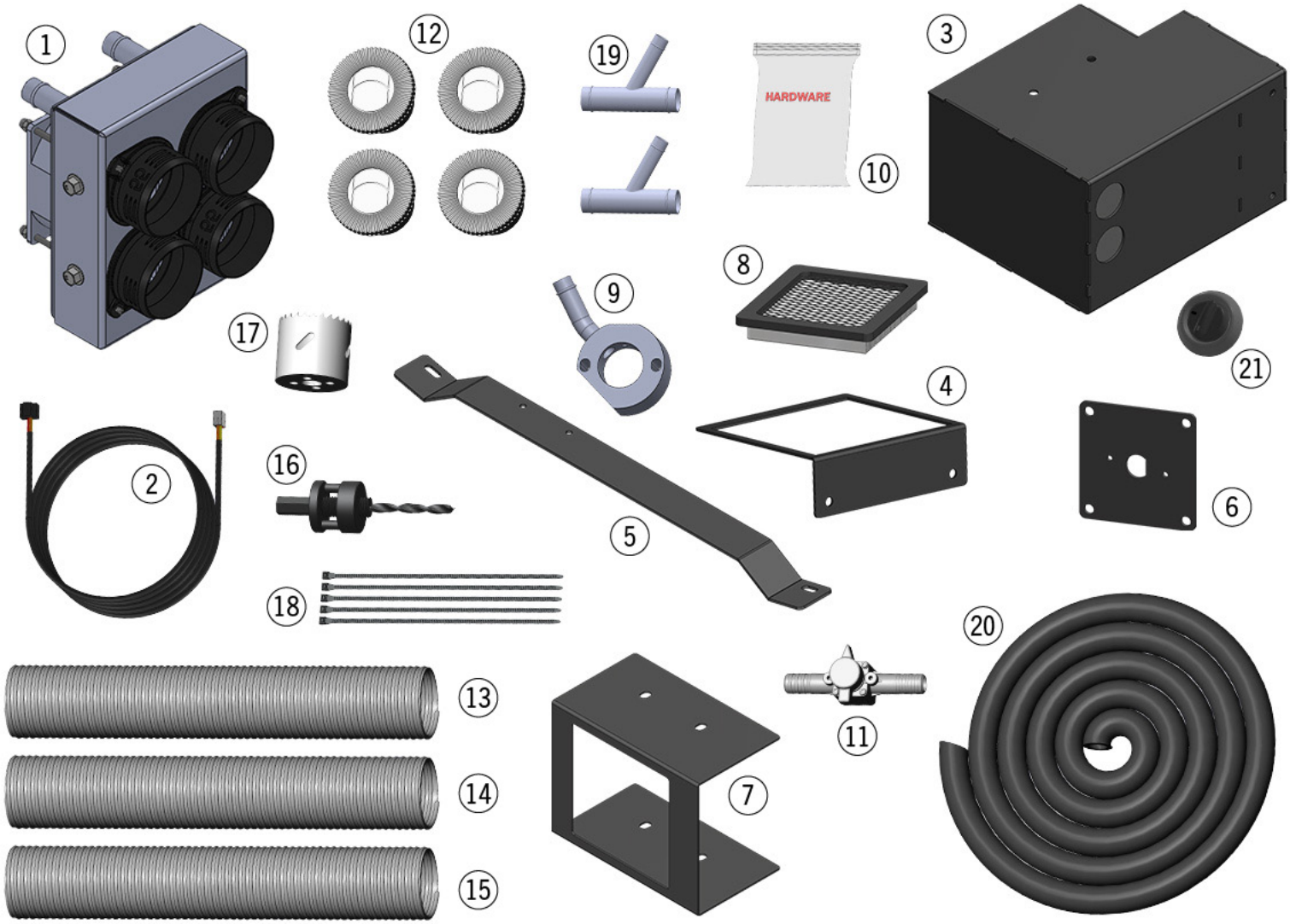
HT_CU_403

FIRESTORM CAB HEATERS

PARTS LIST



Part#	Qty	Item Description
1	1	FIRESTORM Cab Heater Unit
2	1	36" Wiring Harness
		Orange/Yellow/Black Wire
		Red Wire
		Black Wire
		5-Pin Black Connector
		4-Pin White Connector
3	1	HT_CU_498-W1 Heater Box
4	1	HT_CU_498-5 Air Filter Bracket
5	1	HT_CU_499-8 Frame Bracket
6	1	HT_CU_499-9 Switch Bracket
7	1	HT_CU_498-6 Vent Cover

Part#	Qty	Item Description
8	1	Air Filter 491588
9	1	Thermostat Bypass Valve BP104
10	1	Hardware Pack
	2	1" Rubber Grommet
	1	¼" Rubber Grommet
	4	M6-1.0x18mm Hex Head Bolt
	4	M6 Flat Washer
	4	#8 x ¾" Self-tapping Screw
	1	Insulation Displacement Crimp
	6	#10 Stainless Steel Hose Clamps
	2	#16 Stainless Steel Hose Clamps
11	1	Plastic Shut-Off Valve

Part#	Qty	Item Description
12	4	2" Vent
13	10"	2" Compressed Duct Hose
14	10"	2" Compressed Duct Hose
15	10"	2" Compressed Duct Hose
16	1	Hole Saw Pilot Bit
17	1	2" Hole Saw
18	20	Zip Ties
19	2	1" Aluminum Y
20	20'	⅝" Coolant Hose
21	1	3-Position Switch

Please read all instructions before beginning installation. Verify that all parts listed are present.

We have found that several steps in this installation are easier with two people. We recommend finding a partner to assist with this 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.

PREPARATION

1. Open the front hood and disconnect the headlight electrical connectors.
2. Disconnect the wiring harness retention clips from the hood until the wiring harness is free from the hood.
3. Remove the front hood and set it aside.
4. Remove the center tunnel cover plate and rear tunnel cover plate (if 4-seater). ***FIGURE 1***

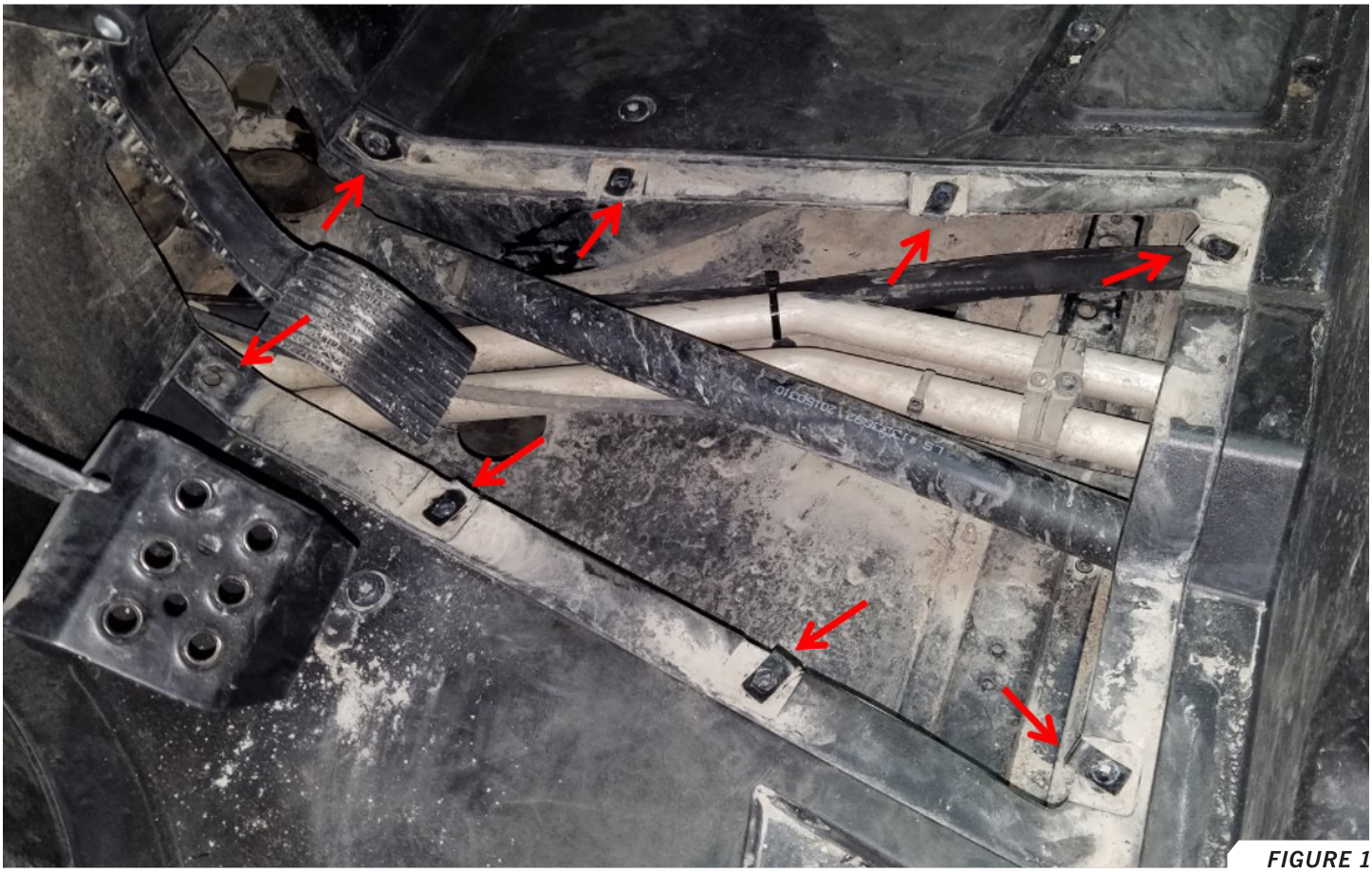


FIGURE 1

5. Tilt the bed to the up position. Disconnect the piston from the back side of the tilt bed to gain maximum access to the engine compartment.

6. Remove the front windshield, if applicable.

7. OPTIONAL: Remove all doors.

TEMPLATES & SWITCH INSTALLATION

Use a tape measure to verify the templates are printed at a 1:1 scale.

8. Cut out the templates from the back of the instruction manual. Position the templates as shown in ***FIGURES 2*** & ***3***, and secure with tape.

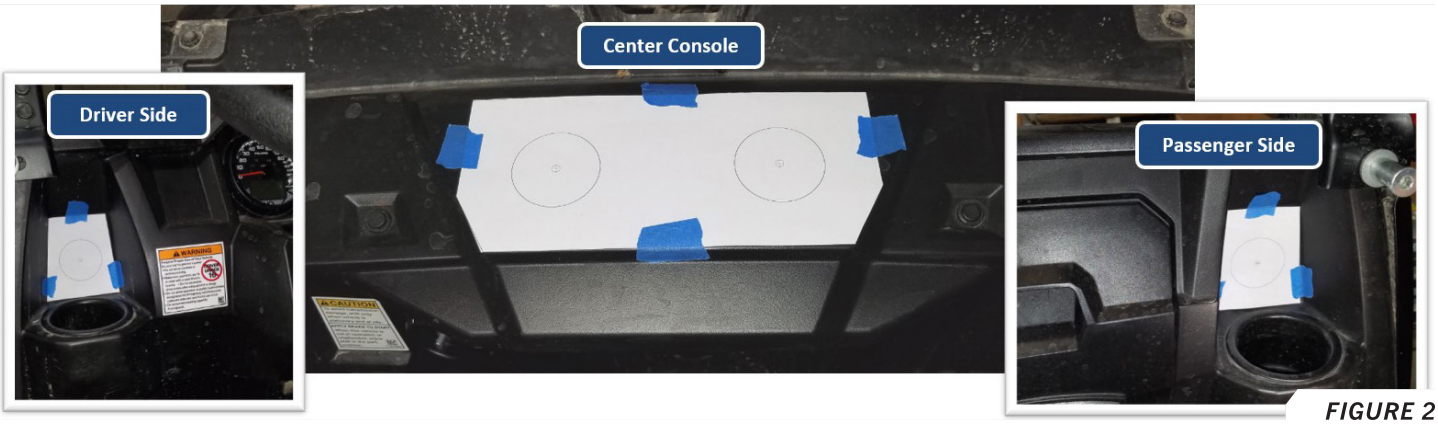


FIGURE 2

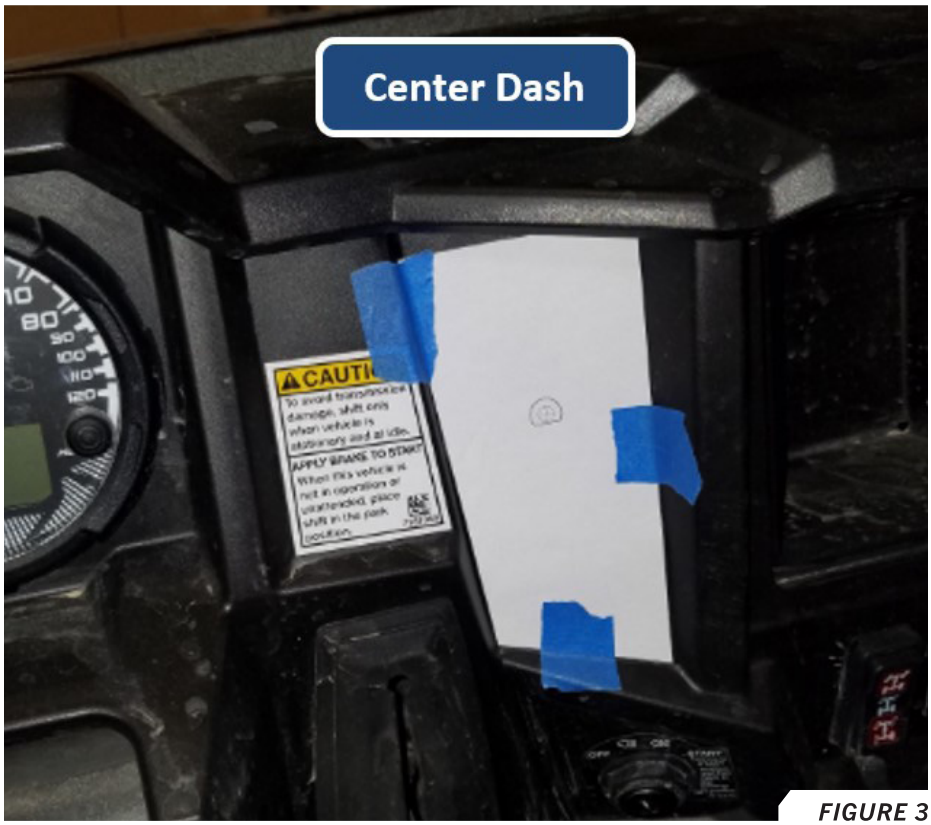


FIGURE 3

9. Using the included pilot bit and 2" hole saw, drill holes at the centers of each 2" circle on the templates.

Transfer the hole centers from the template to the plastic dash using a sharp object. This will keep the drill bit from wandering off center.

10. Using a ½" drill bit, drill a hole at the center of the switch template. It may be necessary to lightly clearance the hole for the switch to fit properly.
11. Insert the Switch into the drilled hole from the backside of the center console.
12. Position the Switch Mount Plate over the Switch.
13. Place the Switch Bezel over the Switch Mount Plate and align the two plastic nubs on the back with the small holes in the Switch Mount Plate. The dial indicators (0, I, II, II) should face up when oriented correctly.
14. Thread the low profile hex nut onto the threaded Switch, tighten snug but do not over tighten.
15. Using the four self drilled and tapping screws, secure the Switch Mount Plate to the plastic center console. Do not over tighten these screws as the plastic threads will be stripped out.
16. Installation Tip: Use a drill to start the threads, but finish by hand with a screw driver to limit over torquing.
17. Place the switch dial indicator on the switch body shaft as shown in ***FIGURE 4***.

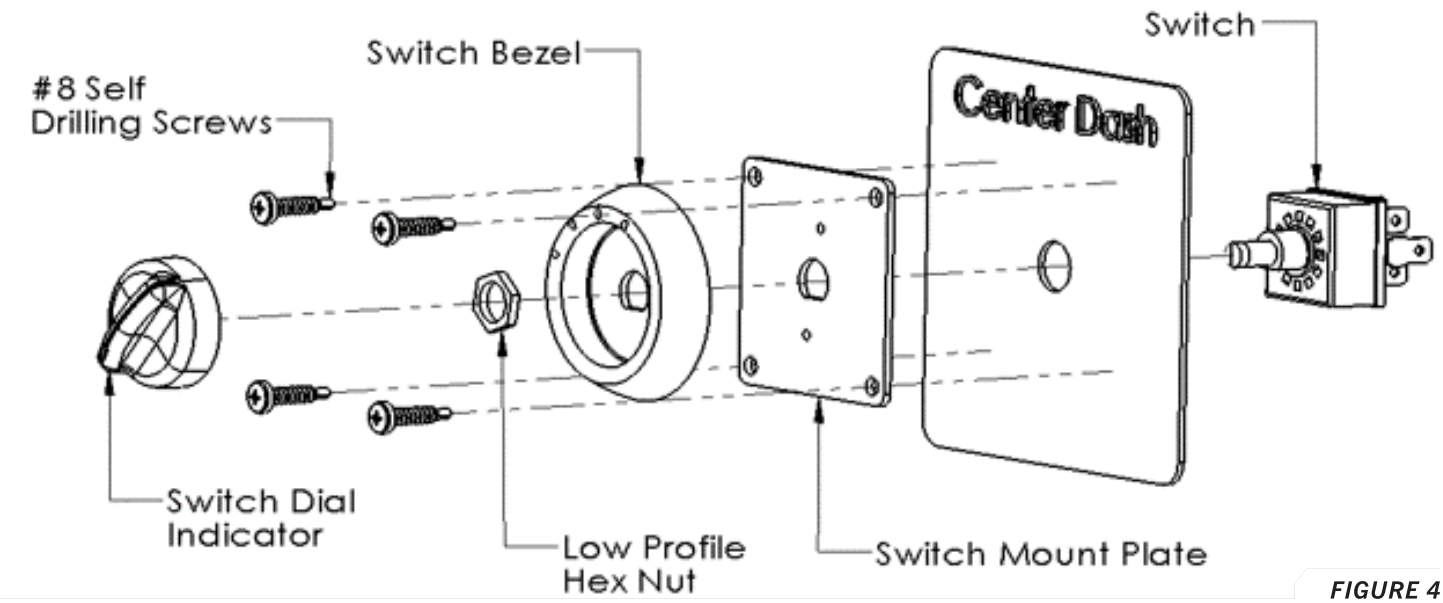


FIGURE 4

HEATER BOX ASSEMBLY

18. Locate the ⅝" radiator hose. From one end, measure 38" and cut the hose to length.

19. Remove the white plug from the end of the wiring harness. ***FIGURE 5***

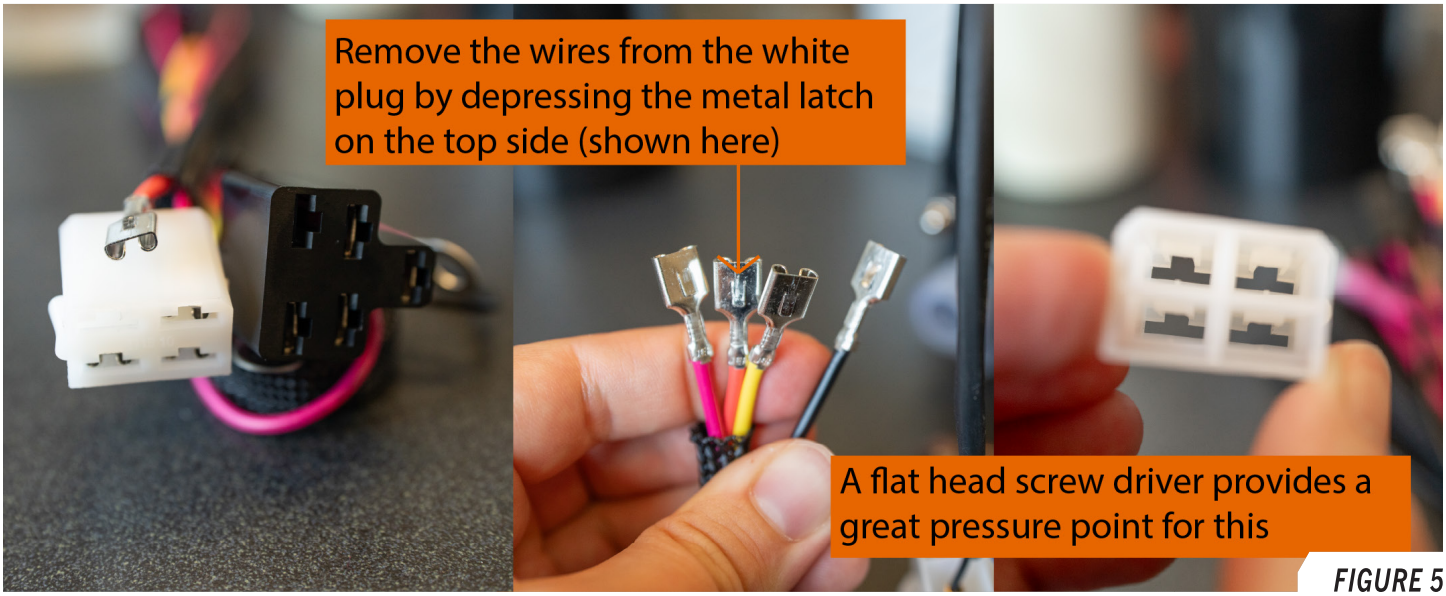


FIGURE 5

20. Feed the end of the wiring loom which the plastic connector was removed from through the outer wall of the heater bracket box. Reatach the plastic connector once the wires are inside the bracket box.

21. Install the two larger rubber grommets into the openings at the back of the heater box. Install the remaining small rubber grommet at the bottom opening. ***FIGURE 6***

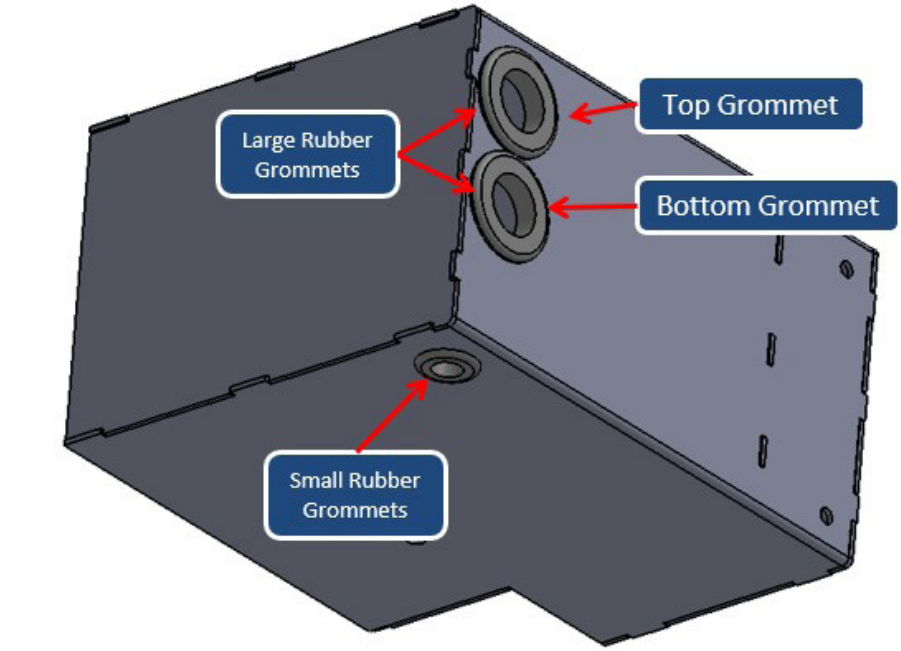


FIGURE 6

22. From the outside of the heater box, push 12" of the 38"- ⅝" radiator hose through the bottom hole and 12" of the remaining (approximately 13') radiator hose through the top hole. ***FIGURE 7***

Rotate the radiator hose so that the natural curvature of the hose goes to the right when viewed from the grommets.

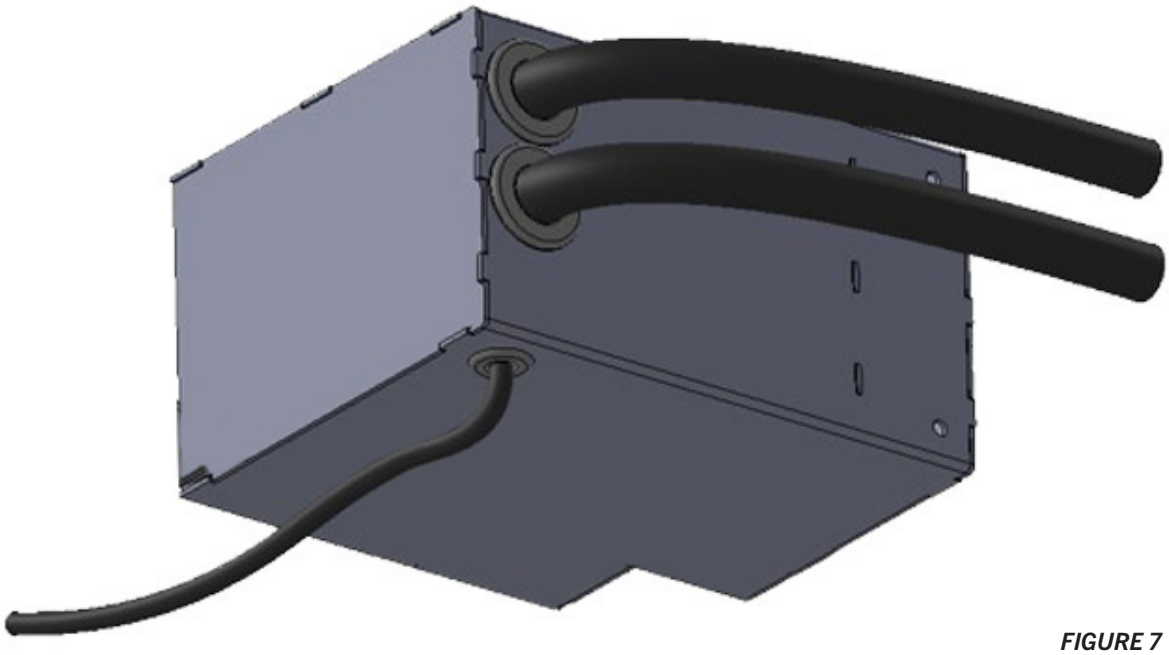
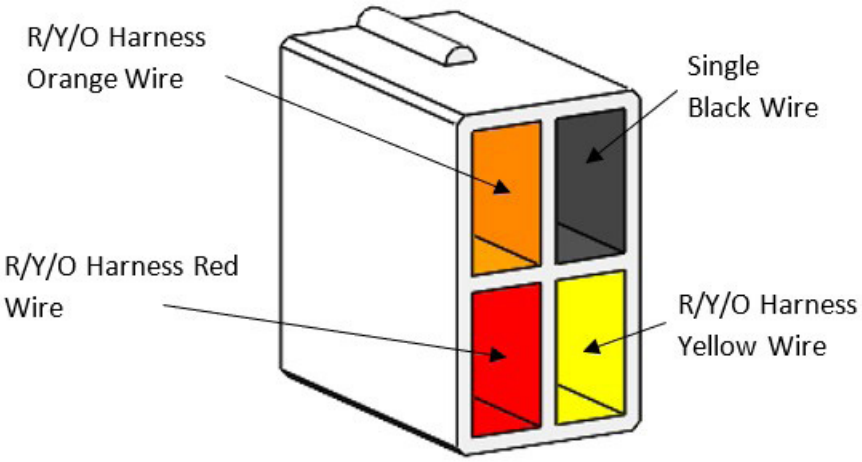


FIGURE 7

23. Attach the hoses to the copper fittings on the heater and secure them with two of the #10 stainless steel hose clamps.

24. Run the ends of the wiring harnesses through the small rubber grommet (red, orange, yellow and black wires) one terminal at a time. Slowly work the heater back into the box by pulling gently on the ⅝" hose in an alternating fashion. Ensure the excess wiring harness is also pulled through the grommet and reconect the wires and demonstrated below. ***FIGURE 8***



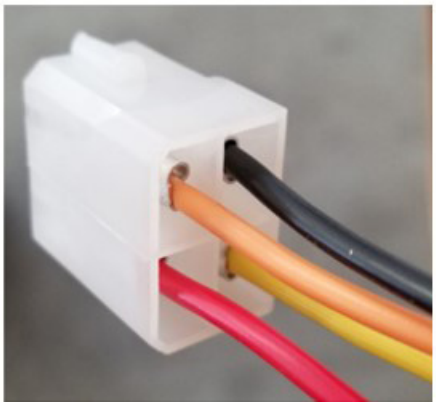


FIGURE 8

25. When the heater unit is fully pressed into the heater box, position the front cover plate over the front of the heater box. Attach the heater box to the frame mount bracket using two M6-1.00 x 18mm hardware as shown in ***FIGURE 9***. Do not fully tighten at this time. Insert the remaining M6 x 18mm hardware from the top of the front cover plate and fully tighten all bolts.

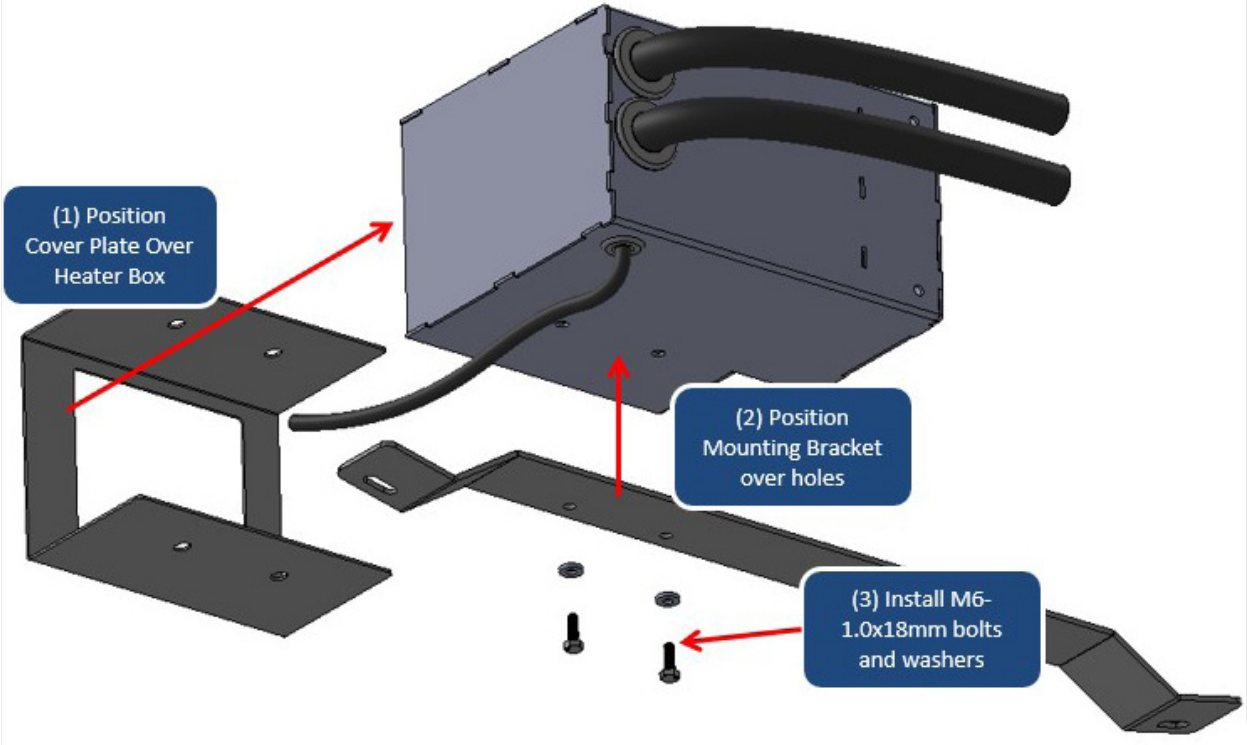


FIGURE 9

26. Remove the two bolts shown in ***FIGURE 10*** and position the heater box assembly over the bolt holes. Reinstall the frame bolts.

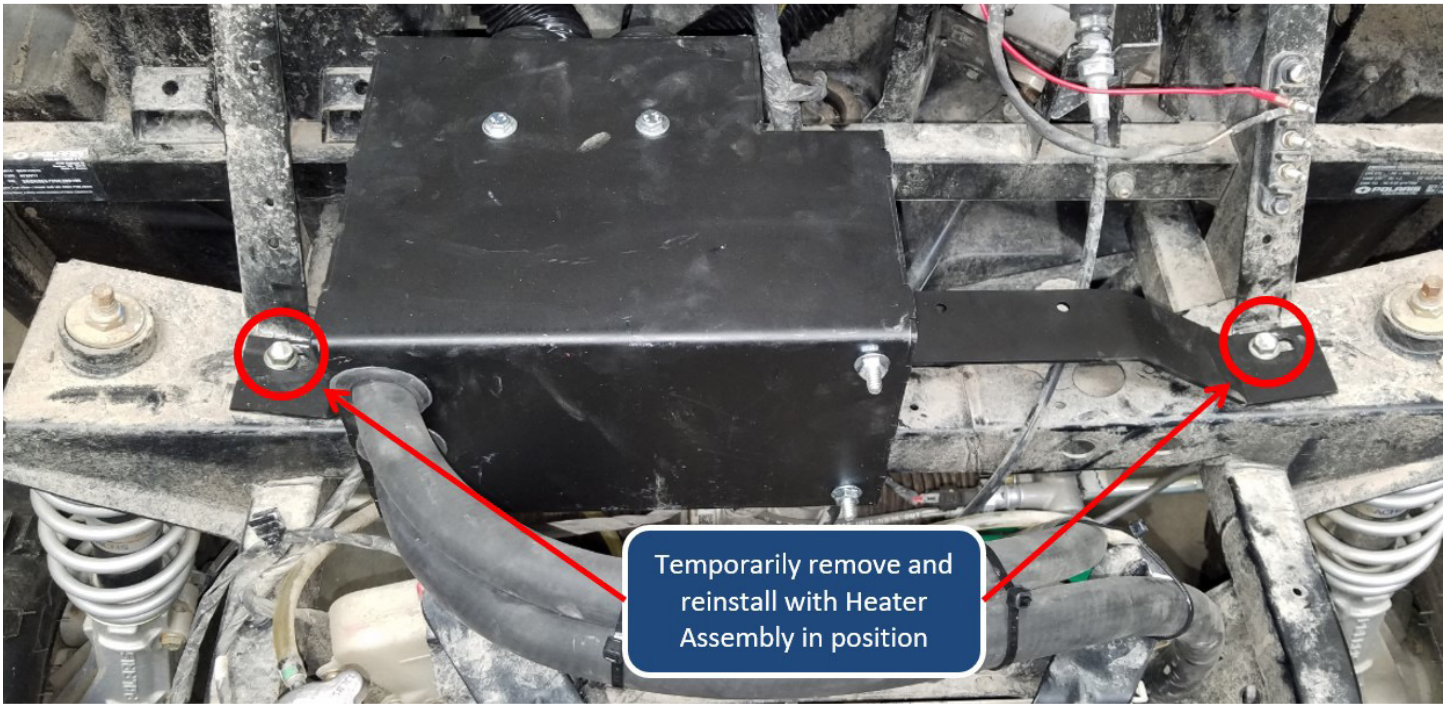


FIGURE 10

VENT & ELECTRICAL INSTALLATION

27. Press all four 2" defrost vents into the holes drilled in step 6 until they snap into place. Do not press on the center of the vents.

28. Use a wire cutter to slit the first three metal ribs of each 2" duct hose. This will allow for easiest installation over the 2" vents and the 55mm heater ports. ***FIGURE 11***

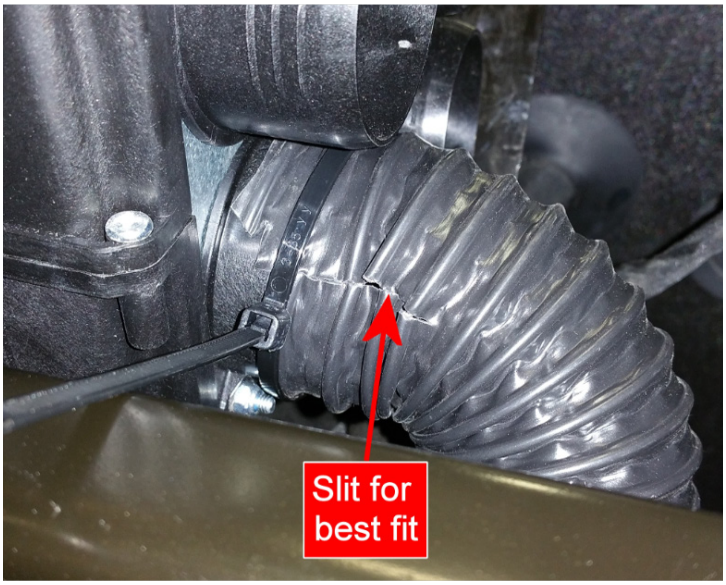


FIGURE 11

29. Attach the 10" piece of compressed 2" hose to the driver side 2" vent and the 7" piece of compressed 2" hose to the passenger side 2" vent. Secure using zip ties.

30. Remove the 1/4" push clips from the front dash. ***FIGURE 12***

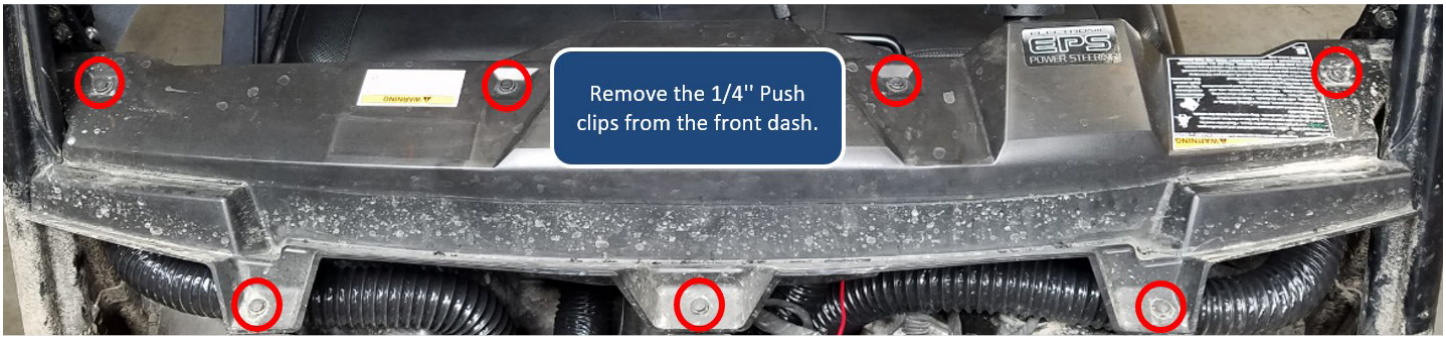


FIGURE 12

31. Tip the front dash toward the steering wheel to gain access to the two 2" defrost vents in the center of the dash. Attach the 5" pieces of 2" hose to the two 2" defrost vents and secure using zip ties.

32. With the front dash free to move, route the Three Conductor Wiring Harness (Red, Orange, Yellow) to the switch and connect the terminals as shown in ***FIGURE 13***. Connect the Single Conductor Red wire as shown in ***FIGURE 13***.

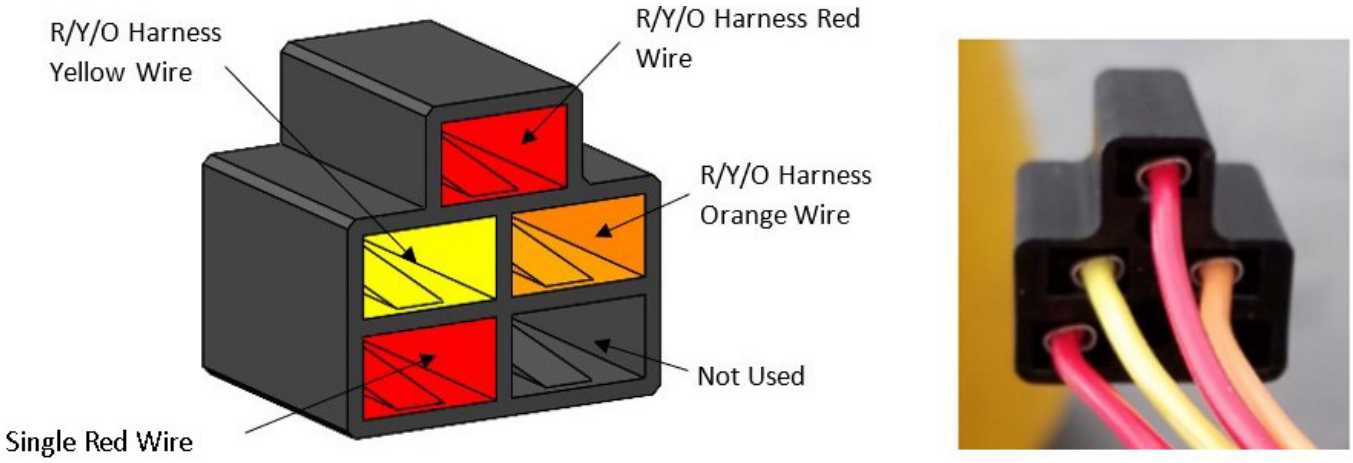


FIGURE 13

33. Locate the Three Conductor wiring harness and insert the Yellow, Red, and Orange wires into the Black, Five Pin Connector. If installed properly the terminal will snap into place. If the terminal does not snap, flip it 180° and try again.

34. Locate the Single Conductor Red wire and insert it in the lower left corner of the Black, Five Pin Connector.

35. Connect the assembled connector into the switch housing.

36. Reposition the front dash and reinstall the push clips.

37. Route the 2" hoses as shown in ***FIGURE 14*** and secure each hose to the 55mm ports on the heater unit using zip ties.

It may be easier to install the driver and passenger side hoses on the bottom vents first.

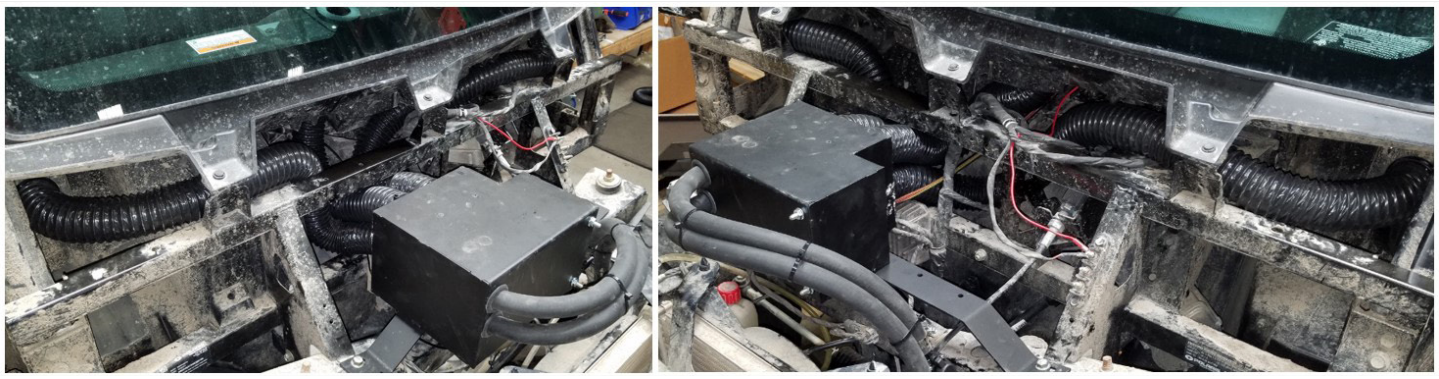


FIGURE 14

38. Attach the Single Conductor Red Wire to the auxillary power post. Using the Blue Insullation Displacement Crimp connect the Single Conductor Black Wire from the Heater Box to the negative wire that connects to the cigerette lighter as shown in ***FIGURE 15***.

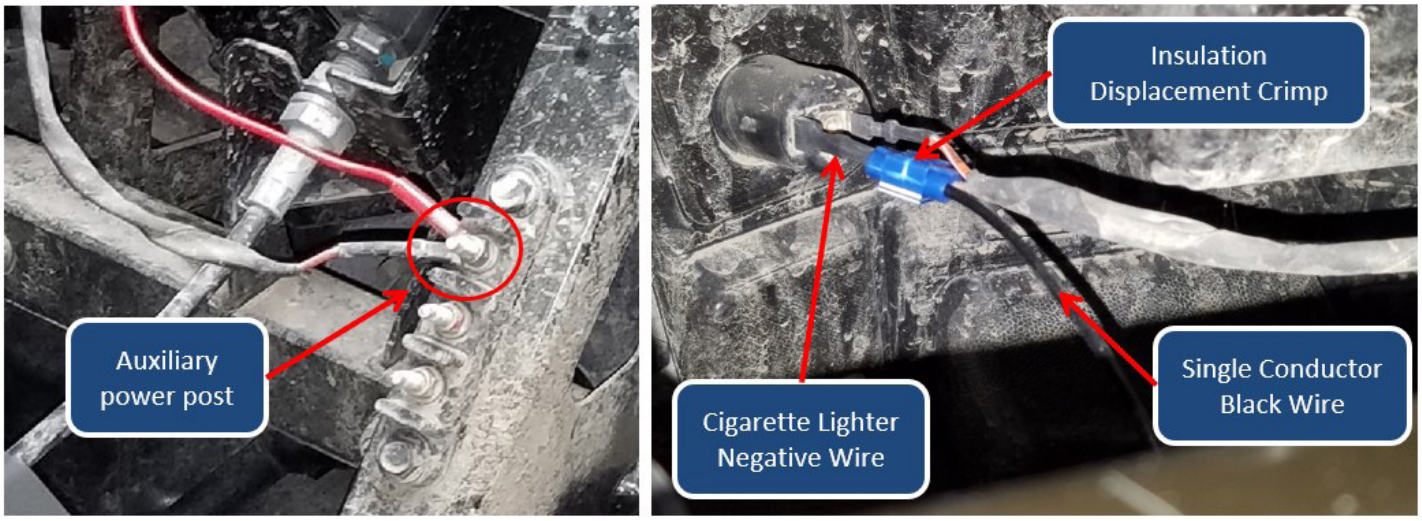


FIGURE 15

39. Turn the vehicle ignition to the Auxilary state and use the 3-position switch to test the operation of the fan.

RADIATOR HOSE ROUTING (NON RANGER ETX ONLY)

ETX Version: skip ahead.

40. Route the short piece of ⅝" radiator hose to the rear of the radiator and down to the bottom 1" outlet hose of the radiator. Leave for future use.

41. Route the long piece of ⅝" radiator hose to the driver side of the radiator and follow the upper 1" factory radiator line toward the center tunnel as shown in ***FIGURES 16*** & ***17***. The yellow arrow indicates the path of the ⅝" radiator hose.

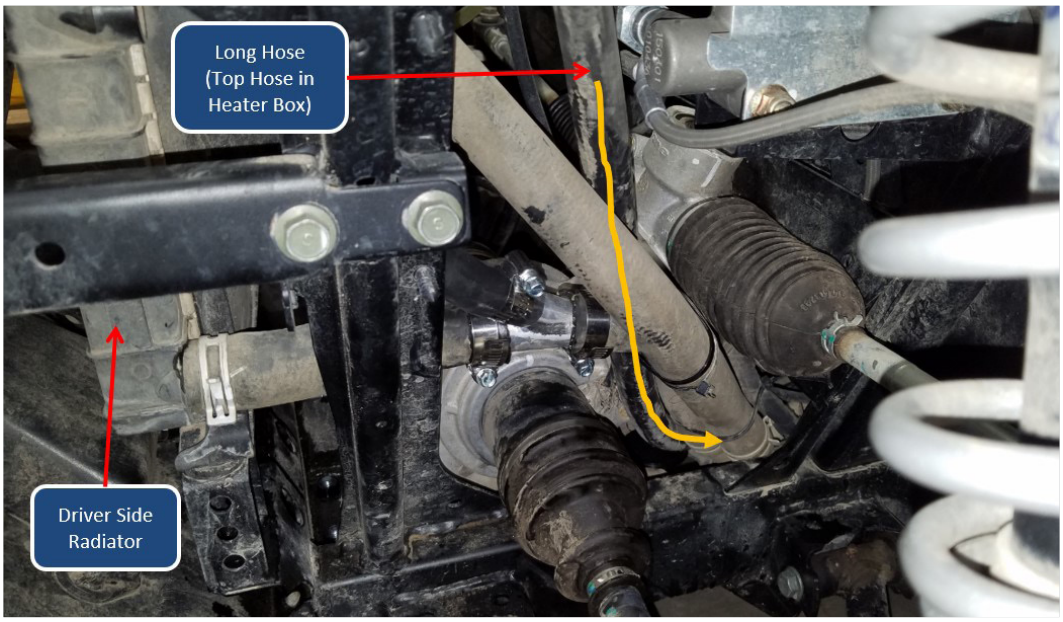


FIGURE 16

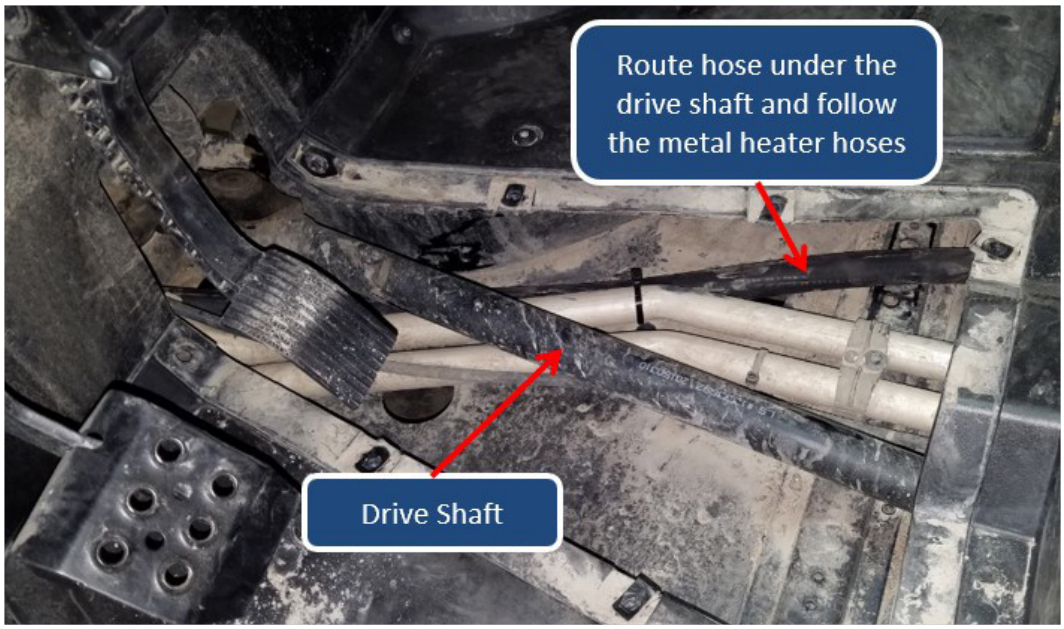


FIGURE 17

42. Route the long ⅝" radiator hose to the top driver side of the engine, continuing to follow the factory 1" radiator hose as shown in ***FIGURE 18***.

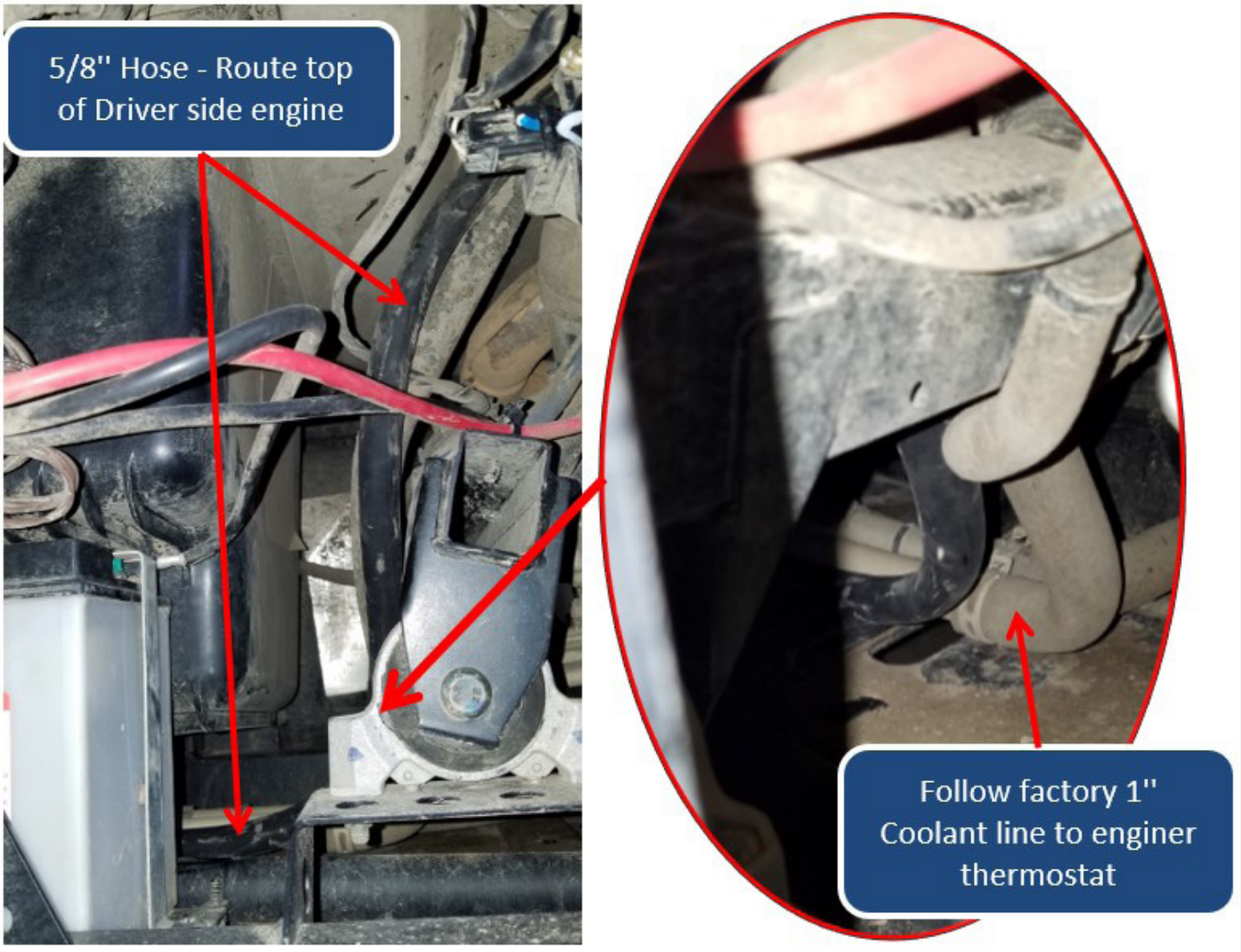


FIGURE 18

43. Pull the extra hose through the top of the engine compartment and set aside.

Perform the next steps ONLY when the vehicle's engine temperature is cold.

44. Place a collection pan for coolant under the vehicles thermostat. Remove the two hex bolts that secure the thermostat as shown in ***FIGURE 19*** and allow

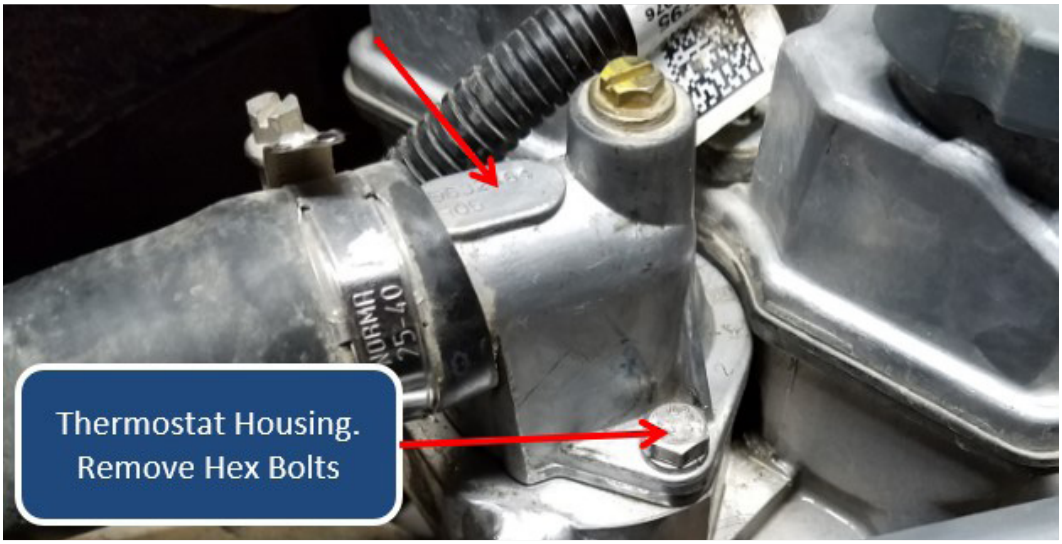


FIGURE 19

45. Position the thermostat bypass valve BP104 as shown in ***FIGURE 20***. The green O-ring should face vdown and touch the engine.

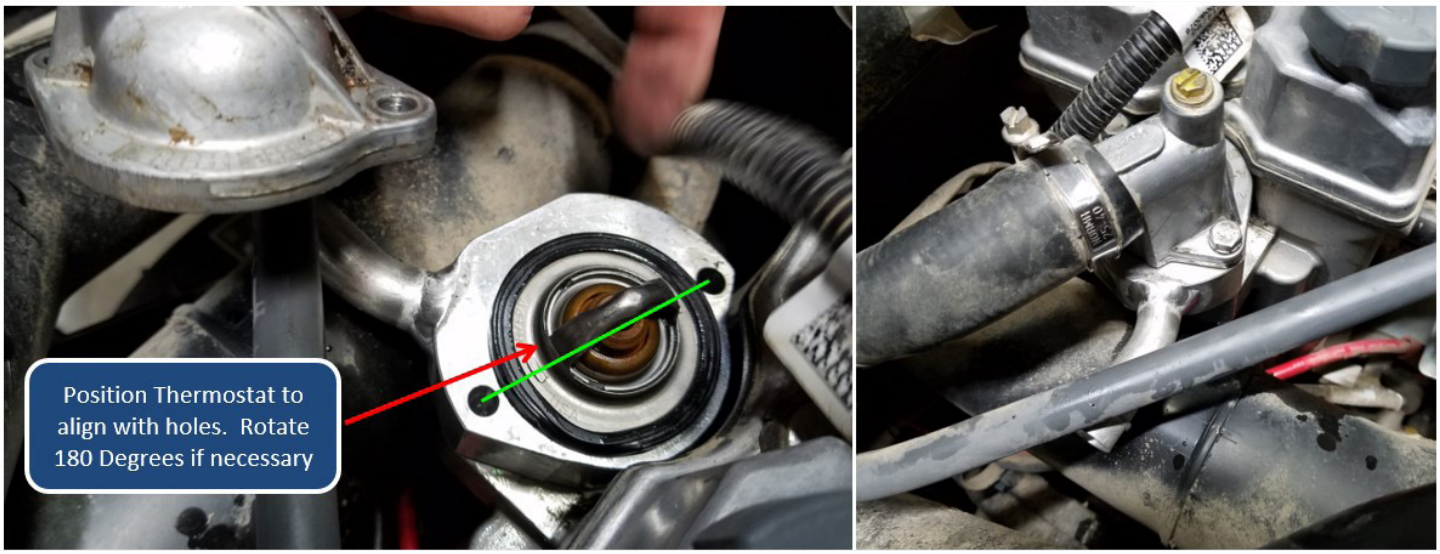


FIGURE 20

46. Position the thermostat on top of the thermostat bypass valve in the same orientation that it came out of the thermostat housing.

47. Reposition the thermostat housing on top of the bypass valve and align to the mounting holes. Install the M6 bolts and M6 lock washers included with the thermostat bypass valve. The thermostat is not symetrical and it may be necessary to rotate the thermostat incrementally until the thermostat housing fits over top and allows the bolt holes to line up.

48. Tighten the bolts by hand and then snug them to the engine block. DO NOT overtighten them.

49. For four-seater vehicles: hold the hose up to the ⅝" port on the thermostat bypass, ensure there are no kinks or sharp angles in the hose and cut any excess hose off. The supplied amount of hose should be very close to the correct length for a four-seater vehicle.

50. For two-seater vehicles: ensure that there are no sharp angles in the hose and cut the hose to length.

51. Leave the long ⅝" hose off of the ⅝" thermostat port for future use.

RADIATOR HOSE ROUTING (RANGER ETX)

52. Ranger ETX machines do not use the thermostat bypass stated earlier. Instead, route the long ⅝" radiator hose to the Upper 1" radiator hose. Use the remaining 1" aluminum Y to attach to the 1" upper radiator hose. Position the aluminum Y so that it faces the radiator and secure it using the #16 hose clamps. Cut the ⅝" radiator hose to length and attach it to the aluminum Y outlet port. Secure using a #10 hose clamp.

53. Move the drain pan to the front of the vehicle and position it under the area shown in ***FIGURE 21***. Position the 1" aluminum Y as shown in ***FIGURE 21***, mark a 1" section of hose and cut that section of the 1" hose. Discard the 1" section. Insert the aluminum Y with the ⅝" port of the aluminum Y facing the radiator. Secure the two ends with the #16 hose clamps. Leave the short ⅝" radiator hose disconnected for future use.

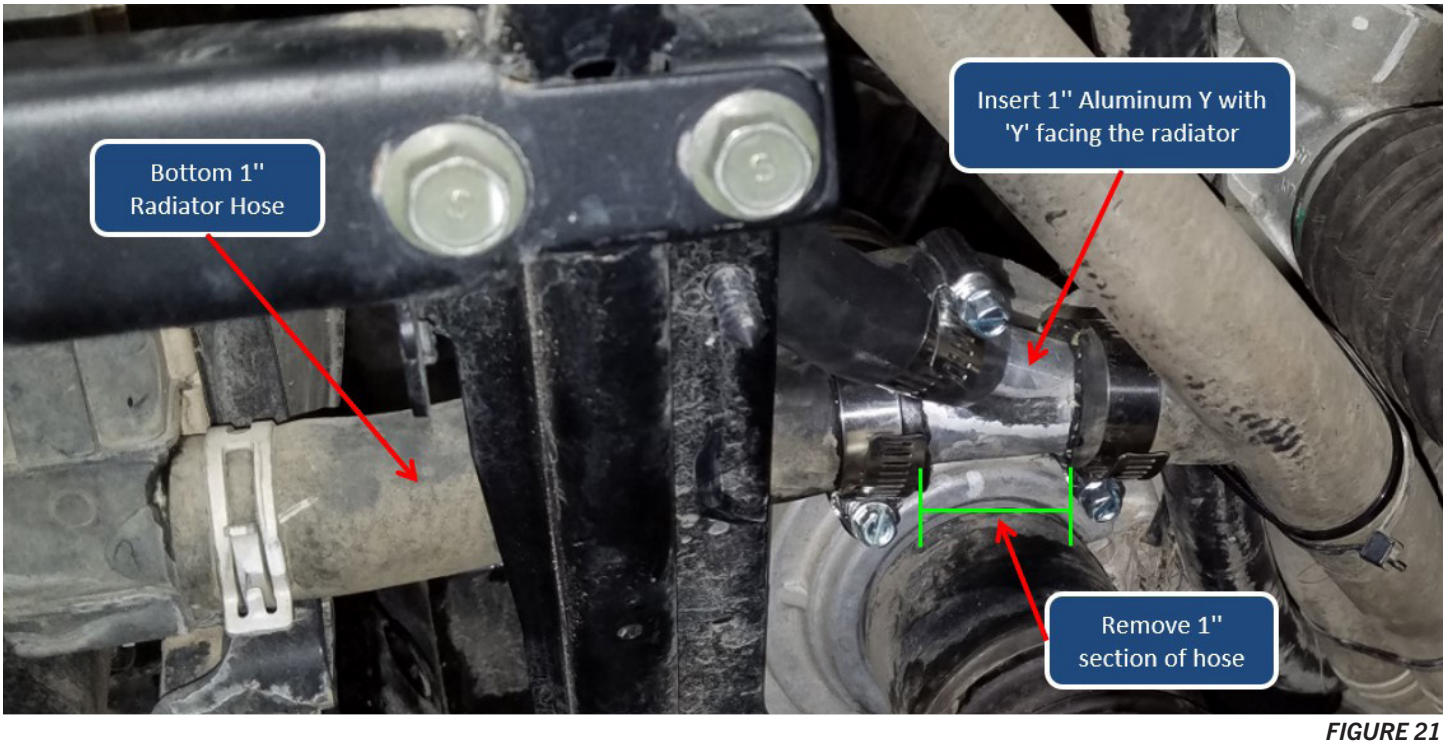


FIGURE 21

54. Install the plastic shutoff valve in the long piece of ⅝" radiator hose by cutting the hose and inserting the plastic shutoff valve as shown in ***FIGURE 22***. Secure using two of the #10 hose clamps.

55. Zip tie the two ⅝" hoses together as shown in ***FIGURE 22***. Loosely zip tie the hoses to the frame that the heater box is mounted to. This will keep the hoses from rubbing against the radiator.

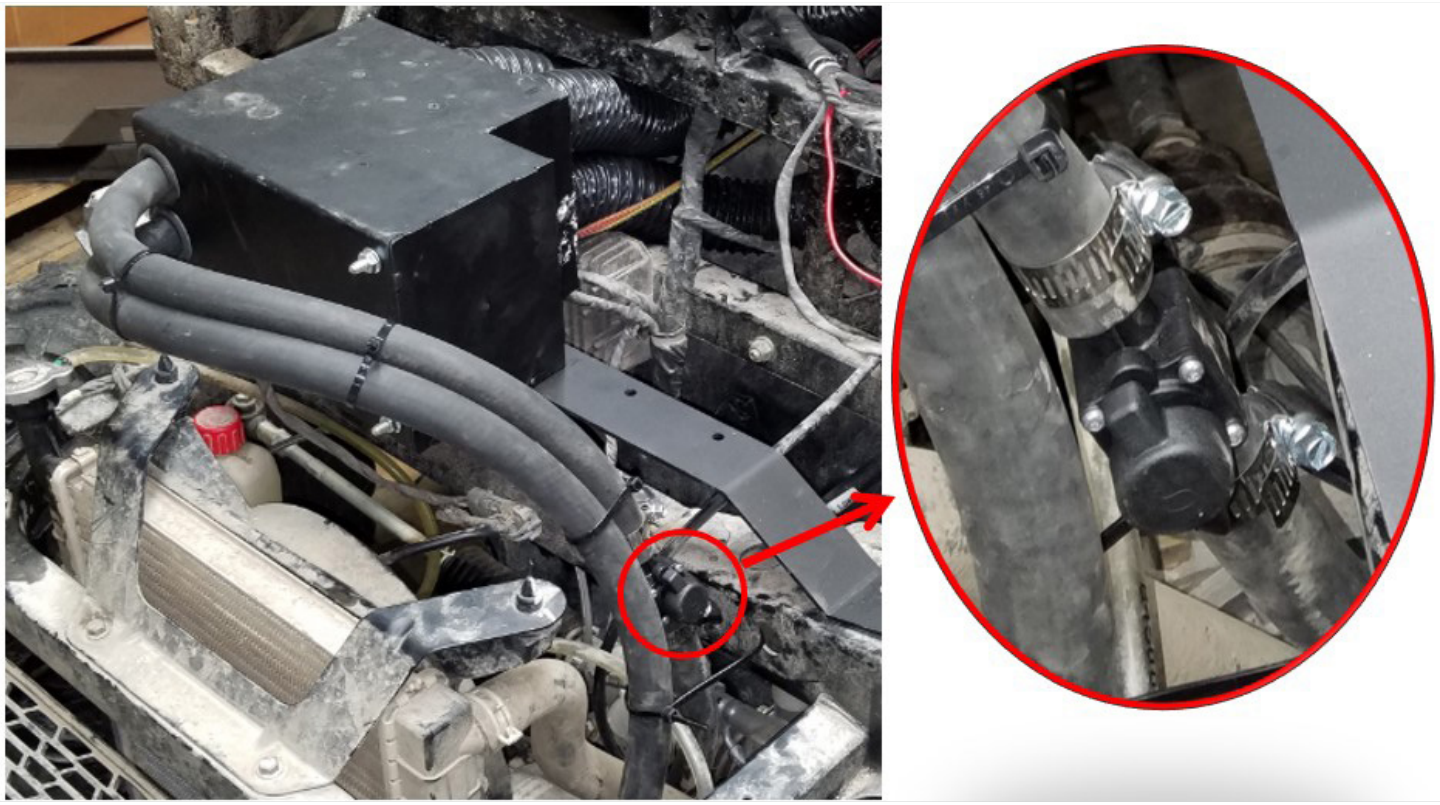


FIGURE 22

56. Insert the air filter (Replacement Filter #491588) into the air filter rentention bracket as shown in ***FIGURE 23***. Insert the assembly into the heater box and secure it with the two ¼" serrated flange nuts. Change the filter annually or as needed.

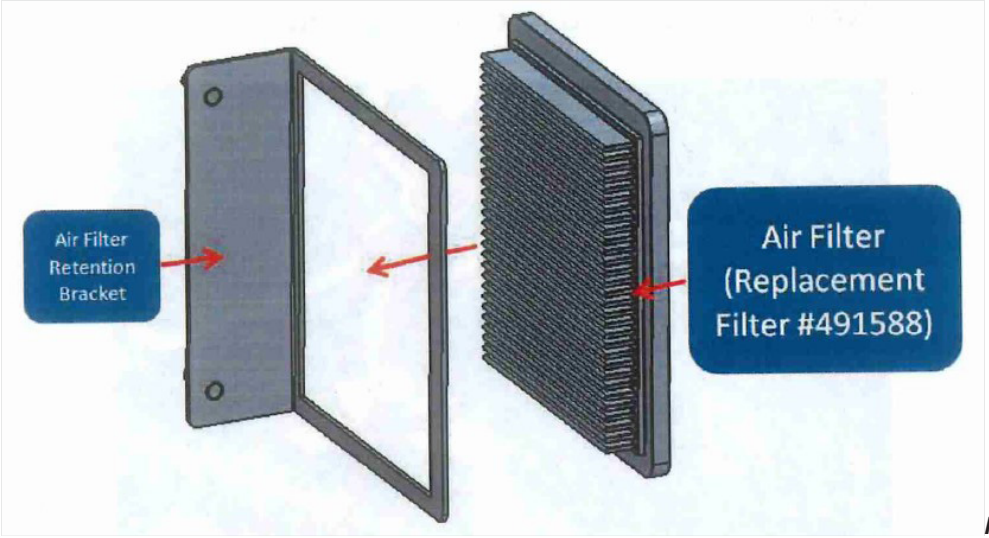


FIGURE 23

BLEEDING THE COOLANT SYSTEM

Read entire section before proceeding

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.

57. Fill radiator with coolant until radiator is full.

Look at owner's manual for manufacturer-approved coolant

58. Open the shutoff valve.
59. Close the radiator cap and drive the machine around until heat comes through the vents or the machine's engine temperature goes above 200°F.
60. Turn off the machine and wait for it to cool down.
61. Open the radiator cap and add more coolant.
62. Repeat the steps in this section until consistent heat is coming out of the vents and machine temperature gauge stays under 200°F.
63. Verify that no leaks have occurred and that the radiator fluid level is per the manufacturer's specifications.

FINISHING

64. Reinstall all doors if applicable.
65. Replace the front windshield, if applicable.
66. Return the tilt bed to the down position.
67. Replace the front hood and reconnect all electrical connections.