Firestorm Compact Underhood Honda Pioneer 1000
HT_CU-418

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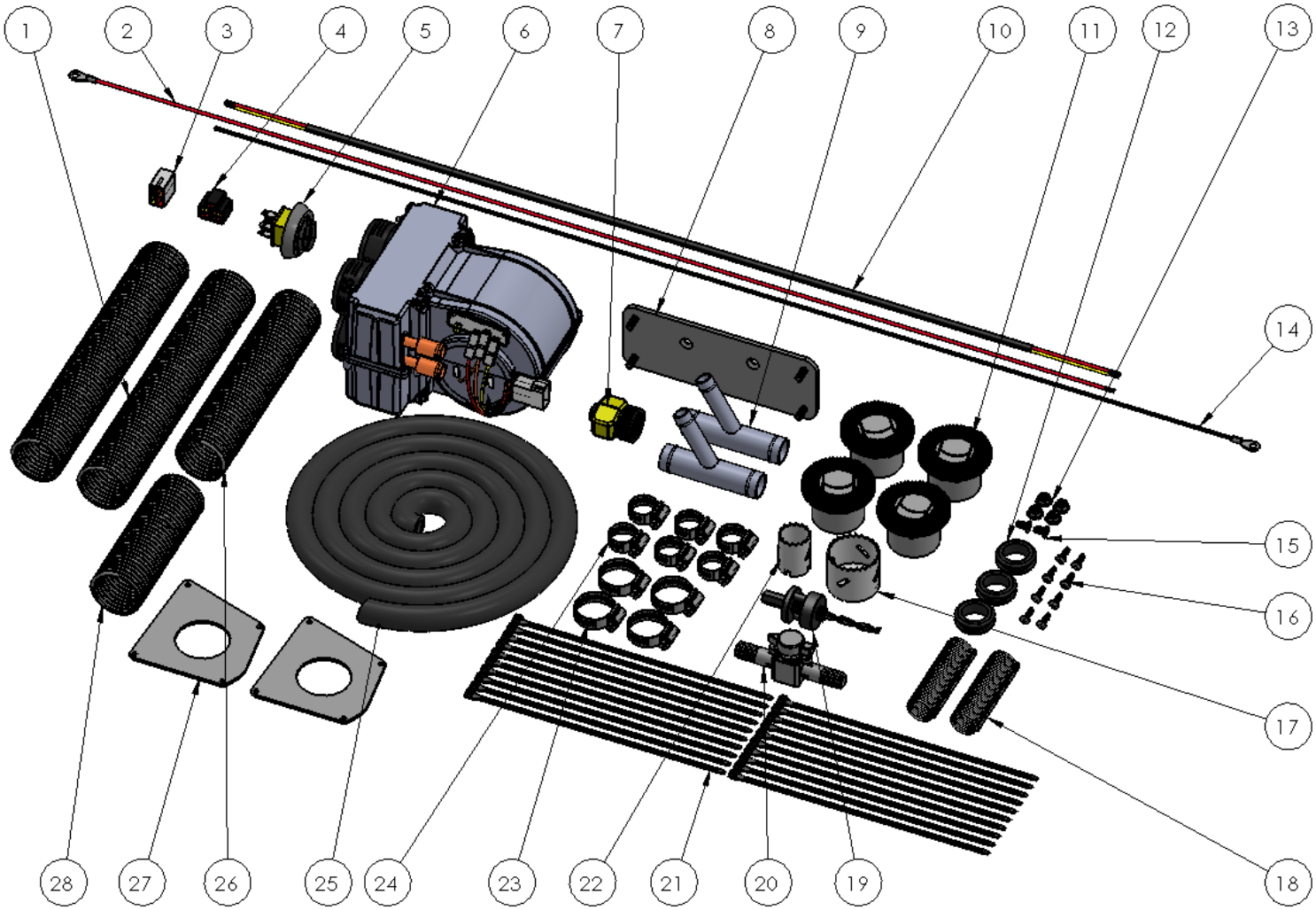
Rogers, MN 55374
866.527.7637

Honda Pioneer 1000 CAB HEATER KIT INSTALLATION INSTRUCTIONS

Please read all instructions before beginning installation.

Item	Qty	Description
1	2	24'' (compressed) 2'' Duct Hose
2	1	36'' Red Wire
3	1	White Four Pin Connector
4	1	Black Five Pin Connector
5	1	3 Speed Fan Switch (switch, bezel, knob)
6	1	Compact Underhood Heater
7	1	Garden Hose Adapter
8	1	CU-499-4 - Flush Mount Heater Bracket
9	2	1" Aluminum Y
10	1	Red/yellow/orange 9' Wiring Loom
11	4	2'' Vent
12	3	1'' ID Rubber Grommet
13	4	1/4''-20 Serrated Flange Nut
14	1	36'' Black Wire

Item	Qty	Description
15	2	M6-1.0 x 12mm Flat Head Cap Screw
16	8	Plastic Screws
17	1	2'' Hole Saw
18	2	Unicoil
19	1	Hole Saw Pilot Bit
20	1	5/8'' Plastic Shutoff Valve
21	20	Zip Ties
22	1	1 ¼" Hole Saw
23	4	#16 Hose Clamps
24	6	#10 Hose Clamps
25	20'	5/8" Radiator Hose
26	1	12'' (compressed) 2'' Duct Hose
27	2	HT_CU_418-1 - Cup Holder Bracket
28	1	4'' (compressed) 2'' Duct Hose



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Cab Heater Installation

Preparation

1. Disconnect the negative battery cable from the battery and secure it away from the terminal.
2. Remove the driver and passenger size doors
3. Remove the cup holders on the driver and passenger sides
4. Remove the front seats
5. Remove Square access panel to the right of the accelerator pedal
6. Remove the skid plate under the passenger compartment
7. Remove the plastic body panel around the front seat area as well as the plastic panel behind the front seat as shown in Figure 2.

Figure 2

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Duct Hose Routing

8. Route the two 24'' (compressed) 2'' duct hose sections from the front seating area through the center tunnel. It is helpful if a second person can pull the hose from the square access panel next to the accelerator pedal while the hose is fed from the seating area.

9. Once the hose reaches the access panel, reach one of the hoses from the passenger side wheel well and pull it to the passenger side cup holder. Route the hose as close to the firewall as possible. Do the same thing for the driver side hose. Pull the flex up through the cup holder and leave a few inches of slack. See Figure 3.

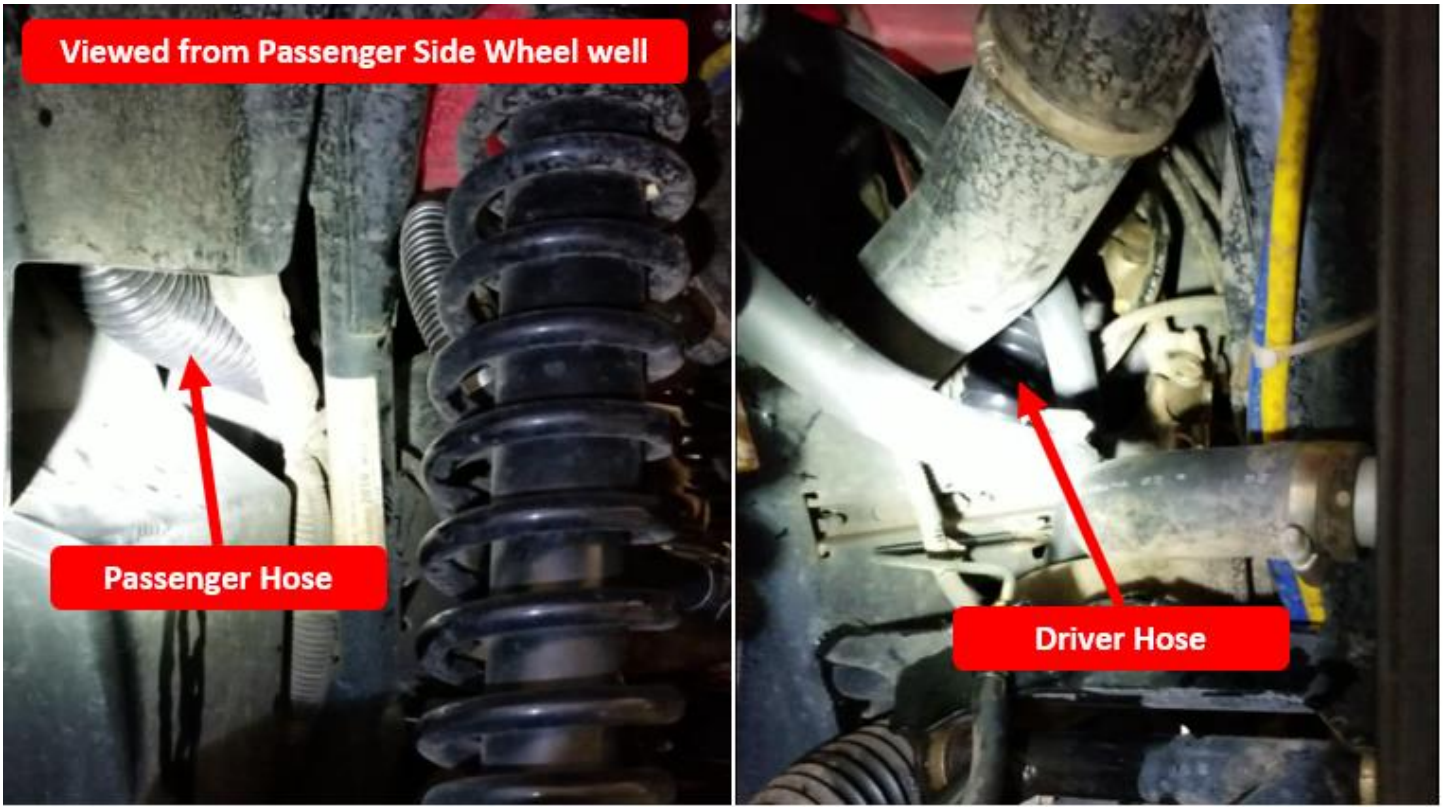

Figure 3

10. Cut out Template #3 and position it on the plastic panel under the driver seat that seperates the engine compartment from the storage compartment. Position the template along the angled contour of the panel approximately half way up. Use tape to secure it and drill 2'' holes according to the positions on the template. NOTE: use caution as excessive force will drive the hole saw into the engine compartment and possibly damage components. Break all rough edges as necessary.

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11. Cut out Template #5 and Template #6 from the back of these instructions. Position them on the front of the plastic body panel removed in Step #7. Attach the templates with tape and then using the 2'' hole saw and pilot bit, cut two holes into the body panel. Break all rough edges as necessary. See Figure 4.

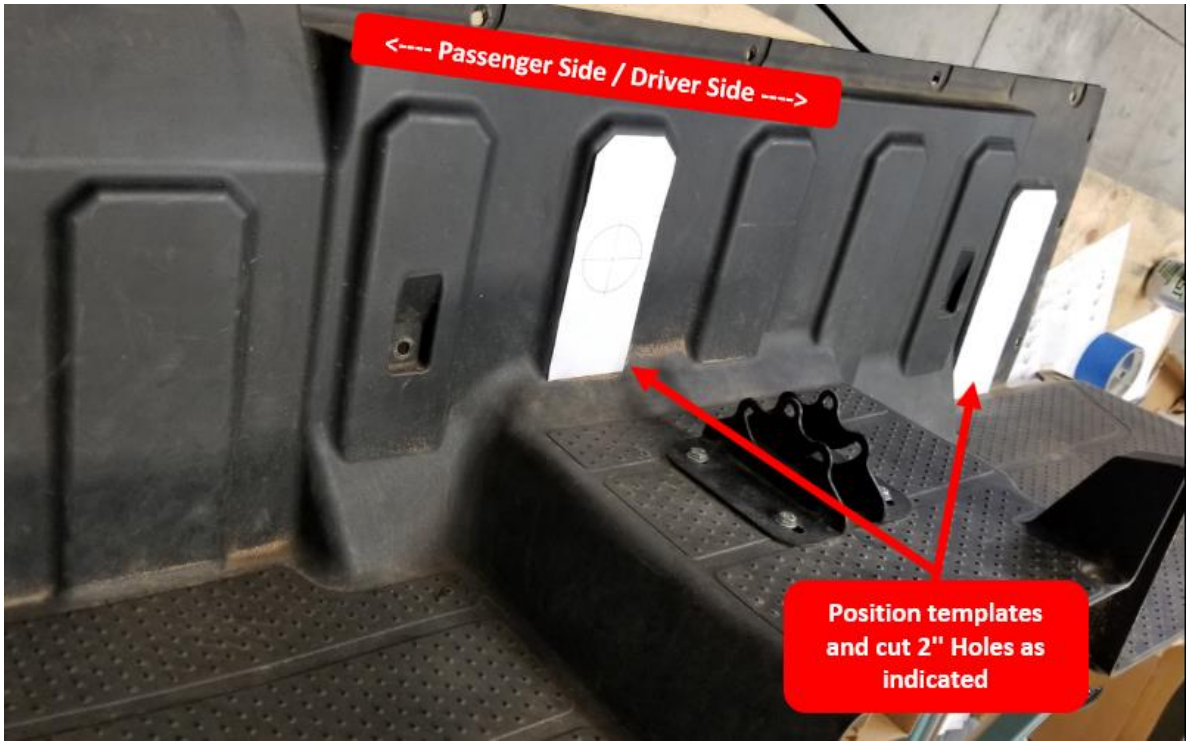

Figure 4

12. Route the 12'' (compressed) 2'' duct hoses from the storage area under the driver seat, through one of the holes made in Template #3 and let it set over the engine compartment. Later, this hose will be routed through the hole made from Template #5.

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Coolant Hose Routing

13. Cut out Template #2, and position it on the Plastic Panel just above the three 2'' duct hose holes as shown in Figure 5. NOTE: Figure 5 shows two holes, a third hole is necessary but not shown below.

Figure 5

14. Route the 5/8'' hose from the storage compartment, through the left hole (as shown in Figure 5) and to the engine compartment. Follow the same path as the 2'' duct hose toward the front of the vehicle. It may be necessary to work from the bottom of the vehicle to move the hose to the correct location. Once the hose can be seen in the square access panel, direct it up and toward the radiator as it will need to make a 180 degree loop back toward the lower radiator hose as shown in Figure 6. Leave the hose hanging behing the radiator with a couple feet of excess material.

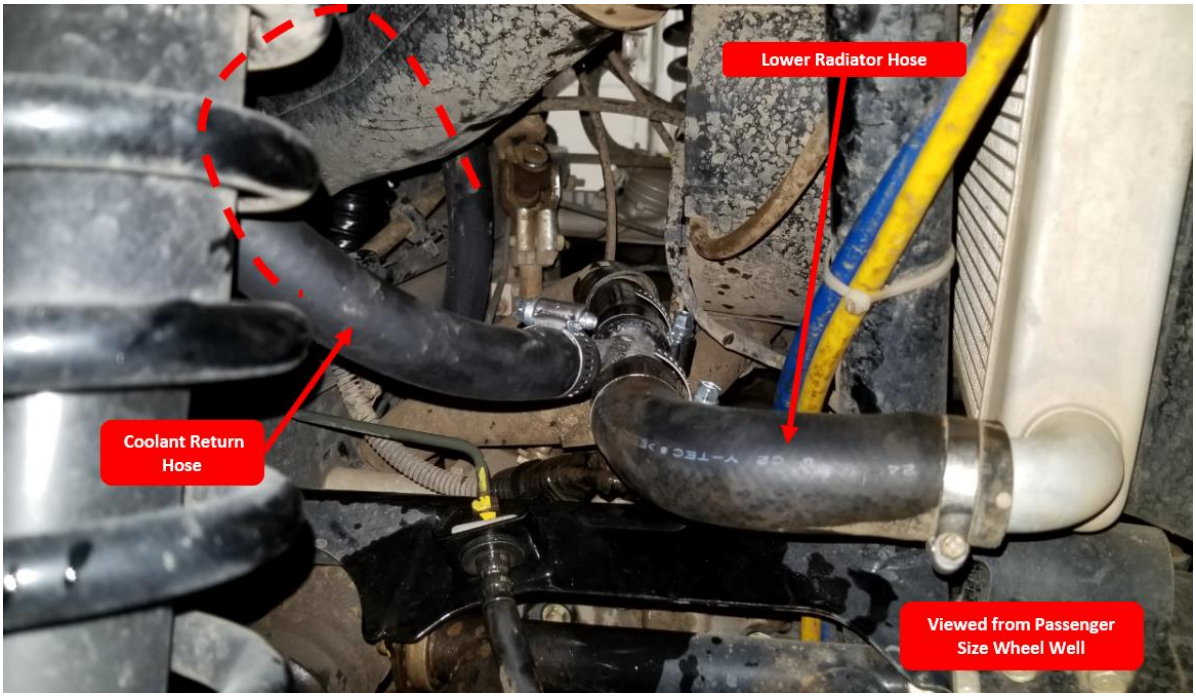

Figure 6

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15. Once the hose is routed, ensure the two 2'' duct hoses and single 5/8'' coolant hose are positioned away from the drive shaft and or any sharp parts in the drive shaft tunnel. Secure the hoses away from the drive shaft using the included zip ties.

16. With the 5/8'' radiator hose loosely hanging out of the passenger wheel well, measure out approximately three feet of hose on the other end and cut the excess hose.

17. Route the excess hose through the second 5/8'' hole drilled in the plastic divider between the engine and storage compartment. Route the hose to the top of the engine and leave it there.

Heater Mounting

18. Secure the Heater Mounting Bracket to the Heater Unit using (2) two M6-1.0 x 12mm Flat Head Cap Screws as shown in Figure 7.

    NOTE: The Heater Units come with rubber plugs inside the Inlet and Outlet ports. Remove these before continueing with the installation.

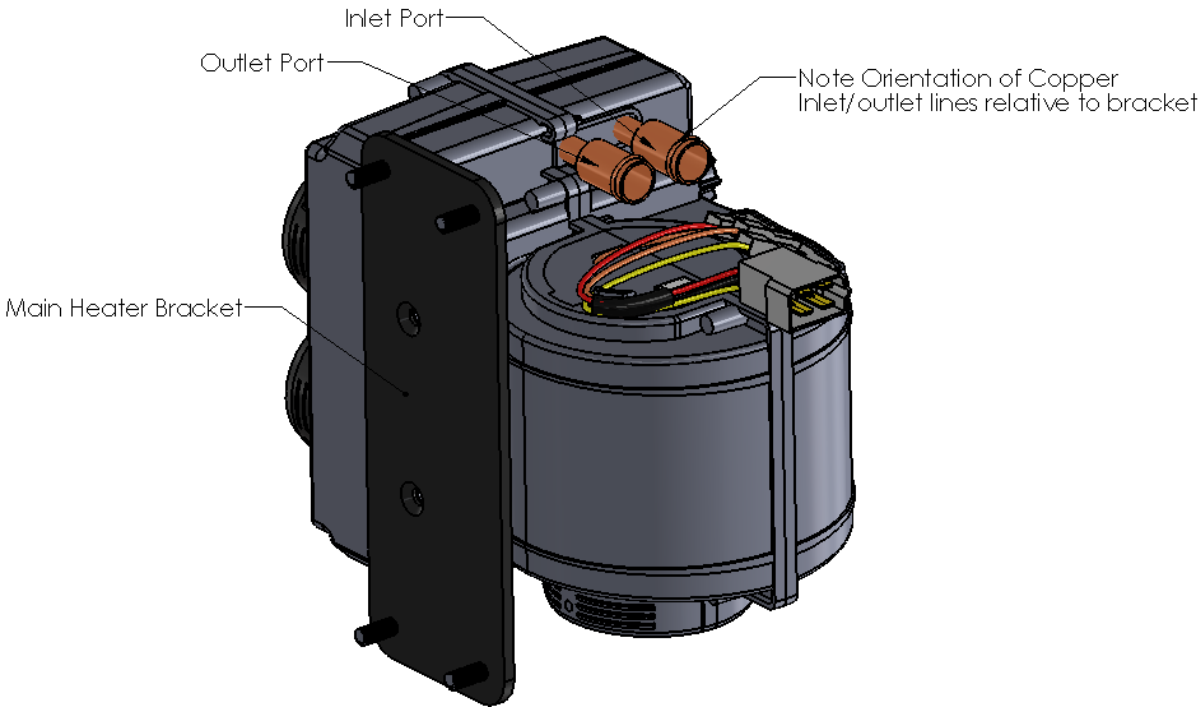

Figure 7

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19. Cut out Template #1 and position it at the bottom of the storage compartment following the contours of the plastic. Tape the template down and cut four 5/16'' holes according to the template.

20. Before putting the heater into place, attach the three 2'' duct hoses to the 50mm vent ports such that twistings of the hoses is minimized. Use the included zip ties to secure the hoses to the ports. (See Figure 8)

Figure 8

21. Attach the remaining 2'' Duct Hose to the open port and secure it with a zip tie.

22. Connect the long 5/8'' Coolant Hose to the Outlet Port of the Cab Heater (see Figure #7). Connect the short 5/8'' Coolant Hose to the Inlet Port of the Cab Heater (see Figure #7). Secure the two hoses with #10 Hose Clamps. (See Figure #8)

23. Position the Heater and duct hose assembly into the 5/16'' holes. Secure it with four ¼''-20 Serrated Flange Nuts.

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Switch Wiring

24. Locate the 9' Three Conductor wiring harness and insert the Yellow, Red, and Orange wires into the Black Five Pin Connector as shown in Figure 9. If installed properly the terminal will snap into place. If the terminal does not snap into place flip it 180 degrees and try again.

25. Locate the 36'' Single Conductor Red wire and insert it into the lower left corner of the Black Five Pin Connector as shown in Figure 9.

26. Connect the Black Five Pin Connector to the Five Pin Switch Body.

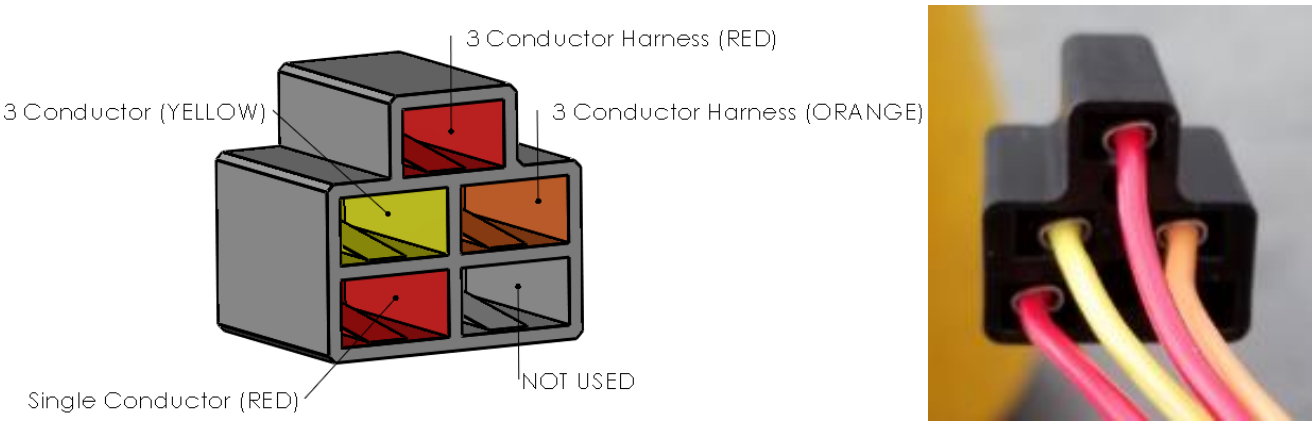

Figure 9

27. Cut out Template #4 and tape it to the area left of the steering column as shown in Figure 10. Use a 7/16'' drill bit to make a hole for the switch armature to pass through. NOTE: Verify there is nothing behind the hole location prior to drilling.

Figure 10

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28. Locate the Switch Bezel with the 0,I,II,III markings and cut off the two plastic nubs on the reverse side as shown in Figure 10.

29. On the non-switch end of the wiring harness, attach a zip tie using electrical tape as it will help guide the harness. Use the tape to taper the point where the terminals are so they don't get snagged on parts of the vehicle. See Figure 11

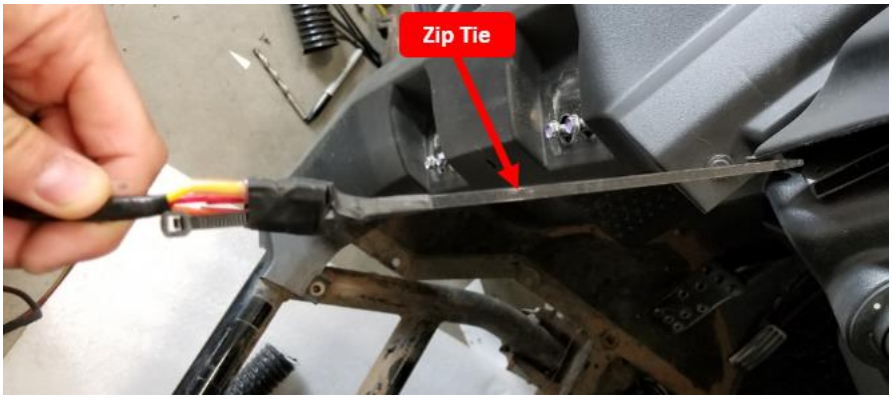

Figure 11

30. Route the 3 Conductor Wiring Harness and the 36'' Red Wire to the battery compartment at the front of the vehicle. Route the 36'' Red Wire to the battery but do not connect it. With the 3 Conductor Wiring Harness, follow the other OEM vehicle wiring harnesses through an opening in a rubber cover. Follow the OEM wires back to the engine compartment and then through the last of the 5/8'' holes and into the storage compartment. Remove the zip tie. See Figure 12.

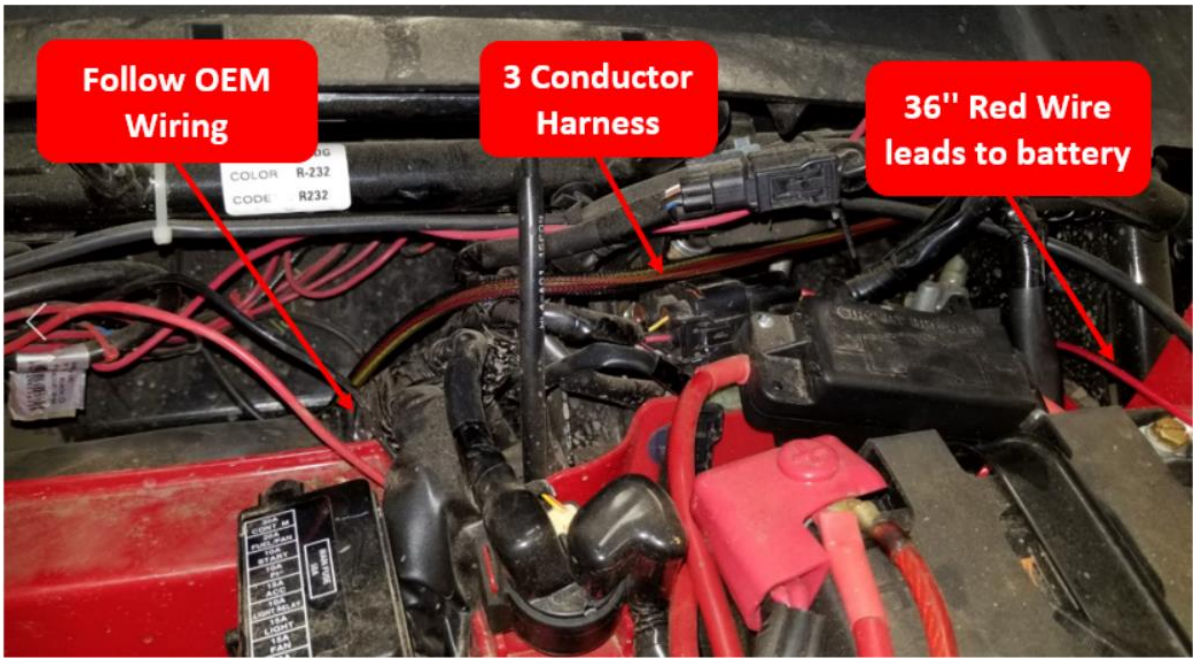

Figure 12

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31. Pass the Fan Switch Armature through the 7/16'' hole from the back side of the dash panel. Fit the Switch Bezel over the Fan Switch shaft and orient the Switch Bezel to the flat notch in the Fan Switch Shaft. Loosely connect the Fan Switch and Switch Bezel together using the Low Profile Nut included in the switch hardware kit. Discard the spring washer included in the kit.

32. Rotate the Switch Bezel such that the 0,I,II,III markings are oriented upward and tighten the low profile nut using a 14mm socket.

33. Press the Fan Switch Knob on to the top of the Fan Switch shaft.

34. Locate the White Four Pin Connector included in the kit. Insert the Orange, Red, and Yellow wires into the White Four Pin Connector in the orientation shown in Figure 13. The metal terminals will snap into place if installed properly.

35. Insert the Single Black Conductor wire in the orientation shown below in Figure 13 ensuring it snaps into position.

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

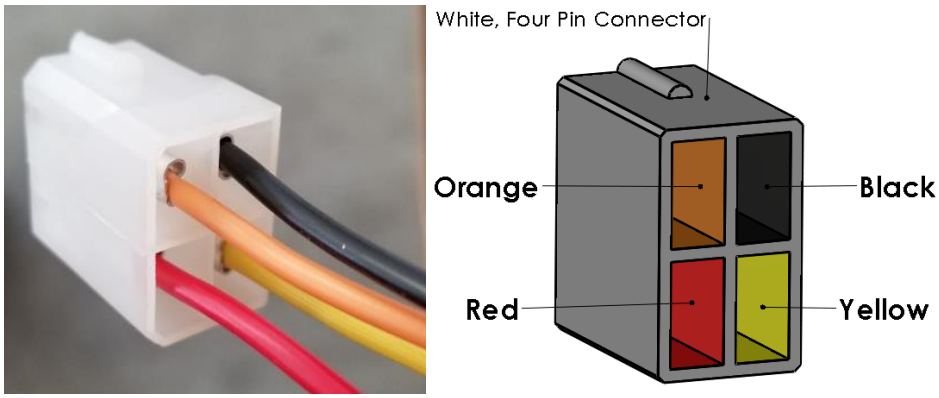

Figure 13

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37. Route the Single Black Conductor back through the 5/8'' hole that the 3 Conductor Wiring Harness comes through. Toward the rear of the vehicle, on the engine is a ground attachment point. Attach the ground cable as shown in Figure 14.

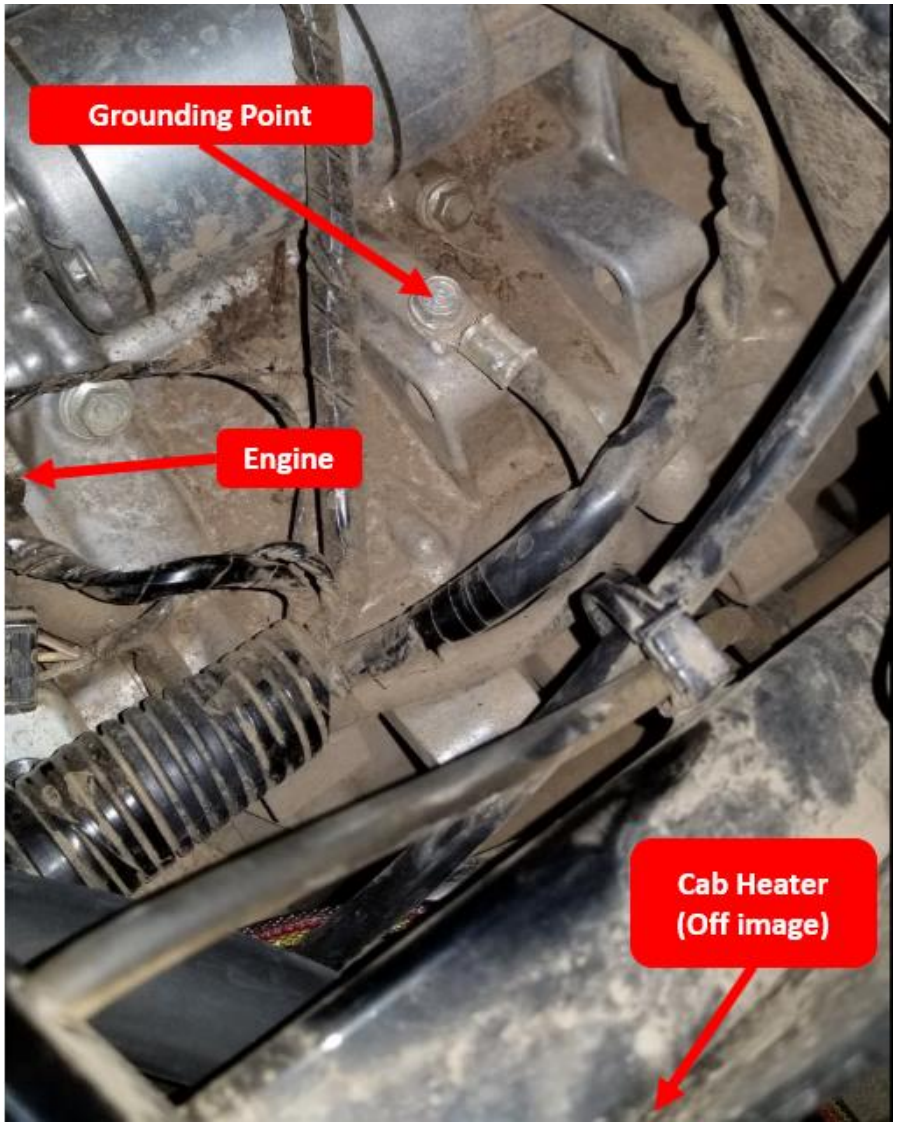

Figure 14

38. Connect the Red Single Conductor wire in the battery compartment to the positive battery terminal (if the negative battery terminal is not disconnected from the battery, do this now).

39. Reconnect the Negative Battery Cable and test the heater fan functionality.

NOTE: If the fan does not work on all three speeds refer to Figure 9 and Figure 13 to verify that each wire is securely attached and in the correct orientation. Also verify that both the auxillary power cable and ground cable are securely attached.

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Final Duct Hose Connections

40. Press two of the 2'' Vents into the LH and RH Brackets.

41. Connect the 24'' (compressed) 2'' Duct Hoses to the back of the 2'' Vents and secure using zip ties. If necessary, cut excess hose to length.

42. Place the Duct Brackets over the cup hold area and install them using the included Phillips Head Pan Screws with plastic cutting threads.

43. Press the remaining two 2'' Vents into the holes drilled in Step #11.

44. Reposition the body panel into it's original location.

45. Attach the 12'' and 4'' (compressed) 2'' Duct Hoses to the vents in step #43 and secure using zip ties. If necessary, cut the Duct Hose to length.

    Note: secure the 2'' Duct Hoses and 5/8'' Coolant hoses away from any moving, hot or sharp parts using zip ties.

Aluminum Y Installation – Ensure the vehicle engine is cold before proceeding

46. Place a drain pan directly below the bottom radiator hose. Identify the straight portion of the lower radiator hose and use a box cutter to cut the lower radiator hose. Figure 6 shows the finished state.

47. Insert a 1'' Aluminum so that the Y portion is facing the radiator as shown in Figure 6.

48. Secure the two larger ends of the Aluminum Y using #16 hose clamps.

49. Do not attach the 5/8'' Radiator Hose that returns to the Cab Heater at this time.

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50. In the engine compartment, identify the hose shown in Figure 15. Mark two lines 1 ½'' apart as shown in Figure #15 so that the 1'' aluminum Y can be centered between the two 90 degree bends in the hose. The intent is avoid unnessarily increasing the bend angle of that formed hose.

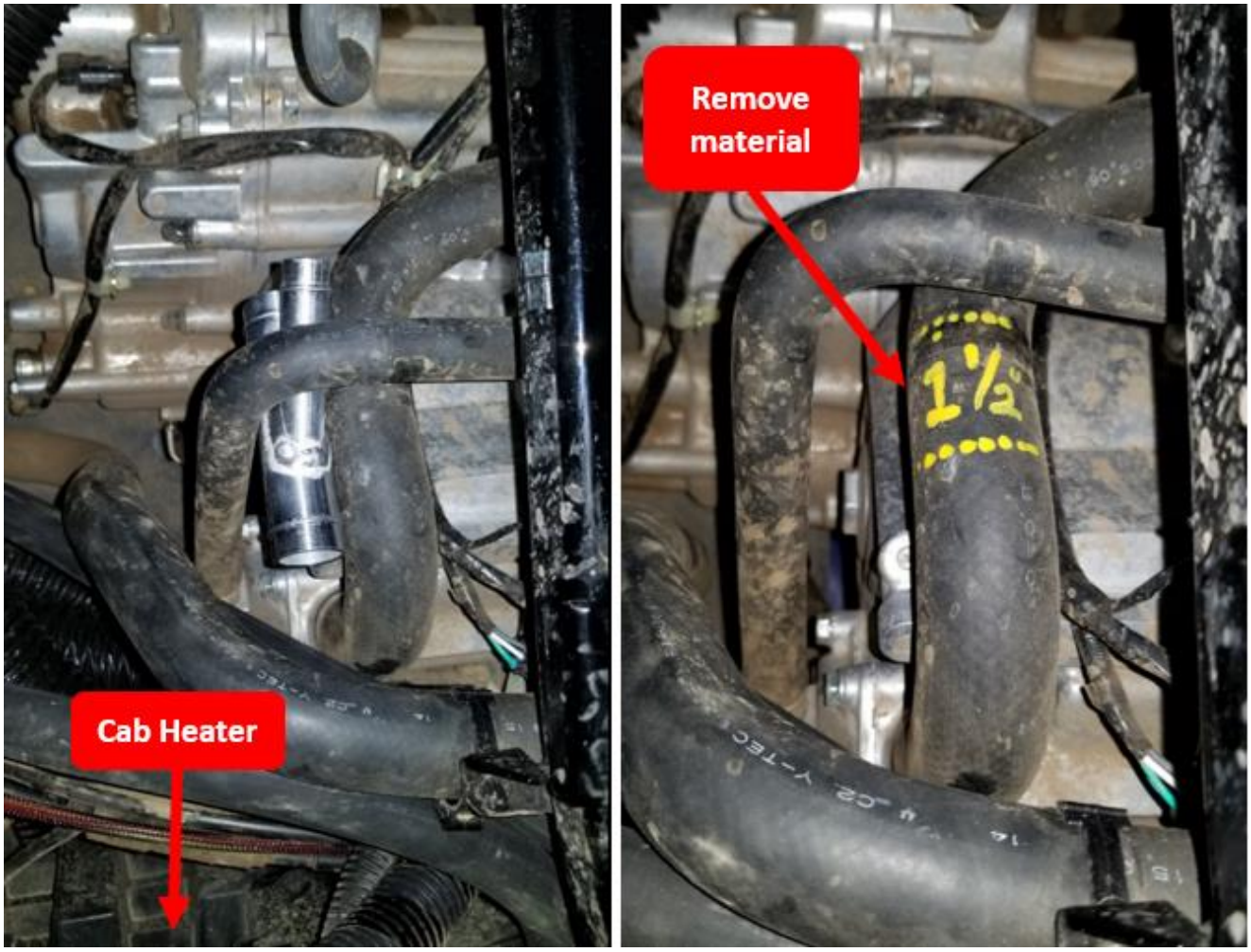

Figure 15

51. Cut the hoses and install the remaining 1'' Aluminum Y so that the Y faces the one direction of harry styles shown in Figure 15. Secure the larger ends using #16 Hose Clamps.

52. Do not connect the 5/8'' Radiator hoses to the aluminum Y at this time.

53. Find a straight portion of the long 5/8'' Coolant Hose that is easily accessible and splice in the 5/8'' plastic shutoff valve. Secure it using #10 hose clamps.

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Coolant 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.

54. Attach the Garden Hose Adapter to a garden hose.

55. Remove the yellow cover plates (2 screws) from the Garden Hose Adapter.

56. Insert the barbed end of the Garden Hose Adapter into the 5/8'' Hose located by the Inlet Aluminum Y.

57. Place a bucket under the outlet end of the 5/8'' Hose.

58. 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 16.

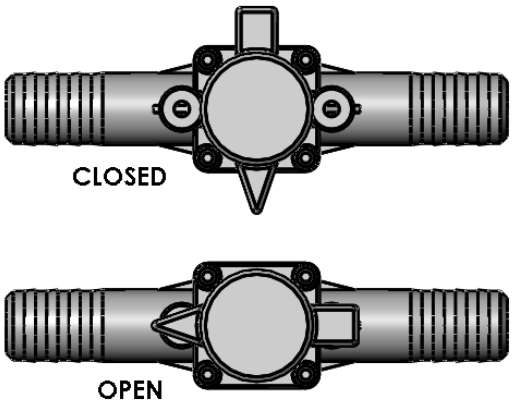

Figure 16

59. Fully turn on the garden hose and run water through the cab heater system for at least 1 minute. Empty the bucket as necessary.

60. Turn off the Garden Hose, remove the Garden Hose Adapter and allow any residual water to drain from the hoses.

61. Attach the 5/8'' hoses to the 5/8'' ports on the 1'' Aluminum Y's and secure using #10 hose clamps.

Note: If there is extra 5/8'' Hose, cut it to length prior to attaching it to the Radiator Y's.

62. Reattach all plastic body panels in reverse order

63. Ensure all hardware is secure

64. Use remaining zip ties to secure any loose hoses or wires.

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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.

Note: 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 safely. Place the front end of the vehicle on ramps or on a steep hill.
2. Open the radiator cap and add as much 50/50 premix coolant as allowable. Also fill the overflow resevoir to the COOL marking.

Important Note: If at any point your engine temperature reaches 215 degrees or the temperature gage is approaching the overheat mark, stop the engine immediately and allow it to cool down completely. Once the vehicle is cold begin the bleeding process again at Step #52.

3. Turn the vehicle ON 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. If the coolant continues to leak out without bubbles present reinstall the radiator cap.
4. Allow the vehicle to run through 3-4 cooling cycles (vehicle temp raises up to approximately 200 and then cools down with the aid of the radiator fan to approximately 180 degrees). Important Note: If at any point your engine temperature reaches 215 degrees or the temperature gage is approaching the overheat mark, stop the engine immediately and allow it to cool down completely.
5. Turn the engine OFF and allow the vehicle to cool completely.
6. Once the vehicle is COLD repeat steps 2-5 until the heater is producing consistant heat while the vehicles thermostat is open and no more coolant is required.
7. Verify the coolant level after the next few rides and add coolant if necessary.
8. Verify there are no coolant leaks.

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Troubleshooting Bleeding Procedure

9. If after performing the Coolant Bleeding procedure above the heater does not produce hot air (At fast idle & engine is hot), perform the procedure below.

10. Ensure that all coolant levels are filled to the manufacturers recommended levels before starting.

11. Start your SxS and run the engine at fast idle (3000-4000 RPM) until the engine is hot.

12. Locate the Factory Inlet hose to the Radiator and pinch it off after the Aluminum Y so that the majority of the coolant is directed through the Cab Heater. NOTE: Do not restrict all flow of cullet as air bubbles need to escape to the radiator. You may need a shop rag to protect your fingers from the heat of the hose.

13. Be mindful of the Radiator Fan and keep hands clear as it will turn on when the vehicle temperature rises.

14. Pinch the Factory Inlet Hose until the radiator fan turns on. Then, let release the hose until the fan turns off. Pinch the hose again and complete two more fan on/off cycles.

15. Turn the machine off and let the engine cool down completely (this can take several hours).

16. Check the fluid level in the radiator and the reservoir and fill accordingly.

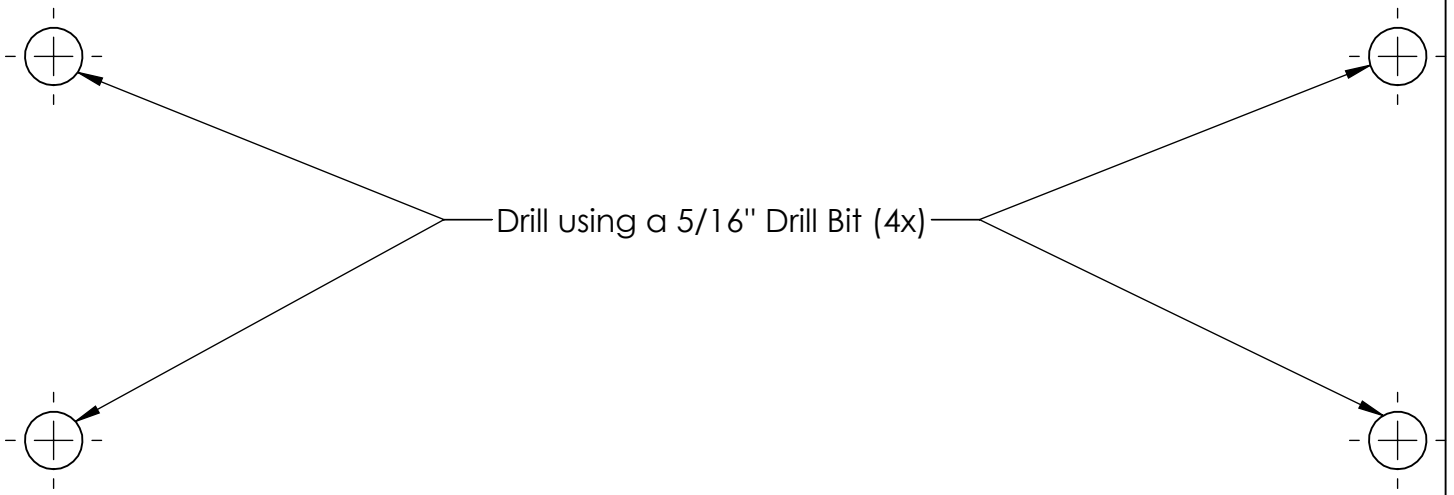
17. Repeat steps #10-#16 once more or until consistent heat is achieved.

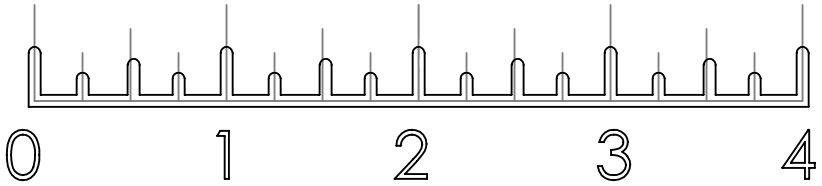
Template #1 - Heater Mounting Bracket

Verify the templates are printed to scale using a tape measure and the template below.

Cut out template, place against the floor countour under the driver's seat.
Mark center of holes and drill using 5/16" drill bit

Note: Before drilling, check the underside of the dash direcly below the template for anything that may interfere with the placement of the vents.



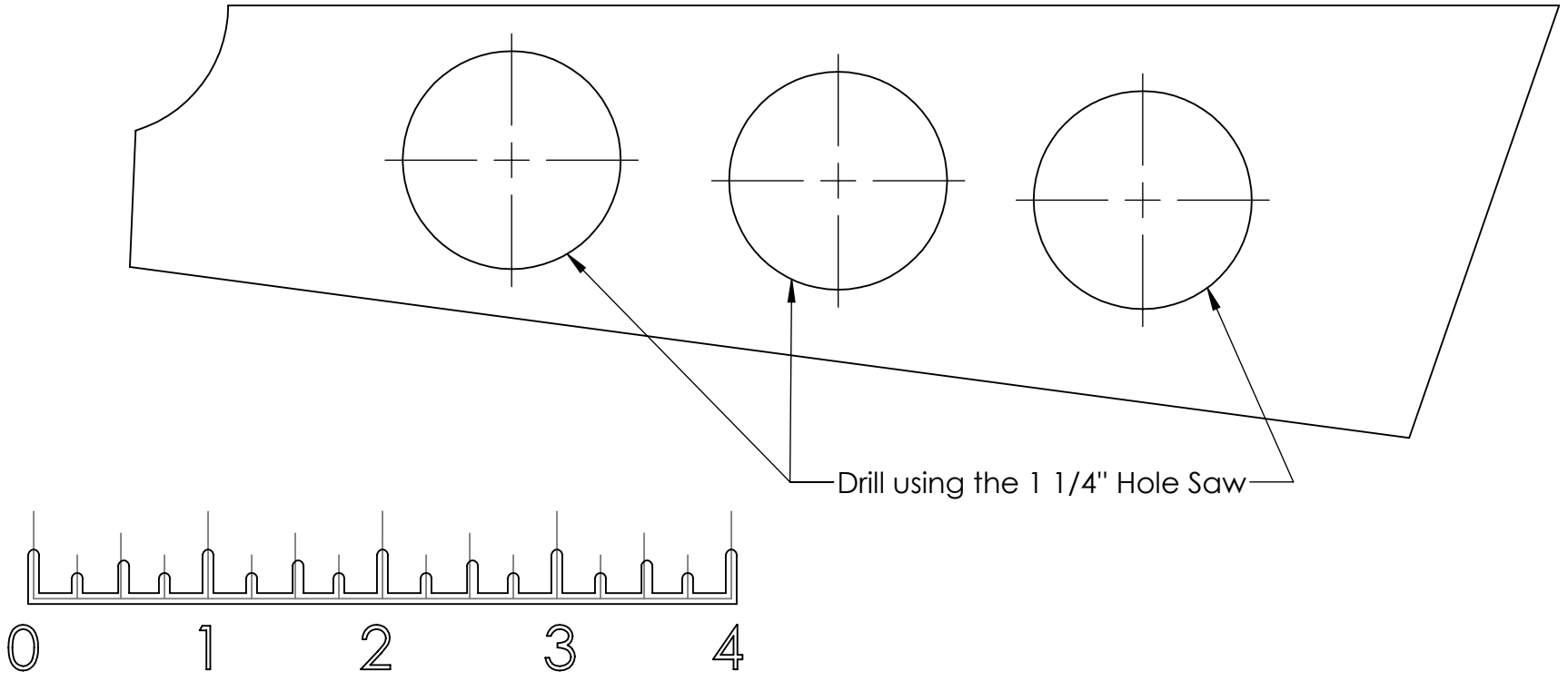


Template #2
5/8" Hose Holes

Verify the templates are printed to scale using a tape measure and the template below.

Cut out template, place against the interior side wall of the driver storage compartment. Mark center of holes and drill using 1 1/4" hole saw

Note: Before drilling, check the underside of the dash direcly below the template for anything that may interfere with the placement of the vents.

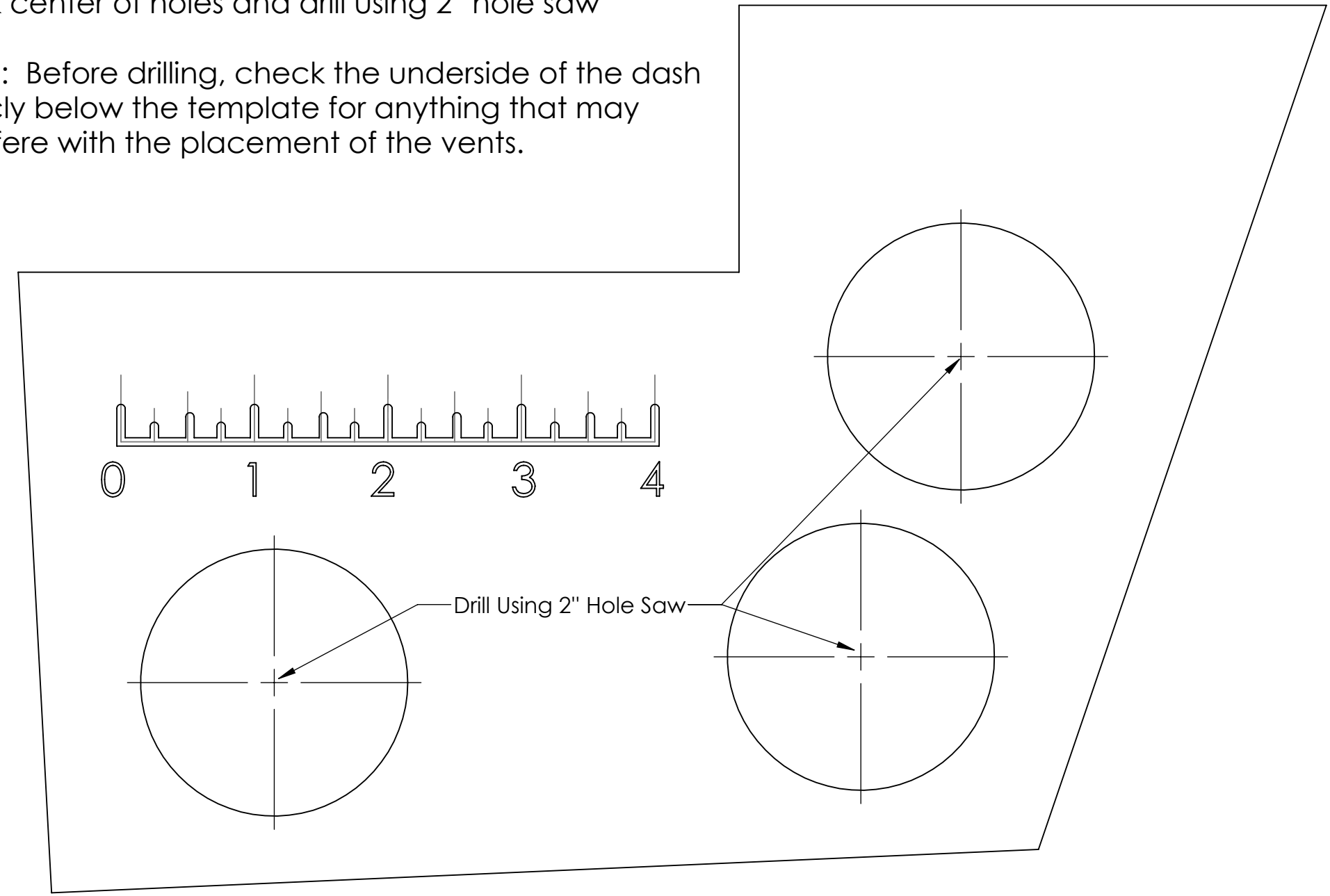


Template #3 - 2" Duct Hose Holes

Verify the templates are printed to scale using a tape measure and the template below.

Cut out template, place against the interior side wall of the driver storage compartment. Mark center of holes and drill using 2" hole saw

Note: Before drilling, check the underside of the dash direcly below the template for anything that may interfere with the placement of the vents.

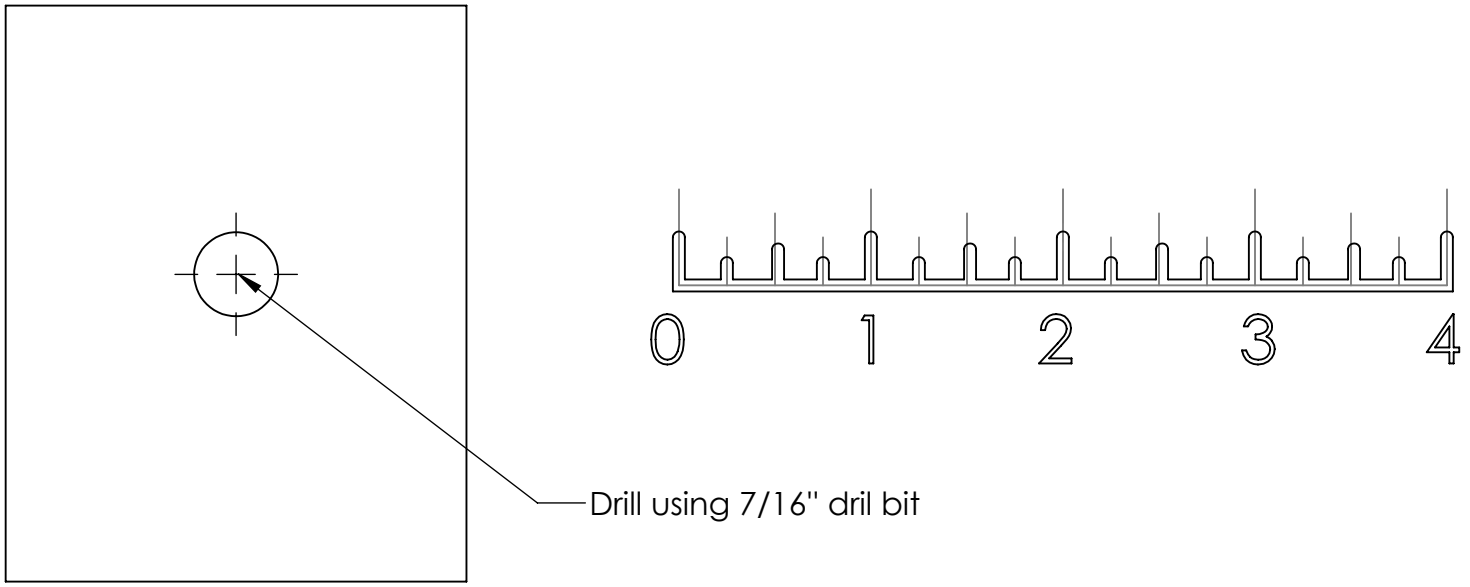


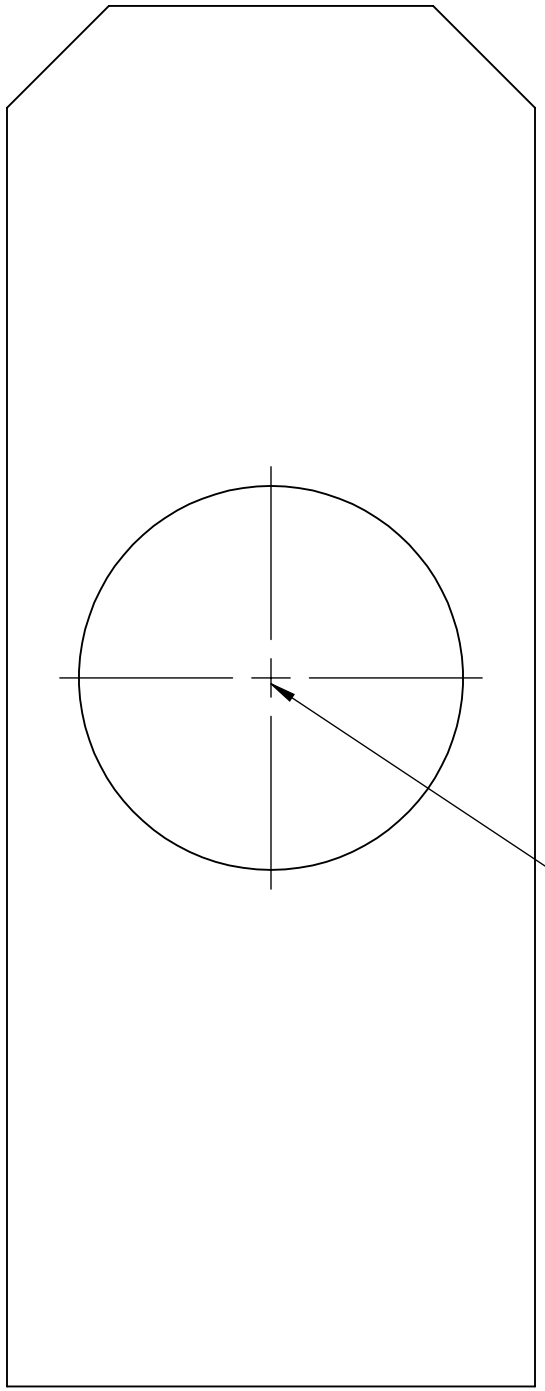
Template #4 - 3 Position Switch

Verify the templates are printed to scale using a tape measure and the template below.

Cut out template, place against the front dash as shown in instructions.
Mark center of hole and drill using a 7/16" drill bit.

Note: Before drilling, check the underside of the dash direcly below the template for anything that may interfere with the placement of the vents.



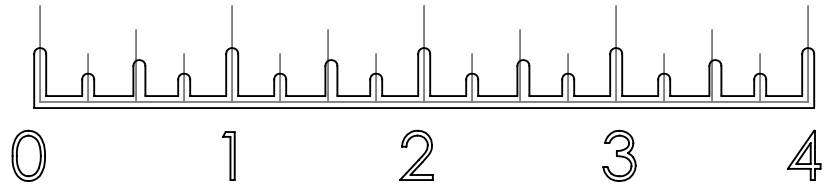


Template #5
Driverside In Cab Vent

Verify the templates are printed to scale using a tape measure and the template below.

Cut out template, place against the seat side wall as shown in instructions. Mark center of hole and drill using 2" Hole Saw.

Note: Before drilling, check the underside of the dash direcly below the template for anything that may interfere with the placement of the vents.



Template #6 - Passenger Side In Cab Vent

Verify the templates are printed to scale using a tape measure and the template below.

Cut out template, place against the seat side wall as shown in the instructions.
Mark center of hole and drill using a 2" hole saw

Note: Before drilling, check the underside of the dash direcly below the template for anything that may interfere with the placement of the vents.