



Firestorm Full Size Polaris Ranger Cab Heater
HT_CP-400

23001 Industrial Blvd
Rogers, MN 55374
866.527.7637

FULL SIZED POLARIS RANGER COMPACT 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.

Please note: These instructions are for a Full-Size Ranger. For other models, please see second set of instructions. Templates are machine specific. Verify before use.

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

Please check your kit with the parts list and picture below for all required parts.

Qty	Description
1	Ranger Heater Unit
1	Standard Heater Mount Bracket
1	5' x 5/8" Heater Hose
13	12" Cable Ties
4	#16 Hose Clamps
4	#10 Hose Clamps
1	1 1/4" Hole Saw
1	36" Ranger Wiring Loom
2	1" Y Fittings (Aluminum)
2	RH and LH Mounting Brackets
2	Heater Core Support Brackets
2	Grommets (Rubber)
1	1/4" - 20 x 1 1/2" Bolt & 1/4" - 20 Nylock Nut
4	1/4" - 20 x 3/4" Serrated Flange Bolts

Qty	Description
4	1/4" x 20 U Nuts
4	1/4" ID x 1/2" OD Spacers
6	#10 x 5/8" Screws for Plastic
4	1/4" Fender Washer
1	Duct Elbow Mounting Bracket
1	90° Duct Elbow
2	2" Defrost Vents
2	2 1/2" to 2" Stepdowns
1	2.5" Duct Y
1	2" Hole Saw
1	3" Hole Saw
1	8" x 2" Duct Hose (Compressed)
1	8" x 2.5" Duct Hose (Compressed)
1	Pilot Bit (not shown)

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Firestorm Cab Heater Important Note

Technical Support:

- Customer Support Phone - 866.527.7637 (toll free), press #1 at menu prompt
- Technical Support Phone – 866.527.7637 (toll free), press #2 at menu prompt
- Email – MotolInfo@motoalliance.com

Supplemental Instructions: Bleeding air from the coolant system:

Note: The inlet hose mentioned below refers to the line that sends coolant from the engine to the radiator.

1. Follow the bleeding procedure included in your instructions. If after following the procedure listed in the instructions you still do not get hot air from your heater (at fast idle & engine is hot), perform the procedure below.
2. Ensure that all coolant levels are filled to the manufacturers recommended levels before starting.
3. Start your SxS and run the engine at fast idle (3000 rpm) until the engine is hot.
4. Locate the inlet hose to the radiator. Pinch off the inlet hose after the radiator Y so that the majority of the coolant is bypassed through the cab heater. You may need a shop rag to protect your fingers from the heat of the hose.
5. Do this until the radiator fan turns on. Let go of the hose until the fan turns off. Pinch the hose again and complete one more fan on/off cycle.
6. Turn the machine off and let the engine cool down completely (this can take several hours).
7. Check the fluid level in the radiator and the reservoir and fill accordingly.
8. Repeat steps #3-6 once more.

The above is assuming that you followed the "garden hose" section of the instructions that came with your heater.

Black Shipping Plugs:

Please remove the black plugs that are found on the heater core lines (copper pipes on the back of the cab heater). These are used for keeping the core lines free of dust and debris during shipping.

Firestorm Compact



866.527.7637

Firestorm Underhood



3

Firestorm Upright



MotolInfo@motoalliance.com

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

Cab Heater Installation

1. Cut out the Heater Hose Hole Template (Template 1) and place on the firewall as shown in Figure 1.



Figure 1

2. Mark the hole saw centers as stated on Template 1 and remove the template.
3. Carefully drill the heater hose holes using the supplied 1 1/4" Hole Saw and Pilot Bit.
4. Install the supplied Rubber Grommets into the drilled heater hose holes.
5. Remove the lower dash panel as required.
6. Cut out Templates 2 & 3 and tape together at arrows.
Note: some trimming of the paper template may be required to line up the arrows correctly.
7. Place the template on the underside of dash panel under the storage cubby with the Template facing down toward the floor.
8. Align Templates 2 & 3 with the dash contours and tape in place.
9. Mark the hole centers and remove the Template.
10. Hold up the Main Heater Mounting Bracket under the dash. The bracket should align with the marked holes. Check the mounting alignment.
11. Adjust the marked hole centers if needed, and then remove Main Heater Bracket.
12. Carefully drill the four (4) marked 3/8" holes, as stated on Templates 2 & 3, using a 3/8" drill (not included).

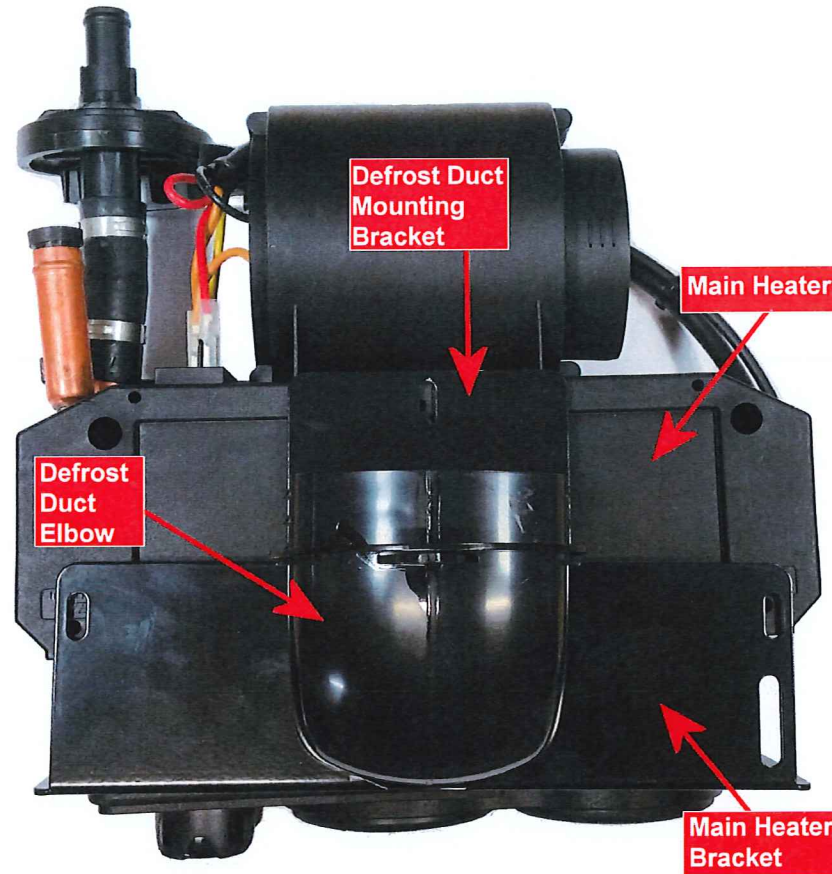


Figure 2

13. Drill the two (2) 3" holes using the supplied 3" Hole Saw and Pilot Bit, as stated on Templates 2 & 3.
14. Install the Main Heater Mounting Bracket around the Compact Heater Unit (do **NOT** insert screws at this time).
15. Insert the non-flanged end of the Defrost Duct Elbow into the oval hole in the Main Heater Mounting Bracket.
16. Using a supplied Plastic Mounting Screw, attach the Defrost Duct Mounting Bracket to the Main Heater Mounting Bracket. The oval hole in the defrost duct bracket should fit over the duct elbow and rest flush with the plastic flanges as shown in Figure 2.
17. Attach the bracket using the supplied Plastic Mounting Screws on both the top and bottom side of the bracket.
18. Remove the front side wheel well panels.
19. Using the supplied 5/8" Heater Hose, pass each end through the supplied Rubber Grommets in the firewall from the **radiator side** of the firewall. **Do not cut the 5/8" heater hose to do this.**
20. Attach the Heater Hoses to the Heater Unit (*note the lower hose clamp placement in Figure 3*):
 - top heater hose attach to the temperature control valve
 - lower heater hose to the heater core, pushing the hose completely on to the fitting

21. Install the Heater Core Support Bracket to the hoses as shown in Figure 3. **Do not over tighten.**

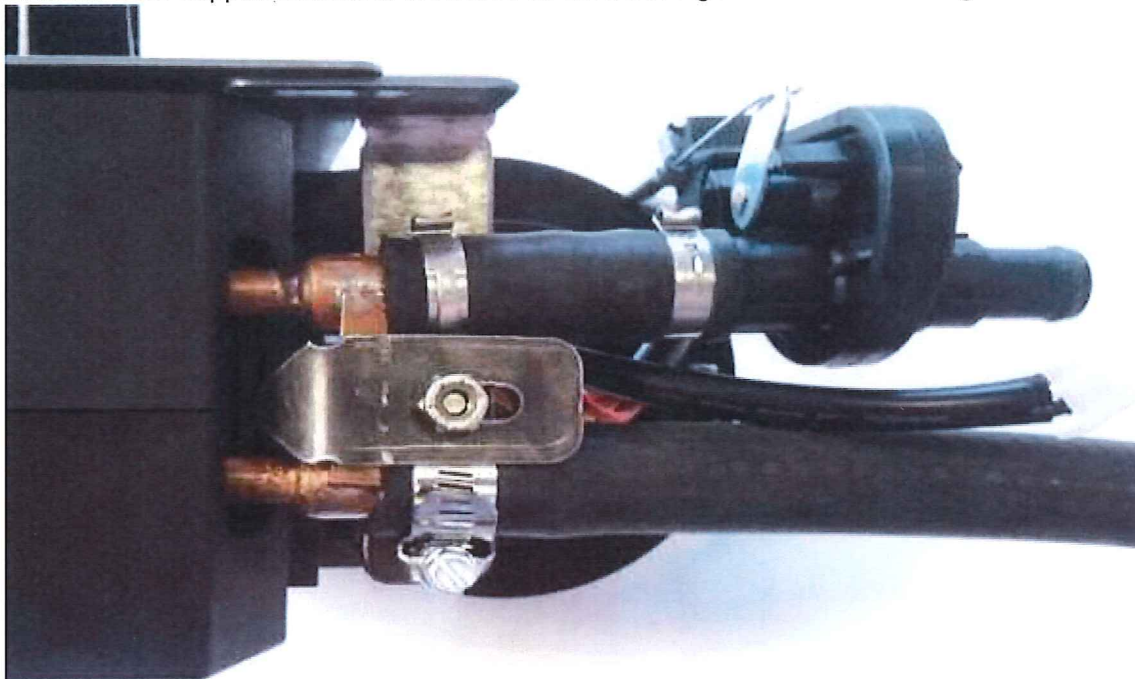


Figure 3

22. Connect the Wiring Loom to the heater:

- Connect the red wire on the wiring loom to the red wire of the heater plug.
- Connect the black wire on the wiring loom to the black wire of the heater plug.

36" Wiring Loom Polaris Ranger



23. Run the Wiring Loom through one of the drilled holes in the underside of the dash panel up to the power connection block as shown in Figure 4.

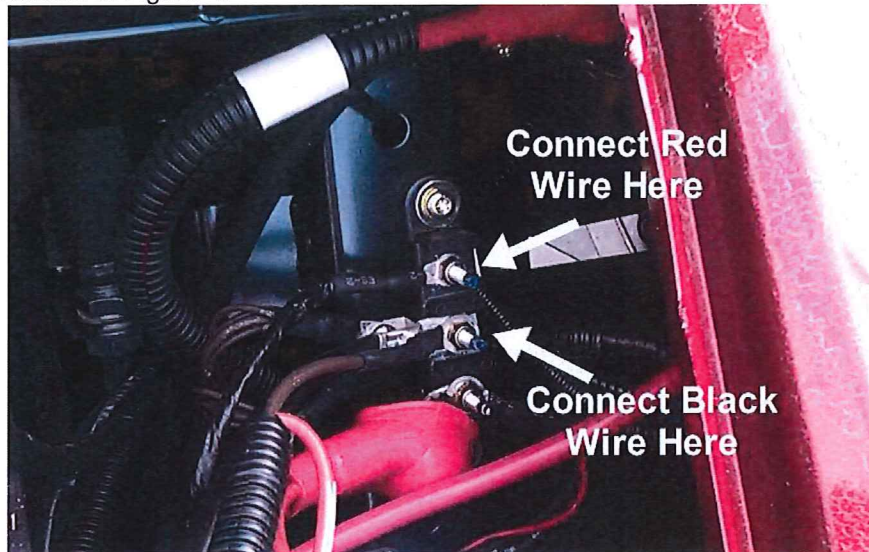


Figure 4

24. Connect the red and black wires as shown in Figure 4.
25. Reconnect the battery.
26. Turn the key on to check the fan operation.
27. Disconnect the battery and use cable ties as necessary to secure the wiring loom.
28. Install the supplied U-nuts onto the Heater Support Brackets as shown in Figure 5.

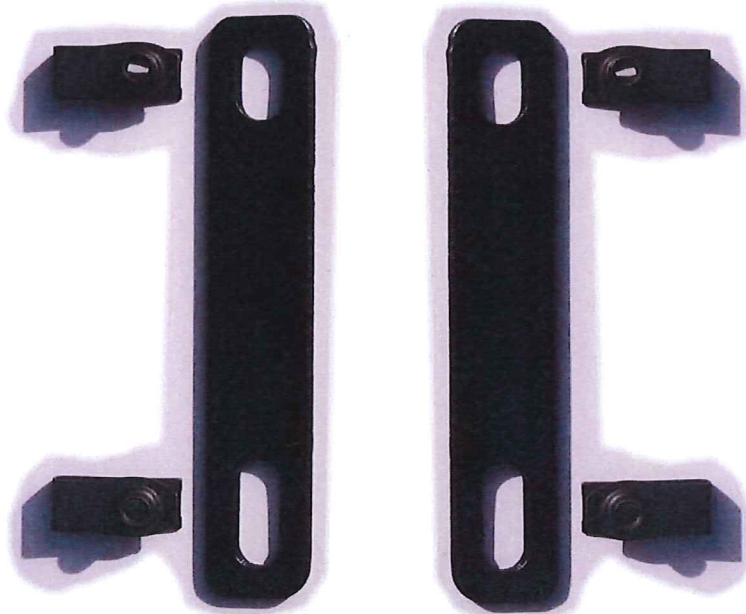


Figure 5

29. Move the Heater Unit up into position and push the Heater Hoses back through the Rubber Grommets.
30. Hold the Heater Support Brackets behind the dash panel over the holes drilled in dash panel.
31. Fit the Heater Unit to the dash panel.



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32. Fit the 1/4" x 1 1/4" mounting bolts through the mounting holes of the Heater Mounting Bracket, through the supplied 1/2" Spacers and 1/4" Fender Washers, up through the holes in the dash and into the Heater Support Brackets with the U-nuts. **Do not tighten at this time.**
33. Adjust the heater position and tighten the mounting bolts.

Defrost Duct Installation

1. Cut out the Defrost Vent Templates 4 & 5 and position on the dash as shown in Figure 7 and as stated on the templates.

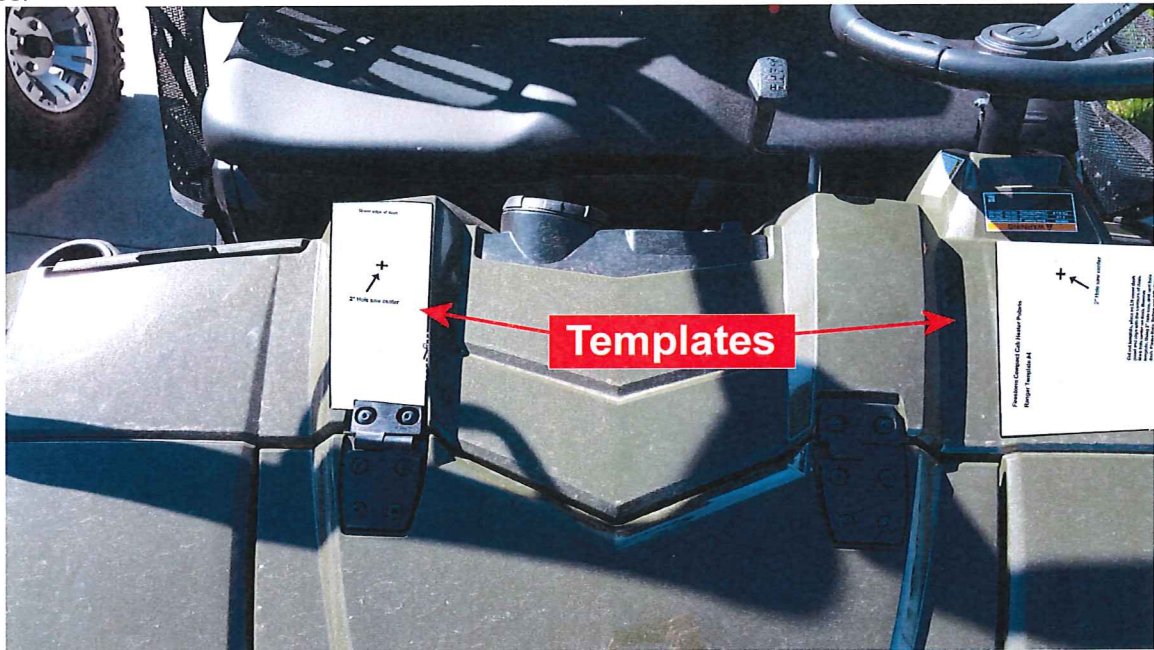


Figure 7

2. Mark the hole centers and remove Templates 4 & 5.
3. Using the supplied 2" Hole Saw and Pilot Bit, drill the holes for the vents.
Note: Before drilling any holes, check area behind the dash panels to make sure no damage will occur by drilling holes and that there is sufficient room for the vent and hose.
4. Attach the 2.5" Duct Hose to the Defrost Duct Elbow and secure with a Cable Tie.
Note: Use a wire cutter to split the hose in half up to three rings on each side. This will give more flexibility to the install. Seal with electrical tape if necessary.
5. Stretch the 2.5" Duct Hose from the Heater through the firewall hole and up in behind the dash area.
6. Attach the Duct Y to the 2.5" Duct Hose and secure with a Cable Tie.
7. Attach the 2.5" Duct Y to the 2.5" to 2" Stepdown.
8. Divide and cut the 2" Duct Hose in half.
9. Attach each piece of the 2" Duct Hose to the Duct Y and secure with a Cable Tie.

10. Run each Duct Hose out to the vent hole and pass through the hole in dash and attach to vent inlet using Figure 8 as a guide.
11. Secure with Cable Ties.

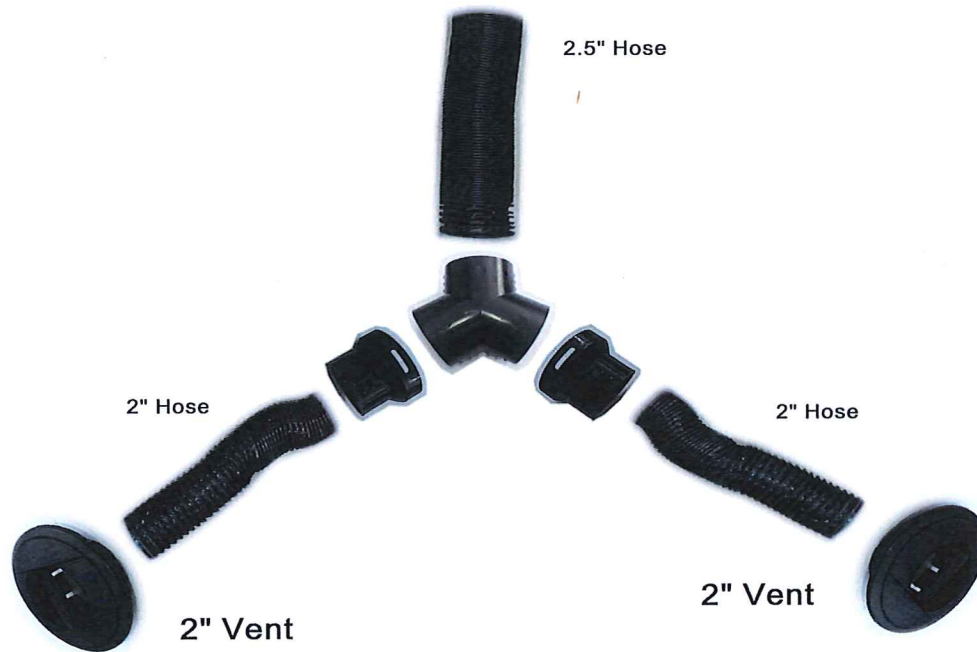


Figure 8

12. Place the vents into the holes and push down carefully until the vents snap into place.
Important Tip: *Cleaning any burs from around the hole with a knife will make installing the vent into place easier.*
13. Reinstall the lower dash panel as required.

Coolant Setup

1. Drain the cooling system by removing the lower radiator hose.
Important Tip: *Raise the front of vehicle on jack stands or ramps before draining the cooling system. This will help in preventing air locks and you won't have to drain the whole cooling system.*
2. Position the Y Connectors as shown in Figure 6a & 6b.
Note: *Before cutting the radiator hoses, be sure that the placement of Ys will not interfere with any part of the vehicle.*

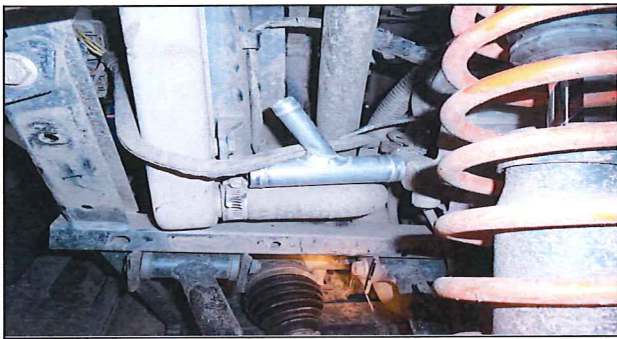


Figure 6a

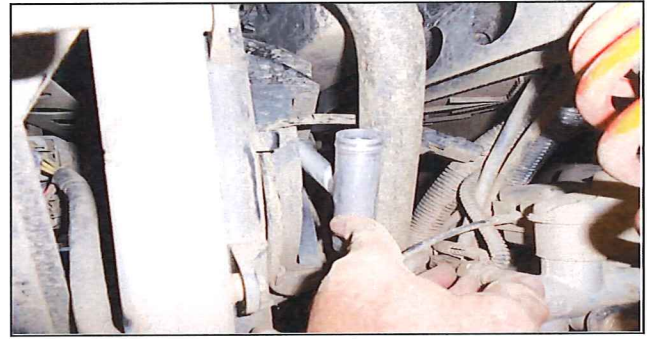


Figure 6b

3. Cut the radiator hoses as shown in Figure 6a and 6b.
4. Insert the Y Connectors exactly as shown in Figure 6c in the radiator hoses and secure with the supplied #16 Hose Clamps.

Note: *Make note of the direction of the Y connectors.*

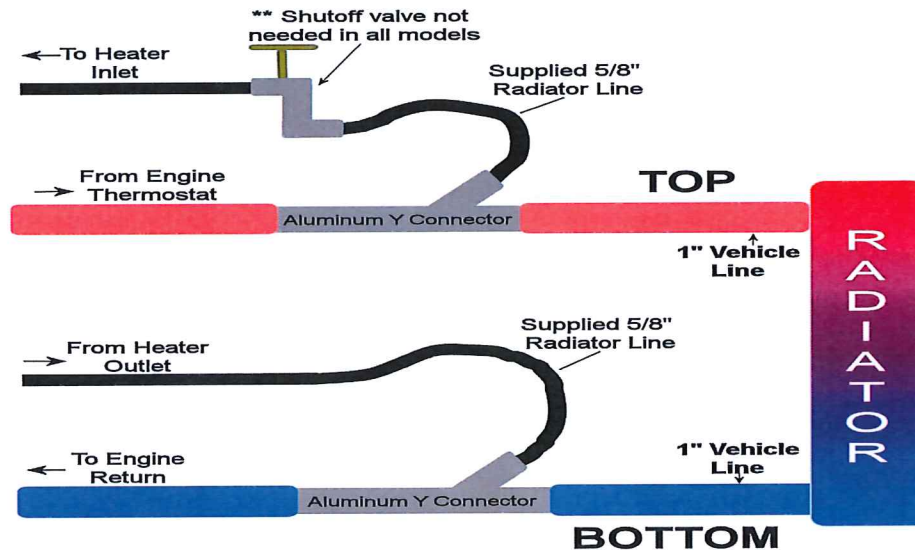


Figure 6c

5. Run the 5/8" Heater Hose to the Y Connectors.
Note: *When running the heater hose, make large bends to avoid crimping the hose*
6. Cut the 5/8" Heater Hoses to length.
7. Before connecting the 5/8" Heater Hoses to the Y Connectors, use a garden hose to run water through the heater hose and heater assembly. **This step must be carried out** as it forces air bubbles out of the heater core. Filling

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the heater core without the pressure of the garden hose leaves the chance for air pockets inside the core. This will lead to no or limited heating during operation.

8. Fit the 5/8" Heater Hose to the Y Connectors and secure with the supplied #10 Hose Clamps. Make sure all hoses are as far away as possible from the driveshaft, steering shaft and sharp areas, etc.
Note: *Be sure the hose connected to the temperature control valve of the heater is also connected to the top radiator hose.*
9. Use Cable Ties as necessary.

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.
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 steps 3 & 4 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 Step #3 and Step #7 until you no longer see a drop in the coolant overflow reservoir and you feel good heat in the cab after the first radiator fan cycle.
9. Verify there are no coolant leaks.
10. For troubleshooting see the Supplemental Instructions Important Note at the beginning of these instructions.

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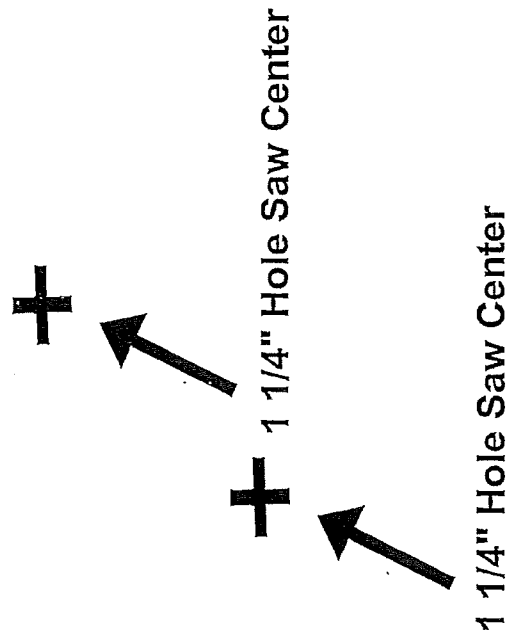
Installed View

Before Your Next Ride:

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



Cut out template. Tape to firewall. Mark hole centers on firewall. Remove template. Using 1 1/4" hole saw, drill heater hose holes in firewall. Please Note: Before you drill please check the other side of firewall for anything that may interfere with the placement of the holes. We will not be held responsible for holes being drilled in the incorrect place.

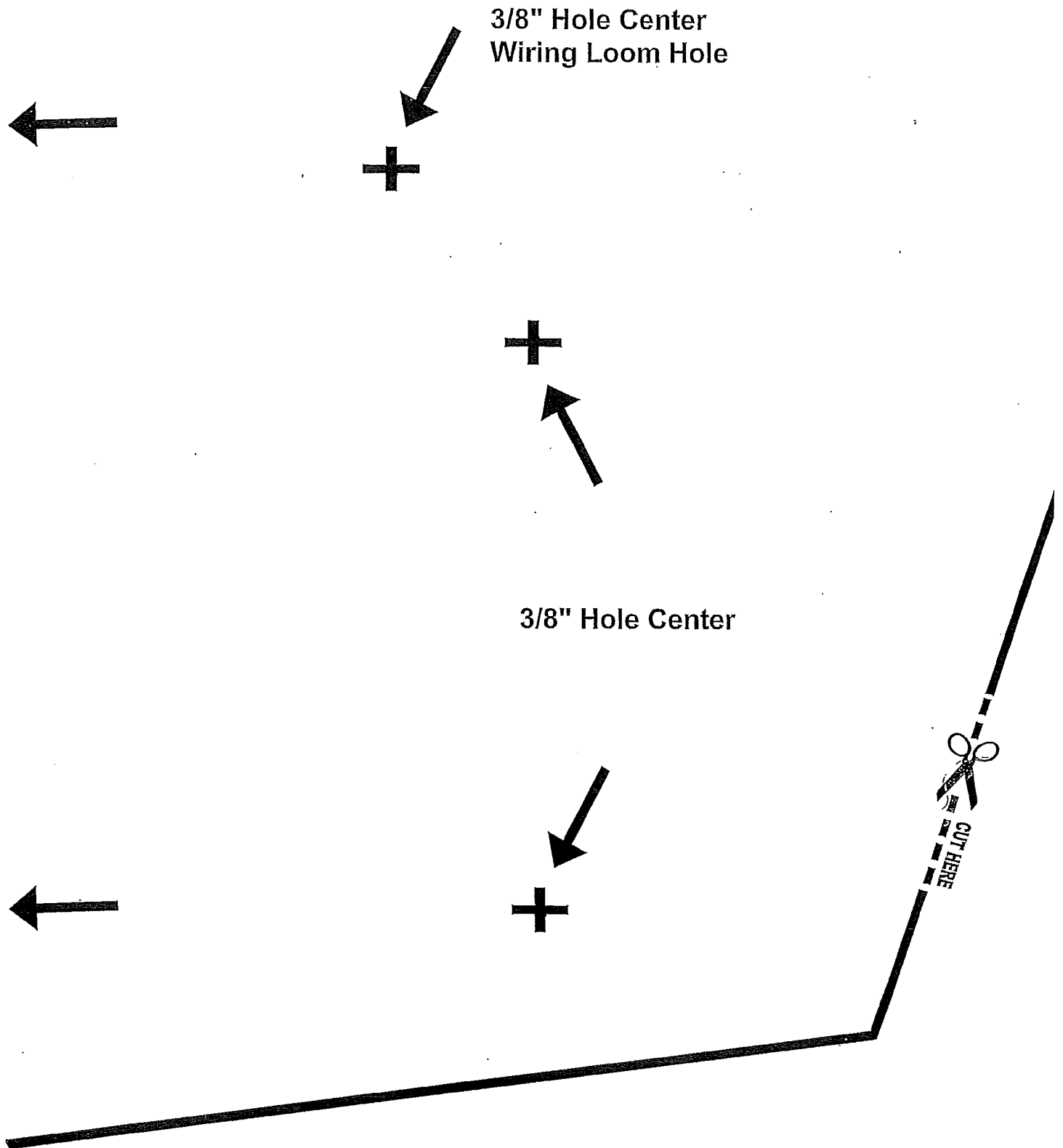


**Firestorm Compact Cab Heater Polaris
Ranger Template #1**



Firestorm Compact Cab Heater Polaris

Ranger Template #2



Firestorm Compact Cab Heater Polaris Ranger Template #3

3" Hole Saw Center
Defrost Hose



Align Arrow at Points →

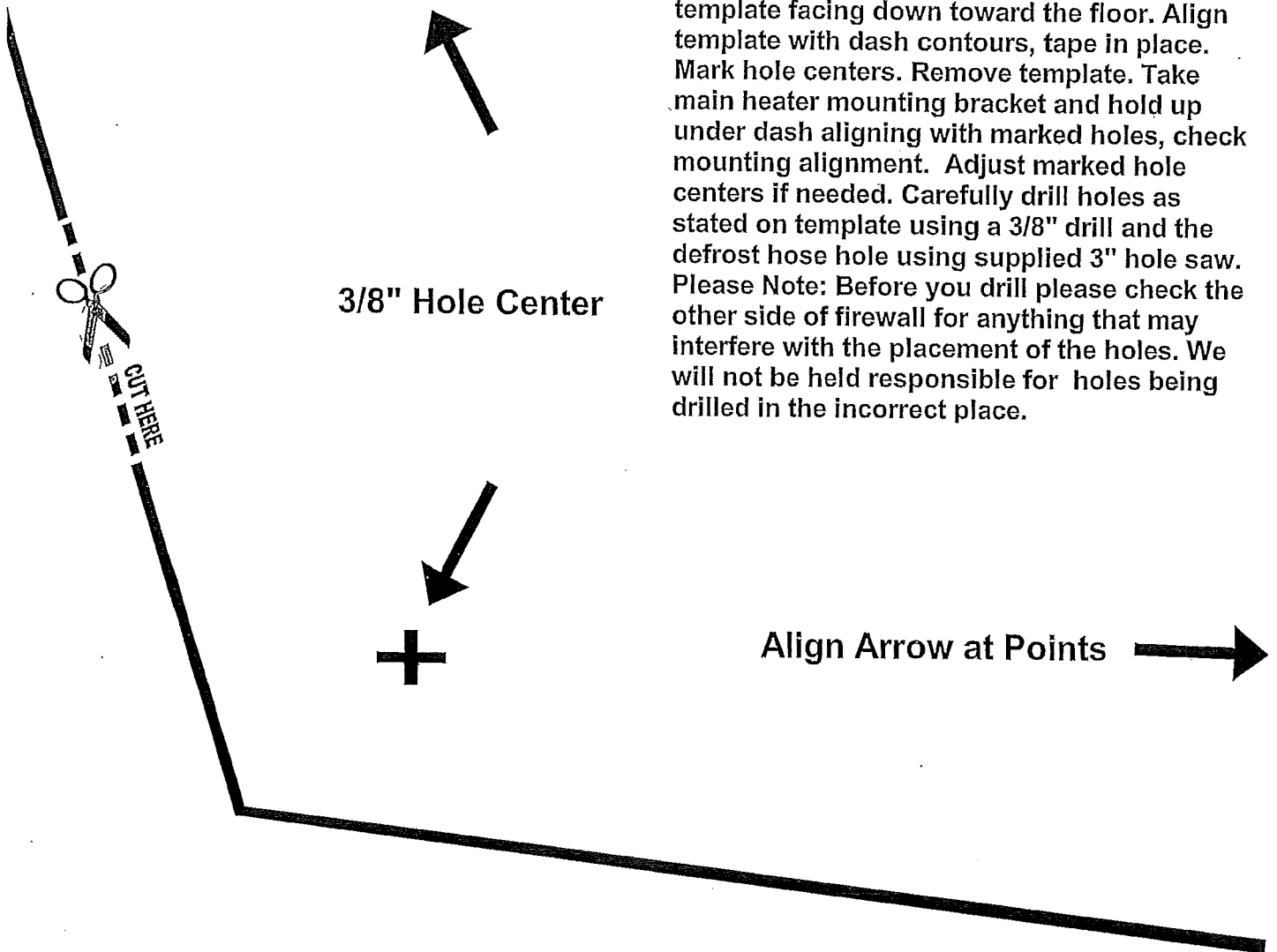


Cut out templates, and tape together at arrows. Place on under side of dash panel under storage cubby with this side of template facing down toward the floor. Align template with dash contours, tape in place. Mark hole centers. Remove template. Take main heater mounting bracket and hold up under dash aligning with marked holes, check mounting alignment. Adjust marked hole centers if needed. Carefully drill holes as stated on template using a 3/8" drill and the defrost hose hole using supplied 3" hole saw. Please Note: Before you drill please check the other side of firewall for anything that may interfere with the placement of the holes. We will not be held responsible for holes being drilled in the incorrect place.

3/8" Hole Center



Align Arrow at Points →



Firestorm Compact Cab Heater Polaris

Ranger Template #4



2" Hole saw center

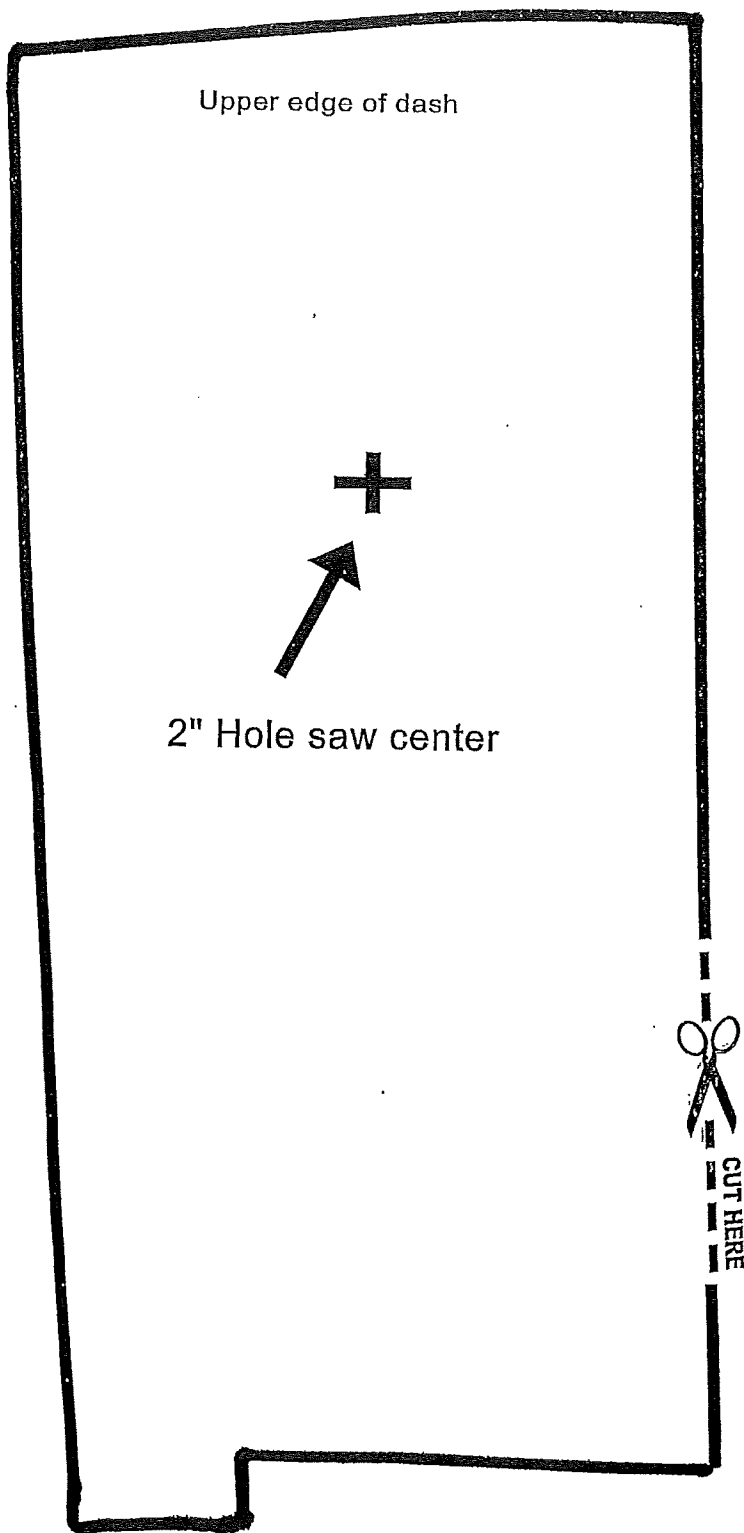
Cut out template, place on LH upper dash panel and align with the contours of dash. Mark hole center on dash. Remove template. Using 2" hole saw, drill vent hole dash. Please Note: Before you drill please check the underside of dash directly below the template for anything that may interfere with the placement of the vent. We will not be held responsible for vent holes being drilled in the incorrect place.



CUT HERE

Upper Edge of Dash

Firestorm Compact Cab Heater Polaris Ranger Template #5



Cut out template, place on RH upper dash panel and align with the contours of dash. Mark hole center on dash. Remove template. Using 2" hole saw, drill vent hole dash. Please Note: Before you drill please check the underside of dash directly below the template for anything that may interfere with the placement of the vent. We will not be held responsible for vent holes being drilled in the incorrect