Firestorm Polaris Ranger XP 900 Compact Cab Heater
HT_CP-404

23001 Industrial Blvd
Rogers, MN 55374
866.527.7637

POLARIS RANGER XP 900 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.

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	Heater Unit
1	Main Heater Mount Bracket
1	7' x 5/8'' Heater Hose
13	Cable Ties
4	#16 Hose Clamps
4	#10 Hose Clamps
1	1 ¼" Hole Saw
1	Ranger XP 900 Wiring Loom
2	1" Y Fittings (Aluminum)
2	RH and LH Mounting Brackets
2	Heater Core Support Brackets
2	Grommets (Rubber)
1	Unicoil
1	¼'' – 20 x 1½" Bolt
1	¼'' - 20 Nylock Nut

Qty	Description
6	¼'' – 20 x 3/4" Serrated Flange Bolts
2	¼'' - 20 Serrated Flange Nuts
4	¼'' x 20 U Nuts
6	#10 x 5/8'' Screws for Plastic
2	¼'' Fender Washer
1	Duct Elbow Mounting Bracket
1	90° Duct Elbow
1	17'' of 2.5" Duct Hose (Compressed)
2	3" Defrost Vents
1	2.5" Duct Y
1	3" Hole Saw
1	Pilot Bit (not shown)
1	Garden Hose Adapter (not shown)

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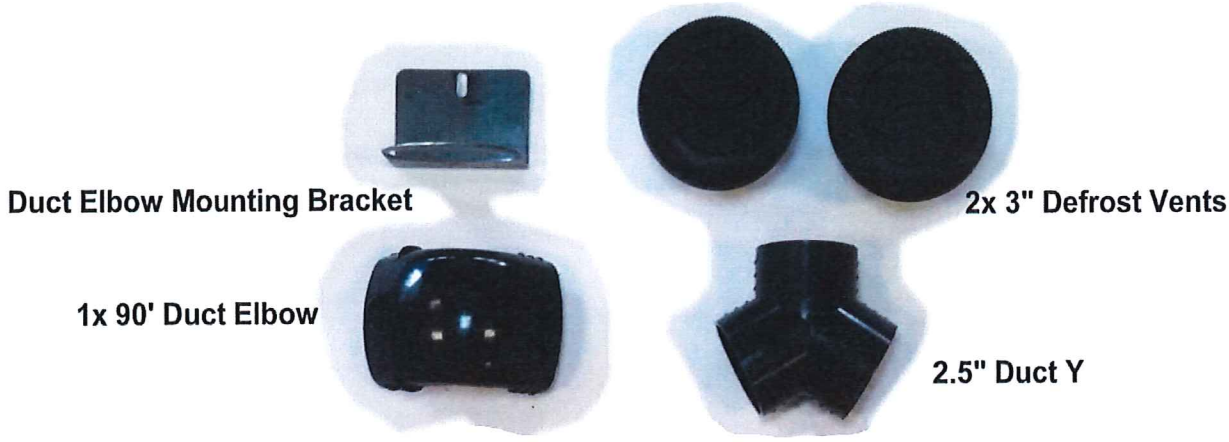

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Firestorm Cab Heater Important Note

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 – MotoInfo@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.

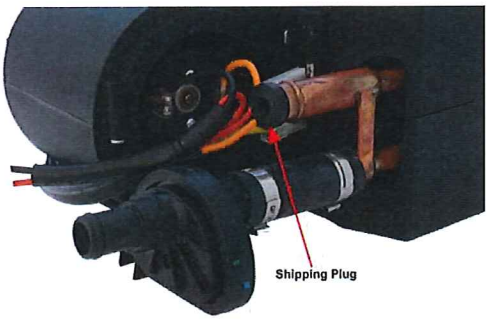
2. Ensure that all coolant levels are filled to the manufacturers recommended levels before starting.
3. Start your SxS and run the engine at fast idle (3000 rpm) until the engine is hot.
4. Locate the inlet hose to the radiator. Pinch off the inlet hose after the radiator Y so that the majority of the 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:

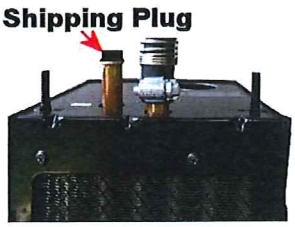
Please remove the black plugs that are found on the heater core lines (copper pipes on the back of the cab heater). These are used for keeping the core lines free of dust and debris during shipping.

Firestorm Compact



Firestorm Underhood

Firestorm Upright



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Cab Heater Installation

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

1. Disconnect the negative battery terminal from the battery.
2. Cut out the Template Center Tunnel Coolant Hose (Template #1) and attach it to the firewall at the center of the vehicle and above the drive shaft tunnel.
   Note: *Before drilling through the firewall, verify that there are no wires behind the cutout area.*

3. Using the 1 1/4" Hole Saw drill through the firewall. Refer to Figures 1a, 1b and 1c.
4. Debur the 1 1/4" hole as necessary.
5. Install one of the included Rubber Grommets into the 1 1/4" hole.

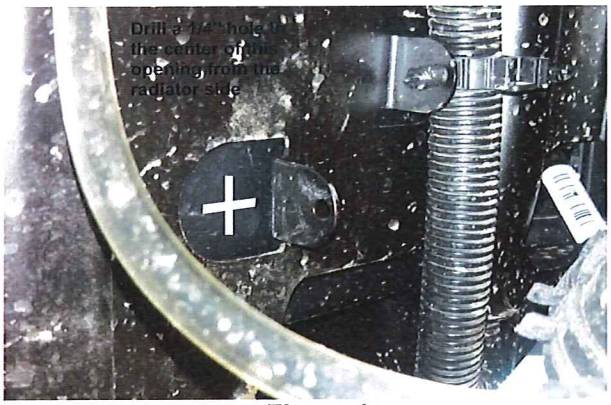

Figure 1a

Figure 1b

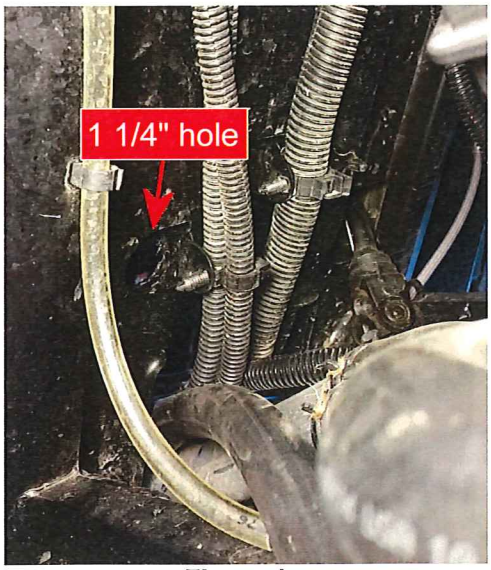

Figure 1c

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6. Cut out the Heater Hose Template (Template #2) and position on the side of the driveshaft tunnel cover as shown in Figure 2.

Figure 2

7. Mark the 1 ¼" hole saw center and remove the Template.
8. Carefully drill the heater hose hole using the supplied 1 ¼" Hole Saw and Pilot Bit.
9. Place the supplied Rubber Grommet into the drilled hole.
10. Cut out the Heater Mount Template and position it in the bottom of the cubby hole as shown in Figure 3.

Figure 3

11. Mark the ¼" hole centers and remove the Template.
12. Carefully drill the two ¼" holes using a ¼" drill bit.
13. Take the Main Heater Mounting Bracket and hold it up under the center of the dash.

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14. Line up the Main Heater Mounting Bracket with the dash molding contour on the right side under the dash as shown in Figure 4a and 4b.

Figure 4a

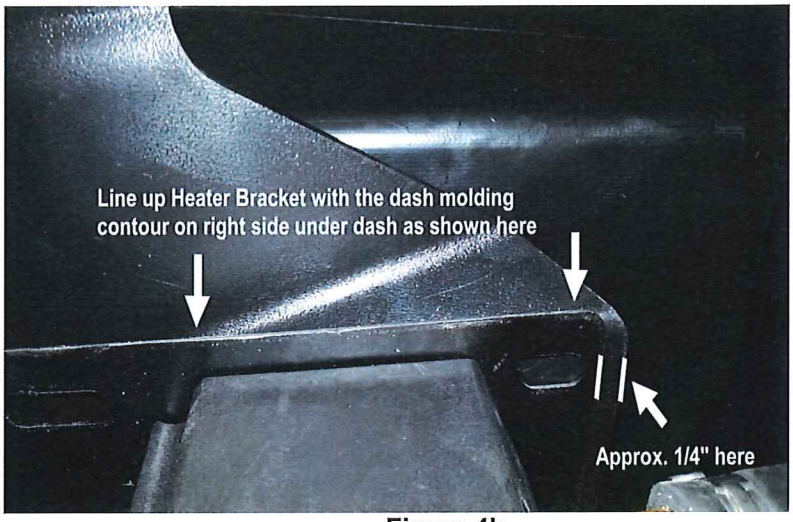

Figure 4b

15. Mark the hole centers of the (4) slotted holes in the Main Heater Mounting Bracket on the under dash panel.
16. Remove the Main Heater Mounting Bracket and drill the four mounting holes using a 3/8" drill.
17. Take the LH and RH Mounting Brackets and install the U-nuts onto the brackets as shown in Figure 5.
18. Fit the LH and RH Mounting Brackets behind the dash over the holes drilled in the lower dash panel.
19. Place the brackets in the long slotted holes behind the cubby hole and point them toward the center of the UTV as shown in Figure 5.

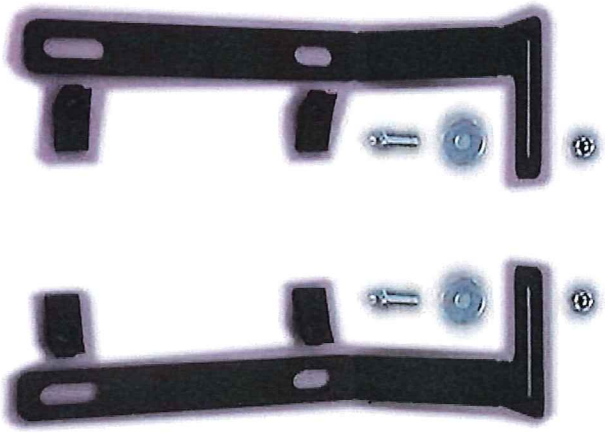

Figure 5

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20. Using the supplied ¼" x ¾" Serrated Flange Bolts with the ¼" Fender Washers as shown in Figure 5, insert the bolts and washers through the holes in the bottom of the cubby hole and into the long slotted holes of the LH & RH Mounting Brackets.
21. Secure the ¼"- 3/4" Serrated Flange Bolts with the ¼"-20 Serrated Flange Nuts. **Do not tighten fully.**
22. Install the Main Heater Mounting Bracket, as shown in Figure 6, around the Compact Heater Unit (do **NOT** insert screws at this time).
23. Insert the non-flanged end of the Defrost Duct Elbow into the oval hole in the Main Heater Mounting Bracket.
24. Using a supplied Screw for Plastic, 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 6.
25. Attach the bracket using the supplied Screws for Plastic on both the top and bottom side of the bracket.

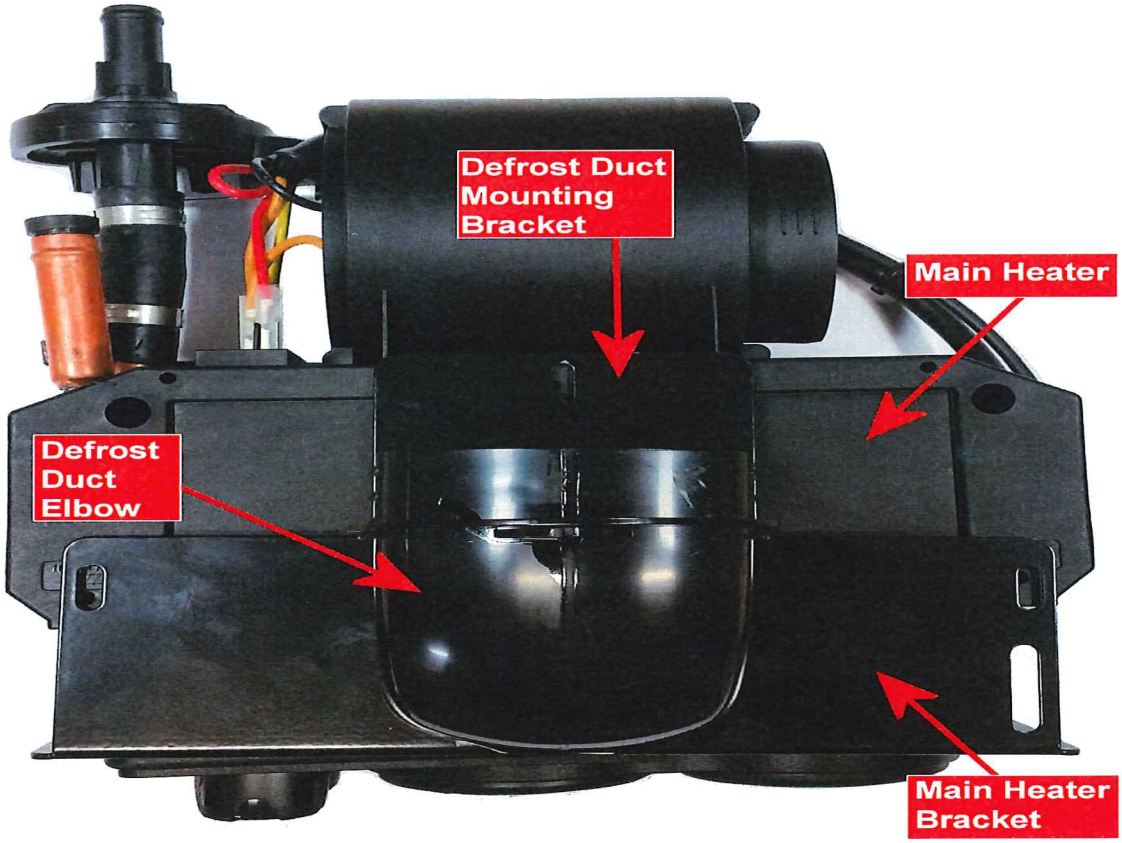

Figure 6

26. Pass each end of the supplied 5/8" Heater Hose through the previously installed Rubber Grommets in the firewall and drive shaft tunnel from the ***radiator side*** of the firewall. **Do not cut 5/8" Heater Hose to do this.**
27. Remove the driveshaft tunnel cover by removing the four (4) plastic push pins.
28. Feed the remaining hose end, from the **radiator side** of the firewall, up under the area below the driveshaft tunnel cover and through the rubber grommet in the driveshaft tunnel cover.
29. Fit the Unicoil over the end of the hose through the Rubber Grommet in the drive shaft tunnel cover.
    Note: *leave approximately 2" of Heater Hose exposed - see Figure 8.*

30. Refit the driveshaft tunnel cover.

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31. Attach the heater hoses to the heater unit and secure with the #10 Hose Clamps (**note:** *the lower hose clamp placement in Figure 7*):
    - 5/8" Heater Hose from the firewall attaches to the temperature control valve
    - 5/8" Heater Hose from the drive shaft tunnel cover attaches to the heater core, pushing the hose completely on the fitting

32. Install the Heater Core Support Bracket to the hoses as shown in Figure 7. **Do not over tighten**.

Figure 7

33. Attach the 2.5" Duct Hose to the Defrost Duct and secure with a Cable Tie.
    Note: *using a wire cutter, split the hose in half up to 3 rings on each side. This will give more flexibility when attaching the Duct Hose to the Defrost Elbow. Seal with electrical tape if necessary.*

34. Lift the heater up into position, pushing the heater hoses back through the Rubber Grommets as needed. Shape the Unicoil so that the 5/8" Heater Hose makes a gradual bend into the driveshaft tunnel as shown in Figure 8

Figure 8

35. Using the remaining ¼"-3/4" Serrated Flange Bolts, attach the Main Heater Mounting Bracket to the LH & RH Mounting Brackets by passing the bolts thru the dash panel. **Do not tighten fully**.
36. Position the heater parallel to the dash and tighten the two1/4" bolts at the bottom of the cubby hole.
37. Tighten the four (4) Main Heater Mounting Bracket mounting bolts.

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38. Connect the Wiring Loom to the heater:
    a. Connect the red wire on the wiring loom to the red wire of the heater plug
    b. Connect the black wire on the wiring loom to the black wire of the heater plug

39. Run the Wiring Loom up to the power connection block as shown in Figure 9.
40. Connect the red and black wires as shown in Figure 9.

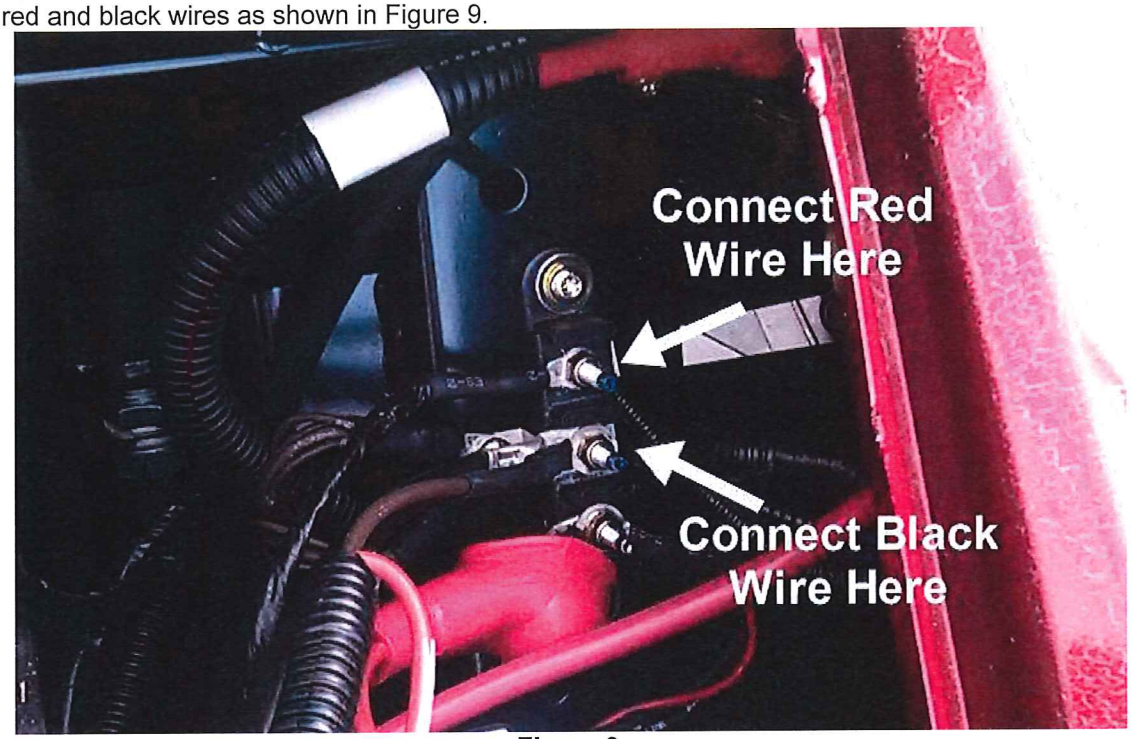

Figure 9

41. Reconnect the battery.
42. Turn the key on to check the fan operation.
43. Disconnect the battery and use Cable Ties as necessary to secure the Wiring Loom.

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Defrost Duct Installation

1. Remove the top dash panel by removing the push-pins, screws, etc.
2. Determine the desired locations for installing the defrost vents. See Figures 10a and 10b for approximate vent locations.
   Please note: *Removal of the "Warning" placard decal is a customer's decision and as such the person who removes such a decal assumes full responsibility.*

Figure 10a


Figure 10b

3. Using the supplied 3.0" Hole Saw, 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. Stretch the 2.5" Duct Hose from the heater to a length past the rear of the heater up in behind dash area.
5. Cut the 2.5" Duct Hose to length.
6. Attach the Duct Y to the 2.5" Duct Hose 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.*

7. Divide and cut the remaining 2.5" Duct Hose in half.
8. Attach each piece to the Duct Y and secure with a Cable Tie.
9. Run each Duct Hose out to the vent hole and pass through the hole in the dash.

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10. Attach the Duct Hose to the Vent and secure with Cable Ties, using Figure 11 as a guide.

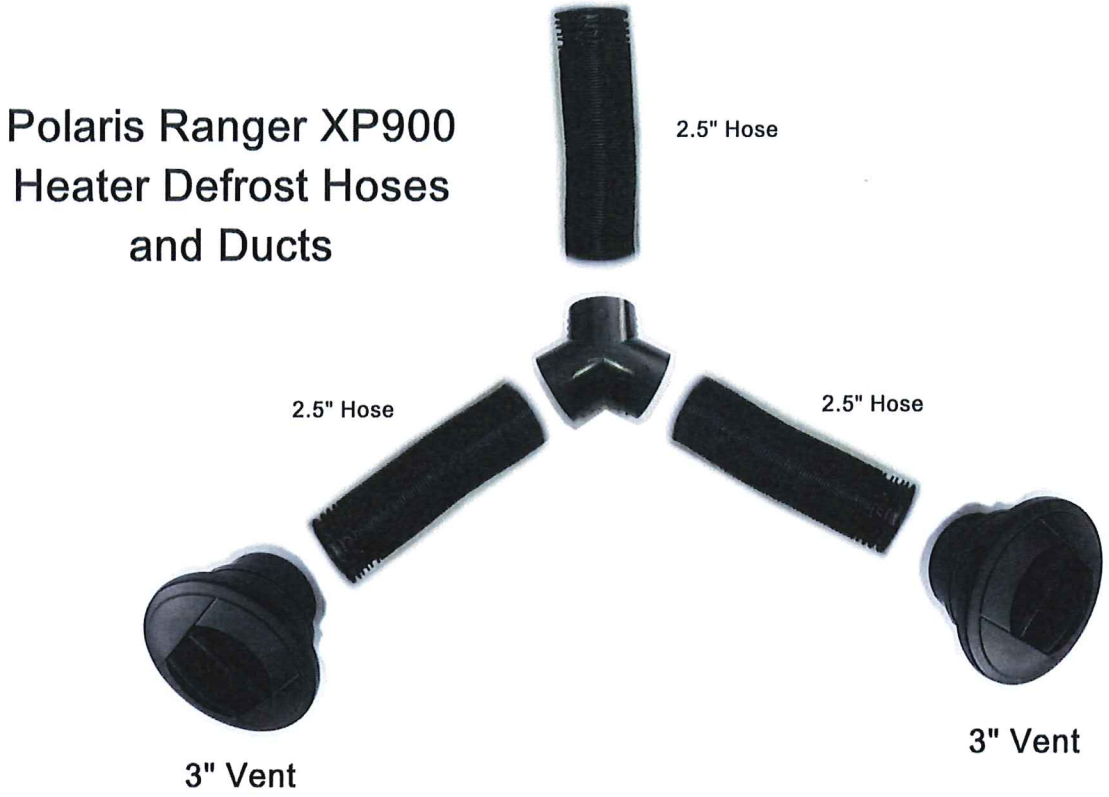

Figure 11

11. 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.*

12. Reinstall the top dash panel.

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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. Cut the radiator hoses as shown in Figures 12a and 12b.
3. **Note:** *Before cutting the radiator hoses, be sure that the placement of the Y Connectors will not interfere with any part of the vehicle. Be sure the hose connected to the temperature control valve of the heater is connected to the top radiator hose.*

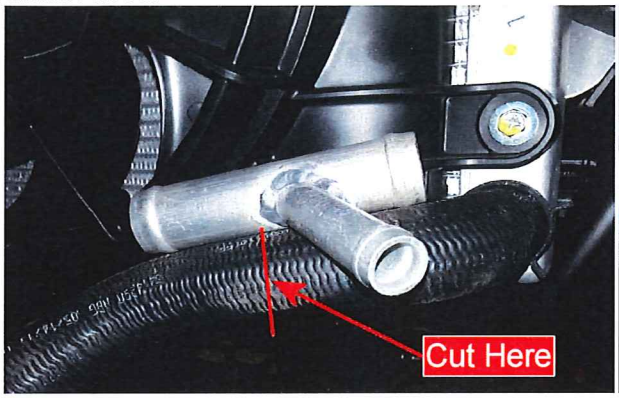

Figure 12a

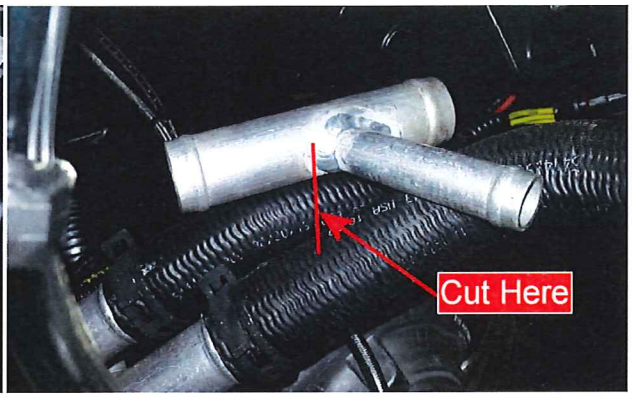

Figure 12b

4. Insert the Aluminum Y Connectors exactly as positioned in Figures 12a, 12b and 13 in the radiator hoses and secure with #16 Hose Clamps.

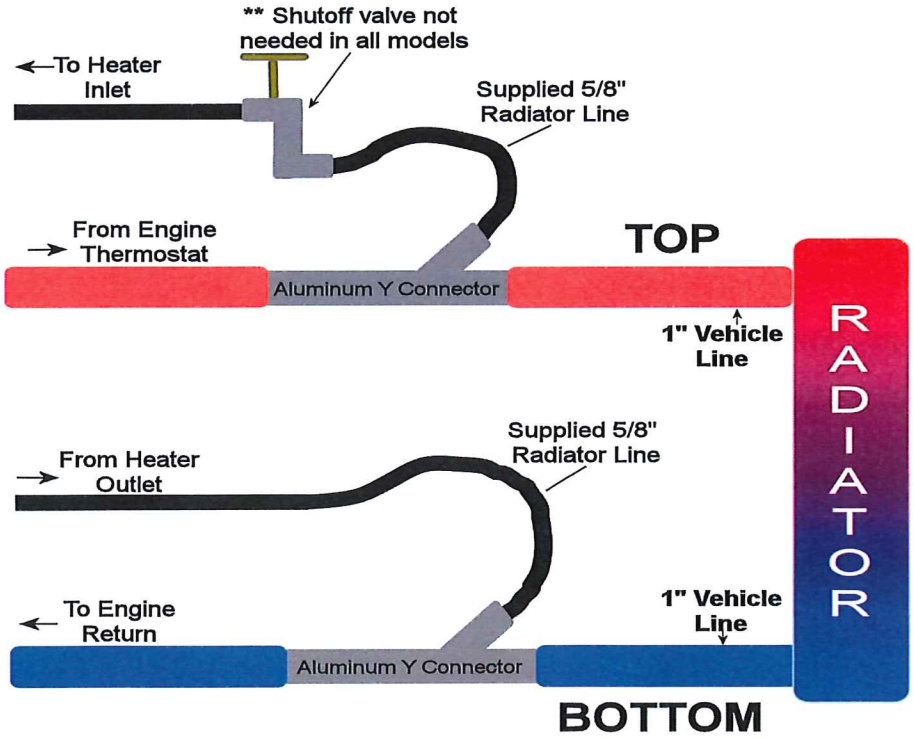

Figure 13

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5. Route the 5/8" Heater Hose to the Y Connectors as follows:
   Note: *When running the heater hose, make large bends to avoid crimping the hose*
   a. Route the portion Radiator Hose that comes through the firewall is positioned over the Aluminum Y Connector that is nearest the firewall (see Figure 12b)
   b. Route the other ½ of Radiator Hose that comes down the drive shaft tunnel toward the Aluminum Y Connector nearest the radiator (see Figure 12a)
6. Cut the 5/8" Heater Hoses to length, leaving enough length on each side so the Radiator Hose is able to bend gently.
7. Before connecting the 5/8" Heater Hoses to the Y Connectors, use the included Garden Hose Adapter and a garden hose to run water through the heater hose and heater assembly. Continue running water thru for at least 1 minute. **This step must be carried out** as it forces air bubbles out of the heater core. Filling 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 Radiator Hoses to the Y Connectors and secure with #10 Hose Clamps. Make sure all hoses are as far away as possible from the driveshaft, steering shaft, sharp areas, etc.
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 your instructions.

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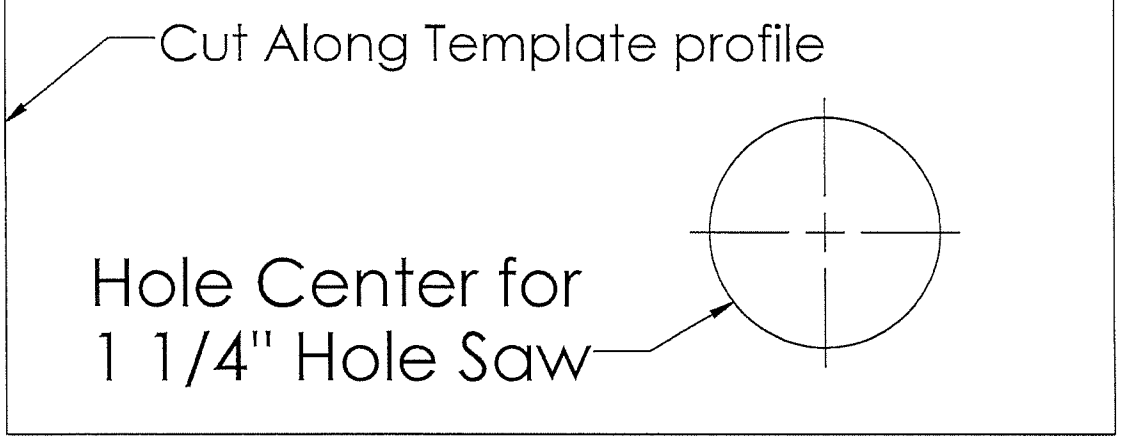
Installed View

Before Your Next Ride:

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

Template #1 Center Tunnel Coolant Hose

1) Cut along template profile
2) Use masking tape to attach template to the Firewall just above the center tunnel
3) Mark hole center
4) Drill hole using 1 1/4" Hole Saw

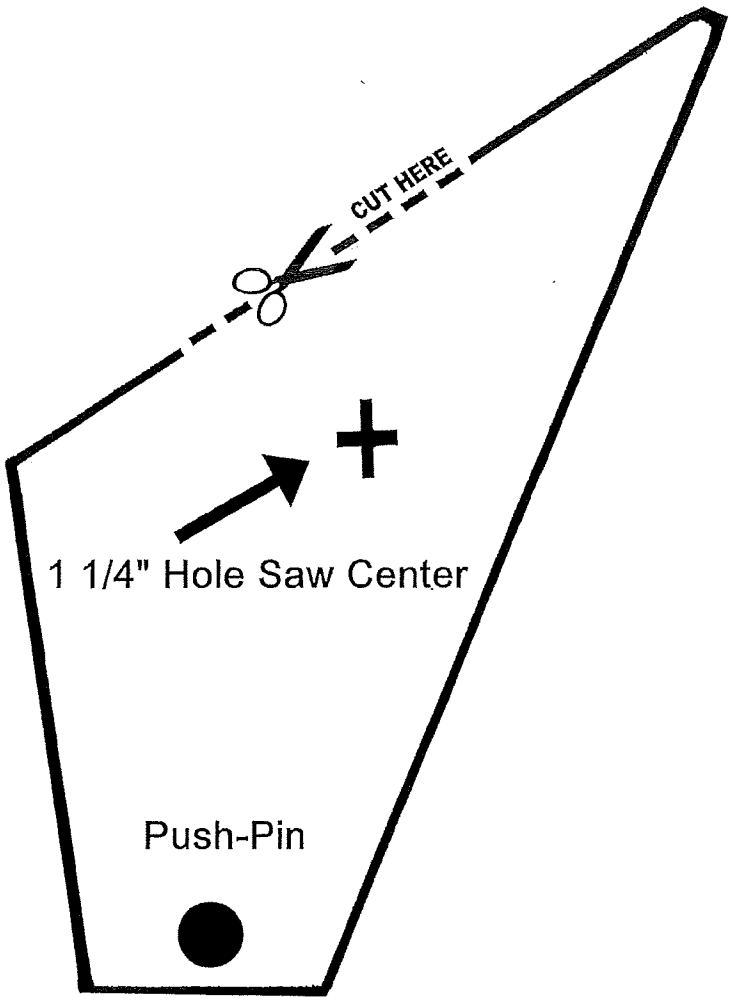


Template

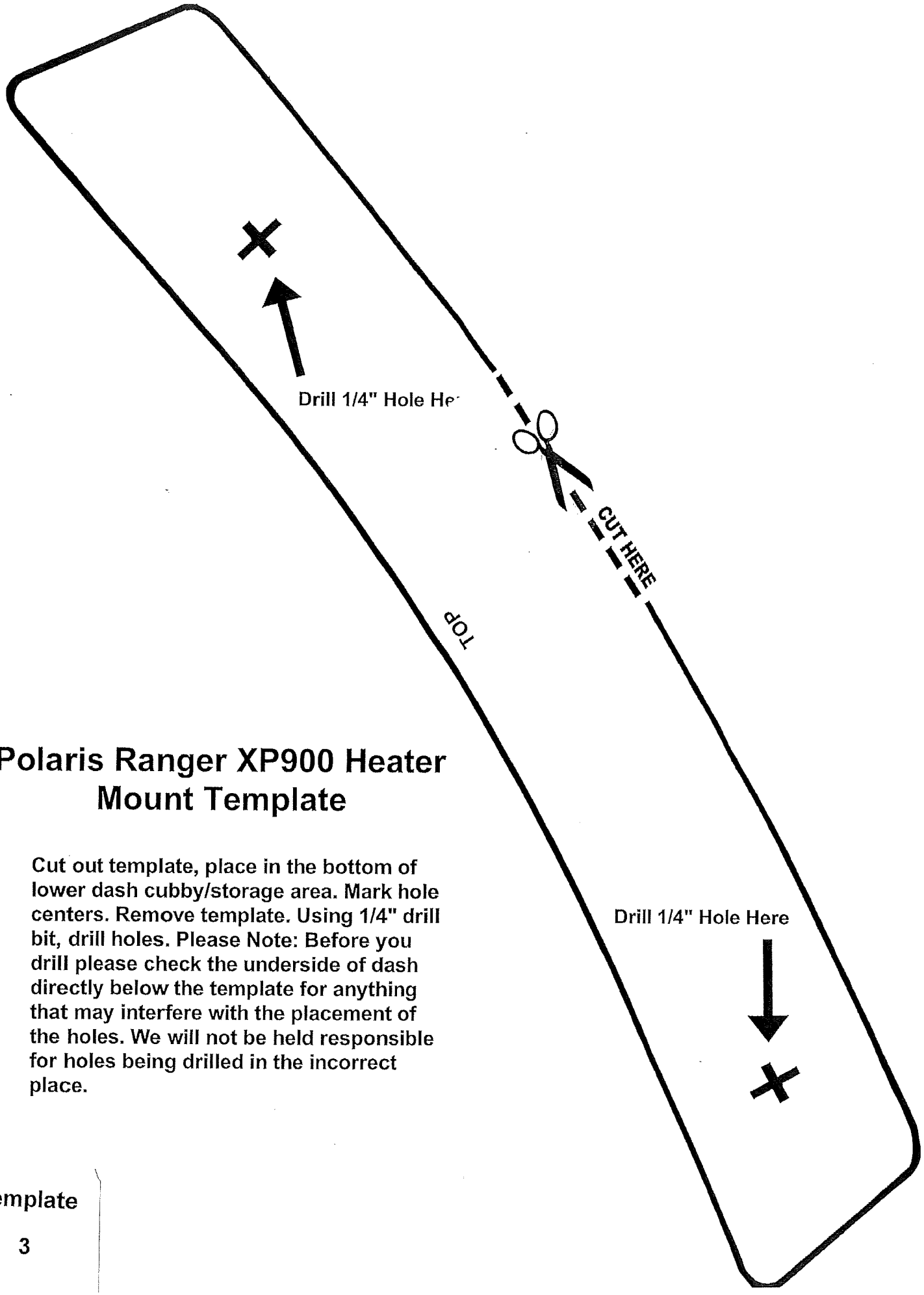
1

5 4 3 2 1

Polaris Ranger XP900 Firestorm
Under Dash Heater Hose Template.



Hold Template in position. Mark hole center. Drill hose hole with supplied 2 1/4" hole saw. Please Note: Before you drill please check the other side of panel 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.



Polaris Ranger XP900 Heater Mount Template

Cut out template, place in the bottom of lower dash cubby/storage area. Mark hole centers. Remove template. Using 1/4" drill bit, drill holes. 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 holes. We will not be held responsible for holes being drilled in the incorrect place.