



Rhino Electric Water Pump & Radiator Installation

Read and Understand these Instructions Thoroughly BEFORE beginning Installation.

- ❑ Designed to be used with or without an aftermarket radiator.
- ❑ The pump is intended to run when ever the key is switched on.
- ❑ The pump is used in conjunction with the OEM mechanical water pump.

Contents

<u>Item ID</u>	<u>Item Description</u>	<u>Qty</u>
hsw-0045	rhino elec water pump kit	1.00
. hsw-0110	electric water pump	1.00
. hse-1123	rhino waterpump harness	1.00
. hss-9004	rhino water pump bracket	1.00
. hsc-9178	1-7/8in metal cable clamp	1.00
. hsh-6809	m6 flange nut	1.00
. hsh-6799	m6 fender washer - 18mm	1.00
. hhh-0120	1/2" x #12 hose clamp	2.00
. hhh-0100	hose for rear exchanger 151+	1.00

Optional

hsw-1110	High performance custom Rhino 3 Pass Radiator	1.00
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Optional

No p/n 100% Engine Ice Coolant by Cycle Logic – Will reduce temp by 20degrees (Must follow their instructions exactly)

Drain Coolant (& Remove Radiator ONLY if you installing a new one)

1. Drain coolant
2. Mount new electric pump with included bracket and clamp to the Brake Master Cylinder. **See Figure 1.**
3. NOTE: The pump must be mounted with the electrical connection on the top. Any other orientation is UNACCEPTABLE!

Replace Radiator -- ONLY if you installing a new one!

4. Remove the OEM oil cooler from the upper and lower radiator support brackets (black u shaped bars).
5. Unbolt the upper radiator support from the radiator and the frame and remove it from the vehicle.
6. Disconnect both hoses going to the radiator. The Left side is the inlet and the right side is the outlet.
7. Unplug the electrical connection to the fan and unplug the electrical connection to the temperature sensor on the Right hand side of the radiator.
8. Unbolt the lower radiator support from the vehicle frame.
9. Jack up the vehicle and remove the right hand shock absorber. The easiest way is to use your jack to just barley lift the vehicle. When the jack is just right the shock bolts will slide right out.
10. Remove the radiator/fan/lower radiator support by sliding them straight out the right side of the vehicle.
11. Move the fan and lower support from the old radiator to the new radiator using the OEM hardware.
12. Reinstall the new radiator assembly by reversing the removal steps.

Plumb the new Water Pump

13. With the water pump mounted as described above, mark and cut the radiator inlet hose coming from the motor on the left side of the vehicle. Use the supplied clamp to connect this hose to the bottom of the new water pump (the nipple pointed down). **See Figure 2.**
14. Use the 2nd supplied clamp to connect the outlet of the water pump (the horizontal nipple) to the Left side of the radiator. A new hose has been supplied to make the routing easier especially with after market shocks and / or a new radiator. If you use the supplied hose, the 90degree bend goes on the radiator pointing down. Our radiator has moved the nipple from the middle of the tank to the top. In all cases, CONFIRM THAT THERE IS NO INTERFERENCE WITH THE SHOCK.

Wiring the new Water Pump

15. The wiring harness included with the pump kit is designed to be used in conjunction with the MPI Rhino Supercharger Kit. Suggestions will be listed at the end if you do not have a supercharger yet (eventually everyone will have one, it's just a matter of time)



MOUNTAIN PERFORMANCE

16. Connect the 2 wire plug with the wire bale to the top of the water pump. Route the wire along a similar path as the brake light wiring (yellow and brown wires) over to the main battery box.
17. The ¼ ring terminal will connect to the negative (-) terminal of the battery.
18. Unbolt the MPI relay included in the original MPI supercharger kit. Unplug and discard the relay from the relay socket. The original MPI relay will NOT be reused.
19. The female spade connector at the end of the pump harness will push into the backside of the relay socket (just like the other 4 wires already installed). The open hole must be in the center of the socket. **See Figure 3.**
20. Install the new relay provided in the pump kit into the relay socket and rebolt the new relay in place. **See Figure 4.**
21. With the KEY OFF verify that the new water pump is NOT running (you'll always feel a slight vibration on top of the pump with your hand when it is running).
22. If the pump happens to run all the time (regardless of the key position, verify that the red wire in the relay base is in a hole parallel to the blue pump wire you just plugged in, and that the larger orange wire is turned 90 degrees to the blue pump wire. The pump running all the time could indicate that the red and orange wires are reversed.
23. If you don't have a supercharger, connect the female spade to a voltage source that is switched on and off with the key. The pump only draws about 1.5A, so just about any source will work.

ACCESSORIES

24. Water temperature is best measured on the radiator outlet. This is the right hand side of the vehicle. MPI sells a quick tap that splices into the hose and provides a 1/8" pipe (NPT) sensor port. MPI also offers a 2-1/16" round dual digital temp gauge that conveniently gives you water temp and supercharger oil temp in 1 gauge. The gauge also has internal and external alarms.
25. Engine Ice Coolant: This product is made by Cycle Logic and is available from most Yamaha dealers (they may have to order it, Western Power Sports is a dealer source that carries it). This stuff really works!! It WILL drop your operating temp by 20 degrees (they say up to 50, but we observe 20 on a rhino). Remember the stock cooling system MUST be purged of all conventional coolant and flushed with water before installing the Engine Ice. You run engine Ice 100% UNMIXED and never add water, just more engine ice. Don't forget to drain the overflow tank!
26. High Pressure Radiator Cap: MPI offers a new rad cap that operates at 22 to 24 PSI. This will help prevent the boil over. The OEM cap is rated 15 to 19 and new ones start out at about 18-19 and 6 month old ones seem to test much closer to 15.

Figure 1



Figure 2.



Figure 3.

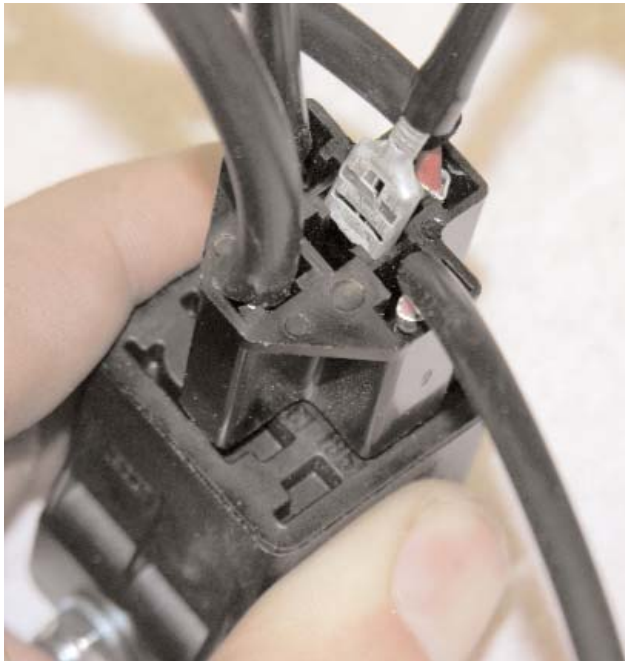


Figure 4.

