



FIELD CONTROLS

APPLICATION NOTE

AN 129

HEATING ELEMENT REPLACEMENT INSTRUCTIONS

INSTALLATION INSTRUCTIONS & OWNER'S MANUAL

HEATING ELEMENT REPLACEMENT INSTRUCTIONS

SUPPLEMENT TO THE ELECTRONIC STEAM POWER HUMIDIFIERS
MODEL # S2000 AND S2020

REPAIRS SHOULD BE PERFORMED
BY A QUALIFIED TECHNICIAN

Field Controls Humidifiers

Heating Element Assembly

Parts List:

- * 1 - 120 or 220 volt element
- * 2 - Fiber washers
- * 2 - Metal flat washers
- * 2 - Metal hex lock nuts

Required tools and materials:

- * 3/4" deep well socket
- * Torque wrench
- * 3/4" open end wrench
- * 1/2" open end wrench
- * Phillips & standard screwdrivers
- * 1/4" & 5/16" nut drivers
- * Needle nose pliers
- * Adjustable wrench 8"
- * Drain bucket

1. Unplug the power cord from the 120 volt source for the S2000. (240 volt for the S2020).
2. Close the water supply valve and disconnect the 1/4" water supply line.
3. *It is assumed the element is faulty and the water is cool, but be careful of hot water!*
4. Open the manual drain valve and drain the water tank completely. *Have a container ready to catch the water.*
5. Disconnect the overflow and drain hoses.
6. Unplug the automatic drain valve from the right side of the front cover, by pressing on the plastic locking lever and pulling the connector straight out. Use snips or pliers to cut the plastic wire tie.
7. Use an adjustable wrench to unscrew and remove the entire automatic drain valve assembly.
CAUTION: There may still be some water in the tank. Have a container ready to catch the water.
8. Unplug the green low voltage connector hub at the top of the front cover by pulling straight up.
9. The entire unit can now be removed by unscrewing all of the 1/4" hex screws which secure the humidifier to the duct. Pull the unit straight out or off of the duct, and set it on a flat work table or surface.
10. Remove the 2 phillips screws which hold the stainless steel baffle to the main tank and remove the baffle. You can now see the entire heating element in full view.
11. Loosen the 4 phillips screws which secure the plastic front cover. Pull and remove the front cover.
12. Use a 5/16" nut driver to remove the nut which secures the water probe to the printed circuit board.
13. Use a phillips screwdriver to remove the ground screw at the top of the printed circuit board, and the two small screws at the bottom corners.
14. The printed circuit board is now loose enough to be moved up slightly. *Be careful not to damage it.*
15. Use needle nose pliers to grasp and pull off the blue and yellow insulated wire connectors at the heating element connections.
16. Use the 3/4" wrench or socket to loosen and remove the hex lock nuts, which secure the heating element.
17. *It will be necessary to use pliers and unbend the 90° spade connectors to a 45° angle to allow the use of the deep well socket and ease the removal of the old element through the holes in the tank.* Remove the flat washers and pull out the old element.



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18. NOW TAKE THE OPPORTUNITY TO CLEAN THE INTERIOR OF THE TANK, THE BAFFLE, AND OTHER COMPONENTS WHICH MAY HAVE SCALE OR DEPOSITS. REMOVE SCALE WITH A WIRE BRUSH OR SOFT EMORY CLOTH. BE CAREFUL NOT TO DAMAGE THE PRINTED CIRCUIT BOARD OR THE SMALL TEMPERATURE PROBE IN THE BOTTOM OF THE TANK.
19. Before inserting the new element, use the needle nose pliers to gently unbend the 90° spade connectors to a 45° angle. This will make it easier to insert the new element.
20. Place a new fiber washer onto each hub and, insert the element into the tank and through the holes. Make sure the spade connectors are pointing to the left as you view the front of the tank.
21. Place a new metal washer over each hub and then the hex nuts. Use a 3/4" wrench as a back up, on the hub of the element inside the tank. Use a 3/4" socket to tighten each hex nut quite snugly, for a leak proof seal. **CAUTION: Do not over tighten and damage the fiber washers. 60 Ft. Lbs. torque.**
22. Use needle nose pliers and gently bend the spade connectors back to a 90° angle.
23. Re-connect the wire connectors to each element spade connector. **Make sure they are tight**
24. Make sure that no other wire connectors came loose off of the printed circuit board. Double check and **tighten** or re-connect any and all connections to the printed circuit board and the new element.
NOTE: Loose spade connectors can overheat and damage the wires. Use pliers to re-tighten the spade connectors and do not allow line and load wires to cross over each other. Doing so will void your warranty.
25. Place the printed circuit board back into position and align the threads on the water probe to the hole on the printed circuit board. Re-insert all screws on the printed circuit board which were removed in step #13.
26. Thread the nut back onto the end of the water probe where it protrudes through the printed circuit board. Adjust the back nut as necessary for a snug fit on the printed circuit board.
CAUTION: Make sure that the water probe is pointing directly down into the water tank at a 90° angle.
Now hold the probe end with your left hand while you tighten the nut against the board. Achieve a snug and tight fit. Once again insure that the probe is pointing straight down into the tank. Loosen the nut and re-adjust if necessary.
27. Before you place the front plastic cover back on, double check to make sure that you have not missed any electrical connections to the board. Also make sure that no wires are being pinched.
28. Align the front cover and slowly push it over and onto the printed circuit board. Make sure that the LED's align up with the holes in front. Tighten all 4 screws.
29. Re-insert the stainless steel baffle into the tank and, secure with the 2 phillips screws.
30. Insert the humidifier back into the duct and, secure with the 1/4" hex screws removed in step # 9.
CAUTION: Make sure the unit is level and plumb.
31. Put some teflon tape onto the threads of the brass drain assembly and screw the entire assembly back onto the drain connection of the humidifier. **CAUTION: Do not hand tighten or use the solenoid valve as leverage. Doing so will damage the valve. Use an adjustable wrench at the brass "T" to tighten.**
32. Plug the automatic drain valve wire connector back into the side of the front cover until it clicks into place.
33. Re-insert the green low voltage terminal block at the top of the front cover.
34. Re-connect the overflow drain hose and the automatic drain hose.
35. Re-connect the 1/4" water supply line and open the valve.
36. Plug the humidifier into the 120 volt or 220 volt outlet.
37. If the humidistat setting is high enough, the unit should start to fill with water.
38. Once the water level is correct, the "HEATER" LED should illuminate.
39. Observe the humidifier through several cycles to insure proper operation.
40. If the humidifier malfunctions, review all of the above steps to make sure that nothing was overlooked.
41. Call Field Technical support if you have any questions. (1-800-742-8368)