

# Service Bulletin EP-23

Models: AE115, AE125, RP17PT, RP27PT, WH17, WH27

## Removing & Replacing Element Assembly



# BOSCH



**This bulletin is only for heaters with polymer heating modules. Element replacement is not possible for units with copper heating modules.**



### WARNING:

THE FOLLOWING PROCEDURE MUST BE PERFORMED BY A LICENSED ELECTRICIAN.



### WARNING:

ELECTRICITY IS EXTREMELY DANGEROUS. TAKE EXTRA PRECAUTIONS AND ENSURE ALL CIRCUIT BREAKERS ARE OFF BEFORE PERFORMING ANY WORK TO THE HEATER.

### Tools required

- Philips head screwdriver
- Flat head screwdriver
- Wire cutters
- Wire ties
- Socket wrench with extension bar and 8mm socket.
- Needle-nose pliers

### Preparation

1. Turn off circuit breakers supplying power to the water heater.
2. Close installer supplied shutoff valves.
3. Open a hot water fixture to allow water to drain from water lines and heater.
4. Remove front cover from heater.

### Removing element assembly

1. Remove gray circuit board cover on lower right side of heater. Cover is secured with one screw. Remove neon light from clip inside cover.
2. Note color and position of wires with white insulators on control board as shown in Fig. 1.



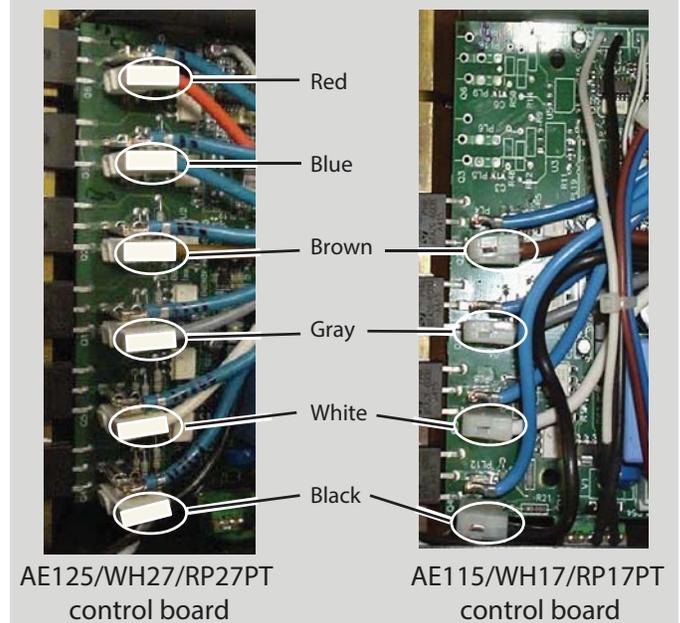
**Models AE115/RP17PT/WH17 will have 4 white insulated wire connections.**  
**Models AE125/RP27PT/WH27 will have 6 white insulated wire connections.**



### CAUTION:

The wires must be re-installed in the same sequence as the original configuration. Improper installation of these wires will result in the unit not operating properly.

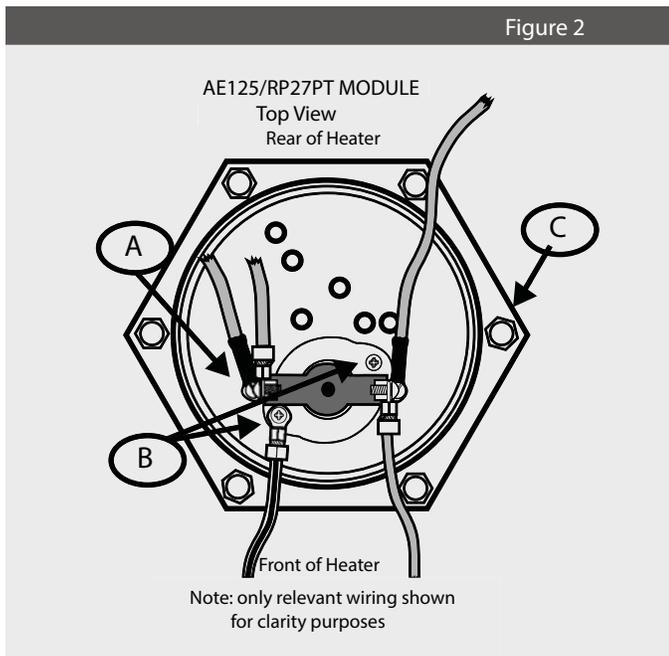
Figure 1



3. Remove the wires with white insulators from the circuit board using needle nose pliers.
4. Using wire cutters, cut the cable ties on the wire bundles leading from the circuit board to the element assembly being removed.
5. Separate the disconnected wires from the wire bundle.
6. Unscrew the slotted screw(s) with washer(s) to remove the wire(s) from the left side of the thermal cut out (TCO). (Figure 2, pos. A) AE125, WH27 and RP27PT models have 2 wires, AE115, WH17 and RP17PT models only have 1 wire. DO NOT remove wire(s) from right side of thermal cut out (TCO).

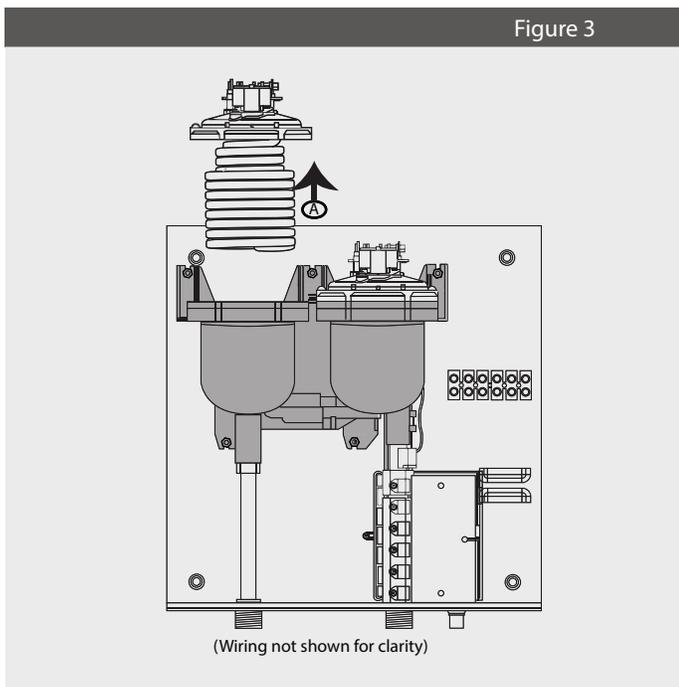
- Remove the 2 screws and washer that mount the TCO and ground wire to the element assembly (Figure 2, pos. B). Pull the TCO and attached wire(s) free from the element assembly.

Figure 2



- Remove the 6 hex head 8mm screws from the element assembly. (Figure 2, pos. C)
- Remove the element assembly from the polymer module. It may be necessary to use a slotted screwdriver to carefully pry them apart. (Figure 3, pos. A)

Figure 3



- Inspect the elements for scale buildup. If scale is present, water must be treated to prevent damage to the elements. Consult local water treatment professional for recommendations.  
**This is not a defect or warranty issue but is related to water hardness (mineral content).**

## Replacing element assembly

- Discard the old o-ring between the element assembly and polymer module.
- Liberaly apply lubricant to the new O-ring, inner lip of element assembly and outer lip of polymer module. We recommend using Dow Corning 111 Valve Lube and Seal.
- Insert the new O-ring into the top of the element assembly, ensuring it is even and fully seated on the ledge approximately 1cm (3/8") in from the mating surface. Make Sure to press the O-ring into the groove. Do not install O-ring on module.
- When you have the new elements with the new O-ring(s) installed, gently lower the canister lid element assembly down. You will have a small gap between the brass lid and the plastic canister. Apply even pressure on brass lid and using a reasonable amount of force, press firmly down until you feel the O-ring push and seal (lock) into place.
- Reinstall all the 8mm hex head six screws started. At this point you will tighten each screw in by hand in a star shaped pattern 2 turns at a time, bringing it down squarely in small increments. You do not want to tighten one screw all the way down and move on to the next screw as you will end up pinching the O-ring on one spot and it will not seal correctly. Doing a star shaped pattern in small increments brings it down square and the O-ring will seal correctly.  
Make sure that you do not over tighten the screws. Since it is an O-ring seal you only want to go hand tight. If you over tighten, you will strip out the screws and the unit will leak. Maximum torque not to exceed 2 Ft-lbs.
- Open a hot water fixture and slowly turn on the water supply to the heater and check for leaks. Turn off the water supply. If no leaks, proceed to the next step.
- Remount the TCO to the top of the element assembly being sure to secure the green and yellow striped ground wire under a mounting screw head. (Figure 2, pos. B)
- Connect the short wire(s) from the new element assembly to the left side of the TCO. On AE125, WH27 and RP27PT models, the wire from the bridged terminals mounts to the lower left terminal of the TCO.
- Connect the wires from the elements to the circuit board in correct order. (Figure 1)
- Bundle the wires together with new wire ties.
- Clip the light to the inside of the circuit board cover and reinstall the cover.
- Reinstall heater cover.
- Turn on a hot water fixture and open shut off valves to heater to allow water to flow through heater.
- Once water has been flowing for at least 30 seconds, turn on circuit breakers. Light should come on and water should heat.



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