

# Balboa Water Group

1,5 kW Pressure Switch and Vacuum Switch Heaters  
3,0 kW Vacuum Switch Heaters

## INSTALLATION & OPERATION INSTRUCTIONS



**ELECTRICAL HEATERS**  
**20-5415P, 20-5415V,**  
**20-54151V, 20-5430V, 20-54301V**

### ***IMPORTANT INSTRUCTIONS*** ***DO NOT DISCARD***

Your whirlpool bathtub heater has been specifically designed to enhance the enjoyment of your whirlpool bath. Once filled, the warm relaxing temperature of the whirlpool bath is constantly maintained by a built-in thermostat as the whirlpool pump is operating.

Your whirlpool bathtub heater is totally self contained to insure trouble free installation and operation. As with all electrical devices, certain safety precautions should be taken during installation and operation. Please read and follow all instructions carefully.

## **IMPORTANT SAFETY INSTRUCTIONS**

You should have received safety instructions with your whirlpool bathtub system. Please read and follow them carefully. Those instructions will include the following warnings.

- 1. WARNING** - Risk of Electrical Shock. Do not permit any electrical appliances (such as a light, telephone, radio, or television) within 1.5 meters of the whirlpool bathtub.
- 2. DANGER** - To reduce the risk of injury, do not remove the suction cover(s) from the whirlpool bathtub.
- 3. To Reduce the Risk of Injury:**
  - A. The water in your whirlpool should not exceed 38 degrees Celsius. Lower water temperatures are recommended for extended use (exceeding 10-15 minutes) and are definitely recommended for younger children.
  - B. Pregnant or possibly pregnant women should consult a physician before using the whirlpool. Water temperatures in excess of 38 degrees Celsius are not recommended.
  - C. The use of alcohol, drugs or medication before or during the use of the whirlpool may lead to unconsciousness with the possibility of drowning. Consult your physician before using the whirlpool if you are using any medication.

D. Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using the whirlpool.

**4. WARNING** - Risk of Child Drowning. To reduce the risk of accidental drowning, do not permit children to use the whirlpool unless they are closely supervised.

**5. WARNING** - Install tub in accordance with local codes to protect the tub area from possible leaks or moisture. Check the pump seal and fittings on a regular basis.

## CAUTION

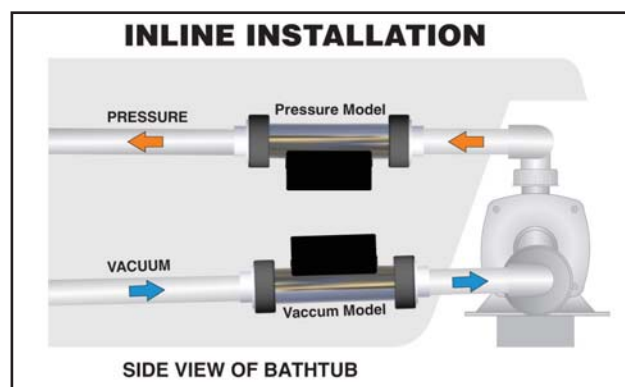
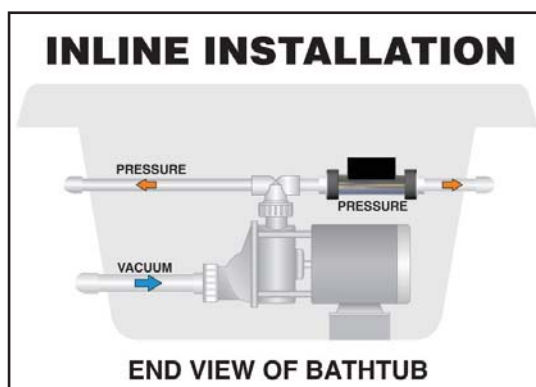
Before use of the pump and heater, test the RCD (Residual Current Device) for proper operation. The pump and/or heater should turn off when the RCD "Test" button is pushed.

### Important

Follow the directions for installation and connection. This heater is not suitable for medical use. We reserve the right to change the product and the specification without notice.

### Safety rules

- A. Locate the heater in a dry area with good ventilation.
- B. The heater must be situated at least 3 cm above the ground floor.
- C. Before cleaning, servicing, exchanging of parts or accessories, or checking up on various disturbances, the mains have to be cut off.
- D. The heater is protection Class I. It has to be connected with wires according to the instructions from EN 60335-1 and EN 60335-2-60. It is recommended that you consult a state-registered electrician.
- E. In order to separate the heater from the mains you must install a suitable RCD with at least 3 mm break distance on each terminal in the present electrical installation.
- F. The mounting is to be made in such a way that it is not possible to touch the electric parts. Install the heater in such a manner that the user in the tub cannot touch any part of the heater or its adjustment appliances.
- G. The electric parts have to be mounted in such a way that they cannot fall into the bathtub.
- H. Instruments of Class I must be connected to a permanent installation and safe guards must be established by way of an equalizer connection to the existing water supply.



# ELECTRICAL HEATERS

**20-5415P, 20-5415V, 20-54151V, 20-5430V, 20-54301V**

## Installation

Install the heater in a frost-free room. Optionally, the heater may be installed horizontally or vertically. Install the heater below water level and in such a manner that water is sure to reach the heating element when filling the tub and that there is no risk of air pockets developing around the heating element. Install the heater in such a manner that it is easily accessible in connection with service and re-connection of the overheating circuit breaker.

## Cable and wiring connections

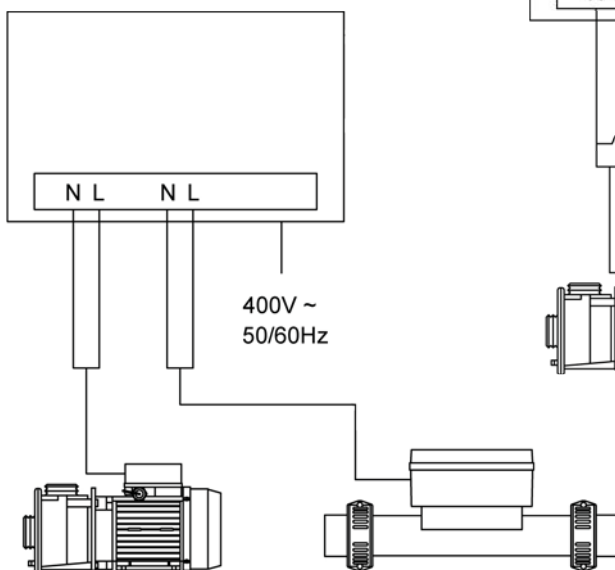
1. Install an external potential equalizer via the exterior boss of the water heater.
2. Heaters to be connected to main control box either on the pump terminal strip via contactor box or to the heat or heater terminal strip. See diagrams below.

## Description of functions

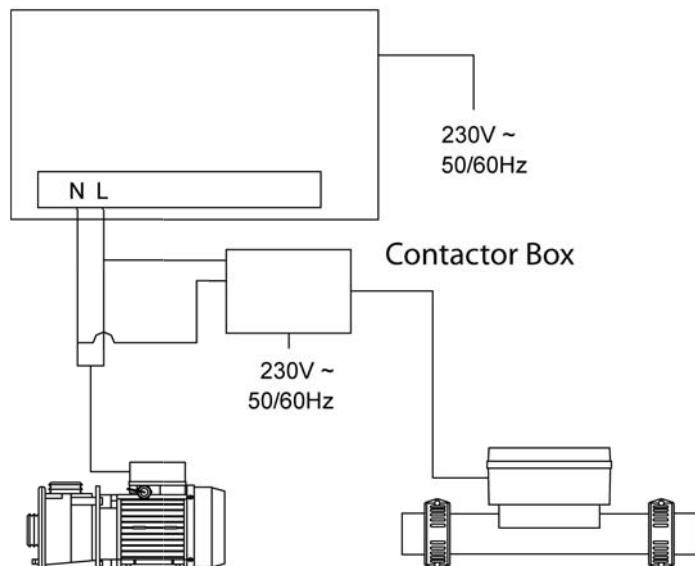
Fill the tub until the level sensor allows operation of the system. Set the temperature to the desired water temperature if your control system has this feature. The heating function may then be activated, provided the other operational conditions are met. This means: the pump and any other safety functions have been activated. Maximum setting temperature is approx. 40°C. The built-in overheating thermostat will automatically cut out, if the temperature exceeds approx. 50°C, and must be reset manually. Drain the tub to reset the cut-out, unplug the heater or turn off the circuit breaker for 15 - 30 minutes.

## Connection Diagrams

2. For control boxes with separate heater outlet



1. For control boxes without separate heater outlet



## OPERATION

Once the Whirlpool Bath Heater has been installed, operation is totally automatic. The Heater will activate to maintain the temperature of the water in the bathtub.

A "heater on" indicator is included for servicing reasons. This indicator is illuminated while the heater is actively heating the water.

**HIGH-LIMIT:** The heater includes a high-limit safety device that is designed to trip if the water exceeds a safe, preset, temperature. If the high-limit trips, the heater will be disabled until the power has been removed from the heater for sufficient time to allow the heater to cool and the switch to automatically reset. This is most easily accomplished by turning off the RCD to the tub. Should the high limit trip repeatedly, do not use the tub until service has been performed.

**NOTE:** Do not attempt to service, there are no field replaceable parts.  
Contact a qualified technician for service issues.

<b>SPECIFICATIONS: ELECTRICAL HEATERS</b> <b>20-5415P, 20-5415V, 20-54151V, 20-5430V, 20-54301V</b>
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<b>Voltage/Current</b>	<b>20-5415(1)X</b>	<b>20-5430(1)X</b>
Nominal voltage:	240, 50/60Hz	240, 50/60Hz
Nominal output:	1,5 kW	3,0 kW
Nominal current:	6,3A	12,5A

### Activation pressure

20-5415P (pressure): 2,25 psi

20-54XX(1)V (vacuum): -0,8 psi

Minimum water flow rate: 9m<sup>3</sup>/h

### Heater

Operating temperature: Higher than 0°C.

Overheating thermostat: Cutting-out at approx. 50°C.

Automatic reset after disconnection of power for 15 - 30 min.

Temperature control: Preset to 40°C, Automatic, not adjustable.

### Materials

Outer tubes and heating element: stainless steel: SUS 304

Tailpiece: PVC

Union nut: ABS

Box with adjustable thermostat: Metal

Box with built-in thermostat: ABS

### Water quality requirements

Chloride: Max. 400 mg/l

Chlorine: Max. 2 mg/l

pH value: 7,0 - 7,8

### Dimensions

Length: 1,5kW: 25,5 cm. (incl. tailpiece). 3,0 kW: 33 cm (incl. tailpiece)

Max. height, built-in thermostat: 13,0 cm.

Max. height, adjustable thermostat: 13,7 cm.