

# HOTRUN

*Electric Instantaneous*



*Water Heaters*

*Service manual*

## Before installation – quoting stage

Work out with the customer what is the right model to install for the application

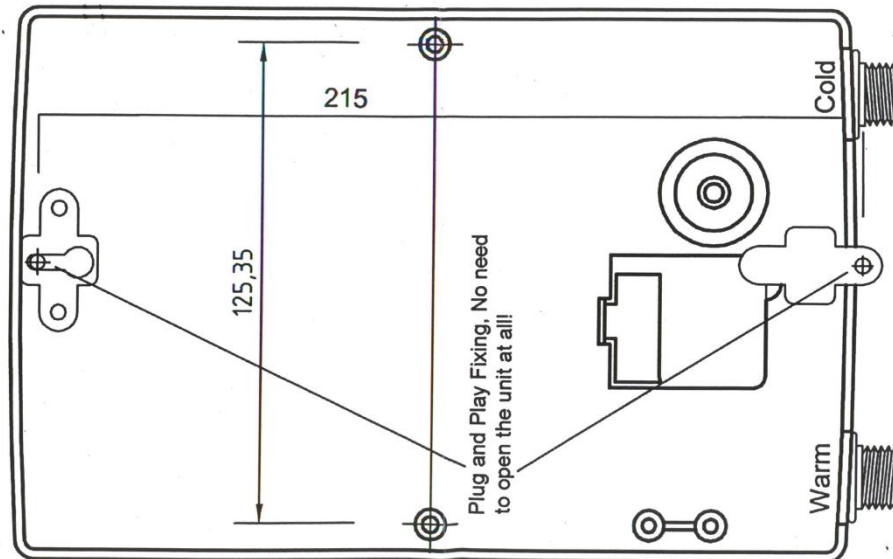
### Site assessment

1. The electrician to assess the site power supply and the requirements for the intended model Hotruns to install. This should include the sub-mains to the main switchboard and the total load on the load of the site.
2. The plumber needs to make sure that the water supply is sufficient for the total flow of all Hotruns running simultaneously at the minimum pressure of 100kPa.
3. Be aware that some multi story apartments may utilise a gravity fed water supply, allow for 30 kPa for every story (9 kPa/metre)

**Both electrical and water supply requirements should be satisfied before purchasing the Hotrun water heaters.**

## General Installation

1. The Hotrun is supplied with two screws to mount it *without the need to open up the lid of the water heater.*
2. The Hotrun can be mounted in any orientation.



### **Electrical installation**

1. The Hotrun range is from 3.5 to 9.0 kW on a single phase 16-40 A or on a 2-phase 16 or 20Amp dedicated circuit.
2. Ensure that the property has the desired supply to the switchboard (divide the load properly if on a 3- phase supply).
3. The circuit ends close/next to the water heater on an isolator switch to allow for the 400mm cord to go in a compression cable gland (without tension).



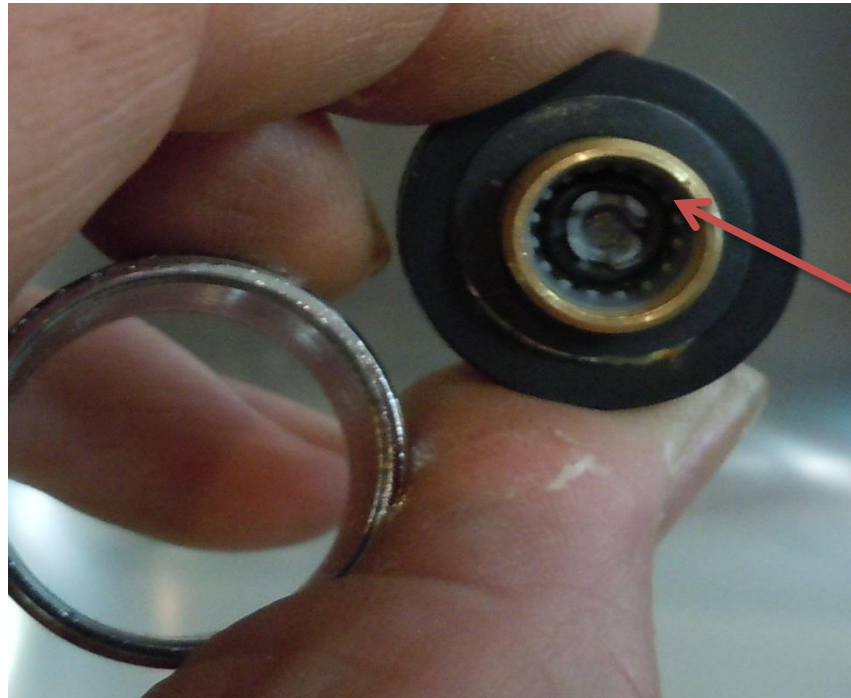
### Water Installation

1. Ensure adequate cold water supply pipe size is installed to maintain the pressure and flow when multiple units are installed(100-1000 kPa)
2. Allow for a full bore stop cock without any flow restriction to be fitted in the cold water supply to each Hotrun
3. Connect the Hotrun only with the flat seal flexible hoses supplied.  
(too much torque on the fittings can damage the internal copper coil)
4. Fit the supplied flow restrictor to the cold water inlet on the Hotrun.

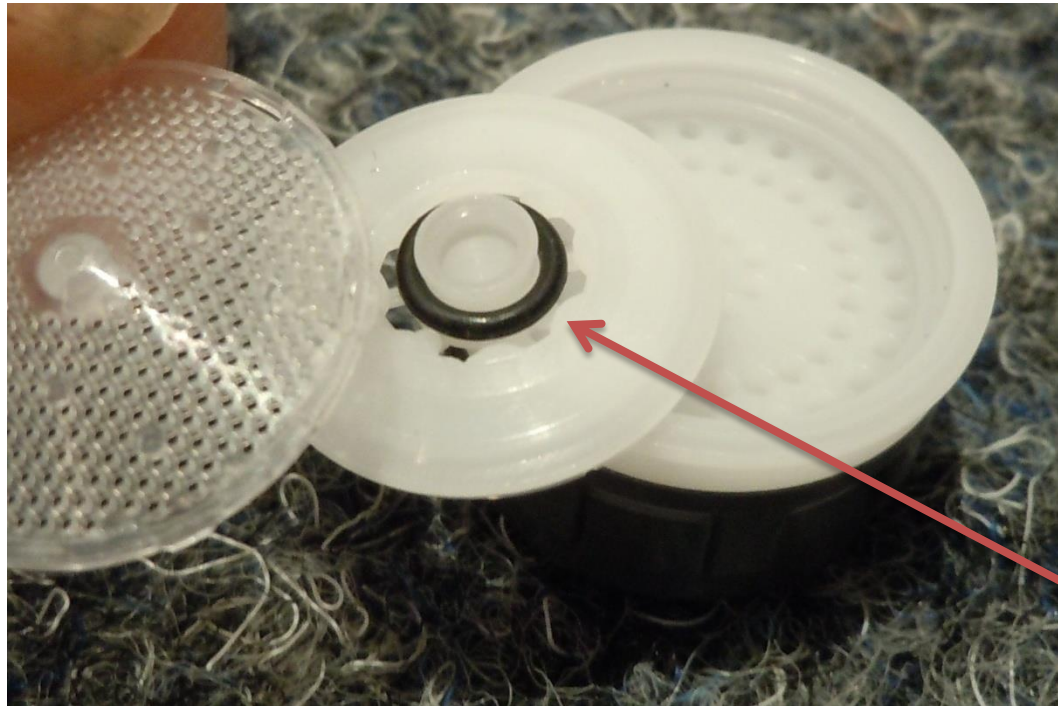


## Water Installation

Remove any other restrictions in taps, shower heads and aerators



Water Installation remove restrictions from aerators



### Initiating the Hotrun

Before applying electricity, open the tap to flush debris and air from the **Hotrun**, this may take a minute to remove all the air.

When the water is clean and free from burst of air, turn the tap off. and switch on the electrical power.





### **Fault finding, initial observations**

1. The adequate supply and pressure of the water (min. 100kPa).
2. Make sure the cold water inlet and the hot water outlet are not connected in reverse.
3. The main switch or circuit breaker is switched on.
4. The fuse/circuit breaker is not blown/triggered.
5. Flow rate from cold supply is adequate for the installed Hotrun.

**Hint.** Try to disconnect the hot water flexi and run it into a bucket and see if there is warm water coming through. If so the problems are being caused by new tap ware or blockages in aerators or restrictors.

**Problem 1**- The Hotrun does not switch on when opening the tap

**Causes**- Usually attributed to water supply problems.

Ensure the pressure on the cold water supply is more than 100kPa, while the Hotrun is in use.

-Too much back pressure in outlets or shower heads after the Hotrun causing lack of pressure differential over the Hotrun (backpressure through the cold)- Wrong flow restrictor installed.

-Maximum temperature cut out switches activated, due to air in the Hotrun not released before switching on the electrical supply.

-Maximum temperature cut out switches activated, due to air in the Hotrun not released before switching on the electrical supply.

**Problem 1 Remedies**

-Correct the water pressure problems; remove any flow restrictors in outlets.

-Disconnect the hot water flexi and run it into a bucket and see if there is warm water coming through. If so the problems are being caused by new tap ware or blockages in aerators or restrictors.-

-Seek electrical assistance to check power all the way to the elements.

-If the cut-out has been triggered due to poor flushing of air from system then RESET the cut-out by gently depressing button (ensure electrical power is disconnected first).

## **Problem 2**

- The water that is coming out of the Hotrun is not warm enough.

## **Cause**

- The incoming water is too cold - The total flow is too high.

## **Remedy**

- A flow restrictor should have been installed. If so, an additional ball valve in the water supply to the Hotrun can be used reduce the flow for the purpose of the test. This will increase the temperature (not for Hotrun-T models)

### **Problem 3**

- The hot water flow stops when trying to set the required temperature to a colder setting.

### **Cause**

- Aerator/restrictor in nozzle of outlet causing too much back pressure
- incorrectly balanced flow restrictor in the supply line.
- flow from the cold supply line is less than the requirements for the Hotrun

### **Remedy**

- Remove the restrictors in the tap or aerator fitting. Fit the appropriate restrictor to the cold supply line for the Hotrun. Check that other taps or restrictors built into the supply line are not restricting the flow or reducing the pressure too much.

#### **Problem 4**

- A Hotrun fitted to the upper floor of a high-rise building that is gravity fed and it does not operate.

#### **Cause**

- The pressure is less than 100 kPa. The pressure of water under gravity is 9 kPa per metre, this equates to approximately 30 kPa per floor plus the height of the roof tank.

#### **Remedy**

- Remove all restrictors in the tap or aerator and use 'star' inserts in spout instead of aerator. Allowing full flow will often help in low pressure situations. On request we can help to accommodate for most situations, sometimes just leaving out the supplied flow restrictor from the cold water inlet can be sufficient.

## Fault finding (level 2)

### Problem 1

-The Hotrun does not switch on

### Tests

-Ensured that the **general conditions** have been met.

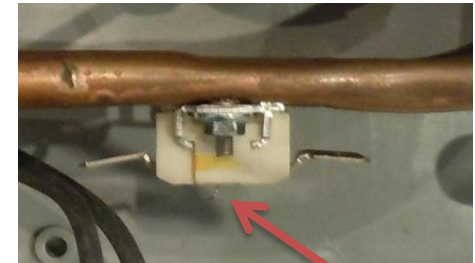
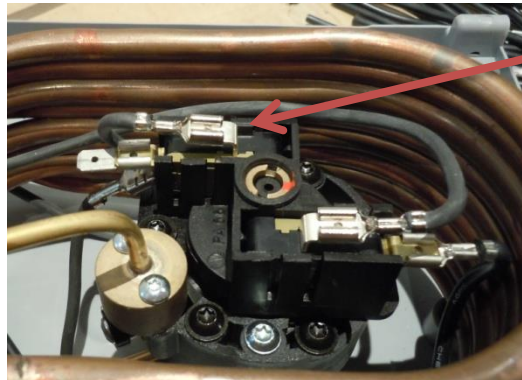
-Isolate the Hotrun unit by switching off an isolating switch and turning off the circuit breaker and secure and tag it in the off position as per the wiring rules.

-Remove top cover from Hotrun

### Fault finding (level 2) continued

-Check with an Ohm meter and ensure flow switches operate (contacts need to close when water flows). When you turn on tap and you can hear the switches “click”.

The best way to check the switch operation with a multimeter



-If the pressure differential switch works O.K. then check that the over temperature cut-out(s) are not triggered.

-If the contact of one of the micro-switches remains closed the heating won't stop when you close the tap, and it will trigger the over-temperature cut-out to trip. In that case the micro-switch needs replacement. Note there are various part numbers for different models Hotruns

### **Fault finding (level 2) continued**

If so: press the tab to reset and retest. If triggered it can be a sign of aging or sticking of the micro-switches of the pressure differential switch.

-Measure continuity of each element 10 to 18 ohms is the expected range depending on element power rating.

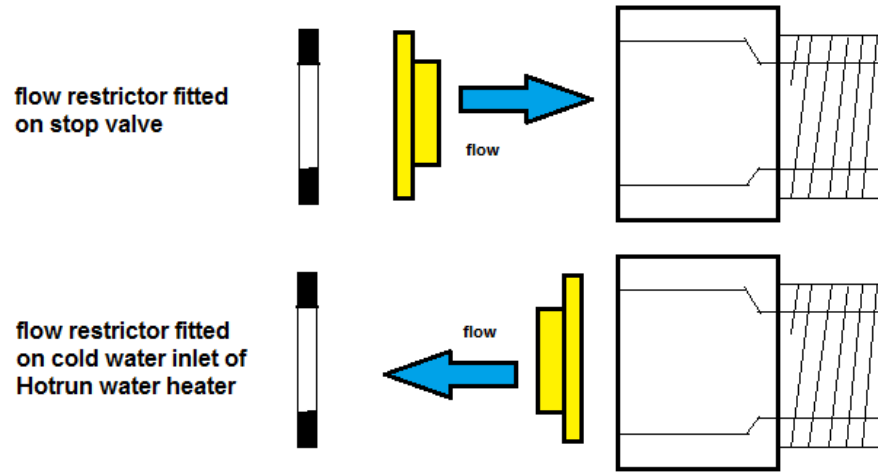
### **Remedy**

**-If the tests above indicate a fault then contact Elwa Technical Support.**

**If an element is blown usually the Hotrun needs to be replaced**



Flow control for Hotrun water heaters



2 l/min  
hotruns  
35/46



3 l/min  
hotrun  
60



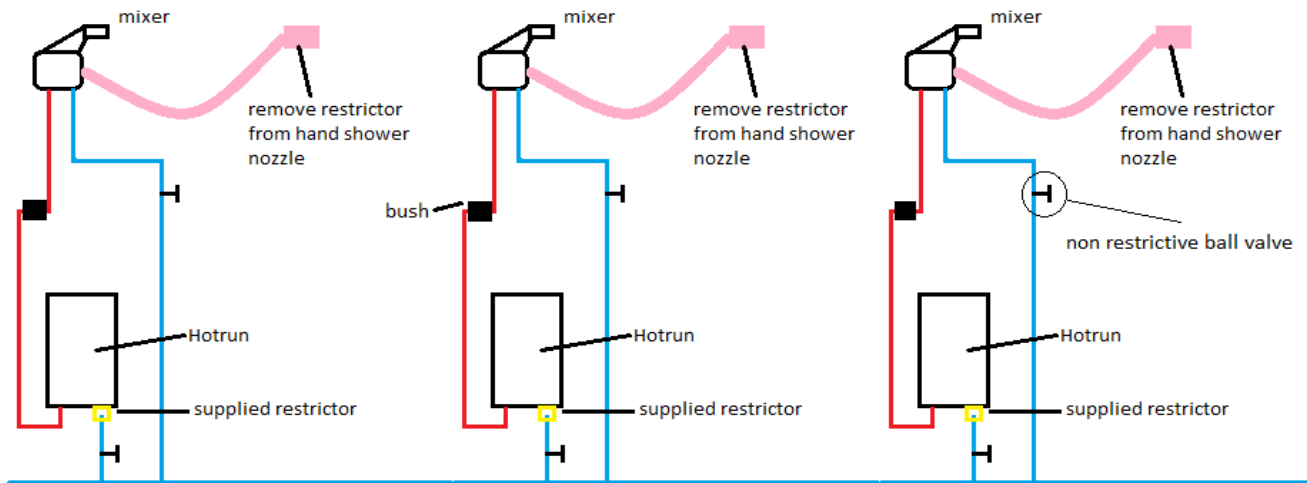
4 l/min  
hotrun  
72



4.5 l/min  
-



5 l/min  
hotrun  
90



multiple outlet site e.g hair salon

Copper  $\geq 20$  mm or  
plastic  $\geq 25\text{mm}\varnothing$



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