Zip InLine

Electronically controlled instantaneous water heaters.

Model number:
ES3, ES4, ES6

CONTENTS

- Please read these instructions carefully before commencing installation of the instantaneous water heater.
- Please leave these instructions with the end user after installation.
- To ensure you have a copy of the latest instructions visit www.zipwater.co.uk.

IMPORTANT:

PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS AND CAUTIONS. USE THIS PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY, AND WILL INVALIDATE THE WARRANTY. RETAIN THESE INSTRUCTIONS FOR FUTURE USE.

⚠ WARNINGS

- Installation, commissioning and maintenance of this appliance must only be carried out by a competent installer who will then be responsible for adhering to all relevant standards and regulations.
- If inlet temperature is up to 65 °C (eg. fed from a solar supply) mixing with cold water will be required to ensure a safe temperature at the outlet.
- Do not remove the front cover under any circumstances before switching off the mains electrical supply to the unit.
- Never make technical modifications, either to the appliance itself or the electrical leads and water pipes.
- ⏚ The appliance must be earthed at all times.
- Pay attention to the fact that water temperatures in excess of approx. 43 °C are perceived as hot, especially by children, and may cause a feeling of burning. Please note that the fittings and taps may be very hot when the appliance has been in use for some time.
- The values stated on the rating plate must be observed.
- In case of malfunction, disconnect the mains power supply immediately. In case of leaks, cut off the mains water supply instantly. Repairs must only be carried out by the customer service department or an authorised professional.
- This appliance can be used by children aged 3 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have

been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be performed by children without supervision.

- If the appliance is factory equipped with a power supply cable, it must be replaced with an original spare cable from the manufacturer in case of damage by an authorised technician in order to avoid any hazards.
- In accordance with EN 60335, the appliance must be permanently connected to the supply through an isolating switch with a contact separation of at least 3 mm in all poles and be protected by a suitably rated RCD.
- The wall bracket must be secured with the supplied screws and dowels. The appliance must be secured to the wall bracket. The appliance may only be operated if it has been properly mounted on the wall bracket.
- The required water resistance may not fall below the value stated on the rating plate at any time.

To observe <u>additionally</u> for pressureless installation:

- The water outlet behind the devices must not be blocked, and the water flow must not be restricted.
- The water outlet facilities, such as shower heads must be decalcified regularly. Deposits must be removed at regular intervals.
- Only the fittings recommended by the manufacturer may be used.
- If the appliance is exclusively connected to a single shower, only the shower heads recommended by the manufacturer may be used. No other fittings or appliances which decrease the water flow to the shower may be installed.

ⓘ CAUTIONS

- Optimum operation is ensured at a water flow pressure of 0.2 to 0.4 MPa (2-4 bar). The appliance must not be subjected to pressure exceeding 1.0 MPa (10 bar).
- The appliance must only be used when correctly installed and in perfect working order.
- The appliance must be installed in a frost-free room and must never be exposed to frost.
- The ES range is not intended for use with thermostatic mixing valves or taps. If thermostatic mixing valves or taps are to be used, their compatibility with the instantaneous water heater must be verified under site operating conditions.
- The appliance must be completely filled with water before being switched on.
- Before commissioning for the first time and each time the appliance or the piping system is emptied (e.g. due to work on the plumbing system or maintenance), the appliance must be purged by opening and closing the hot water tap until all air has been eliminated from the water heater and no more air emerges, before re-connecting to the electrical supply.
- The appliance must only be used for heating wholesome (or cat 1) water. The specific water resistance must not fall below the required value indicated on the rating plate. The appliance must not be used for any other purpose.
- Incoming water temperature must not exceed that stated in Technical data.

- The Zip InLine is intended for connection to mains supply only. In any other case please contact Zip on 0345 6 005 005 for advice.
- **Zip Water UK cannot be held liable for any damages caused by failure to observe these instructions.**

GENERAL PRODUCT DESCRIPTION

Zip InLine ES3, ES4 and ES6 instantaneous water heaters are compact electronically controlled instantaneous water heaters for hand washing.

Its electronic control regulates the heating power consumption depending on the selected outlet temperature, the respective inlet temperature and the flow rate, thus reaching the set temperature exactly to the degree and keeping it constant in case of pressure fluctuations.

The heater is pre-set in the factory to an outlet temperature of about 38°C, which is ideal for hand washing. When this temperature is reached, the electronic regulator reduces the power in order to ensure that the outlet temperature does not exceed this value. This automatic temperature regulation means that it is only necessary to open the hot water tap to obtain water at a constant, safe temperature for washing hands. If the set outlet temperature is not reached, slightly reduce the flow of water from the tap. Cold water may be added if a lower temperature is required.

APPROVALS

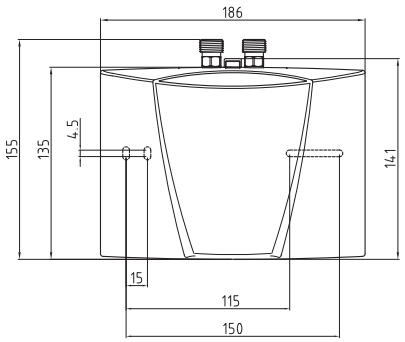
Zip InLine ES3, ES4 and ES6 are VDE approved to the LVD and EMC directives and are CE marked.

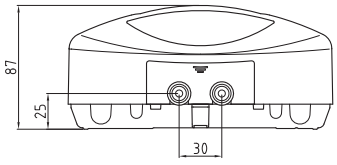
Zip InLine ES3, ES4 and ES6 have been examined, tested and found when correctly fitted to comply with the requirements of the United Kingdom Water Regulations / Byelaws (Scotland).

The products are listed under the WRAS (Water Regulations Advisory Scheme) Water Fittings and Materials Directory.

DIMENSIONS

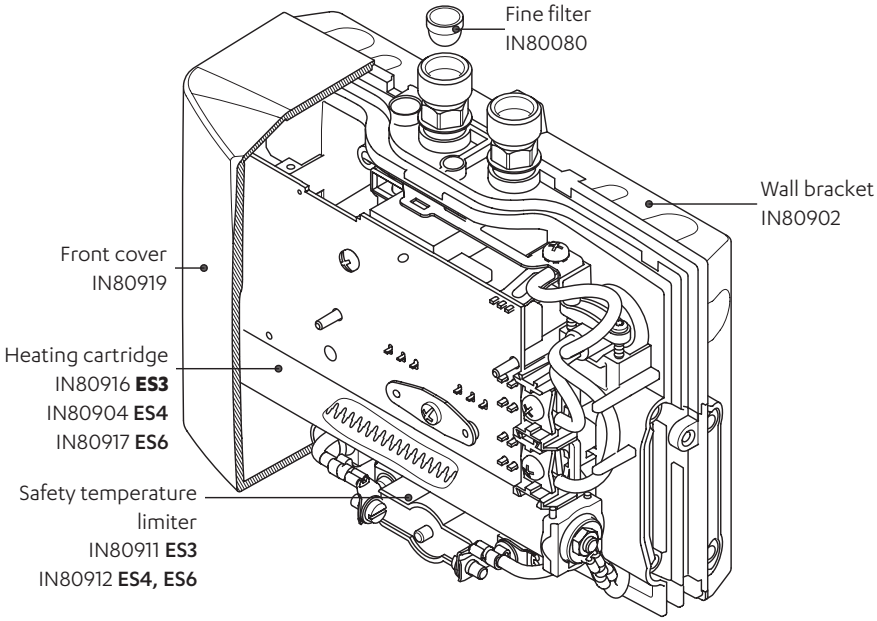
Dimensions in mm





SPARE PARTS

When ordering spare parts, please always specify the appliance model and serial number.
Spares are available, however they may be on a made to order basis.



IN80910	Temperature sensor (not shown)
ZL011	Aerator insert for **ES3** and **ES4** (not shown)
ZL010	Aerator insert for **ES6** (not shown)

TECHNICAL DATA

	Zip InLine		
MODEL	**ES3**	**ES4**	**ES6**
Installation	Under-basin		
Declared load profile	XXS		
Energy efficiency class *)	A		
Energy efficiency (ηwh) *)	39 %		
Annual electricity consumption *)	478 kWh	475 kWh	475 kWh
Sound power level	15 dB(A)		
Electrical connection	1/N/PE 220..240 V AC		
Power rating	2.8 kW	4.4 kW	5.5 kW
Rated current	12 A	19 A	24 A
Min. required cable size	1.5 mm^2	2.5 mm^2	4 mm^2
Hot water (l/min) max. at Δt = 25 K	2.0	2.5	3.3
Rated volume	0.3 l		
Rated pressure	1.0 MPa (10 bar)		
Heating system	Bare wire heating system IES®		
Required spec. water resistance @ 15 °C	≥ 1100 Ωcm	≥ 800 Ωcm	
Inlet temperature	≤ 65 °C		
Factory set temperature	38 °C		
Internal temperature adjustment	30 °C – 43 °C		
Factory set flow rate @3 bar 1)	2.0 l/min	2.5 l/min	3.3 l/min
Switch on flow rate	1.2 l/min	1.5 l/min	1.5 l/min
Switch off flow rate	1.0 l/min	1.3 l/min	1.3 l/min
Minimum differential pressure @ 38 °C	0.020 MPa	0.045 MPa	0.065 MPa
Water connection	½" BSP		
Weight (when filled w. water)	1.5 kg		
VDE class of protection	I		
Water protection class	IP25		
Type of protection / safety			

*) The declaration complies with the EU regulation No 812/2013
1) Flow rate limited to achieve optimum temperature rise
The cable size may not exceed 4 mm^2
All data quoted at nominal supply voltage. Standard European voltage tolerances of -6 % to +10 % may be applied.
A minimum water pressure of 0.2 MPa (2 bar) is recommended for optimum performance.

Instantaneous performance calculations

$$\text{Temperature rise °C} = \frac{\text{(Nominal power rating (kW)} \times 14.3)}{\text{Flow per minute (litres)}}$$

INSTALLATION

Requirements

The following regulations must be observed:

- **EN 806**
- **The installation must comply with current IEE regulations and relevant Local Authority requirements**
- **The rating plate and technical specifications**
- **Only functional and appropriate tools must be used during the installation**

Installation site

- Appliance must only be installed in frost-free rooms. Never expose appliance to frost.
- The ES3, ES4 and ES6 are designed for under-basin installation must be installed with the water connections upward.
- The unit should be positioned as close as possible to the outlet to minimise heat loss. The recommended maximum distance is 0.5 metres.
- For maintenance work, a shut-off valve should be installed in the supply line. The appliance must be accessible for maintenance work.
- The water pipes must not exert any mechanical force on the water connections of the instantaneous water heater during installation and operation. If this cannot be guaranteed due to the installation conditions, we recommend the use of flexible connections.
- Hot and cold water connecting pipes should be WRAS approved and of copper or steel construction. Plastic pipes may only be used if they conform to EN 16893, Series 2. The hot water pipes must be thermally insulated.
- The specific resistance of the water must be at least 1100 Ωcm at 15 °C for ES3 and at least 800 Ωcm at 15 °C for ES4 and ES6. The specific resistance can be obtained from your water supply company.
- When considering the location of the heater, consideration should be given to the safe and visible disposal of any water resulting from leaks and seepage. This is particularly relevant when the heater is located in a cupboard or any concealed location. For guidance please call Zip on 0345 6 005 005.
- The water pipes must not exert any mechanical force on the water connections of the instantaneous water heater during installation and operation. If this cannot be guaranteed due to the installation conditions, we recommend the use of flexible connections.

Shower application

- The hot water temperature may not exceed 55 °C if the ES system is connected to a shower. If the appliance is operated with preheated water, it must be ensured that its temperature is also limited to 55 °C by the customer.

Typical installations

Fig. 1 **Vented installation with special open outlet tap**

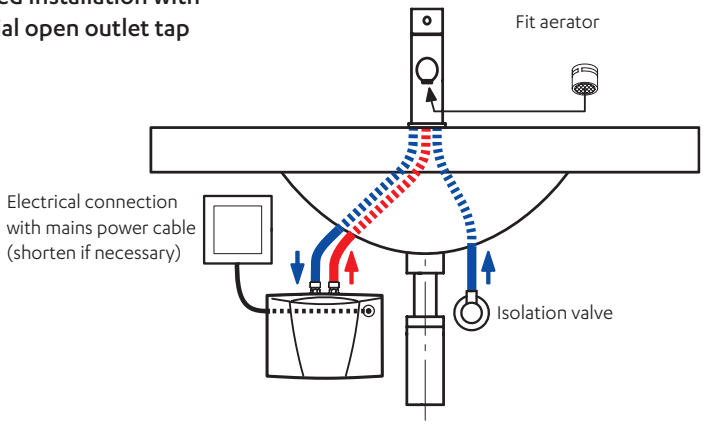
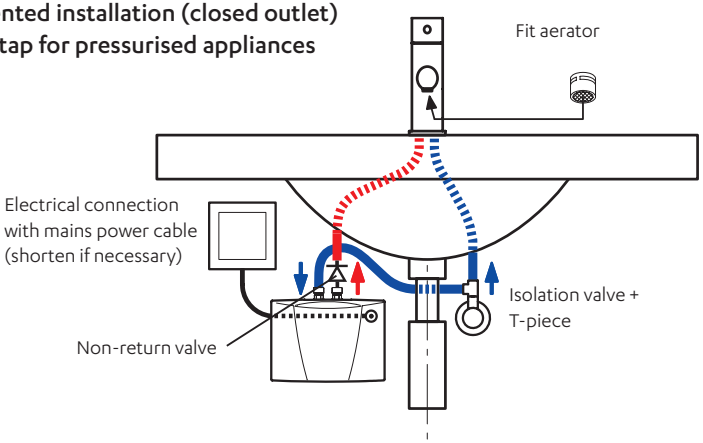


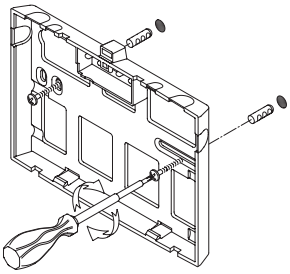
Fig. 2 **Unvented installation (closed outlet) with tap for pressurised appliances**



Installing the appliance

- Install the appliance with the water connectors vertically upwards for direct connection to the tap.
- Secure the wall bracket to the wall with screws and suitable wall plugs (Fig. 3).
- Place the appliance on the wall bracket and snap it into position (Fig. 4). The appliance may only be operated, if it has been placed properly into the wall bracket!

Fig. 3

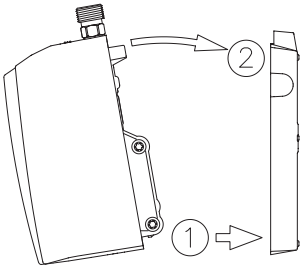


Drill size Ø 6 mm.

Use the mounting bracket as a guide for fixing marks.

Drilling width variable: 100 mm minimum to 145 mm maximum.

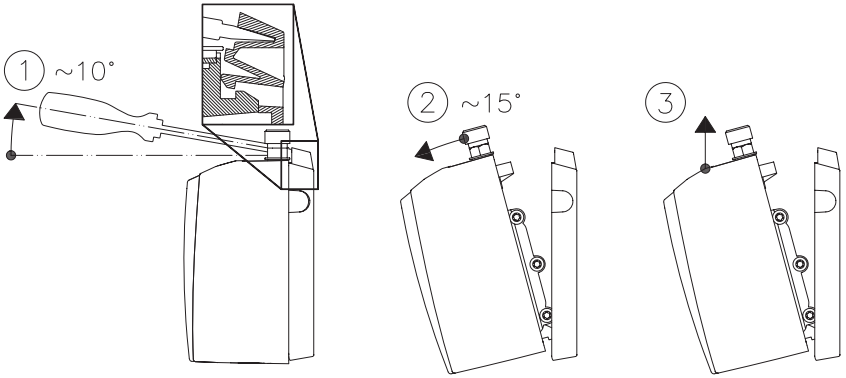
Fig. 4



Removing the appliance from the wall bracket (see Fig. 5)

Put the wide screwdriver tip into the interlock between the water connections until it stops, then push slightly upwards (1), tilt the appliance forward by max. 15° (2) and remove it upwards (3).

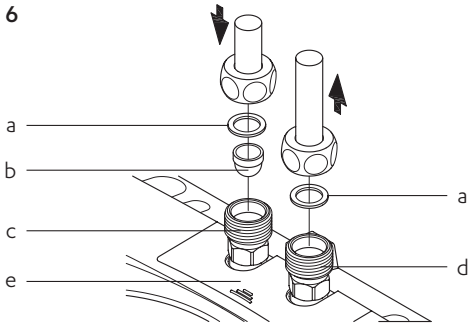
Fig. 5



Tap connection

- The cold water inlet (blue) and hot water outlet (red) are marked on the rating plate. Connect the appropriate pipes from the tap to the water inlet and outlet accordingly. Avoid exerting any mechanical pressure on the appliance by using a 13 mm spanner on the flats of the inlet and outlet connections when tightening the pipe connectors (Fig. 6).
- When supplying mixer taps a non-return valve must be fitted to the hot water outlet and not to the cold water inlet (Fig. 2).
- A flow control valve may be required on the cold supply to the mixer taps to balance the flow (Fig. 2).
- Thoroughly flush the water supply pipes before connection to remove any water borne debris.
- Once the water connections have been made, check for any leaks and rectify as necessary.
- In order to obtain an optimum water jet at low flow rates, always screw the aerator insert supplied with the unit onto the tap outlet. This insert fits commercially available sleeves with an M22 or M24 thread.

Fig. 6



a. Seal
b. Strainer
c. Cold water-connection (inlet)
d. Hot water-connection (outlet)
e. Rating plate cover

Electrical connection

Only undertaken by a competent person familiar with electric instantaneous water heaters !

Do not switch on the electric power at this time.

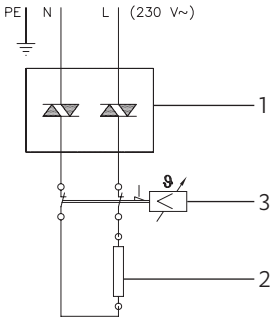
Please observe:

- **The electrical installation must comply with current IEE regulations and relevant Local Authority requirements.**
- **The rating plate and technical specifications**
- **The appliance must be earthed!**

Structural prerequisites

- Check that the power supply is switched off prior to electrical connection.
- The appliance must be installed via a permanent connection.
- A maximum cable size must be observed: 4 mm^2.
- Take care to protect the wiring from damage during installation and ensure that the wiring is not directly accessible after installation.
- The appliance must be permanently connected to the supply through an isolating switch with a contact separation of at least 3 mm in all poles and be protected by a suitably rated RCD.

Fig. 7



Circuit diagram

1. Electronic regulator
2. Heating element
3. Safety thermal cut-out

To prevent damage to the appliance, the instantaneous water heater must be purged of air before using it for the first time.

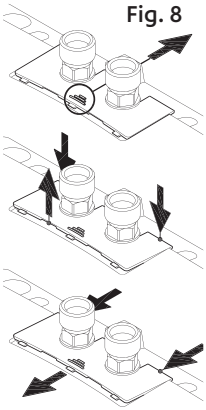
Purging

Before turning on the electrical supply, open and close the hot water tap until the water runs smoothly and no more air emerges.

Note: Every time the appliance is drained (e.g. after work on the plumbing system, if there is a risk of frost or following repair work), the heater must be purged in this way before reconnecting the power supply.

- Turn on the electrical supply, after a short power up delay the water heats up.
- Check everything is working as it should and the water is heating to the desired temperature. If not follow the guide on page 15.
- Explain the functions of the heater to the user and ensure that the know how to use it. Hand over these operating instructions to the user.

Fig. 8



Removing the cover

The rating plate and the case screw are located under this cover.

- Push the cover at the tactile bumps towards the wall bracket.
- Press the cover down at the rear corners until the front edge lifts.
- Remove the cover by pulling forward.

The underside of the cover (Fig. 9) is the data plate and displays model type, serial number etc.

Fig. 9

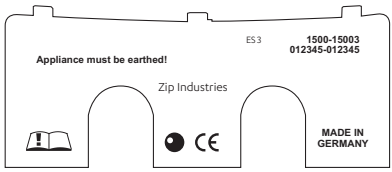
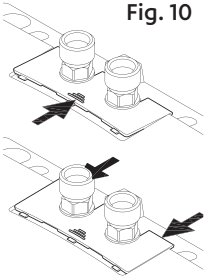


Fig. 10



Replacing the cover

- Push the cover horizontally towards the wall bracket under the edges of the water connections.
- Press down the front edge of the cover and push it forward again at the rear edge until it clips into place.

Adjusting the water flow

May only been undertaken by a competent person familiar with electric instantaneous water heaters!

Remove the cover (see Fig. 8), undo the case screw underneath and remove the case.

The flow rate can be adjusted with the adjustment screw, see fig 11:

Decreasing the flow rate:

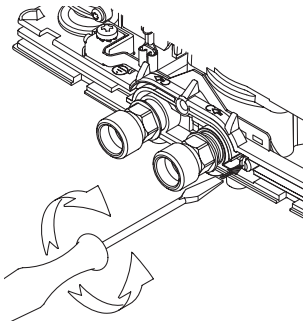
Turn the adjusting screw clockwise to decrease the flow rate, thus making a higher outlet temperature possible.

Increasing the flow rate:

Turn the adjusting screw counter-clockwise to increase the flow rate, thus reducing the possible outlet temperature.

Direction	Flow	Temperature increase
	−	+
	+	−

Fig. 11



Adjusting the water temperature (see Fig. 12)

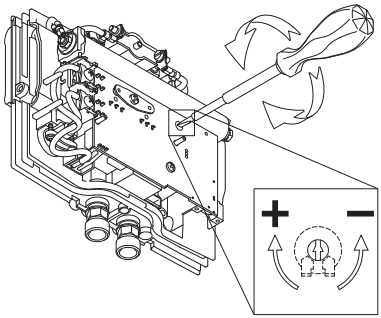
May only be carried out by a specialist.

The factory set hot water outlet temperature is 38 °C.

This factory setting can be modified within the range of approx. 30 °C to 45 °C by turning the adjustment potentiometer with a flat blade screwdriver (width approx. 2 mm).

The hot water outlet temperature will be increased by clockwise rotation and decreased by counterclockwise rotation.

Fig. 12



Note: Adding cold water wastes the energy used to heat it! This unit is not intended for use with a 'thermostatic mixing valve' or tap.

MAINTENANCE & CLEANING

General cleaning

- Plastic surfaces and fittings should only be wiped with a damp cloth. Do not use abrasive or chlorine-based cleaning agents or solvents.
- For a good water supply, the outlet fittings (special tap aerators and shower heads) should be unscrewed and cleaned at regular intervals. Periodically, the electrical and plumbing components should be inspected by a competent professional in order to ensure proper functioning and operational safety at all times.

Purging after maintenance work

This instantaneous water heater features an automatic air bubble protection system to prevent it from inadvertently running dry. Nevertheless, the appliance must be purged of air before using it for the first time. Each time the appliance is emptied (e.g. after work on the plumbing system, if there is a risk of frost or following repair work), the appliance must be re-purged before it is used again.

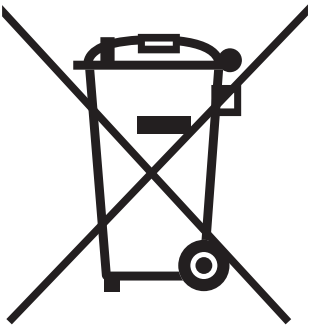
- Disconnect the instantaneous water heater from the mains power supply.
- Unscrew the aerator (see Fig. 1 & 2) on the outlet fitting and open the cold water tap to flush out the water pipe and avoid contaminating the appliance or the aerator.
- Open and close the hot water tap until no more air emerges from the pipe and all air has been eliminated from the water heater.
- Only then should you re-connect the power supply to the instantaneous water heater and screw the aerator back in.
- The appliance activates the heater after approx. 10 seconds of continuous water flow.

END OF LIFE DISPOSAL

The use of this crossed out wheeled bin logo indicates that this product needs to be disposed of separately to any other household waste.

Within each of the European Union member countries, provisions have been made for the collection and recycling of unwanted electrical and electronic equipment.

In order to preserve our environment we ask that you dispose of this product correctly. Please contact Zip Customer Service for advice on 0345 6 005 005.



REPAIRS

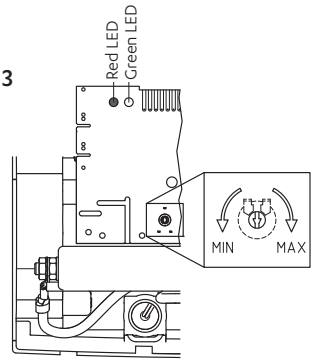
- Repairs should only be carried out by competent persons familiar with electric instantaneous water heaters.
- All service work should be performed by an authorized Zip service engineer – for details of the full range of services available call Zip on **0345 6 005 005**.
- When calling for service, please always specify the appliance model and serial number.
- The fault finding table on page 18 will be helpful in determining the causes of some common problems and their solutions.

LED Functions

Green LED...	
...flashes regularly	Standby mode
...lights on	Appliance is heating water

Red LED...	
...lights on	Maximum power reached; the desired outlet temperature cannot be reached.
...flash code:	
long-short-long-short-long	Defective heating element
long-short-short-short	Faulty temperature sensor
long-short-long	Air bubble in system

Fig. 13



FAULT FINDING

This instantaneous water heater was manufactured, thoroughly inspected & tested before delivery. Use the following fault finding information to diagnose the fault or seek remedial action.

Fault	Cause	Action
No water flows	Water supply is turned off	Open the main water valve and the shut-off valve
Water flows more slowly than expected	Water pressure is not sufficient	Check the water flow pressure and then let check the water flow adjustment
	Dirt / lime scale	Remove any dirt from the filter, shower head and valves / check the technical data & aerator
The heater switches itself on and off	Water pressure is varying, flow rate is too low	Remove any dirt / increase the flow water pressure, close other taps
Water remains cold	Water pressure is not sufficient	Adjust the water flow (authorized technician), open the shut-off valve, check water pressure
	Dirt	Remove dirt from the inlet and outlet
	Defective temperature sensor	Replace temperature sensor (authorized technician)
	Defective heating element	Replace heating element (authorized technician)
Hot water temperature varies	Supply voltage varies	Check the supply voltage
	Water connections reversed	Check installation
Hot water temperature too low	Flow rate is too high or inlet temperature is too low	Adjust the flow rate (see chapter “Adjusting the water flow“ on page 15).

If the connection cable is damaged, it must be replaced with an original spare cable from the manufacturer by an authorised technician in order to avoid any hazards.

If you cannot rectify the fault with the aid of the troubleshooting table, please contact customer service on **0345 6 005 005.**

WARRANTY

The Zip appliance you have chosen is precision-built from the finest materials available and should give many years of trouble free service.

Certain warranties may be implied by law into your contract with Zip. The warranty provided below is additional to these implied warranties and nothing set out below shall limit your statutory rights or rights at law.

Zip Water UK warrants that, should any part fail within 12 calendar months of installation, that part will be repaired or replaced free of charge by Zip or its Distributor or Service Provider, except as set out below, provided the appliance is installed and used strictly in accordance with the instructions supplied, and that failure is not due to accident, misuse, abuse, unsuitable water conditions, or to any alteration, modification or repair by any party not expressly nominated by Zip.

No costs are payable by the customer other than any mileage or travelling-time charges incurred by a Zip Service Provider or the cost of removal, cartage and re-installation of any component of the appliance if it needs to be returned for repair to Zip or its Distributor.

This warranty does not cover damage resulting from non-operation of the appliance or consequential damage to any other goods, furnishings or property.

Zip does not exclude, restrict or modify any liability that cannot be excluded, restricted or modified or which cannot, except to a limited extent, be excluded, restricted or modified as between the owner or user and Zip under the laws applicable.

Furthermore, this warranty does not displace any statutory warranty, but, to the extent to which Zip is entitled to do so, the liability of Zip under any statutory warranty will be limited at Zip's option to the replacement of the appliance or supply of equivalent appliance, the payment of the cost of replacing the appliance or acquiring an equivalent appliance, or the payment of the cost of having the appliance repaired or the repair of the appliance.

Note It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

To ensure you have the latest revision of this instruction manual, please visit
www.zipwater.co.uk
to download the latest copy.

IMPORTANT

No liability is accepted for incorrect use of this product.

Zip Water UK

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www.zipwater.co.uk