



**SureFlow Pro Series Auto-Fill
Water Boilers**

USER INSTRUCTION MANUAL

Models Covered:

CTSV36T/9 (CT6000-9), **CTSV45T/6** (CT8000-6) & **CTSV50T/9** (CT8000-9)

IB20

1.0 - INTRODUCTION

Your new Water Boiler is designed to give years of trouble-free service provided that the instructions contained in this manual are followed.

All new series Instanta products are energy efficient, simple to operate and easy to service.

2.0 - WARNINGS & PRECAUTIONS

Please read the following carefully before starting work on this equipment.

A competent installation engineer should install this appliance in accordance with the installation instructions for this appliance and all relevant local and national standards including the following:

- . Health and Safety at Works Act
- . IEE regulations
- . Local and national building regulations
- . BS Codes of practice
- . Water supply regulations

Your new water boiler is designed to provide a constant source of near boiling water for the preparation of hot drinks. **THIS IS VERY HOT**

All personnel must be provided with sufficient and appropriate training in the safe use of this appliance.

In line with Health and Safety requirements we recommend that a risk assessment be carried out after the boiler has been installed.

A warning notice displayed next to the machine is often helpful in notifying users that the appliance contains and dispenses near boiling water.

During normal use of the boiler, certain surfaces will become hot (especially the draw off tap(s)). Care should be taken to avoid potential injury from burns and scalding whilst operating this appliance.

Scale formation within the hot water appliances can be problematic in hard water areas. Damage to the appliance caused by excessive scale build up may invalidate the warranty. See notes on de-scaling.

Drawings, parts list, circuit/wiring diagrams are the sole property of Instanta Limited and must not be reproduced with consent.

This appliance is not intended for use by persons (Including Children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the appliance

3.0 - CHECK LIST

Before starting installation check that you have the following parts:

1. Drip Tray
2. Front Overflow Blanking Cap
3. Non-toxic Hose
4. 1 Sachet of De-scaler

INSTALLATION [ALL MODELS]

a) WATER CONNECTION

Your machine has been supplied with a WRAS approved non-toxic hose for connection to a suitable drinking water supply. The water supply must have a pressure not exceeding 7 bar (96psi), and no lower than 1.5 bar (20psi).

- If your water pressure exceeds 7-bar, a suitable pressure reduction valve may need to be fitted to the water supply to bring the pressure to a level that the machine can cope with.
- In the unlikely event of the pressure being too low a booster pump can be supplied.

INSTANTA CANNOT BE HELD RESPONSIBLE FOR ANY MACHINE MALFUNCTION IF THE WATER PRESSURE EXCEEDS THAT STATED. IF IN DOUBT, CONSULT YOUR WATER SUPPLY COMPANY.

The hose supplied with the machine is manufactured from materials which have been approved for drinking water and should only be connected to a cold water supply.

- If any hose not supplied by Instanta is used to connect the machine, the guarantee could be invalidated and contamination may occur.

PLEASE NOTE: Washing machine hoses (usually red, black or blue,) are not suitable for drinking water and will cause a very bad taste to the water.

A 15mm stop valve should be fitted between the water supply and the hose so that the machine can be isolated.

Water purification filters are available to ensure fresh water. Please contact Instanta for details.

In hard water areas, scale can cause problems. Fitting a scale reducer will help minimise scale but will not eliminate scale completely.

WE REGRET THAT INSTANTA CANNOT BE HELD RESPONSIBLE FOR SCALE RELATED PROBLEMS IF A SCALE REDUCER HAS BEEN INSTALLED

b) OVERFLOW

We have provided two overflow connection points to choose from:

1. The normal overflow is directed to the drip-tray.
2. The alternative overflow is at the back of the machine.

If the drip-tray option [1] is to be used for the overflow, we have provided a fitting kit which includes a 15mm pipe assembly. This can be fitted into the base of the drip-tray in place of the rubber blanking plug.

If the rear overflow option is chosen [2], the front overflow-pipe [behind curved-front panel], must be blocked-off using the tapered-rubber blanking bung provided. Pipe-work should then be provided between the rear-overflow connection [1/2" bsp-15mm] and a suitable waste/drain [NOTE: An air gap must be provided within 250mm of the connection point. Failure to provide an air gap within this distance could cause an air lock which would stop the water discharging in the event of an overflow].

IMPORTANT:

Whichever overflow connection is chosen, the diameter of the pipe used must be no less than 15mm.

Failure to connect the overflow-outlet to a permanent waste or drain, could lead to property damage from flooding.

If in all circumstances, it is absolutely not possible to direct the boiler overflow-outlet to a permanent waste or drain, then the mains water supply to the boiler should be isolated and the unit switched off whenever it is left unattended for long periods (e.g. overnight).

Whilst reasonable precaution is taken to prevent an overflow, Instanta cannot be held responsible for any damage caused as a result of incorrect installation or blockage of the overflow or failure to direct the overflow to a safe outlet.

c) ELECTRICAL CONNECTION

All 3kw Machines:

Your machine is supplied with a standard 3-pin bonded plug and lead with 13amp fuse.

All 6kw Machines:

Your machine is supplied with a 1.5mtr electrical cord [3-core @ 2.5mm]. Wire to at least a 30amp single-phase supply via an isolation switch. Only a qualified electrician should undertake this work.

All 9kw Machines:

Your machine is supplied with a 1.5mtr electrical cord [5-core @ 2.5mm]. Connect to a suitable 3-phase, neutral & earth supply: 13amp per phase [39amp total].
A 16amp non-inductive breaker is required.

Wiring colour configuration;

Live Phase-1: Brown
Live Phase-2: Black
Live Phase-3: Grey
Neutral: Blue
Earth: Green/Yellow

Only a qualified electrician should undertake this work.

4.0 - OPERATION

SWITCHING BOILER ON FOR THE FIRST TIME:

After the electrical and water connections have been made, the boiler is ready to be used.

NOTE: If the “7-day Timer” or “Filter Monitor” features are not required, the boiler can be used without any program set-up. Simply switch the machine on by pressing the small button at the top of the LCD window.

The boiler will run through an initial self diagnostic check and various messages will display within the LCD window, informing the user of the boiler's status (e.g. filling, heating, ready etc.).

Providing the water supply is present, the machine will start to fill and the message “BOILER FILLING” will be displayed.

If the machine does not fill to its pre-set level within 6 minutes the display will read “CHECK FILLING”. If this happens, check that the water stop valve is turned on and there are no kinks in the inlet hose. If these are in order, check that the small plastic filter in the water connection point on the machine is not clogged with debris. To clear the warning, switch the machine off at the mains and then back on again.

When the water level reaches the boiler's bottom sensor, the heater(s) will be switched on and the display will show the message “BOILER HEATING”.

When the correct temperature has been reached, the “GREEN TICK” will illuminate and the display will show the “DATE & TIME”.

IMPORTANT NOTE: In daily use you may use the boiler as soon as you see this message BUT ON FIRST INSTALLATION YOU SHOULD WAIT AT LEAST 15 MINUTES BEFORE STARTING TO USE THE WATER.

Your machine will not fill completely at once. The water input is electronically controlled to obtain maximum output, temperature and efficiency.

5.0 - IN DAILY USE:

- Switch boiler on.
- Wait for the GREEN TICK and the “DATE & TIME” message. The water will then be at the correct temperature.
- Dispense water via the lever tap(s) on the front of the boiler (CAUTION: Take care as boiler dispenses near-boiling water).

6.0 - LCD DISPLAY: PROGRAMMING TIMER & FILTER MONITOR

The LCD display informs the user of the boiler's status (e.g. filling, heating, ready etc.). In conjunction with the ON/OFF button it also gives access to the Program Menu which allows various settings to be selected.

To access the Program Menu, switch power on to the boiler at the mains whilst at the same time, pressing the On/Off button until the display reads "PROGRAM MODE".

***IMPORTANT:** Once in program mode, pressing the On/Off button (short-push) advances through the 18 menu selections. When the desired mode is displayed, select by holding the button in for 3 seconds (long push).*

A full list of the program selections is listed in section-13.

PROGRAMMING BOILER FEATURES ON INITIAL SET-UP:

SET CLOCK TIME (24h) – required if 7-day timer or filter monitor is to be used.

Having entered the program mode (as described above), the first menu is "SET CLOCK TIME (24H)". The time will have been factory-set but you may need to adjust for changes such as British Summer Time.

- Press and hold On/Off button (long push) to access.
- Set the Hours, Minutes and Day of the week. As each are set, hold button in (long push) to store information and advance to the next menu.
- Once hours, minutes and days are set-up, the display shows "SET CLOCK TIME (24h)" again. Continue through the menu by pressing the button (short pushes).

TIMER CONTROLLED

Setting up the 7-day Timer:

The boiler can be set-up to switch on and off using the programmable seven-day timer.

- With display showing "TIMER CONTROLLED", hold button in (long push)...display changes to "TIMER DISABLED / ENABLED".
- Choose "ENABLED" and hold button in to select. The display shows "TIMER CONTROLLED" again.
- Press button (short push) to advance to "SET PERIOD MONDAY, TUE, WED etc." Push button and hold (long push) to set times.
- When setting the ON and OFF times, the main power On/Off button advances the "ON time" and the Eco button the "OFF time" ...both advance in 15-minute increments (If a time is not set for a day, it is ignored and the boiler will remain in the last programmed condition).
- Once the chosen ON and OFF times have been set in the display, hold main power On/Off button in (long push) to store the information and advance to the next day of the week. Repeat for each day of the week (Monday to Sunday).
- Once the timers have been set up for each day, the menu advances to next menu option.

OVERRIDING THE TIMER:

NOTE: The timer can be overridden when it is in a “timed off” period, simply by pressing the ON/OFF button on the front of the boiler. If the timer is overridden, the boiler will remain ON until the next programmed “time-off period” occurs or until the boiler is switched off manually.

In some situations, it may be preferable to set up the boiler so that the timer cannot be overridden (e.g. in a secure environment such as a prison). To disable the override feature, enter Program mode as previously described and advance through the menu until “TIMER OVERRIDE” is displayed. Hold button (long push) to change the Timer Override from “ENABLED” to “DISABLED”. Press button again (long push) to save and then exit the Program menu.

SET FILTER CAPACITY

Setting up the filter monitor:

The boiler has a built in filter monitor which can be activated when a scale reduction cartridge or water softener is installed. This will measure the through-put of water into the boiler and inform (via the display) when the filter is exhausted and needs to be replaced.

- Once a filter cartridge/water softener has been installed, enter the Program menu and advance through the menu options until “**SET FILTER CAPACITY**” is displayed.
- Hold button in (long push) to enable filter monitor and select “Number of Litres”. This should be matched with the capacity of the cartridge/softener being used.
- The number of litres is adjustable between 500 and 9900Litres. Press power On/Off button to increase the number of Litres (increases in 100-L increments)
- Once the monitor has been set with the correct litres, press and hold button (long push) to store information and come out of the filter menu. Continue with short pushes of the button to advance through the program menu.

Resetting counter when new filter is installed:

Whenever a new cartridge-filter/water softener is installed, the filter monitor can be reset by accessing the Program Menu and choosing “**RESET THE FILTER**”.

- Push and hold button (long push).
- Once the display changes, press the Eco Button (as prompted) to reset the counters to zero...the display briefly shows “**FILTER LOADED**” before message; “**RESET THE FILTER**” is displayed again.
- Press button (short push) to continue through the program menu.

7.0 - TEMPERATURE

Your boiler temperature is factory set to operate at around 98°C. This temperature may be adjusted but this is not recommended unless you wish to reduce the boiler operating temperature (the range is 80°C to 99°C +/- 1°C). To adjust, access Program menu as described above and choose menu option “**SET BOILER TEMPERATURE**”.

8.0 - ECO MODE / POWER SAVING

At the bottom of the display panel you will find the **ECO MODE** button with a globe symbol. Pushing this button activates ECO MODE. When you push this button the message “**ECO MODE ACTIVE**” will display. This reduces the boiler operating capacity by approximately 50%. When the volume of water in the tank has fallen below half, the globe symbol in the display will illuminate to show that the boiler is operating on half capacity. To revert to full capacity, simply push the **ECO MODE** button again.

If you always switch to **ECO MODE** after your busy periods have passed you will achieve a small energy saving.

When you have finished using your boiler we recommend that you switch it off at the mains supply to maximise your energy savings. Switching off at the front of the boiler will deactivate the boiler functions but will use a small amount of power in this standby mode. “**POWER OFF**” will display when in standby.

As a general rule of thumb, leaving your boiler on overnight will usually be more energy efficient if your establishment is closed for less than 14 hours at any time.

9.0 - CLEANING

The external surfaces of the machine can be kept clean by wiping with a damp cloth. A good quality stainless steel cleaner will keep the machine in its original condition. The plastic top trim may also be cleaned with a damp cloth. Do not use abrasive material on the outer surface of the machine.

10.0 - TECHNICAL SPECIFICATIONS

Outer casing and tank constructed in Type-304 stainless steel. Internal baffle-plates [for condensing steam within the tank] are made from Type-316 stainless steel. The tank is fully insulated with high-temperature polystyrene.

All boilers have electronic control of the main functions. This means that the temperature is controlled precisely within given parameters. The circuit constantly monitors the operation of the machine and warns the user via the display panel if any abnormal circumstances have been detected.

11.0 - SERVICE WARNINGS AND FAULT DIAGNOSIS

Your boiler is fitted with an intelligent fault diagnosing system. There are two levels of diagnosis.

1-Simple warnings - accompanied by the illumination of a red exclamation mark. Your boiler will continue to operate as normal whilst displaying these warnings.

2-Critical faults - accompanied by the illumination of a red spanner.

Simple Warnings [1]:

The following messages may be seen. The display will alternate between the boiler status (e.g. “**BOILER READY**”) and the warning message. To clear the message, switch

the boiler off at the mains supply and switch the boiler back on. These messages, which are not critical and should be dealt with when it is convenient, are as follows:

“CHECK SUPPLY” The boiler has not sensed any drop in temperature after opening the cold water valve a number of times. The most common cause is an interruption of the water supply. Check the stop valve and make sure there are no kinks in the hose and no debris in the water inlet valve. The message can also indicate that your incoming water pressure is low. Shortly after the water supply returns to normal, the message will cease.

“CHECK FILLING” 6 Minutes after the boiler was switched on, the circuit has not sensed water on the bottom level sensor. Check that there is a water supply to the boiler and make sure that there are no kinks in the hose and no debris in the water inlet valve. Please note that in hard water areas this message can be caused by limescale (see message **“CLEAN PROBES”** below). Once you have rectified the water supply or cleaned the bottom probe, the boiler must be switched off at the mains and back on again to reset.

“CLEAN PROBES” [+ 1 or + 2]: Your boiler is fitted with five level sensors. These sensors use a very small electric current and a circuit is made by the water. In some areas hard water causes a build up of limescale deposits on the sensors and this acts as an insulator. When a sensor becomes insulated, the water level will switch to a different sensor and the **“CLEAN PROBES”** message will display. This will be followed by a number 1 or 2. 1 indicates that the bottom and possibly ECO sensor are coated in scale, 2 indicates that one of the top three sensors is coated in scale.

TO CLEAN THE PROBES:

First disconnect the machine from the power supply.

The lid must first be removed. There are four clips holding the lid to the case. These are situated 25mm from each corner. To remove the lid, insert the tip of a screwdriver or round ended knife into the gap between the case and the lid and twist on each corner. After removing the lid the tank is accessible.

Remove the tank lid by taking out the fixing screws. Lift out the baffle plates on the inside of the tank (note the position of these plates so that you can replace them correctly). Wipe clean the level sensing probes using a non-metallic scourer. It is important to ensure that you also clean the white insulators. Reassemble and switch the boiler back on. Leave for 15 minutes after **“BOILER READY”** displays before using the boiler.

Critical Warnings [2]:

In the event of a serious malfunction, the red spanner in the display will illuminate together with the message **“CALL SUPPLIER”** alternating with one of the following messages.

“THERMISTOR O/C” The temperature sensor has been disconnected or is faulty. Consult with your supplier or phone Instanta service department on 01704 501114.

“ELEMENT OR TRIP FAULT” This means that either the overflow or element safety cut out has activated or the element has failed. Switch the boiler off at the mains and switch back on in 2 minutes. If the overflow cut out has operated, the boiler will reset and work as normal. If the element cut out has activated or the element has failed, the message

will recur in around 1½ hours. In this instance phone your supplier or phone Instanta service department on 01704 501114.

“OVERFILL” This means that the boiler has sensed water on the fifth level sensor. If you have ignored a **previous** “CLEAN PROBES” message, simply clean the probes as above. If this does not resolve the fault, the boiler has overfilled. This may have been caused by a faulty water inlet valve or very high or low incoming water pressure. Consult with your supplier or phone Instanta service department on 01704 501114

12.0 - MAINTENANCE

The boiler should be periodically checked for scale build-up. The frequency depends upon hardness of the water and whether or not an effective scale reducer is fitted.

It is advisable to keep a spare tap spring and washer in case of emergencies. Apart from scale removal no regular maintenance should be required.

Spare parts and accessories are available from Instanta Limited – Tel: 01704 501114 and ask for spares

DE-SCALING:

To de-scale your machine, first disconnect the machine from the power supply, empty the machine through the draw off tap and allow to cool down.

The square lid must first be removed. There are four clips holding the lid to the case. These are situated 25mm from each corner. To remove the lid, insert the tip of a screwdriver or round ended knife into the gap between the case and the lid and twist on each corner. After removing the lid, the tank is accessible.

Remove the tank lid by taking out the four fixing screws. Lift out the baffle plates on the inside of the tank. Remove as much scale as possible by hand. Any scale which is difficult to remove can be dissolved by using a solution of Renegite de-scaler. Wipe clean the level sensing probes.

Ensure all traces of de-scaler are removed before using the boiler again.

Rather than frequently de-scaling the machine it may be preferable to install an effective scale reducer or WRAS approved water softener. This will reduce the frequency of de-scaling but will not remove scale completely in some areas.

13.0 – FULL PROGRAM MENU:

- | | | |
|----|-----------------------|--|
| 1 | SET CLOCK TIME (24h) | SET CLOCK – HOURS
SET CLOCK – MINUTES
SET CLOCK – MONDAY
SET CLOCK – TUESDAY
SET CLOCK – WEDNESDAY
SET CLOCK – THURSDAY
SET CLOCK – FRIDAY
SET CLOCK – SATURDAY
SET CLOCK – SUNDAY |
| 1a | RESET THE FILTER | [resets filter-monitor when a new cartridge is installed]

<u>NOTE:</u> This menu option only appears in the menu once the filter counter has been activated] |
| 2 | TIMER CONTROLLED | SET PERIOD – MONDAY
SET PERIOD – TUESDAY
SET PERIOD – WEDNESDAY
SET PERIOD – THURSDAY
SET PERIOD – FRIDAY
SET PERIOD – SATURDAY
SET PERIOD – SUNDAY |
| 3 | SET WATER TEMPERATURE | [Adjustable: 80 & 99°C - Your boiler has been factory-set. We do not recommend increasing the factory-set temperature] |
| 4 | SET FILTER CAPACITY | [Enable filter monitor and set Number of Litres] |
| 5 | SET HEATER RATING | [select KW rating of boiler: 1.5KW - 18KW KW] |
| 6 | ECO MODE BUTTON | [Enable or Disable. Disable if you do not want to use Eco Mode] |
| 7 | OVERRIDE BUTTON | [Enable or Disable...you can override the timer settings by pressing the On/Off button at any time. If you do not want to allow this to happen, disable the override button] |
| 8 | PROGRAM MODE EXIT | [Exit program menus] |
| 9 | TEST PROBES | [shows which sensors in contact with water] |
| 10 | DISPLAY ADC VALUES | [manufacturers test values] |
| 11 | VOLTAGE & LOAD TEST | [takes a reading of mains supply voltage] |
| 12 | POWER UP MODE | [<u>last-used</u> , always-off, always on] |
| 13 | SHOW CLOCK ON DISPLAY | [enable or disable clock/time display] |
| 14 | LOAD DEFAULTS | [returns boiler to factory-set defaults] |
| 15 | ENG MODE 1 STATUS | [not used] |
| 16 | ENG MODE 2 STATUS | [not used] |
| 17 | PROGRAM MODE EXIT | [exit program menus] |

BACK TO BEGINNING OF MENU...