



Titan Pro Bulk Water Boiler
MOD18

INSTALLATION and USER INSTRUCTION MANUAL

Serial Number: _____

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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.

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

Installation is straightforward but it is recommended that this, be carried out by a properly qualified fitter.

2.0 ACCESSORIES

The new boiler is supplied with the following components and should be verified before installation:

1. Non-toxic flexible hose assembly (WRAS approved)
2. One chrome plated swivel-dispense arm (2 if requested on order)

IMPORTANT: Please read carefully all the instructions before commencing with the installation and commissioning of the appliance.

3.0 WARNINGS AND PRECAUTIONS

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

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

- Health and Safety at Work Acts
- 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 & 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 taps and swivelling dispense arms). Care should be taken to avoid potential injury from burns and scalding whilst operating the appliance.

Scale formation within hot water appliances is problematic and more so 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 without their 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

4.0 INSTALLATION

Qualified personnel must carry out all installation work.

4.1 WORK SURFACES AND LOCATION:

a) Ensure that the work surface upon which the appliance is to be sited is capable of sustaining the working weight of the appliance:

- **Total Boiler weight when full = 175kg**

b) The work surface must have a minimum depth of 600mm

c) Consideration should be given for servicing requirements – If electrical/water/waste services are brought up through the work surface, ensure there is sufficient cable slack and movement for the flexible inlet hose/ overflow pipe, to allow access in the event of maintenance/service work.

d) Location of boiler - Ensure that access to the appliance is unrestricted to allow safe user operation

e) Avoid obstruction of the vent hole in the top lid. Do not site the appliance directly beneath wall cupboards, other wall mounted appliances and low ceilings that are susceptible to damage from steam/water vapour.

4.2 WATER CONNECTION

Your machine has been supplied with a WRAS approved non-toxic hose for connection to a suitable drinking water supply. The fittings are ¾" BSP.

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

The water supply must have a pressure not exceeding 7.0bar (96psi) and no lower than 2bar (28psi). If your water pressure exceeds 7bar, a suitable pressure reduction valve will need to be fitted to the water supply to bring it to a level that the machine can cope with. If in doubt, consult your water supply company.

In hard water areas it is advisable to fit a scale reducer to limit scale deposits.

Important: We regret that Instanta cannot be held responsible for scale related problems or for machine malfunction where the water pressure exceeds or is less than the limits above.

4.3 OVERFLOW/WASTE

Due to advanced electronic features on the appliance it is unlikely that an overflow will occur. However, during normal operation and under certain conditions, small quantities of water vapour and steam are emitted from the rear vent/overflow connection. This vent/overflow connection MUST be directed to a suitable waste.

Any pipe used to connect the overflow connection to a waste must have a continuous fall and have a minimum internal bore of 13mm. An air gap must be provided within 1metre of the appliance. 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:** While 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.*

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).

4.4 ELECTRICAL CONNECTION

All electrical work must comply with all relevant wiring regulations and be carried out by a qualified electrician.

a) The MOD18 boiler is supplied with a 2mtr long, 3-phase, Neutral and Earth lead for connection to a suitable power supply. The five wires are coloured and should be configured (latest European Standard) as follows:

Brown	=	Phase-1
Black	=	Phase-2
Grey	=	Phase-3
Blue	=	Neutral
Green/Yell	=	Earth

b) The appliance should be wired into a non-inductive breaker, fused at 32A per phase. The isolation switch for the appliance must not be obstructed and be within easy reach

5.0 INITIAL COMMISSIONING OF THE BOILER

- Remove protective plastic coating from all surfaces
- Attach a swivel-dispense arm to each of the draw-off taps
- Ensure that the taps are both in the closed position
- With all appropriate services connected, turn on the water supply
- Switch on the electricity supply at the isolation switch.
- Switch the machine on at the black rocker switch (front panel). The green “power” and amber “ready” lights will illuminate briefly. The power light will then be constantly illuminated to indicate mains supply. (All boilers have low voltage switching for user safety).
- The machine will start to fill with water. After approximately 4 ½ minutes, the red “service” light will flash 6 times and the boiler will stop filling. Note: This is an electronic fault-diagnosis check, which only happens on initial priming of the boiler from empty. To continue, switch the machine off and then back on again – the machine will continue to fill.
- Upon the water reaching the lower water sensor, the solenoid valve will close and the elements will begin to heat.
- When the correct temperature (factory-set between 96 and 98°C) has been reached, the amber ready light will illuminate. This takes approximately 10 minutes.
- Upon reaching the correct temperature, the boiler will call for more water. The machine will not fill completely all at once but in short, controlled bursts that are electronically controlled to obtain maximum output, temperature and efficiency. Note: The heating elements remain on while the solenoid is energised to maximise performance.
- This heat/fill cycle will continue until the water reaches the top water level sensor. This takes approximately 35 minutes. Thereafter the machine goes into "idle" mode, pulsing the heating element periodically to maintain temperature.
- Water can be manually dispensed via the two outlet taps on the front of the unit
- When the volume of stored water in the tank reduces, this is picked up via the top operating sensor and the unit reverts back to "heat/fill" mode thus maintaining a constant supply of near-boiling water

Note to installation engineer

- Instruct the end user on the operating features of the appliance.
- Instruct the end user how to isolate all services in case of emergency.
- Instruct the end user on cleaning and de-scaling of the appliance
- Advise end user that these instructions must be retained in a safe place

6.0 USER INSTRUCTIONS

6.1 DAILY OPERATING INSTRUCTIONS

- a) In daily use, switch the machine on and wait until the amber “ready” light illuminates. Once the “ready” light illuminates the boiler is ready for use.
- b) Heat-up time from cold depends on the volume of stored water in the boiler from the previous day. As a guide, assuming the tank is full, heat-up time from cold will take approximately 39minutes.

NOTE: This is the maximum time taken to heat the full boiler capacity. This provides an immediate rapid delivery of 135 litres.

- c) Each tap is fitted with a swivel-dispense arm. This should be aligned to the desired position before opening the tap.
- d) To dispense hot water, pull the tap handle forward. Hot water will be dispensed at a steady flow until the handle is released.

NOTE: The tap handle can be revolved to either of two operating positions:

- 1) Self-closing mode – handle will return to closed position on release.
 - 2) Lock-open mode (for filling larger containers) – handle will have to be manually returned to the closed position. **IMPORTANT:** Whilst the handle is in the locked open position the boiler must not be left unattended.
- e) **WARNING:** Care should always be taken to avoid injury whilst operating this boiler as the water temperature is maintained at near-boiling point.

6.2 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.

6.3 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.

7.0 TECHNICAL SPECIFICATIONS

Voltage:	400/430V 3-phase, 50/60 Hz
Supply:	AC
Amps:	30A per phase
Rated Input:	18.0 KW
Front fuses required:	3 x 32A
Mains Water Pressure:	Between 2.0 and 7.0 bar (28 – 96psi)
Fill type:	Automatic
Materials:	All non-metallic materials in contact with water are WRAS approved
Max Draw-Off:	135 Litres (238 UK pints)
Recovery per minute:	3.4 Litres
Recovery to full capacity:	39 minutes
Draw-off speed:	135 Litres in 11 minutes (using both taps)
Heat up time from cold:	45 minutes (to full capacity)
Temperature:	98 ^o C (factory set)
Width:	660mm
Height:	892mm
Depth:	550mm
Weight (empty):	52kg
Weight (full):	175kg
Machine construction:	Outer casing and tank constructed from combination of type 304 and 316 stainless steel.

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 service light if any abnormal circumstances have been detected.

If the service light flashes refer to the diagnosis codes at the back of this manual.

Other technical information available:

Spare Parts List: Order Ref: INS-MOD18SP

Service/Maintenance Manual: Order Ref: INS-MOD18SVC

Please order direct from Instanta Limited, Spares Department: 01704 501114

8.0 DE-SCALING THE BOILER

It is recommended that the appliance be de-scaled regularly:

- To de-scale the machine, first isolate from the electrical power supply.
- Remove outer lid (insert the tip of a screwdriver into gap between case and lid and twist on each corner).
- Remove inner tank lid (6 screws)
- Lift out both baffle plates from the inside of the tank
- Using a suitable de-scaling agent, add the solution to the water inside the tank. NOTE: Some de-scaling compounds may cause hot water to erupt. It is advisable to add the solution a little at a time and follow the manufacturers instructions closely.
- Allow time for the de-scaling solution to neutralise (This will depend on how heavy the scale deposits are). In the case of severe scale deposits it may be necessary to repeat the de-scaling process.
- On completion of successful de-scaling, evacuate the tank via the taps. To completely empty the contents below the tap level, the drain tap (situated behind the clip-on front panel) can be opened. Once complete, REMEMBER to close the drain tap.
- Ensure all traces of de-scaler are removed before using the boiler again. Flush tank with copious amounts of clean cold water.
- Examine the water level sensors for scale build-up - clean thoroughly as necessary using a non-metallic scourer.
- When de-scaling is complete, replace internal tank baffle plates, tank lid and main outer lid.

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.

9.0 FAULT DIAGNOSIS (Service Warning Light)

The boiler has a red “service” warning light facility. The light is designed to help identify the cause of any malfunction. If the circuit senses a problem, the red “service” light will flash a number of times and then pause and repeat the sequence.

Count the number of flashes between pauses and refer to the following table:

Serious problems will disable the boiler whilst less serious conditions will allow the boiler to continue functioning until a convenient time arises for the fault to be rectified.

NUMBER OF FLASHES BETWEEN PAUSES	MEANING	ACTION
1 Constant	Water level sensor has scaled up at normal level and machine has filled to a higher level	Clean Sensing Probes
2	Operating level sensor has been detected but lower level sensor has not	Clean Sensing Probes
3	Overfill level sensor has been detected but other sensors have not	Clean Sensing Probes
4	Danger level sensor has been detected and machine functions have been shut down	Clean Sensing Probes
5	Boiler has overheated	Call Instanta service department Quoting the Serial Number
6	Boiler has failed to fill in the allotted time. Possible causes: 1. Water supply turned off. 2. Water inlet valve has failed. 3. Blockage in water inlet pipe. 4. Pipe connecting inlet valve to boiler has become detached.	Check water supply If in order call Instanta service department quoting the Serial Number
7	The temperature sensor has become disconnected or the heating element(s) have failed.	Call Instanta service department Quoting the Serial Number
8 or 9	Fault on temperature sensor.	Call Instanta service department Quoting the Serial Number
10	Heating element(s) faulty or a system fault.	Call Instanta service department Quoting the Serial Number
11	The water supply has been interrupted and the level has fallen to a point at which the heating element(s) could be damaged.	Check water supply If in order call Instanta service department quoting the Serial Number
12	The machine has over-boiled and the level has fallen to a point at which the element(s) could be damaged.	Call Instanta service department Quoting the Serial Number

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