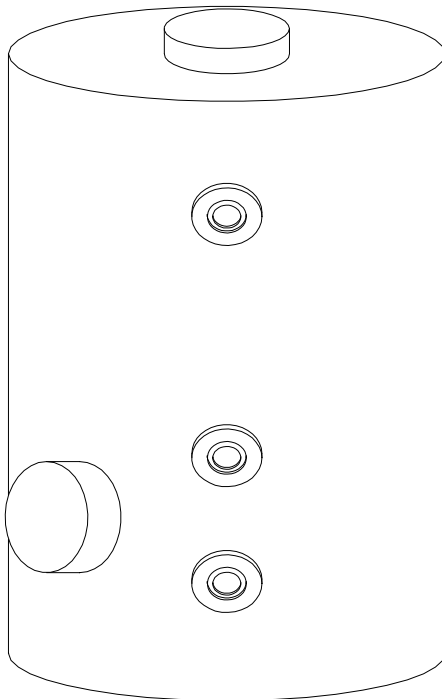


# **KESTON SPA**

## **UNVENTED STORAGE CYLINDERS**

### **Installation Instructions & Performance Specification**



**Models**  
**125 litre**  
**150 litre**  
**200 litre**  
**300 litre**  
**400 litre**  
**Indirect**  
**Stainless Steel**  
**Cylinders with**  
**Ultra-High**  
**Performance**

**Fully Approved To BS7206**

**KESTON BOILERS LTD**  
**34 WEST COMMON ROAD**  
**HAYES, BROMLEY**  
**KENT BR2 7BX**

**ISSUE 01-2003**

**Specialists in high**  
**Efficiency Commercial**  
**& Domestic Heating**  
**Equipment**

**Tel: (+44) 020 8462 0262**  
**Fax: (+44) 020 8462 4459**  
**Email: [info@keston.co.uk](mailto:info@keston.co.uk)**  
**Web: [www.keston.co.uk](http://www.keston.co.uk)**

## **READ CAREFULLY BEFORE INSTALLATION**

**INCORRECT INSTALLATION MAY INVALIDATE GUARANTEE**

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**Note to Installer:**

**Please leave Installation manual with Householder after installation**

## INTRODUCTION

The Keston Spa is a range of stainless steel un-vented water heaters with ultra high performance coils for indirect heating. The use of stainless steel for both coil and tank ensures long life and high strength ensuring high pressure performance. The ultra high efficiency coils give rapid reheat and high volume hot water delivery.

The units are supplied with manifold type pressure regulating/expansion relief valves preset to 3.5bar and with integral strainer. However, the manifold can be separated to two sections should you wish to install the pressure regulating valve at a remote location. An expansion vessel is also supplied for connection to the cold supply. Use of an external expansion vessel allows the entire volume of the tank to be used for water storage.

The units are also fitted with a 3kW electric immersion heater as standby heating and adjustable thermostat with overheat shut down to control the supply of indirect heat to the unit.

### Operating Data:

|  |          |
|--|----------|
| Maximum Water Supply Pressure to pressure regulating valve | 12.0 bar |
| Operating Pressure of unit                                 | 3.5 bar  |
| Expansion Vessel Charge Pressure                           | 3.5 bar  |
| Expansion Relief Valve Setting                             | 6.0 bar  |
| Maximum Primary Working Pressure                           | 3.0 bar  |
| Opening Temperature of T&P Valve                           | 90C      |
| Opening Pressure of T&P Valve                              | 7 bar    |

### Performance Data:

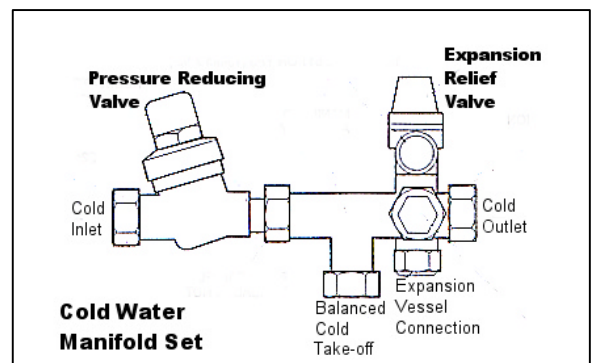
| Model                      | Spa125 | Spa150 | Spa200 | Spa300 | Spa400 |
|----------------------------|--------|--------|--------|--------|--------|
| Re-heat 15C – 65C          | 17mins | 19mins | 16mins | 23mins | 23mins |
| Re-heat after 70% draw-off | 12mins | 13mins | 13mins | 16mins | 17mins |

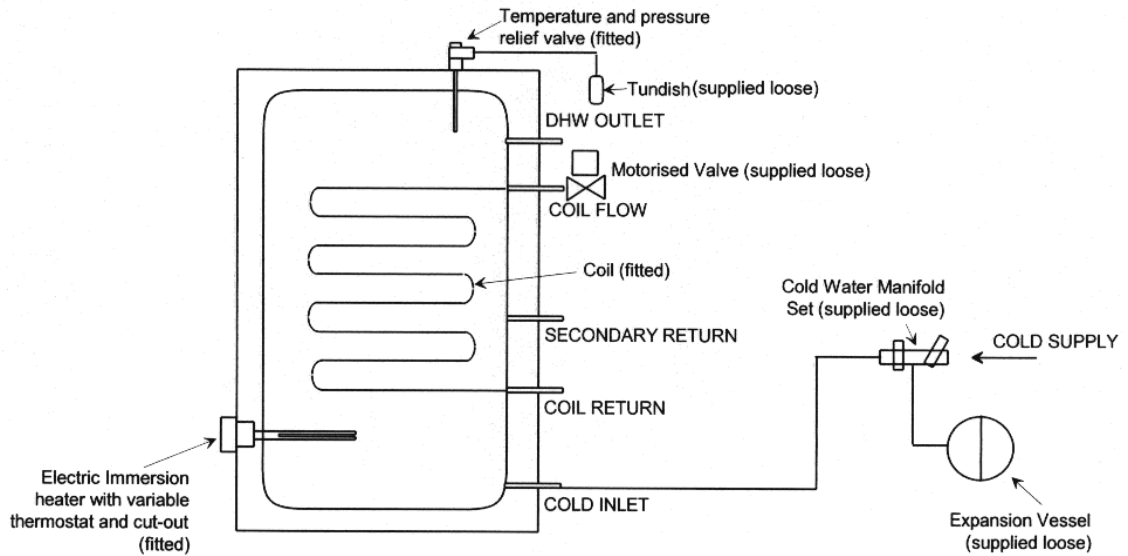
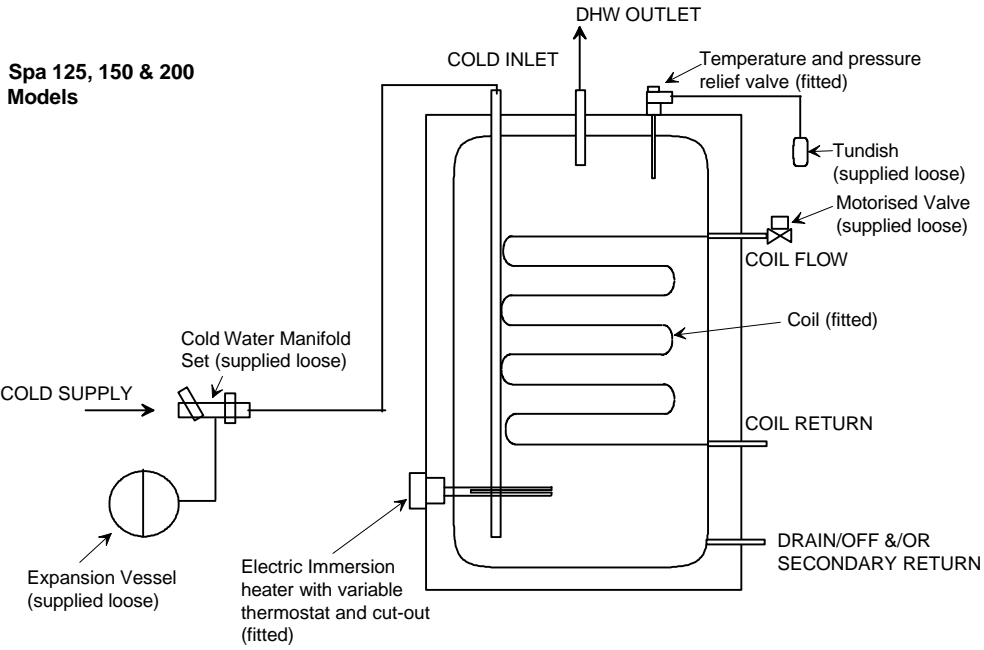
NB: Above figures assume constant primary coil flow of 82C and sufficient heat input to fully utilise the coil output.

## 1. Component Check-List

The following items accompany your Spa Unvented Storage Cylinder.

- a) **Fitted to the cylinder**
  - 90C/7 bar Temperature and pressure (T&P) relief valve.
  - AFSTA 327, 3kW/230 VAC electric element with 80C cut-out switch and variable thermostat (10 to 80C)
  - Combined control and overheat thermostat with manual cut-out switch, variable thermostat (30-70C) and immersion capillary sensor.
- b) **Supplied as Installation Pack**
  - Combined strainer/pressure reduction valve, 3.5bar
  - Combined stop tap, check valve, expansion relief valve 6bar.
  - Expansion vessel
  - Discharge tundish
  - 2-Port Motorised Valve





**2. Handling & Storage**

- Do not lift via valves or element bosses on unit
- Expansion vessels must not be dented.
- Store unit away from excess heat or frost
- **Always transport cylinders in the vertical position**

**3. Location and Cylinder Mounting**

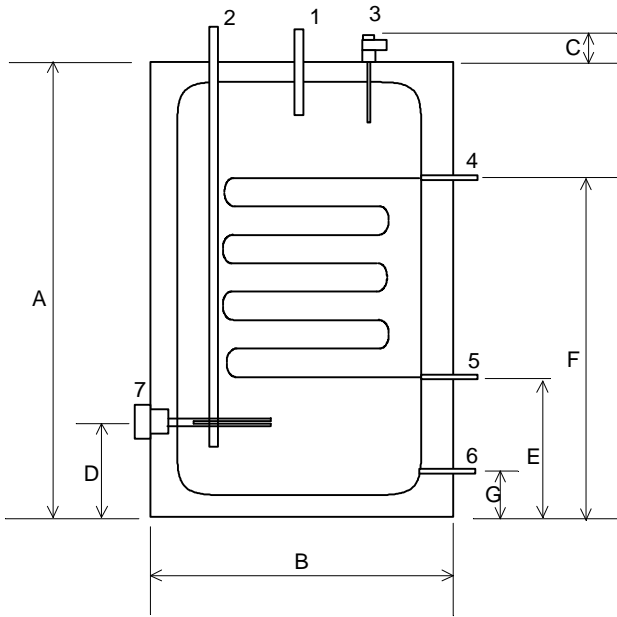
- Site the unit as close as possible to main points of usage
- Avoid locating the unit where freezing temperatures may be experienced.
- Ensure unrestricted access to plumbing connections and top of expansion vessel
- Allow sufficient clearance for removal of immersion heater and valves.
- In floor standing the unit place the unit on a load bearing surface sufficient for the weight of the unit when full of water.
- If wall hanging ensure the wall and fixings are adequate to support the weight of the unit when full of water.
- The unit must be installed and transported vertically unless otherwise indicated on packaging
- Valves can be mounted in any orientation provided discharge downpipes can be run to drain in accordance with instructions (see Tundish). The discharge pipework should have a minimum fall of 1:200 from the unit.
- A drainage safe tray should be placed under the cylinder to facilitate servicing

**4. Warnings**

- Boilers without thermostatic control, such as and steam heating plant should not be used with this unit unless appropriate additional safety controls are installed. Solid fuel boiler must not be used with any unvented unit.
- Under no circumstances must the unit be filled or operated without the factory fitted T&P relief valve.
- Do not fit a stop or check valve between the inlet safety group and the cylinder
- Do not apply heat to any component or any welding to cylinder or pipe connections.
- All electrical wiring should be carried out by a registered electrical contractor and must conform to IEE Wiring Regulations.
- If a replacement immersion heater is required at any time, do not fit an immersion heater(s) without thermal cut-out(s).
- Ensure unit is flushed for 3 minutes via hot tap before switching on.
- Do not use excessive plumbers paste or flux, which may damage the controls.
- Do not switch on power until the unit is full of water. Do not open electric elements unless power is switched off.
- Position discharge tundish away from any electrical components.
- Do not allow discharge pipes to kink or block in any way.

**5. Markings and Specification**

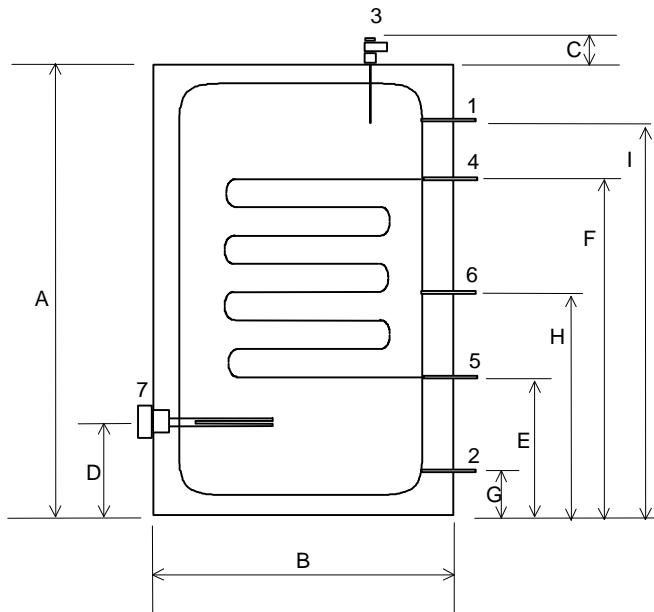
| MODEL   | CAPACITY<br>(Litres) | WEIGHT        |              | DIMENSIONS (in mm) |     |     |     |     |     |     | IMM<br>(kW) | COIL<br>(m <sup>2</sup> ) |
|---------|----------------------|---------------|--------------|--------------------|-----|-----|-----|-----|-----|-----|-------------|---------------------------|
|         |                      | Empty<br>(kg) | Full<br>(kg) | A                  | B   | C   | D   | E   | F   | G   |             |                           |
| Spa 125 | 125                  | 55            | 180          | 800                | 565 | 120 | 210 | 275 | 545 | 190 | 3           | 0.84                      |
| Spa 150 | 150                  | 61            | 211          | 925                | 565 | 120 | 210 | 275 | 575 | 190 | 3           | 0.92                      |
| Spa 200 | 200                  | 74            | 274          | 1165               | 565 | 120 | 210 | 275 | 725 | 190 | 3           | 1.39                      |



| LEGEND  | Spa 125 | Spa 150 | Spa 200 |
|---|---------|---------|---------|
| 1 Hot Water Outlet Connections                | 3/4"    | 3/4"    | 3/4"    |
| 2 Cold Water Supply Connections               | 3/4"    | 3/4"    | 3/4"    |
| 3 Temperature & Pressure Relief Valve         | 1/2"    | 1/2"    | 1/2"    |
| 4 Coil Flow Connection                        | 3/4"    | 3/4"    | 3/4"    |
| 5 Coil Return Connection                      | 3/4"    | 3/4"    | 3/4"    |
| 6 Secondary Circulation/ Drain Off Connection | 3/4"    | 3/4"    | 3/4"    |
| 7 Electric 3kW Immersion Heater               | 2.25"   | 2.25"   | 2.25"   |

Spa 125, 150 and 200 Models

| MODEL   | CAPACITY (Litres) | WEIGHT Empty (kg) | WEIGHT Full (kg) | DIMENSIONS (in mm) |     |     |     |     |      |     | IMM (kW) | COIL (m <sup>2</sup> ) |   |      |
|---------|-------------------|-------------------|------------------|--------------------|-----|-----|-----|-----|------|-----|----------|------------------------|---|------|
|         |                   |                   |                  | A                  | B   | C   | D   | E   | F    | G   | H        | I                      |   |      |
| Spa 300 | 300               | 118               | 418              | 1155               | 740 | 120 | 275 | 318 | 838  | 235 | 600      | 921                    | 3 | 1.96 |
| Spa 400 | 400               | 157               | 557              | 1472               | 740 | 120 | 275 | 318 | 1083 | 235 | 600      | 1230                   | 3 | 2.60 |



| LEGEND  | Spa 300 | Spa 400 |
|---|---------|---------|
| 1 Hot Water Outlet Connections                | 1"      | 1"      |
| 2 Cold Water Supply Connections               | 1"      | 1"      |
| 3 Temperature & Pressure Relief Valve         | 3/4"    | 3/4"    |
| 4 Coil Flow Connection                        | 1"      | 1"      |
| 5 Coil Return Connection                      | 1"      | 1"      |
| 6 Secondary Circulation/ Drain Off Connection | 3/4"    | 3/4"    |
| 7 Electric 3kW Immersion Heater               | 2.25"   | 2.25"   |

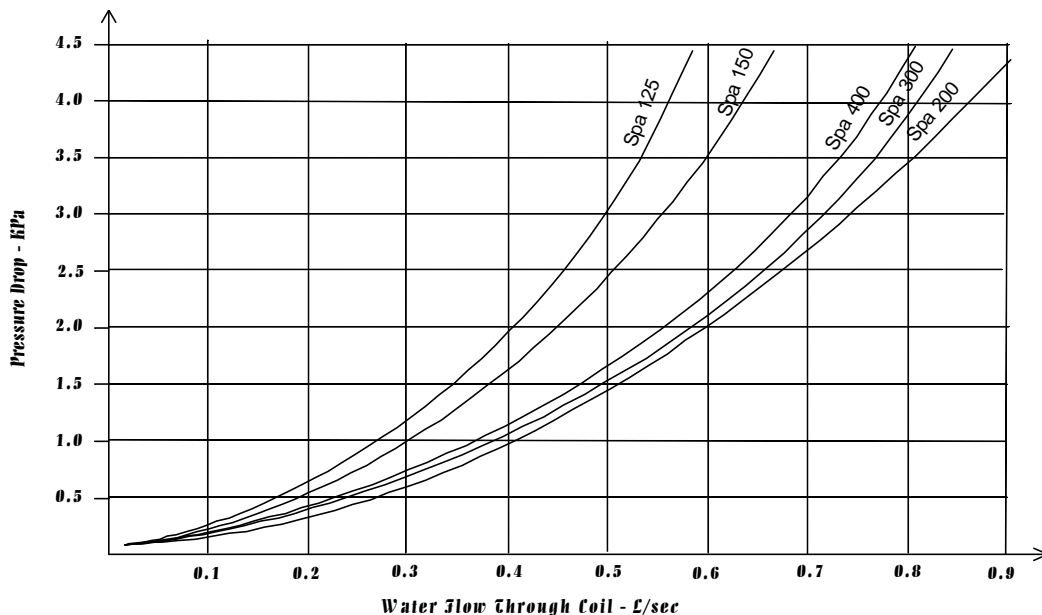
Spa 300 and 400

## 6. Connection Layout & Recommendations

The performance of any unvented mains fed cylinder is always limited by the supply of mains water to the unit. A high static mains pressure is not a guarantee of adequate supply. The static mains supply pressure should be measured as well as the size of the supply pipe. Unvented mains fed cylinders should not be used where the water supplies have inadequate pressure, flow rate or where the supply may be intermittent.

1. For cylinder sizes up to 300 litres a suggested supply pressure of 1 bar or more is desirable.
2. For cylinders of 200 litres or below with water pressure below 1.5 bar use 22mm supply and distribution pipework.
3. Use 22mm pipe distribution up to the first branch connection
4. For 300 litres and over use 28mm or larger pipework. If long pipe runs are required extra expansion vessel capacity may be necessary.
5. All hot pipework should be insulated.
6. Use the balanced cold take-off connection of the pressure reduction valve to ensure satisfactory shower performance. However, it should be noted that this will reduce the total available regulated flow available from the tank.
7. Do not vent the primary circuit from the boiler to the water heater system.
8. Better performance will be obtained by using 22mm pipe, limiting the number of elbows and fittings and using swept bends.
9. Follow connection layout on page 3. Connect valves with flow in arrow direction marked on valve bodies.
10. For indirect cylinders the control thermostat and overheat thermostat must be wired to the motorised valve supplied, or some other suitable device to shut off the flow to the coil that is approved by a member of EOTA or by a body with NACCB accreditation.
11. The high efficiency coil of the Spa tanks offer a higher resistance to boiler water flow than other lower efficiency traditional cylinders. Consideration should therefore be given to additional pump capacity or a coil flow/return bypass arrangement. Such a by-pass may then be adjusted to balance cylinder and boiler flow accordingly. Refer to the cylinder coil pressure drop curves below for pump selection.

#### COIL PRESSURE DROP CURVES



#### How to drain the System

1. Switch off the electrical power to the immersion heater(s) and shut down the boiler. Close the stop cock valve.
2. Open a hot water tap on order to reduce pressure in the cylinder. Leave the hot water tap open.
3. For the 125, 150 and 200 litre models connect a hose to the drain tap fitted on the secondary return connection of the tank. (If a drain tap has not been fitted the tank should be siphoned via the cold water supply connection). For the 300 and 400 litre models the drain tap should be fitted on the cold water supply pipework.

**Discharge Pipework and Tundish**

- Tundish must be visible
- Discharge pipe must be to fixed grating and not located to cause possible discharge injury to persons.

**Typical Discharge Pipe Arrangement**

Table 1: Sizing of copper discharge pipe "D2" for common temperature relief valve outlet sizes.

| Valve Outlet Size | Min size of discharge pipe D1 | Min size of discharge pipe D2 from tundish | Maximum resistance allowed as a length of straight pipe (i.e. no elbows or bends) | Resistance created by each elbow or bend |
|-------------------|-------------------------------|--|---|--|
| <b>G1/2</b>       | <b>15mm</b>                   | <b>22mm</b>                                | <b>up to 9m</b>   | <b>0.8m</b>                              |
|                   |                               | <b>28mm</b>                                | <b>up to 18m</b>  | <b>1.0m</b>                              |
|                   |                               | <b>35mm</b>                                | <b>up to 27m</b>  | <b>1.4m</b>                              |
| G3/4              | 22mm                          | 28mm                                       | up to 9m  | 1.0m                                     |
|                   |                               | 35mm                                       | up to 18m   | 1.4m                                     |
|                   |                               | 42mm                                       | up to 27m   | 1.7m                                     |
| G1                | 28mm                          | 35mm                                       | up to 9m  | 1.4m                                     |
|                   |                               | 42mm                                       | up to 18m   | 1.7m                                     |
|                   |                               | 54mm                                       | up to 27m   | 2.3m                                     |

**Worked example:**

The example below is for a G1/2 temperature relief valve with a discharge pipe (D2) having 4 no. elbows and length of 7m from the tundish to the point of discharge.

From Table 1: Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G1/2 temperature relief valve is 9.0m. Subtract the resistance for 4 no. 22mm elbows at 0.8m each = 3.2m

Therefore the maximum permitted length equates to 5.8m is less than the actual length of 7m therefore calculate the next largest size. Maximum resistance allowed for a straight length of 28mm pipe (D2) from a G1/2 temperature relief valve equates to 18m. Subtract the resistance for 4 no. 28mm elbows at 1.0m each = 4m.

Therefore the maximum permitted length equates to 14m.

As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.

The tundish should be vertical, located in the same space as the Spa tank and fitted as close as possible and within 500mm of the temperature relief valve.

The discharge pipe D2 from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge, be of metal and:

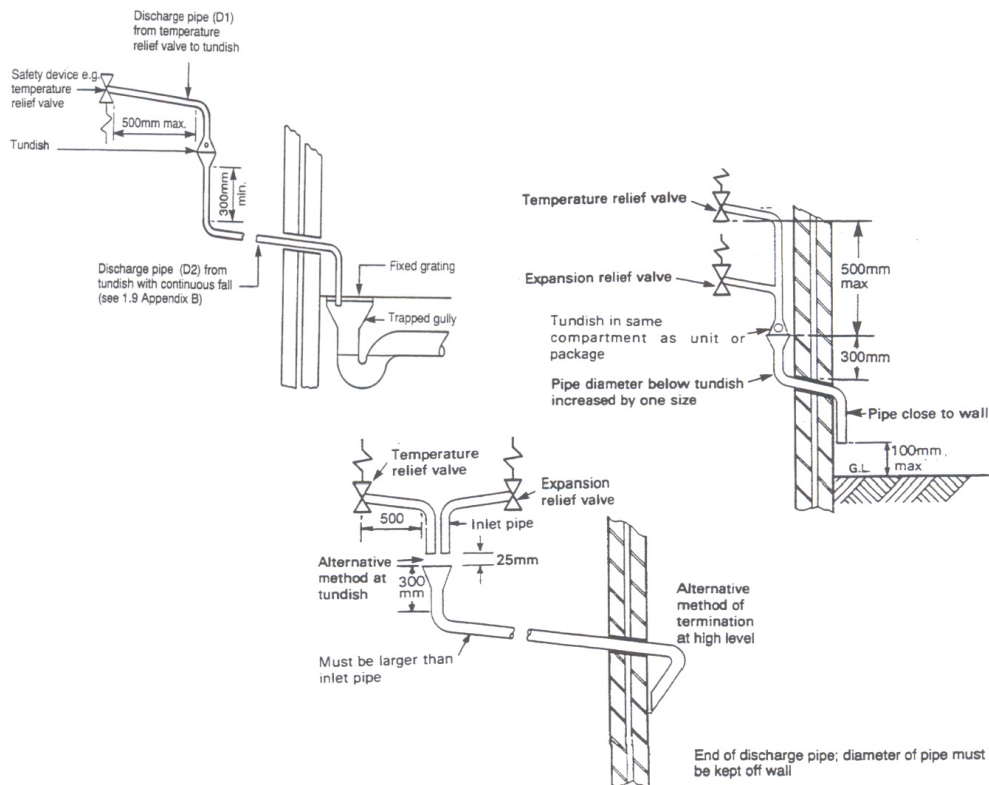
- a) be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9m long i.e. discharge pipes between 9m and 18m equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device, between 18m and 27m at least 3 sizes larger, and so on. Bends must be taken into account in calculating the flow resistance. Refer to the worked example.

An alternative approach for sizing discharge pipes would be to follow BS6700: 1987 *Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages*, Appendix E, section E2 and table 21.

- b) have a vertical section of pipe at least 300mm long, below the tundish before any elbows or bends in the pipework
- c) be installed with a continuous fall.



- d) have discharges visible at both the tundish and the final point of discharge but where this is not possible or is practically difficult there should be clear visibility at one or other of these locations. Examples of acceptable discharge arrangements are;
- i) ideally below a fixed grating and above the water seal in a trapped gully.
  - ii) Downward discharges at low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed area etc. are acceptable providing that where children may play or otherwise come into contact with discharges a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility.
  - iii) Discharges at high level; e.g. into a metal hopper and metal down pipe with the end of the discharge clearly visible (tundish visible or not) or onto a roof capable of withstanding high temperature discharges of water 3m from any plastics guttering system that would collect such discharges (tundish visible)
  - iv) Where a single pipe serves a number of discharges, such as in blocks of flats, the number served should be limited to not more than 6 systems so that and installation discharging can be traced reasonably easily. The single common discharge pipe should be at least one pipe size larger than the largest individual discharge pipe D2 to be connected. If unvented hot water storage systems are installed where discharges from safety devices may not be apparent i.e. in dwellings occupied by blind, infirm or disabled people, consideration should be given to the installation of an electronically operated device to warn when discharge takes place.

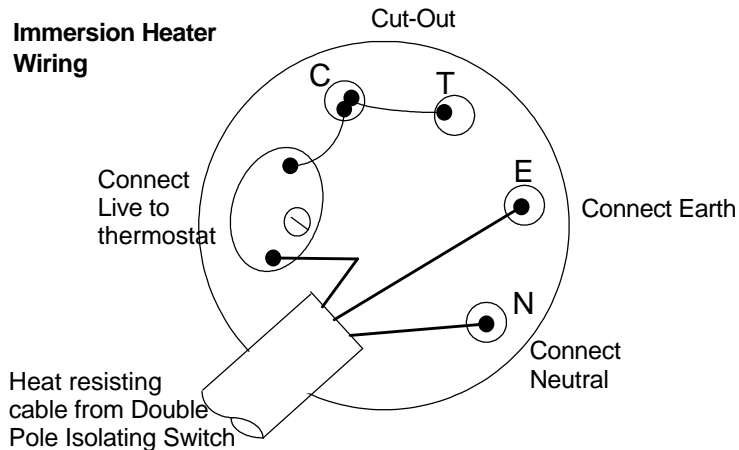


Note: The discharge will consist of scalding water and steam. Asphalt, roofing felt and non-metallic rainwater goods may be damaged by such discharges.

## 7. Flushing and Commissioning

- Ensure all pipe connections are tight, including immersion heater(s).
- Check the immersion heater setting is not above 60C and that the live and neutral connections are correct.
- Open a hot tap farthest from the unit. Open the mains stop cock to fill the unit.
- Flush for three minutes.

- Close off taps and check pipework for leaks.
- Switch on electricity to the immersion heater(s) or switch on the boiler. Refer to boiler manufacturer's instructions or commissioning.
- Bring the unit to approx 65C. Check that water does not discharge via the Tundish pipework during heating.



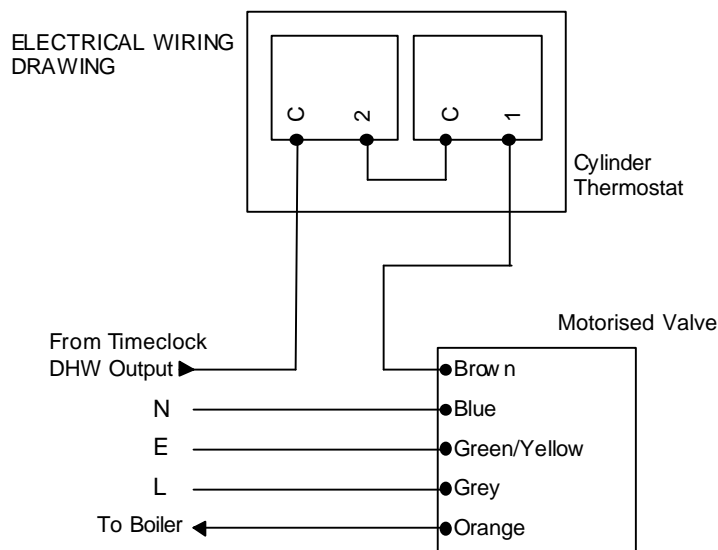
- Hand guarantee card to user.

**8. Electrical Specification & Wiring (Immersion Heater)**

- Element terminals are marked N(Neutral) and L(Live)
- Ensure earth connection of 3 wire supply is connected to earth.
- Recommended supply for 3kW element is 2.5mm cable to BS6141
- A 16 Amp timer is recommended for 3kW elements
- The unit is not fitted with a fuse.
- All heating elements operate on a 230 VAC 50Hz mains supply. Do not fit immersion heater(s) without thermal cut-out(s).

**FUSE RATING:**

The fuse rating for two 3kW immersion heaters wired separately from the main fuseboard should be 15 Amps.



Electrical Specification and Wiring (Thermostat Control)

- The cylinder control thermostat is mounted on the top of the unit in a housing with cable entry point.
- The unit houses two thermostats, a control thermostat and an overheat thermostat. Operation of either thermostat must cease the supply of heat to the cylinder.
- Remove the thermostat housing cover. Wire the two thermostats inside in series to the hot water control valve as shown below.

### 9. Secondary Circulation

- A pump is required together with a non-return valve.
- The pump should be fitted with isolating valves on either side and sited to minimise air accumulation – away from the high point of the circuit. An air bleed valve may be located at the high point.
- The return pipe should be fitted to the secondary return/drain off tapping near the base of the cylinder.
- A drain off cock (not supplied) should be fitted in-line in the secondary return near the connection to the cylinder to facilitate drainage of the cylinder for maintenance purposes.
- A non-return valve (not supplied) must be fitted to prevent backflow.
- Calculate the flow rate and pump size by determining the total heat loss in flow and return in watts.
- Consideration should be given to the fitting of an additional vessel where excessively large secondary loop circuits are used.

$$\text{Required flow rate} = \frac{\text{Total Watts}}{4186 \times 1000 \times T} \quad \text{litres/second}$$

where T = temperature difference between flow and return (normally the desirable drop is 5C and the hot water temperature should be 60C).

### 10. Scale Advice and Maintenance

- In areas of hard water high storage temperatures (above 50C) will result in scale deposition
- It is advisable to set the thermostat to the required level and fit a water softener or scale inhibitor (capable of the required circuit flowrate) in the cold supply line.

#### Maintenance

- The valve easing gear on the pressure and temperature relief valve must be operated at least once every 6 months.
- The charge pressure of the expansion vessel should be checked annually with a pressure gauge at the top (and with a hot tap open and the cold supply turned off). Recharge with clean dry air to 3.5 bar.
- Clean the pressure reducing valve filter every 2 years or of flow from water heater begins to deteriorate.
- 

### 11. Trouble Shooting & Fault Guide

#### WARNINGS

If hot water discharges at tundish do not turn off supply main, Switch off power to electric elements and shut down heating boiler (indirect models).

The cause of this could be a failure of the safety controls and you should immediately contact your installer or our service operator.

| <b>SYMPTOMS</b>  | <b>POSSIBLE CAUSES</b>  | <b>ACTION</b>  |
|--|---|--|
| 1. No or low flow  | <ul style="list-style-type: none"> <li>- Poor mains pressure</li> <li>- Restricted pipework</li> <li>- Mains stopcock</li> <li>- Sticking jumper in stop cock</li> <li>- Blocked filter</li> </ul>  | <ul style="list-style-type: none"> <li>- Check that all arrows on valves are in water flow direction.</li> <li>- Use larger diameter pipework</li> <li>- Operate stopcock or replace</li> <li>- Replace stop cock</li> <li>- Clean filter</li> </ul>                           |
| 2. Discharging cold relief valve   | <ul style="list-style-type: none"> <li>- Loss of expansion vessel</li> <li>- Defective pressure reducing valve</li> <li>- Blocked or defective expansion relief valve</li> <li>- Crossflow from cold supply through mixer top or other fittings.</li> </ul> | <ul style="list-style-type: none"> <li>- Check and recharge vessel (with hot tap open)</li> <li>- Replace pressure valve</li> <li>- Operate expansion valve mechanism to clear or replace</li> <li>- Check mixer taps and fit check valve on hot outlet from heater</li> </ul> |
| 3. Water is cold - Boiler not switched on - CARRY OUT PROCEDURE (indirect) | <ul style="list-style-type: none"> <li>- Air locked primary flow</li> <li>- Thermostat settings incorrect</li> <li>- Cut out switch need reset</li> </ul>   | BELOW  |

### **Warnings (Electric Models)**

Always isolate the electrical supply before opening heating elements.

Confirm that power supply is reaching the elements

If thermal cut-out switches have operated press in the red button. If this fails to heat the cylinder the element has failed and should be replaced. Fit new element and reset thermal cut-out.

With power to the element and the cut-out reset, check the voltage on thermal cut-out output. If this is incorrect replace cut-out switch.

### **12. Spares**

| <b>ITEM DESCRIPTION</b>  | <b>MODEL</b>    | <b>SPECIFICATION</b>   |
|--|-----------------|--|
| 1/2 inch Temperature and Pressure Relief Valve                                   | KSI.125.04.00.1 | 1/2 inch male inlet, 15mm comp. outlet, 90C, 7 bar               |
| 3/4 inch Temperature and Pressure Relief Valve                                   | KSI.125.04.00.0 | 3/4 inch male inlet, 22mm comp. outlet, 90C, 7 bar               |
| 3/4 inch pressure reduction valve, expansion relief manifold (125 and 200 litre) | KSI.125.06.00.0 | 22mm comp inlet, 22mm comp outlet, 3.5 bar supply, 6 bar relief. |
| 3/4 inch pressure reduction valve, expansion relief manifold (300 litre)         | KSI.300.02.00.0 | 22mm comp inlet, 22mm comp outlet, 3.5 bar supply, 6 bar relief  |
| 1 inch pressure reduction valve, expansion relief manifold (400 litre)           | KSI.400.02.00.0 | 1 inch male inlet, 1 inch female outlet, 3.5 bar, 6 bar relief.  |
| 8 litre Expansion Vessel   | KSI.125.01.00.1 | 3/4 inch female inlet. 3.5 bar                                   |
| 12 litre Expansion Vessel  | KSI.200.01.00.1 | 3/4 inch female inlet. 3.5 bar                                   |
| 19 litre Expansion Vessel  | KSI.300.03.00.0 | 3/4 inch female inlet. 3.5 bar                                   |
| 24 litre Expansion Vessel  | KSI.400.01.00.1 | 1 inch female inlet. 3.5 bar                                     |
| Immersion Heater   | KSI.125.02.00.0 | 3kW. 2.25 inch male. 80C cut-out                                 |
| Control Thermostat   | KSI.125.03.02.0 | Adjustable 30 to 70C   |
| Overheat Thermostat  | KSI.125.03.01.0 | 80C Cut-Out Manual Reset   |
| Motorised Valve 22mm   | KSI.125.07.00.1 | 22mm 2-port valve  |
| Motorised Valve 28mm   | KSI.125.07.00.2 | 28mm 2-port valve  |

13. **Safety & Relevant British Standards**  
 Installation of this tank as an unvented hot water system falls within the scope of the Building Regulations 1995 (Part G). These require that installation of an "unvented" system shall be notified to the local authority Building Control Department; also that the work must be carried out by a competent person as defined in the Approved Document G3.

14. **Tank Data Plate**

|   |  |
|---|--|
| <b>Manufacturer :</b>   | <b>KESTON SPA UNVENTED CALORIFIER</b><br>Keston Boilers Ltd, 34 West Common Road,<br>Hayes, Bromley, Kent BR2 7BX UK<br>Tel 020 8462 0262, Fax 020 8462 4459<br>Email info@keston.co.uk,<br>Web www.keston.co.uk   |
| Serial Number   | <input style="width: 100%;" type="text"/>  |
| Storage Capacity  | <input style="width: 100%;" type="text"/> litres   |
| Mass Full   | <input style="width: 100%;" type="text"/> kg   |
| Max. Supply Pressure  | : 12 bar      Max Primary Pressure : 3 bar   |
| Expansion Vessel Charge   | : 3.5 bar      Expansion Valve Setting : 6 bar   |
| Operating Pressure  | : 3.5 bar  |
| Immersion Heater  | : 3 kW / 230 VAC / 50 Hz<br><b>AFSTA327 (BS3456, 11 inch, BS7351)</b>  |
| <b>WARNING</b>  |  |
| To The User<br><b>(i) Do not remove or adjust any component part of this unvented water heater. Contact the installer.</b><br><b>(ii) If this unvented water heater develops a fault, such as a flow of hot water from the discharge pipe, switch the heater off and contact the installer.</b> | To The Installer<br><b>(i) This installation is subject to building regulation approval, notify the Local Authority of intention to install.</b><br><b>(ii) Use only manufacturers replacement parts.</b><br>Completion Date : <input style="width: 100%;" type="text"/> |
| Installed By:<br>(name, address & tel no.)  | <input style="width: 100%; height: 80px;" type="text"/>  |