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UNVENTED CYLINDER RANGE

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UNVENTED WATER STORAGE CYLINDER

No longer than every 12 months, the magnesium anti-corrosion anodes should be checked by your service engineer/installer.

Installation and Users Guide

IMPORTANT

Please read these instructions carefully
before installing the cylinder.
Failure to do so may invalidate the Warranty

WATER BYELAWS

These bye-laws ensure a good supply of wholesome water, and that only approved materials, pipes and fittings are used to convey water.

BUILDING REGULATIONS

These are a statutory document and take priority over all other regulations and recommendations. The installation of an unvented hot water storage cylinder is classified as a "Controlled Service" and Regulation G3 applies. To meet the requirements of the Regulation, installation of an unvented system should be undertaken by a "competent installer".

All installations of unvented hot water storage systems having a capacity of more than 15 litres should be notified to the relevant Local Authority by means of building notice or by the submission of full plans. It is important to note that it is a criminal offense to install an unvented hot water storage system without notifying the Local Authority.

DELIVERY

The range is available with the following options;

The wall-hung range (50, 75, 100 litre models), which are supplied as the following;

One large box containing;

- 1) The unit with factory fitted Temperature & Pressure Relief Valve and Immersion Heater.

One small box containing;

- 1) Unvented control pack (Expansion vessel, 2 piece Cold Water Combination Valve, Tun Dish).

The Ariston Contract and the Ariston Comfort (Indirect only) floor-standing range (125, 150, 200 litre models).

The Contract is supplied with the following;

One large box containing;

- 1) The unit with factory fitted Temperature & Pressure Relief Valve.
- 2) Immersion Heater(s) (not fitted).
- 3) Cylinder Thermostat (Indirect only, not fitted).
- 4) Feet x 3.

One small box containing;

- 1) Unvented control pack (Expansion vessel, 2 piece Cold Water Combination Valve, Tun Dish, Drain Cock and Motorised Valve (Indirect only)).

The Comfort is supplied with the following:

One large box containing;

- 1) The unit with factory fitted Temperature & Pressure Relief Valve.
- 2) Factory fitted Immersion Heater (Dry pocket).
- 3) Factory fitted Cylinder Thermostat.
- 4) Feet x 3.

One small box containing;

- 1) Unvented control pack (Expansion vessel, 2 piece Cold Water Combination Valve, Tun Dish, Drain Cock and Motorised Valve).

The high capacity floor-standing range (300, 500 litre models), which are supplied as the following:

One large box containing;

- 1) The unit
- 2) Factory fitted Temperature & Pressure Relief Valve (300 litre models only).
- 3) Factory fitted Immersion Heater(s)
- 4) Factory fitted Cylinder Thermostat.
- 5) Feet x 3.

One small box containing;

- 1) Unvented control pack (Expansion vessel, 2 piece Cold Water Combination Valve, Tun Dish, Drain Cock and Motorised Valve) (500 litre model 1" Temperature & Pressure Relief Valve).

HOW THE HEATER WORKS

The Immersion Heater(s) are connected through a thermostat which senses the water temperature. The operating temperature can be pre-set by adjusting the spindle in the head of the thermostat. In addition to the thermostat there is a Thermal Cut-out incorporated if the thermostat fails and the water temperature rises too high. Once the cut-out operates it can only be re-set manually after the fault has been rectified.

Indirect models have dual thermal controls. In addition to the above there is a separate Cylinder Thermostat and Thermal Cut-out for controlling the indirect circuit. Again the Thermal Cut-out operates if the Cylinder Thermostat fails, by disconnecting the live feed (call for hot water) from the programmer.

Floor-standing models have Magnesium Anodes provided to prevent corrosion of the water cylinder tank. Wall-hung units have a single Magnesium Anode.

The factory fitted Temperature & Pressure Relief Valve at the top of the cylinder is a safety device to back-up the Thermostat(s) and Thermal Cut-out(s). It works by sensing an excess in water temperature or pressure and releasing the hot water into a Discharge Tundish and drain.

The cylinder will only work in the vertical position. The inlet pipe needs to deliver cold water to the bottom of the tank. When water is heated it expands. To accommodate this increase in volume an Expansion Vessel is provided. A Cold Water Combination Valve is also provided in two pieces, loose jointed for ease of installation. These comprise a Combined Line Strainer/Pressure Reducing Valve and Core Non Return Valve/Expansion Relief Valve.

The Strainer prevents any debris entering the other controls. The Pressure Reducer ensures the correct operation of the Expansion Vessel, and prevents any damage to the control valves through too great a pressure.

The Non-Return Valve ensures the water expansion is forced into the Expansion Vessel and prevents contamination of the mains cold water supply. The Expansion Relief Valve will discharge expanded water to the Discharge Tundish if the Expansion Vessel fails.

COLD WATER SUPPLY

It is important to ensure that the cold water main is capable of supplying the increased demand which will be imposed on it.

Hot and cold water are both drawn off the same source of supply. Remember, there will not be a storage tank to help compensate for variations in the demand on the system.

A minimum pressure of approximately 1.5 bar and 20 litres per minute is required for satisfactory operation. 85% of UK dwellings have a mains pressure above 2.0 bar.

THE MAINS WATER SUPPLY MUST NOT EXCEED 12 BAR

SITING AND FIXING

The cylinder may be installed at any convenient position, as it is connected to the mains cold water supply, it is equally effective on any floor.

However, do not install the unit in premises which may be subject to freezing. Ensure that the floor load bearing strength is adequate to take the weight of the cylinder when full of water (see table 1).

The ST50, ST80 and ST100 models are wall mounted. All other models are free standing. These are supplied with feet which are attached to the heater via self tapping screws which are also supplied. All units must be installed in the VERTICAL POSITION.

For maintenance purposes leave at least 500 mm free space in front of the unit, for access to electrical components, immersion heater(s) and magnesium anodes.

CONNECTION OF MAINS WATER SUPPLY

For Contract & Comfort models:

On the front of the unit there is a label to identify the connection ports. **Please check this before making any connection to the unit.**

For units up to 300 litres it is recommended that all mains cold water supply pipe work is a minimum of 22mm, with the exception of model ST50 where 15mm can be used. For 500 litre models the supply should be 28mm. An Isolating Valve should be installed between the cold water supply and the cylinder for servicing. **ALL PIPEWORK MUST BE FLUSHED TO AVOID DAMAGE TO THE CONTROL VALVES.**

Please refer to figs. 1, 2, 3, 3^o, 3^o for a suggested installation layout.

COLD WATER COMBINATION VALVE

The Cold Water Combination Valve can be connected either close by the unit or alternatively it may be installed in a remote position from the unit as there is no requirement to site it in close proximity to the cylinder. This allows a flexible and convenient installation. However, it is important to note allowances for the discharge pipe work from the Expansion Relief Valve must be accounted for.

A Balancing Port is supplied on the 22mm (for units above 50 litres) valve allowing balanced cold water supply to the rest of the building giving excellent results with mixer and shower valves. If the facility is not needed a plug is supplied. Refer to fig. 4

Although this facility is not built into the 15mm valve (supplied with Contract ST50), a Tee Piece may be inserted between the two components giving the same results. Refer to fig. 5

CONNECTION TO SERVICES

Again it is recommended that a 22mm pipe run should supply the outlets throughout the building, especially to baths and showers. Short runs of 15mm pipe may be used to connect basins and sinks

SECONDARY RETURN

On all non-standing models a Secondary Return may be fitted. On Compact and Comfort models via the special port on the side of the cylinder (consult the label on the face of the unit for the correct location), for 300 and 500 litre models refer to fig. 6. A Non Return Valve (not supplied) must be fitted to prevent back flow and a Bronze Pump will be needed in conjunction with a Pipe Thermostat to circulate the hot water (both not supplied).

DISCHARGE PIPEWORK

1) The Tundish must be vertical and fitted within 500mm of the Temperature & Pressure Relief Valve and must be located with the cylinder. The Tundish must also be in a position visible to the occupants, and positioned away from any electrical devices. The discharge pipe from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge and to be of metal.

2) Discharge pipes from the Temperature & Pressure Relief and Expansion relief valve may be joined together.

3) The pipe diameter must be at least one pipe size larger than the nominal outlet size of the safety device unless it's 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 2 sizes larger than the nominal outlet size of the safety device. Between 18m and 27m at least 3 larger, and so on.

Bends must be taken into account in calculating the flow resistance.

See fig. 7 and Table 2.

4) The discharge pipe must have a vertical section of pipe at least 300m in length, below the Tundish before any elbows or bends in the pipework.

5) The discharge pipe must be installed with a continuous fall.

6) The discharge must be visible at both the Tundish and the final point of discharge, but where this is not possible or practically difficult; there should be clear visibility at one or other of these locations. Examples of acceptance are:

- i) Ideally below a fixed grating and above the water seal in a trapped gully.
- ii) Downward discharges at a low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. These 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; i.e. into a metal hopper and metal down pipe with the end of the discharge pipe clearly visible (Tundish visible or not). Or onto a roof capable of withstanding high temperature discharges of water 3m from any plastic guttering systems that would such a discharge (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 any installation can be traced reasonably easily. The single common discharge pipe should be at least one pipe size large than the largest individual discharge pipe 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 the 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.

WARNINGS

The outlet from the Temperature & Pressure Relief Valve must not be used for any other purpose. This also applies to the Expansion Relief Valve. No other valve is to be fitted between the Cold Water Combination Valve and the cylinder.

The Temperature & Pressure Relief Valve must not be removed in any circumstances. Any of the above will totally invalidate the warranty.

ELECTRICAL

The electrical installation must be in accordance with the current I.E.E. wiring regulations.

FITTING IMMERSION HEATER(S) (CONTRACT RANGE ONLY)

These are supplied but not fitted with the Ariston Contract range. A Sealing Gasket is supplied with each element and must be used to ensure a correct seal. Care must be taken not to cross thread the Immersion Heater(s) when fitting. Each Immersion Heater is supplied with a Regulation Thermostat and manual reset Thermal Cut-out. This will activate if the Regulation Thermostat fails. **Under no circumstances should this be bypassed.**

Although the Immersion Heaters are a standard 2¹/₄" thread, they must not be substituted with anything but an original Ariston spare part.

DIRECT SYSTEMS

A mains supply of 240V, 3kW (13 amps) is required. Heat resistant cable, round 3 or 4 core 2.5mm² (to BS6141 table 8) must be used to connect the electrical supply through the Economy 7 time control switch using either system 'A' or 'B' as illustrated in fig. 8.

Should the Economy 7 system not to be used, a separate 13 amp supply to each element will be required. Through a double pole fused isolating switch having a contact gap of at least 3mm on each pole. Make the connection(s) to the Immersion Heater(s) as per figs. 9, 10. For 500 litre models consult the wiring diagram on the reverse of the inspection panel.

The Thermostat(s) on the Immersion Heater(s) should be adjusted to trip at 60°C. This is the ideal temperature to prolong element life in hard water areas. Scale on the sheath builds up more rapidly at temperatures above this causing the element to overheat and premature failure can occur. Higher temperatures without additional controls would result in scalding.

In addition to the thermostat the Thermal Cut-out will switch power off to the element should the thermostat malfunction, causing an excessive rise in water temperature. The Thermal Cut-out can be reset manually after the fault has been corrected.

INDIRECT SYSTEMS

Again for models up to 300 litres a mains supply of 240v, 3kW (13 amps) will be required for the direct Immersion Heater. Heat resistant cable, round 3 core 2.5mm² (to BS) must be used. For 500 litre models consult the wiring diagram on the reverse of the inspection panel.

For indirect controls a 240V, 3amp supply is required.

On Comfort models the Indirect thermostat is factory fitted, for Contract models it is necessary to fit the thermostat using P.T.F.E Tape (Please consult the label on the face of the unit for the correct location in both cases).

The cables must be clamped in position (as previously stated) and the control thermostat should be set at 60°C for the reasons above. In addition to the thermostat there is a Thermal High Temperature Cut Out should the thermostat fail. Refer to figs. 11 & 12 for full wiring instructions.

WARNING : THIS APPLIANCE MUST BE EARTHED.

The earth continuity conductor of the electrical installation must be effectively connected to all exposed parts of other appliances and services in the room in which the water heater is to be installed, conformity with the I.E.E. wiring regulations.

NOTE : Do not switch on the Immersion Heater or fire the boiler until the water heater is full of water.

COMMISSIONING

Check for obvious signs of damage to the cylinder and controls and also that the controls fitted correspond with the reference quoted in these instructions.

Ensure that the Drain Cock at the base of the water heater is closed before commencing.

1) Open all cold water taps.

2) Turn on mains water supply and allow the water heater to fill.

- 3) Close taps in turn after having purged the system of air.
- 4) Check for leaks around the controls and Immersion Heaters and again after the unit has heated up.
- 5) Check that no water is passing to waste through the relief valves.
- 6) Test the operation of the Temperature & Pressure Relief and Expansion Valves by lifting/turning the manually operated test lever/cap and observing that water flows through freely and safely to waste.
- 7) Check that the discharge pipe is plumbed so that it falls continuously and that no taps, valves or other shut off devices are installed in the pipe.
- 8) Check that all thermostats are set at 60°C.
- 9) DIRECT UNITS. Switch on Immersion Heater(s) and allow unit to heat up. Check operation of Thermostat(s).
- 10) INDIRECT UNITS. Fill the indirect (primary) circuit following the boiler instructions. Switch on the boiler, ensure that the programmer is to Domestic Hot Water. Allow unit to heat up and check operation of indirect thermostat on motorised valve(s).
- 11) Demonstrate operation to user, including operation of Temperature & Pressure Relief Valve and what to do if it operates.
- 12) Give this book to the user to retain for future reference and make the customer aware that periodic checks of the equipment are essential for safety.

MAINTENANCE

No longer than every 12 months, the installer should check the Magnesium Anti-corrosion Anodes (consult the label on the face of the unit for the correct location). Assessment of the condition of the bottom anode can be made by judging the condition of the top anode.

If the heating element is heavily coated with scale we recommend descaling at the time of this inspection. The Expansion Vessel may need to be recharged periodically by your installer.

WARNING : SWITCH OFF THE POWER SUPPLY BEFORE WORKING ON THE APPLIANCE.

If the Thermal Cut-Out has operated the cause must be found before resetting.

Removal of top & bottom Anodes;

- 1) Close the mains supply service valve.
- 2) Open hot water taps.
- 3) Attach a hose and open the drain cock and allow the cylinder to empty.
- 4) The anodes are removed by unscrewing using an Allen key.

EXAMINE THE ANODES AND REPLACE IF THE DIAMETER IS LESS THAN 10mm.

The use of P.T.F.E. sealing tape is recommended to ensure watertight connection for Anodes. Descale the Immersion Heater(s) and remove any lime deposit from the cylinder. Replace in reverse order. THIS DOES NOT APPLY TO COMFORT MODELS.

Check controls as per the following:-

- 1) Check and clean the Line Strainer before refilling the system.
- 2) Check pressure in Expansion Vessel and top up as necessary.
- 3) Check manually by lifting the test lever the Temperature & Pressure Relief Valve.
- 4) Check manually by turning the test knob the Expansion Relief Valve.
- 5) Check discharge pipes from both Temperature & Pressure Relief and Expansion Relief Valve for obstructions.

FAULT FINDING

FAULT	POSSIBLE CAUSES	REMEDY
NO HOT WATER FLOW	1) Mains Cold Water supply shut off	Check and open Isolating and/or Stop Valve. Check water, Local Water Authority
	2) Line Strainer blocked	Turn off mains water supply, remove Line Strainer and clean
	3) Cold Water Combination valve fitted incorrectly	Check direction of flow arrows on valve, refit in correct position if necessary
REDUCED FLOW RATE	1) Low Mains Water Pressure	Check pressure, consult Local Water Authority if necessary
	2) Line Strainer partially blocked	Turn off mains water supply, remove Line Strainer and clean
	3) Size of Service Pipe too small	Increase to size stated on page 4
WATER FROM HOT TAPS IS COLD	1) Direct Immersion Heater is not switched on	Check Immersion Heater, switch on if necessary
	2) Direct Thermal Cut-Out has operated	Test Thermostat operation and wiring, if faulty, correct/replace. Reset Cut-Out
	3) Boiler Programmer set to Central Heating only (Indirect models)	Check switch on Domestic Hot Water if necessary
	4) Boiler is not functioning (Indirect models)	Check boiler operation, if fault suspected consult Manufacturer's Instructions
	5) Indirect Thermal Cut-Out has operated	Test Thermostat operation and wiring, if faulty, correct/replace. Reset Cut-Out
	6) Motorised valve jammed or not wired correctly (Indirect models)	Check wiring and operation of Motorised Valve correct/replace as necessary
DISCHARGE FROM PRESSURE/TEMPERATURE RELIEF VALVE	1) Pressure above 7 bar, failure of Pressure Reducing Valve. Temperature above 90 C failure of thermal control	Shut down boiler or immersion heater. Check pressure Reducing Valve and Thermal Controls. Replace if necessary
DISCHARGE FROM EXPANSION VALVE	1) Continually. Pressure Reducing Valve faulty	Check pressure from valve. Replace if over 3.5 bar
	2) When heating is operating Faulty Expansion Vessel or lost charge	Check charge of vessel. Recharge vessel to 3.0 bar or replace if necessary

For the full specification of each unit please consult the labels attached to the side of the unit.

Max Water supply Pressure	12.0 bar
Operating Pressure	3.5 bar
Expansion Vessel Charge Pressure	3.5 bar
Expansion Valve Setting	6.0 bar
Pressure And temperature relief valve	7.0 bar / 90° C
Immersion Heater Rating for Each Heater	3000 W - 240 V.
Pressure Reducing valve set pressure	3.5 bar

TABLE 1

MODEL	STORAGE CAPACITY	UNITS PIPES SIZE		COIL SURFACE m ²	DIMENSIONS IN MM						WEIGHT WHEN FULL KG
		INLET	OUTLET		A	B	C	D	E	F	
DIRECT RANGE											
<i>Wall Hung</i>											
CONTRACT ST 50	50 L		1/2"	-	410	120	580	160	475	460	77
CONTRACT ST 80	75 L		3/4"	-	590	175	740	230	475	460	115
CONTRACT ST 100	100 L		3/4"	-	550	175	700	230	575	560	141
<i>Floor Standing</i>											
CONTRACT STD 100	100 L		3/4"	-	530	650	890	-	-	505	129
CONTRACT STD 125	125 L		3/4"	-	700	805	1045	-	-	505	158
CONTRACT STD 150	150 L		3/4"	-	840	965	1205	-	-	505	190
CONTRACT STD 210	200 L		3/4"	-	990	1280	1525	-	-	505	245
STDI 300	300 L		3/4"	-	-	-	1790	-	-	560	385
500 ST6	495 L		1"	-	-	-	1870	-	-	714	630
INDIRECT RANGE											
CONTRACT STI 125	125 L		3/4"	0.75	700	805	1045	675	-	505	166
CONTRACT STI 150	150 L		3/4"	0.9	840	965	1205	815	-	505	201
CONTRACT STI 210	200 L		3/4"	0.9	990	1280	1525	815	-	505	256
STT 300	300 L		3/4"	0.6	-	-	1790	-	-	560	395
500 STT6	495 L		1"	1.5	-	-	1870	-	-	714	641
COMFORT STI 125	125 L		3/4"	0.75	700	805	1045	675	-	505	169
COMFORT STI 150	150 L		3/4"	0.9	840	965	1205	815	-	505	203
COMFORT STI 210	200 L		3/4"	0.9	990	1280	1525	815	-	505	258

TABLE 1.1

Model	Time taken to raise temperature from 15 C to 65 C	Time taken to raise 70% of the stored volume to 65 C
Contract STI 125*	15 mins	13 mins
Contract STI 210*	24 mins	21 mins
Comfort STI 125*	15 mins	12 mins
Comfort STI 210*	19 mins	16 mins
Contract STD 100	2 hrs 30 mins	1 hr 19 mins
Contract STD 210	1 hr 58 mins	1 hr 39 mins

* Indirectly heated. Figures obtained by WRC in accordance with Test Criteria 1-50-220 & 1-50-222.

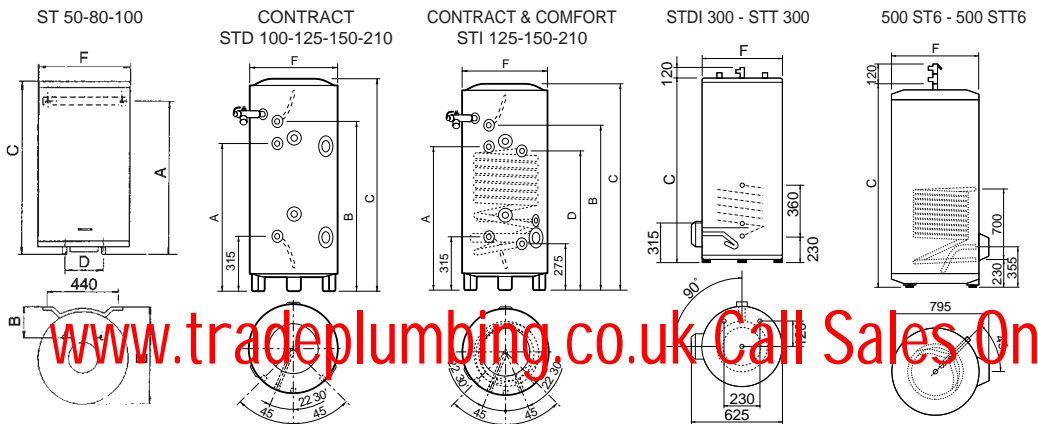


FIG. 1
MODELS CONTRACT
STD 100-125-150-210 DIRECT

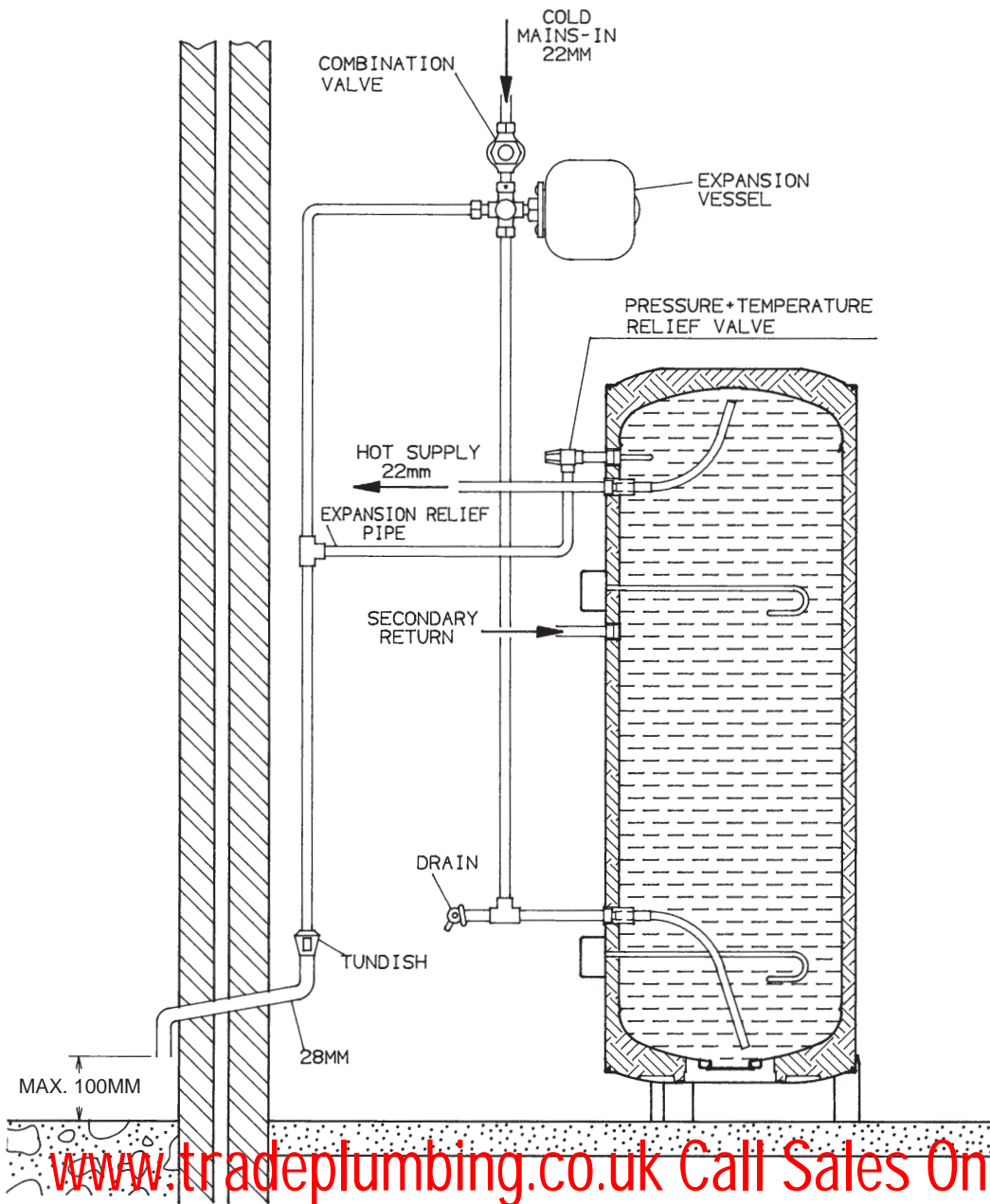


FIG. 2
MODELS CONTRACT - COMFORT
STI 125 - 150 - 210 INDIRECT

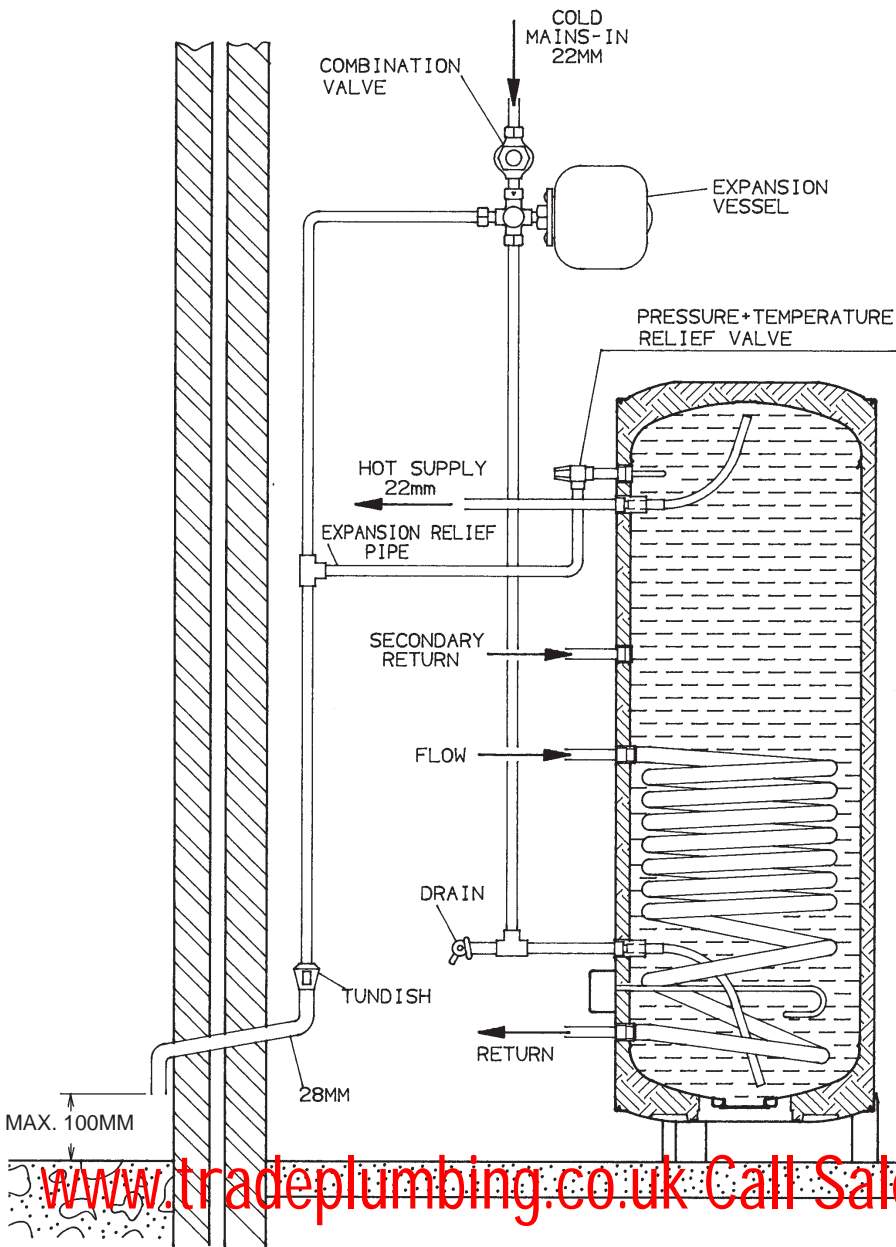


FIG. 3
MODELS ST 50 - 80 - 100

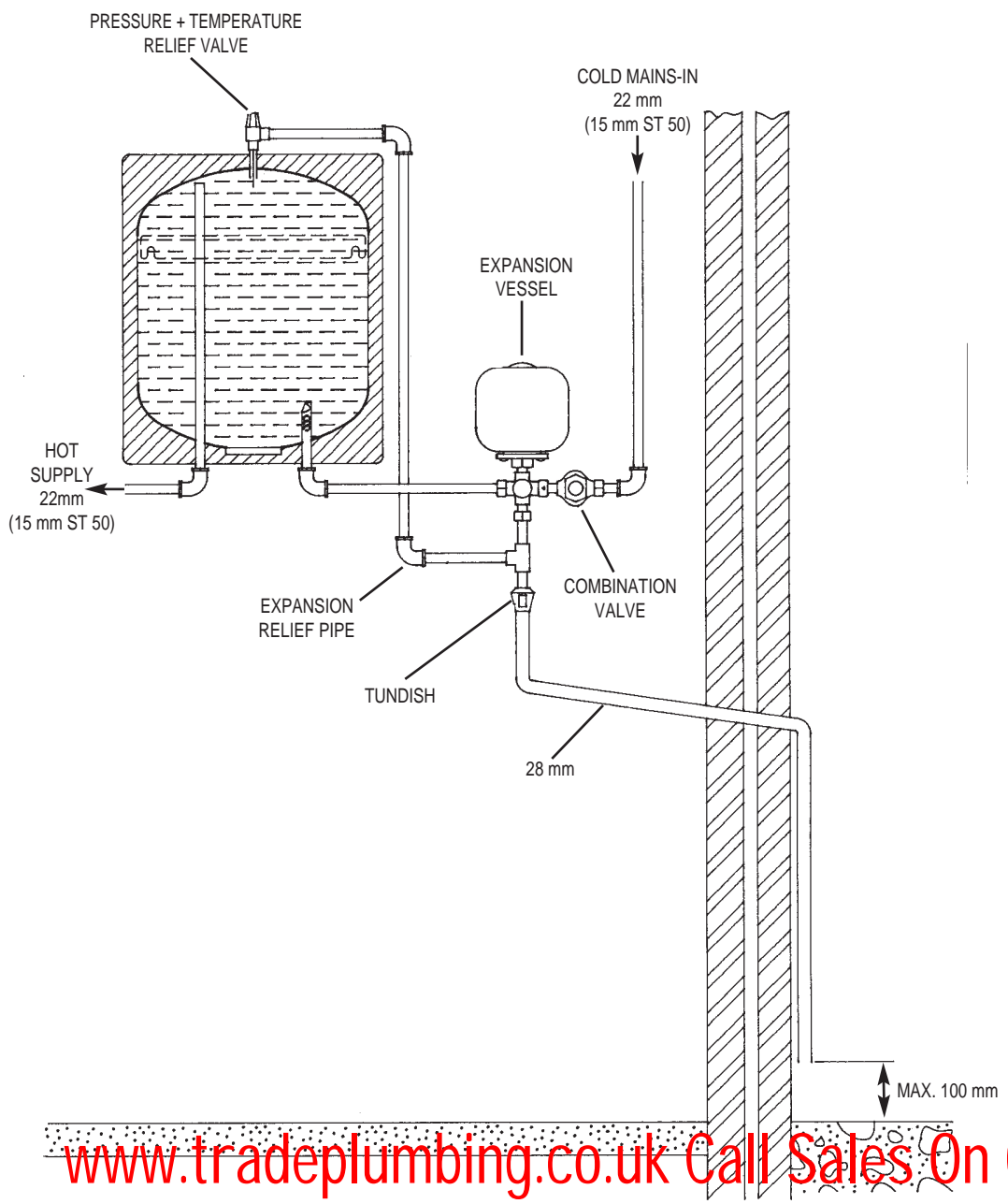


FIG. 3
MODEL STD 300 DIRECT

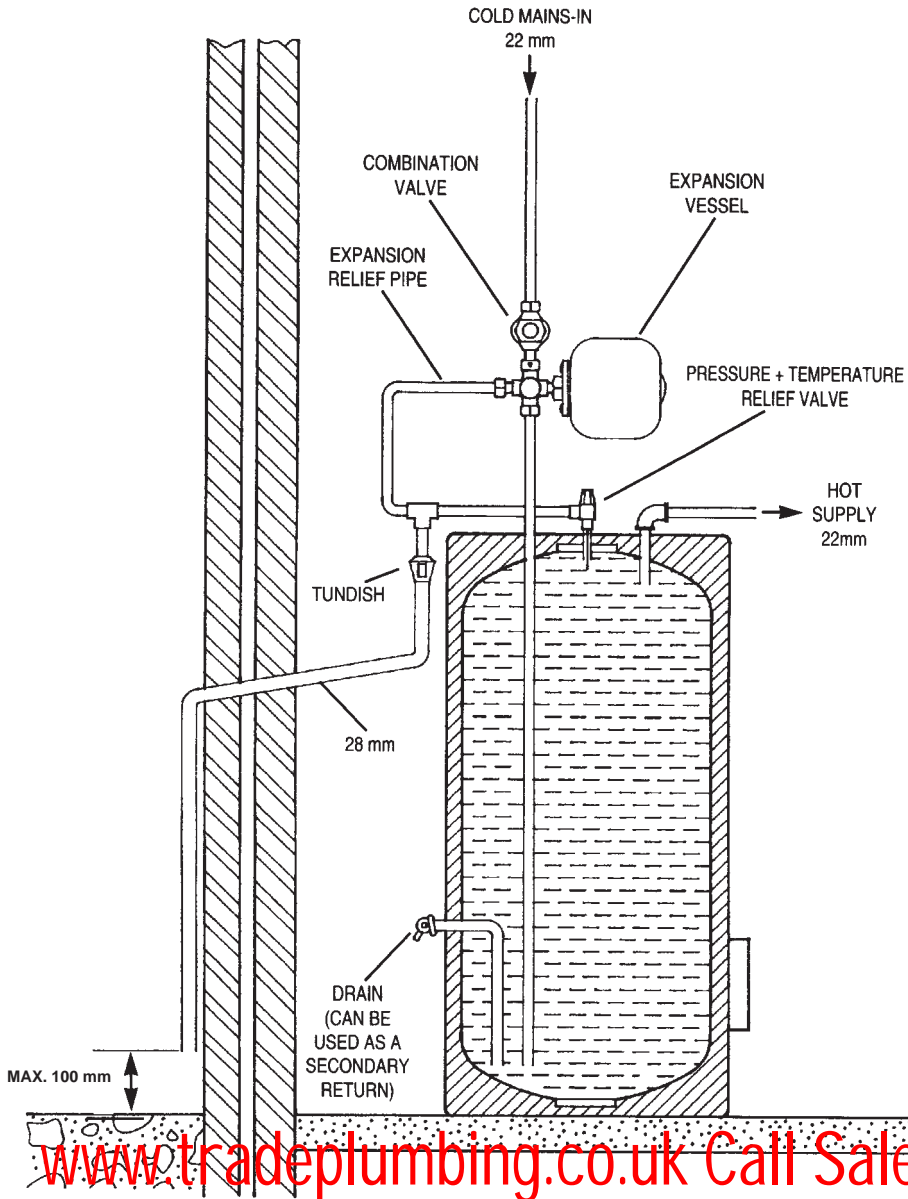


FIG. 3
MODEL STT 300 INDIRECT

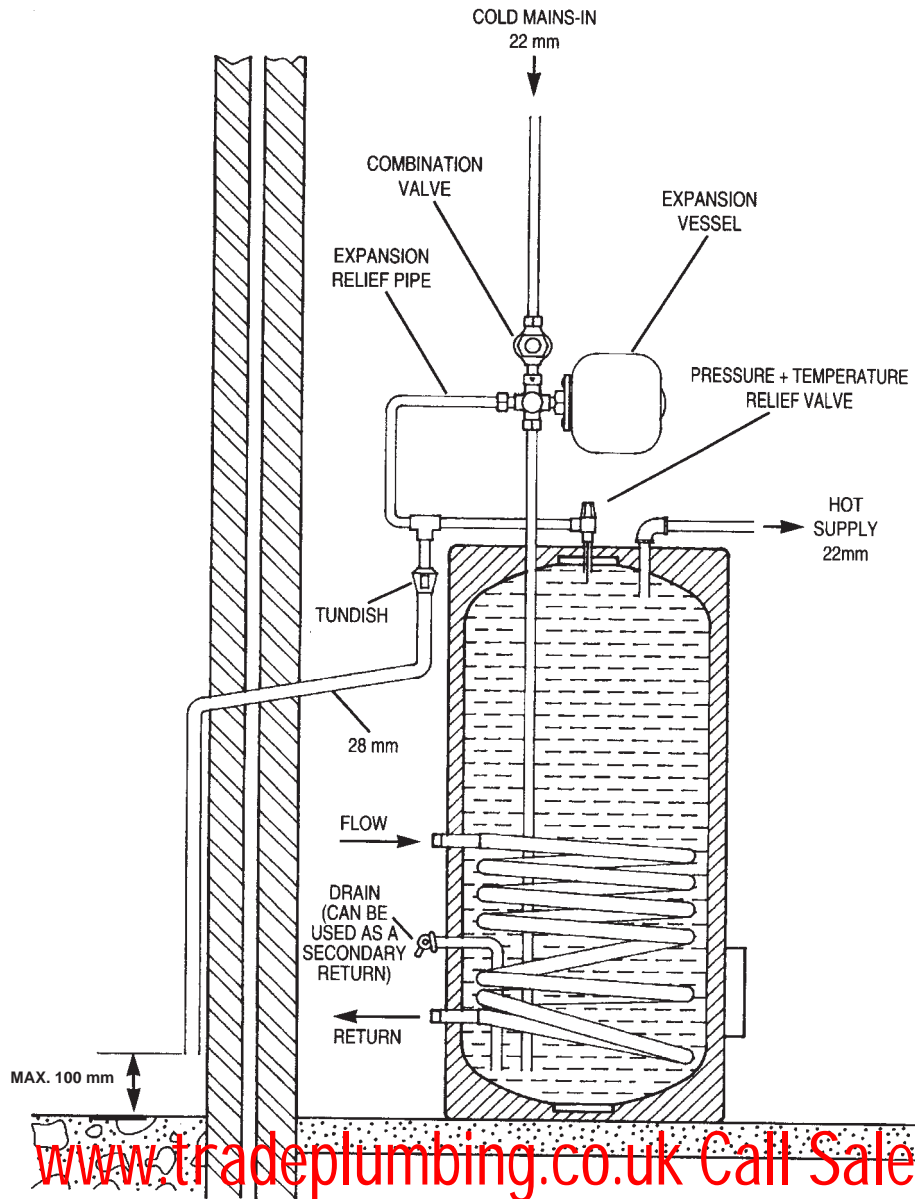


FIG. 3
MODEL 500 ST6 DIRECT

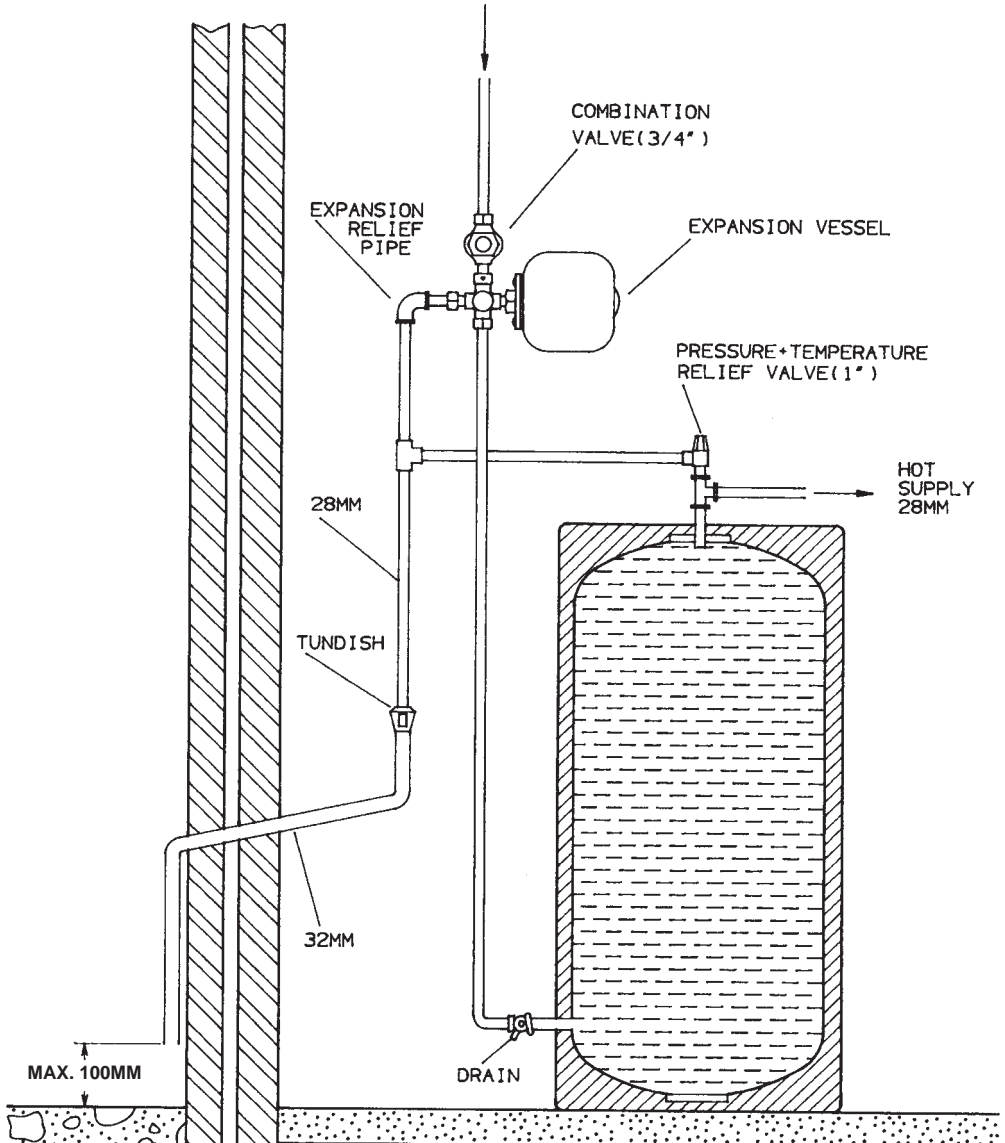


FIG. 3
MODEL 300 STT6 INDIRECT

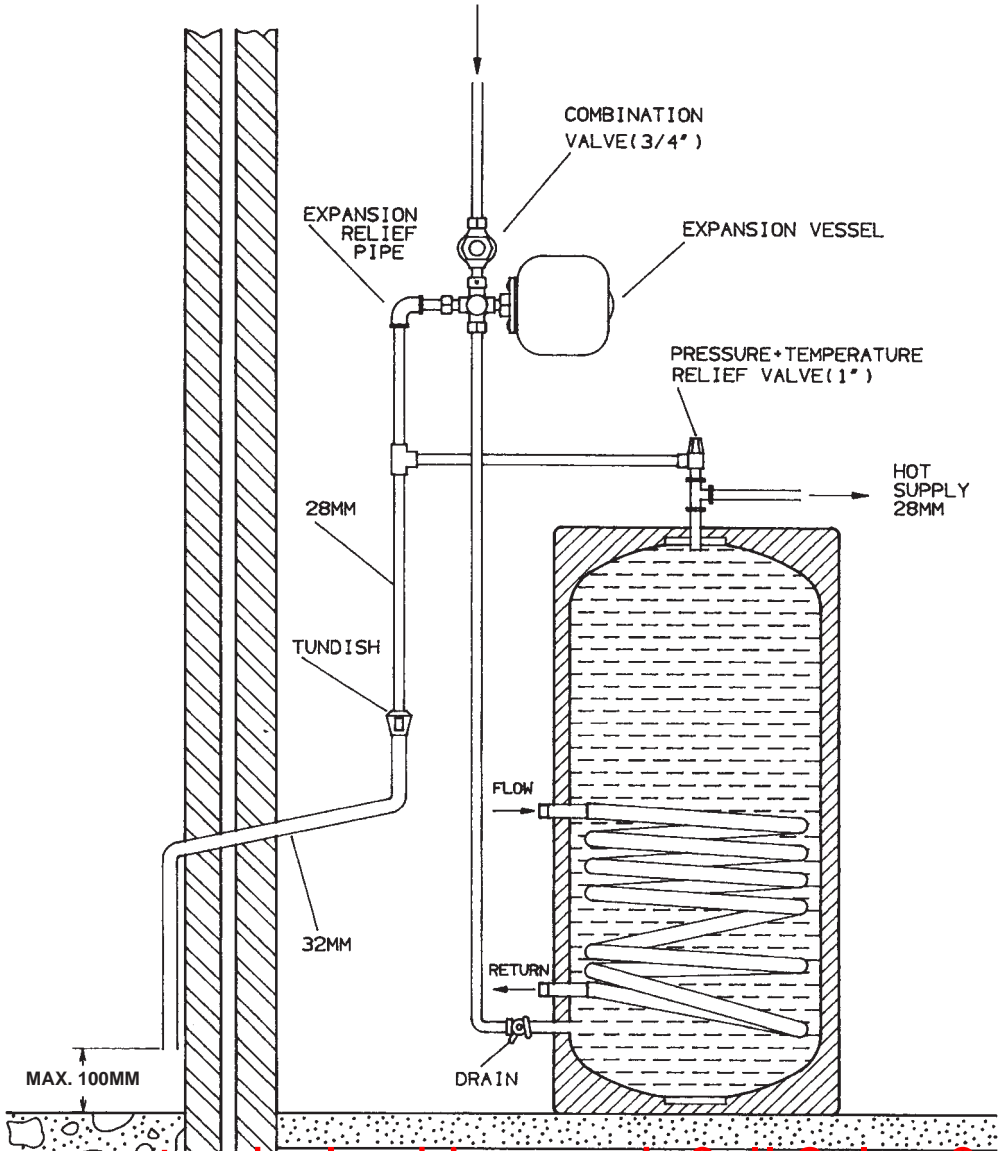


FIG 4

COLD WATER COMBINATION VALVE 3/4"

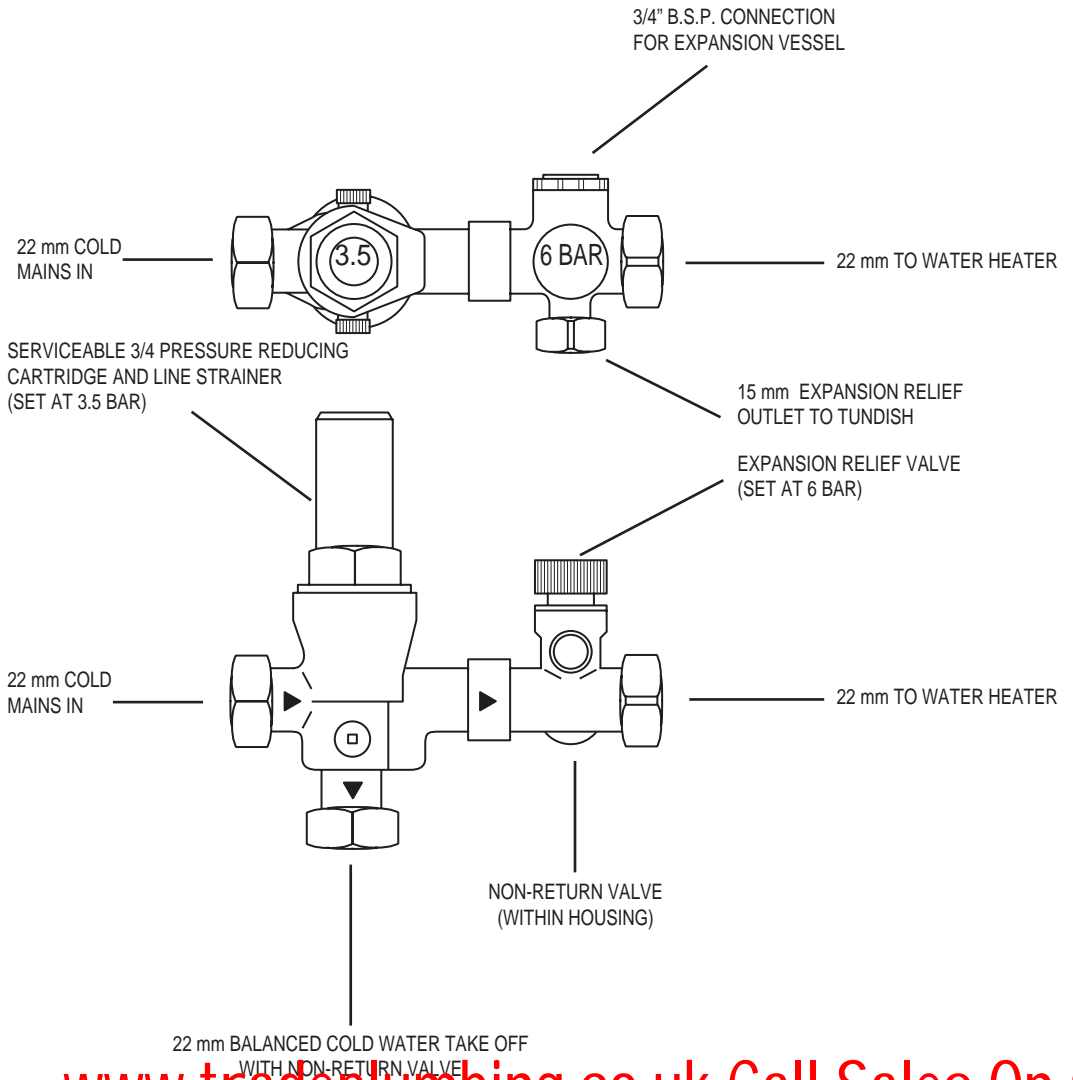


FIG. 5

COLD WATER COMBINATION VALVE 1/2"

SERVICEABLE 1/2 PRESSURE
REDUCING CARTRIDGE AND LINE
STRAINER

NON-RETURN
VALVE (WITHIN HOUSING)

EXPANSION RELIEF
VALVE (SET AT 6 BAR)

15 mm
COLD
MAINS IN

15 mm
TO WATER
HEATER

TEE PIECE
FOR BALANCED
COLD WATER
TAKE OFF
(NOT SUPPLIED)

3/4" B.S.P. CONNECTIONS
FOR EXPANSION VESSEL

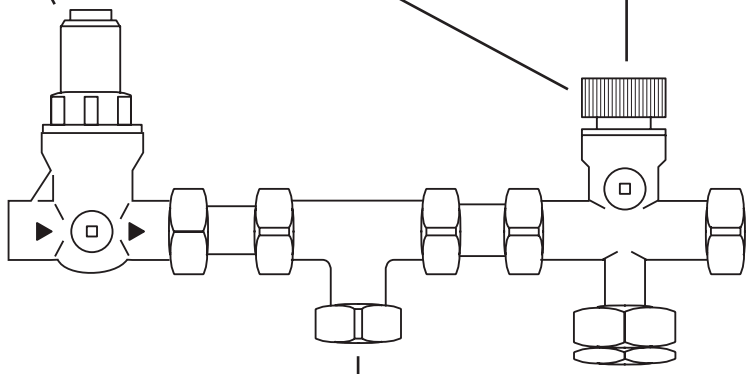


FIG. 6
300L AND 500L ONLY

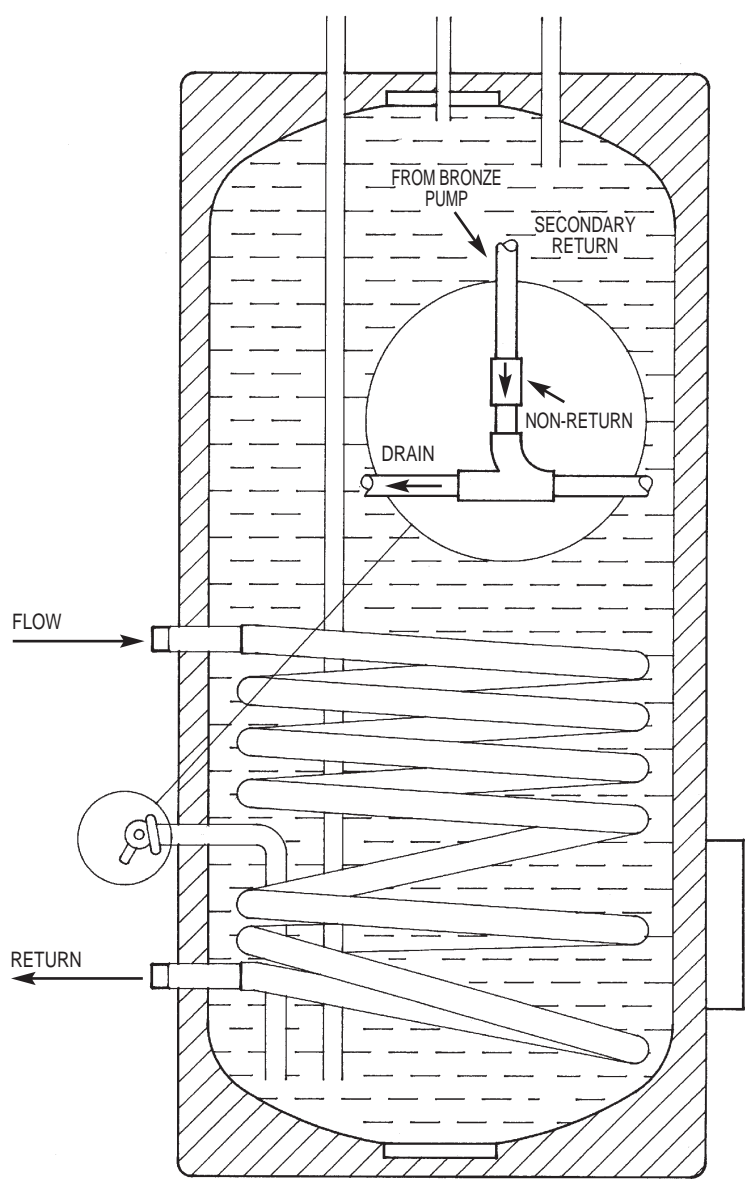


FIG. 7
SUGGESTED WAYS OF TERMINATING
DISCHARGING PIPES SAFETY

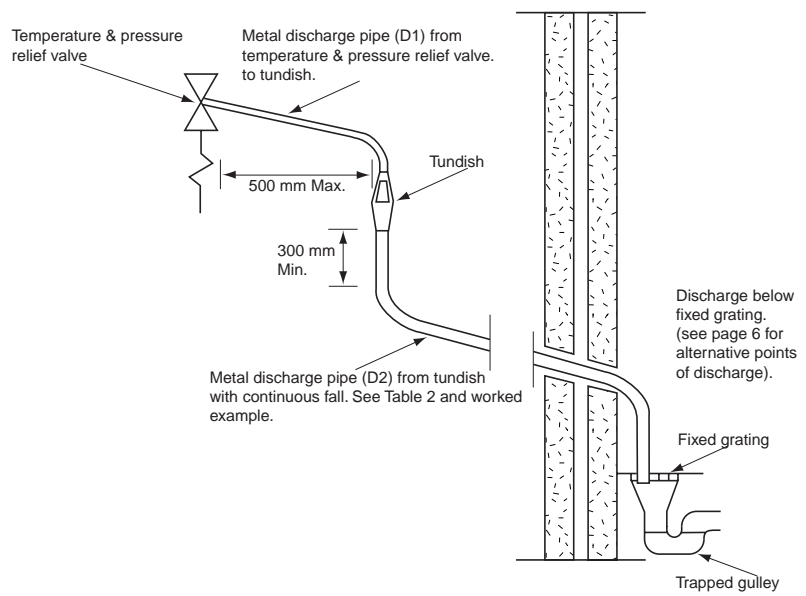


Table 2. Sizing of copper discharge pipe “D2” for common temperature valve outlet sizes.

Valve outlet size	Minimum size of discharge pipe D1*	Minimum size of discharge pipe D2* from tundish	Maximum resistance allowed, expressed as a length of pipe (i.e. no elbow or bends)	Resistance created by each elbow or bend
G ½	15 mm	22 mm	Up to 9 m	0.8 m
		28 mm	Up to 18 m	1.0 m
		35 mm	Up to 27 m	1.4 m
G ¾	22 mm	28 mm	Up to 9 m	1.0 m
		35 mm	Up to 18 m	1.4 m
		42 mm	Up to 27 m	1.7 m
G 1	28 mm	35 mm	Up to 9 m	1.4 m
		42 mm	Up to 18 m	1.7 m
		54 mm	Up to 27 m	2.3 m

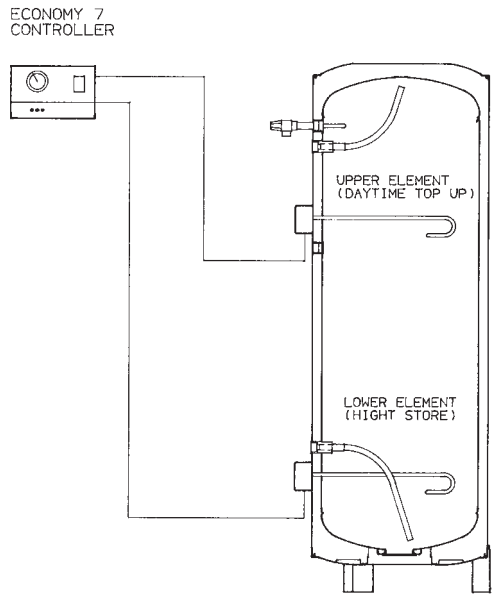
WORKED EXAMPLE

The example below is for a G ½ Temperature & Pressure 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 2
 Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from G ½ T & P valve is 9m.
 Subtract the resistance for 4 no. 22mm elbows at 0.8m each = 3.2m.
 Therefore the maximum permitted length equates to: 5.8m.
 As 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 G ½ T & P valve equates to: 18m.
 Subtract the resistance for 4 no. 28mm elbow 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.

RECOMMENDED ECONOMY 7 SYSTEMS

SYSTEM A



SYSTEM B

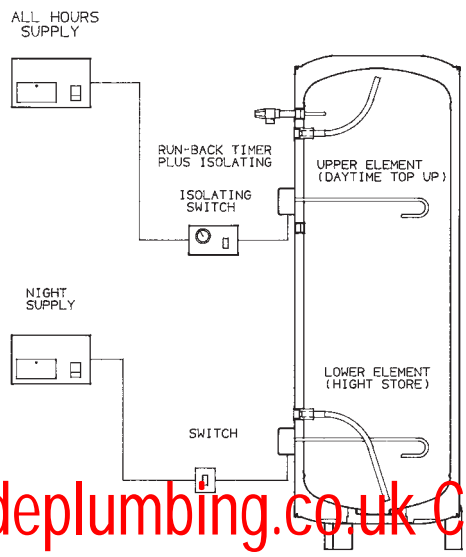
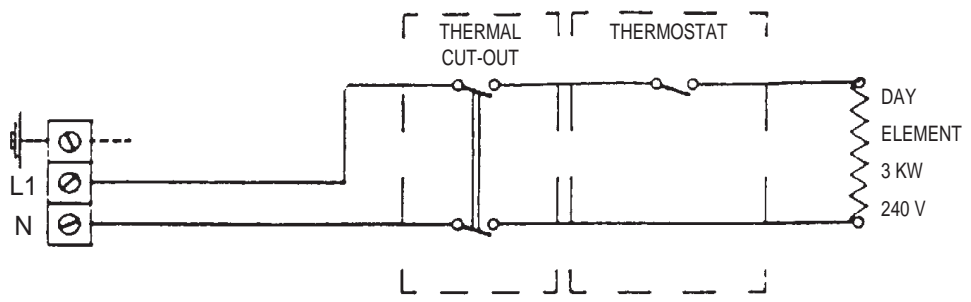


FIG. 9

a) SINGLE ELEMENT

RECOMMENDED ECONOMY 7 SYSTEMS



THE IMMERSION HEATER SHALL BE INSTALLED WITH 85°C RUBBER INSULATED HOFR-SHEATHED FLEXIBLE CORDS COMPLYING WITH TABLE 8 OF BS 6141 : 1981

THE FOLLOWING DRAWING MUST BE REFERRED TO BEFORE THE SIDE MOUNTED IMMERSION HEATER IS REPLACED.

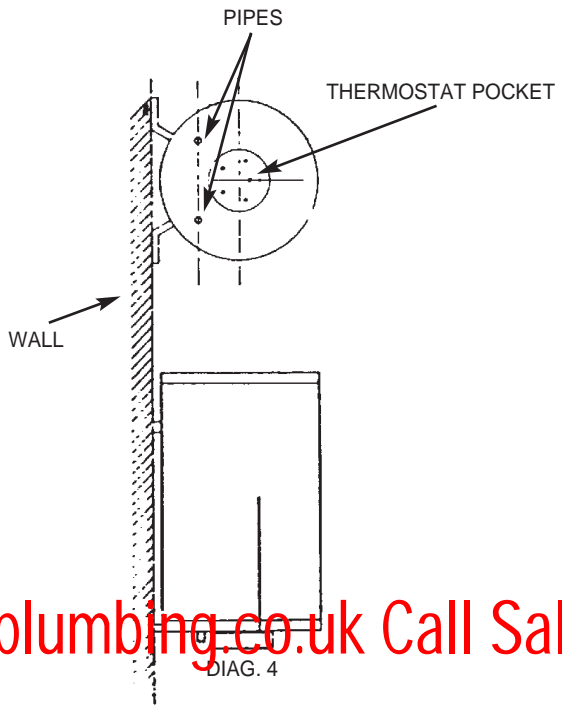
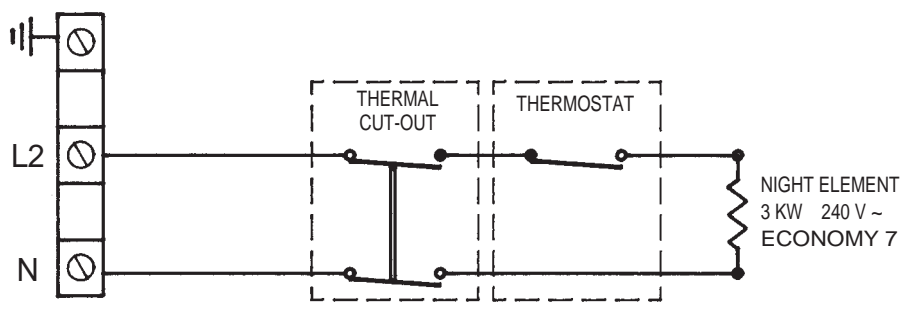
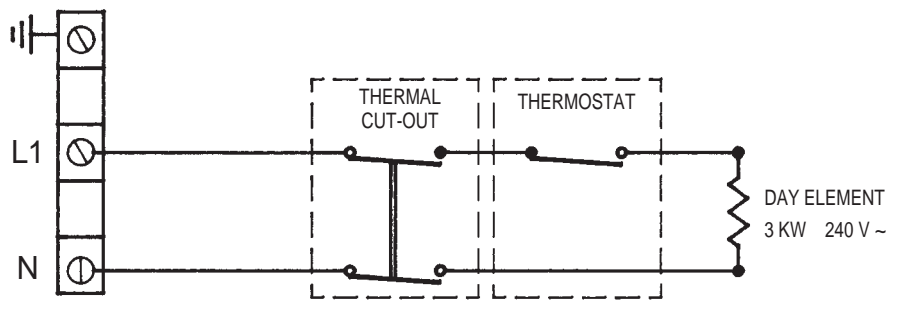


FIG. 10

For 300 L models only

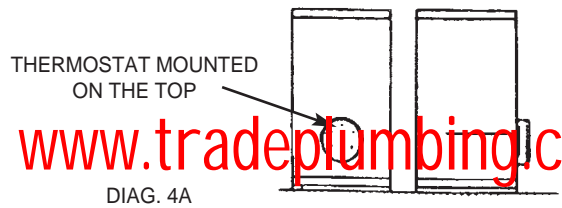
a) SINGLE ELEMENT

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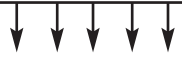
DIAG. 4A

Basic Boiler List

Baxi	Bermuda range Boston RS and OF range
Glowworm	Complheat Hideaway range 65 - 80 Ultimate 40 - 80 30B - 80B, 30CF - 60CF
Halstead	Buckingham range
Potterton	Kingfisher range Statesman range (oil fired)
Caradon Ideal	Classic range Mexico Ssper range Mexico Slimline range
Newflame Boilers	Backboiler range

Condensing Boiler List

CARADON IDEAL	Minimiser FF30 - FF80		L	E	N	
GLOWWORM	Energysaver (Remove link SL-9)	PL	SL	E	N	L
KESTON	L	E	N			
POTTERTON	Envoy 30F - 80F	PL	SL	E	N	L
VAILLANT	VU 186, 226	refer to manufacturers instructions				



Boiler Connections	2 Motorised values 2 way (see fig. 11)	9	10	3	2	1
	1 Motorised value 3 way (see fig. 12)	9	8	3	2	1

Pump Connections	2 Motorised values 2 way (see fig. 11)	9	3	2	
	1 Motorised value 3 way (see fig. 12)	9	3	2	

Guarantee

We, MTS, guarantee that should this water heater prove to be defective by reason of faulty workmanship or material during the periods stated below, we will replace the defective parts (or product) free of charge on the condition that :

- The appliance has been correctly installed by a competent installer and used only on the supply voltage stamped on the rating plate.
- The appliance has been used and maintained in accordance with these instructions and has not been tampered with or otherwise subjected to misuse neglect or accident.
- The appliance has not been taken apart, modified or repaired except by a MTS authorised Service Engineer*.
- Evidence of the date of purchase in the form of an invoice receipt (or hire purchase documents) is not included with the appliance returned under guarantee.

The guarantee will be applicable from the date of purchase or commencement of hire purchase for the following periods :

On Contract models:

- 12 months on electrical parts and components
- 3 years on the cylinder tank

On all other models:

- 12 months on electrical parts and components
- 5 years on the cylinder tank

* Important : the guarantee period on the tank will apply only if the annual inspection will have been carried out by a MTS authorised Service Engineer.

* A MTS authorised Service Engineer is :

1. the installer of the appliance.
2. a MTS approved Service Centre
3. an engineer who has attended a MTS training course in unvented storage water heaters.

Manufactured by

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