INSTALLATION INSTRUCTIONS –
WALL HUNG WATER HEATERS

EPU - WM30
EPU - WM 50
EPU - WM100

MARCH 2018

PART NO. 025217

IMPORTANT NOTE TO THE INSTALLER

Read these instructions before commencing installation. Unvented cylinders are a controlled service as defined in the latest edition of the building regulations and should only be fitted by a competent person.

The relevant regulations are: England and Wales – Building Regulation G3, Scotland – Technical Standard P3, N Ireland – Building Regulation Part F
After installation the Benchmark check list must be completed and left, with these instructions, with the householder for future reference.

INTRODUCTION

The EVERFLO WH Unvented cylinder is made from Duplex Stainless Steel for excellent corrosion resistance. EVERFLO WH has a strong rust-proofed steel case and is highly insulated with environmentally friendly foam.

EVERFLO WH is supplied complete with all the necessary safety and control devices needed to connect to the cold water mains. All are pre-adjusted. High quality controls have been selected to combine high flow rate performance with minimum pressure drop to make EVERFLO WH perform well in all areas, even those with poor water pressure.

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STORAGE PRIOR TO INSTALLATION

EVERFLO WH should be stored in its original packaging in an upright position in an area free from excessive damp. Regulations G3+L.

HANDLING PRODUCT

The EVERFLO WH should be carried upright where possible. Assessments of risks for carrying the cylinder should be conducted. Use more than 1 person for carrying where appropriate. Always follow latest guide lines for lifting techniques, to avoid injury and damage to the product.

WATER SUPPLY

EVERFLO WH operates at 3 bar (controlled by the inlet control set). The high quality inlet control set has been designed to make the most of the flow rates available, however the performance of any unvented system is only as good as the mains water supply. The maximum possible water demand should be assessed, taking into consideration that both hot and cold services are supplied simultaneously from the mains.

The water supply should be checked to ensure it can meet these requirements. If necessary, consult the local water company regarding the likely pressure and flow rate availability.

If measuring the water pressure, note that a high static (no flow) mains pressure is no guarantee of good flow availability. In a domestic installation 1.5 bar and 25 l/min. should be regarded as the minimum. The maximum mains pressure that the inlet control set can accept is 12 bar.

Consideration should be given to upgrading existing ½" (15mm) cold mains pipework to a larger size if the recommended minimum pressure/flow rate is not being achieved.

ELECTRIC SUPPLY

The EVERFLO WH requires 240 Volt electrical supply for the standard Incoloy immersion elements. The electrical supply to each immersion heater must be fused at 13A via a double pole isolating switch to BS 3456. The cable must be at least 2.5mm^2 heat resistant (85°C HOFR) sheathed flex complying to BS 6141:1981 Table 8.

UNPACKING THE UNIT

EVERFLO WH comes complete with the fittings required to complete the installation. Please see over for component content list.

High flow rate inlet control set 3 bar PRV 6 bar Expansion relief.
Spare Part No.024762

7 bar Temperature and pressure relief valve
Spare Part No. TS202

Acetal tundish 15 x 22 mm
Spare Part No. TUNDPL15ALT

Expansion Vessel
Up to 250 ltr cylinders - 18 ltr vessel
Spare Part No. TS219

Incoloy long life
3 kW immersion heater
Spare Part No. 025152

Installation & Maintenance Instructions
Spare Part No. 025217

COMPONENT CONTENT TABLE

	Installation & Maintenance Instructions	Immersion Heater	Expansion vessel	Tundish	Temp & Pressure relief valve	Inlet Control set
EPU - WM30	⊙	⊙	⊙	⊙	⊙	⊙
EPU - WM 50	⊙	⊙	⊙	⊙	⊙	⊙
EPU - WM1000	⊙	⊙	⊙	⊙	⊙	⊙

SITING THE UNIT

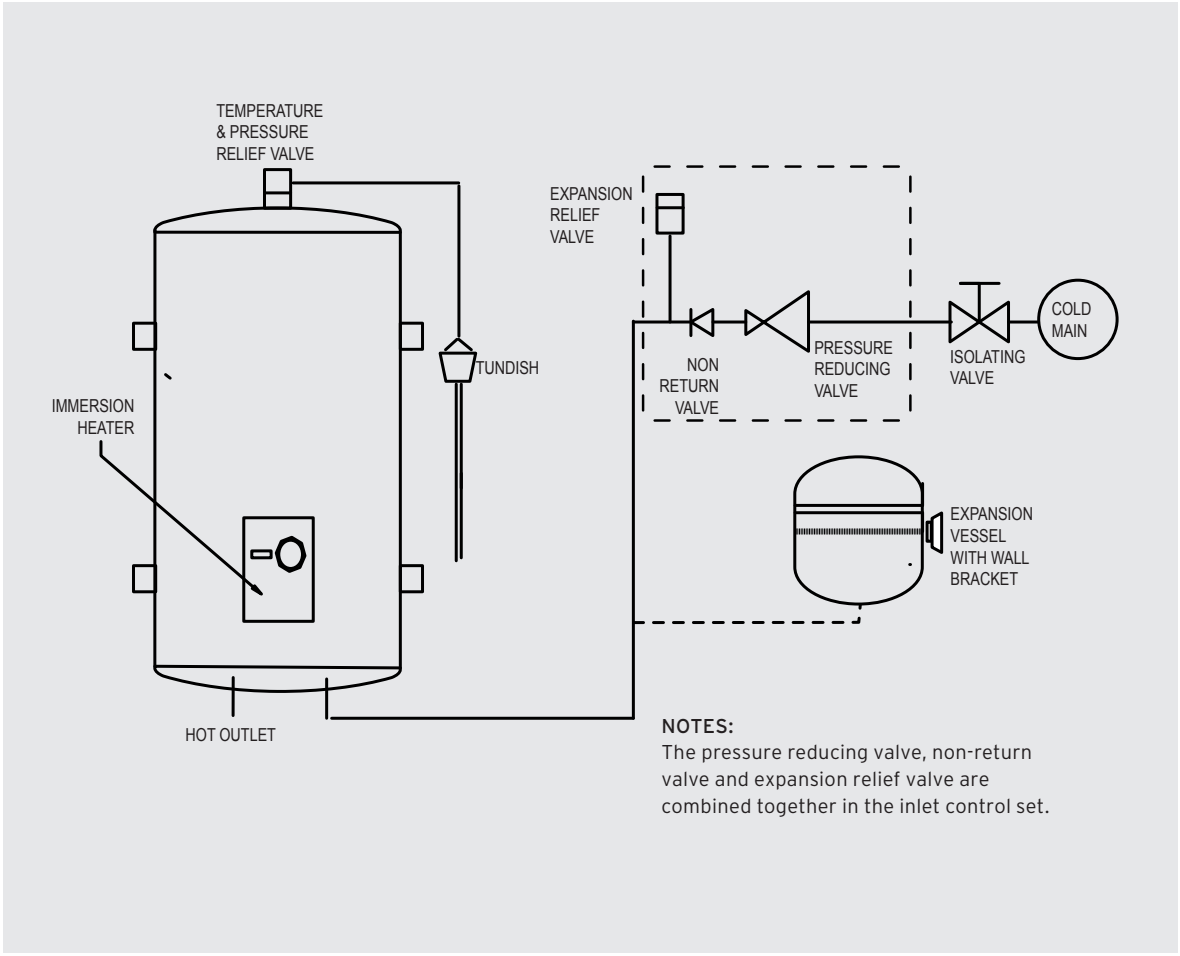
EVERFLO WH can supply outlets above it or at some distance from it. Site the unit to minimise "dead leg" distances, especially to the point of most frequent use.

Outlets above the EVERFLO WH will reduce the outlet pressure available by 0.1 bar for every 1m of height difference. The unit should be protected from frost. Particular care is needed if sitting in a garage or outbuilding. All exposed pipework should be insulated.
EVERFLO WH must be installed VERTICALLY on a WALL capable of supporting the weight of the cylinder when full. See technical specification section (page 10) for weights. Always ensure the correct mounting fixtures are used for the installation of the prodcut.

Access for maintenance of the valves should be considered. Consideration should be given to position of discharge pipes (tundish), drain valves - shall be positioned away from electrical components.

The unit is designed to be wall mounted.
Select a wall suitable for supporting the weight of the cylinder when full.
Attatch the cylinder to the wall using correct anchor bolts for the wall matrerial and cylinder load. Ensure the cylinder is mounted vertically with sufficient access for sevicing and space for positioning of electrical connections and pipework.

SCHEMATIC DIAGRAM



GENERAL INSTALLATION

COLD MAINS PIPEWORK

Run the cold main through the building to the place where the EVERFLO WH is to be installed. Take care not to run the cold pipe near hot water or heating pipework so that the heat pick-up is minimized. Identify the cold water supply pipe and fit an isolating valve (not supplied).

NOTE: The appliance is not intended to be connected to the water mains by a hose set.

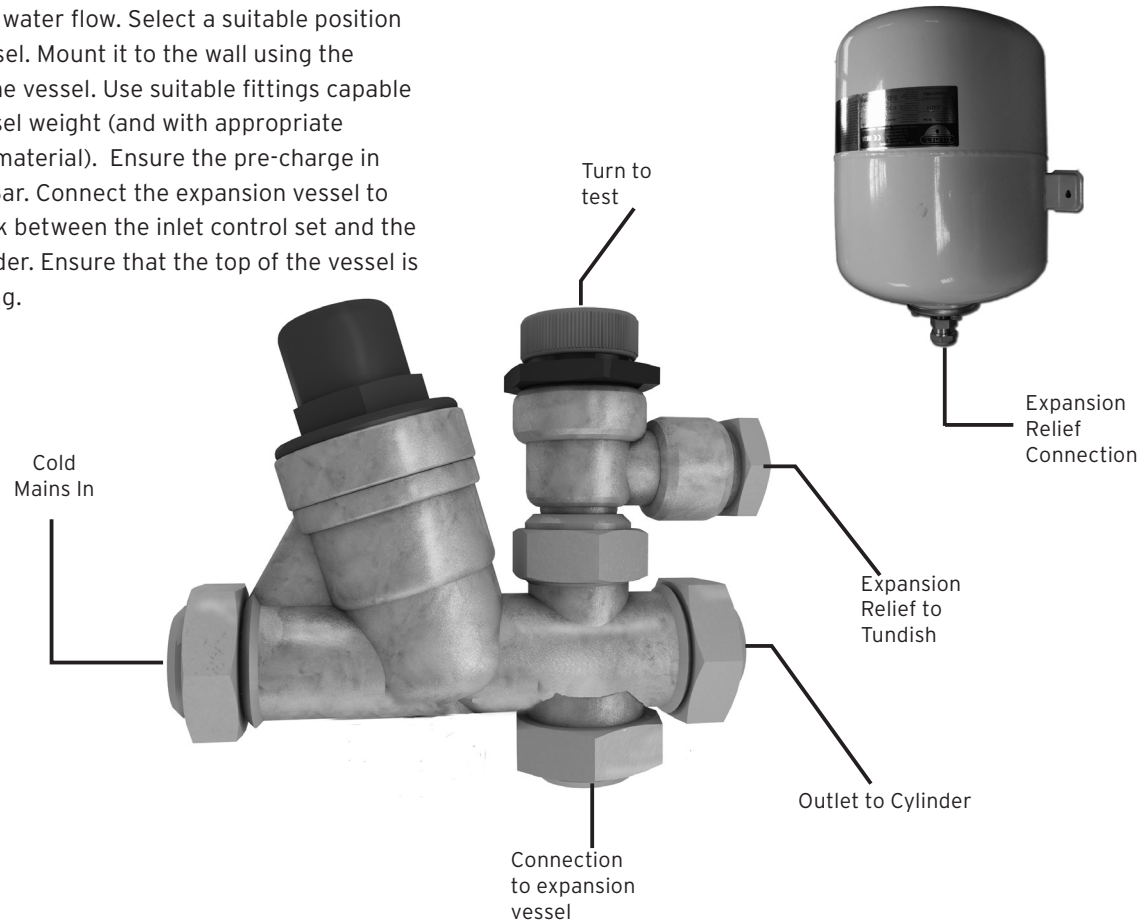
A 22mm BS1010 stopcock can typically be used but a 22mm quarter turn full bore valve would be better as it does not restrict the flow as much. Do not use "screwdriver slot" or similar valves. Make the connection to the cold feed of the cylinder and incorporate a drain valve. Position the drain valve no higher than the cold inlet to ensure sufficient draining of cylinder when required. Position the inlet control just ABOVE the Temperature & Pressure Relief Valve (TPRV) mounted on the side of the cylinder. This ensures that the cylinder does not have to be drained down in order to service the inlet control set. Ensure that the arrow points in the direction of the water flow. Select a suitable position for the expansion vessel. Mount it to the wall using the bracket attached to the vessel. Use suitable fittings capable of supporting full vessel weight (and with appropriate consideration to wall material). Ensure the pre-charge in the vessel is set at 3 Bar. Connect the expansion vessel to the cold feed pipework between the inlet control set and the cold inlet on the cylinder. Ensure that the top of the vessel is accessible for servicing.

CONNECTING TO THE CYLINDER

All of the pipework connections on the cylinder are 22mm compression and supplied complete with gland nuts and olives, in the Accessory Kit box. Only connect 22mm Table X copper tube to these connections.

Cut the tube with a pipe cutter and ensure no sharp edges or burrs protrude. Slide both gland nut and olive onto the tube and push tube fully home into the connection, ensuring the tube end fully bottoms on the connection recess. Smear the outer wall of the olive with plumbing paste and tighten gland nut in the prescribed manner. Upon filling/commissioning, ensure all connections are completely watertight. Note: No control or isolation valve should be fitted between the expansion relief valve and the storage cylinder. The relief valve connections should not be used for any other purpose.

(expansion vessel not to scale)



HOT WATER PIPEWORK

Run the first part of the hot water distribution pipework in 22mm. This can be reduced to 15mm and 10mm as appropriate for the type of tap etc. Your aim should be to reduce the volume of the hot draw-off pipework to a practical minimum so that the time taken for the hot water is as quick as possible. Where monobloc mixing taps and showers are used, these should be installed to comply with the Water Supply (Water Fittings) Regulations 1999. If these devices are supplied with un-balanced supplies there should be single check valves installed at both inlets, to stop over pressurising of either supply.

IMMERSION HEATERS

Only immersion heaters with a thermal cut-out may be used. To help ensure this, the immersion heaters have a special 1¾" thread. They are rated at 3kW at 240V and are of a low noise Incoloy construction.
They have both a thermostat and a high limit cutout. Please order the correct replacement via ourselves; fitting non-approved immersions may affect your guarantee. When fitting, ensure the sealing ring is positioned correctly on the head of the immersion heater.

The electrical supply to the immersion heater must be fused at 13A via a double pole isolating switch to BS 3456. The cable must be 2.5mm^2 heat resistant (85°C HOFR) sheathed flex complying to BS 6141:1981 Table 8.

Do not operate the immersion heater/s until the unit is full of water. Do not operate the immersion heater/s if any sterilisation liquid is in the cylinder as this will cause premature failure.

DISCHARGE ARRANGEMENT

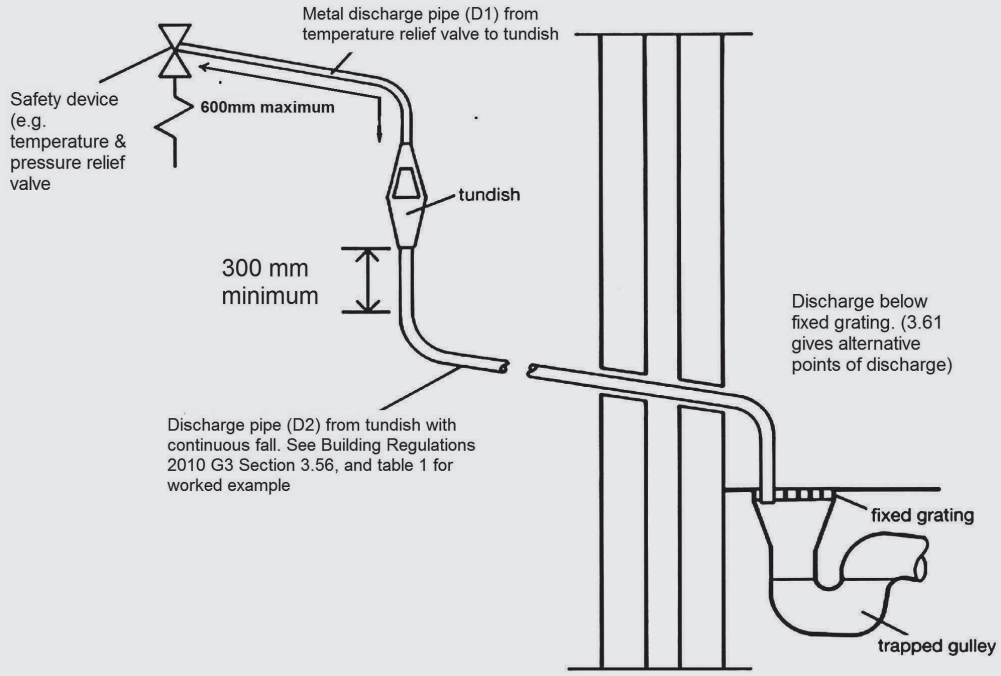


Diagram of a typical discharge pipe arrangement (extract from Building Regulation G3)

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

Note: D2 pipe from tundish is now allowed to be installed in soil stacks within premises. Discharge from T&P may continue for long periods of time. It is the installer's responsibility to ensure the discharge pipework can support the discharge for prolonged periods.
If used follow guidance on mechanical seal without water trap given in G3 Building Regulations.
As discharge can be in excess of 90°C discharge into plastic pipework is also not recommended.

Position the inlet control group so that the discharge from both safety valves can be joined together via a 15mm end feed Tee (see diagram above). Connect the Tundish and route the discharge pipe. The discharge pipework must be routed in accordance with Part G3 of schedule 1 of the Building Regulations. The information that follows is not exhaustive and if you are in doubt you should seek advice. The two safety valves will only discharge water under fault conditions. When operating normally water will not be discharged. The tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible to, and lower than, the safety device, with no more than 600mm of pipe between the valve outlet and the tundish. The tundish should be positioned away from electrical devices.
Any Discharge should be visible at the tundish. The tundish should be located such that any discharge is visible. In addition, where discharges from safety devices may not be apparent, e.g. people with impaired vision or mobility, consideration should be given to the installation of a suitable safety device to warn when discharge takes place, e.g. electronically operated.

The discharge pipe (D2) from the tundish should:

A) Have a vertical section of pipe at least 300mm long, below the tundish before any elbows or bends in the pipework.

B) Be installed with a continuous fall of at least 1 in 200 thereafter.

The discharge pipe (D2) from the tundish should be of metal or other material that have been demonstrated to be capable of withstanding temperatures of the water discharged.

The discharge pipe (D2) should 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 18 and 27m at least 3 sizes larger, and so on. Bends must be taken into account in calculating the flow resistance. Refer to diagram 1, Table 1 and the worked example. An alternative approach for sizing discharge pipes would be to follow BS6700 Specification for design installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

The discharge pipe (D2) should terminate in a safe place where there is no risk to persons in the vicinity of the discharge. Examples of acceptable discharge arrangements are:

a. To a trapped gully with the end of the pipe below the fixed grating and above the water seal.

b. Downward discharges at a low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that where children play or otherwise come into contact with discharges, a wire cage or similar guard is positioned to prevent contact whilst maintaining visibility.
c. Discharges at a high level; e.g. in to metal hopper and metal down pipe with the end of the discharge pipe clearly visible or onto a roof capable of withstanding high temperature discharges of water and 3m from any plastic guttering systems that would collect such discharges.
d. Device to warn when discharge takes place.

WORKED EXAMPLE

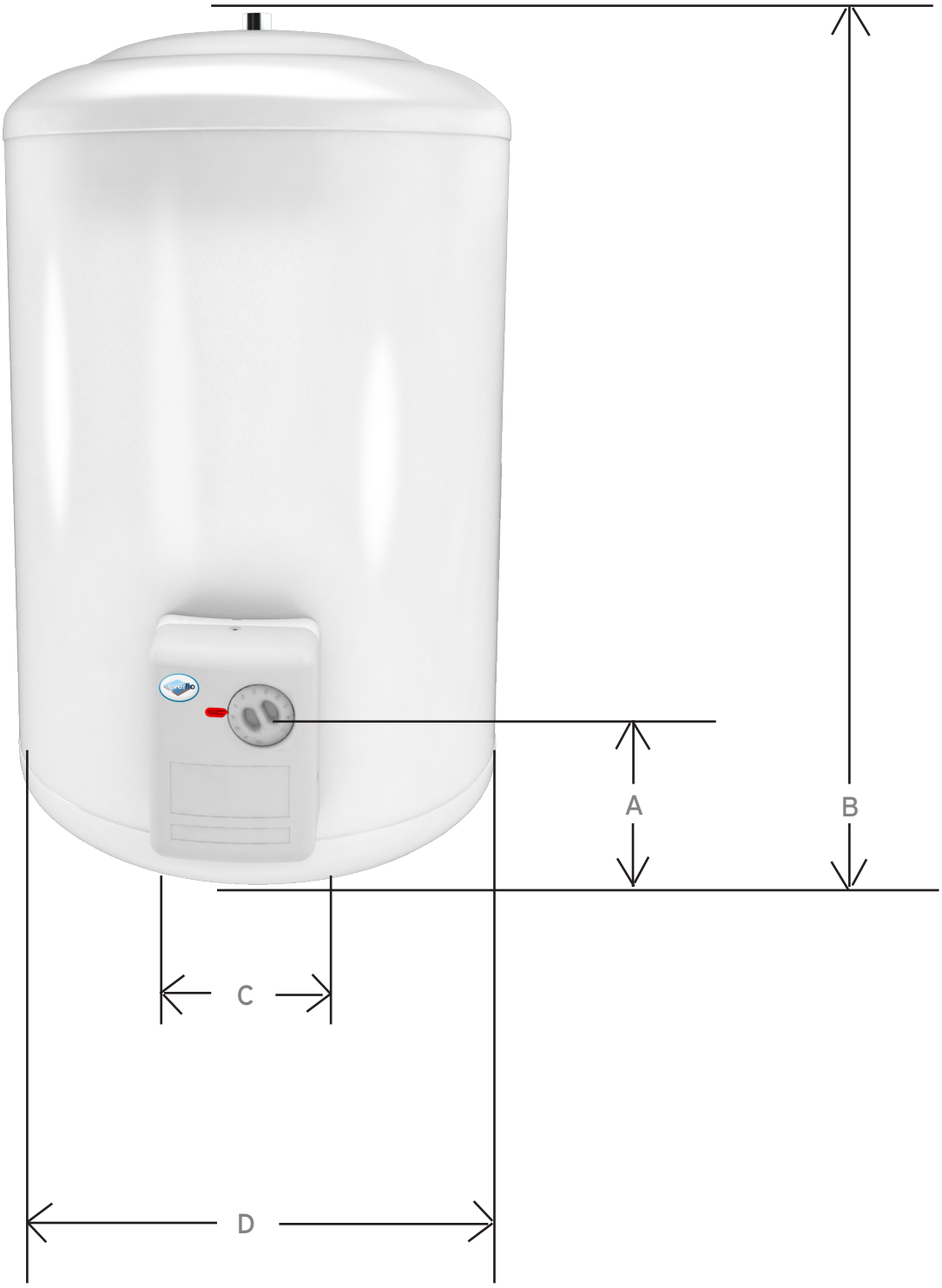
The example below is for G1/2 temperature relief valve with a discharge pipe (D2) having 4 No. elbows and length of 7m from the tundish to the point of discharge.
From Table 1:
Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G1/2 temperature relief valve is: 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. 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: 14m. As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.

TABLE 1

Sizing of copper discharge pipe 'D2' for a temperature relief valve with a G1/2 outlet size (as supplied).

Size of discharge pipework	Maximum length of straight pipe (no bends or elbows)	Deduct the figure below from the maximum length for each bend or elbow in the discharge pipe
22mm	Up to 9m	0.8m
28mm	Up to 18m	1m
35mm	Up to 27m	1.4m

TECHNICAL SPECIFICATIONS



TECHNICAL SPECIFICATIONS

DIMENSIONS & WEIGHTS

CODE	HEIGHT (B)	WIDTH (D)	DEPTH	WEIGHT EMPTY	WEIGHT FULL	CAPACITY
EPU -WM30	593	478	555	12	47	34.9
EPU -WM50	817	478	555	38	77	59.8
EPU -WM100	1211	478	555	24	127	103

PRESSURE SPECIFICATIONS

Maximum Inlet Water Pressure	12 Bar
Operating Pressure	3.0 Bar (300 kPa)
Expansion Valve Opening Pressure	6.0 Bar (600 kPa)
Expansion Vessel Charge Pressure	3.0 Bar (300kPa)
Maximum Operating Pressure	5.5 Bar (550kPa)
Opening Pressure of T & P Valve	7.0 Bar (700kPa)
Opening Temperature of T & P Valve	90°C

IMMERSION ELEMENT SPECIFICATIONS

Element Rating	3kW 240 V
Thread Type	1 3/4" BSP
Fuse Requirement	13A via Double Pole Switch
Control Thermostat for Element - Temperature Range	45°C - 65°C
High Limit Thermostat for Element - Temperature Set Point	85°C

CYLINDER PERFORMANCE & ERP PERFORMANCE

CODE	HEAT UP TIME	V40	ERP BAND	LOAD PROFILE	Efficiency	kWH/Annum	Noise Level dB
EPU -WM30	36	51.8	C	S	34	530	15
EPU -WM50	61	93.8	B	M	40	1276	15
EPU -WM100	102	165.1	B	M	38	1338	15

COMMISSIONING

FLUSHING & FILLING

Check that the pressure in the expansion vessel is 3 bar (45PSI), i.e. the same as the setting of the pressure reducing valve. The valve is of the car tyre (Schrader) type. Check all the connections for tightness including any factory made connections such as the immersion heater and the temperature and pressure relief valve. Before filling, open the hot tap furthest away from the EVERFLO WH to let air out. Open the cold main isolation valve and allow the unit to fill. When water flows from the tap allow it to run for a short while to flush through any dirt, swarf or flux residue. Close the tap and open every other hot tap in turn to purge all remaining air.

DIRECT UNITS

After filling with water and after sterilisation liquid has been purged, switch on the power to the immersion heaters and allow the unit to start to heat. The immersion heater is supplied preset at 55°C. Turning fully to + sets to approx 65°C. Allow unit to heat up, adjust the thermostat so that the heater switches off at 60°C. Record information on commissioning check list (Page 13).

STORAGE TEMPERATURE

The recommended storage temperature for direct cylinders is 60 °C. In hard water areas consideration should be given to reducing this to 50-55°C. In many healthcare applications the guidance on Legionella control and safe water delivery temperatures will require storing the water at 60-65°C, distributing at 50- 55°C and using thermostatic mixing valves to control the final temperature. For details consult the NHS Estates Guidance on safe hot water temperatures.

SAFETY VALVE CHECKS

During heat-up there should have been no sign of water coming from either the expansion relief valve or the temperature/pressure relief valve. Now hold both of these safety valves fully open, in turn, allowing as much water as possible to flow through the tundish. Check that your discharge pipework is free from debris and is carrying the water away to waste efficiently. Release the valves and check that they reseat properly. On Completion of commissioning, fill in the commissioning list and leave with the house owner.

SERVICING

GENERAL

Servicing should only be carried out by competent installers and any spare parts used must be official parts available from the helpdesk. NEVER bypass any safety devices or operate the unit without them being fully operational.

DRAINING

Isolate from the electrical supply to prevent the immersion heaters burning out. Turn off the boiler. Isolate the unit from the cold mains. Attach a hose to the draining tap ensuring that it reaches to a level below the unit (this will ensure an efficient syphon is set up and the maximum amount of water is drained from the unit). First open the hot tap closest to the unit and then open the draining tap.

WARNING: WATER DRAINED OFF MAY BE VERY HOT!
IMPORTANT: After draining the cylinder do not close the hot tap until the cylinder has fully cooled, failure to follow this instruction may result in damage to the cylinder and will invalidate the guarantee.

ANNUAL MAINTENANCE

EVERFLO WH requires an annual service in order to ensure safe working and optimum performance. It is essential that the following checks are performed by a competent installer on an annual basis. Commonly this is done at the same time as the annual boiler service.

1) Twist the cap of the expansion relief valve on the inlet control set and allow water to flow for 5 seconds. Release and make sure it resets correctly. Repeat with the pressure / temperature relief valve. In both cases check that the discharge pipework is carrying the water away adequately. If not, check for blockages etc. and clear.
WARNING: THE WATER DISCHARGED MAY BE VERY HOT!
2) Check that any immersion heater fitted is working correctly and that they are controlling the water at a temperature between 55°C and 65°C.
3) Check the pressure in the expansion vessel is charged to 3 bar. Turn off the water supply to the unit and open a hot tap first. The air valve on expansion vessel is a Schrader (car tyre) type. Air or CO2 may be used to charge the expansion vessel.
4) Unscrew the head on the inlet control set and clean the mesh filter within.
5) The service record should be updated at each service. (Page 14)

YOUR GUARANTEE MAY BE VOID WITHOUT PROOF OF ANNUAL SERVICING.

FAULT FINDING

FAULT	POSSIBLE CAUSE	SOLUTION
Water escaping from the case	Compression fitting on hot - draw off not sealing	Check/remake joint with sealing paste
Cold water at Hot taps	Direct - immersion heater not switched on or cutout has triggered	Check / reset
Water discharges from expansion relief valve	If continual - pressure reducing valve (part of inlet control set) may not be operating correctly	Check outlet pressure from inlet control set is 3 bar.
	If continual - expansion relief valve seat may be damaged	Remove cartridge - check seat and renew if necessary
	If intermittent - expansion vessel charge may have reduced / bladder perished	Check pressure in expansion vessel. Recharge to 3 bar if necessary. If bladder perished replace vessel.
	Unit it being back pressurised	With cylinder cold check pressure in cylinder. If this is the same as the incoming mains pressure then you are getting backfeed. Install a balanced cold supply
Water discharges from temperature &. pressure relief valve	Unit has overheated - thermal controls have failed	"Switch off power to immersion heaters. Leave water supply on. Wait until discharge stops. Isolate water supply and replace if faulty"
Milky / cloudy water	Oxygenated water	Water from any pressurised system will release oxygen bubbles when flowing. The bubbles will settle out.
No hot water flow	Cold main off	Check and open stopcock
	Strainer blocked in pressure reducing valve	Isolate water supply and clean
	Inlet control set may be fitted incorrectly	Check and refit as required
Noise during hot water draw-off -typically worse in the morning.	Loose airing cupboard pipework	Install extra clips
Hot or warm water from cold tap	If tap runs cold after a minute or so the pipe is picking up heat from heating pipework.	Insulate / re-route

SPARE PARTS

A full range of spare parts is available from Everflo. Tel: 0330 999 0035 see page 2 for part numbers.

USER INSTRUCTIONS

Your stainless system is automatic in normal use and requires only annual servicing. You should employ a competent installer to perform the annual servicing. Normally this is timed to coincide with the annual boiler service.

IF WATER IS FLOWING FROM THE SAFETY VALVES THROUGH THE TUNDISH THIS INDICATES A FAULT CONDITION AND ACTION IS NEEDED.

If this water is hot, turn the immersion heater off. Do not turn off the water until the discharge runs cool. The discharge may also stop.

CALL OUT A COMPETENT PLUMBER TO SERVICE THE UNIT.

Tell them you have a fault on an unvented cylinder. We stock all the spare parts they may need (see page 2).

DRAINING

IMPORTANT: After draining the cylinder do not close the hot tap until the cylinder has fully cooled, failure to follow this instruction may result in damage to the cylinder and will invalidate the guarantee.

The installer must complete the Commissioning record.

Any engineer completing service work must complete the service record sheet. Additional service record sheets can be obtained by contacting the help line.

COMMISSIONING RECORD

Commissioning Date...

Customer Name..

Customer Phone Number ....

Cylinder Model Numer ....

Cylinder Serial Number ....

Engineers Name...

Company Name..

Company Address ....

Telephone Number...

Registered Operator ID Number,,

Building Regulation Notification Number (if applicable)

....

POTABLE WATER INFORMATION

What is the standing pressure at the cylinder? ....

What is the dynamic pressure at the cylinder? ....

What is the pre-charge in the potable vessel? ....

Where is the Pressure Reducing Valve fitted?

,,

What is the PRV setting?..

Has the Expansion relief Valve been tested? ....

Has the T & P vlve been tested? ....

Does the Discharge pipework meet building regulations?

....

Does the Discharge pipework carry discharge away in a safe manor? ....

Have all safety features been checked? ....

DOES THE INSTALLATION COMPLY WITH THE APPROPRIATE BUILDING REGULATIONS?	YES	NO
HAS THE SYTEM BEEN COMMISSIONED IN LINE WITH INSTRUCTIONS?	YES	NO
HAS THE SYSTEM BEEN FULLY EXPLAINED TO THE CUSTOMER	YES	NO

COMMISSIONING ENGINEER SIGNATURE..

CUSTOMER SIGNATURE ....DATE ....

SERVICE HISTORY

SERVICE1 Date.....

Engineers Name.....

Company Name.....

Telephone Number.....

Pressure in Potable Expansion Vessel.....

Safety valves functioning YES NO

Actions .....

Discharge pipe clear YES NO

Actions.....

Temerature of hot water.....

Immersion heater tested YES NO N/A

Actions .....

Signature.....

SERVICE 2 Date.....

Engineers Name.....

Company Name.....

Telephone Number.....

Pressure in Potable Expansion Vessel.....

Safety valves functioning YES NO

Actions .....

Discharge pipe clear YES NO

Actions.....

Temerature of hot water.....

Immersion heater tested YES NO

Actions .....

Signature.....

SERVICE 3 Date.....

Engineers Name.....

Company Name.....

Telephone Number.....

Pressure in Potable Expansion Vessel.....

Safety valves functioning YES NO

Actions .....

Discharge pipe clear YES NO

Actions.....

Temerature of hot water.....

Immersion heater tested YES NO

Actions .....

Signature.....

SERVICE 4 Date.....

Engineers Name.....

Company Name.....

Telephone Number.....

Pressure in Potable Expansion Vessel.....

Safety valves functioning YES NO

Actions .....

Discharge pipe clear YES NO

Actions.....

Temerature of hot water.....

Immersion heater connected YES NO

Actions .....

Signature.....

GUARANTEE TERMS AND CONDITIONS

This product is guaranteed against faulty materials and manufacture for a period of one year from the date of purchase. This is extended to 3 years for the inner vessel. In the event of issues with the product the customer shall return the product to the merchant or other retailer from where the product was originally supplied. Kingspan will not provide any on site field support for this product.

The Warranty is valid provided that:
1. The appliance has been installed by a competent person in accordance with the installation, User instructions, all relevant Code of Practice, Regulations in force at the time of installation and that all necessary controls and safety valves have been fitted correctly.

2. The appliance has only been used for heating potable water.

3. The appliance has been maintained as detailed in the Installation and User Instructions.

4. The product has been returned with proof of purchase.

Exclusions:
The inner container with integral heating element is not guaranteed against excessive scale build-up.

The Warranty is void if:
1. The appliance has been modified or tampered with in any way.

2. The appliance has been damaged by frost.

Should the product be found to be faulty and all requirements of the Gaurantee have been met Kingspan shall, at their discretion repair or replace the unit.

This guarantee, in no way, affects the statutory rights of the consumer

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Sales Enquiries
0208 3123720

Technical Helpline:
0330 999 0035

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