unvented hot water

XYLINDERS



INSTALLATION MANUAL

Direct Xylinders
Indirect Xylinders
Heat pump Xylinders

Capacity (L) 150 - 180 - 200 - 250 - 300

GB Release Date 30-07-2026

INTERGAS®

INTRODUCTION

The following pages incorporate the installation instructions and must be left in a safe place adjacent to the Xylinder or given to the end user once they have been correctly instructed in the effective operation of the Xylinder. The Installer has a duty of care to instruct the end user how to operate the Xylinder correctly.
Intergas will not accept liability for any claims or damages from failure to observe these instructions.
These instructions include essential and important information for safe and correct installation and are an integral part of the product. As a consequence, all technical documents must always accompany the product.
Intergas is continually developing its product range and therefore reserves the right to change specification without prior notice. All the data and instructions contained in this manual are subject to review or product update changes at any time.
They will be current at time of print. If in doubt please contact the manufacturer to ensure you have the correct and current manual.
Please always refer to the instructions contained in this manual when installing the equipment.
The operations described in these instructions require specialised knowledge and therefore it is essential the installer has the appropriate qualifications and competence training prior to installing the product. You should only install this product once you have achieved such technical qualifications.
The Xylinder should be installed by qualified and licenced personnel only, and registered at the time of installation with Building control or alternatively through a competent person scheme.
The instructions are provided in schematic form only as installations designs may vary. The diagrams used are purely indicative and as such have no pretence of completeness and are not intended to replace the design.
Please ensure that the installer has fully completed the Benchmark Checklist on the inside back pages of the installation instructions supplied with the product and that you have signed it to say that you have received a full and clear explanation of its operation. The installer is legally required to complete a commissioning checklist as a means of complying with the appropriate Building Regulations (England and Wales).
All Installations must be notified to Local Area Building Control either directly or through a Competent Persons Scheme.
A Building Regulations Compliance Certificate will then be issued to the customer who should, on receipt, write the Notification Number on the service record / checklist.
This product should be serviced regularly to ensure its safety, efficiency and performance is maintained. The installation engineer should complete the relevant Service Record on the Benchmark Checklist after each service. The service record / checklist is required in the event of any warranty work and as supporting documentation relating to home improvements in the optional documents section of the Home Information Pack This must be completed and left with the product at all times as it contains importance commissioning reference information which is essential information for future service work. Failure to do so will result in the warranty becoming void.
Intergas cannot be held liable for any loss or damage arising from product specifications deviating from the standard version.
The information contained within this document has been compiled with all possible care, Intergas cannot be held liable for any installation errors, loss or damage or work performed by third parties.

To activate your warranty please register on MiREG www.myintergasregistration.co.uk/app/home or via the Intergas website www.intergasheating.co.uk, without this your Xylinder will have invalid warranty

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1 GENERAL NOTICE

1.1 Personal responsibility

The manufacturer is responsible for the product's conformity to the relevant construction directives, laws and regulations in force at the time the product is first commercialised. The Plumbing Engineer/Electrician/Installer and User are the each exclusively responsible in their respective fields, for knowing and observing the legal requirements and technical regulations concerning the design, installation, operation and maintenance of the appliance. Reference to laws, regulations or technical specifications contained in this manual is purely for information purposes; any new laws introduced or modifications to existing laws are not in any way binding on the manufacturer towards third parties.

1.2 Field of use

The indirect water heater for the production of hot water is only intended to be used for Domestic Hot Water heating, without exceeding the usage restrictions specified herein. To this purpose it must be hydraulically connected to a sanitary domestic hot water delivery network. It requires a power supply to operate.
Never use the unit for any purposes other than those specified herein. Any other use is to be deemed as inappropriate and is not allowed. The manufacturer cannot be held responsible for any installation errors and inappropriate equipment use.

1.3 Certifications and Markings

The CE marking applied to the appliance certifies that it conforms to the essential requirements of the following European Directives:

- Directive 2014/35/EU on electrical equipment.
- Unvented hot water systems must comply with "The Building Regulations 2010 - Sanitation, hot water safety and water efficiency" section G3.

1.4 Xylinder

The Xylinder is manufactured in five sizes of indirect, direct and heat pump models 150L, 180L, 200L, 250L, and 300L. The Xylinders are manufactured from stainless steel 444. Thermal insulation is ensured by highly biological, CFC-free rigid Neopor polystyrene foam parts, with a plastic dent resistant coating. This thermal insulation and coating allows to minimal energy losses. It is supplied with all required control devices including a 2-port motorised valve.

The Xylinder works utilising the main domestic water supply and does not require stored cold water to operate. The hot and cold connections are male threaded to be connected with compression fittings. To enable the Xylinder to work at its optimum level a cold-water supply with a pressure and flow rate appropriate for the system is required.

1.5 WRAS

WRAS approval demonstrates that a product meets the high standards of British water companies, providing consumers with assurance regarding drinking water quality.

WRAS APPROVED PRODUCT

1.6 The Features

- Manufactured using grade 444 stainless steel for extreme corrosion resistance and heat transfer capabilities.
- Smooth internal coil for superior heat transfer and rapid Xylinder recovery.
- Immersion above coil saves energy and also enables rapid Xylinder recovery.
- All Xylinders have sensor pockets and an immersion heater.
- Easy to install as every connection is on a 30-degree plane at the front of the Xylinder.
- Lightweight construction and built-in carry handle on bottom lid for ease of manoeuvrability.
- Comes with a standard G3 kit comprising expansion vessel, dual stat, PRV, inlet group, diverter valve and tundish.
- Xylinders come with a 25-year warranty and a 2-year parts and labour warranty.

1.7 Meaning of the symbols

CAREFUL / IMPORTANT / WARNING
Failure to comply with the provision in question may result in injuries and/or damages to people, objects, plants or animals.

1.8 Measuring

The measuring units used in this manual for dimensions are those of the International System (SI).

1.9 Benchmark

Benchmark places responsibilities on both manufacturers and installers. The purpose is to ensure that customers are provided with the correct equipment for their needs, that it is installed, commissioned and serviced in accordance with the manufacturer's instructions by competent persons and that it meets the requirements of the appropriate Building Regulations. The Benchmark Checklist can be used to demonstrate compliance with Building Regulations and should be provided to the customer for future reference.
Installers are required to carry out installation, commissioning and servicing work in accordance with the Benchmark Code of Practice which is available from the Heating and Hotwater Industry Council who manage and promote the Scheme.

benchmark
COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

1.10 Hot Water Association

Intergasheating limited is a full member of the Hot Water Association and promotes the scheme in association with its Xylinder range. Details are available on the web site www.intergasheating.co.uk

hot water association

2 SAFETY

2.1 Installation site

Make sure the floor is capable of (locally) supporting the weight as shown in the Technical Data Table. Do not install the Xylinder on floors made of chipboard or other flooring where the mechanical strength is compromised when damp. If the Xylinder is fitted very high in the building, negative pressure may form, in this instance a technical advisor should decide whether an anti-vacuum valve is required to protect the Xylinder.

2.2 Electrical power immersion heater

The 3 kW immersion water heater requires a 240V-12.5A (single phase) electrical power supply. The 6 kW immersion water heater requires a 240V-25A (single phase) or three phase electrical power supply, both heaters fused and wired according to the local regulations. The Earth connection is required on both the electrical terminal and pipework. Make sure the power supply is disconnected before wiring the power supply.
It is not allowed to operate the water heater without sufficient water inside the vessel.

2.3 Unvented

It is not allowed to fit any valves between the Xylinder and Pressure Reducing Valve (PRV).
It is not allowed to fit any valves between the Xylinder and it's expansion vessel.

2.3 Personal protection

Wear suitable protection during installment and servicing the unit (e.g. safety shoes and gloves).

2.4 Risk of scalding

Caution should be taken at periods of thermal disinfection due to the possibility of domestic hot water temperatures being in excess of 60 °c.

2.5 Delivery and packaging

The Xylinder is supplied in an environment-friendly and easy to handle cardboard packaging with protective inserts. Make sure that the packaging material is disposed of properly in compliance with the local environment-related regulations in force. Should the Xylinder show any clear signs of any transport damage, then you should inform the supplier and return it immediately. In this instance do not attempt to install the appliance.

2.6 Transport and manual handling

When moving the Xylinder, always keep your back straight, bend your knees, don't twist, move your feet. Avoid bending forwards or sideways and keep the load as close to your body as possible. Where possible transport the unit using a suitable trolley, sack truck or get some assistance. Grip the Xylinder firmly and before lifting establish where the weight is concentrated to determine the centre of gravity, repositioning yourself if necessary.

When storing and transporting it, always keep the indirect water heater vertical (straight) in its original packaging. When transporting to a second floor, it is permissible to tilt the unit to an angle of 45°, provided utmost care is taken when moving it to its final location.

Due to the forward inclination, when using forklift trucks or other means of transport, proceed slowly and fasten the equipment to prevent it from tipping. When manually carrying and putting the Xylinder into position, after removing the packaging, you need to use the auxiliary equipment/the bracket for transportation.

2.7 Legionella prevention



WARNING

► **The internal temperature of the tank must remain above 60°C to prevent legionella. Adjust the temperature control of the heat source accordingly.**

If there has been a day with a lower temperature than required, make sure to reheat the complete tank to a minimum of 65°C for at least 10 minutes before water usage. If the water temperature has been lower than 60°C for longer than a week, flush the entire tank and raise the temperature to at least 65°C for at least 10 minutes.

2.8 Disposal of electrical waste



► **This symbol indicates that the appliance must not be treated as domestic waste upon disposal.**

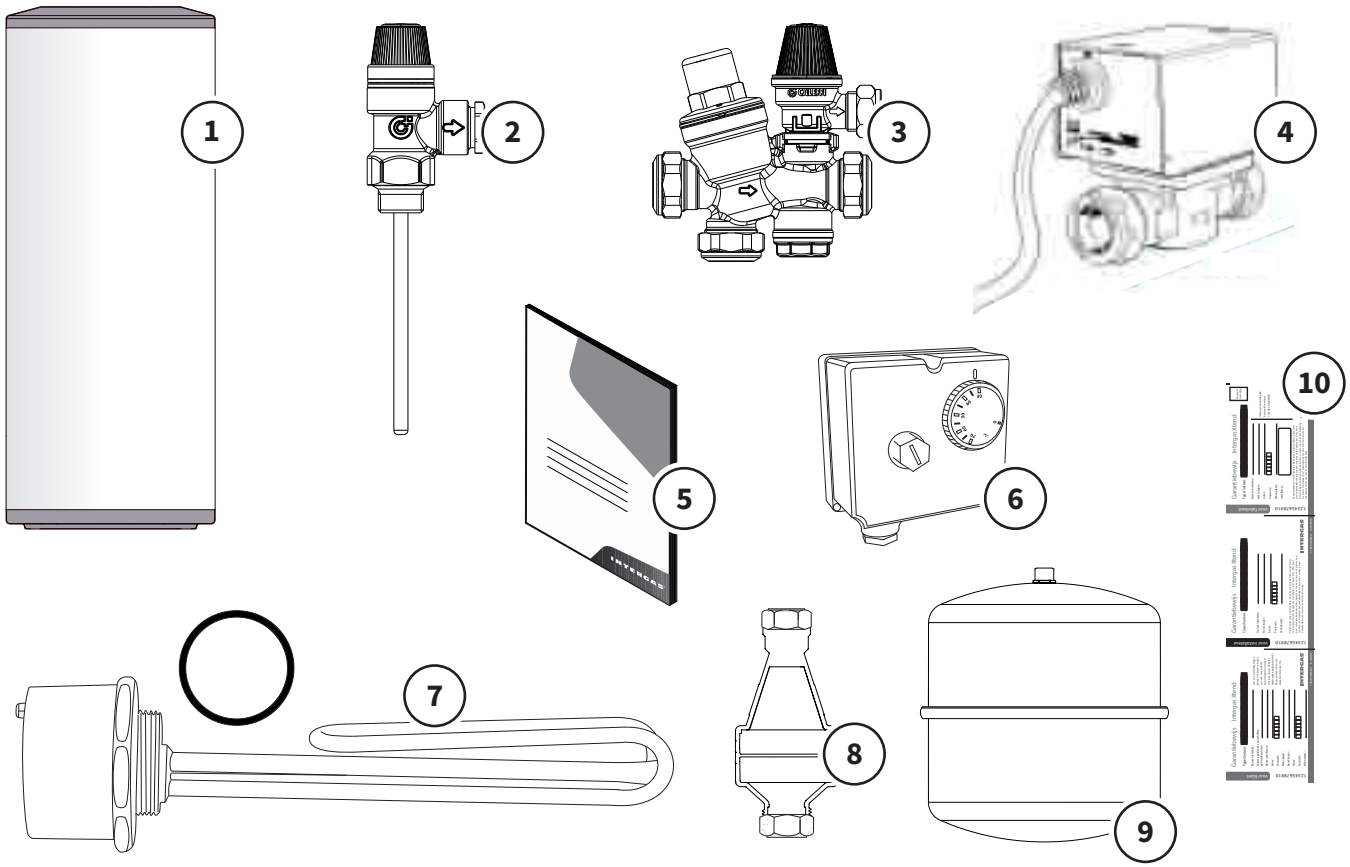
Only the immersion heater and controls must be separated from the xylinder and then disposed.
Proper disposal of the electrical waste will avoid potential health hazards and adverse consequences for the environment.
Recycling of materials helps to preserve natural resources.
For further information about the recycling of this appliance, contact your municipal offices, your domestic waste disposal service or the retailer/installer from whom the appliance was purchased.
The penalties for failure to comply with these disposal procedures are laid down in local legislation.

3 SCOPE / SYSTEM OVERVIEW

3.1 Standard delivery

Intergas stainless-steel Xylinders (Direct 6 kW ,Indirect, Heat Pump) are supplied with a factory-fitted Temperature & Pressure relief valve (7 bar / 90 °C) and are installed with a compact inlet control set comprising a pressure reducing valve (PRV 3.0 bar), single check valve and 6.0 bar expansion relief valve. Immersion thermostats include manual reset safety cut-outs.

- ► Typical DHW expansion vessel sizing guidance (see table page 7) matched to xylinder capacity and charged to ~3.0 bar when cold.
- ► Solar systems (twin-coil): integrate solar high-limit protection and gravity-break check valve or close a zone valve on high temperature to protect G3 devices.



Pos	Description
1	Xylinder
2	Temperature pressure relief valve (factory fitted)
3	Inlet group (contains pressure reducing valve, safety relief valve and check valve)
4	Motorised / zone valve
5	Benchmark / Service record
6	Thermostat and control
7	Immersion heater
8	Tundish
9	Expansion vessel
10	Guarantee card

3.2 G3 kits dependant on Xylinder

G3 kits dependant on Xylinder		2 port zone valve	Inlet group	Tundish	Dual stat	Immersion heater 3kW	Compression nut 22mm	Compression nut 28 mm	Olive 22 mm	Olive 28mm
Item code	**Item**	**212940**	**212900**	**212904**	**212924**	**212932**	**212754**	**212755**	**212756**	**212757**
212500	Indirect G3 kit	1	1	1	1	1	4	-	4	-
212501	Direct G3 kit	-	1	1		2	2	-	2	-
212502	Heat pump G3 kit	1	1	1	1	1	2	2	2	2

Please note, the Expansion Vessel will also be sent alongside the kit, respective of the cylinder size, see **§3.3**.

3.3 Expansion vessels for Xylinders

Expansions vessels for Xylinders	
212920	150ltr (12ltr)
212921	180ltr & 200ltr (19ltr)
212922	250ltr & 300ltr (24ltr)



Direct Xylinder



Indirect Xylinder



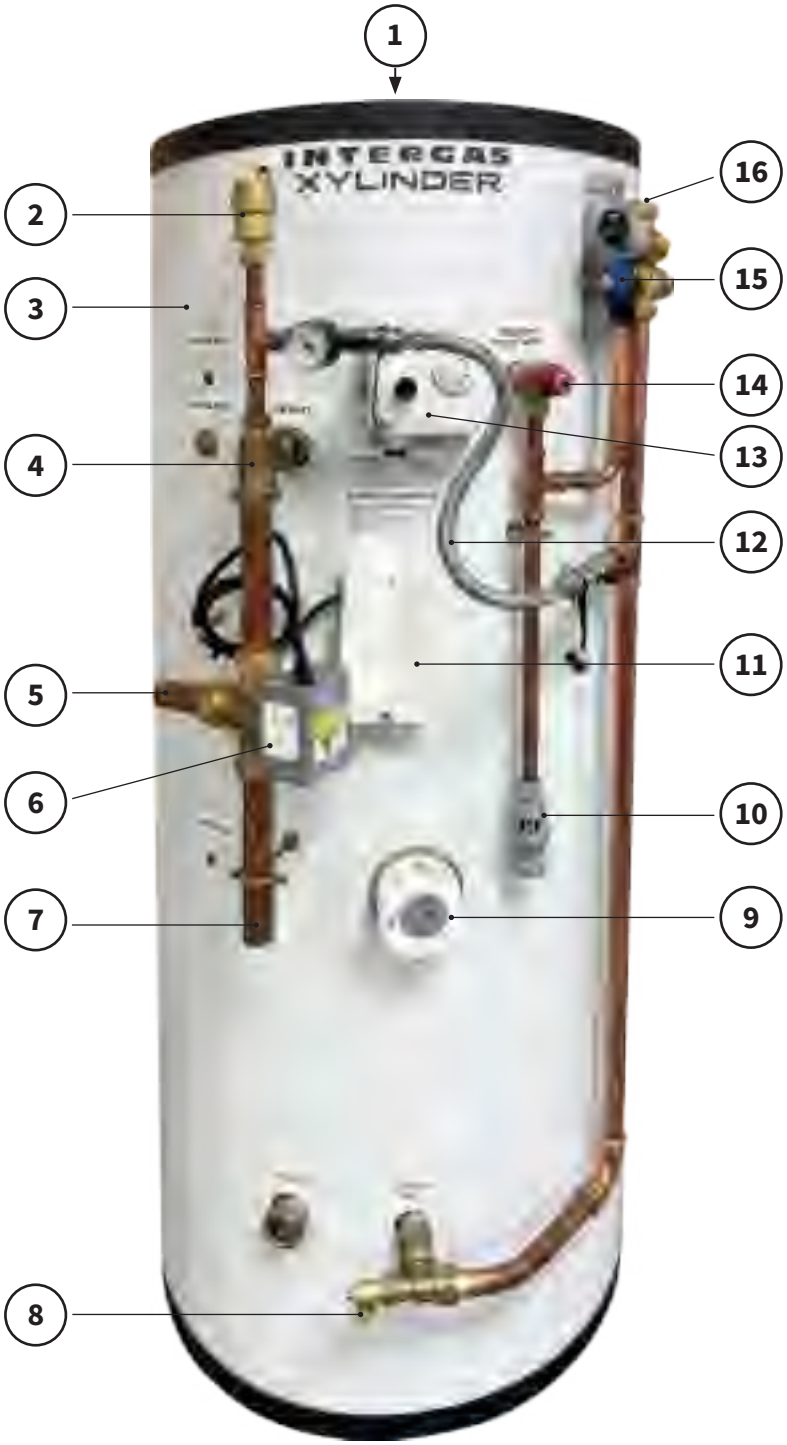
Preplumbed Heatpump Xylinder



Preplumbed Tank on Tank Heatpump Xylinder

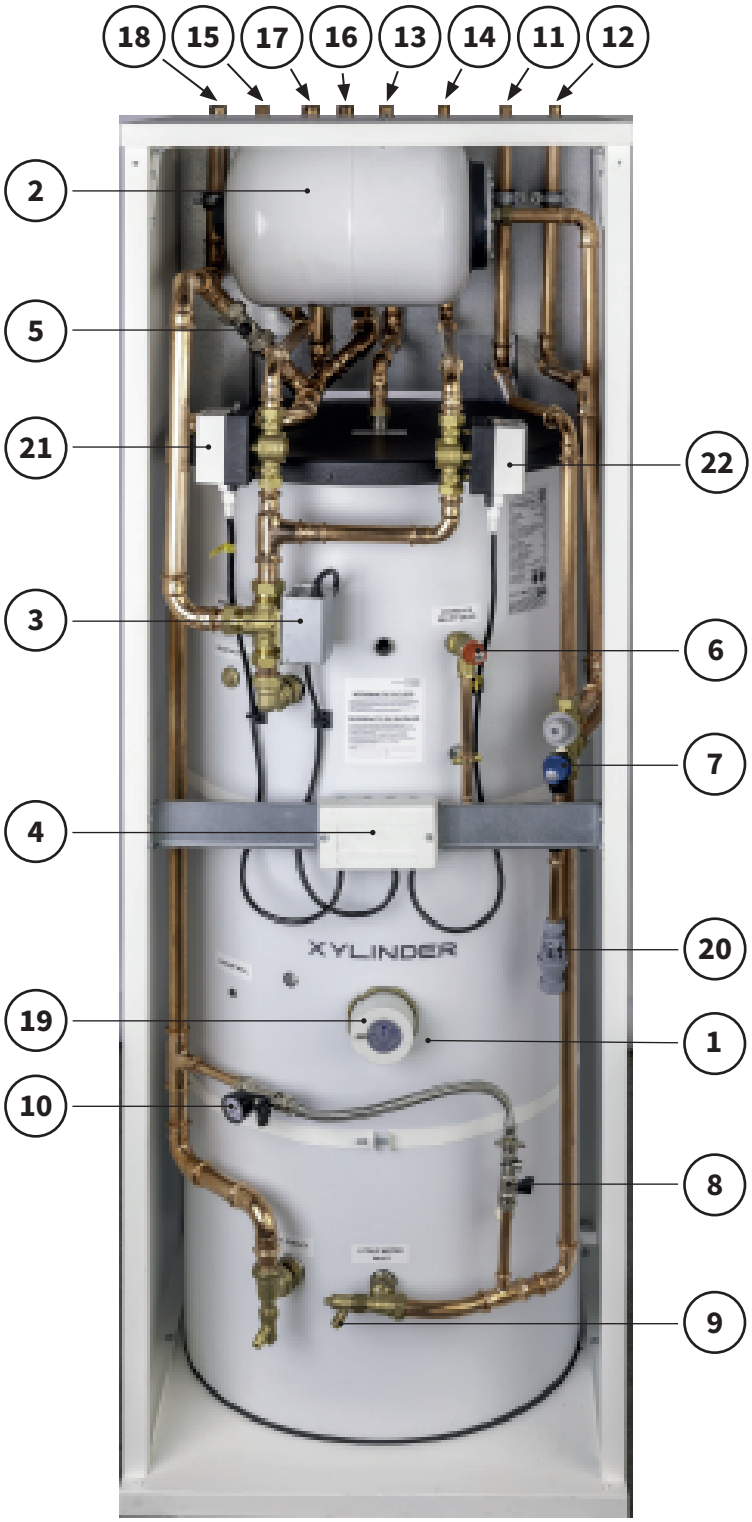
4 TECHNICAL DATA

4.1 Elements of the Hot water Xylinder



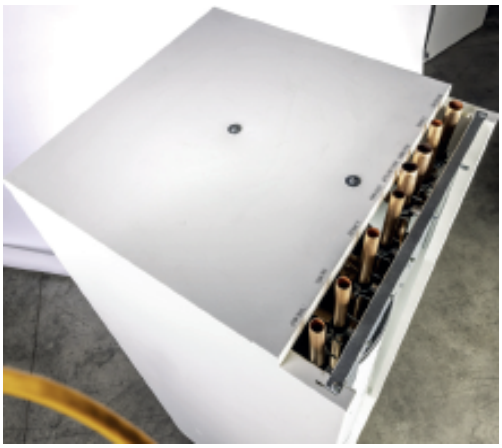
1. DHW Outlet
2. Automatic air vent
3. Domestic hot water tank
4. Coil inlet
5. HTG Flow
6. Three-way valve
7. Primary flow
8. Drain off
9. Titanium Immersion heater
10. Tundish
11. Junction box
12. Filling loop & pressure gauge
13. Dual thermostat
14. Temperature & Pressure relief valve (PRV)
15. Inlet group
16. Cold water inlet

4.2 Preplumbed Cased Indirect Xylinder (special product)



1. Domestic hot water store
2. 19 litre expansion vessel
3. Diverter valve
4. Junction box
5. Bypass valve
6. Temperature & Pressure relief valve
7. Presuure reducing valve
8. Filling loop valve
9. Drain cock
10. Pressure gauge
11. Cold Feed 3/4" M BSPT
12. Cold balance 3/4" M BSPT
13. Domestic hot water outlet 3/4" M BSPT
14. Zone 1 (Underfloor open) 1" M BSPT
15. Zone 2 (Radiators or underfloor) 3/4" M BSPT
16. Return to heatpump 1" M BSPT
17. Return from Central Heating 1" M BSPT
18. Primary flow
19. Titanium immersion heater
20. Tundish & discharge connection
21. Zone 1 - 22mm motorised valve
22. Zone 2 - 22mm motorised valve

Top view



Front view



Side view



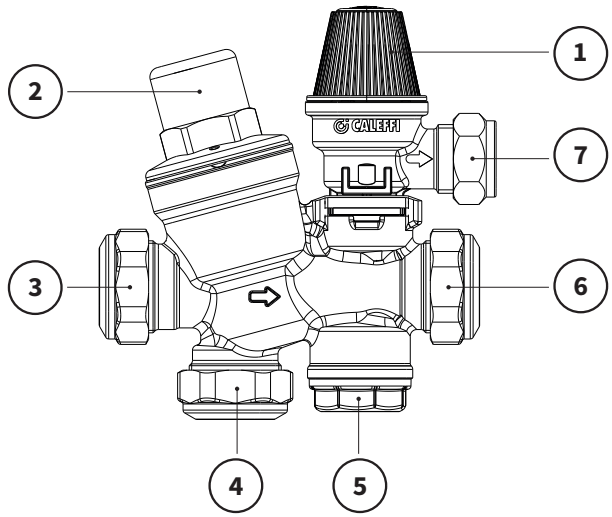
4.3 Product dimensions

Capacity (L)		150	180	200	250	300
Footprint (minimum diameter)	mm	555	555	555	604	604
Height (housing without connections)	mm	1192	1372	1594	1485	1750
Maximum design pressure	bar	7				
Xylinder						
Tested in accordance with		BS EN 12897:2016+A1:2020				
Normal operating pressure	bar	3				
Cold connection (CW)		22 mm				
Hot connection (DHW)		22 mm				
Pressure reducing valve pressure	bar	3				
Xylinder T&P	°C/bar	90/7				
Expansion Valve setting	bar	6				
Expansion Vessel pressure	bar	3				
Max design pressure - Coil	bar	16				
Max primary operating pressure	bar	3				
Max working temperature - tank	°C	85				
Max operating pressure - vessel	bar	6				
Max design pressure - Tank	bar	7				
Immersion heater						
Electrical Supply	V~	240 (Single phase)				
Amp	A	12.5				
Electric protection grade		IP24				
Electric Heater Rating	kW	3				
EPS Insulation (NeoPor grade)						
Thickness	mm	50				
Indirect Xylinder						
Coil Surface area	m^3	0.78				
Coil Rating	kW	22.9				
Coil length	m	11.3				
Rated storage water volume	l	147.7	175.9	210.8	247.8	299.2
Weight when empty	kg	33.2	37.9	42.7	46.8	52
Weight when full	kg	180.9	213.8	253.5	294.6	351.2
Reheat times 15°C– 60°C	min	20	23	28	33	39
Primary heater pressure drop	mb	124				
Primary flow rate	l/h	1400				
Standing loss	W	60	67	77	83	93
Heat Loss	kWh/24h	1.43	1.62	1.86	1.99	2.23
Immersion heater (Capacity)	Qty (kW)	1 (3kW)				
Energy Efficiency Class		C				
Max operating temperature fluid	°C	90				

Capacity (L)		150	180	200	250	300
Direct Xylinder						
Rated storage water volume	l	151.9	180.2	210,8	252.1	303.5
Weight when empty	kg	33.1	36.9	41.1	47.4	51
Weight when full	kg	179.6	210.5	249.7	292.7	346.7
6 kW Reheat time 15°C– 60°C	min	93	112	130	155	186
Heat loss	W	62	70	80	83	93
Heat Loss EN 12897:2006	kWh/24h	1.48	1.68	1.92	1.99	2.23
Immersion heater (Capacity)	Qty (kW)	2 (6kW)				
Water heating energy efficiency		C				
Max operating temperature fluid	°C	90				
Indirect Heat Pump Xylinder						
Coil Surface area	m^3	1.42	1.92	2.42	2.55	2.98
Coil Rating	kW	28.9	35.5	41.5	41.7	40.9
Coil length	m	16	21.8	27.5	29	33.9
Rated storage water volume	l	142.1	167.3	199.6	234.2	283.4
Weight when empty	kg	37	44.7	52.5	57.4	65.2
Weight when full	kg	172	204	244	282	340
Reheat times 15°C– 60°C	min	13	13	14	16	18
Primary heater pressure drop	mb	45	61	78	81	95
Primary flow rate	l/h	1400				
Heat Loss	W	64.6	72.1	81.7	85	96
Heat Loss EN 12897:2006	kWh/24h	1.55	1.73	1.96	2.04	2.30
Immersion heater (Capacity)	Qty (kW)	1 (3kW)				
Energy Rating EU		C				
Max operating temperature fluid	°C	90				

5 COMPONENTS AND CONNECTIONS

5.1 Inlet group



Pos	Description
1	Safety relief valve (Discharge to Tundish)
2	Pressure reducing valve and inline strainer
3	Cold water mains in (Ø22 mm)
4	3 bar balanced, cold supply to taps (Ø22 mm)
5	Connection to expansion vessel (G¾")
6	Cold water supply to Xylinder (Ø22 mm)
7	To Tundish (Ø15 mm)

WARNING

► **Actuate the pressure relief valve regularly to prevent scaling.**

This one-piece inlet control incorporates several different controls devices in one, it is specifically designed for use on an unvented system to control the incoming water supply to a hot water Xylinder.

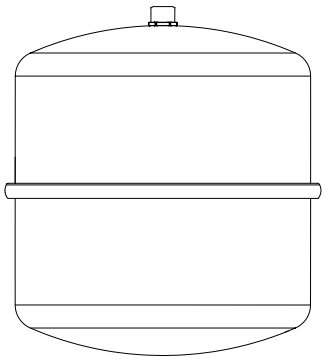
- ☐ A 'drop tight' pressure reducing valve (PRV) meaning the valve will hold at the pre-set pressure regardless of it being under flow or no flow conditions or regardless of fluctuating inlet pressures.
- ☐ A single check valve which will protect the system for backflow prevention up to fluid category 2, and a preset pressure relief valve which will prevent the system from over pressurisation. The pressure relief valve is designed so it can rotate, to allow the discharge connection to be easily fitted in various directions making installation simple.
- ☐ The valve also includes a specific connection for a balanced cold water take off which can allow the user to connect a cold-water feed direct from the inlet control valve, and a dedicated connection for an expansion vessel.

- ► During installation position the valves so that you can connect the 15mm connection of the pressure relief valve with the tundish. The flow direction is marked with arrows.
- ► Install the discharge pipe of the pressure relief valve with a constant fall to the outside. The discharge pipe must finish at a safe and visible height where there is no danger of it freezing and where there is no danger of injury to persons.
- ► Connect the Xylinder via the Xylinder connection.
- ► Use 22mm copper pipe to connect the Xylinder from the main stop valve to ensure that the Xylinder is as efficient as possible. This is particularly important for installations with a balance cold water inlet.
- ► Install the safety assembly in the cold mains inlet on the Xylinder.
- ► If necessary establish the connection to the cold water inlet with pressure compensation of the safety assembly.

Technical data:

Max. working pressure:	12 bar (static)
Max. temperature:	40°C
WRAS approved prduct:	Yes
Safety relief setting:	6 bar
Pressure relief valve setting:	3 bar

5.2 Expansion vessel



To prevent any overpressures that might damage the equipment, frequently triggering the safety unit and causing water dripping, it is mandatory that you install the expansion vessel included in the kit. Install it in accordance with the instructions provided by the manufacturer. The Expansion vessel is required to keep pressure constant and avoid harmful pressure shocks or accidental overpressures.

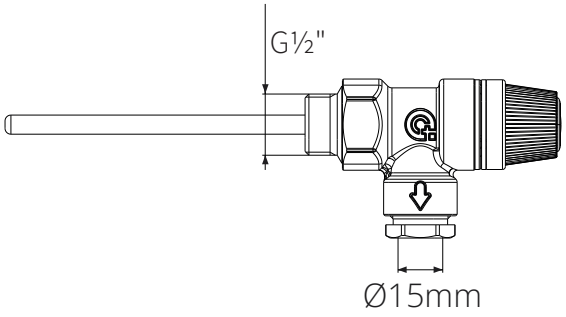
CAUTION

► **Where secondary return circuits are used (SR) an additional expansion vessel may be required.**

Xylinder size (L)	Typical EV size (L)	Charge pressure (bar)	Notes
150	12	3.0	Adjust per site conditions
180 - 210	18		
250 - 300	24 - 25		Floor-standing vessels ≥ 35 L for larger systems

Table 1 DHW Expansion Vessel Guidance (indicative)

5.3 Temperature and pressure relief valve

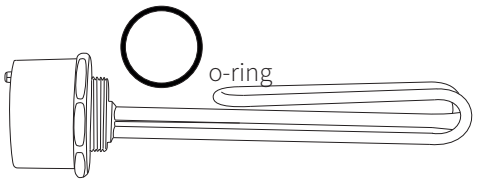


The Xylinder is equiped with a Temperature and pressure relief valve to protect the Xylinder.

Technical data:

Maximum pressure:	7 bar
Maximum temperature:	90°C

5.4 Immersion Heater

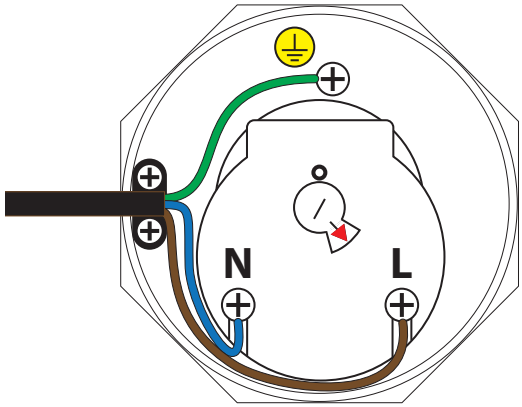


WARNING

► **Only switch the immersion heater on when the Xylinder is full with water.**

WARNING

► **When tightening an immersion heater in a Xylinder, hand-tighten it firmly with an immersion wrench, then snug it another quarter-turn to compress the O-ring or washer (roughly 40-60Nm). Avoid over-torquing, as excessive force can distort the cylinder boss or ruin the seal**



The Xylinder is equipped with an additional electric immersion heater with an output of 3kW. The immersion heater is located just below the midpoint of the Xylinder and is designed for use in unvented Xylinders. It has a temperature controller and a thermal cut out. To adjust the temperature the factory seal can be broken by rotating the red arrowhead to the desired temperature. If required, the immersion heater can be removed to achieve visual access to the inside of the Xylinder. Make sure the Xylinder is empty before removing the immersion heater.

Electrical connection;
single phase 3x 1,5mm²
N = Blue
L = Brown
Earth = Green /yellow

Technical data:
Electric supply - rated 3kW / 240V
temperature control 0-80°C (factory sealed to 65°C)
Heater is approved to EN 60335-2-73

5.5 Motorised zone valve

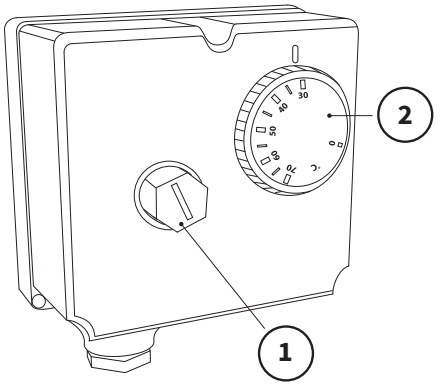


The Motorised zone valve is used to control the flow of water. The zone valve is linked via wiring in the junction box, see **§5.8**.
When the thermostat calls for heat, the zone valve will be opened and the flow of water will pass to the calling zone. The diverter valve Incorporates a manual lever, the lever should normally be in 'AUTO' position, but can be moved to 'MAN OPEN' position for system draindown and filling purposes only.

Technical data:

Power supply:	230 Volts AC 50Hz
Switch type:	SPST 28 mm
Flow temperature:	5°C- 88°C
Static pressure:	8,6 bar
Flow directions:	As per arrow on valve body

5.6 Dual thermostat



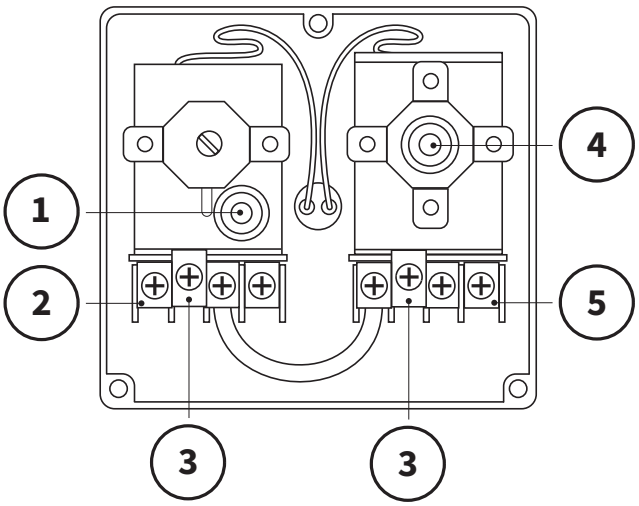
Pos	Description
1	Cover cap for reset button for reheating circuit TCO
2	Temperature setting dual thermostat

The dual thermostat includes both a temperature control and a high limit safety cut-out and manual reset. This thermostat is designed to be fitted to the hot water Xylinder and in the event of a failure the thermostat will either cut off due to the control thermostat reaching its set temperature which is user adjustable or by the high limit cut-off thermostat which is set to a pre-determined temperature.
Please note: Before connecting or working on the thermostat, please ensure that the power supply is NOT CONNECTED and that the fused spur is switched to the off position.

Technical data:

Temperature control:	30-70°C
High limit temperature:	82°C
Temperature tolerance:	+/-5°C
Probe length:	160mm
Degree of protection:	IP40
Insulation class:	I

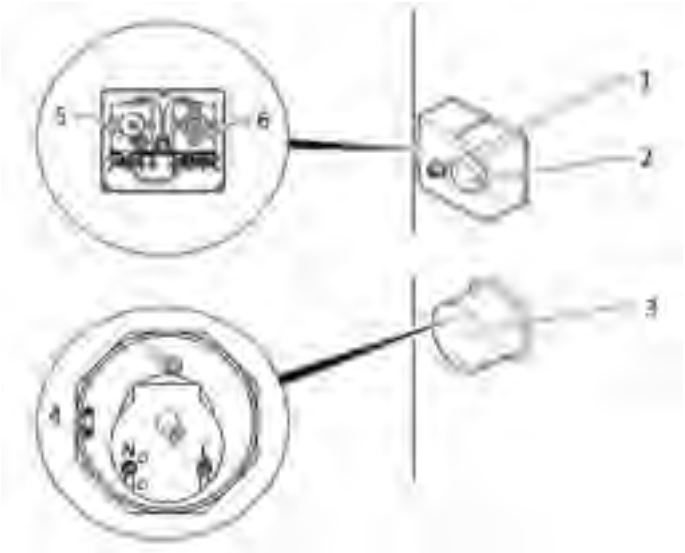
5.6.1 Wiring thermostat



Pos	Description
1	Reset button TCO (Thermal Cut Out)
2	Terminal C
3	Earth terminal
4	Temperature setting
5	Terminal connection

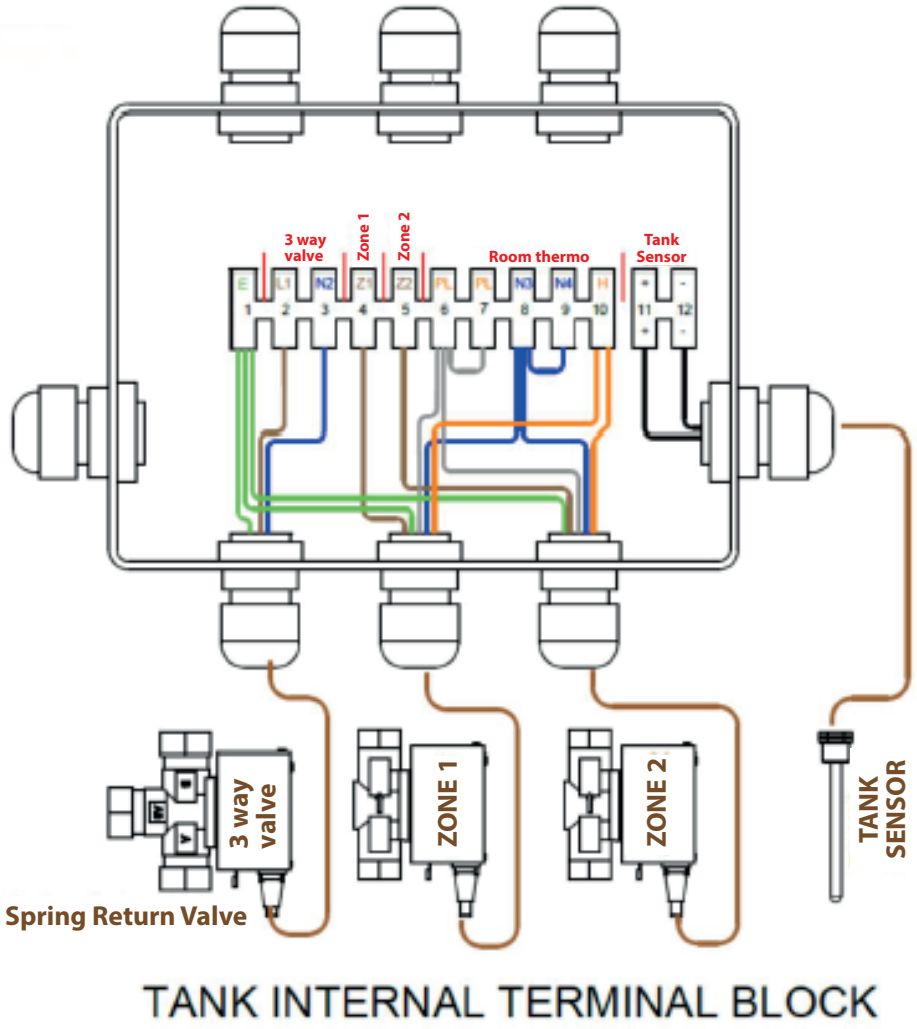
- Terminal C (**2**): Connect the phase wire (Live/Brown) coming from the programmer or switch here.
- Terminal (**5**) (Call for Heat): Connect the switching wire here that goes to the zone valve or the boiler. This circuit is broken as soon as the set temperature is reached.
- Earth wire (Green/Yellow): Must always be connected to the designated earthing terminal in the housing or to the immersion heater.

5.7 Xylinder control (Dual thermostat)



Pos	Description
1	Cover cap for reset button for reheating circuit TCO
2	Temperature setting dual thermostat
3	Electric immersion heater cover
4	Electric immersion heater
5	Reheating circuit safety thermostat
6	Xylinder thermostat

5.8 Junction box



Wiring from the various electrical components, such as the zone valves and 3-way valve, are connected in the junction box, see **chapter 11** for schematics.

5.9 Safety components

- Compact inlet control: PRV 3.0 bar (drop-tight), single check valve, expansion relief 6.0 bar, balanced cold outlet, and expansion vessel port — mount adjacent to the Xylinder cold inlet.
- DHW expansion vessel: wall-mounted (12–24 L) or floor-standing (≥ 35 L); charge to ~3.0 bar when cold; size per 12.2.
- T&P relief valve: 7 bar / 90 °C — route via metal D1 into the tundish, see **§5.5**. Immersions: 3 kW (12.5 A) for indirect/HP; Direct 6 kWmodels use two immersions and suitable circuits; wire (2,5mm) via double-pole isolators with ≥ 3 mm contact separation; verify earth bonding of hot/cold pipework and immersion.
- Solar high-limit protection (twin-coil): fit a solar high-limit thermostat and incorporate a gravity-break check valve OR close a zone valve on high temperature to protect G3 devices.

6 BUILDING REGULATIONS G3

The following text is reproduced from the UK Building Regulations G3 (Hot Water Supply and Systems). This document contains the regulations for safe and efficient hot water installations. It is included here for reference only.
We must point out that It is the duty of the qualified and licenced installer to ensure the installation is correct and meets the requirements of the G3 Building Regulations for the installation of a hot water unvented Xylinder, it is also the installers duty to ensure the Xylinder is registered with Building control. The customer must be advised that a service is required to the Xylinder on an annual basis and failure to have this undertaken could lead to either a waste of domestic water or an unsafe situation.

6.1 Location requirements for hot water

The system must deliver heated wholesome water (or heated softened wholesome water) to specific outlets.

- Sanitary Accommodation: Washbasins and bidets provided in or adjacent to a room containing a toilet.
- Bathrooms: Washbasins, bidets, fixed baths, and showers.
- Kitchens: Sinks in any area where food is prepared or culinary utensils are washed.)
- Energy Efficiency: Pipe runs must be kept as short as reasonably practicable and adequately insulated to minimise heat loss and prevent unnecessary water wastage.

6.2 Fundamental system requirements

Installations must be capable of withstanding extreme conditions without failing.

- Resistance: The system, including all pipes and fittings, must be designed, constructed, and supported to safely withstand the effects of temperature and pressure during normal use and any anticipated malfunctions (such as a seized thermostat).
- Prevention of Boiling: The temperature of the stored water must never exceed 100°C. This prevents the formation of low-pressure steam, which could otherwise lead to an explosion of the storage Xylinder.
- Safe Discharge: Any water discharged from safety devices must be safely conveyed to a location where it is visible (via a tundish) but will not cause danger to persons in or about the building.

6.3 Safety measures Unvented hot water storage systems

- Minimum of Two Barriers: Because these systems do not have an open connection to the atmosphere, they require at least two independent, automatic safety devices:
  1. An independent, manual-reset energy cut-out linked to a temperature sensor.
  2. A mechanical Temperature and Pressure (T&P) Relief Valve that opens at a specific pressure or when the water temperature reaches approximately 95°C.
- Certification: Systems with a storage capacity up to 500 litres must be certified as a complete package (including all safety valves) by an approved body (such as the British Board of Agrément - BBA).
- Labelling: The vessel must be indelibly marked with manufacturer specifications and feature a prominent, visible Warning to User / Installer label.

WARNING TO USER

a. Do not remove or adjust any component part of this unvented water heater; contact the installer.
b. 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.

WARNING TO INSTALLER

a. This installation is subject to the Building Regulations.
b. Use onlu appropriate components for installation or maintenance.

Installed by:

Name .....
Address .....
Tel. No. .....
Completion date .....

Warning label (example)

6.4 Prevention of scalding

- Maximum Bath Temperature: To prevent children or vulnerable adults from sustaining severe burns, the hot water delivery temperature to any fixed bath must be limited to a maximum of 48°C.
- Blending Valves: This must be controlled by an approved in-line blending valve (such as a TMV Type 2 or Type 3) installed in a way that prevents the user from easily altering the temperature setting.
- Solar & Solid Fuel Systems: Systems heated by solar collectors or solid fuel appliances can become extremely hot (exceeding 80°C). In these setups, an in-line tempering valve is required to restrict the water temperature supplied to the domestic distribution system to a maximum of 60°C.

6.5 The Discharge Pipework System (D1 & D2)

When a safety valve operates, the boiling water must be safely conveyed away following a strict mechanical design:

- **The Tundish**: The discharge pipe from the relief valve (1) must terminate in a tundish within 600mm of the valve. The tundish must be vertical and visible to the occupants (so leaks are noticed immediately) but positioned away from any electrical components, see fig. 1
- The discahrge pipe D2 (downstream of tundish) should: Have a vertical section of pipe at least 300mm long below the tundish before any elbows or bends in pipework (see Figure 1); and be installed with a continuous fall thereafter of least 1 in 200.

The discharge pipe (D2) should be made of:

- Metal or thermoplastics proven to withstand discharge temperatures and clearly/permanently marked to BS 7291 Class S (PB or PE-X).
- Sizing by equivalent resistance: minimum D1 equals valve outlet; D2 upsized per 9/18/27 m straight-length bands; deduct per-bend resistances, see table 2).
- Common discharge: size ≥ one pipe size larger than the largest individual D2 connected.
- Connection to soil stack permitted only if stack is temperature-capable and ALL conditions are met: mechanical seal (not a water trap), separate branch (no sanitary appliances), PB/PE-X Class S for plastic branch, and continuous warning marking.

- ***Worked example:*** The example below is for a G ½ 6 with discharge pipe (D2) having 4 No. 22mm elbows and length of 7m from the tundish to the point of discharge. Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G ½ temperature relief valves 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 which is less than the length of 7m therefore calculated the next largest size. Maximum resistance allowed for a straight length of 28mm copper dischargepipe (D2) from a G ½ temperature relief valve is 18m. Subtract theresistance for 4 No.28mm elbowsat 1.0m each = 4m. Therefore themaximum permitted length equates to: 14m. As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.
- Safe Discharge Point: The pipe must terminate outside in a safe location where the boiling water cannot pose a danger to persons, such as directly above a gully or into a wire-caged hopper on a flat roof.
- Where valves other than the temperature and pressure relief valve from a single unvented discharge by way of the same manifold that is used by the safety devices, the manifold should be factory fitted as part of the hot water storage system unit or package.

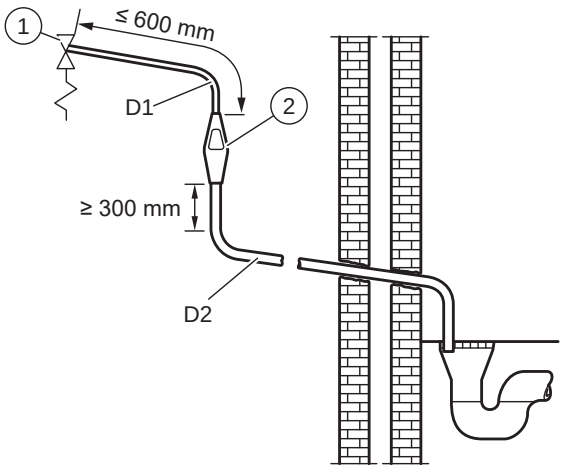


Figure 1 Typical discharge pipe arrangement

Pos	Description
1	Temperature and pressure relief valve
2	Tundish

Valve outlet size	Min D1 (mm)	Min D2 bands (mm)	Max atraight length bands (mm)	Per bend resistance (m)
G 1/2	15	22 / 28 / 35	9 /18 / 27	0.8 / 1.0 / 1.4
G 3/4	22	28 / 35 / 42		1.0 / 1.4 / 1.7
G 1	28	35 / 42 / 54		1.4 / 1.7 / 2.3

Table 2 Sizing of copper discharge pipe 'D2' (per G3)

FOR FURTHER GUIDANCE PLEASE USE THE LINK BELOW:

https://www.gov.uk/government/publications/sanitation-hot-water-safety-and-water-efficiency-approved-document-g

7 INSTALLATION

7.1 Pre-Installation Requirements

- Cold mains: recommended static pressure ≥ 1.5–2.0 bar and dynamic flow ≥ 20–25 L/min to achieve design performance.
- Primary circuit (indirect): positively pumped; minimum 22 mm pipework; install a two-port motorised valve on the primary flow; vent and ensure no air locks.
- Balanced cold take-offs: supply mixers/showers from the balanced cold port on the inlet group to prevent back-pressure and nuisance discharge.
- Height & anti-vac: where the height difference between the lowest outlet and Xylinder top exceeds 15 m, fit a WRAS-approved anti-vacuum valve on the cold inlet near the Xylinder.

7.2 Site Selection & Preparation

- Position the Xylinder as near as possible to the heat source to prevent heat loss.
- Install on a level surface in a frost-free location with adequate access for service and immersion removal.
- Insulate exposed pipework; provide visible tundish location and clear discharge path.
- Plan discharge routing per **§6.5**; avoid electrical components in the spray zone.
- Position the Xylinder so that the immersion heater can be serviced or replaced, see fig. 2



Fig. 2 Every connection is on a 30-degree plane at the front of the Xylinder

WARNING

- **Water temperature over 50°C running from taps may immediately cause serious burns. Children, disabled and elderly run a greater risk in this regards. Therefore it is advisable to use a thermostat mixing valve connected to the water outlet or where preferred at the point of use.**

7.4 Installation Procedure

1. Fix the compact inlet control adjacent to the cold inlet (observe flow arrows); connect balanced cold take-offs and the expansion vessel port.
2. Connect cold main (22 mm copper) to the inlet control; include a drain valve on the cold feed.
3. Connect DHW outlet (22 mm) and distribute hot draw-offs; minimise dead-leg volumes.
4. Connect DHW secondary return (if used): WRAS-approved. pump with non-return valve; insulate thoroughly; add auxiliary DHW expansion vessel if SR circuit volume is large.
5. Primary circuit (indirect/HP): connect 28 mm for the HP and 22mm for the indirect flow to the coil via a two-port motorised valve; connect return; vent the coil and ensure positive pumping.
6. Electrical: bond hot/cold pipework; earth immersion; wire immersions via double-pole fused spurs; provide appropriate circuits for direct 6 kW models.
7. Install tundish and discharge per **§5.5**, ensure clear visibility and safe termination.

- If necessary establish the connection to the cold water inlet with pressure compensation of the safety assembly.
- Dependent on the fittings used and the type of draw off points it may be necessary to install a backflow preventative device in the cold water inlet.
- To prevent any overpressures that might damage the equipment, frequently triggering the safety unit and causing water dripping, it is mandatory that you install the expansion vessel included in the kit, see table 1. Install it in accordance with the instructions provided by the manufacturer. The expansion Xylinder is required to keep pressure constant and avoid harmful pressure shocks or accidental overpressures.

7.5 Electrical connection

Wiring should be installed by a qualified, competent person in accordance with the prevailing building regulations, part P of the current IEE regulations and all other directives.

Standard commercial cables can be used, 230 V supply lines must be laid separately above lengths of 10m.
The discharge pipes of the tundish, drain valves and motorised valves must be laid at distance from all electrical components.

Before wiring the control components dismantle the casing to facilitate the work. Utilise the cut outs in the casing for routing cables.

WARNING

- **If the supply cable is damaged, it must be replaced by the manufacturer or by its technical support service or a suitably qualified person.**

DANGER

- **Without earthing, life threatening voltage can reach the pipework and draw off points – it is imperative that you earth the immersion heater.**

WARNING

- **Ensure that both hot and cold pipes are connected to the earth line by means of an earth cable directly on the cylinder.**

WARNING

- **Ensure that the immersion heater is connected to the earth line via the earth terminal.**

7.6 Unit filling

WARNING

- **Switching on the equipment when it is not filled with water will seriously damage the electric heating element.**

WARNING

- **In the presence of water with a hardness degree >200ppm it is mandatory that you install a softener to reduce limestone scaling inside the Xylinder and keep the electric heating element and the hydraulic safety unit in good working order.**

To fill the equipment you need to:

The tap present in the hydraulic unit must be put in the open position, the opening of the tap allows the equipment's supply. The retain system incorporated in the safety hydraulic unit prevents from the heat water return. Open the main water supply or the equipment water supply cock;

Open a hot water tap (e.g. bathroom, wash basin, etc.) to allow the water to flow out; when the water outflow from the tap is constant the equipment will be full;

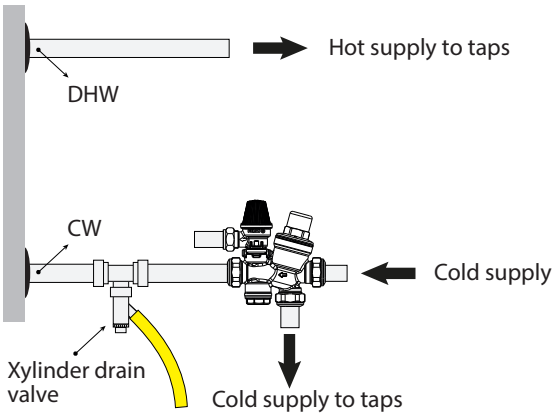
Check that there are no leaks from the various hydraulic connections;

We recommend that you clean the pipes before laying them. Only proceed with the electrical connection after performing this operation

7.7 Drainage

Aside from the emergency G3 safety valves, unvented systems require a manual mechanism to empty the heavy tank safely during servicing.

- Placement: Positioned at the absolute lowest point of the cold water inlet pipework, right where it enters the base of the Xylinder.
- Configuration: A dedicated drain cock/valve featuring a hose-tail connection.
- Operation: To perform a drain-down, the main cold water inlet control group is isolated. A hose is attached to the drain valve and run out to a low-level drain or foul sewer. Opening a hot water tap higher up in the building breaks the internal vacuum, allowing gravity to cleanly empty the cylinder.



Typical drain arrangement and system design.

7.8 Unit emptying

Should the unit be going to remain unused for a prolonged time, we recommend that you empty it. In this case proceed as follows:

- Cut off the power supply and the main water supply;
- Open a hot water tap to allow air to flow in;
- Turn the emptying knob on the hydraulic safety unit to the open position;
- Verify that the discharge connector of the hydraulic safety unit is connected to a drain.

7.9 Restart after a long time

When the unit is restarted after a long-term stop (trail running included), it is normal that outlet water is unclean. Keep the tap on and the water will be clean soon.

8 COMMISSIONING

IMPORTANT

► **It is the responsibility of the installer to ensure that the system is properly commissioned and the end user instructed in the safe operation of the equipment.**

The thermostat on the immersion heater 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 known hard water areas the use of a scale inhibitor is also recommended.
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

8.1 Electrical check

Check that all wiring including earth wiring, has been installed correctly, conform to current regulation and satisfactory electrical test and inspection certificate has been completed.

- ► Check all electrical covers are correctly fitted;
- ► Check Tundish is positioned so that any spillage or spray from the Tundish would not contact any electrical components.
- ► Check all wiring connections have been made.
- ► Check the required earth continuity conductors have been fitted.

8.2 Pre-fill check

- ► Check the expansion vessel is fitted and that no valves are fitted between the expansion vessel and the combination valve.
- ► Check that no valves are fitted between indirect water heater and the combination valve.
- ► Check the PRV, tundish and discharge pipes are correctly installed and conform to the Building Regulation G3.
- ► Check all pipes connections are tight and no joints have been left unsoldered.
- ► Check all drain cocks are closed.

WARNING

► **Upon commissioning of the Xylinder ensure that the immersion heater is correctly tightened before filling the tank with water.**

8.3 Filling system

- ► Close all isolating valves.
- ► Close all taps.
- ► Open the incoming water mains stopcock.
- ► Turn on mains water, allow system to fill up to first isolating valve. Turn on hot taps. Open isolating valves and allow the indirect water heater to fill and let water pass through the system to the open hot tap, this will expel most of air from the system and fill the indirect water heater vessel.
- ► Systematically open all hot and cold taps to purge air.
- ► Check system for leaks.
- ► Check no water is discharging from T&P or PRV.
- ► Expansion vessel – with the water supply turned off and taps open, check expansion vessel pressure and top up as necessary.
- ► Cylinder T&P – check its operation; with the water supply on, turn the T&P test knob and check water discharges to tundish, ensure the valve closes after testing.
- ► Discharge pipe (D1) – open either T&P or PRV gradually to produce all full bore discharge into tundish and D2 and check there is no back pressure, and that the water flows freely to drain.
- ► Pressure Reducing Valve (PRV) – check that the correct outlet pressure is being maintained by measuring the pressure at an in-line terminal fitting e.g. a tap.
- ► When necessary the immersion heater boss can be used as an access to view internal of the cylinder.

8.4 Drainage

- ► Turn off incoming mains stop cock.
- ► Using hose and suitable containers, drain all water from the cylinder and pipework using drain cocks.
- ► Remove and clean in-line strainer of combination valve.

WARNING

► **Water drained off may be very hot!**

8.4 Cleaning the system

- ► Using proprietary chlorination product, chlorinate domestic hot water system as per manufacturer's instruction.
- ► Drain the system, see §7.8, then fill and drain to flush as many times as recommended by chlorination product manufacturer.
- ► Refill system.

8.5 Setting and testing Controls

- ► Switch on indirect water heater electric isolating switch.
- ► For commissioning use the factory default setting, no changes parameters should be required.
- ► Set indirect water heater into operation, and when hot check for leaks.
- ► Check operating of any open flue appliances that could be affected by air movement through the indirect water heater.
- ► Fill in details in the Benchmark Logbook.

8.6 Handing over

- ► Complete the Benchmark Logbook.
- ► The installer should re-check the system and ensure it's completely satisfactory before demonstrating to the end user.
- ► The end user should be aware of the following:
  - ☐ The most cost-effective use of the indirect hot water system using the automatic mode.
  - ☐ How to set the temperature of the tap hot water.
  - ☐ How to set the different functions.
  - ☐ The function of the combination valve's PRV and that over pressure will cause steam and scalding water to
  - ☐ be emitted from the discharge pipes.
  - ☐ That the tundish is supplied as a visual identification for over pressure.
  - ☐ The procedure to follow in event of over pressure.



IMPORTANT

- ► **This manual must be left with the end user together with the Service record / Logbook.**

9 MAINTENANCE

WARNING
- ► **The repair and/or maintenance operations must only be performed by qualified personnel.**
- ► **Only use genuine spare parts.**
- ► **Prior to undertaking any maintenance operations, turn off and disconnect the equipment from the mains electrical supply before commencing any work on the Xylinder.**

9.1 General

- ► Operate and re-seat T&P and expansion relief; ensure the discharge route is unobstructed and visible at the tundish.
- ► Check expansion vessel charge (~3.0 bar) with supply off and a hot tap open; re-pressurise as required; replace if bladder fails to hold charge.
- ► Clean inlet control strainer; inspect tundish and discharge pipework.
- ► Verify immersion thermostat and thermal cut-out; confirm earthing/bonding integrity.
- ► The resistance is properly housed and the sealing gaskets are correctly installed.
- ► Before reconnecting the equipment to the mains fill it and check that there are no water leaks.
- ► Update the Benchmark Service Record.

9.2 Water circuit / Condensate discharge

The water circuit check is limited to the integrated filter installed by the customer (if any; in this case follow the instructions provided by the valve manufacturer); also check the tightness of the valves, of the screw connections, etc.; should they be loose, have them tightened by technicians.

WARNING
- ► **Actuate the pressure relief valve regularly to prevent scaling.**

9.3 Replacement of the immersion heater

If replacement of the electric immersion heater is required follow this procedure;
- ► Turn off the unit.
- ► Disconnect the heater from the electrical power supply.
- ► Empty the Xylinder until the water level seems to be lower than the place where the electric immersion heater is joined.
- ► Remove the immersion heater cover. Disconnect the wiring.
- ► Disconnect and replace the electric immersion heater and replace the o-ring.
- ► Restore the electrical connections
- ► Place the immersion heater cover
- ► Fill the Xylinder and check for leaks
- ► Restore the connection to the electrical supply

9.4 Outer cover cleaning

For the cleaning of the outer shell only use a damp cloth. Do not in any circumstances use abrasive products containing organic thinners (alcohol, benzene, etc.).

9.5 User instructions

Your Xylinder is automatic in normal use and requires only annual servicing, normally this is timed to coincide with the annual boiler service. You should employ a competent installer to perform the annual service and the installer MUST complete the service history to maintain your 25-year guarantee on the inner vessel. See the guarantee terms and conditions on page 28 for further details.
If water is flowing from the safety valves through the tundish, this indicates a fault in your heating system and action is needed.
If this water is hot, turn the boiler and/or immersion heaters off. Do not turn off the water until the discharge runs cool. The discharge may also stop.
Call out a competent installer to diagnose the fault.
Tell them you have a fault on your hot water system and that the system includes an unvented hot water cylinder.

9.6 After-sales service

In case of errors or malfunctions, switch off the equipment and disconnect the power supply. Then contact the technical support service.

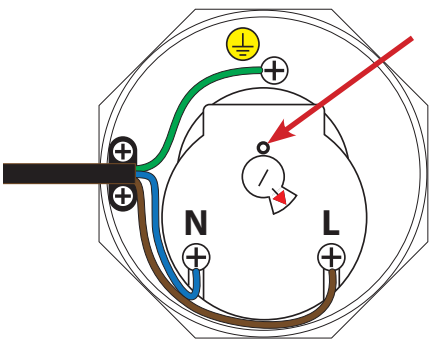
10 TROUBLESHOOTING

Symtoms	Likely Cause	Action
Discharge from tundish during normal operation	Back-pressure from mixers or imbalance; low EV charge	Fit/verify balanced cold to mixers; check and recharge/replace expansion vessel; verify PRV set to 3.0 bar
No hot water	Immersion off/cut-out; boiler/HP fault; motorised valve closed	Reset immersion cut-out; check boiler/HP and controls; check two-port valve operation
Intermittent discharge on heat-up	Expansion relief seat contamination; excessive primary temperature	Exercise/clean ERV; check boiler/HP flow temperature; verify two-port valve
Milky/cloudy hot water	Oxygen release from pressurised system	Normal behaviour — bubbles settle out after draw-off
The Xylinder cools down at night	One pipe circulation in the case of short tube networks with low pressure loss	Install a non-return valve as close as possible to the Xylinder
Primary heating not working. Boiler runs for short periods repeated until cylinder reaches temperature	Air in the reheating chamber	Compare the data provided by the boiler manufacturer with the cylinder data it may be possible to cure by setting a higher flow rate on the boiler
	Heat exchanger surface area too small	
Only cold or lukewarm water at draw off	The cold and hot draw offs have been reversed	Turn off the cold-water supply and let the water flow out via the hot draw off. Only a few litres of water will flow if the setup is correctly. The hot water withdrawal pipe intake is then in air space and further draining is not possible. If it is possible to drain the entire cylinder via the hot draw off then the connections are incorrect. Change the connections.
	Hot water thermostat set too low	Increase the setting
	Heating insufficient – boiler doesn't reheat	Check boiler is working
	External control device faulty	Check controls are working and that the 2-port valve is in the DHW position
	Air in the reheating heat exchanger	Vent the reheating heat exchanger
	Xylinder sensor faulty	Check thermal cut out and replace if faulty
Water flows from the expansion relief valve when heating up	Dirt on the valve seat	Check and repair
	PRV Faulty	Check an replace if faulty
	Expansion vessel faulty	Check pressure, if insufficient repressurise and replace if pressure not held
	Expansion relief valve faulty	Check if pressure is normal and replace if faulty
Water flows from the temperature and pressure relief valve when heating up	Dirt in the valve seat	Check and repair
	Boiler temperature control system faulty	Check boiler control system and that the 2 port valve switches when cylinder temperature reached
	Cylinder sensor faulty	Check sensor and TCO replace if faulty
	T & P relief valve faulty	If water escapes when only heated by the immersion replace the T & P relief valve
	Immersion heater faulty	Check thermal cut out and replace if faulty

10.1 Manual reset immersion heater

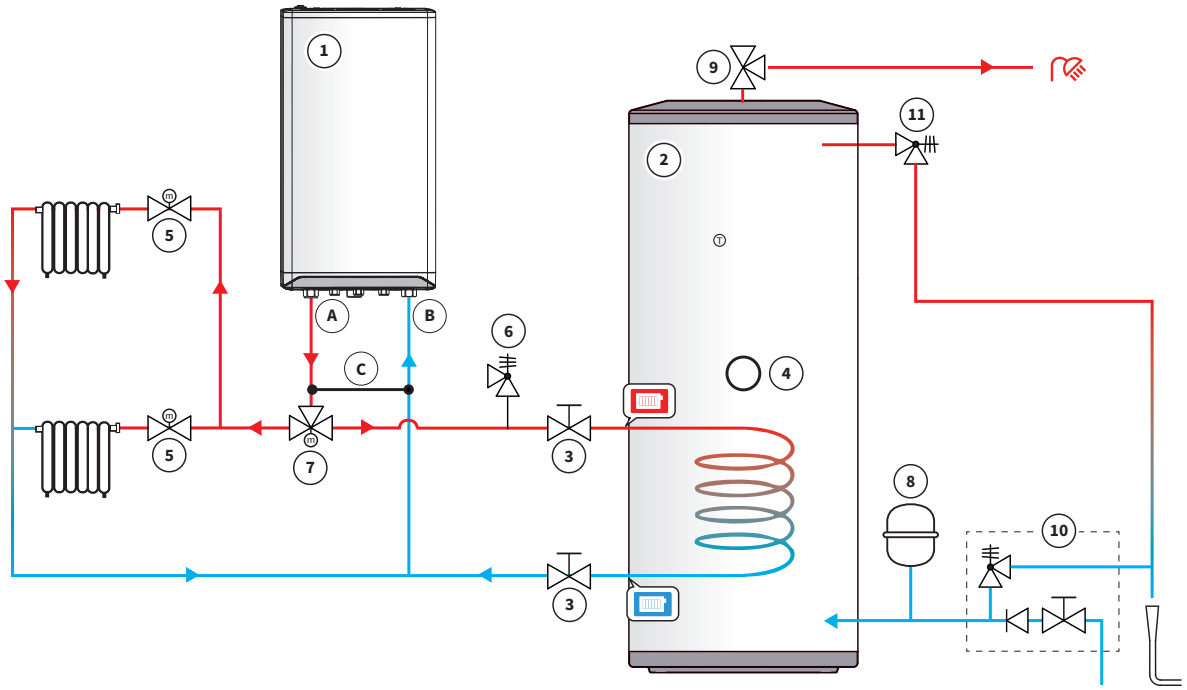
Manual reset the immersion heater after eliminating the cuase of intervention as follows:

- ► Disconnect the power supply
- ► Remove the cover fixing nut
- ► Lightly press the thermostat reset button, using an insulated object with a round tip, in the position indicated, until hearing a click.



11 SCHEMATICS

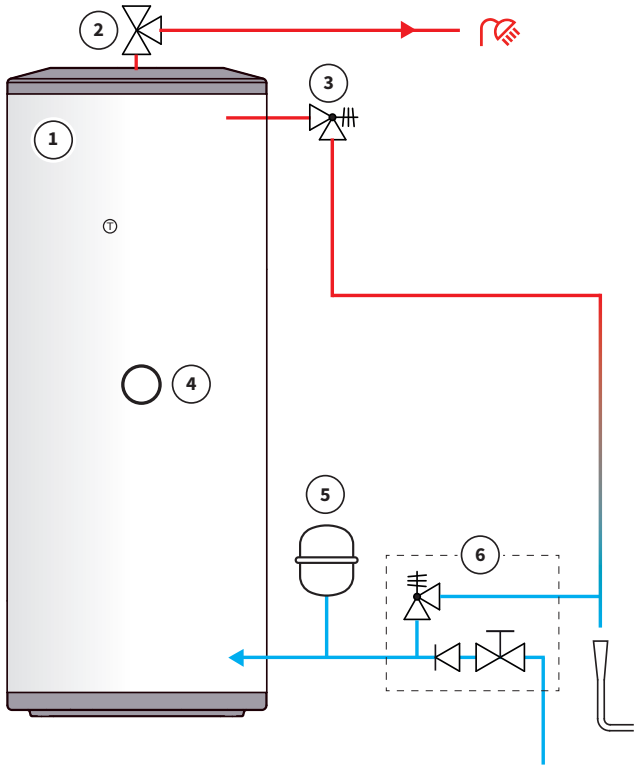
11.1 Schematic overview Boiler - Xylinder



Pos	Description
1	Heat source
2	Xylinder
3	Two port Valve
4	Electric Immersion heater
5	Two port motorised valve
6	Auto air seperator
7	Three port motorised valve

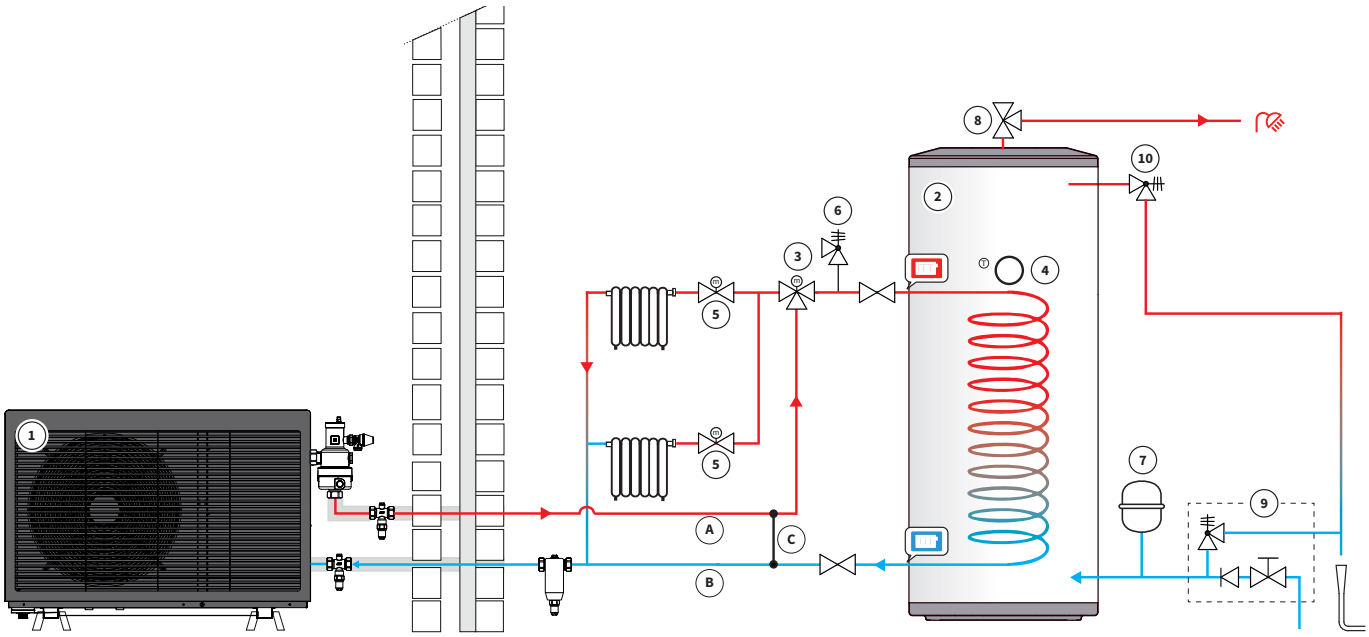
Pos	Description
8	Expansion vessel
9	Hot water thermostatic mixing valve
10	Inlet group
11	Temperature and pressure relief valve
A	Heating flow
B	Heating return
C	Auto bypass

11.2 Schematic overview Direct Xylinder



Pos	Description
1	Xylinder
2	Hot water thermostatic mixing valve
3	Temperature and pressure relief valve
4	Electric Immersion heater
5	Expansion vessel
6	Inlet group

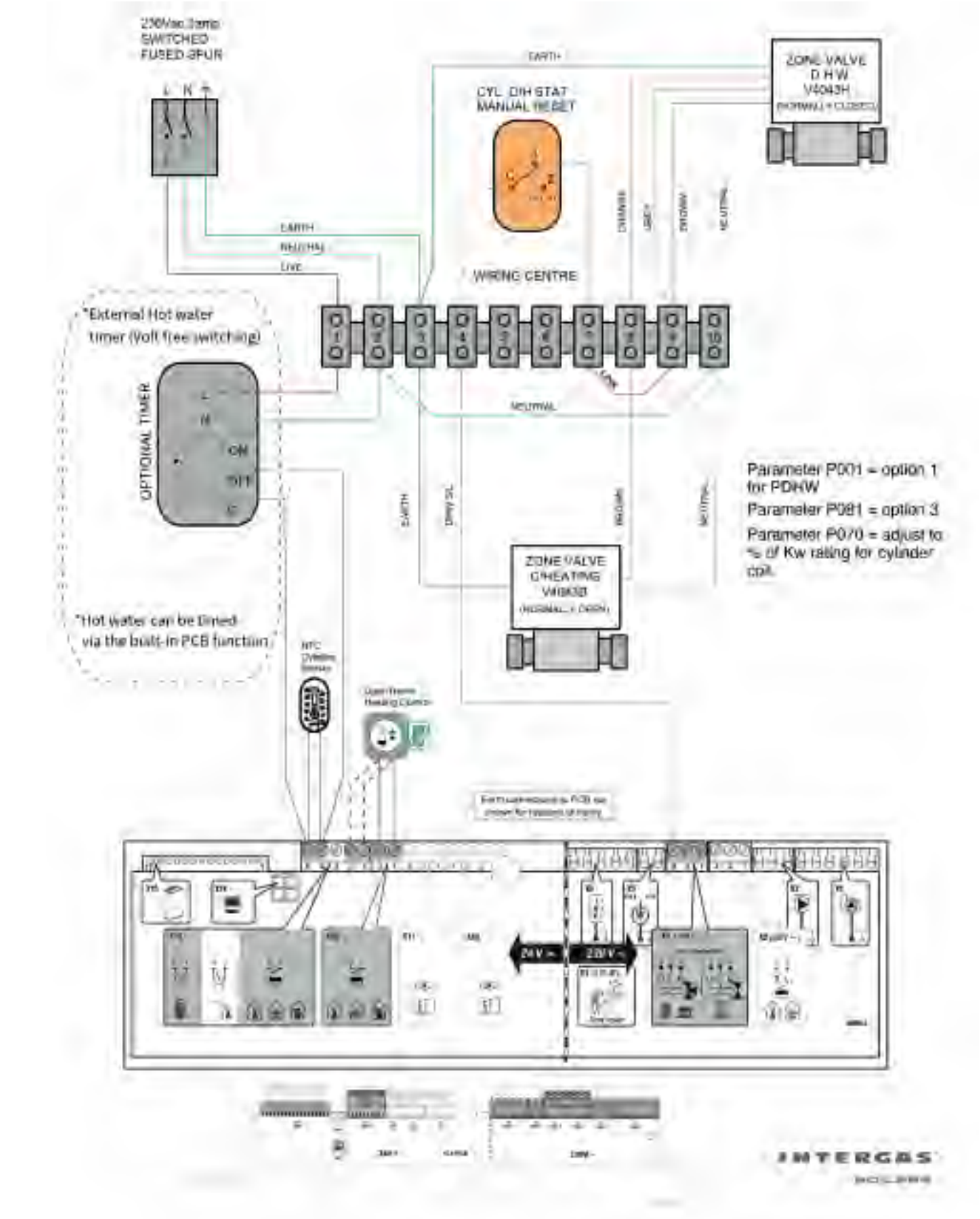
11.3 Schematic overview Heatpump - Xylinder



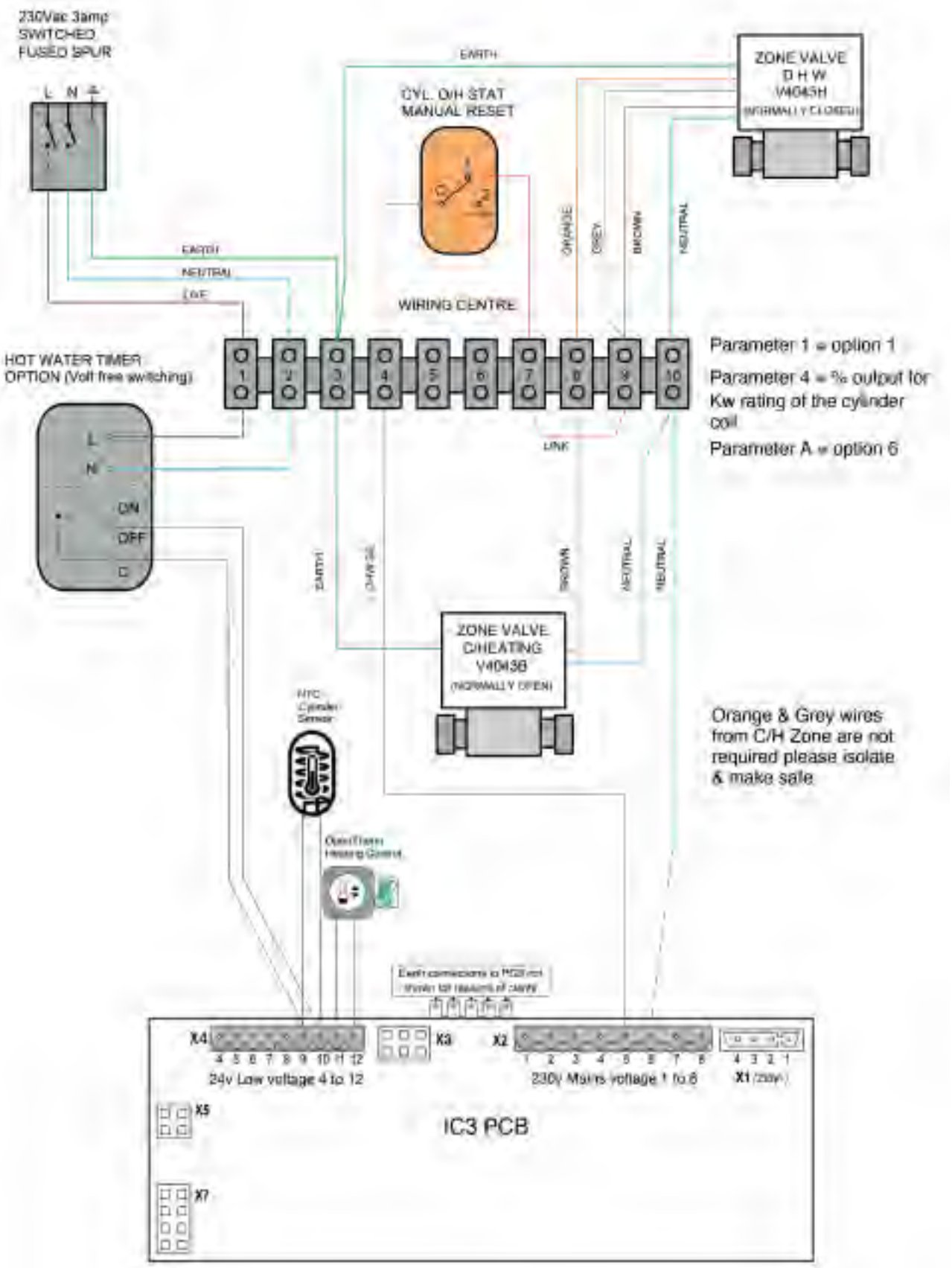
Pos	Description
1	Heat source
2	Xylinder
3	Three port motorised valve
4	Electric Immersion heater
5	Two port motorised valve
6	Auto air seperator

Pos	Description
7	Expansion vessel
8	Hot water thermostatic mixing valve
9	Inlet group
10	Temperature and pressure relief valve
A	Heating flow
B	Heating return
C	Auto bypass

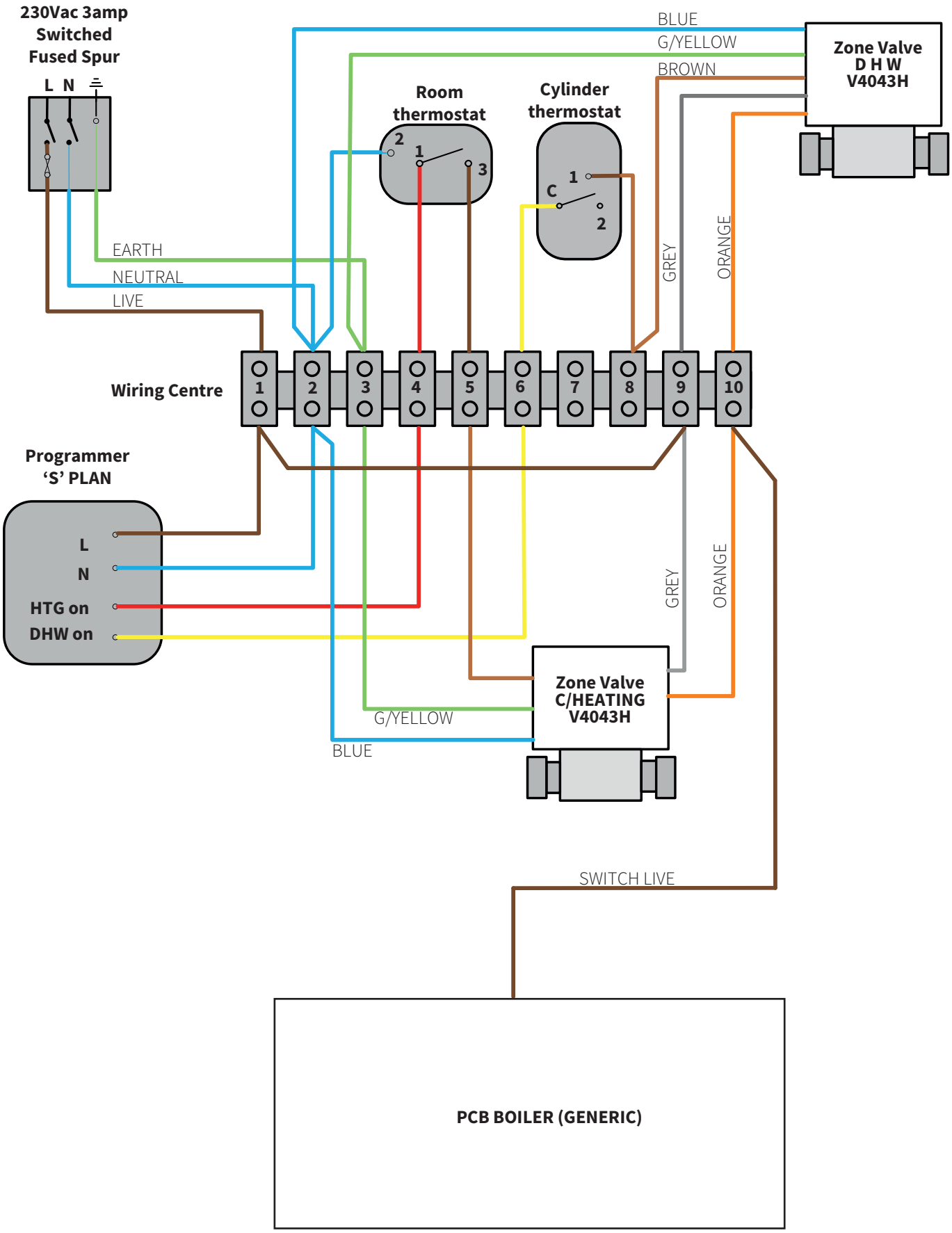
11.4 X-Plan Wiring diagram Intergas X-series boilers



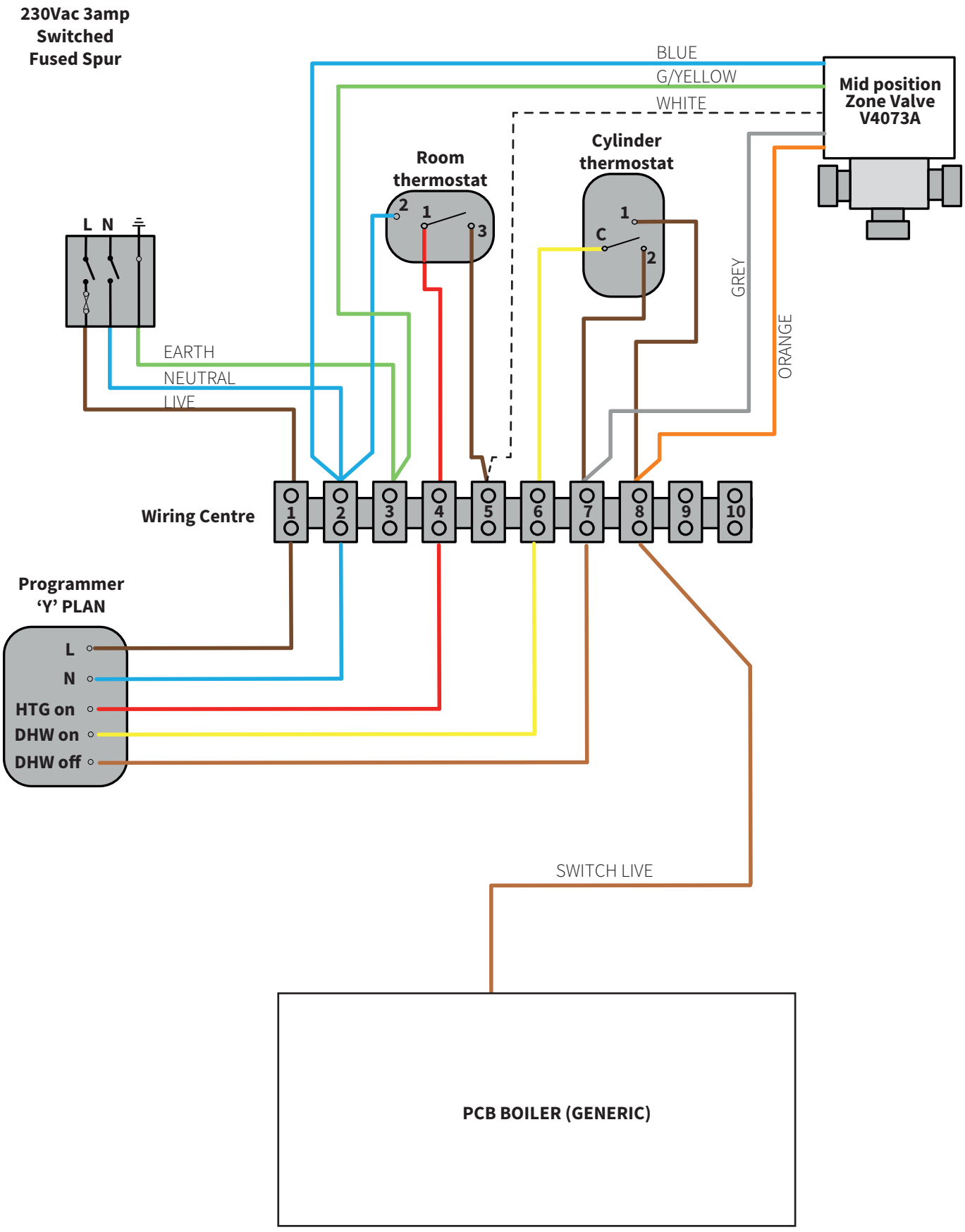
11.5 X-Plan Wiring diagram other Intergas boilers



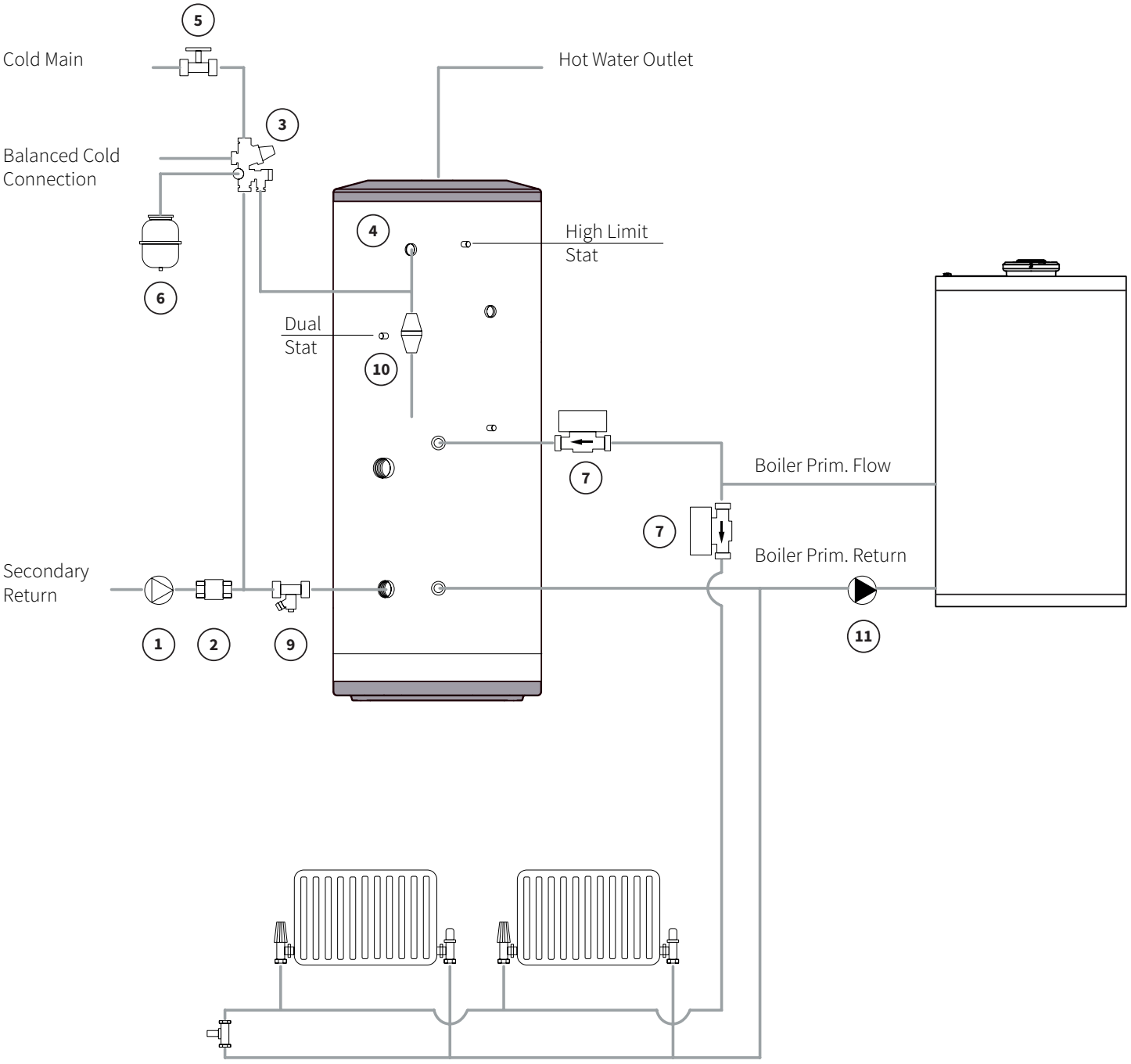
11.6 S-Plan Wiring diagram other boilers (generic)



11.7 Y-Plan Wiring diagram other boilers (generic)

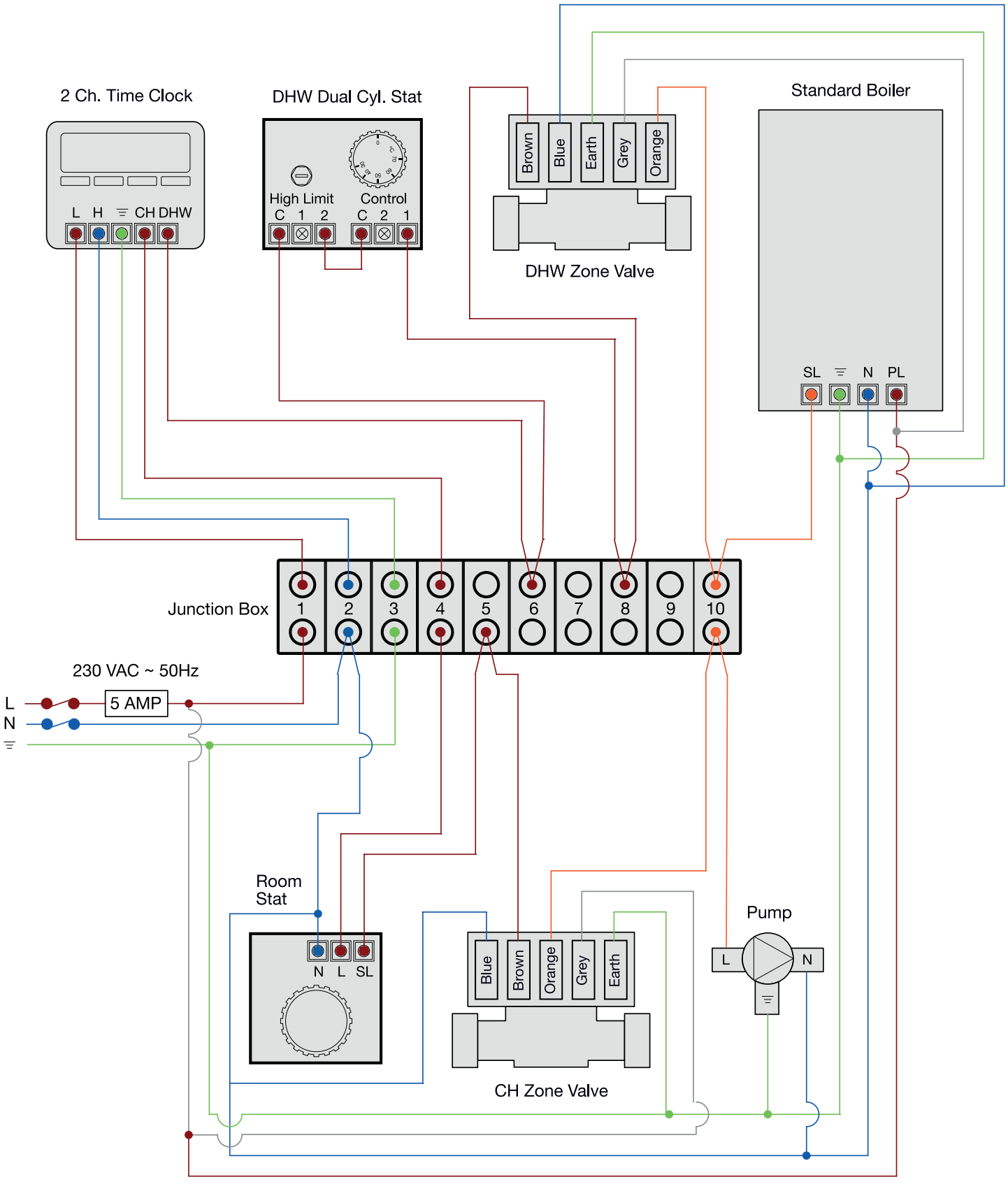


11.8 S-Plan Mechanical diagram Un-Plumbed Xylinder

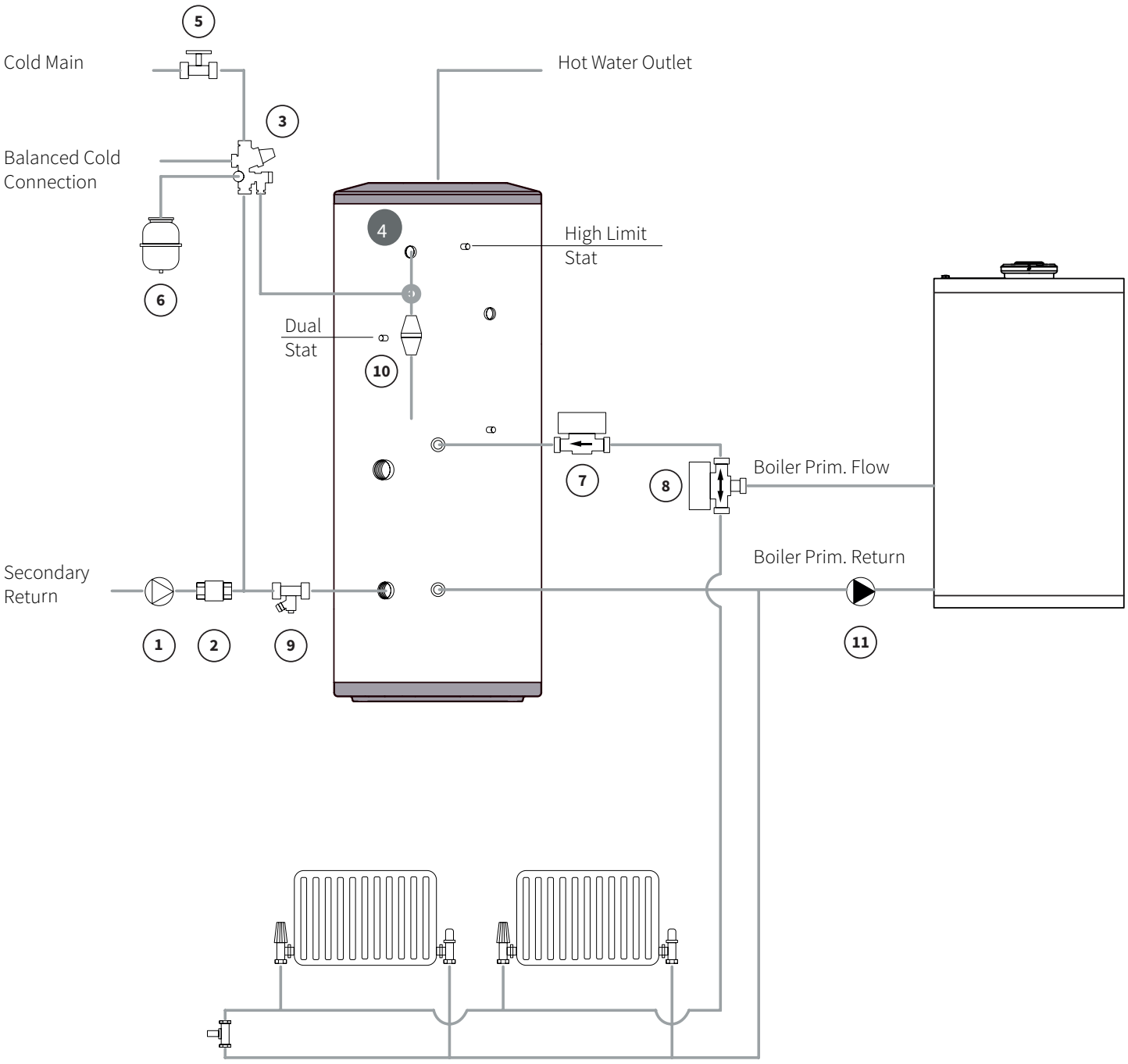


Pos	Description
1	Bronze pump
2	Non return valve (not supplied)
3	Inlet control group
4	Temperature & PRV
5	Isolation valve (not supplied)
6	Expansion vessel with wall bracket
7	Two port zone valve (only one supplied)
9	Drain valve (not supplied)
10	Tundish
11	Heating circ. pump (not supplied, required with heat only boiler)

11.9 S-Plan Wiring diagram Un-Plumbed Xylinder

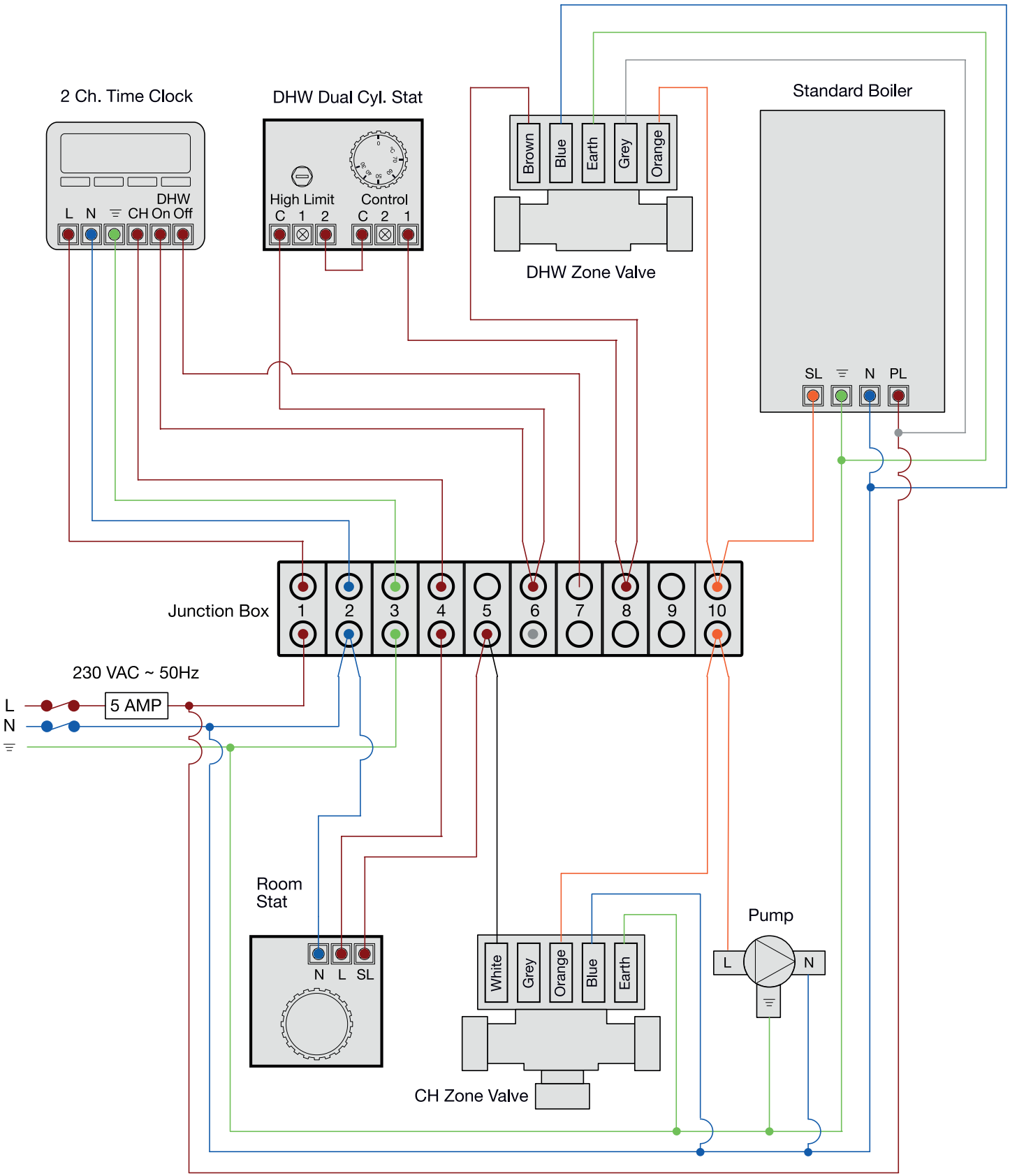


11.10 Y-Plan Mechanical diagram Un-Plumbed Xylinder



Pos	Description
1	Bronze pump
2	Non return valve (not supplied)
3	Inlet control group
4	Temperature & PRV
5	Isolation valve (not supplied)
6	Expansion vessel with wall bracket
7	Two port zone valve
8	Three port zone valve (not supplied)
9	Drain valve (not supplied)
10	Tundish
11	Heating circ. pump (not supplied, required with heat only boiler)

11.11 Y-Plan Wiring diagram Un-Plumbed Xylinder



MAINS PRESSURE HOT WATER STORAGE SYSTEM COMMISSIONING CHECKLIST

This Commissioning Checklist is to be completed in full by the competent person who commissioned the storage system as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Customer name:	Telephone number:
Address:	
Cylinder Make and Model	
Cylinder Serial Number	
Commissioned by (PRINT NAME):	Registered Operative ID Number
Company name:	Telephone number:
Company address:	
	Commissioning date:
To be completed by the customer on receipt of a Building Regulations Compliance Certificate*:	
Building Regulations Notification Number (if applicable)	

ALL SYSTEMS PRIMARY SETTINGS (indirect heating only)					
Is the primary circuit a sealed or open vented system?	Sealed		Open		
What is the maximum primary flow temperature?					°C

ALL SYSTEMS					
What is the incoming static cold water pressure at the inlet to the system?					bar
Has a strainer been cleaned of installation debris (if fitted)?	Yes		No		
Is the installation in a hard water area (above 200ppm)?	Yes		No		
If yes, has a water scale reducer been fitted?	Yes		No		
What type of scale reducer has been fitted?					
What is the hot water thermostat set temperature?					°C
What is the maximum hot water flow rate at set thermostat temperature (measured at high flow outlet)?					l/min
Time and temperature controls have been fitted in compliance with Part L of the Building Regulations?					Yes
Type of control system (if applicable)	Y Plan		S Plan		Other
Is the cylinder solar (or other renewable) compatible?	Yes		No		
What is the hot water temperature at the nearest outlet?					°C
All appropriate pipes have been insulated up to 1 metre or the point where they become concealed					Yes

UNVENTED SYSTEMS ONLY					
Where is the pressure reducing valve situated (if fitted)?					
What is the pressure reducing valve setting?					bar
Has a combined temperature and pressure relief valve and expansion valve been fitted and discharge tested?	Yes		No		
The tundish and discharge pipework have been connected and terminated to Part G of the Building Regulations					Yes
Are all energy sources fitted with a cut out device?	Yes		No		
Has the expansion vessel or internal air space been checked?	Yes		No		

THERMAL STORES ONLY		
What store temperature is achievable?		°C
What is the maximum hot water temperature?		°C

ALL INSTALLATIONS		
The hot water system complies with the appropriate Building Regulations	Yes	
The system has been installed and commissioned in accordance with the manufacturer's instructions	Yes	
The system controls have been demonstrated to and understood by the customer	Yes	
The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer	Yes	

Commissioning Engineer's Signature
Customer's Signature
(To confirm satisfactory demonstration and receipt of manufacturer's literature)

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

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benchmark COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS
www.centralheating.co.uk

SERVICE RECORD

It is recommended that your hot water system is serviced regularly and that the appropriate Service Record is completed.

Service Provider

Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions.

SERVICE 01	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 02	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 03	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 04	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 05	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 06	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 07	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 08	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 09	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 10	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

12 WARRANTY HOT WATER TANKS INTERGAS HEATING LIMITED

Scope

Intergas Heating Ltd Xylinders warrants for 2 years from the date of purchase, that the Product will: i) conform to Intergas Heating Ltd specification, ii) be free from defects in materials and workmanship, subject to conditions below.
Mains water supply - The warranty is voluntarily extended by Intergas Heating Ltd to 25 years for the stainless-steel inner tank from 125 to 300 litres. All components carry a 2-year warranty.
Private supply such as a well, spring, or borehole - The warranty is voluntarily extended by Intergas Heating Ltd to 5 years for the stainless-steel inner tank from 125 to 300 litres. All components carry a 2-year warranty.
For all other product capacities please refer to product literature.
This extended warranty only applies to Products purchased by a consumer, that has been installed for private use and that has been distributed by Intergas Heating Ltd or by a distributor where the Products have been originally sold by Intergas Heating Ltd.
These shall be subject only to the mandatory provisions of the law.
The conditions and limitations set out below shall apply.

Coverage

If a defect arises and a valid claim is received within the statutory warranty period, at its option and to the extent permitted by law, Intergas Heating Ltd shall either: i) repair the defect, or ii) replace the product with a product that is identical or similar in function, or iii) refund the purchase price. If a defect arises and a valid claim is received after the statutory warranty period has expired, but within the extended warranty period, Intergas Heating Ltd will supply a product that is identical or similar in function. Intergas Heating Ltd will in such cases contribute towards any associated costs. Any exchanged Product or component will become the legal property of Intergas Heating Ltd. Any valid claim or service does not extend the original warranty. The replacement Product or part does not carry a new warranty.

Conditions

The Product is manufactured to suit public and private water supplies. However, there are certain water chemistries (outlined below) that can have a detrimental effect on the Product and its life expectancy. If there are uncertainties regarding water quality, the local water supply authority can supply the necessary data.
The warranty applies only if the conditions set out below are met in full:

- The Product has been installed by a professional installer, in accordance with the instructions in the installation manual and allrelevant Codes of Practice and Regulations in force at the time of installation.
- The Product has not been modified in any way, tampered with or subjected to misuse and no factory fitted parts have been removedfor unauthorized repair or replacement.
- The Product has only been connected to a domestic mains water supply in compliance with the UK Drinking Water quality regulations. The water should not be aggressive, i.e. the water chemistry shall comply with the following:
  - Chloride < 250 mg / L
  - Electric Conductivity (EC) @25°C < 750 uS / cm
  - Saturation Index (LSI) @80°C > - 1,0 / < 0,8
  - pH level > 6.0/ < 9.5
- The immersion heater has not been exposed to hardness levels exceeding 5°dH (180 ppm CaCO3).). Warranty is invalid if the product is affected by accumulation of limescale/ calcium deposits . A water softener is recommended in such cases.
- Any disinfection has been carried out without affecting the Product in any way whatsoever. The Product shall be isolated from any system chlorination.
- The Product has been in regular use from the date of installation. If the Product is not intended to be used for 60 days or more, it must be drained.
- The immersion heater element must be removed for inspection on service after 5 years. The threads must be checked for corrosion. If signs of corrosion are evident, the element must be replaced. Subsequently the element must be removed and examined every 3 years. Failure to do so in areas of aggressive water may result in the element separating from the Xylinder with consequential escape of water.
- Service and/or repair shall be done according to the installation manual and all relevant codes of practice. Any replacement parts used shall be original Intergas Heating Ltd spare parts.
- The Service record / Benchmark logbook has been completed and updated after each annual service. Invoices should be kept as proof of service.
- The Commissioning Checklist / Benchmark certificate has been completed at the time of installation.
- Any third-party costs associated with any claim has been authorized in advance by Intergas Heating Ltd in writing.
- The purchase invoice and/or installation invoice, a water sample as well as the defective product is made available to Intergas Heating Ltd upon request.

Failure to follow these instructions and conditions may result in product failure, and water escaping from the Product.

Limitations

The warranty does not cover:

- Any fault or costs arising from incorrect installation, incorrect application, lack of regular maintenance in accordance with theinstallation manual, neglect, accidental or malicious damage, misuse, any alteration, tampering or repair carried out by a non-professional, any fault arising from the tampering with or removal of any factory fitted safety components or measures.
- Any consequential damage or any indirect loss caused by any failure or malfunction of the Product whatsoever.
- Any pipework or any equipment connected to the Product.
- The effects of frost, lightning, voltage variation, lack of water, dry boiling, excess pressure or chlorination procedures.
- The effects of stagnant (de-aerated) water if the Product has been left unused for more than 60 days consecutively.
- Damage caused during transportation. Buyer shall give the carrier notice of such damage.
- Costs arising if the Product is not immediately accessible for servicing.

These warranties do not affect the Buyer's statutory rights. Unit 2 Easter Park Worcester Road Kidderminister West Midlands DY11 7AR T +44 (0)1527 888000 E sales@intergas-heating.co.uk

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