



Ashburn stoves

Unvented Domestic Hot Water Kit UNVO15

**Additional instructions to be used when installing a Regulus heat store
with DHW heat exchanger over 15 litres capacity**

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UNVO15 unvented domestic hot water kit

The following guidance should be adhered to during the installation of this product.

These instructions should be left with the home owner.

Installation of products providing domestic hot water are subject to the water regulations and approved document G and L of the building regulations. To help ensure compliance with the relevant water and building regulations this product is supplied with the necessary safety and control devices required to connect to the cold water mains.

Installation of heat stores providing domestic hot water should only be undertaken by persons holding their G3 unvented qualifications who should notify the installation to the local authority.

The heat store is made from a heavy grade of steel which should give many years of good service providing the system design is sound and the heating water has been thoroughly flushed using a system cleanser and treated with a corrosion inhibitor such as provided by Sentinel or Fernox. Any issues arising from poor system design or failure to treat the system water correctly will void the warranty.

Frost protection must be provided for the heat store and its safety components.

Installation

Siting

The heat store should be sited on a flat level base capable of supporting its weight when full of water. This can be calculated by adding the dry weight found on the data badge and adding to this the weight of water inside the heat store. 1 litre of water weighs 1 kilo.

The insulation can be removed to help moving the heat store through restricted spaces. Instructions for refitting the insulation are in the main part of this manual.

Installation should consider access to components for the service, removal and replacement of parts.

Water connections

It is recommended that the water supply is in 22mm copper pipe from the incoming water supply to the heat store. A smaller pipe may still give good performance providing the pressure and flow rates are good.

A guide to minimum flow rates are that the incoming cold water main should provide 21 litres per minute whilst maintaining 1bar pressure. Lower pressure and flow rates can still provide adequate performance if system design is considered carefully. The biomass safety valve performance will be reduced below this figure.

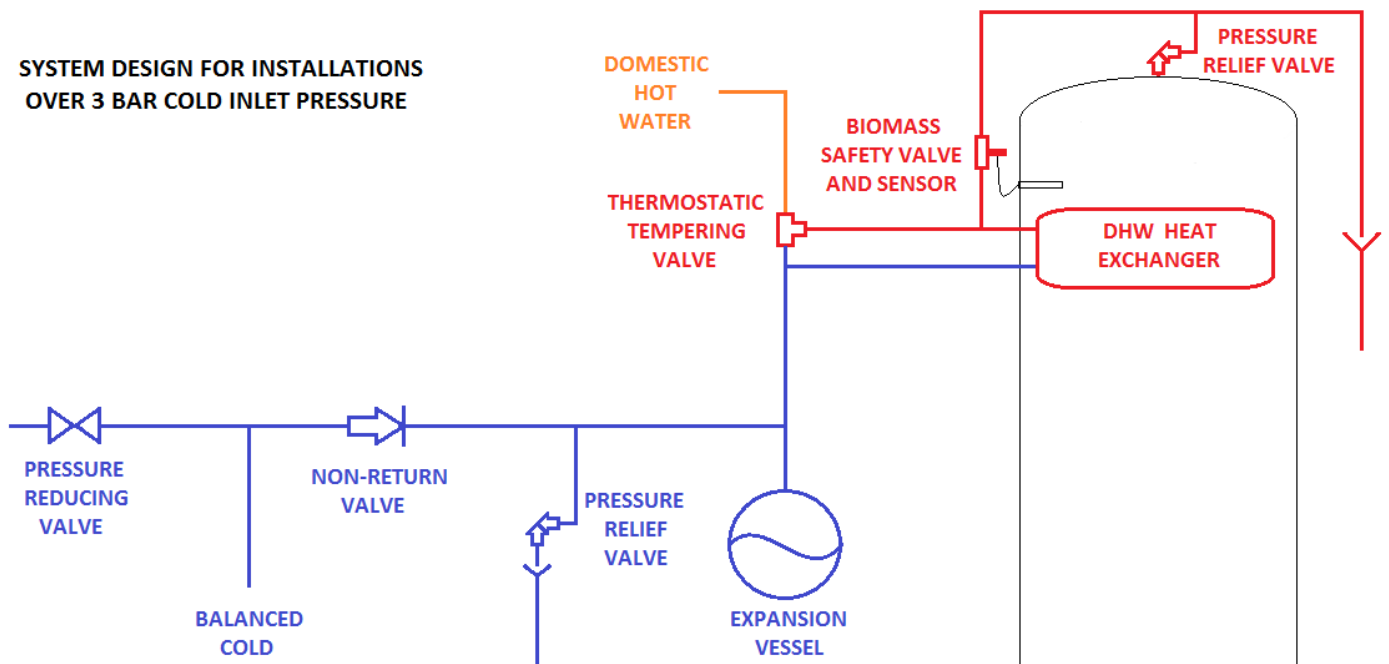
If this heat store is to be connected to an uncontrolled heat source such as a solid fuel boiler stove then a cold water isolation valve should **not** be fitted to the inlet of the heat store and controls.

Showers, bidets and monoblock taps should be provided with cold water from the balanced cold connection. If this is not adhered to then back pressure can result in the operation of safety devices.

Domestic hot water discharge pipes should be as short as possible to prevent water wastage and improve reaction time at the outlet.

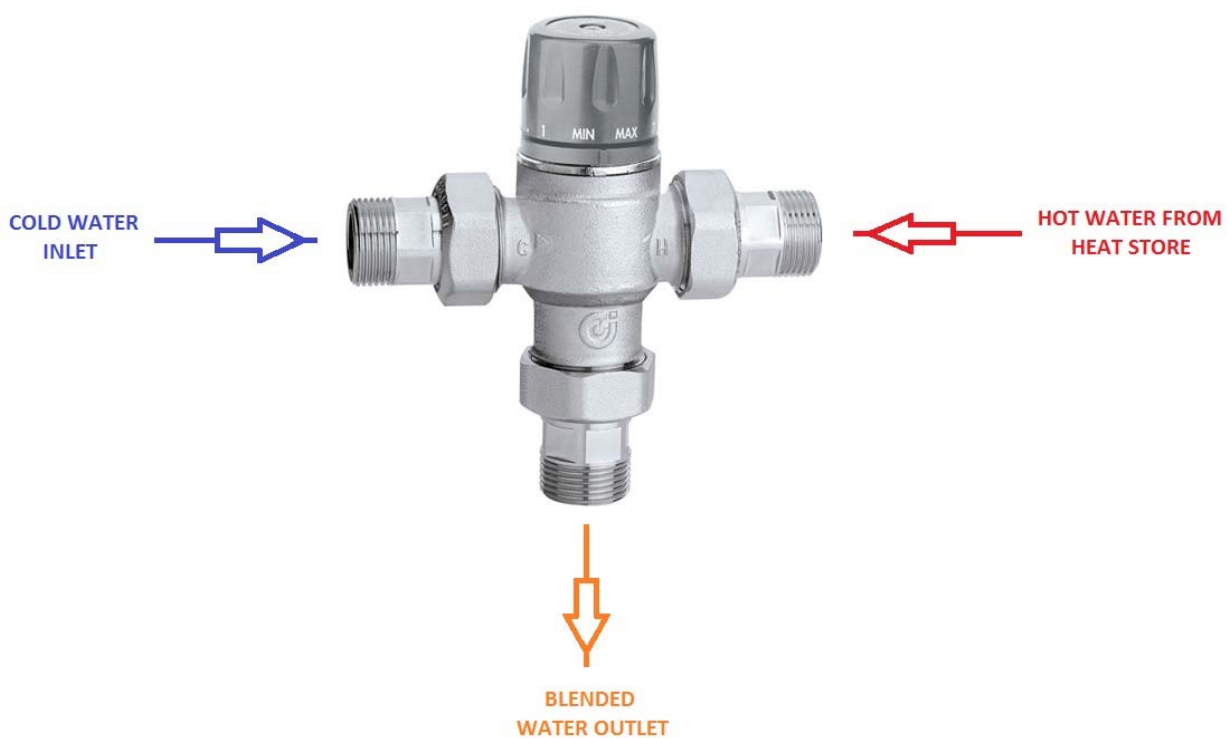
CAUTION. This system is designed for connection using the safety group supplied including pressure reducing valve, non-return valve, balanced cold connection and expansion vessel. These components must be fitted as shown in the diagram below.

SYSTEM DESIGN FOR INSTALLATIONS OVER 3 BAR COLD INLET PRESSURE



Domestic hot water outlet

Primary store water can be in excess of 85°C and the domestic hot water provided via the heat exchanger could also reach this temperature. For this reason a tempering valve is supplied and must be fitted as shown in the diagram below. Its purpose is to limit the temperature of the domestic hot water at the point of use to a safer level. The temperature is adjustable between 45°C and 65°C.

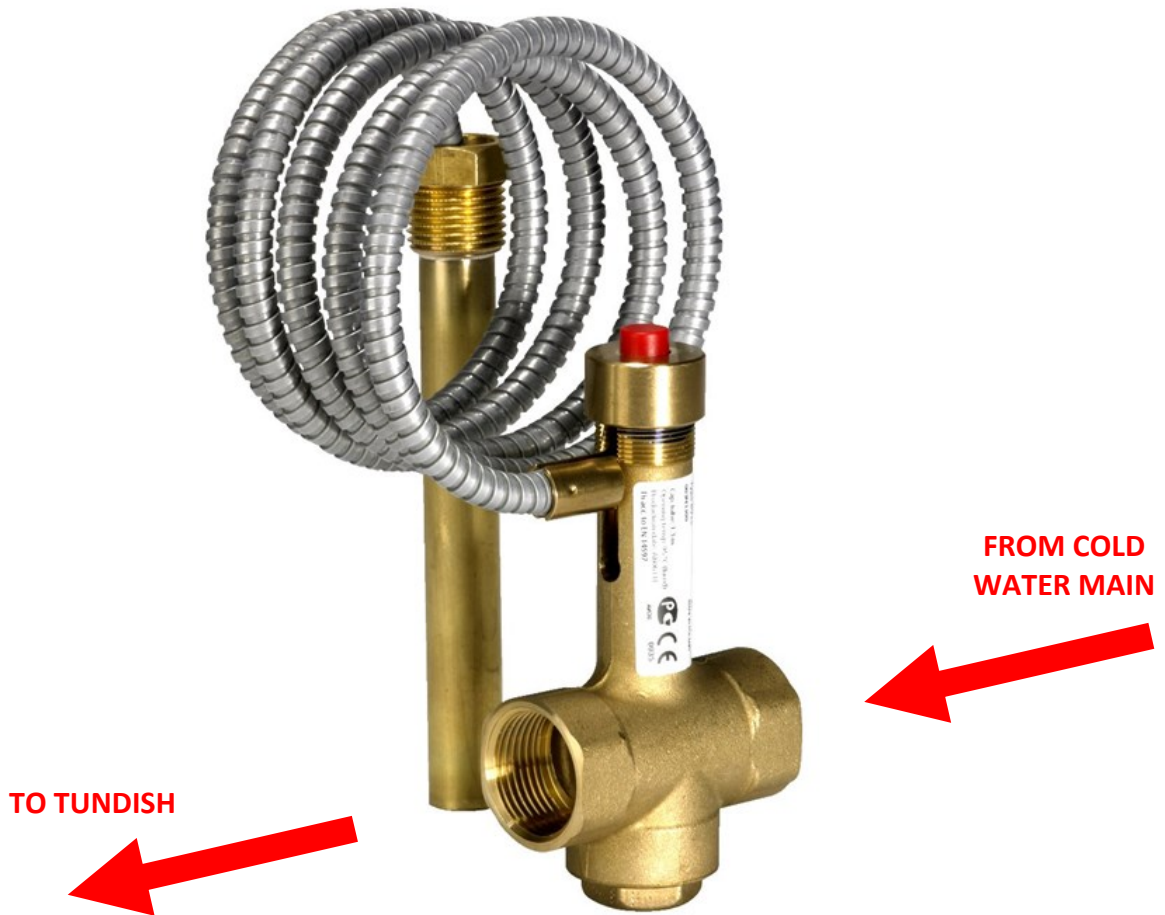


Biomass safety valve

The biomass safety valve forms an important part of the safety devices fitted to this heat store, it should not be removed or omitted from installation. This valve will allow the domestic hot water heat exchanger to act as a cooling loop (quench coil) for an uncontrolled heat source should the heat store become overheated. The biomass safety valve opens at 95°C +/- 2°C.

CAUTION.

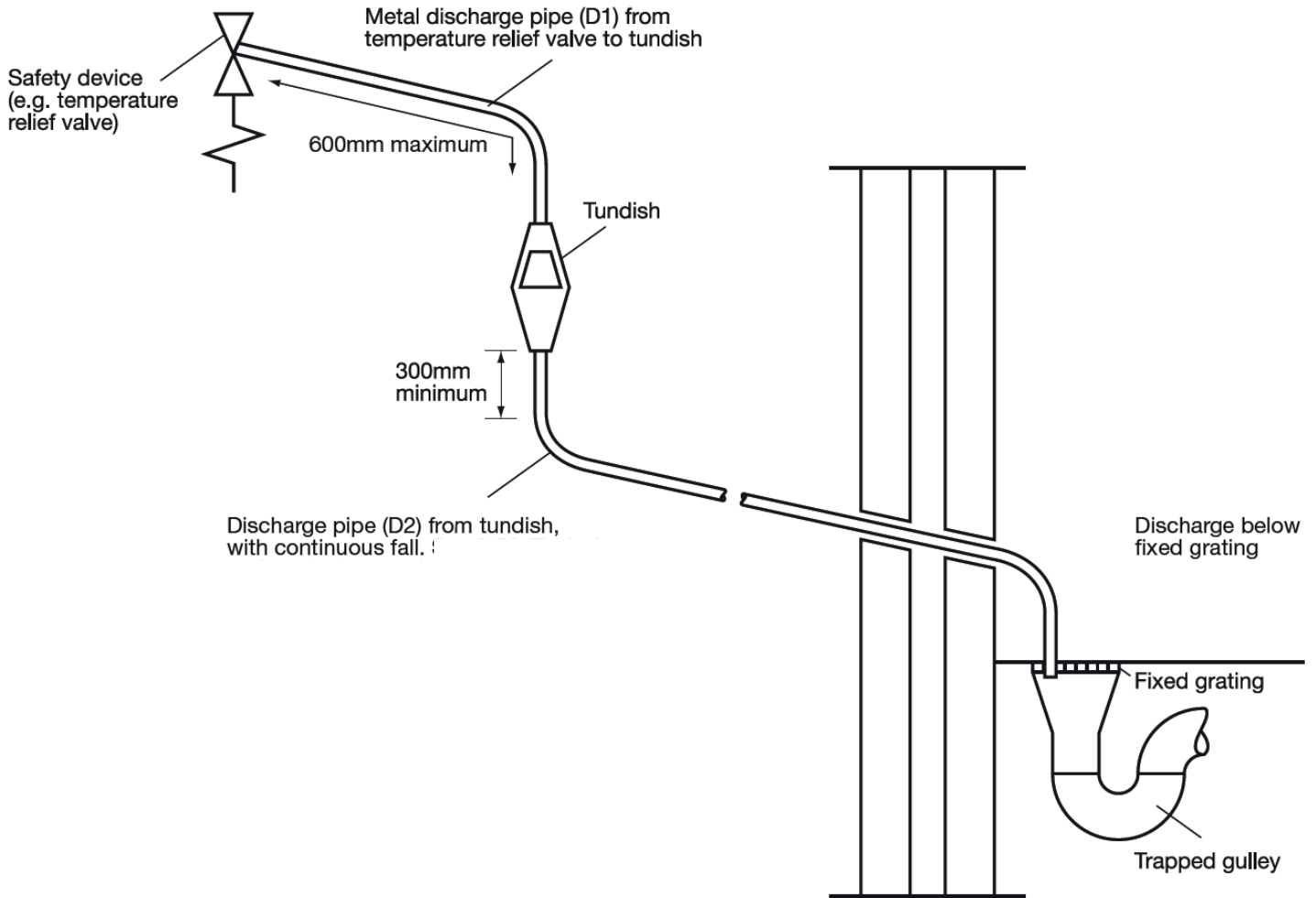
The biomass safety valve **must be fitted** to the system and the sensor **must be fitted** along with its pocket into the heat store as shown in the diagram above



Discharge pipes from safety devices

D1 and D2 discharge pipes should be fitted in compliance with building regulations approved document G, a free copy of which can be obtained from the internet.

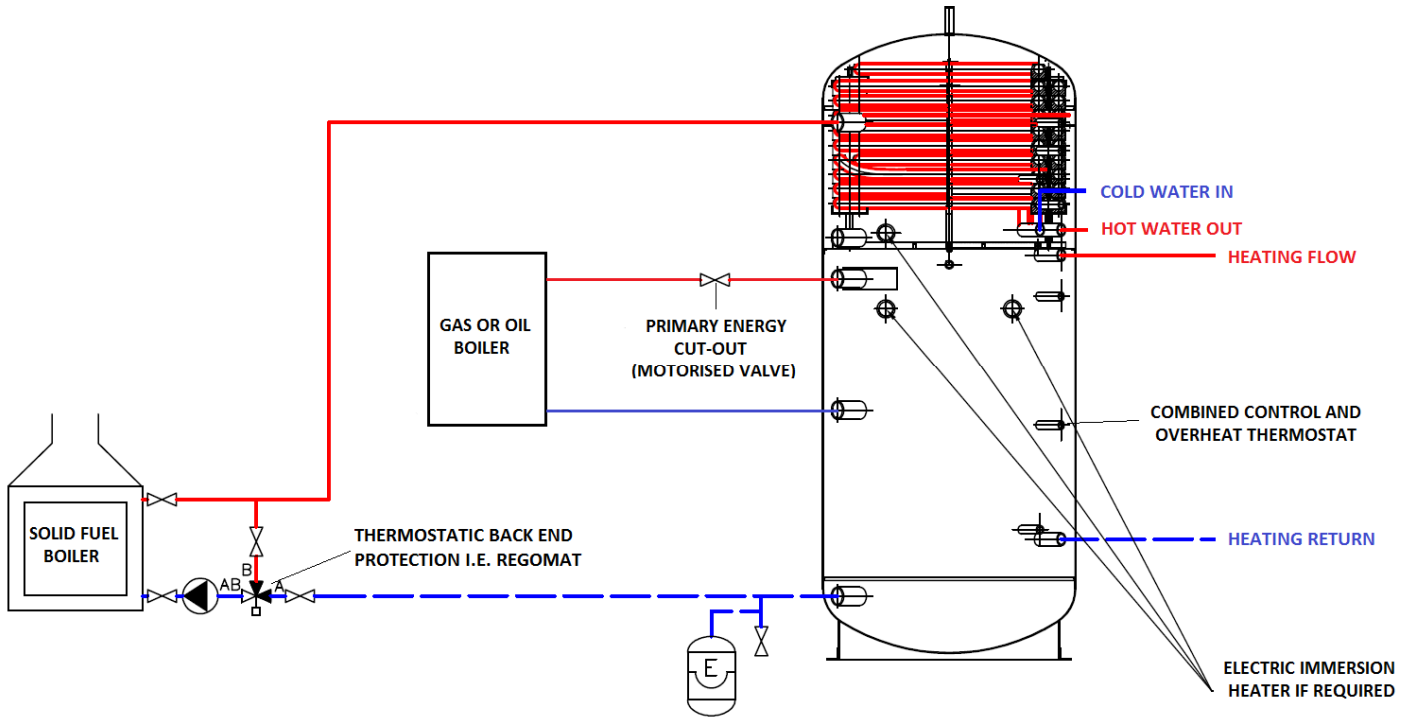
Below is a guide to discharge arrangements and sizing using copper pipe.



Valve outlet size	Minimum size of discharge pipe D1*	Minimum size of discharge pipe D2* from <i>tundish</i>	Maximum resistance allowed, expressed as a length of straight pipe (i.e. no elbows or bends)	Resistance created by each elbow or bend
G $\frac{1}{2}$	15mm	22mm	Up to 9m	0.8m
		28mm	Up to 18m	1.0m
		35mm	Up to 27m	1.4m
G $\frac{3}{4}$	22mm	28mm	Up to 9m	1.0m
		35mm	Up to 18m	1.4m
		42mm	Up to 27m	1.7m
G1	28mm	35mm	Up to 9m	1.4m
		42mm	Up to 18m	1.7m
		54mm	Up to 27m	2.3m

Energy cut-out

In addition to a control thermostat a non-resetting overheat thermostat is provided which acts upon a motorised valve fitted to the primary flow from the energy source. This method of energy cut-out is only suitable for gas, electric and oil energy sources under effective thermostatic control and should **not** be fitted to a solid fuel appliance such as gasification boilers or stoves with back boilers. The gas or oil boiler is interlocked via the motorised valve end switch. The motorised valve receives its power from the supplied combined overheat and control thermostat which is fitted to the ½" F.I. connection a third of the way up the heat store.



Immersion heaters

The manufacturer supplies immersion heaters in various heat outputs according to requirements.

Commissioning

The biomass and pressure relief safety valves should be tested ensuring water flows to waste via the tundish. The strainer should be removed from the pressure reducing valve to remove any installation debris collected. Functional checks of all other safety and control devices should be made and any water leaks observed should be repaired.

Maintenance

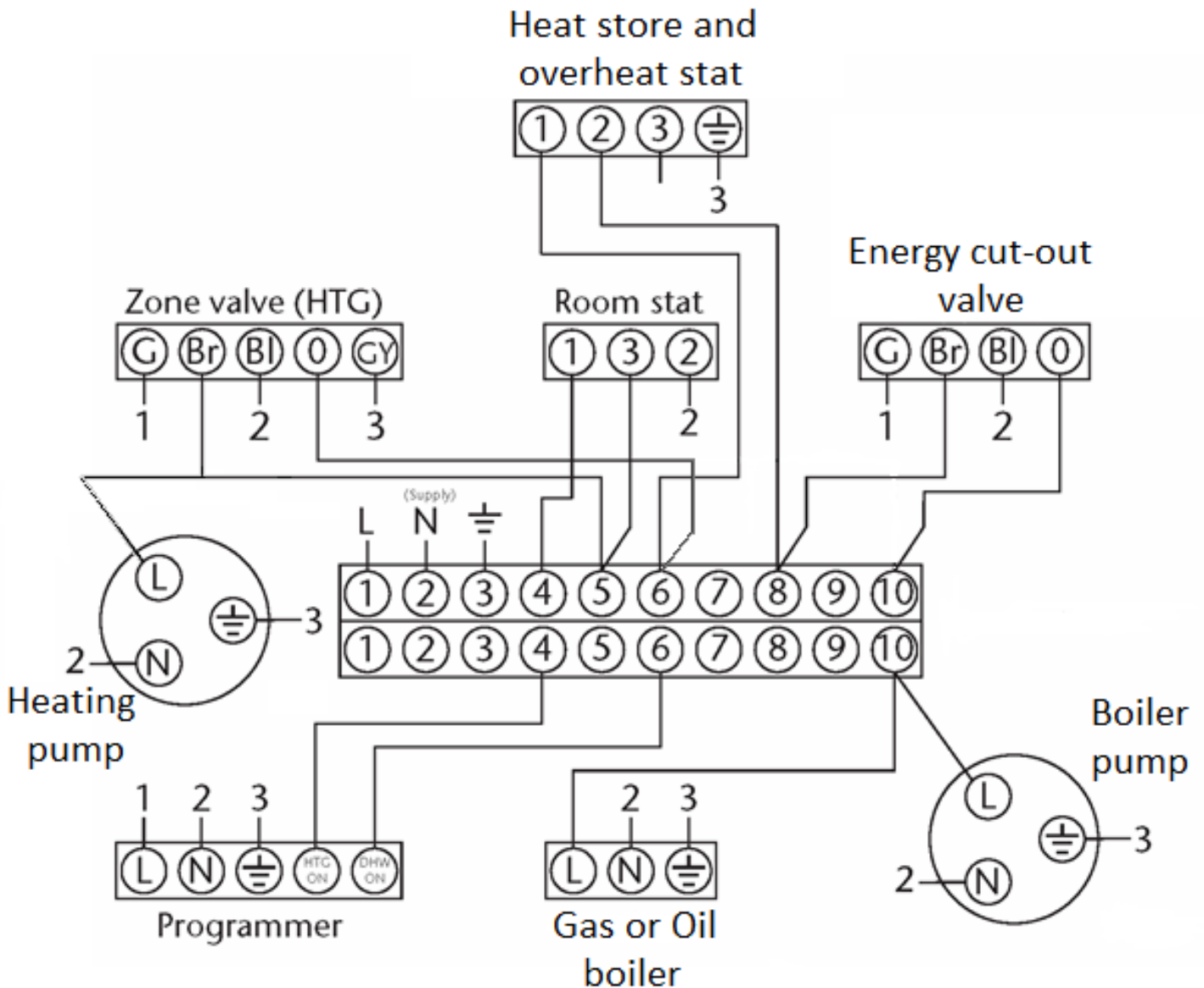
The biomass safety valve should be tested annually by pressing the manual activating button and ensuring water flows to waste via the tundish.

The strainer should be removed from the pressure reducing valve annually to remove any debris collected.

Functional checks of all other safety and control devices should be made and any water leaks observed should be repaired.

Electrical Wiring

Electrical wiring must comply with current electrical regulations and British standards as applicable. Connections must be carried out by competent and suitably qualified persons.



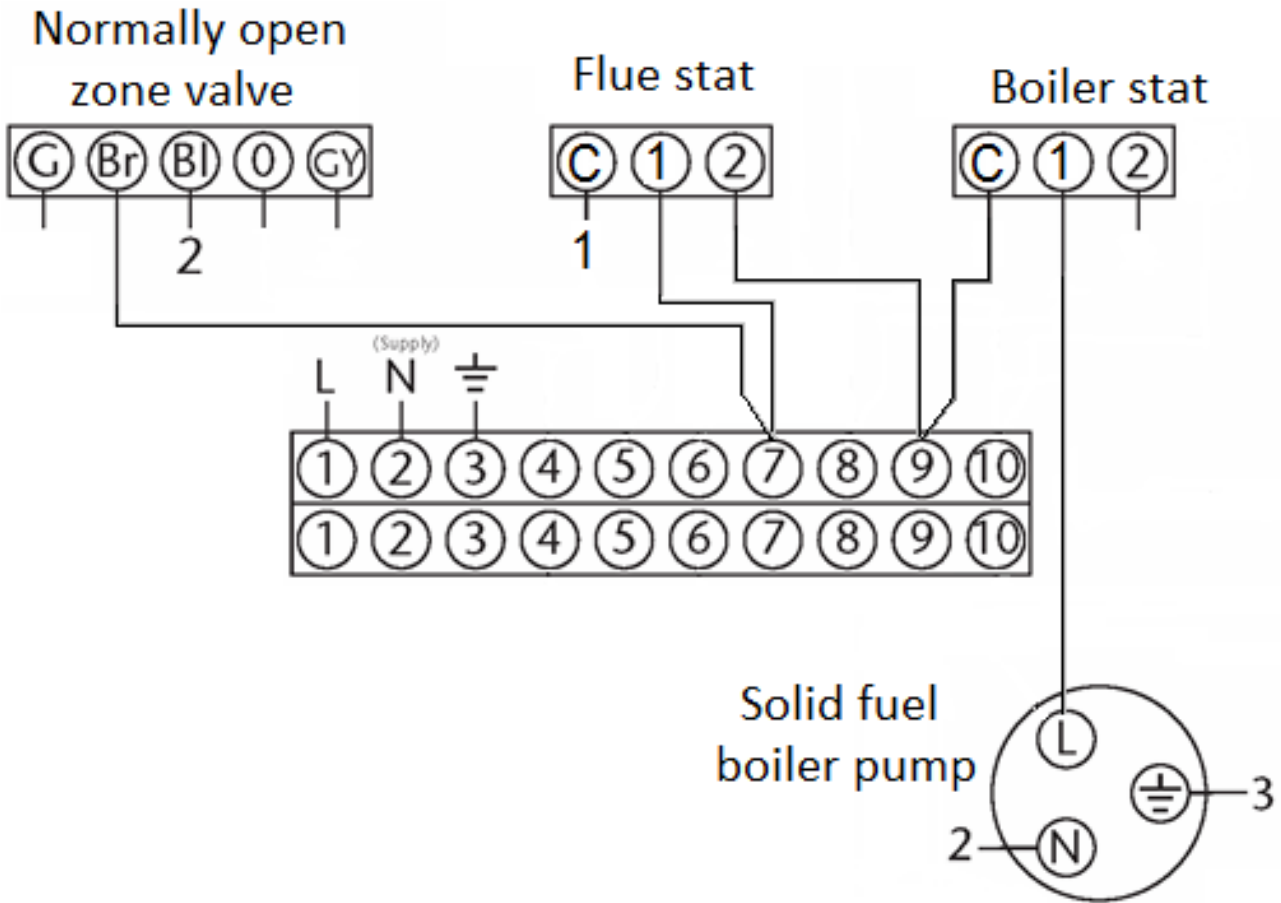
Anti-gravity circulation valve

For solid fuel appliances without advanced controls to turn off the primary circulation pump it is possible to fit a flue thermostat which will effectively stop circulation once it senses the boiler is not producing heat. This is fitted in conjunction with a boiler thermostat (or pipe thermostat) and correctly sized normally open (NO) motorised valve which is fitted to the primary flow from the solid fuel appliance. This motorised valve powers shut on flue temperature drop, stopping gravity circulation and preventing the heat store water from cooling down through the boiler. In the case of flue temperature rise or power failure the de-energised motorised valve springs open.

Caution.

This method of preventing unwanted gravity circulation is only suitable for solid fuel appliances fitted with a cooling loop (quench coil) or with a directly connected open vent. In both cases a safety pressure relief valve must be fitted no more than 1 metre from the appliance on the flow pipe and before the normally open motorised valve.

The following wiring diagram should be used in conjunction with the diagram above.



We recommend that the flue thermostat is set to approximately 50°C, the boiler thermostat is set to 60°C and the heat store control thermostat is set to 70°C. As is usual with this type of installation some degree of fine tuning will be required.

Whilst these instructions are comprehensive they are by no means exhaustive or cover every application possible to encounter.

If in doubt – Ask.