



Xstream

DESIGN AND INSTALLATION INSTRUCTIONS

**AN UNVENTED
DOMESTIC HOT
WATER STORAGE
CYLINDER**



kiwa
approved
product



UK BUILDING REGULATIONS

kiwa
approved
product



UK WATER SUPPLY
REGULATIONS

**TESTED BY KIWA EVALUATION AND TESTING CENTRE AND
FOUND TO COMPLY WITH THE BUILDING REGULATIONS**

**PLEASE LEAVE THESE INSTRUCTIONS ADJACENT TO THE
CYLINDER**

In the interest of continuously improving the Xstream range, Gledhill Building Products Ltd reserve the right to modify the product without notice, and in these circumstances this booklet, which is accurate at the time of printing, should be disregarded



**Gledhill Building Products
Limited**

Issue 2 : 07-05

Section	Page
Description	3-4
System Design	5-7
Installation	8-14
Commissioning	15
Servicing/Maintenance	15
Fault Finding	16
Parts	17
Terms & Conditions	19

These instructions should be read in conjunction with the installation/servicing instructions issued by the manufacturer of the heat source being used.

Any installation must be in accordance with the relevant requirements of the Gas Safety Regulations, Local Building Regulations, I.E.E. Wiring Regulations and Byelaws of the Local Water Undertaking. It should be read in accordance with the relevant recommendations of the following:

BS 6798; BS 5549; BS 5546;
BS 5440:1; BS 5440:2; CP 331:3
BS 6700; BS 5258 and BS 7593: 1992

It must be installed by a competent person as defined by part G3 of the Building Regulations. Manufacturers notes must NOT be taken as over-riding statutory obligations.

Xstream is covered by Section G3 of the Building Regulations and is therefore notifiable to Building Control.

This information is provided to assist generally in the selection of equipment.

Responsibility for selection and specification of our equipment must however remain that of our customer and any experts or consultants concerned with the installation(s).

PLEASE NOTE: THAT WE DO NOT THEREFORE ACCEPT ANY RESPONSIBILITY FOR MATTERS OF DESIGN SELECTION OR SPECIFICATION, FOR THE EFFECTIVENESS OF AN INSTALLATION OR SYSTEM CONTAINING ONE OF OUR PRODUCTS UNLESS SPECIFICALLY REQUESTED TO DO SO IN WRITING.

All goods are sold subject to our Conditions of Sale which are set out at the rear of this specification. In the interest of continuously improving the Xstream range, Gledhill Building Products Limited reserve the right to modify the product without notice, and in these circumstances this booklet, which is accurate at the time of printing, should be disregarded. An updated set of Instructions will be produced and supplied with new appliances and will be made available for other appliances on request.

A KIWA PRODUCT APPROVED TO COMPLY WITH ALL RELEVANT PARTS OF THE BUILDING REGULATIONS AND WATER SUPPLY (WATER FITTINGS) REGULATIONS.

XSTREAM IS PRODUCED UNDER AN ISO 9001:2000 QUALITY SYSTEM APPROVED BY BSI.



*The code of practice for the installation,
commissioning & servicing of central heating systems*

As part of the industry wide "Benchmark" Initiative all Gledhill Xstreams now include a Benchmark Installation, Commissioning and Service Record Log Book. Please read carefully and complete all sections relevant to the appliance installation. The details of the Log Book will be required in the event of any warranty work being required. There is also a section to be completed after each regular service visit. **The completed Log Book and these instructions should be left with the cylinder in the pocket provided.**

DESCRIPTION

MANUFACTURER GLEDHILL WATER STORAGE LTD

Maximum inlet pressure to Pressure Reducing Valve	6 bar	[If incoming mains exceed this static pressure] [a pressure reducing valve should be fitted]
Operating pressure (PRV setting)	1.5 bar	[upstream of the cylinder set at 5 bar.]
Expansion Relief Valve setting	3 bar	
Maximum primary working pressure	3.5 bar	
Opening pressure of T & P Relief Valve	4 bar	
Opening temperature of T & P Relief Valve	90°C	
Energy cut-out thermostat setting	80°C	
Immersion heater: Redring Type GU 11TC Rating: 3kW, 240V AC		
Drain tap will empty 100% of contents		

All cylinders are manufactured in accordance with the requirements of BS7206 : 1990.

The tundish must be positioned so that it is visible to the occupant and is away from electrical devices.

Components supplied with Xstream:
Expansion relief/PRV combination valve
Temperature and Pressure Relief Valve
Control thermostat
Energy cut-out thermostat
Energy cut-out motorised valve (indirects only)
Tundish
Immersion heater

(Note: Two immersion heaters are supplied with the direct Xstream)

In any situation where the volume of heated pipework (eg. secondary circulation pipes or manifold pipework for multiple units) exceeds 10 litres, then an additional expansion vessel must be fitted to accommodate the extra expansion volume.

HANDLING BEFORE INSTALLATION

Xstream must be handled with care and stored the correct way up in a dry place. Any manual handling/lifting operations will need to comply with the requirements of the Manual Handling Operations Regulations issued by the H.S.E.

The appliance can be moved using a sack truck on the rear face although care should be taken and the route should be even.

In apartment buildings containing a number of storeys we would recommend that the appliances are moved vertically in a mechanical lift.

If it is proposed to use a crane expert advice should be obtained regarding the need for slings, lifting beams etc.

A specific manual handling assessment is shown in Appendix B at the rear of this manual.

MAINTENANCE

Modifications should not be made to this product. Replacement parts, including immersion heaters, should be purchased from Gledhill Building Products, or agents approved by them.

Unvented hot water storage vessels need regular routine checks, and these are detailed below. It is for this reason that this manual must always be left with the Xstream.

It is recommended that these checks be carried out at the time of boiler maintenance by a qualified installer:

1. Manually open the relief valves in turn, and check that water is discharged from the valves and runs freely through the tundish and out at the discharge point. Ensure that the valves re-seat satisfactorily.
2. Turn the mains water off and remove and clean the strainer element in the Pressure Reducing Valve.
3. Check the charge pressure in the expansion vessel and repressurise if required
4. Re-fill the system and ensure that all relief valves have re-seated.

DESCRIPTION

INTRODUCTION

Xstream is a range of unvented hot water storage appliances designed to provide mains pressure hot water to comply with Section G3 of the Building Regulations. The Xstream incorporates a twin tank design and is housed in a pre-finished rectangular case with all connections front mounted. The appliance is extremely well insulated using high density HCFC free foam insulation with an ozone depleting potential (ODP) of zero. It is fitted with all necessary safety devices and supplied with all the necessary control devices to make installation on site as easy as possible.

The twin tank configuration is important in ensuring more usable water because the pipework is arranged so that gravity circulation takes place constantly around two tubes. In a single tube cylinder some 15% of the contents, which are below the heat exchanger, remain unheated, and therefore at an unusable temperature. The twin tube design of Xstream overcomes this problem and therefore significantly reduces the risk of legionella. Drain down is effected from the very bottom of both tubes.

Xstream is available in two basic variants:

1. **Xstream Direct** - For providing hot water heated by electricity (Figure 1).
2. **Xstream Indirect** - For use with gas or oil boilers (Figure 2).

XSTREAM DIRECT (Figure 1)

Xstream direct is an electrically heated, unvented hot water storage package appliance designed primarily for use with off peak electrical supplies.

It is supplied fitted with two 3kW immersion heaters as recommended by the Electricity Council and BEAB approved for safety.

Xstream direct models are listed in Table 1.

XSTREAM INDIRECT (Figure 2)

Xstream indirect is an unvented hot water storage package and is provided with an internal coil which is designed for use with a gas or oil boiler and is suitable for both open vented and sealed pumped primary systems.

When used with a sealed heating system the boiler must incorporate its own energy cut-out overheat thermostat.

Xstream indirect models are listed in Table 2.



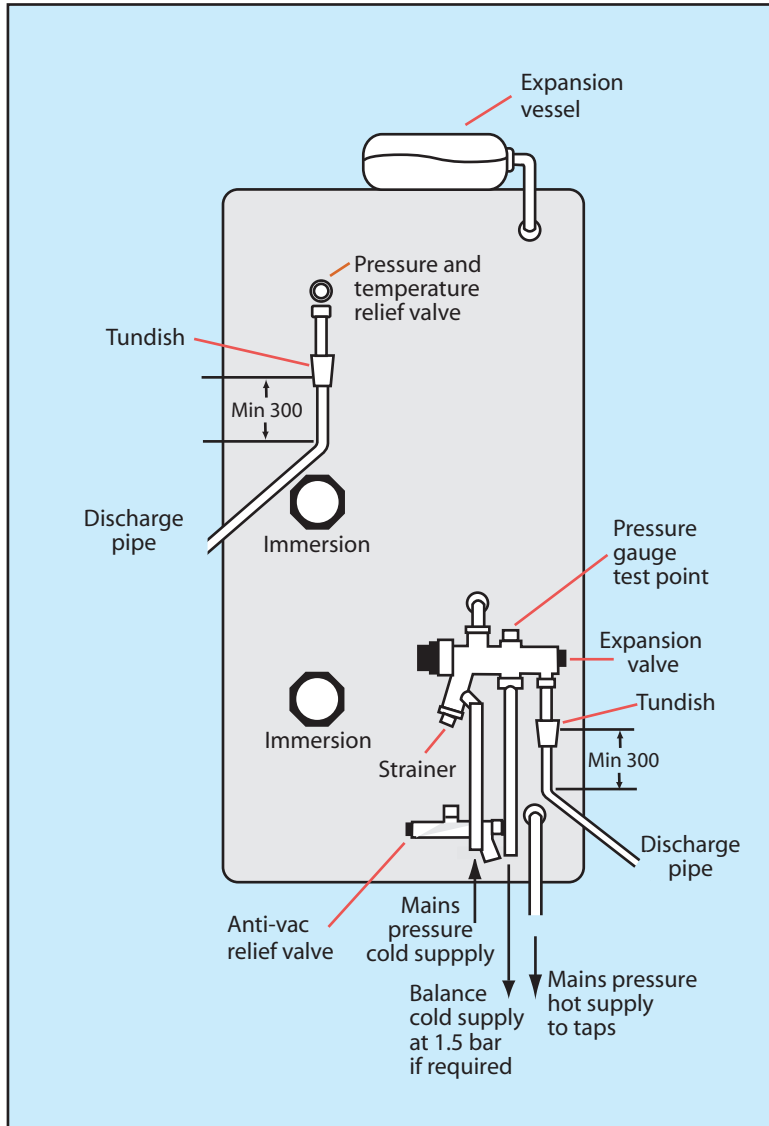
Figure 1



Figure 2

XSTREAM DIRECT

Basic Appliance - see Figure 1



1. Anti vacuum valve
2. Temperature and Pressure relief valve
3. 1 3/4" x 3kW on peak (boost) upper immersion heater (incolloy) complete with control and overheat thermostats
4. 1 3/4" x 3kW off peak lower immersion heater (incolloy) complete with control and overheat thermostats
5. 1/2" BSP (M) - for connection to the potable expansion vessel
6. 22mm copper - for connection to the 1 1/2 bar cold feed from the combination inlet group
7. 1/2" BSP (F) connection - for drain valve (not supplied)
8. 22mm copper - connection for hot water supply

Component kit supplied separately:-

1. Combination valve incorporating pressure reducing valve, strainer, cold water connections, expansion relief valve and check valve
2. Potable water expansion vessel
3. Tundish
4. Installation instructions

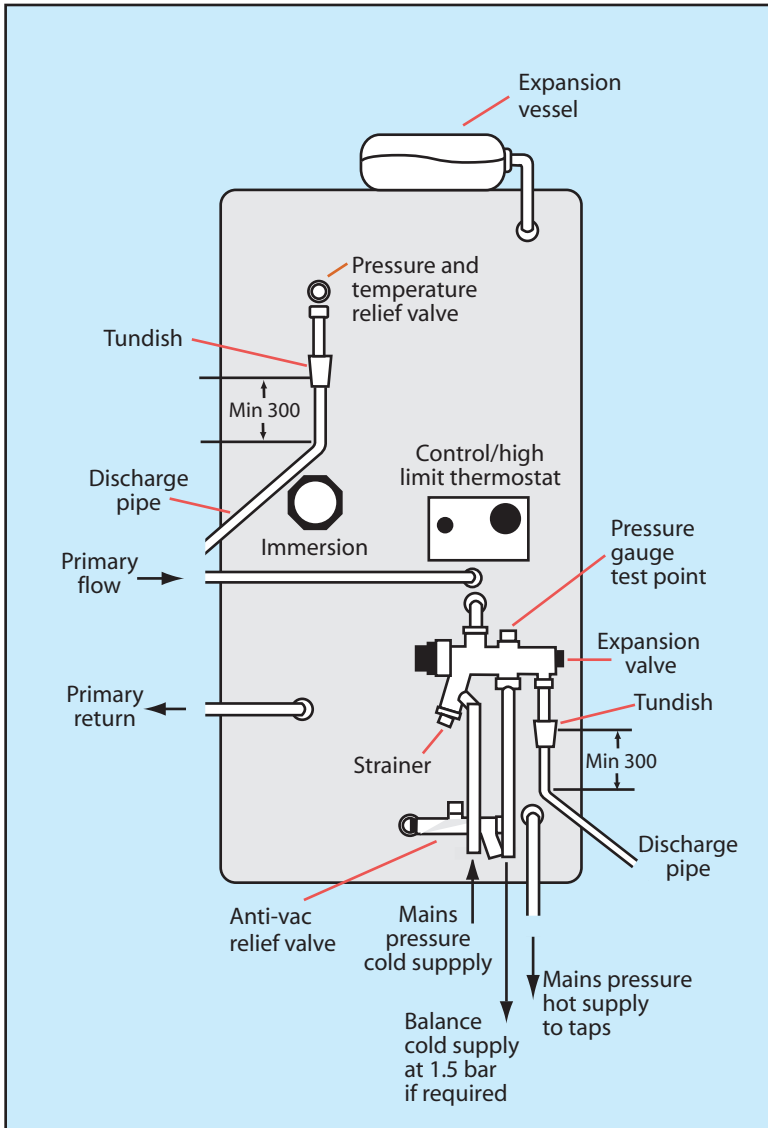
Table 1 Direct Model Options:

Model	Model Capacity (litres)	Appliance Size			Minimum Cupboard Size			Selection Guide
		H (mm)	W (mm)	D (mm)	H	W	D	
AX140D	145	1370	595	410	1550	700	600	2/3 Bedroom house with 1 bathroom & 1 shower
AX175D	171	1600	595	410	1780	700	600	2/3 Bedroom, house with 1 bathroom & 2 showers
AX210D	215	1950	595	410	2130	700	600	3/4 Bedroom house with 2 bathrooms & 2 showers

SYSTEM DESIGN

XSTREAM INDIRECT

Basic Appliance - see Figure 2



1. Anti vacuum valve
2. Temperature and Pressure relief valve
3. 1¾" x 3kW emergency immersion heater (incolloy) complete with control and overheat thermostat
4. 22mm copper - for connection to the primary return.
5. ½" BSP (M) for connection to the potable expansion vessel
6. Pocket for control/high limit thermostat
7. 22mm copper - for connection to the primary flow
8. 22mm copper - for connection to the 1½ bar cold water feed from the combination inlet group
9. ½" BSP (F) connection for drain valve (not supplied)
10. 22mm copper - connection for hot water supply

Component kit supplied separately:-

1. Combination valve incorporating pressure reducing valve, strainer, cold water connections, expansion relief valve and check valve
2. Potable water expansion vessel
3. Tundish
4. 2 port motorised valve
5. Control/overheat thermostat
6. Installation instructions

Table 2 Indirect Model Options:

Model	H (mm)	W (mm)	D (mm)	Selection Guide	Heating from cold time ⁽¹⁾ (mins)	Recovery time ⁽²⁾ mins	Hourly hot water output ⁽³⁾ (litres)			Coil rating (kW)
							15kW boiler	25kW boiler	35kW boiler	
AX125 IND	907	595	410	2/3 bedrooms, 1 bath and shower	11	7	339	505	670	35
AX150 IND	1140	595	410	2/3/4 bedrooms, 1 bath & 2 showers	14	9	367	533	698	35
AX180 IND	1370	595	410	3/4 bedrooms, 1 bath & 3 showers	17	11	394	560	725	35
AX210 IND	1600	595	410	3/4/5 bedrooms, 2 baths & 2 showers	16	10	420	586	751	44
AX240 IND	1950	595	410	4/5 bedrooms, 3 baths & 1 shower	20	13	464	630	795	44

SYSTEM DESIGN

Building Products - Unvented Range		Xsstream Indirect Models					Xsstream Direct Models		
		AX125_ID	AX150_ID	AX180_ID	AX210_ID	AX240_ID	AX140_D	AX175_D	AX210_D
Overall dimensions (mm)	Width	595	595	595	595	595	595	595	595
	Depth	410	410	410	410	410	410	410	410
	Height	907	1140	1370	1600	1950	1370	1600	1950
Weight (kg)	Empty	39	45	51	60	69	42	51	60
	Full	132	165	197	233	287	193	229	283
Temperature set-point of thermostats (°C)	Control thermostat (CT)	60							
	OHT_1	80							
	P & T Valve	90					90		
	Top IH CT (inside heater head)	60					60		
	Top IH OHT (inside heater head)	80					80		
	Bottom IH CT (inside heater head)						60		
	Bottom IH OHT (inside heater head)						80		
Pressure set point (bar)	Inlet pressure regulator	1.5					1.5		
	Expansion relief valve	3.0					3.0		
	P&T valve	4.0					4.0		
	Primary expansion relief valve	3.0							
	Test pressure-HE	6.0							
	Test pressure -store	7.0					7.0		
DHW (potable water) expansion vessel sizing	Expansion coefficient (%)	4.00					4.00		
	Expansion volume (l)	3.60	4.72	5.80	6.84	8.60	5.80	6.84	8.60
	Expansion vessel (l)	8.4	11.1	13.6	16.0	20.1	13.6	16.0	20.1
Primary i.e. heating circuit expansion vessel sizing	Maximum boiler rating (kW)	15	15	20	25	35	Not required for direct models		
	Maximum design heating load (kW)	10.5	10.5	15	19.5	28.5			
	Water content (litres)	47.25	47.25	67.5	87.75	128.25			
	Vessel charge pressure (bar)	1.0							
	Primary exp relief valve setting	3.0							
	Expansion coefficient (%)	5.0							
	Expansion vessel (l)	5.53	5.53	7.91	10.28	15.02			
Boiler/Heating circuit									
Pump: Grundfos UPS 15-50 (22mm connections)		Installer to source all these components							
Pump: Grundfos UPS 15-60 (28mm connections)									
HTG Zone valve_22mm: Honeywell V4043 with removable head									
HTG Zone valve_28mm: Honeywell V4043 with removable head									
Bypass valve : Comap Automatic-factory set at 2.5									
Pressure relief valve									
Expansion vessel(s) supplied as part of sealed system kit (FF-SS) Zilmet OEM-PRO Rectangular - charged to 1.0 bar									
Filling loop									
Pressure gauge									
DHW circuit									
Anti-vacuum valve: GT056		FF-S					FF-S		
Combined CT & OHT_1: Honeywell dual Aquastat TS9430.51/04224		FF-S							
HW zone valve_22mm: Honeywell V4043 with removable head		FK-S	FK-S	FK-S					
HW zone valve_28mm: Honeywell V4043 with removable head					FK-S	FK-S			
P & T valve: Honeywell TP152-3/4ZB set at 4.0 bar and 90°C		FF-S						FF-S	
Inlet control group: Honeywell ICS 22mm with PRV set at 3.0 bar, PR set at 1.5 bar		FK-S						FF-S	
Tundish(s)		2 x FK-S						2 x FK-S	
Expansion vessels supplied as part of standard kit(FK-S): Zilmet HYDRO-PRO Circular - charged to 1.5 bar.		1 x 8 litre (11A0000800) 200 x 280	12 litre (11A0001200) 270 x 264	2 x 8 litre (11A0000800) 200 x 280	18 litre (11A0001800) 270 x 349	24 litre (11A0002400) 300 x 392	2 x 8 litre (11A0000800) 200 x 280	18 litre (11A0001800) 270 x 349	24 litre (11A0002400) 300 x 392
Electric Heating									
Immersion heater: Redring 3kW Type GU11TC		1 x FF-S					2 x FF-S		
IH control thermostat: Integral part of IH		1 x FF-S					2 x FF-S		
IH OHT: Integral part of IH		1 x FF-S					2 x FF-S		
User controls									
Programmer: Honeywell ST 6400C1003		Installer to source and provide					Not required for direct models		
Room thermostat: Honeywell T6360B1028		Installer to source and provide					Not required for direct models		
FF-S Factory fitted standard item		FK-S: Part of factory supplied standard kit		FK-O: Part of factory supplied optional kit					

INSTALLATION

GENERAL DESIGN CONSIDERATIONS

The minimum cupboard width to accommodate the Xstream is 700mm.

The base chosen for the cylinder should be level and capable of supporting the weight of the unit when full of water as shown in General Data. The discharge pipework for the safety valves must have a minimum fall of 1 : 200 from the unit to a safe discharge point. All exposed pipework should be insulated and the unit should NOT be fixed in a location where the contents could freeze.

The pipe connecting the boiler flow to the appliance must not be less than 22mm copper or equivalent.

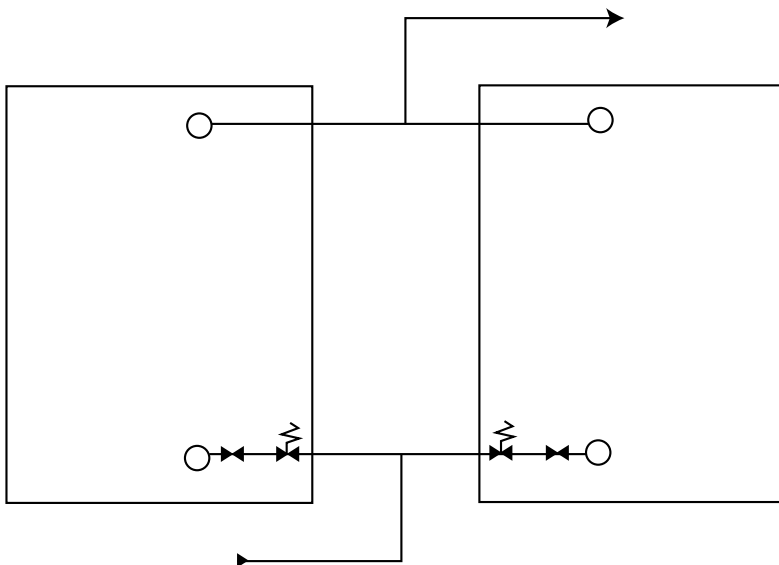
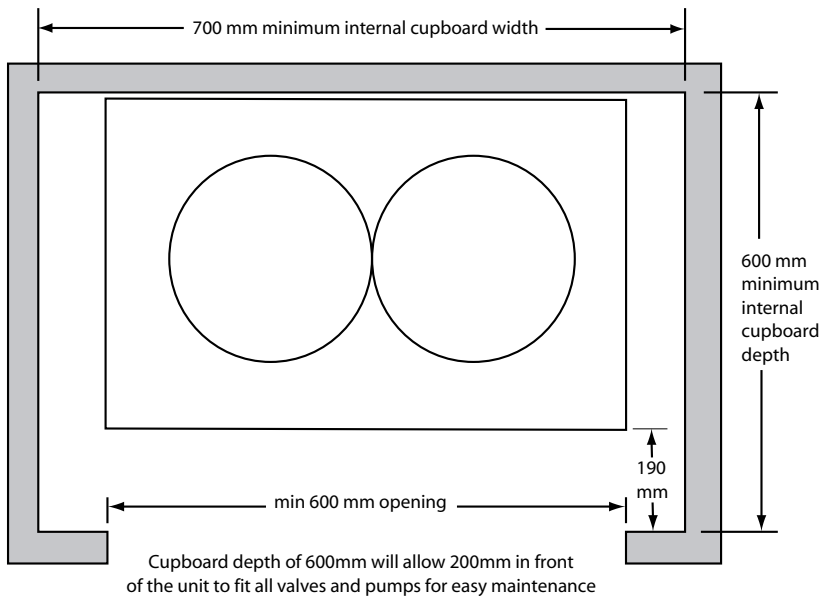
There should be no valves or other equipment in the pipe connecting the boiler flow to the appliance.

MAINS WATER SUPPLY

Existing properties with a 15mm supply will be satisfactory provided the local mains pressure is good, but should be confined to single bathroom properties. For new properties where simultaneous demand is required to more than one bathroom or a bathroom and one or more en-suites, the communication and service pipe into the dwelling should be a minimum of 22mm (usually in the form of a 25mm MDPE supply). The minimum recommended static pressure to operate an Xstream domestic system is 2 bar. There should be a flow of at least 25 litres per minute or above available into the property. Normally Xstream provides well in excess of 30 litres/min in most conditions. Flow rates for ALL mains pressure systems are subject to district pressures and system dynamic loss.

GENERAL RESTRICTIONS

- The highest hot or cold water draw off point should not exceed 4 metres above the Pressure Reducing Valve.
- An ascending spray type bidet or any other appliance with a Class 1 back-syphonage risk requiring a type A air gap should not be used.
- Xstream should not be used where steam is the primary heating medium, or in a situation where maintenance is likely to be neglected.
- Unvented cylinders are not suitable for use with solid fuel boilers.



INSTALLATION

- e. **If the supply to the mixer fittings (other than a dual outlet type) is not taken from the balanced supply the system will become over pressurized and cause the pressure relief valve to discharge. Over time this could also cause the premature failure of the appliance itself which will not be covered by the warranty**
- f. In larger properties with a number of bathrooms/en-suites and long pipe runs we would recommend that the balance cold supply is provided with its own pressure reducing valve and is not taken from the balanced cold connection on the combination valve. In this case it will also be necessary to fit a small expansion vessel on the balanced cold water system to accommodate the pressure rise caused by the increase in temperature of the balanced cold water.

SHOWER FITTINGS

Any type of shower mixing valve can be used as long as both the hot and cold supplies are mains fed. However, **PRESSURE COMPENSATING** shower mixing valves are proven to give better control when more than one fitting are open simultaneously and are therefore **STRONGLY RECOMMENDED**.
Thermostatic versions are preferable.

PIPE LAYOUT

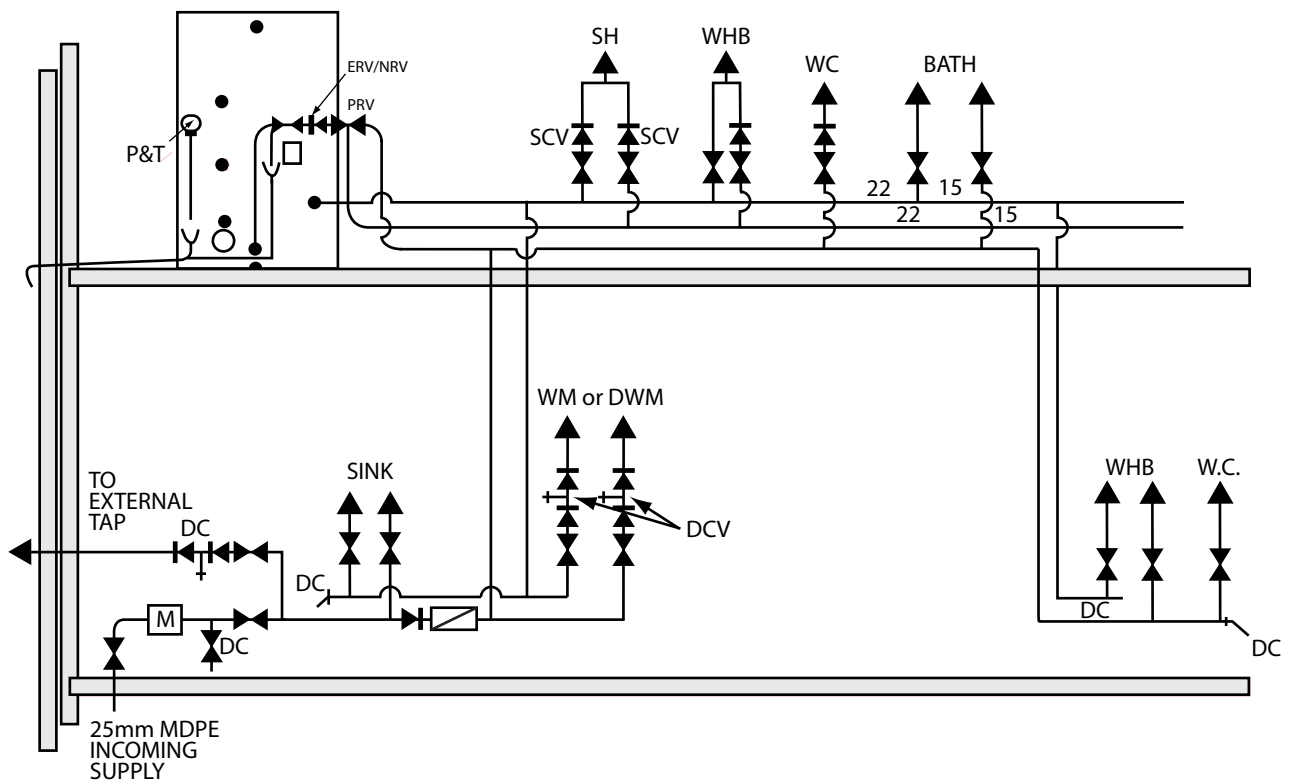
In all mains pressure installations it is important to remember that the incoming cold supply must be shared between all terminal fittings. It is important that a 22mm supply is brought to the appliance and a 22mm take-off is continued at least to the bath. If there are two baths, 28mm pipework should be considered. Smaller pipework, or the use of flow restrictors, should be considered for other outlets so as to balance the water available. In any event the distribution pipework should generally be in accordance with BS6700.

PLASTIC PIPEWORK

This appliance is suitable for use with plastic pipework as long as the material is recommended for the purpose by the manufacturer and is installed fully in accordance with their recommendations.

SECONDARY HOT WATER CIRCULATION

The two largest indirect models are fitted with a secondary return tapping as standard. This tapping may also be fitted on other models on request. If fitted, an extra expansion vessel may be necessary. A non-return valve **MUST** be FITTED near the return connection. No valve or terminal fitting should be installed between the non return valve and the cylinder.

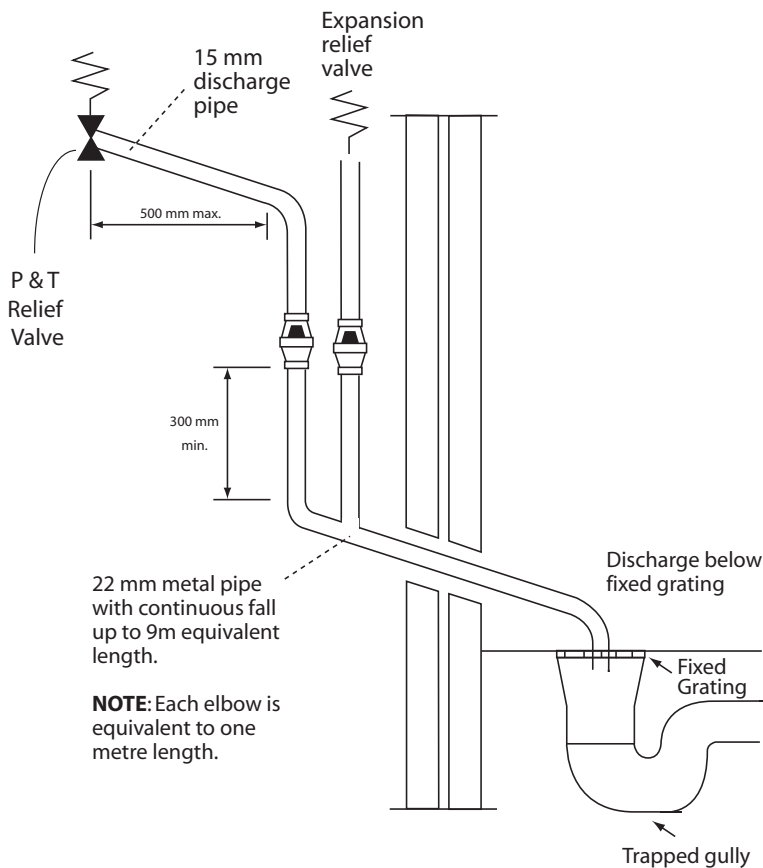


Note:

Cold supplies to single taps taken from the mains cold water system
Cold supplies to mixer taps to be taken from the balanced cold water connection on the combination valve

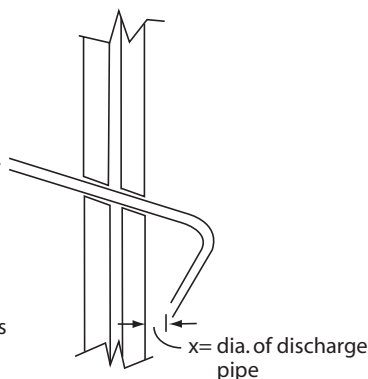
INSTALLATION

Typical Discharge Pipe Arrangement



Locations to be avoided when siting a discharge pipe at high level:

1. The discharge pipe should not be located above a pedestrian area, or above a window, door, ventilator etc.
2. Subsequent freezing of the discharge should not create a hazard to persons about the building.
3. The adjacent structure should be impervious to water at 80°C.



Alternative Discharge Arrangement (High Level)

PRESSURE & TEMPERATURE RELIEF PIPEWORK

The safety relief valves should be installed to discharge in accordance with G3 of the Approved Document of the Building Regulations and should be piped to where it is visible, but will not cause danger to persons or damage to materials.

The discharge pipework should be of metal and from the tundish should fall vertically for at least 300mm, and then continue by continuous fall to a visible safe termination. The discharge termination point should be below a fixed grating and above the water seal of a trapped gully or other permissible terminations as in G3 of the Approved Document.

Discharges should be visible at either the tundish or the termination.

SAFETY

The safety devices supplied or fitted on an Xstream are selected for their suitability for the temperatures and pressures involved. They must not be changed or removed and it is essential that replacements must be supplied or approved by Gledhill Building Products Limited. This includes the immersion heaters, which must incorporate energy cut-out, and are available to approved installers from Gledhill Building Products Limited, Sycamore Estate, Squires Gate, Blackpool (Telephone 01253 474402).

COMBINATION INLET GROUP

Combines elements 1, 2 and 3 below.

1. *Pressure Reducing Valve* - This must be fixed near the cylinder. The cold water supply terminal fittings in the property should be taken from the cold water tapping of this valve to ensure balanced hot and cold pressures. This valve is factory set to ensure the correct operating pressure for the Xstream.
2. *Non Return Valve* - This is integral with the pressure reducing valve to prevent backflow of hot water towards cold water draw off points.
3. *Cold Water Expansion Relief Valve* - This safety device is pre-set at the factory and will relieve excess cold water pressure resulting from a fault condition.

TEMPERATURE/PRESSURE RELIEF VALVE

This safety device is also pre-set at the factory and relieves before the temperature reaches 100°C. It is also a Pressure Relief Valve, and is pre-set to 4 bar.

INSTALLATION

IMMERSION HEATERS

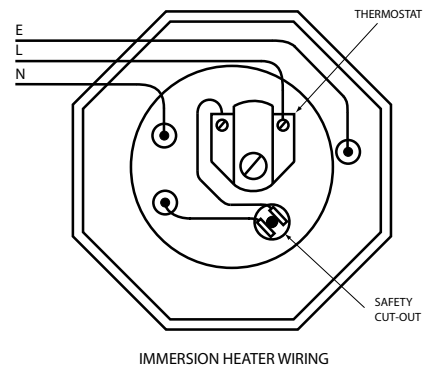
These are 3kW 240V AC heaters and incorporates thermostat and a manually reset cut-out which operates at 80°C. They have incoloy elements to prolong their life expectancy in aggressive water conditions.

LINE STRAINER

This is integral within the combination inlet group to reduce the likelihood of contaminants fouling the valve seat.

TUNDISH

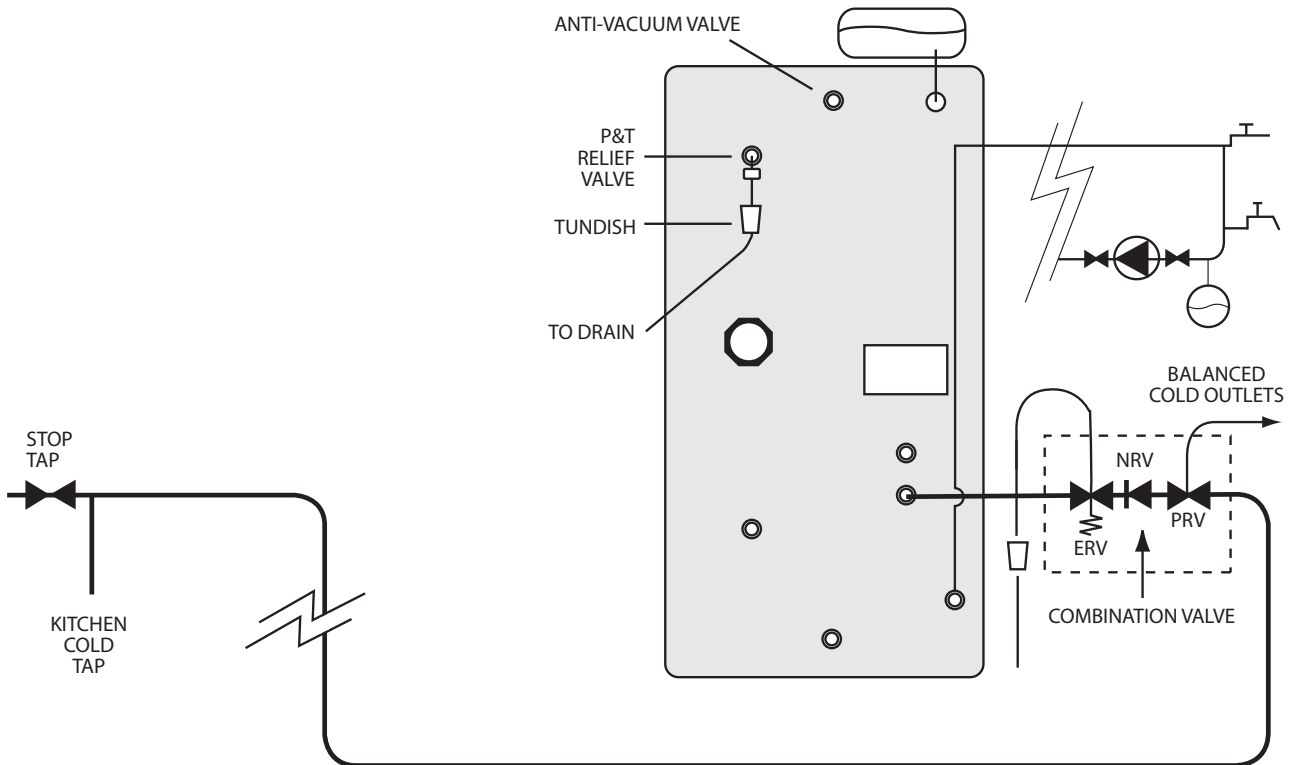
This is to allow the discharge from any Relief Valve to be seen. It must be fitted away from any electrical devices. See page 10 for discharge pipework details.



Two immersion heaters are fitted to all direct models and one immersion heater is fitted to the indirect models. Where it is intended that units are fitted to offpeak circuits, then suitable controllers must be supplied. External wiring to the immersion heaters must be in accordance with the relevant IEE Wiring Regulations and the circuit must be protected by a suitable fuse and a double pole isolating switch.

SAFETY

The immersion heaters must be earthed and they should be isolated from the mains before the cover is removed on every occasion. Replacement immersion heaters should be obtained from Gledhill Building Products Limited.



PRV Pressure reducing Valve } (All built into one
 NRV Non Return Valve } combination valve)
 ERV Expansion Relief Valve }

INSTALLATION

HEATING/PRIMARY SYSTEMS

The boiler and primary/heating systems should be sized and installed in accordance with BS 5449.

SAFETY

Xstream is fitted with a Pressure Relief Valve to cope with any increase in system pressure above the design limitations, and a Temperature Relief Valve to provide an adequate safety factor when used with boilers up to 45kW output.

The primary water temperatures should be controlled as outlined below.

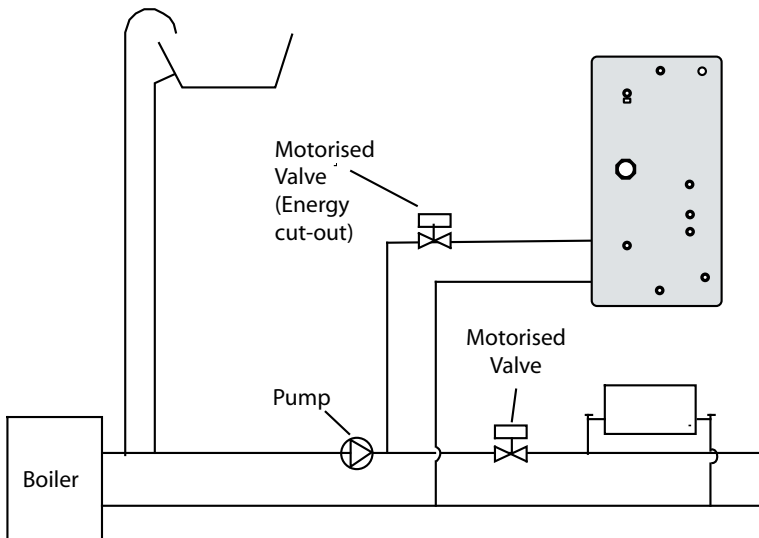
PRIMARY CIRCUIT

It is essential that the circuit between the boiler and the Xstream is pumped. The motorised zone valve supplied should be fitted adjacent to the unit and controlled by the cylinder thermostat supplied. The thermostat and motorised valve must be wired so that they both switch off should an overheat situation develop. It is important to follow the wiring diagram in the Wiring Section of these instructions.

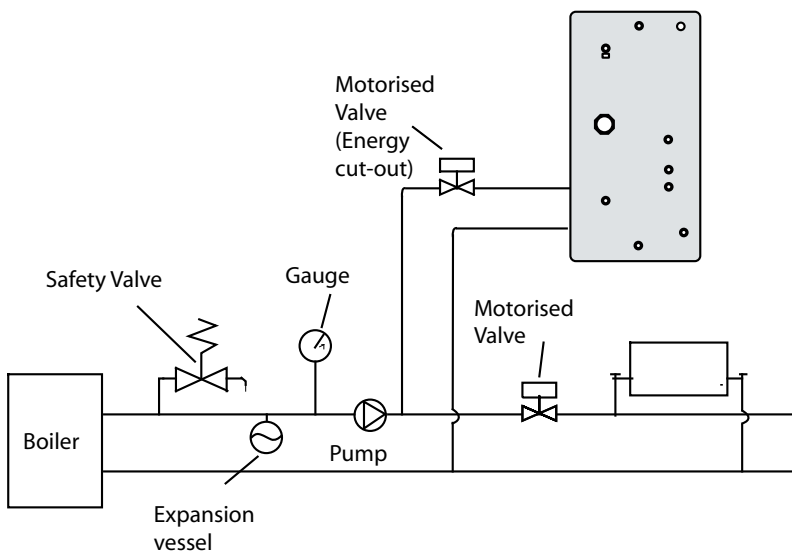
SEALED PRIMARY CIRCUIT

Any boiler used must be of a rated output of less than 45kW and must be fitted with an over temperature cut-out.

Unvented primary circuits may be filled or replenished by means of a temporary connection between the circuit and a supply pipe provided a 'Listed' double check valve or some other no less effective backflow prevention device is permanently connected at the inlet to the circuit and the temporary connection is removed after use.



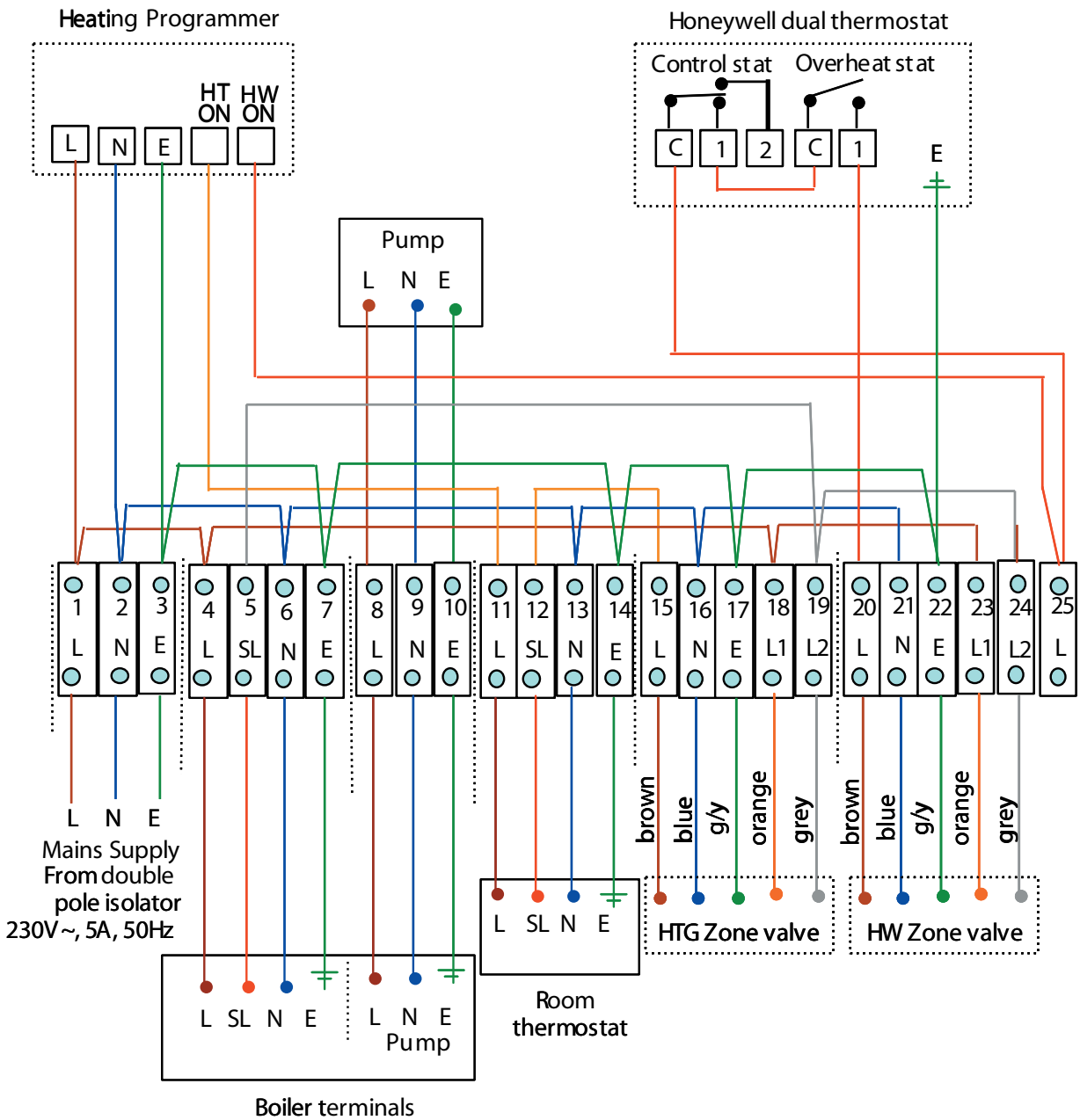
Schematic Open Vented Primary System



Schematic Sealed Primary System

INSTALLATION

Typical schematic wiring diagram for Xstream Indirect models (Ver: 081003)



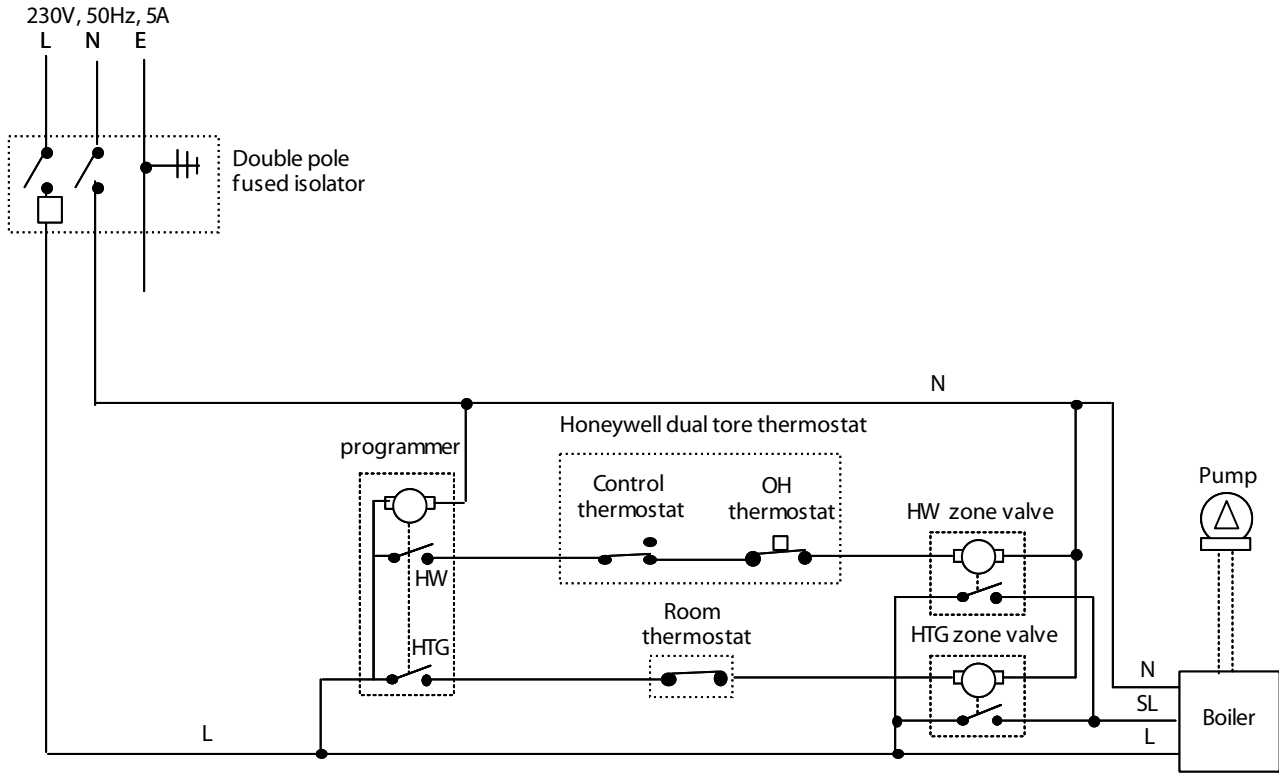
The electrical installation must comply with IEE requirements.

For electrical installation refer to BS7671

Note: Do not attempt the electrical work unless you are competent to carry out to the above standard

INSTALLATION

Functional Wiring Diagram for Xstream Indirect Models (Ver: 081003)



COMMISSIONING

Connections can come loose in transit, and all should be checked before installation.

Ensure that the immersion heater setting is 60°C and that the wiring is in accordance with the diagram on page 11.

Check the pressure on the air side of the expansion vessel. This must be done when the volume in the cylinders is cold.

Check that the drain cock is closed, and open all the cold and hot water taps and other terminal fittings. Allow the system to fill with water, and to run until there is no air left in the system. Close the taps and inspect the system closely for leaks.

Manually open the Relief Valves one by one and check that water is discharged and run freely through the tundish and out at the discharge point. The pipework should accept full bore discharge without overflowing at the tundish, and the valve should seat satisfactorily.

Allow the cylinder to heat to normal working temperature, then thoroughly flush the domestic hot and cold water pipework through each tap.

If it is necessary to drain the cylinder switch off the boiler/immersion heater, open the nearest hot tap and run all hot water until cold. Then close the stop tap and open all hot taps in the system. **AT THE SAME TIME HOLD OPEN THE PRESSURE AND TEMPERATURE RELIEF VALVE UNTIL WATER STOPS DISCHARGING INTO THE TUNDISH. OPEN THE DRAIN COCK AND IMMEDIATELY HOLD OPEN THE P & T RELIEF VALVE AGAIN. THIS MUST BE HELD OPEN UNTIL THE CYLINDER IS COMPLETELY DRAINED.**

Remove the filter from the combination inlet group clean and replace refill the system and open all hot taps until there is no air in the pipe work. ENSURE CYLINDER IS DRAINED PRIOR TO CHECKING OR REMOVING FILTER FROM THE COMBINATION INLET GROUP.

Allow the cylinder to heat to normal working temperature with whatever heat source is to be used, and check again for leaks. The Pressure Relief Valve should not operate during the heating cycle.

The boiler/heating systems should be filled and commissioned in accordance with good practice following the guidance in BS 5449/the boiler manufacturers instructions.

NOTE: This appliance is covered by BENCHMARK and the log book must be completed after commissioning and after every maintenance/service visit.

DON'T place any clothing or other combustible materials against or on top of this appliance.

MAINTENANCE

The Registered Installer is responsible for the safe installation and operation of the system. The installer must also make his customer aware that periodic checks of the equipment are essential for safety.

Maintenance and inspection periods will vary for many reasons. Gledhill Building Products Ltd recommend a maximum of 12 months between inspections to coincide with boiler maintenance. Experience of local water conditions may indicate that more frequent inspection is desirable, eg, when water is particularly hard, scale-forming or where the water supply contains a high proportion of solids, eg, sand. Maintenance will include the following:

1. Check and clean filter
2. Manually check the operation of the temperature relief valve.
3. Manually check the operation of the expansion relief valve.
4. Check discharge pipes from temperature and expansion relief valves are free from obstruction and blockage and are not passing any water.
5. Descale heat exchangers in hard water areas (if required).
6. Check that water pressure downstream of pressure reducing valve is within the manufacturers limits.
7. Check operation of motorised valve.
8. Check the pressure on the air side of the expansion vessel. This must be done when the volume in the cylinders is cold.

PROBLEMS AND REMEDIAL ACTION

SCALE

In hard water areas it is recommended that an in-line scale inhibitor is fitted. Reducing the temperature of the stored water will reduce the rate at which scale forms. If the recovery rate is badly affected, this is an indication that scaling may have occurred. In this event, follow the procedures as recommended by a reputable Water Treatment Company.

GENERAL

No water at the tap. Check that the mains water supply is turned ON. Check the line strainer is not blocked. Check that the combination valve has been fitted so that water is flowing in the correct direction.

If the water at the tap is cold, ensure that the boiler has been switched ON and is working correctly. Check that there are no air locks in the primary system. ISOLATE THE UNIT AT THE MAINS ELECTRIC SUPPLY AND THEN CHECK THE FOLLOWING:

- i. The cylinder thermostat
- ii. The thermal cut-out, which can be re-set by pushing the red button
- iii. The motorised valve
- iv. The boiler thermostat
- v. The boiler thermostat cut-out (if fitted)

ANY ENERGY CUT-OUT MUST NEVER BE BY-PASSED UNDER ANY CIRCUMSTANCES.

If the units are not getting hot and the heat source is electrical, ensure that the immersion heaters are isolated from the mains before re-setting the energy cut-out. If the immersion heater(s) need replacing this should be done with the units supplied from Gledhill Building Products Limited. Same day despatch to approved installers can be arranged by telephoning 01253 474402.

DISCHARGE FROM RELIEF VALVES

If cold water is discharging from the expansion relief valve into the tundish check the pressure on the expansion vessel when cold and recharge if necessary.

If the fault continues and the problem cannot be stopped by operating the easing control a few times then either the Pressure Reducing Valve or the Relief Valve may be at fault. If the cold water pressure is too high, this would suggest that the Pressure Reducing Valve is at fault and the Gledhill approved replacement should be fitted. If the pressure is correct then the Relief Valve will require replacing with a Gledhill approved component.

See Commissioning for drain down procedure.

If there is an overheat fault and very hot water is being discharged, turn off the heat source, **but not the water supply.**

When the supply is cool, check thermostats and energy cut-outs in the boiler and immersion heaters and replace the faulty component with a unit supplied by Gledhill and check that it works correctly before returning the system to full operation.

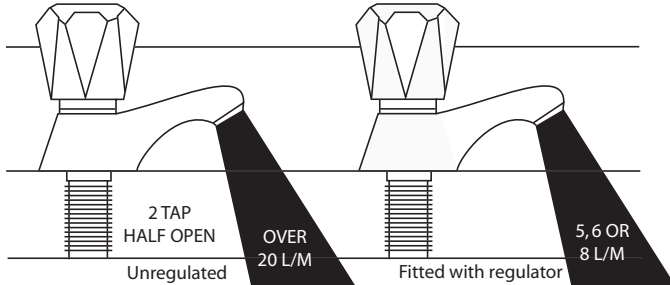
SPARE PARTS

Key No.	Description	Manufacturer	Stock Code No.	Gas Council Part No.
1	Temperature Pressure Relief Valve	Honeywell	XG169	
2	Control/High Limit Thermostat	Honeywell	XG168	
3	Immersion Heater	Redring	XG086	
4	Combination inlet group	Honeywell	XG170	
4	22mm 2 port zone valve	Honeywell	XG083	
5	12 litre expansion vessel	Zilmet	XG164	
6	18 litre expansion vessel	Zilmet	XG009	
7	25 litre expansion vessel	Zilmet	XG165	
8	Tundish	Honeywell	XG173	
9	Anti-vacuum valve	Reliance	GT056	
10	28mm 2 port zone valve	Honeywell	XC012	

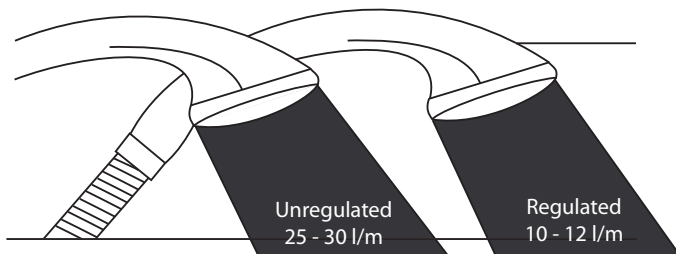
WATER SAVINGS

WATER RELATED COSTS CAN BE REDUCED BY GOOD PLUMBING PRACTICE.

TAPS & MIXERS



SHOWERS



Vast quantities of water are needlessly run off to waste due to Taps, Mixers and Showers discharging flow rates far in excess of the rates required for them to perform their duties.

The contrasting flow rates shown on this leaflet clearly illustrate the savings that can be made whilst still providing a good performance.

British made Aquaflo Regulators provide constant flow rates by automatically compensating for supply pressure changes between 1 bar & 10 bars.

To facilitate installation into the wide range of plumbing equipment which is encountered in the U.K, Four Fixing Options are available:-

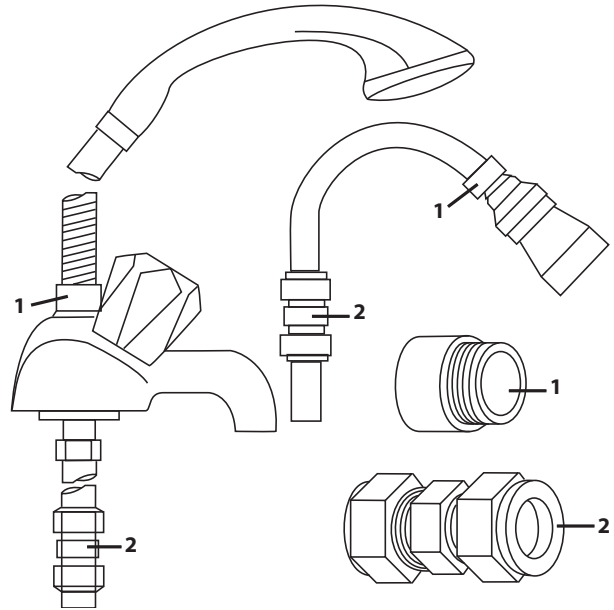
OPTIONS FOR SHOWERS

1. MXF "DW" Range - For fitting behind Fixed Shower Heads or onto Flexible Hoses for Handshowers (preferably onto the inlet end when lightweight hoses are used).
2. Compression Fitting Range. "In Line" regulators as in Option 4 for Taps & Mixers.

Information by courtesy of

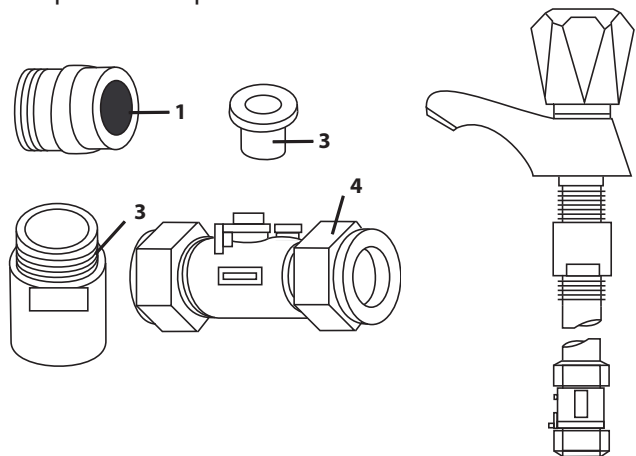
AQUAFLOW REGULATORS LTD

Haywood House, 40 New Road, Stourbridge, West Midlands DY8 1PA
TELEPHONE (01384) 442611 FAX: (01384) 442612



4 FIXING OPTIONS FOR TAPS & MIXERS

1. MK Range - Combined Regulators & Aerators for screwing onto Taps & Mixers with internal or external threads on their noses. Anti Vandal models also available.
2. MR05-T Range - Internal Regulators. Push-fit into Tap or Mixer seats. Produced in three sizes - 12.5mm (BS1010), 12mm & 10mm, Flangeless models also available for Taps with Low Lift washers.
3. MXF Standard Range - Screw on tail models for Taps & Mixers. Fix onto the tails before fitting the tap connectors. Available in 3/8", 1/2", 3/4" and 1" BSP.
4. Compression Fitting Range - "In Line" regulators housed in 15mm & 22mm CXC Couplers & Isolating Valves. "UK WFBS listed by the Water Research Centre. Isolating valves available for slotted screwdriver operation or with coloured plastic handles. Now available also in plastic bodied push-fit couplers & valves.



MANUAL HANDLING OF APPLIANCE PRODUCTS

Description

Manual handling means any transporting or supporting of a load (including lifting, putting down, pushing, pulling, carrying or moving) by hand or bodily force.

Scope

This assessment will cover the largest Appliance, namely ElectraMate, GulfStream, BoilerMate, SysteMate, PulsaCoil and Accolade Manufactured by Gledhill Water Storage Ltd.

The maximum weight of the largest product in each range is 98kg and the size is 595 x 595 x 1900 mm high.

Main Hazards

Vision may not be clear due to the size of the products. Adopting an incorrect method of lifting may cause injury, attempting to lift these products will require help from others. (Team lifts)

Control Measures

Manual lifting procedure

The lift, key factors in safe lifting are:

- a. **Balance**
 - b. **Position of back**
 - c. **Positioning of the arms and body**
 - d. **The hold**
 - e. **Taking the lead for team lifts**
- a. **Balance** - Since balance depends essentially upon the position of the feet, they should be apart about hip breadth with one foot advanced giving full balance sideways and forward without tension. In taking up this position, lifting is done by bending at the knees instead of the hips and the muscles that are brought into use are those of the thigh and not the back.
 - b. **Position of back** - Straight - not necessary vertical. The spine must be kept rigid, this coupled with a bent knee position, allows the centre line of gravity of the body to be over the weight so reducing strain.
 - c. **Positioning of arms and body** - The further arms are away from the side, the greater the strain on the shoulders, chest and back. Keep elbows close to the body arms should be straight.
 - d. **The hold** - Before lifting ensure you have a good hold. Two handles are provided on Appliance products at the top rear side, these allow one or two persons to have a purposely-designed hold at the top of the appliance to ensure easy lifting at the top of the product. Each appliance is supplied with a pallet, which has been attached to the unit via the packaging. The pallet will also allow for one or two persons to get a good hold.

- e. **Taking the lead for team lifts**- As more than one person is required for these products ensure that one person is taking the lead. **This may be you** so ensure that each person that is helping is made aware of the weight and of the items listed within this assessment. Make sure you and any others helping know the route you intend to take that it is clear of any obstructions. Never jerk the load as this will add a little extra force and can cause severe strain to the arms, back and shoulders. If there are steps involved decide on where you will stop and take a rest period. Move smoothly and in unison taking care to look and listen to others helping with the lift. Where possible use a sack truck to move the product over long flat distances, only lift the products when necessary. If in doubt stop and get more help. The unit handles and packaging with the pallet have been designed to ensure that two-four people can assist when lifting up stairs or over longer distance.

Individual capability

Individual capability plays an important part in handling these products. Persons above average build and strength will find it easier and should be in good health. Persons below average build and strength may require more rest periods during the handling process.

Pregnant women should not carry out this operation.

Persons who are not in good health should seek medical advice prior to commencing any lifting or manual handling operation.

Residual risk

Following the guidelines given above will reduce any risk to injury.

All persons carrying out this operation must be fully trained and copies of the specific risk assessment made available for inspection and use in their training process.

Further guidance on Manual Handling can be obtained from the Health and Safety Executive. Manual Handling Operations Regulations 1992.



Gledhill Building Products Ltd

AMD. MAY 2005

CONDITIONS OF SALE & WARRANTY TERMS

1. We only do business upon the Conditions which appear below and no other. Unless we so agree in writing these Conditions shall apply in full to any supply of goods by us to the exclusion of any Conditions or terms sought to be imposed by any purchaser. These Conditions of Sale and Warranty Terms override those which are contained on the Invoice Forms and all Sales are now subject to these Conditions of Sale and Warranty terms only.

2. PRICE

Orders are accepted at the price ruling at the date of receipt of order; this price is our last published list price plus a supplement to allow for any increase in the price of copper between the dates of publication of our price lists ("the copper price supplement"). An order may not be cancelled or varied after acceptance without the written consent of the company. Such cancellation or variation shall be subject to such reasonable charges as may be appropriate.

3. SPECIFICATION

The goods are supplied in accordance with the Specifications (if any) submitted to the Purchaser and any additions and alterations shall be the subject of an extra charge. Any goods not so specified shall be in accordance with our printed literature or the literature of any of our component suppliers (subject to any modifications made since publication). If we adopt any changes in construction or design of the goods, or in the specification printed in our literature, the Purchaser shall accept the goods so changed in fulfilment of the order.

4. PAYMENT

The invoice price of goods shall be payable within 30 days of despatch by us of our invoice for the goods or such longer time as may be stated by our quotation or invoice. If we receive payment in full on or before the due date we will allow an appropriate settlement discount except where we have quoted a special net price. If payment is not received in full on or before the due date we shall be entitled in addition to the invoice price to:

- (i) payment of a sum equal to any increase in the copper price supplement applicable to the particular goods sold between the date of receipt of order and the date of receipt of payment in full; and
- (ii) interest on any part of the invoice price unpaid after the due date at the rate of 3% per annum over the base rate for the time being of HSBC Bank plc.

5. TIME

We give estimates of delivery dates in good faith and time of delivery is not nor shall be made of the essence of any contract nor shall we be liable for any loss or damage occasioned by delay in delivery.

6. DELIVERY

We deliver free normally by our own vehicles within 25 miles of any of our manufacturing depots. Delivery to any place more than 25 miles from one of our manufacturing depots is subject to our quoted delivery charges. We reserve the right to make delivery of goods contained in one order by more than one consignment and at different times. Where a period is agreed for delivery and such period is not extended by our Agreement, the Purchaser shall take delivery within that period. If the Purchaser fails to take delivery, we shall be entitled at the Purchaser's risk and expense to store the goods at the Purchaser's premises or elsewhere and to demand payment as if they had been despatched. Off loading at point of delivery shall be the responsibility of and be undertaken by the Purchaser.

7. SHORTAGES OR DAMAGE

Goods must be inspected before signature of delivery note and any damage, shortage or discrepancy noted on the delivery note and the goods returned on the same vehicle. The buyer must also give us immediate written notice of the damage, shortage or discrepancy so that we may prompt investigation.

8. RETURN OF GOODS

Goods may not be returned to the Company except by prior written permission of an authorised officer of the Company and such return shall be subject to payment by the Purchaser of handling and re-stocking charges, transport and all other costs incurred by the Company.

9. COMPANY LIABILITY

All our goods are made of the best materials from reputable manufacturers and where stated are manufactured to the appropriate British Standard. Complaints must be given to us immediately, before any action is taken, as responsibility cannot be accepted if repairs or renewals are attempted on site without our written authority.

Defects caused by corrosion or scale deposits are not covered by this guarantee save as expressly provided in paragraph (4) of this Condition 9.

Where we agree to rectify any defect, we reserve the right to undertake the work on our own premises.

The following guarantee covers faulty materials and manufacture for the stated period, **provided that:-**

- The unit has been installed in accordance with our installation and service instructions and all relevant codes of practice and regulations in force at the time of installation.
- That all necessary inlet controls and safety valves have been fitted correctly.
- It has only been used for the storage of potable water supplied from the public mains.
- **Where appropriate the unit has been regularly maintained as detailed in the installation and service instructions.**

(1) **Domestic and Commercial Open Vented Cylinders and Tanks.**

If the copper cylinder or tank or any integral pipework proves to be defective either in materials or workmanship, we will either repair or supply replacement at our option with the closest substitute in the case of any obsolete product to any address in Great Britain.

- (a) free of all charge during the first year after delivery by us.
- (b) thereafter at a charge of one-tenth of the then current list price and any copper price supplement and delivery charge during the second year after delivery by us and increasing by a further one-tenth on the second and subsequent anniversary of delivery by us.

AND FURTHER we will meet the contractors/installers reasonable costs in removing and replacing any defective Open Vented Copper Cylinder or Tank with defective integral pipework as follows:

(i) in the case of vessels of less than 80 imperial gallons capacity up to a maximum of one-half of the extent of our liability in regard to the replacement product expressed in (1) (a) and (b) above

ii) in the case of vessels larger than 79 imperial gallons capacity up to a maximum of one-quarter of the extent of our liability in regard to the replacement product as expressed in paragraphs (1) (a) and (b) above.

(2) **Domestic Mains Fed Products**

If the copper storage vessel itself or any integral pipework as part of the storage vessel assembly proves to be defective either in materials or workmanship, we reserve the right to either repair or supply replacements or the closest possible substitute in the case of any obsolete product and will collect and deliver to any address in England, Wales and Scotland (excluding all Scottish Islands).

(a) free of all charge during the first year after delivery by us.

(b) thereafter at a charge of one-fifth of the then current list price or any copper price supplement and delivery charge during the second year after delivery by us increasing by a further one-fifth on the second and subsequent anniversary of delivery by us.

AND FURTHER we will meet the contractors/installers reasonable costs in removing and replacing any defective copper storage vessel or storage vessel with defective integral pipework from the Domestic Mains Pressure Range of products up to a maximum of one-third of the extent of our liability in regard to the replacement product expressed in (2) (a) and (b) above.

(3) **Gledhill Boiler/Combi**

Gledhill guarantees the heat exchanger (boiler) for material and construction faults for two years and FURTHER we will meet the installer/contractors reasonable costs in removing and replacing any DEFECTIVE heat exchanger up to a MAXIMUM of one third of the extent of our liability in regard to the replacement product.

THE RESPONSIBILITY FOR THE EXECUTION OF THIS GUARANTEE LIES WITH THE INSTALLER.

The guarantee becomes null and void if the appliance is used incorrectly, or in the event of proven negligence or incorrectly implemented repairs **OR FAILURE TO CARRY OUT THE RECOMMENDED INSPECTION/MAINTENANCE.** The guarantee also becomes null and void if changes are made to the appliance without our knowledge, or if the serial number on the appliance is removed or made illegible.

The annual service must be carried out by a competent installer in accordance with the advice given by Gledhill and using Gledhill approved parts.

(4) **Components of our products other than Storage Vessels and Integral Pipework.**

We will either extend to the purchaser the same terms of warranty as we are given by the manufacturer of the component or if the manufacturer does not give any warranty, replace free of charge any component which becomes defective within twelve months after the date of the delivery by us and is returned to us at the purchaser's expense but we shall not meet the cost of removal or shipping or return of the component or any other cost charges or damages incurred by the purchaser.

If the appliance manufactured by Gledhill incorporates a factory fitted scale inhibitor then during the period of three years from the date of delivery Gledhill will replace, free of charge, any plate heat exchanger fitted in the appliance as original equipment in which scale formation occurs that materially reduces the effectiveness of the plate heat exchanger. This guarantee does not extend to any other component installed within the Gledhill appliance or elsewhere in the Purchaser's domestic water system.

(5) **General**

In the case of goods manufactured solely in accordance with our specification and designs and in respect of any installation work carried out by or on our behalf, our entire liability and the purchaser's sole remedies (subject to (1-4) above) and shall be as follows:

(a) we accept liability for death or personal injury to the extent that it results from our negligence that of our employees agents or subcontractors.

(b) subject to paragraph (d) below, we accept liability for direct physical damage to tangible property to the extent that such damage is caused by our negligence that of our employees agents or subcontractors.

(c) our total liability to the purchaser over and above any liability to replace under (1 - 4) above (whether in contract or in tort including negligence) in respect of any one cause of loss or damage claimed to result from any breach of our obligations hereunder, shall be limited to actual money damages which shall not exceed £20,000 provided that such monetary limit shall not apply to any liability on the part of ourselves referred to in paragraph (a) above.

(d) except as provided in paragraph (a) above but otherwise notwithstanding any provision herein contained in no event shall we be liable for the following loss

or damage howsoever caused and even if foreseeable by us or in our contemplation :-

(i) economic loss which shall include loss of profits, business revenue, goodwill or anticipated savings.

(ii) damages in respect of special indirect or consequential loss or damage (other than death, personal injury and damage to tangible property).

(iii) any claim made against the purchaser by any other party

(save as expressly provided in paragraph (b) above).

(e) except in respect of our liability referred to in paragraph (a) above no claim may be made or action brought (whether in contract or in tort including negligence) by the purchaser in respect of any goods supplied by us more than one year after the date of the invoice for the relevant goods.

(f) nothing in these Conditions shall confer on the purchaser any rights or remedies to which the purchaser would not otherwise be legally entitled.

(6) Notwithstanding any other provision contained herein the Purchaser's hereby agree to fully indemnify us against any damages losses costs claims or expenses incurred by us in respect of any claim brought against us by any third party for :-

(a) any loss injury or damage wholly or partly caused by any goods supplied by us or their use.

(b) any loss injury or damage wholly or partly caused by the defective installation or sub-standard workmanship or materials used in the installation of any goods supplied by us.

(c) any loss injury or damage in any way connected with the performance of this contract.

PROVIDED that this paragraph (6) will not require the Purchaser to indemnify us against any liability for our own acts of negligence or those of our employees agents or sub-contractors.

FURTHER in the case of goods supplied by us which are re-sold to and installed by a third party by the Purchaser it will be the sole responsibility of the Purchaser to test the goods immediately after their installation to ensure that inter alia they are correctly installed and are in proper working order, and are not likely to cause any loss injury or damage to any person or property.

10. VARIATION OF WARRANTY AND EXCLUSION

Should our warranty and exclusion be unacceptable we are prepared to negotiate for variation in their terms but only on the basis of an increase in the price to allow for any additional liability or risk which may result from the variation.

Purchasers are advised to insure against any risk or liability which they may incur and which is not covered by our warranty.

11. RISK AND RETENTION OF TITLE

(a) goods supplied by us shall be at the Purchaser's risk immediately upon delivery to the Purchaser or into custody on the Purchaser's behalf or to the Purchaser's Order. The Purchaser shall effect adequate insurance of the goods against all risks to the full invoice value of the goods, such insurance to be effective from the time of delivery until property in the goods shall pass to the Purchaser as hereinafter provided.

(b) property in the goods supplied hereunder will pass to the Purchaser when full payment has been made by the Purchaser to us for :-

(i) the goods of the subject of this contract.

(ii) all other goods the subject to of any other contract between the Purchaser and us which, at the time of payment of the full price of the goods sold under this contract, have been delivered to the Purchaser but not paid for in full.

(c) until property in the goods supplied hereunder passes to the Purchaser in accordance with paragraph (2) above.

(i) the Purchaser shall hold the goods in a fiduciary capacity for us and shall store the same separately from any other goods in the Purchaser's possession and in a manner which enables them to be identified as our goods.

(ii) the Purchaser shall immediately return the goods to us should our authorised representative so request. All the necessary incidents associated with a fiduciary relationship shall apply.

(d) the Purchaser's right to possess the goods shall cease forthwith upon the happening of any of the following events, namely :-

(i) if the Purchaser fails to make payment in full for the goods within the time stipulated in clause 4 hereof.

(ii) if the Purchaser, not being a company, commits any act of bankruptcy, makes a proposal to his or her creditors for a compromise or does anything which would entitle a petition for a Bankruptcy Order to be presented.

(iii) if the Purchaser, being a company, does anything or fails to do anything which would entitle an administrator or an administrative receiver or a receiver to take possession of any assets or which would entitle any person to present a petition for winding up or to apply for an administration order.

(e) the Purchaser hereby grants to us an irrevocable licence to enter at any time any vehicle or premises owned or occupied by the Purchaser or in the possession of the Purchaser for the purposes of repossessing and recovering any such goods the property in which has remained in us under paragraph (2) above. We shall not be responsible for and the Purchaser will indemnify us against liability in respect of damage caused to any vehicle or premises in such repossession and removal being damaged which it was not reasonably practicable to avoid.

(f) notwithstanding paragraph (3) hereof and subject to paragraph (7) hereof, the Purchaser shall be permitted to sell the goods to third parties in the normal course of business. In this respect the Purchaser shall act in the capacity of our commission agent and the proceeds of such sale :-

(i) shall be held in trust for us in a manner which enables such proceeds to be identified as such, and :

(ii) shall not be mixed with other monies nor paid into an overdrawn bank account.

We, as principal, shall remunerate the Purchaser as commission agent a commission depending upon the surplus which the Purchaser can obtain over and above the sum, stipulated in this contract of supply which will satisfy us.

(g) in the event that the Purchaser shall sell any of the goods pursuant to clause (6) hereof, the Purchaser shall forthwith inform us in writing of such sale and of the identity and address of the third party to whom the goods have been sold.

(h) if, before property in the goods passes to the Purchaser under paragraph (2) above the goods are or become affixed to any land or building owned by the Purchaser it is hereby agreed and declared that such affixation shall not have the effect of passing property in the goods to the Purchaser. Furthermore if, before property in the goods shall pass to the Purchaser under paragraph (2) hereof, the goods are or become affixed to any land or building (whether or not owned by the Purchaser), the Purchaser shall:-

(i) ensure that the goods are capable of being removed without material injury to such land or building.

(ii) take all necessary steps to prevent title to the goods from passing to the landlord of such land or building.

(iii) forthwith inform us in writing of such affixation and of the address of the land or building concerned.

The Purchaser warrants to repair and make good any damage caused by the affixation of the goods to or their removal from any land or building and to indemnify us against all loss damage or liability we may incur or sustain as a result of affixation or removal.

(i) in the event that, before property in the goods has passed to the Purchaser under paragraph (2) hereof, the goods or any of them are lost, stolen, damaged or destroyed :-

(i) the Purchaser shall forthwith inform us in writing of the fact and circumstances of such loss, theft, damage or destruction.

(ii) the Purchaser shall assign to us the benefit of any insurance claim in respect of the goods so lost, stolen, damaged or destroyed.

12. NON-PAYMENT

If the Purchaser shall fail to make full payment for the goods supplied hereunder within the time stipulated in clause 4 hereof or be in default of payment for any other reason then, without prejudice to any of our other rights hereunder, we shall be entitled to stop all deliveries of goods and materials to the Purchaser, including deliveries or further deliveries of goods under this contract. In addition we shall be entitled to terminate all outstanding orders.

13. RISK

All goods sold by us shall be at the sole risk of the Purchaser from the date of despatch by us of the invoice for their price.

14. VALUE ADDED TAX

All prices quoted are exclusive of Value Added Tax which will be charged at the rate ruling at the date of despatch of invoice.

15. TRADE SALES ONLY

We are only prepared to deal with those who are not consumers within the terms of the Unfair Contract Terms Act 1977, the Sale of Goods Act 1979 and the Supply of Goods and Services Act 1982. Accordingly any person who purchases from us shall be deemed to have represented that he is not a consumer by so purchasing.

16. JURISDICTION

The agreement is subject to English/Scottish law and any dispute arising hereunder shall be settled in accordance therewith dependent upon the location.

