

HERZ Guildford Heat Interface Unit

The modern Solution for Apartment Heating and Domestic Hot Water Services



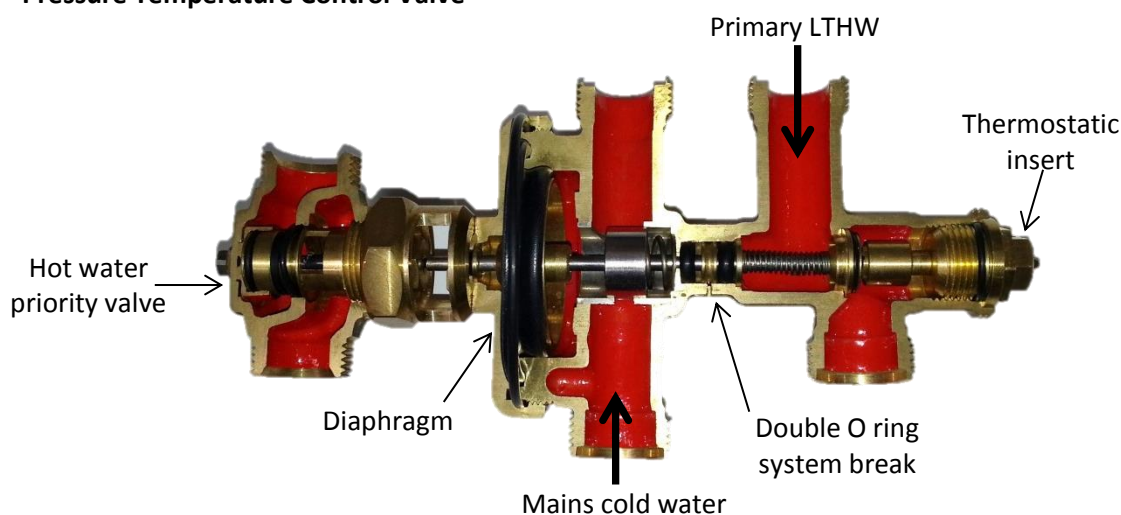
General Description

The Herz Guildford HIU is suitable for all community schemes and enables LTHW from a central plant to provide heating and DHWS to each dwelling with complete hydraulic separation between the LTHW primary and secondary heating and DHWS systems.

The HIU is a complete package comprising of all components mounted on a frame, factory assembled and tested.

Main Components

Pressure Temperature Control Valve



As a hot water tap is opened the pressure temperature control valve reacts to the difference in pressure via a diaphragm and opens allowing the cold and primary heating water to flow through the heat exchanger. At the same time, a hot water priority valve closes the primary feed to the secondary heat exchanger, thus ensuring maximum flow is available at the domestic heat exchanger. In order to prolong the life of the DHW heat exchanger and prevent lime scale build up, the temperature of the domestic hot water is controlled by a thermostat fitted to the pressure temperature control valve. Using an immersion sensor, this thermostat controls the temperature of the hot water that exits the heat exchanger and regulates the pressure temperature control valve thus maximising the energy efficiency of both the HIU and the primary system.

Summer Bypass Valve



The "Summer bypass" valve utilises a return temperature limiter head fitted to a thermostatic valve installed in a bypass between the primary flow and return pipework within the HIU. This maintains a minimum primary temperature when the space heating is not in use.

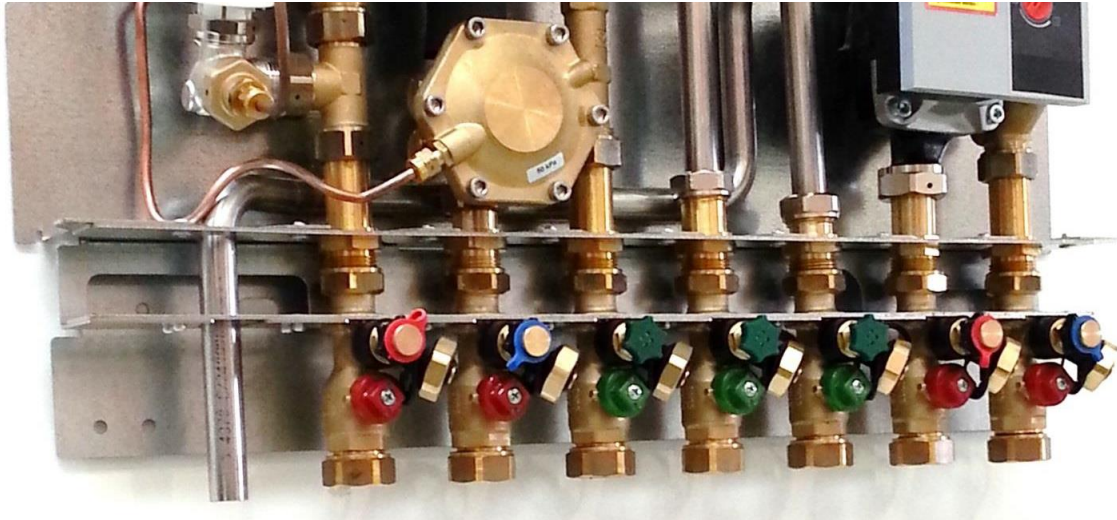
Primary Return Temperature Limiter

A return temperature limiter valve is installed in the primary return to guarantee low primary return temperatures and maximise system efficiency. In the Guildford UFH unit the return temperature limiter is replaced by a thermostatic head with a contact sensor attached to the secondary flow pipe to control the secondary temperature.



First Fix Rail

The First Fix Rail is a pre-assembled unit fitted with all the isolation ball valves required for the various circuits installed within the HIU. The unit is installed at first fix and allows shell and core pipework to be completed without the HIU being fitted. The first fix rail ball valves are fitted with drain valves to facilitate draining with integral test points fitted on the primary and secondary heating circuits to aid additional temperature or pressure measurement if required. The first fix rail with ball valves also allows maintenance to be carried out on the HIU as the main unit can be removed easily.



Top Entry stand-off Bracket

The Guildford HIU has the option to have a stand-off bracket installed to enable the services to be connected from the top of the unit. The top entry bracket is available purely as a stand-off bracket to enable installation of some or all the services, or fully installed with all the pipes insulated so that all that is required on site is to connect the pipework to the connections on the top of the unit.

Other Features

- ▶ Instantaneous hot water and space heating to properties
- ▶ Twin heat exchangers provide hydraulic separation
- ▶ Thermostatic hot water temperature control
- ▶ Tempering valve to prevent risk of scalding
- ▶ Low primary return temperature maximises system efficiency
- ▶ Suitable for radiators or underfloor heating
- ▶ Insulated secondary heating heat exchanger & heating pipework
- ▶ Option for heat meter (110mm Spool piece provided as standard)
- ▶ Lockable cover with viewing window allows meter reading without cover removal
- ▶ Option for Differential Pressure Control Valve
- ▶ 110mm Spool piece provided for water meter
- ▶ The Guildford HIU is a WRAS approved product
- ▶ 18mm stainless steel pipe work



Functions

a) Residents Heating System

The primary flow to the heating system heat exchanger is controlled by a two port on/off actuated valve linked to a programmable room thermostat (Herz 1 7791 23). This valve will close when the room temperature setting has been achieved or when the heating system is not in use. An optional fixed spring differential pressure control valve can be fitted across the primary flow and return circuits on each HIU to protect the control valves from excessive DP.

The secondary heating circuit is provided with an expansion vessel and secondary domestic heating pump which varies the system flow rate automatically based on demand.

b) Residents Hot Water (DHW)

Domestic hot water is generated via the DHW heat exchanger mounted in the HIU and provides instantaneous hot water on demand.

DHW flow rate and temperature is controlled via the Pressure temperature control valve which is temperature compensated and requires no auxiliary power to operate.

When a hot water tap is opened the drop in pressure in the hot water pipe will open the 4 port pressure temperature control valve which in turn will allow primary hot water into the heat exchanger.

When the hot water demand ceases the pressure temperature control valve will immediately stop the primary flow into the heat exchanger. Therefore there is no drain on the primary heating when there is no demand, so no “extra energy usage” when residents are on holiday for example.

A tempering valve is provided to ensure a stable hot water temperature and as a guard against scalding.

A thermostatic “summer” bypass valve is fitted to maintain a minimum primary temperature when the space heating is not in use. This provides a quick DHW response and avoids unnecessary energy usage.

Energy Metering

As an option the HIU can be provided with a built in battery powered energy meter mounted in the primary heating return pipe.

The meter will measure flow using the ultrasonic principle with an accuracy complying with EN1434 and MID in Class 2 with dynamic range of 1:250 (qi:qp)

The heat meter has options for pulse, M bus or radio to allow remote reading with hand held scanner, drive by or remotely via GPRS. All necessary system hardware and software is available on request.

Pre-payment options are available on request.

If a cold water meter is fitted this can be pulse linked to the energy meter.

The heat calculator will display energy usage in kW hours.

Battery life approximately 12 years.



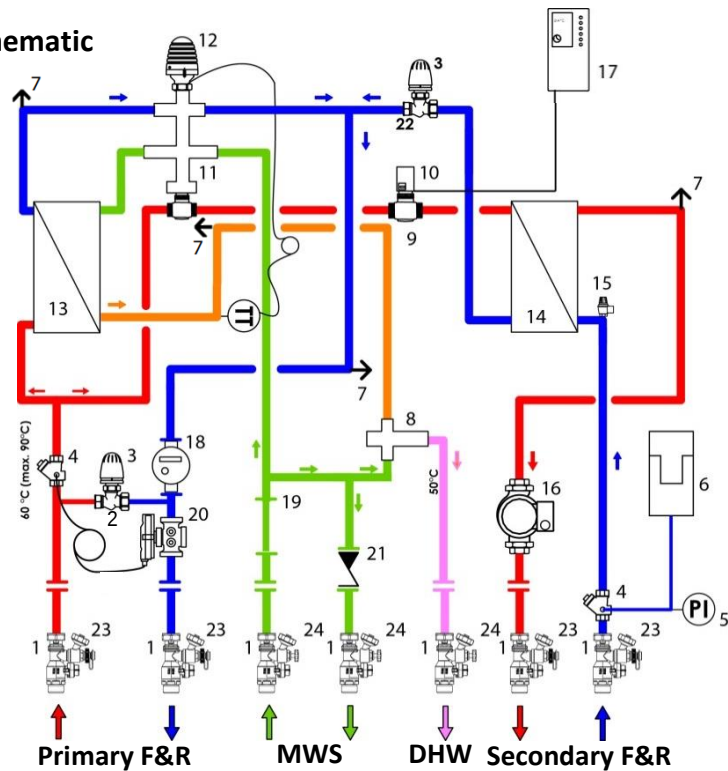
System Balancing

Differential pressures higher than 55kPa could affect the performance of some components in the HIU. Excessive differential pressures can also cause noise and reduce the lifetime of components within the HIU. We would recommend the integral DPCV option should be utilised to protect the components in the HIU from excessive differential pressures. If this option is not utilised then differential pressure control valves must be fitted at branches/floors to stabilise pressures and temperatures.



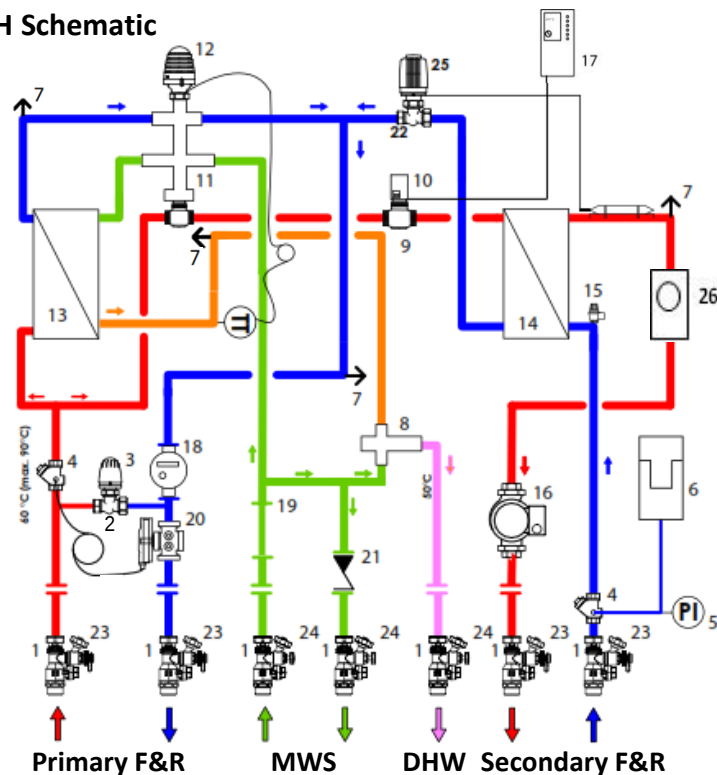
Technical Data

Guildford HIU Schematic



No	Description	No	Description
1	First fix pre-mounting rail ball valves	14	Space heating heat exchanger - Stainless Steel brazed
2	Summer bypass valve	15	Pressure relief safety valve
3	Return temperature limiter	16	Secondary circulating pump
4	Strainer 0.5mm mesh	17	Room temperature controller (not supplied)
5	Pressure gauge	18	Ultrasonic Heat meter with pockets (optional)
6	Expansion vessel 7.5 litres	19	Spacing piece (110mm) for water meter
7	Air vent	20	Differential pressure control valve (optional)
8	Tempering valve	21	Non-return valve
9	Zone valve	22	Thermostatic valve
10	Actuating drive for zone valve	23	Drain valve with test point
11	Pressure temperature control valve with hot water priority valve	24	Drain valve
12	Thermostatic head with contact sensor	25	Secondary flow temperature limiter (UFH version)
13	DHW heat exchanger - Stainless Steel brazed	26	Temperature safety switch (UFH version)

Guildford HIU UFH Schematic



Guildford HIU Data

Description	Data
Maximum DHW output	55 kW
Maximum secondary heating output	15 kW (8kW UFH)
Maximum primary supply temperature	90°C
Maximum DHW temperature	55°C
Maximum DHW flowrate	20 l/min
Minimum DP at 85°C	25 kPa
Maximum working pressure primary side	10 bar
Maximum working pressure DHW side	10 bar
Minimum cold water pressure	2.5 bar
Safety relief valve setting secondary heating side	3 bar
Safety relief valve stainless steel tail	18mm
Expansion vessel capacity	7.5 litres
Ball valve connections	22mm/15mm compression
Dimensions H x W x D	1010mm x 606mm x 190mm
Dimensions H x W x D (top entry)	1010mm x 674mm x 253mm

Guildford HIU Flow Data

DHW		50/10°C	50/10°C	50/10°C	50/10°C	DHW Temperature
Output	Flowrate	70°C	75°C	80°C	85°C	Primary Flow Temperature
31 kW	11 l/min	34.7	32.4	29.7	27.1	Primary Return Temp (°C)
		769	646	551	482	Primary Flowrate (l/h)
42 kW	15 l/min	30	30.7	29.9	28.2	Primary Return Temp (°C)
		882	818	737	662	Primary Flowrate (l/h)
47 kW	17 l/min	26.8	29.3	29.1	28.3	Primary Return Temp (°C)
		896	878	810	737	Primary Flowrate (l/h)
55 kW	20 l/min	23	24	23.8	25.8	Primary Return Temp (°C)
		860	858	800	795	Primary Flowrate (l/h)

Heating capacity examples - Radiator Heating			
Output	Primary Flowrate	Primary Temperature (°C)	Secondary Temperature (°C)
5 kW	160 l/h	85/60	75/40
10 kW	320 l/h	85/60	75/35
15 kW	437 l/h	85/55	66/35

Heating capacity examples - Underfloor Heating			
Output	Primary Flowrate	Primary Temperature (°C)	Secondary Temperature (°C)
3 kW	79 l/h	75/41	45/40
5 kW	127 l/h	75/41	45/40
8 kW	193 l/h	75/39	45/35

Guildford HIU Part Numbers

Part no	Description
1401882	Herz Guildford Indirect HIU
1401883	Herz Guildford Indirect HIU inc. Heat Meter
1401885	Herz Guildford Indirect HIU inc. DPCV
1401889	Herz Guildford Indirect HIU inc. Heat Meter + DPCV
1402211	Herz Guildford UFH Indirect HIU
1402212	Herz Guildford UFH Indirect HIU inc. Heat Meter
1402213	Herz Guildford UFH Indirect HIU inc. DPCV
1402214	Herz Guildford UFH Indirect HIU inc. Heat Meter + DPCV
1401893	Herz Guildford HIU Cover
1401895	Herz Guildford HIU Cover for Top Entry
1401896	Herz Guildford First Fix Pre-Mounting Rail
1401890	Herz Guildford Top Entry Bracket
1401891	Herz Guildford Top Entry Bracket + Pipes

Water Quality

Consideration should be given to the use of a scale prevention device when aggressive water supplies are present.

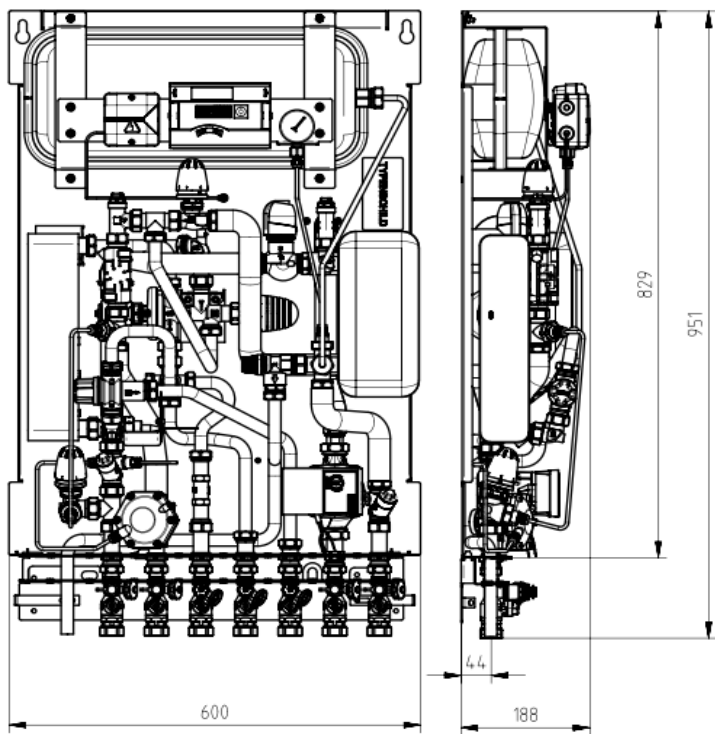
WRAS Approval Number

Guildford HIU WRAS certificate No: 1412327

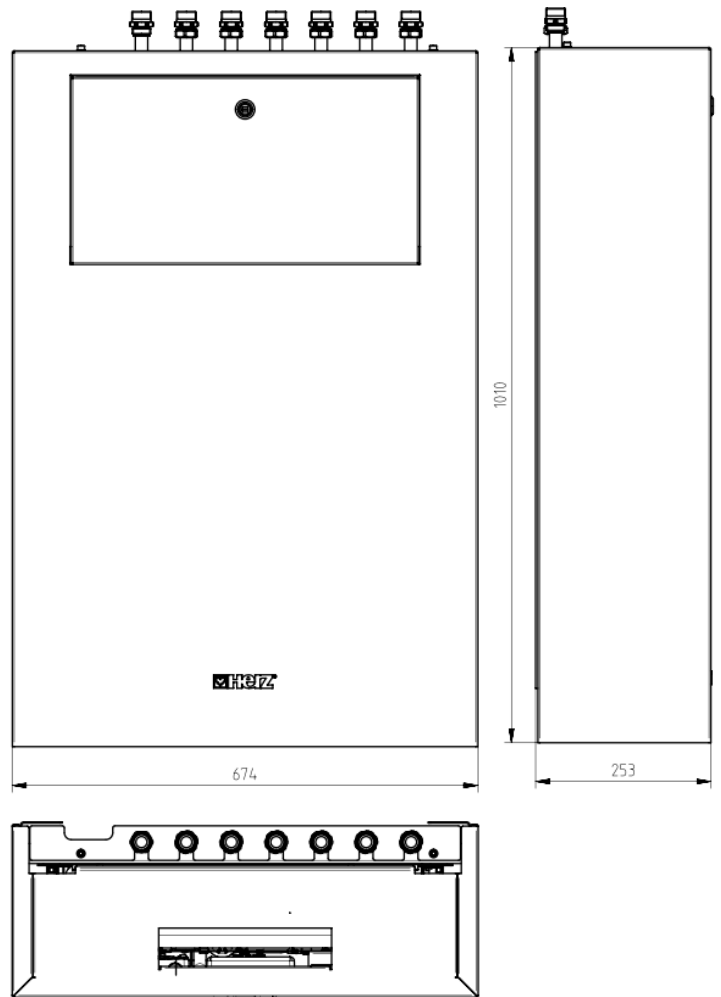
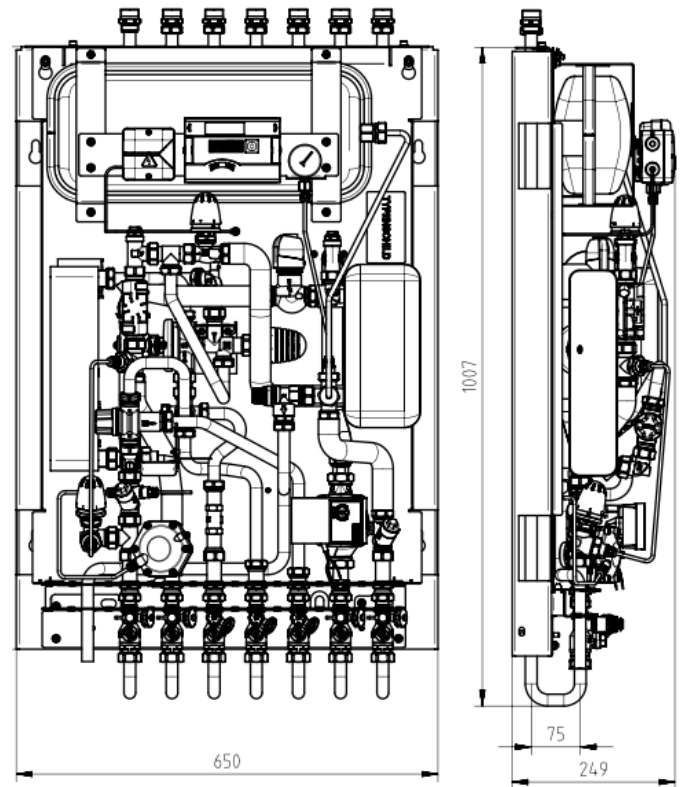


Guildford HIU Drawings

Bottom entry version



Top entry version



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HERZ Valves UK

Progress House, Moorfield Point
Moorfield Road, Slyfield Industrial Estate
Guildford, Surrey GU1 1RU
Tel.: +44 (0)1483 502211, Fax: +44 (0)1483 502025
E-Mail: sales@herzvalves.com
www.herzvalves.com

International Headquarters

HERZ Armaturen GmbH

Richard-Strauss-Str. 22, A-1230 Vienna
Tel.: +43 (0)1 616 26 31-0, Fax: +43 (0)1 616 26 31-227
E-Mail: office@herz.eu

www.herz.eu

