www.Versatile.ie

VERSATILE Dublin Heat Interface Unit

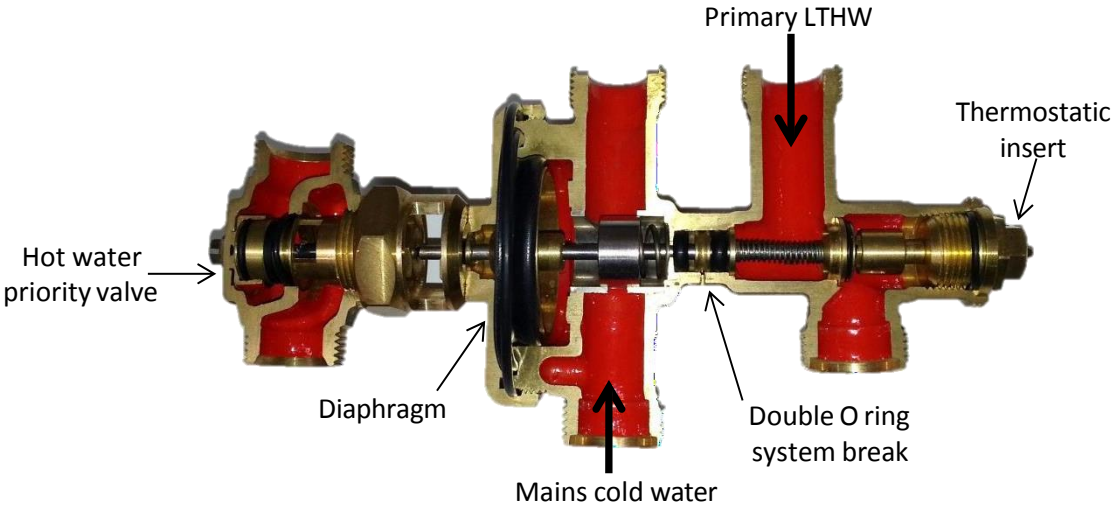
General Description

The Versatile Dublin 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.

Zone Valve

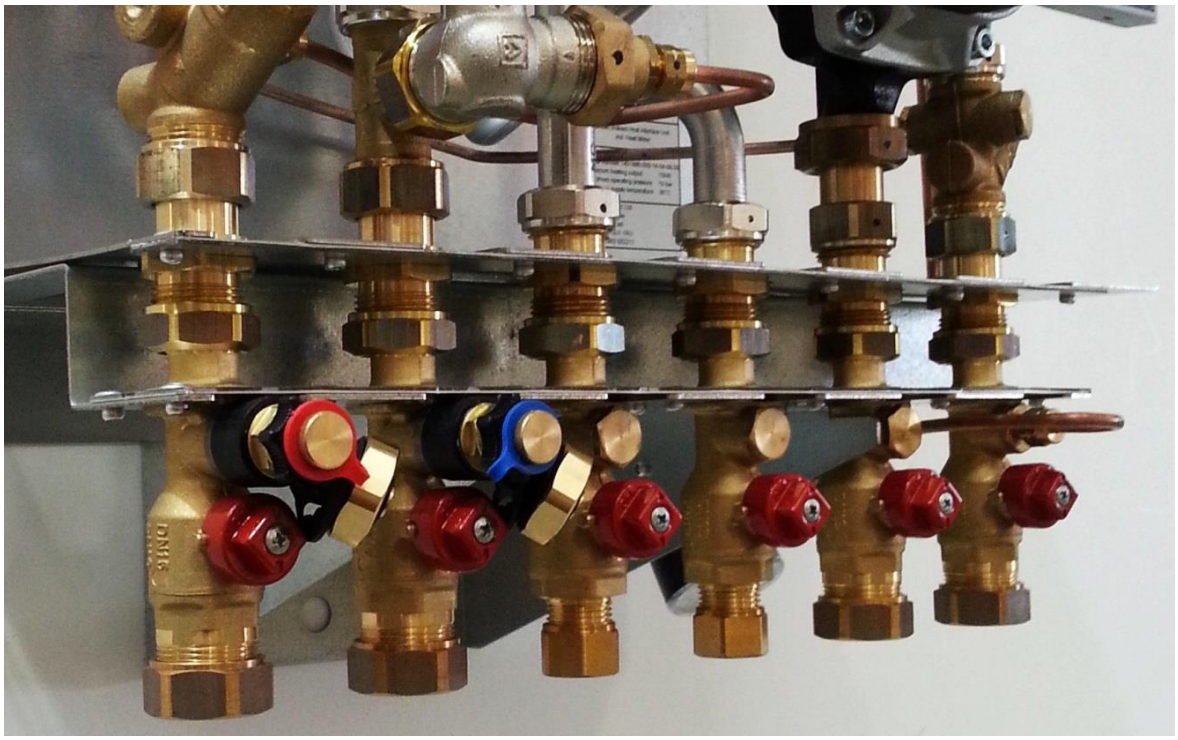
The primary flow to the heating system heat exchanger is controlled by a two port on/off actuated valve linked to a programmable room thermostat. This valve will close when the room temperature setting has been achieved or when the heating system is not in use.

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.

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 with integral test points on the primary flow and return to facilitate draining and 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.



Main Features

- Instantaneous hot water and space heating to properties
- Twin heat exchangers provide hydraulic separation
- Thermostatic hot water temperature control
- ”Summer bypass” valve
- First Fix pre-mounting rail
- Low primary return temperature maximises system efficiency
- Suitable for radiators or underfloor heating
- Option for heat meter (110mm Spool piece provided as standard)
- Viewing window allows meter reading without casing removal
- 110mm Spool piece provided for water meter
- WRAS approved products utilised where required
- 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 (Versatile 1 7791 23). This valve will close when the room temperature setting has been achieved or when the heating system is not in use.

A differential pressure control valve should be fitted on each HIU or across the primary flow and return circuits in the distribution pipework or 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 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.

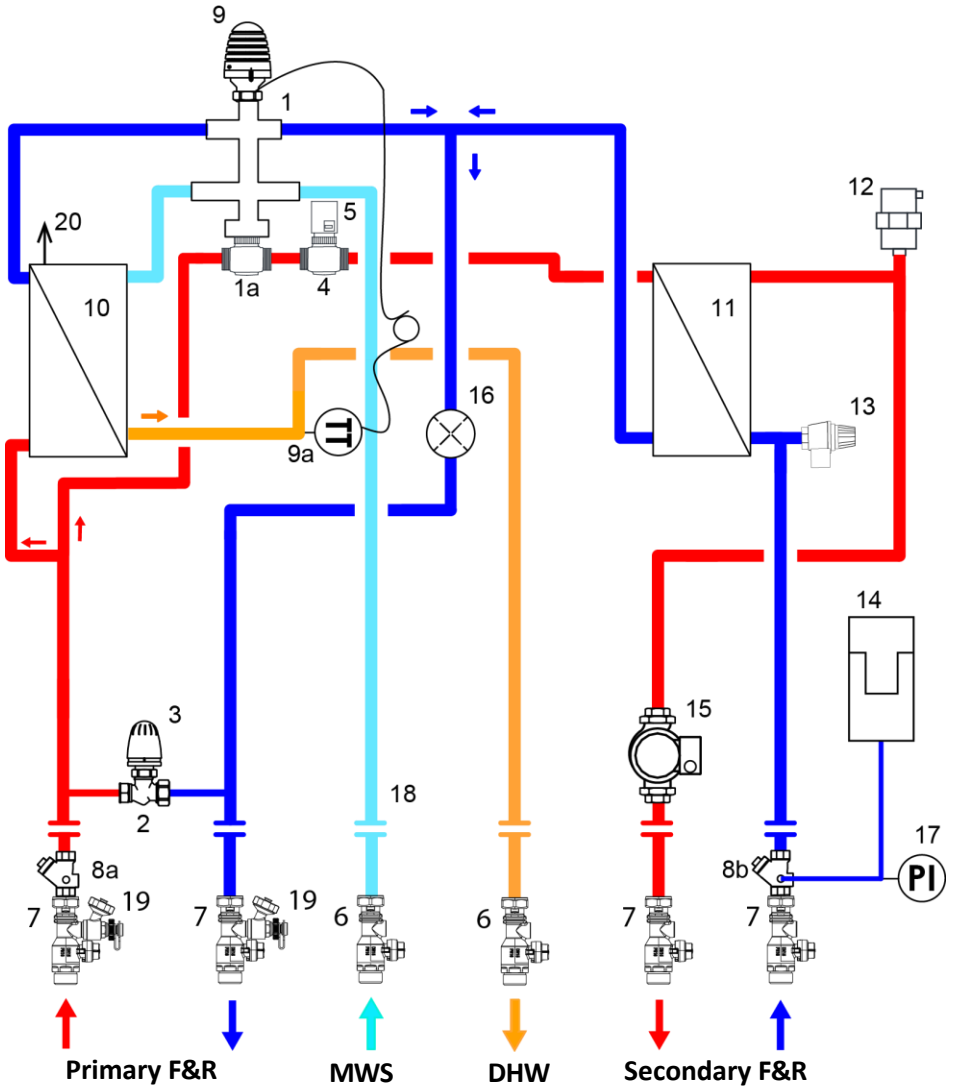
Battery life approximately 12 years.

System Balancing

High differential pressures could affect the performance of some components in the HIU and in particular cause temperature spikes in the hot water. Excessive differential pressures can also cause noise and reduce the lifetime of components within the HIU. We would recommend that DPCV should be installed on each HIU to protect the components from excessive differential pressures and to control flow. If this option is not utilised then differential pressure control valves must be fitted at branches/floors to stabilise pressures and temperatures.

Technical Data

Dublin HIU Schematic



No	Description
1	Pressure temperature control valve WRAS approved
1a	Hot water priority valve WRAS approved
2	Summer bypass valve
3	Return temperature limiter
4	Zone valve
5	Actuating drive for zone valve
6	Ball valves 15mm compression WRAS approved
7	Ball valves 22mm compression
8a	Primary Strainer 0.5mm mesh
8b	Secondary Strainer 0.5mm mesh
9	Thermostatic head with contact sensor
10	DHW heat exchanger - Stainless Steel brazed
11	Space heating heat exchanger - Stainless Steel brazed
12	Air vent
13	Pressure relief safety valve
14	Expansion vessel 10 litres
15	Secondary circulating pump
16	Ultrasonic Heat meter with pockets (optional)
17	Pressure gauge
18	18 l/min flow restrictor
19	Drain valve with test point
20	Manual air vent

Dublin HIU Data

Description	Data
Maximum DHW output	52 kW
Maximum secondary heating output	15 kW
Maximum primary supply temperature	90°C
Maximum DHW temperature	55°C
Maximum DHW flowrate	18 l/min
Minimum DP at 81°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 copper tail	15mm
Expansion vessel capacity	10 litres
Ball valve connections	22mm/15mm compression
Dimensions H x W x D	750mm x 440mm x 365mm

Dublin HIU Flow Data

All flow data calculated at 25 kPa primary differential pressure

	50/10°C	50/10°C	DHW Temperature
DHW flowrate	65°C	81°C	Primary Flow Temperature
5 l/min	27	21	Primary Return Temp (°C)
	347	230	Primary Flowrate (l/h)
	16	16	DHW Output (kW)
12 l/min	24	23	Primary Return Temp (°C)
	620	504	Primary Flowrate (l/h)
	32	35	DHW Output (kW)
14.5 l/min	22	22	Primary Return Temp (°C)
	620	570	Primary Flowrate (l/h)
	34	40	DHW Output (kW)
17.5 l/min	20	22	Primary Return Temp (°C)
	620	621	Primary Flowrate (l/h)
	35	45	DHW Output (kW)

Water Quality

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

Dublin HIU Part Numbers

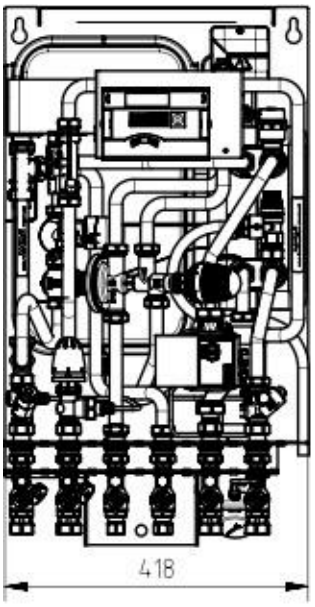
Part no	Description
1401865	Versatile Dublin Indirect HIU
1401866	Versatile Dublin Indirect HIU inc. Heat Meter
1401867	Versatile Dublin HIU bottom cover optional extra

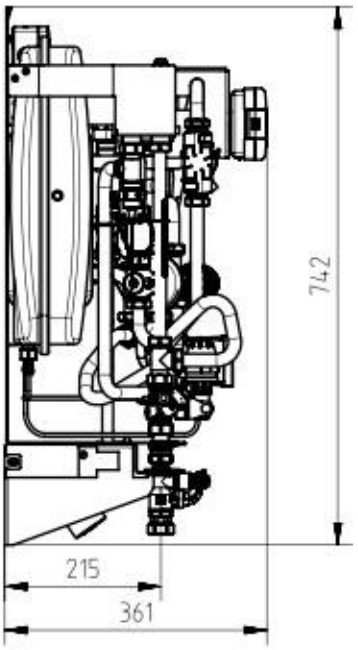
WRAS Approval Numbers

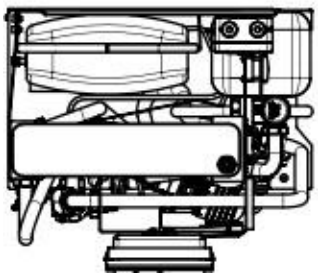
WRAS approved components utilized in the HIU

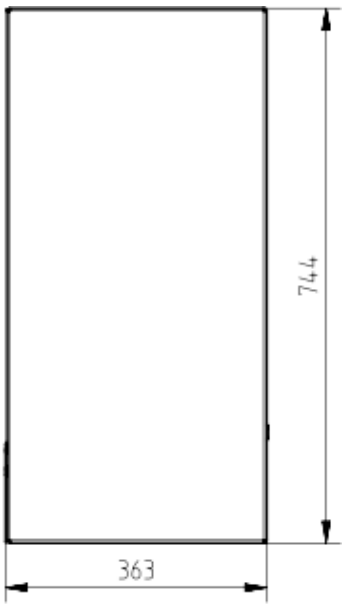
Description	WRAS Cert No
Ball valve	1210314
Pressure temperature control valve	1207310
DHW heat exchanger	1105334
18 l/min flow restrictor	1003082

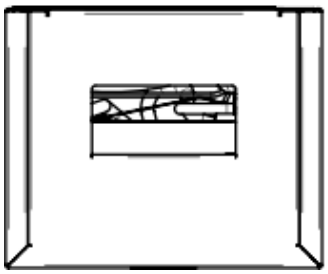
Dublin HIU Drawings











Versatile

Enrich your space

Versatile Valves UK Ltd.
Beechmount Homepark, Clogherboy, Navan,
Co. Meath, C15 WR60
Tel: 046 902 9444,
E-Mail: sales@Versatile.ie

www.Versatile.ie