

Herz Caledonia Direct Heat Interface Unit

The Modern Solution for Apartment Heating and
Domestic Hot Water Services



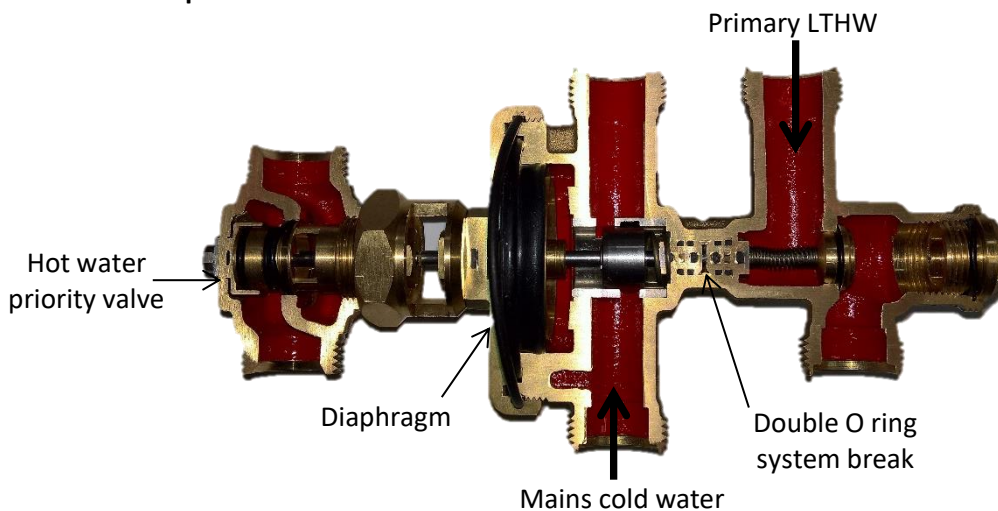
General Description

The Herz Caledonia Direct 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 DHWS system.

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. The valve has proportional control and only allows the minimum amount of primary water required to produce the requisite amount of hot water at the tap, maximising system efficiency. At the same time, a hot water priority valve closes the primary feed to the secondary heating system, 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 a thermostatic control valve. Using an immersion sensor, this thermostat controls the temperature of the hot water that exits the heat exchanger and regulates the thermostatic 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. The thermostatic bypass valve is installed upstream of the heat meter. Combined with the Pressure Temperature Control Valve, which only allows water through the DHW heat exchanger when there is a demand, ensures that it is impossible to have meter creepage or standing losses from the Herz York Direct HIU.

Isolation ball valves

Isolation ball valves are provided so that the shell and core pipework can be completed without the HIU being fitted. Drain valves can be supplied to facilitate draining and also with integral test points to aid additional temperature or pressure measurement if required. The ball valves also allow maintenance to be carried out on the HIU as the main unit can be removed easily.



Top Entry stand-off Bracket

The Herz Caledonia Direct 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 stand-off bracket enables any combination of services to be piped from above or below the HIU. Pre-formed, pre-insulated pipes, complete with all connections, are available to provide full flexibility.

Other Features

- ▶ Instantaneous hot water and space heating to properties
- ▶ DHW heat exchanger provides hydraulic separation
- ▶ Thermostatic hot water temperature control
- ▶ Primary Differential Pressure Control Valve
- ▶ Secondary Differential Pressure Control/Zone Valve
- ▶ Insulated heating pipework & cover
- ▶ Low primary return temperature maximises system efficiency
- ▶ Optional drain valves with test points available to be fitted to the ball valves
- ▶ Optional MCW booster pump
- ▶ Optional primary flushing bypass available
- ▶ Option for heat meter (110mm Spool piece provided as standard)
- ▶ Optional return temperature limiter available for installation in the secondary radiator system
- ▶ 18mm stainless steel pipe work



Functions

a) Residents Heating System

The primary flow to the secondary heating system is controlled by an integrated fixed spring differential pressure control valve with on/off actuated zone valve linked to a programmable room thermostat (Herz 3 F799 17). This valve will close when the room temperature setting has been achieved or when the heating system is not in use. The differential pressure controller is fitted across the secondary flow and return circuit on each HIU to ensure that the delta t is maintained to maximise system efficiency and the return temperature.

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 temperature is controlled by a thermostat fitted to a thermostatic control valve. Using an immersion sensor, this thermostat controls the temperature of the hot water that exits the heat exchanger and regulates the thermostatic control valve thus maximising the energy efficiency of both the HIU and the primary system.

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.

If the mains cold water pressure is insufficient for the HIU to produce hot water, an optional cold water booster pump can be installed. The pump is operated automatically from an integral flow switch.

Energy Metering

A battery powered energy meter can be provided as an option.

The meter will measure flow using the ultrasonic principle with an accuracy complying with EN1434 and MID in Class 2.

The heat meter will have options for M bus or radio.

Pre-payment options are available on request.

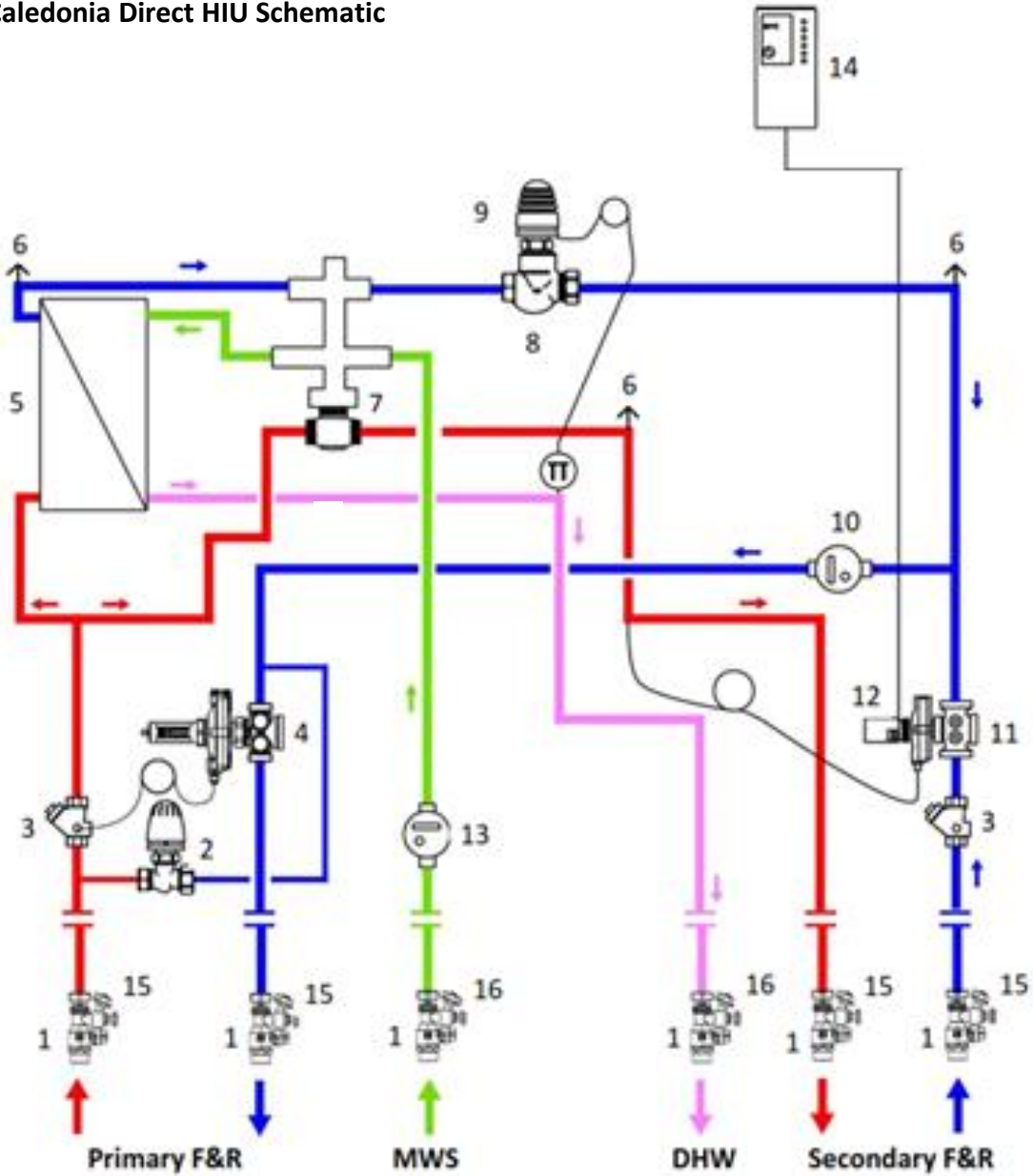
System Balancing

BSRIA BG 62/2015 states that each HIU should include a differential pressure control device so that the operation of the HIU is independent of fluctuations in the primary pressure. A Differential Pressure Control Valve is included across the primary in the Herz Caledonia Direct HIU to protect the HIU from pressure fluctuations in the primary system and to govern the primary flow rate to the HIU. A fixed spring differential pressure control/zone valve with actuator is also fitted across the secondary circuit to ensure that the delta t is maintained to maximise system efficiency and the return temperature. This means that the Herz Caledonia Direct HIU is effectively self-balancing and requires no other commissioning valves.



Technical Data

Herz Caledonia Direct HIU Schematic



No	Description
1	Isolation ball valves
2	Thermostatic circulation "Summer bypass" valve
3	Strainer 0.5mm mesh
4	Primary Differential pressure control valve
5	DHW heat exchanger - Stainless Steel brazed
6	Air vent
7	Pressure temperature control valve with hot water priority valve
8	Thermostatic control valve
9	Thermostatic head with contact sensor
10	Optional Ultrasonic Heat meter spacing piece
11	Secondary Differential pressure control/zone valve
12	Actuating drive for zone valve
13	Cold water booster pump
14	Room temperature controller (optional)
15	Optional drain valve with test point
16	Optional drain valve

Herz Caledonia HIU Data

Description	Data
Maximum DHW output	63 kW
Maximum primary supply temperature	90°C
Maximum DHW temperature	55°C
Maximum DHW flowrate	20 l/min
Recommended minimum DP	55 kPa
Maximum Secondary DP	23 kPa
Maximum working pressure primary side	10 bar
Maximum working pressure DHW side	10 bar
Minimum cold water pressure for maximum output	2.5 bar
Ball valve connections	22mm compression
Dimensions H x W x D	780mm (c/w ball valves) x 535mm x 220mm
Dimensions H x W x D (top entry)	887mm (c/w ball valves) x 535mm x 280mm

Water Quality

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

UK Water Reg 4 Compliant

Caledonia HIU KUKReg4 certificate No: 2204702



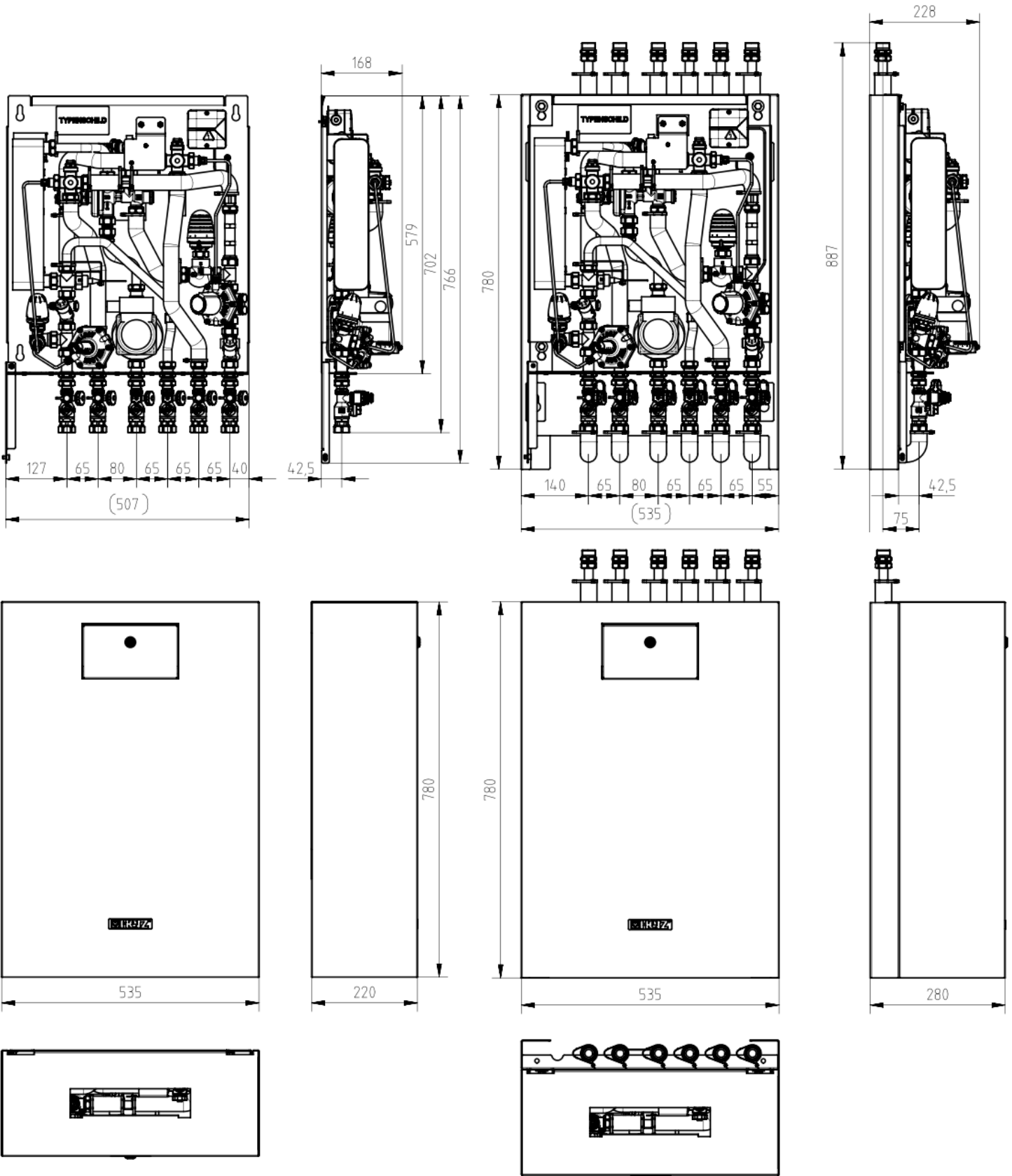
Herz Caledonia HIU Accessories

Top entry pipe 1401887 First fix entry 1401888	Flushing bypass can be connected to the primary flow & return ball valves on the first fix pre-mounting rail or the pipes in the top entry bracket	
3F79917	230V Programmable digital thermostat with individual time and temperature adjustment on a weekly basis	
HVHIUSV-01	Solenoid Valve for pre-payment applications supplied separately ½" NC 230V/50hz DIN plug included	
HVHIUTRV-99 HVHIUTRV-98	Pre-settable TRV kits for HIU radiator heating systems, TRVs available for radiators up to 3kW or 6kW @ 20°Δt	
HVHIUDVKIT-01	Drain valve kit for Caledonia HIU ball valves	

Herz Caledonia HIU Dimensions

Bottom entry version

Top entry version



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Herz Valves UK Ltd.
Unit 2B Centurion Business Park,
Sturrock Way, Bretton,
Peterborough PE3 8YF
Tel: 01733 300330
E-Mail: sales@herzvalves.com

www.herzvalves.com

