GIACOMINI HEAT INTERFACE UNITS

GIACOMINI
WATER E-MOTION

BROCHURE CONTENT

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CIBSE HEAT NETWORKS CONSULTANTS

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Telephone: 01454 311012
Email: sales@giacomini.co.uk

DISTRICT HEATING SYSTEMS

OVERVIEW

District heating systems have been utilised in the UK since the 1940's. The first large district heating system in the UK, Pimlico District Heating Undertaking in London, became operational in 1950 and is still in operation today.

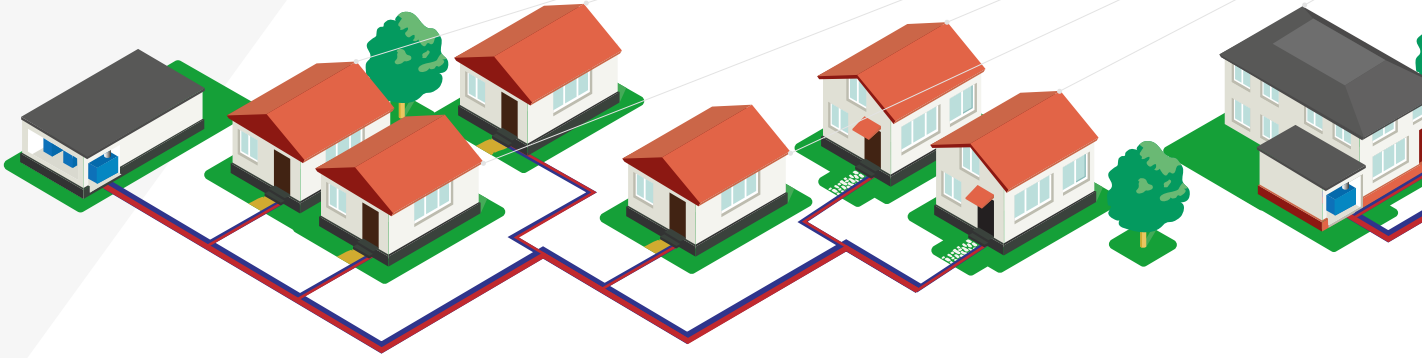
The popularity of district heating schemes peaked in the 1960's. By the mid 1980's the combination boiler had become the preferred choice of developers.

Over the last 10 years, district heating systems have had a resurgence in their popularity, mainly due to the environmental and carbon saving benefits.

In a heat network, such as a district or communal heating system, water is heated up to design flow temperature in a remote boiler. This hot water is then distributed through a pipe network to multiple end users where the energy contained in the water is used for the domestic hot water and the space heating.

When the hot water reaches the end user, the energy is transferred either directly or indirectly to the dwelling via a HIU. The HIU meters the usage of each dwelling and controls the flow of water to it, which helps balance the system.

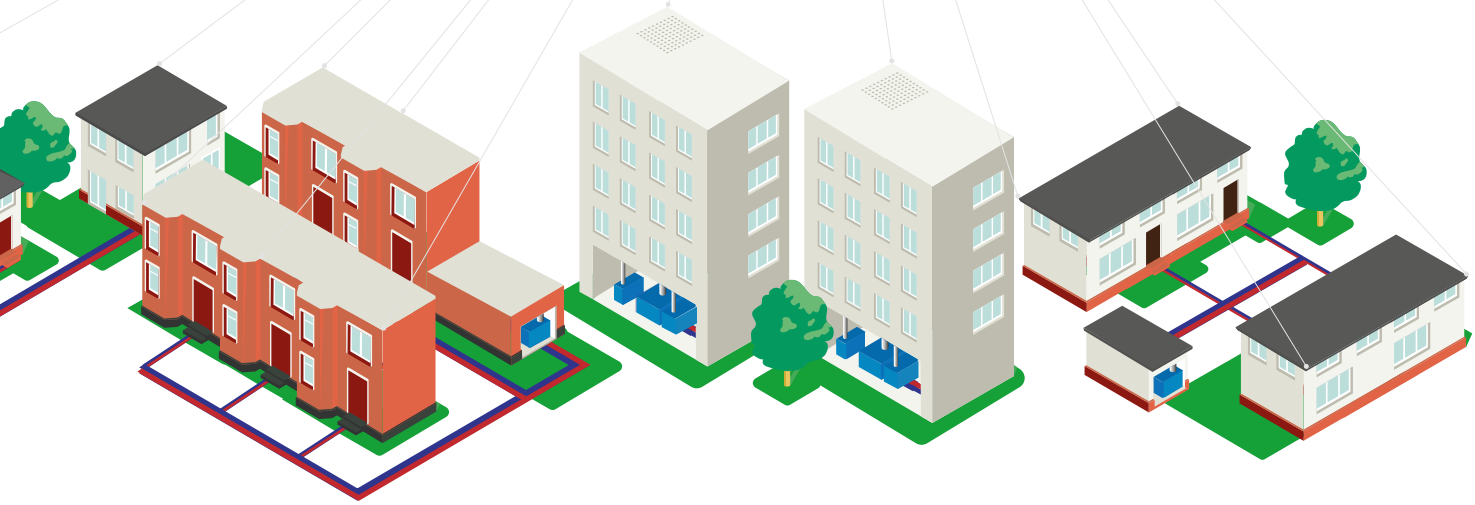
A properly designed central plant heating system can offer great economic and environmental benefits, especially if a renewable energy source has been chosen.



HOUSING DEVELOPMENTS

CARE HOMES

T: 01454 809100 E: sales@giacomini.co.uk W: uk.giacomini.com



STUDENT ACCOMMODATION APARTMENTS OFFICES

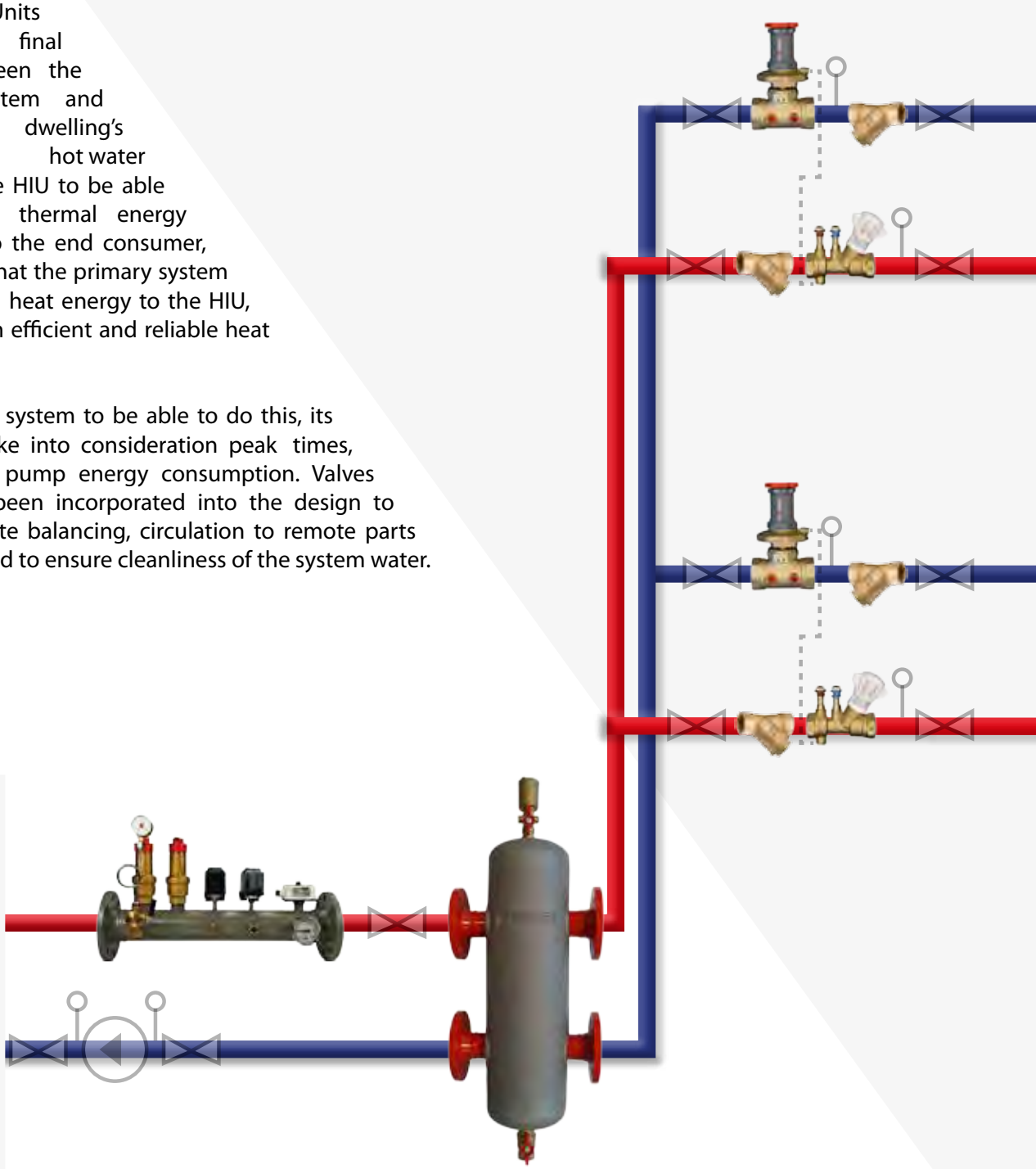
A heat network can be broken down into three areas;

Production, Distribution and Consumption.

DISTRIBUTION

In heat networks, Heat Interface Units (HIUs) are the final interface between the communal system and the individual dwelling's heating and hot water systems. For the HIU to be able to deliver the thermal energy requirements to the end consumer, it is important that the primary system delivers enough heat energy to the HIU, guaranteeing an efficient and reliable heat supply.

For the primary system to be able to do this, its design must take into consideration peak times, base load and pump energy consumption. Valves need to have been incorporated into the design to provide adequate balancing, circulation to remote parts in the system and to ensure cleanliness of the system water.



BOILER

PRODUCTION

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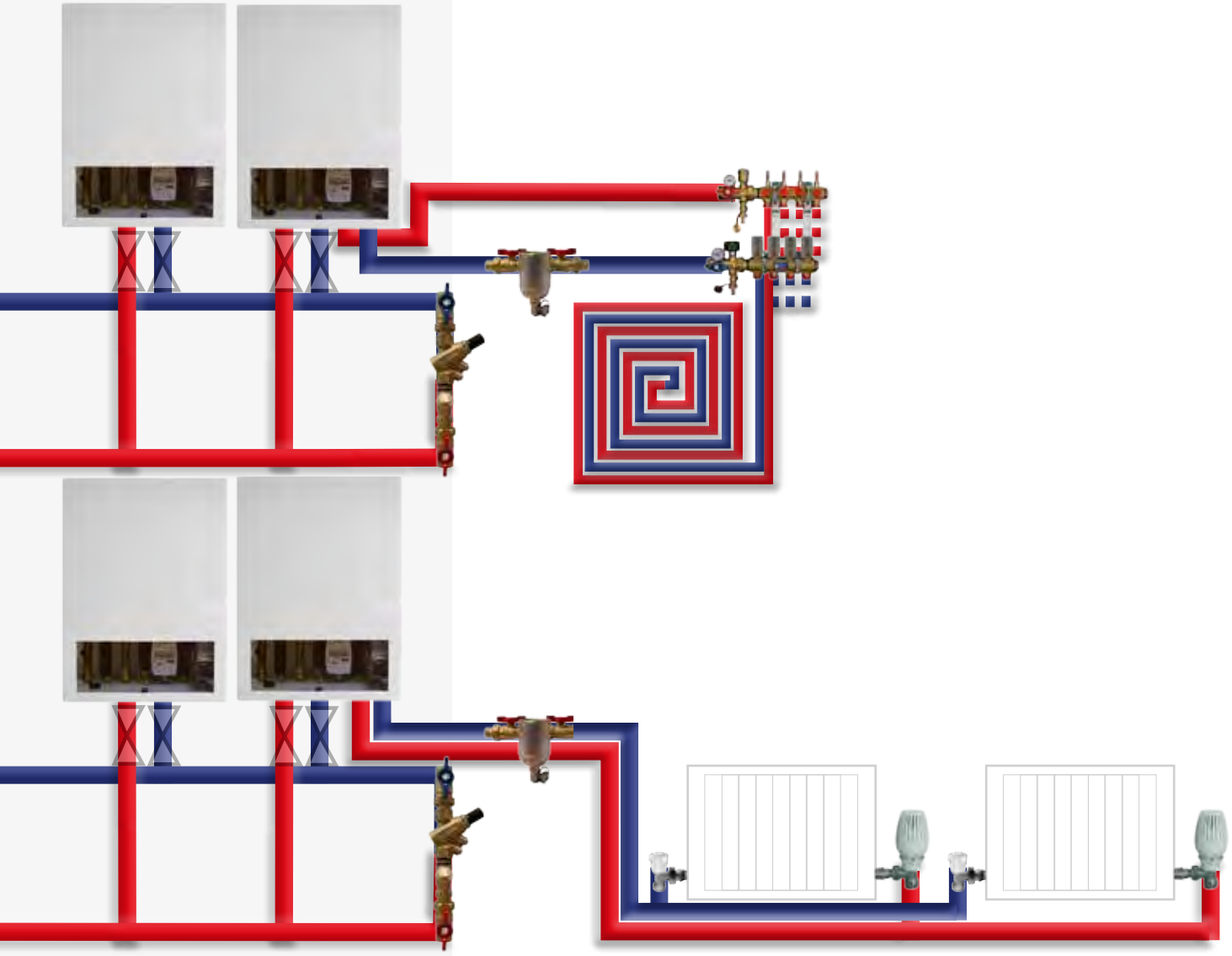


For more information on Giacomini's plant room components and flow control valves, scan the code displayed right or visit **uk.giacomini.com/download-area** to view the latest **Flow Control Brochure.**

CONSUMPTION

PRODUCT RANGE

ELECTRONIC UNITS

SINGLE PLATE
INDIRECT DHW, DIRECT HEATING

Single plate indirect DHW units with direct heating generate instantaneous hot water via a plate heat exchanger, whilst the heating is fed directly through the unit. These types of unit tend to be popular on smaller projects with a low static pressure and low flow temperature. One of the main benefits is that no temperature is lost across the heating circuit, meaning the flow temperature is the same on the primary and secondary flow sides.

P10

TWIN PLATE
INDIRECT DHW, INDIRECT HEATING

Twin plate units hydraulically separate the primary and secondary heating systems and allow for instantaneous domestic hot water (DHW) production. The instantaneous production of DHW ensures there is no storage of hot water and subsequently minimised risk of legionella developing. The hydraulic separation of the primary and secondary heating systems minimises risks if there is a leak anywhere in the heating system. These units are primarily installed on larger projects and high-rise buildings.

P14

SINGLE PLATE
INDIRECT DHW/HEATING

Single plate indirect units are normally connected directly to the dwelling's heating system. It is also possible to connect the unit to an external coil contained within a DHW cylinder. Alternatively, both can be achieved via an s-plan zone valve arrangement.

MECHANICAL UNITS

P18

P22

P26

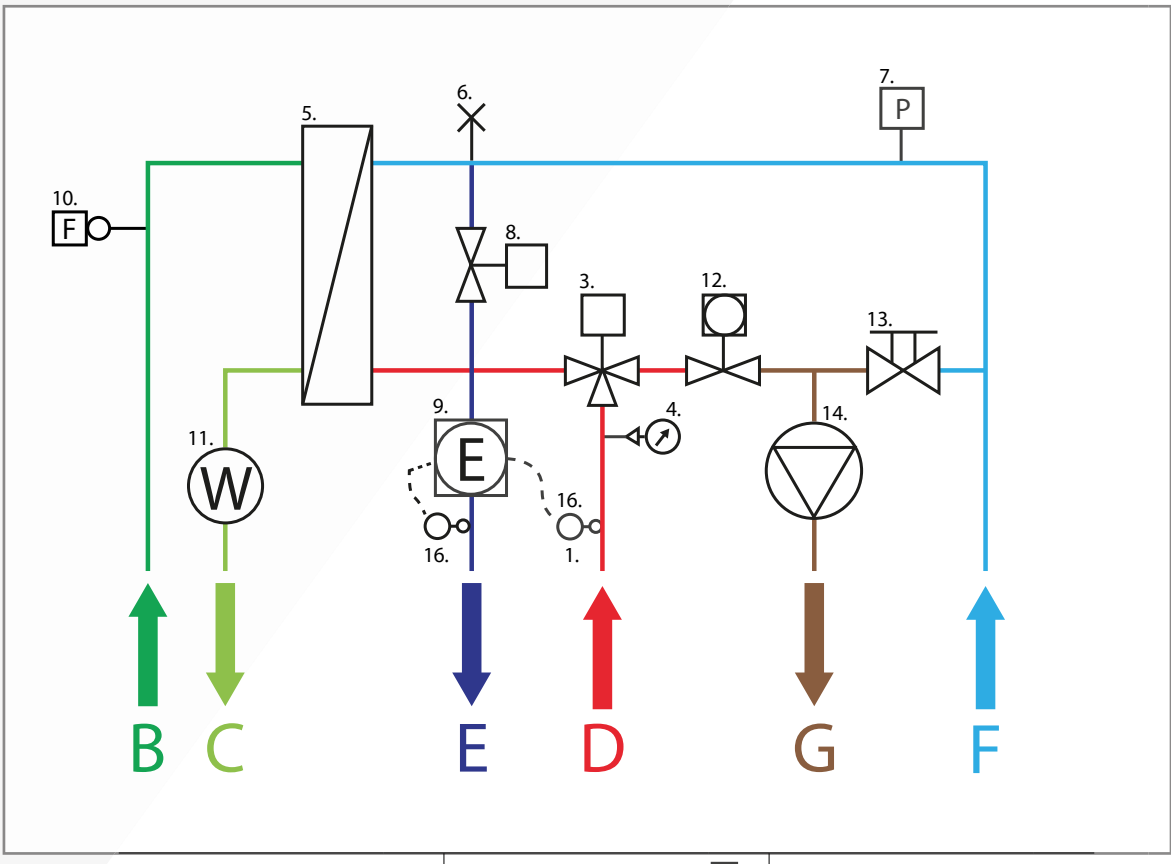
G6 SINGLE PLATE
58kW GE556Y401 67kW GE556Y402

INDIRECT DHW, DIRECT HEATING

High-efficiency electronic Heat Interface Unit (HIU) for managing high/low temperature heating and domestic hot water (DHW) production. The heating is fed directly from the primary system without a plate heat exchanger and the domestic hot water is generated instantaneously via a plate heat exchanger. The fast-acting modulating two-port valve ensures the lowest return temperature possible at any given condition.

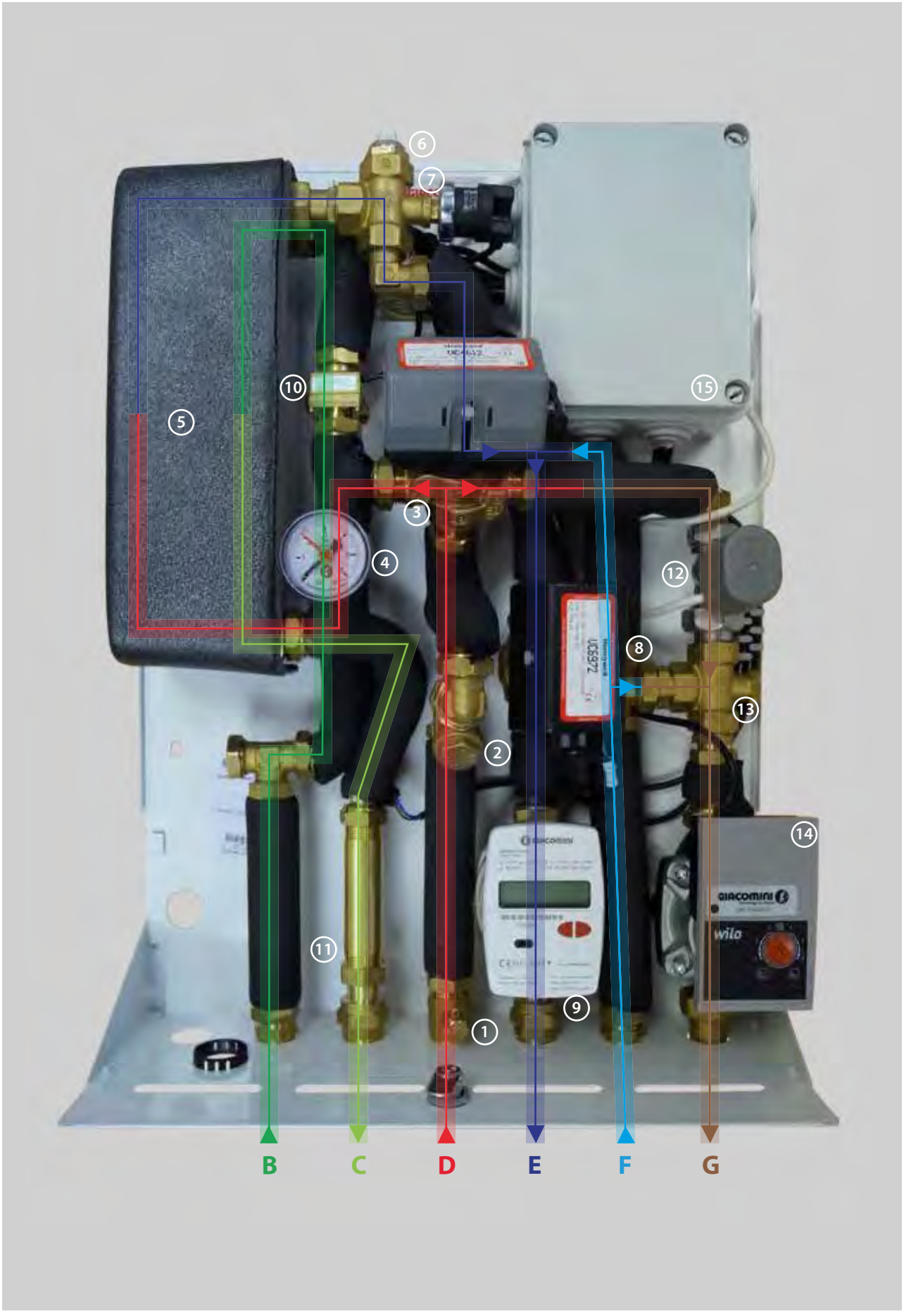
MAIN FEATURES

- **Electronic control,** to manage the set point of the DHW and heating temperatures.
- **External temperature sensor** for weather compensation.
- **Motorised three -port priority valve on primary circuit** to divert the primary water from the heating circuit to the DHW plate on demand.
- **Motorised two-port modulating valve on primary circuit** for modulation of the primary flow rate to suit demand.
- **Safety pressure switch** for protection of pump.
- **Electrical and thermal temperature safety valve** for heating system.
- **Self-modulating pump** complying with ErP directive (2009/125/CE).



1. Housing for energy meter temperature probe	**7.** Minimum pressure switch	**13.** Bypass lock shield valve
2. Filter	**8.** Motorized two-way modulating valve	**14.** High efficiency circulator
3. Motorized three-way priority valve for DHW	**9.** Spacer for heat energy meter	**15.** Cabinet with electronic regulation unit
4. Manometer	**10.** Flow switch	**16.** Temperature probe
5. Heat exchanger for the domestic hot water function	**11.** Spacer for DHW meter	
6. Manual air vent valve	**12.** Motorized two-way zone valve for heating and electric safety	

B: Domestic cold water inlet	**D:** Primary inlet	**F:** Heating return
C: Domestic hot water outlet	**E:** Primary outlet	**G:** Heating delivery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G6 SINGLE PLATE
58kW GE556Y401 67kW GE556Y402

INDIRECT DHW, DIRECT HEATING

TECHNICAL DATA

Max. working temperature:	90 °C
Max. operating pressure (primary and secondary):	10 bar
Max. differential pressure:	4 bar
Temperature of heating circuit: low temperature	24-45°C
Temperature of heating circuit: high temperature	25-85°C
DHW temperature range:	30-60°C (factory set to 50°C)

GE556Y401 DHW PRODUCTION

l/min	l/h	kW	75°C	70°C	65°C	60°C
Primary outlet temperature (15-50°C)			Flow rate [l/h]			
12	720	29	495 (24°C)	550 (24°C)	665 (27°C)	850 (30°C)
15	900	37	630 (25°C)	720 (26°C)	850 (28°C)	1050 (30°C)
17	1020	41.7	730 (26°C)	830 (27°C)	1000 (29°C)	1200 (30°C)
20	1200	49	875 (27°C)	1000 (28°C)	1200 (30°C)	1450 (31°C)
22	1320	54	980 (28°C)	1100 (28°C)	-	-
24	1440	58.8	1070 (28°C)	1200 (28°C)	-	-

GE556Y402 DHW PRODUCTION

l/min	l/h	kW	75°C	70°C	65°C
Primary outlet temperature (10-50°C)			Flow rate [l/h]		
12	720	33.5	510 (18.5°C)	580 (20°C)	670 (22°C)
15	900	42	660 (20.5°C)	750 (22°C)	880 (24°C)
17	1020	47.5	770 (22°C)	880 (23.5°C)	1020 (25°C)
20	1200	56	940 (23.5°C)	1050 (24.2°C)	-
22	1320	61.5	1040 (24°C)	1160 (24.6°C)	-
24	1440	67	1150 (25°C)	1280 (25°C)	-

EXAMPLE

FLOW RATE: SELECTION CHARTS

1) Select the required flow rate (DHW) from the first column. Example 12 litres per minute

2) Column 3 shows the kW load required. Example 29 kW

3) Select the flow temperature of the primary pipework from top row. Example 75°C

4) Cross reference to find flow rate. This is required litres per hour through the heat exchanger on the primary side. Example 495 litres per hour

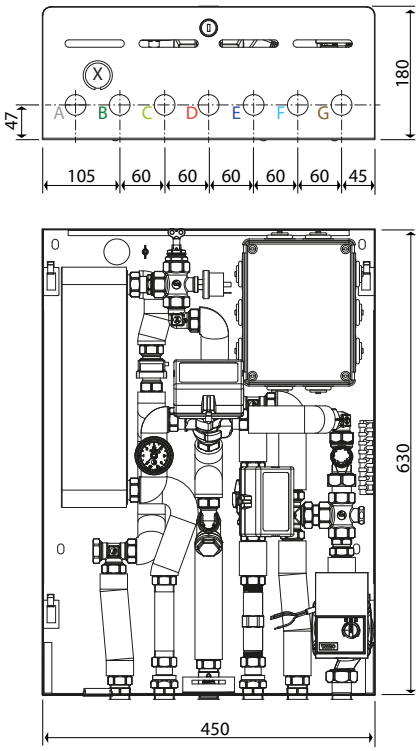
The figure in brackets is the return temperature when under load. Example 24°C

HEATING

circular speed	flow rate (l/h)	power (kW)	75°C	70°C	65°C	60°C
Primary outlet temperature (35-30°C)			Flow rate [l/h]			
Max	1500	8.8	170 (30°C)	190 (30°C)	215 (30°C)	250 (30°C)
Primary outlet temperature (45-40°C)			Flow rate [l/h]			
Max	1500	8.8	215 (40°C)	250 (40°C)	300 (40°C)	375 (40°C)
Primary outlet temperature (60-45°C)			Flow rate [l/h]			
Max	1500	26.3	750 (45°C)	900 (45°C)	1130 (45°C)	-
Max	1200	21.0	-	-	-	1200 (45°C)
Primary outlet temperature (70-55°C)			Flow rate [l/h]			
Max	1200	21.0	900 (55°C)	1200 (55°C)	-	-

UNIT DIMENSIONS

Height	630 mm		
Width	450 mm	**Depth**	180mm

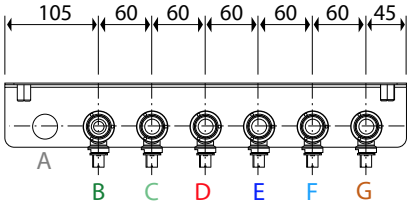


JIG BRACKET (GE551Y074)

The initial fix of the jig bracket can be completed prior to the heat interface units arriving on site, preventing any unnecessary site thefts or damage.

Height	721 mm		
Width	450 mm	**Depth**	94 mm
Jig Valve Connections		3/4"	

A: Domestic cold water outlet (optional)
B: Domestic cold water inlet
C: Domestic hot water outlet
D: Primary inlet
E: Primary outlet
F: Heating return
G: Heating delivery



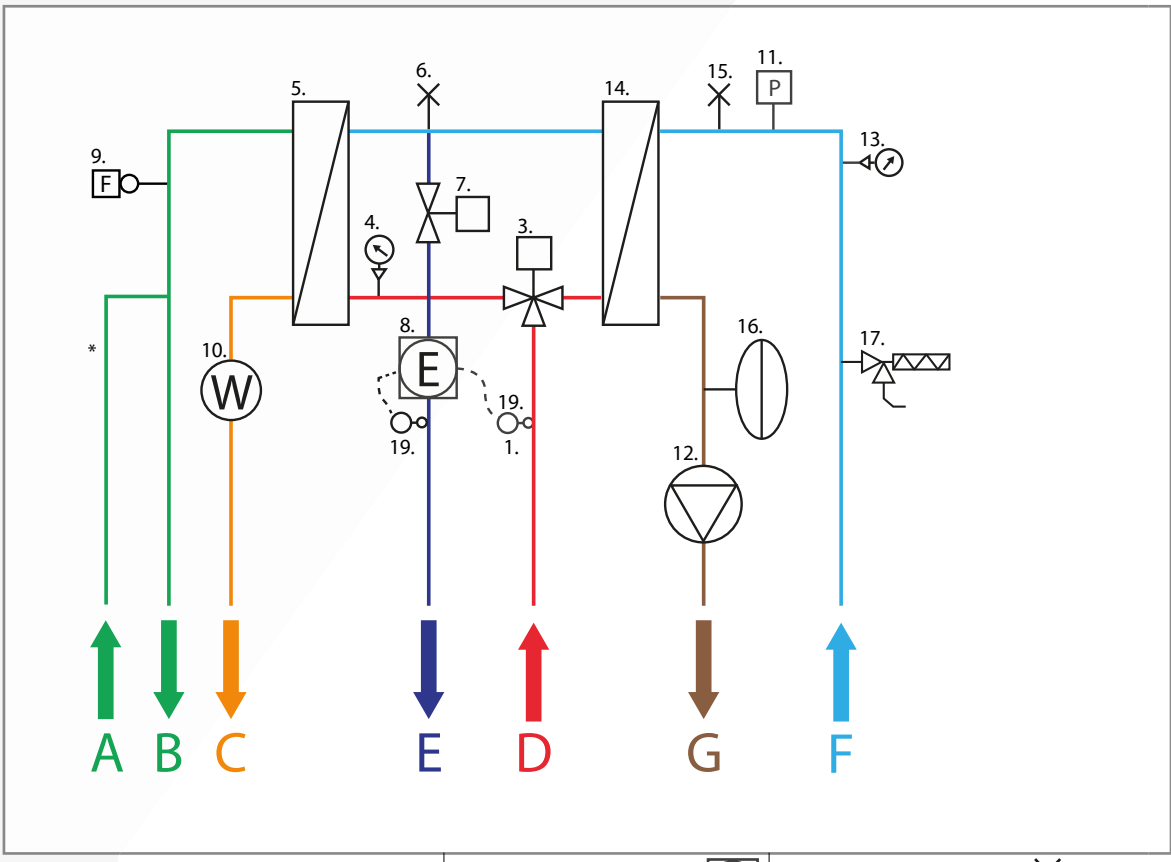
G6 TWIN PLATE
58kW GE556Y411 67kW GE556Y412

INDIRECT DHW, INDIRECT HEATING

High-efficiency electronic Heat Interface Unit (HIU) for managing high/low temperature heating and domestic hot water production. Both the heating and domestic hot water is generated instantaneously via separate plate heat exchangers. Fast acting modulating two-port valve ensures lowest return temperature possible at any given condition.

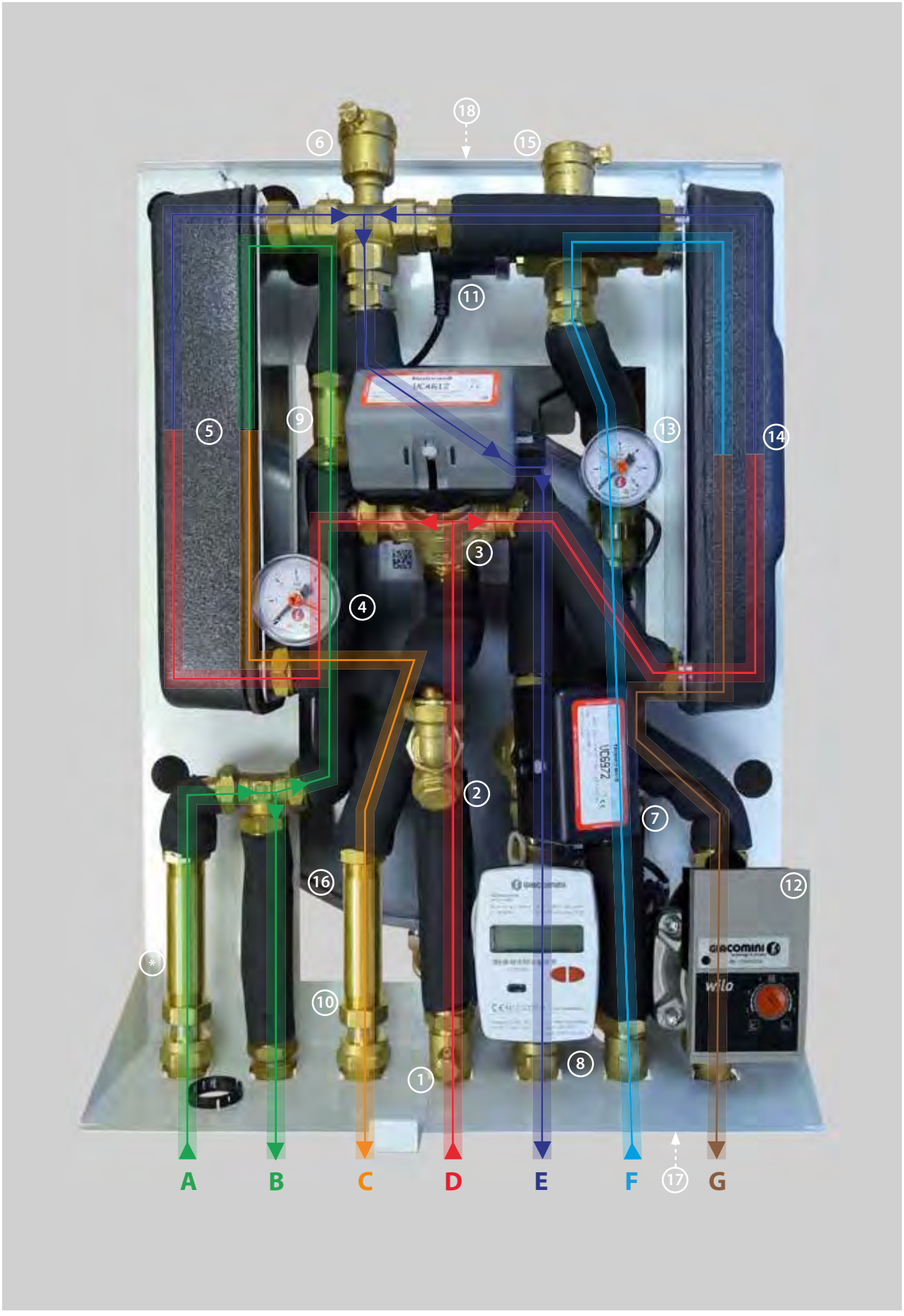
MAIN FEATURES

- **Hydraulic separation** on the primary heating, ensures that any potential leaks or failure of heating pipework is contained within the individual property.
- **Energy and water metering** options for accurate consumption readings.
- **Electronic control,** to manage the set point of the DHW and heating temperatures.
- **External temperature sensor** for weather compensation.
- **Motorised three -port priority valve on primary circuit** to divert the primary water from the heating plate to the DHW plate on demand.
- **Motorised two-port modulating valve on primary circuit** for modulation of the primary flow rate to suit demand.
- **Safety pressure switch** for protection of pump.
- **Electrical and thermal temperature safety valve** for heating system.
- **Self-modulating pump** complying with ErP directive (2009/125/CE).



1. Housing for energy meter temperature probe	**8.** Spacer for heat energy meter (E)	**15.** Automatic air vent valve
2. Filter	**9.** Flow switch (F)	**16.** Expansion vessel
3. Motorized three-way priority valve for DHW	**10.** Spacer for DHW meter (W)	**17.** Safety valve
4. Manometer	**11.** Minimum pressure switch (P)	**18.** Cabinet with electronic regulation unit
5. Heat exchanger for the domestic hot water function	**12.** High efficiency circulator	**19.** Temperature probe
6. Automatic air vent valve	**13.** Manometer	* Spacer for additional DHW meter
7. Motorized two-way modulating valve	**14.** Heat exchanger for the heating function	

A: Domestic cold water inlet	**C:** Domestic hot water outlet	**E:** Primary outlet
B: Domestic cold water outlet	**D:** Primary inlet	**F:** Heating return
		G: Heating delivery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G6 TWIN PLATE
58kW GE556Y411 67kW GE556Y412

INDIRECT DHW, INDIRECT HEATING

TECHNICAL DATA

Max. working temperature:	90 °C
Max. operating pressure (primary and secondary):	10 bar
Max. differential pressure:	4 bar
Temperature of heating circuit: low temperature	24-45°C
Temperature of heating circuit: high temperature	25-85°C
DHW temperature range:	30-60°C (factory set to 50°C)

GE556Y412 DHW PRODUCTION

l/min	l/h	kW	80°C	75°C	70°C	65°C
Primary outlet temperature (10-50°C)			Flow rate [l/h]			
12	720	33.5	465 (17.5°C)	510 (18.5°C)	580 (20°C)	670 (22°C)
15	900	42	595 (19.5°C)	660 (20.5°C)	750 (22°C)	880 (24°C)
17	1020	47.5	700 (21°C)	770 (22°C)	880 (23.5°C)	1020 (25°C)
20 (1)	1200	56 (2)	840 (22.5°C)	940 (23.5°C)	1050 (24.2°C) (4)	-
22	1320	61.5	950 (23°C)	1040 (24°C)	1160 (24.6°C)	-
24	1440	67	1030 (24°C)	1150 (25°C)	1280 (25°C)	-

(3) 70°C

HEATING

circular speed	flow rate (l/h)	power (kW)	80°C	75°C	70°C	65°C	60°C
Primary outlet temperature (35-30°C)			Flow rate [l/h]				
Max	1400	8.2	150 (30°C)	170 (30°C)	175 (30°C)	210 (31°C)	260 (32°C)
Primary outlet temperature (45-40°C)			Flow rate [l/h]				
Max	1400	8.2	175 (40°C)	210 (41°C)	250 (42°C)	310 (42°C)	400 (42°C)
Primary outlet temperature (60-45°C)			Flow rate [l/h]				
Max	1400	24.5	750 (48°C)	800 (48°C)	1100 (49°C)	1350 (49°C)	-
Primary outlet temperature (70-55°C)			Flow rate [l/h]				
Max	1400	24.5	1100 (58°C)	1350 (59°C)	-	-	-

EXAMPLE

FLOW RATE: SELECTION CHARTS

1) Select the required flow rate (DHW) from the first column. Example 20 litres per minute

2) Column 3 shows the kW load required. Example 56 kW

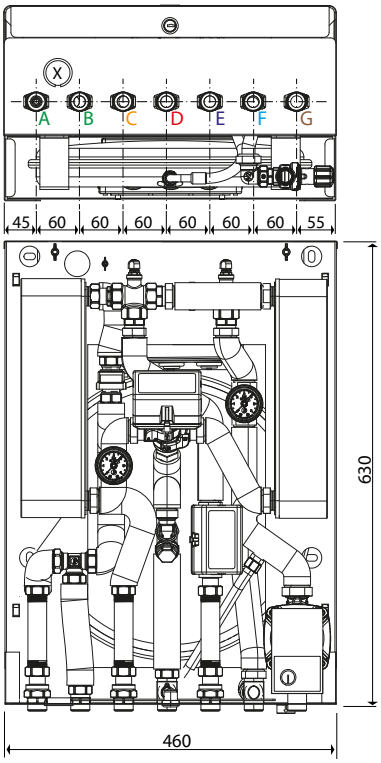
3) Select the flow temperature of the primary pipework from top row. Example 70°C

4) Cross reference to find flow rate. This is required litres per hour through the heat exchanger on the primary side. Example 1050 litres per hour

The figure in brackets is the return temperature when under load. Example 24.2°C

UNIT DIMENSIONS

Height	630 mm		
Width	460 mm	**Depth**	270 mm

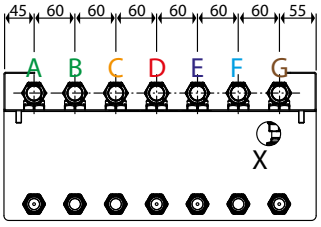


JIG BRACKET (GE551Y085)

The initial fix of the jig bracket can be completed prior to the heat interface units arriving on site, preventing any unnecessary site thefts or damage.

Height	792 mm		
Width	458 mm	**Depth**	218 mm
Jig Valve Connections		22 mm	

A: Domestic cold water inlet
B: Domestic cold water outlet
C: Domestic hot water outlet
D: Primary inlet
E: Primary outlet
F: Heating return
G: Heating delivery
X: Hole for electrical cables



G5 SINGLE PLATE
44kW GE556Y301 58kW GE556Y302

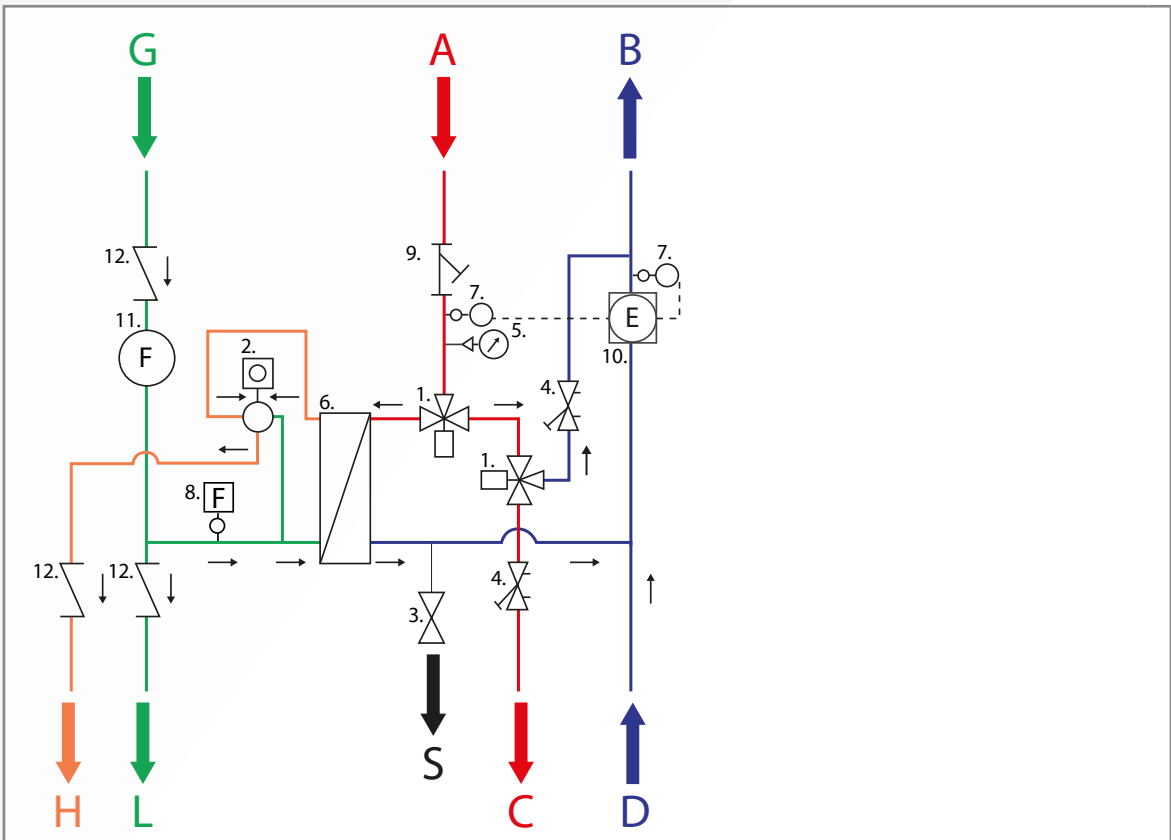
INDIRECT DHW, DIRECT HEATING

The ideal solution for multi dwelling properties that need to produce domestic hot water locally (in each individual dwelling). The heat exchanger within the unit generates instant domestic hot water. By producing the DHW internally, the system requires less pipework because there is no external cylinder. The primary circuit supplies the heating system direct from the central boiler plant. The HIU then manages the heating circuit for the individual dwelling.

MAIN FEATURES

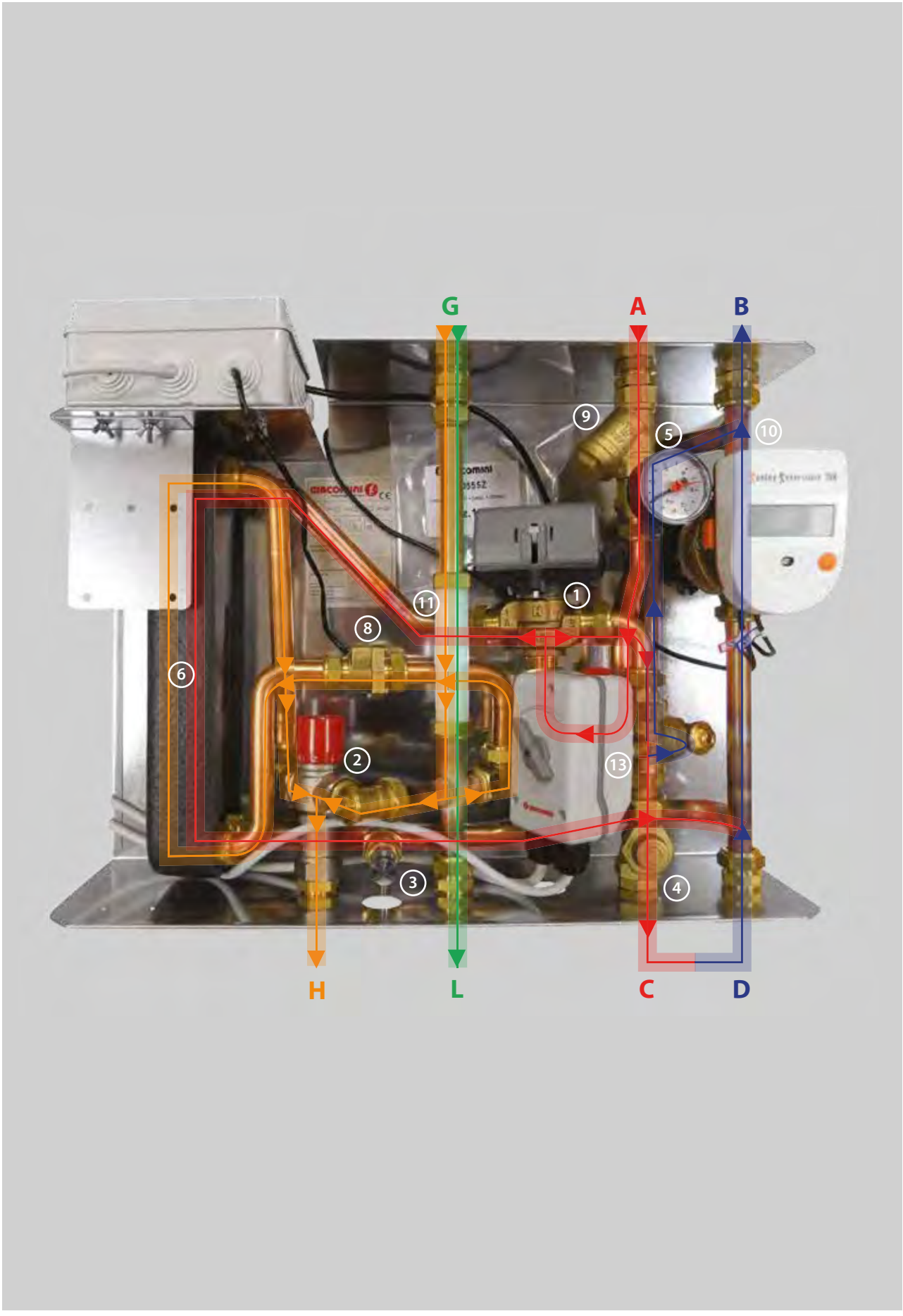
• **Priority Valve.** Supplies hot water when required, giving greater efficiency and fuel economy. It also allows for primary pipework dimensions and main boiler plant size to be reduced.

• **Trickle Bypass**. The unit can be shut down when no demand is present, or a trickle bypass can be set. Setting a trickle bypass creates greater diversity (coincidence factor) within the whole building, leading to smaller overall boiler plant size, reduced pipe dimensions and significant cost savings. It also primes the unit ready for a quick restart.



1. 3-way zone valve priority valve	**5.** Manometer	**9.** Filter
2. Thermostatic mixer	**6.** Heat exchanger for the domestic hot water function	**10.** Spacer for energy meter
3. Drain cock	**7.** Temperature probe	**11.** Spacer for sanitary water meter
4. Balancing lock shield valve	**8.** Flow switch	**12.** Non-return valve (optional)

A: Primary delivery	**D:** Heating system return	**L:** Domestic cold water outlet
B: Primary return	**G:** Domestic cold water inlet	**S:** Drainage
C: Heating system delivery	**H:** Mixed domestic hot water outlet	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G5 SINGLE PLATE
44kW GE556Y301 58kW GE556Y302

INDIRECT DHW, DIRECT HEATING

TECHNICAL DATA

Max. working temperature:	90 °C
Max. working pressure:	16 bar (10 bar with plastic spacer)

GE556Y301 DHW PRODUCTION

l/min	l/h	kW	75°C	70°C	65°C	60°C
Primary outlet temperature (15-50°C)			Flow rate [l/h]			
12	720	29.5	580 (31°C)	700 (33.8°C)	880 (36.3°C)	1330 (40.9°C)
15	900	37	780 (34.2°C)	960 (36.9°C)	1260 (39.8°C)	-
17	1020	41.5	920 (35.8°C)	1140 (38.4°C)	1540 (41.6°C)	-
18	1080	44	1000 (36.6°C)	1240 (39.3°C)	1700 (42.6°C)	-
19	1140	46.5	1070 (37.4°C)	1340 (40°C)	-	-
20	1200	49	1150 (38.1°C)	1450 (40.8°C)	-	-

GE556Y302 DHW PRODUCTION

l/min	l/h	kW	75°C	70°C	65°C	60°C	57°C
Primary outlet temperature (15-50°C)			Flow rate [l/h]				
12	720	29.5	460 (20°C)	525 (21.4°C)	610 (23.5°C)	760 (26.7°C)	920 (29.5°C)
15	900	37	590 (21.2°C)	675 (23°C)	800 (25.3°C)	1000 (28.5°C)	1240 (31.5°C)
17	1020	41.5	680 (22.1°C)	775 (23.8°C)	925 (26.2°C)	1180 (29.7C)	1480 (32.8°C)
18	1080	44	725 (22.4°C)	830 (24.2°C)	1000 (26.9°C)	1275 (30.2°C)	1620 (33.5°C)
19	1140	46.5	770 (22.8°C)	885 (24.7°C)	1060 (27.2°C)	1380 (30.9°C)	1750 (34.1°C)
20	1200	49	815 (23.2°C)	940 (25.1°C)	1130 (27.7°C)	1480 (31.5°C)	1880 (34.6°C)
24	1430	58.5	1000 (24.6°C)	1160 (26.7°C)	1420 (29.5°C)	1880 (33.3°C)	-

EXAMPLE

FLOW RATE: SELECTION CHARTS

1) Select the required flow rate (DHW) from the first column. Example 18 litres per minute

2) Column 3 shows the kW load required. Example 44 kW

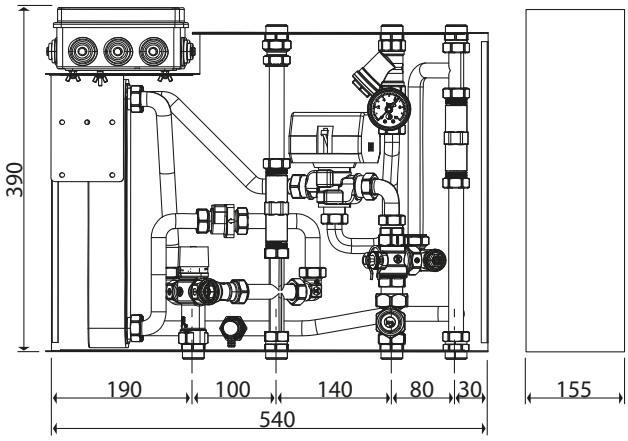
3) Select the flow temperature of the primary pipework from top row. Example 70°C

4) Cross reference to find flow rate. This is required litres per hour through the heat exchanger on the primary side. Example 1240 litres per hour

The figure in brackets is the return temperature when under load. Example 39.3°C

UNIT DIMENSIONS

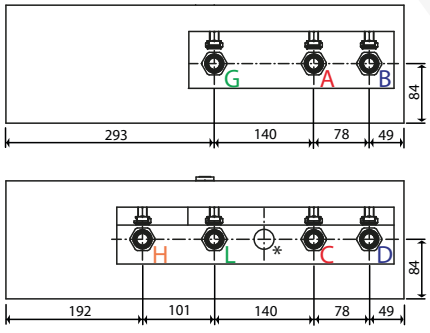
Height	390 mm		
Width	540 mm	**Depth**	155 mm



JIG BRACKET (GE551Y072)

The initial fix of the jig bracket can be completed prior to the heat interface units arriving on site, preventing any unnecessary site thefts or damage.

A: Primary delivery
B: Primary return
C: Heating system delivery
D: Heating system return
G: Domestic cold water inlet
H: Mixed domestic hot water outlet
L: Domestic cold water outlet
* Hole for additional valve GE500Y253



Height	570 mm		
Width	560 mm	**Depth**	165 mm
Jig Valve Connections	3/4"		

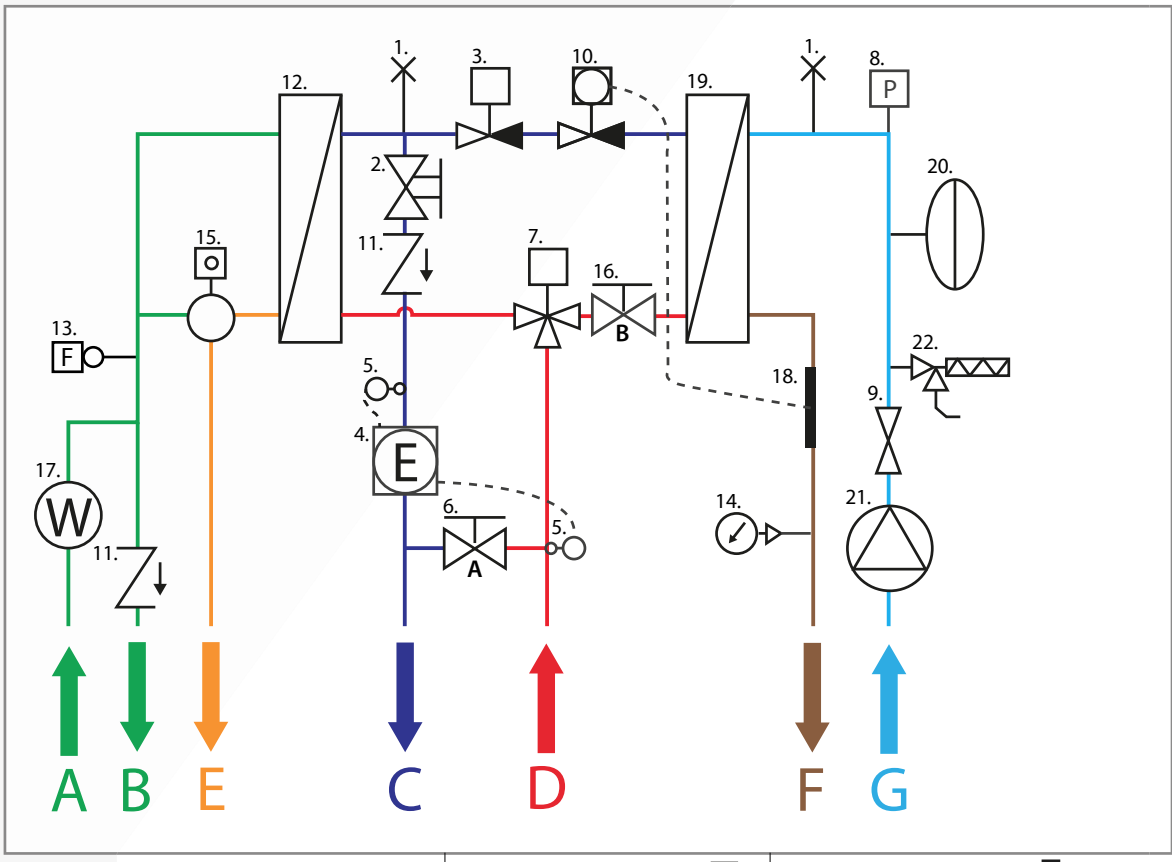
G5 TWIN PLATE
56kW GE556Y176 67kW GE556Y177

INDIRECT DHW, INDIRECT HEATING

The G5 twin models are the perfect solution for the new build market, as they control both the DHW & CH without the need for a gas supply, flue, or hot water cylinder. The primary circuit supplies two heat exchangers within the unit that in turn supply the central heating system and generate instant domestic hot water.

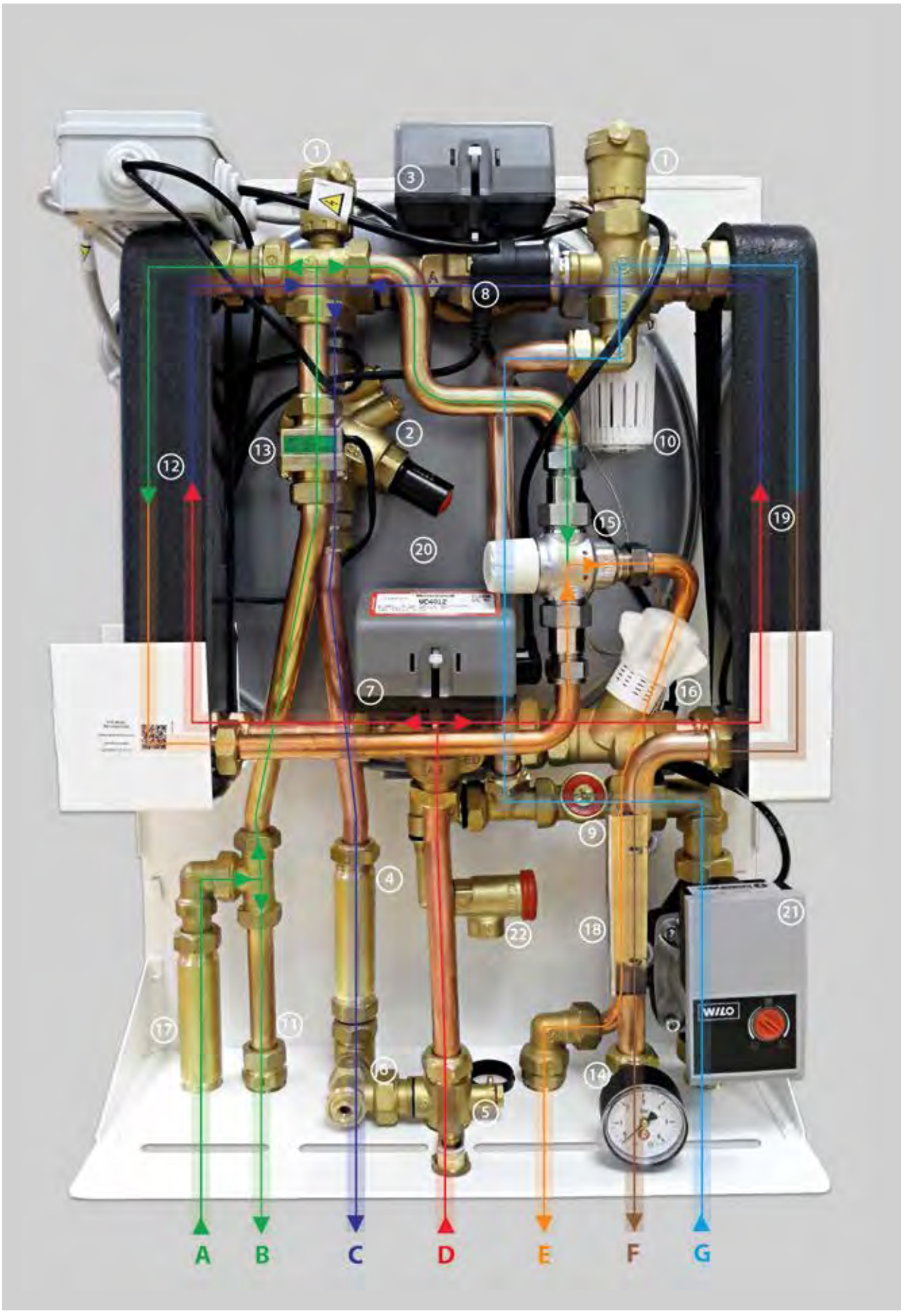
MAIN FEATURES

- **Hydraulic separation** on the primary heating, ensures that any potential leaks or failure of heating pipework is contained within the individual property.
- **Energy and water metering** options for accurate consumption readings.
- **Pressure Switch.** Cuts power to the pump in cases of low pressure, protecting the pump from running dry, therefore reducing maintenance costs.
- **Dynamic Balancing Valve.** Balances the system throughout the apartment block. This maintains optimum performance at each apartment and makes commissioning a simple low cost task.
- **Thermostatic Mixing Valve.** Safely and accurately controls domestic hot water temperature.
- **Priority Valve.** Supplies hot water when required, giving greater efficiency and fuel economy. It also allows for primary pipework dimensions and main boiler plant size to be reduced.



1. Automatic air vent	**8.** Pressure switch (P)	**15.** TMV2 & TMV3 thermostatic mixing valve
2. Dynamic balancing valve	**9.** Ball valve for circulator maintenance	**16.** Static balancing valve (B)
3. Motorised 2 way zone valve	**10.** Thermostatic head R462L	**17.** Spacer for sanitary cold water meter (W)
4. Spacer for energy meter (E)	**11.** Check valve	**18.** Sensor of thermostatic head R462L
5. Temperature probe housing for energy meter	**12.** Heat exchanger for the domestic hot water function	**19.** Heat exchanger for the heating function
6. Primary by-pass (A)	**13.** Flow switch (F)	**20.** Expansion vessel
7. Priority valve	**14.** Manometer	**21.** High efficiency circulator
		22. Safety valve

A: Domestic cold water inlet
B: Domestic hot water outlet
C: Primary outlet
D: Primary inlet
E: Domestic hot water outlet
F: Heating delivery
G: Heating return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G5 TWIN PLATE
56kW GE556Y176 67kW GE556Y177

INDIRECT DHW, INDIRECT HEATING

TECHNICAL DATA

Max. working temperature:	90 °C
Max. working pressure (primary and DHW secondary):	16 bar
Max. working pressure (heating secondary):	3 bar (safety valve set)
Max. differential pressure:	4 bar

GE556Y176 DHW PRODUCTION

l/min	l/h	kW	80°C	75°C	70°C	65°C	60°C
Primary outlet temperature (10-50°C)			Flow rate [l/h]				
12	720	33	510 (22.9°C)	580 (25°C)	690 (27.9°C)	865 (31.4°C)	1210 (36°C)
15	900	42	670 (25.7°C)	775 (28.1°C)	935 (31.1°C)	1200 (34.8°C)	-
17	1020	47	785 (27.5°C)	920 (30.2°C)	1120 (33.2°C)	1480 (37.1°C)	-
20	1200	56	975 (30.2°C)	1150 (32.9°C)	1430 (36.1°C)	-	-

GE556Y177 DHW PRODUCTION

l/min	l/h	kW	80°C	75°C	70°C	65°C	60°C
Primary outlet temperature (10-50°C)			Flow rate [l/h]				
12	720	33	450 (15.4°C)	495 (16.9°C)	565 (18.7°C)	660 (21.3°C)	825 (24.9°C)
15	900	42	575 (16.8°C)	640 (18.3°C)	730 (20.4°C)	870 (23.3°C)	1105 (27.2°C)
17	1020	47	660 (17.7°C)	740 (19.4°C)	850 (21.6°C)	1010 (24.4°C)	1300 (28.5°C)
20	1200	56	790 (18.9°C)	890 (20.7°C)	1030 (23.1°C)	1260 (26.3°C)	-
24	1430	67	970 (20.6°C)	1100 (22.6°C)	1280 (25.1°C)	-	-

EXAMPLE

FLOW RATE: SELECTION CHARTS

1) Select the required flow rate (DHW) from the first column. Example 15 litres per minute

2) Column 3 shows the kW load required. Example 42 kW

3) Select the flow temperature of the primary pipework from top row. Example 65°C

4) Cross reference to find flow rate. This is required litres per hour through the heat exchanger on the primary side. Example 1200 litres per hour

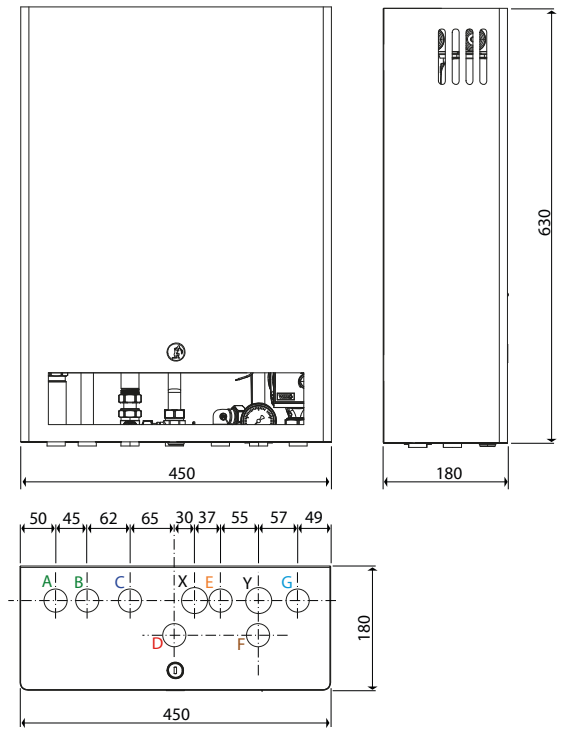
The figure in brackets is the return temperature when under load. Example 34.8°C

HEATING

Primary circuit data for radiator heating					
circular speed	flow rate (m^3/h)	power (kW)	80°C	75°C	72°C
Primary outlet temperature (65-53°C)			Flow rate [l/h]		
Max	1.2	17.4	670 (57°C)	950 (59°C)	1350 (61°C)
Primary circuit data for underfloor heating					
circular speed	flow rate (m^3/h)	power (kW)	70°C	65°C	60°C
Primary outlet temperature (45-38°C)			Flow rate [l/h]		
Max	1.2	10.0	280 (39°C)	340 (39°C)	430 (40°C)

UNIT DIMENSIONS

Height	630 mm		
Width	450 mm	**Depth**	180 mm

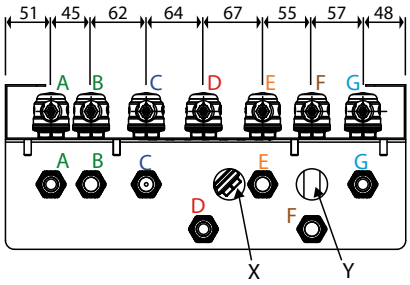


JIG BRACKET (GE551Y084)

The initial fix of the jig bracket can be completed prior to the heat interface units arriving on site, preventing any unnecessary site thefts or damage. The inclusion of the strainer stops any debris in the system entering the unit, preventing damage, blockages or any reduction in the efficiency of the plate heat exchanger.

Height	796 mm		
Width	450 mm	**Depth**	185 mm
Jig Valve Connections		22 mm	

A: Domestic cold water inlet
B: Domestic hot water outlet
C: Primary outlet
D: Primary inlet
E: Domestic hot water outlet
F: Heating delivery
G: Heating return
X: Hole for safety valve drain
Y: Hole for electrical cables



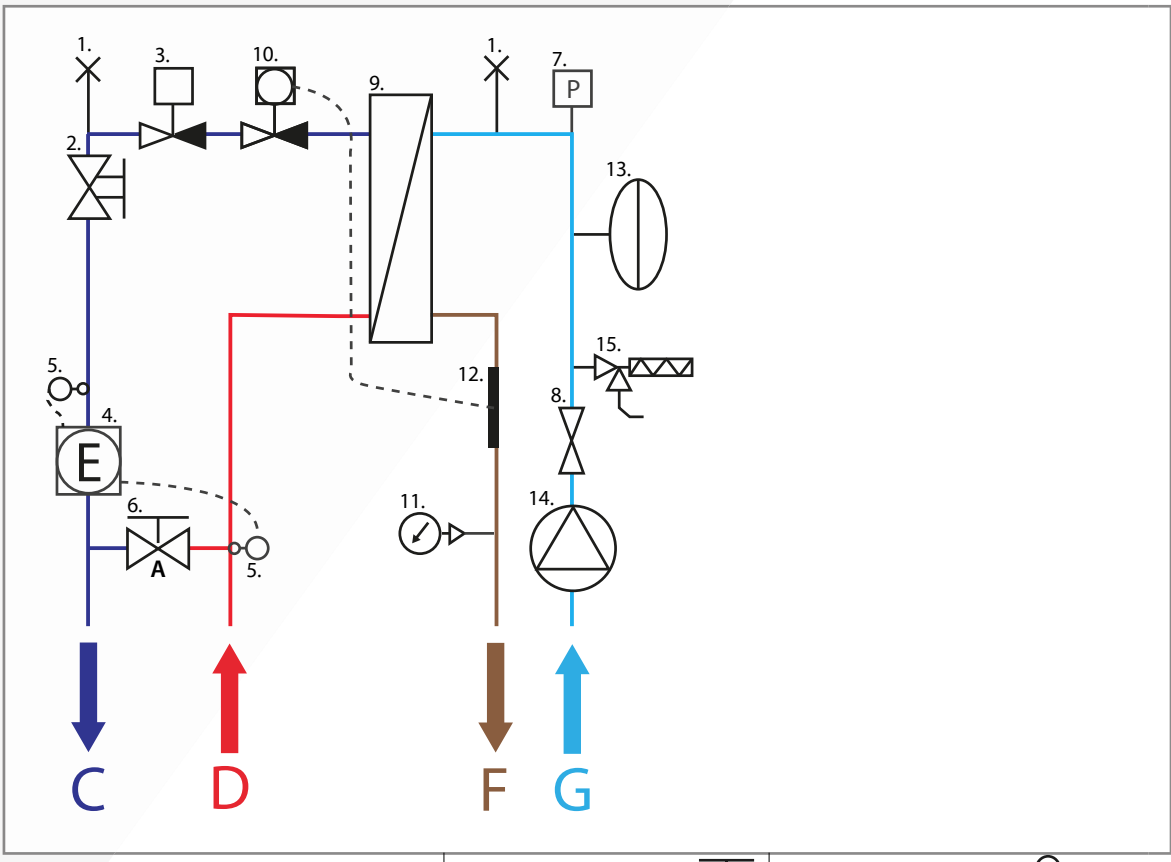
G5 SINGLE PLATE
17.4kW GE556Y171

INDIRECT DHW/HEATING

The G5 single plated heat interface unit is ideal for the refurbishment and replacement market, offering direct domestic hot water (DHW) to apartments, where cylinder storage is preferred or where a cylinder is already in place. The primary circuit supplies a single heat exchanger within the unit, that in turn supplies the central heating system and can also be connected to a hot water cylinder.

MAIN FEATURES

- **Pressure Switch.** Cuts power to the pump in cases of low pressure, protecting the pump from running dry therefore reducing maintenance costs.
- **Dynamic Balancing Valve.** Balances the system throughout the apartment block. This maintains optimum performance at each apartment and makes commissioning a simple low cost task.
- **Trickle Bypass**. The unit can be shut down when no demand is present or a trickle bypass can be set. Setting a trickle bypass creates greater diversity (coincidence factor) within the whole building leading to smaller overall boiler plant size, reduced pipe dimensions and significant cost savings. It also primes the unit ready for a quick restart.



1. Automatic air vent	**6.** Primary by-pass	**11.** Manometer
2. Dynamic balancing valve	**7.** Pressure switch	**12.** Sensor of thermostatic head R462L
3. Motorised 2 way zone valve	**8.** Ball valve for circulator maintenance	**13.** Expansion vessel
4. Spacer for energy meter	**9.** Heat exchanger for the heating function	**14.** High efficiency circulator
5. Temperature probe housing for energy meter	**10.** Thermostatic head R462L	**15.** Safety valve

C: Primary outlet
D: Primary inlet
F: Heating delivery
G: Heating return

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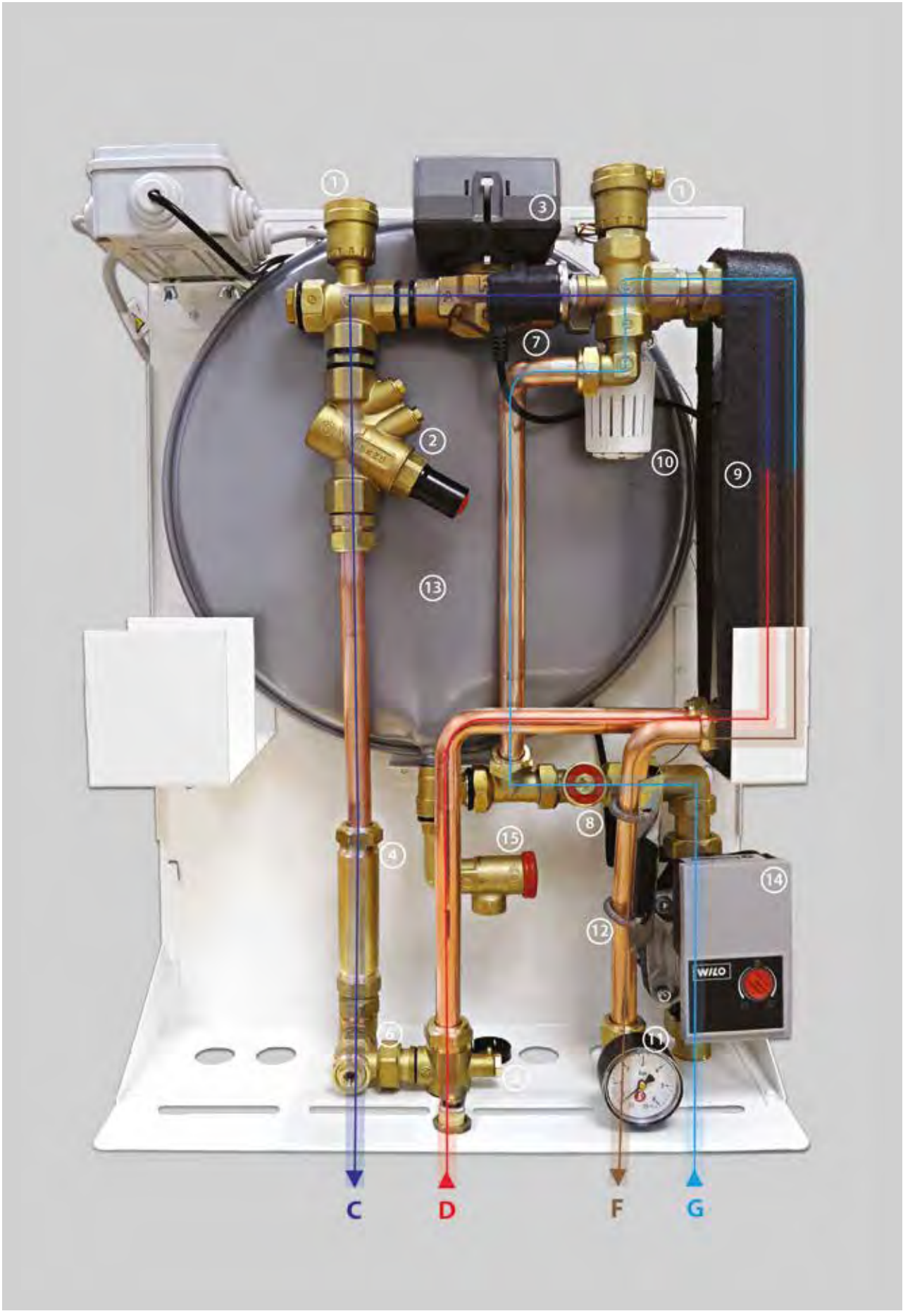
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G5 SINGLE PLATE
17.4kW GE556Y171

INDIRECT DHW/HEATING

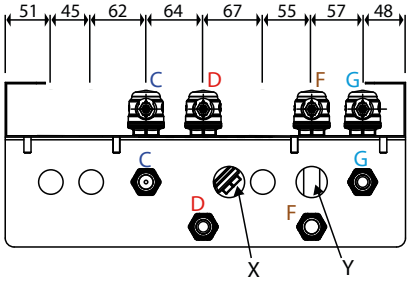
TECHNICAL DATA

Max. working temperature:	90 °C
Max. working pressure:	16 bar
Max. working pressure (heating secondary):	3 bar (safety valve set)
Max. differential pressure:	4 bar

HEATING

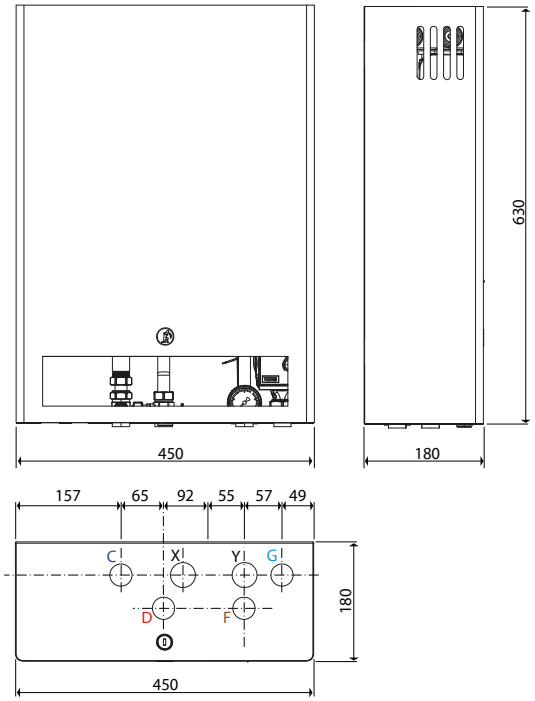
Primary circuit data for radiator heating					
circular speed	flow rate (m³/h)	power (kW)	80°C	75°C	72°C
Primary outlet temperature (65-53°C)			Flow rate [l/h]		
Max	1.2	17.4	670 (57°C)	950 (59°C)	1350 (61°C)
Primary circuit data for underfloor heating					
circular speed	flow rate (m³/h)	power (kW)	70°C	65°C	60°C
Primary outlet temperature (45-38°C)			Flow rate [l/h]		
Max	1.2	10.0	280 (39°C)	340 (39°C)	430 (40°C)

C: Primary outlet
D: Primary inlet
F: Heating delivery
G: Heating return
X: Hole for safety valve drain
Y: Hole for electrical cables



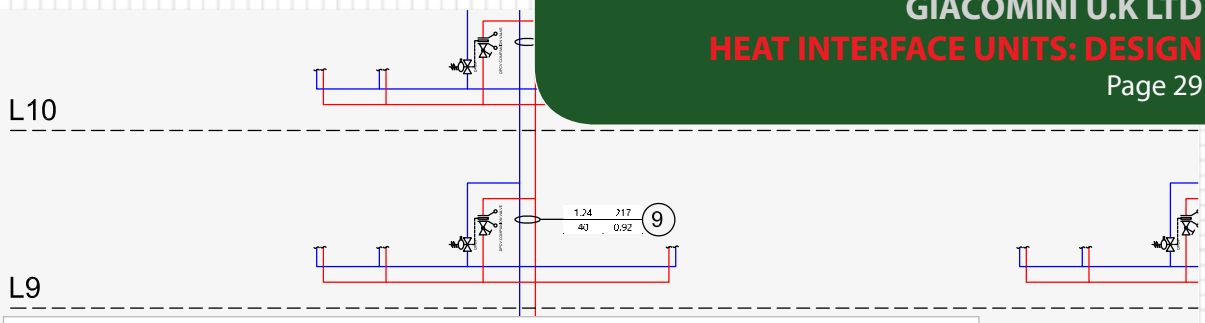
UNIT DIMENSIONS

Height	630 mm
Width	450 mm
Depth	180mm



JIG BRACKET (GE551Y083)

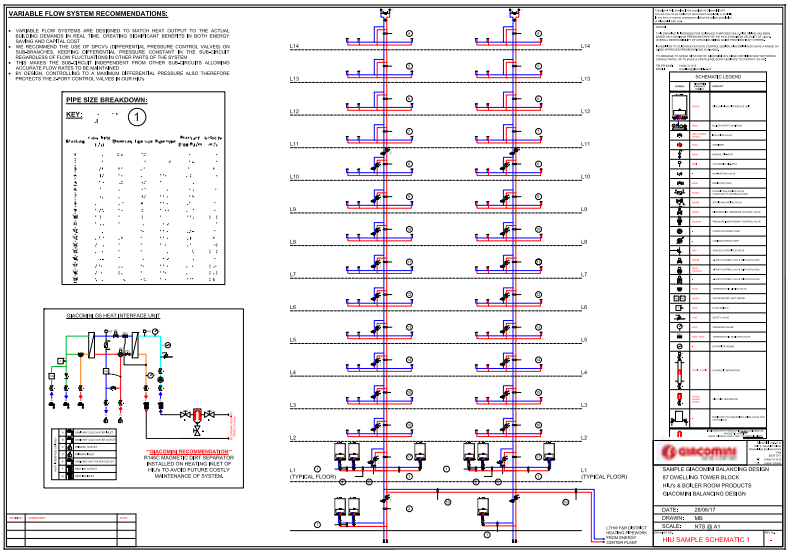
Height	796 mm		
Width	450 mm	Depth	185 mm
Jig Valve Connections		22 mm	



SYSTEM DESIGN

Giacomini have several CIBSE Certified Heat Network Consultants who are able to advise on the efficient design of heat networks. The primary goal according to CIBSE Heat Networks Code of Practice for the UK (CP1 - 2015) is to design an energy efficient system that minimises heat losses. A few key points to keep in mind when designing a system are:

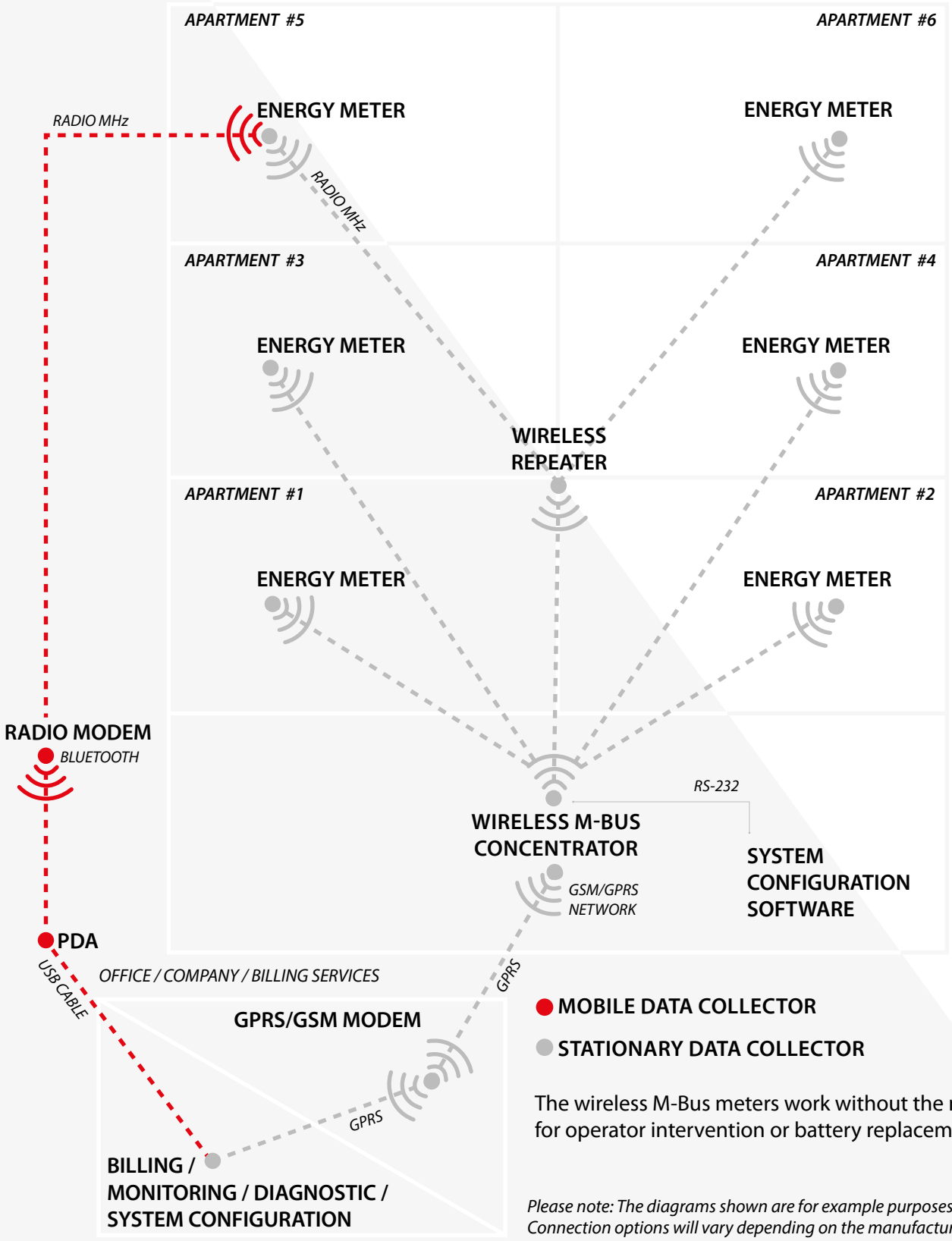
- Keep flow and return temperatures low – this will reduce the heat losses and allow boilers to condensate.
- Low temperature secondary systems, such as underfloor heating, help to reduce the primary return temperature.
- Reduce the flow rate when possible in order to reduce both pump energy costs, as well as pipework heat losses.
- Minimise heat losses by insulating pipework, fittings and other components and by reducing system temperatures.
- Look at diversity – Giacomini recommend using DS439:2009 to calculate the simultaneous DHW demand.
- Include Differential Pressure Control Valves (DPCVs) in the design of the heat network. DPCVs help with the balancing of the overall system – this is especially important if the system is large! DPCVs are preferred over Pressure Independent Control Valves (PICVs) as DPCVs give the overall system greater balance and supports the use of faster acting two-port valves in the HIUs. Faster acting two port valves help lower the return temperature and offer better secondary temperature control.



GSM/GPRS
WIRELESS METERING

WIRED
WIRELESS

Wireless Metering uses 434 MHz radio technology to a Bluetooth antenna to transmit data, for analysis and billing, from individual apartments to either a stationary data collector or a mobile data collector, such as a PDA device.



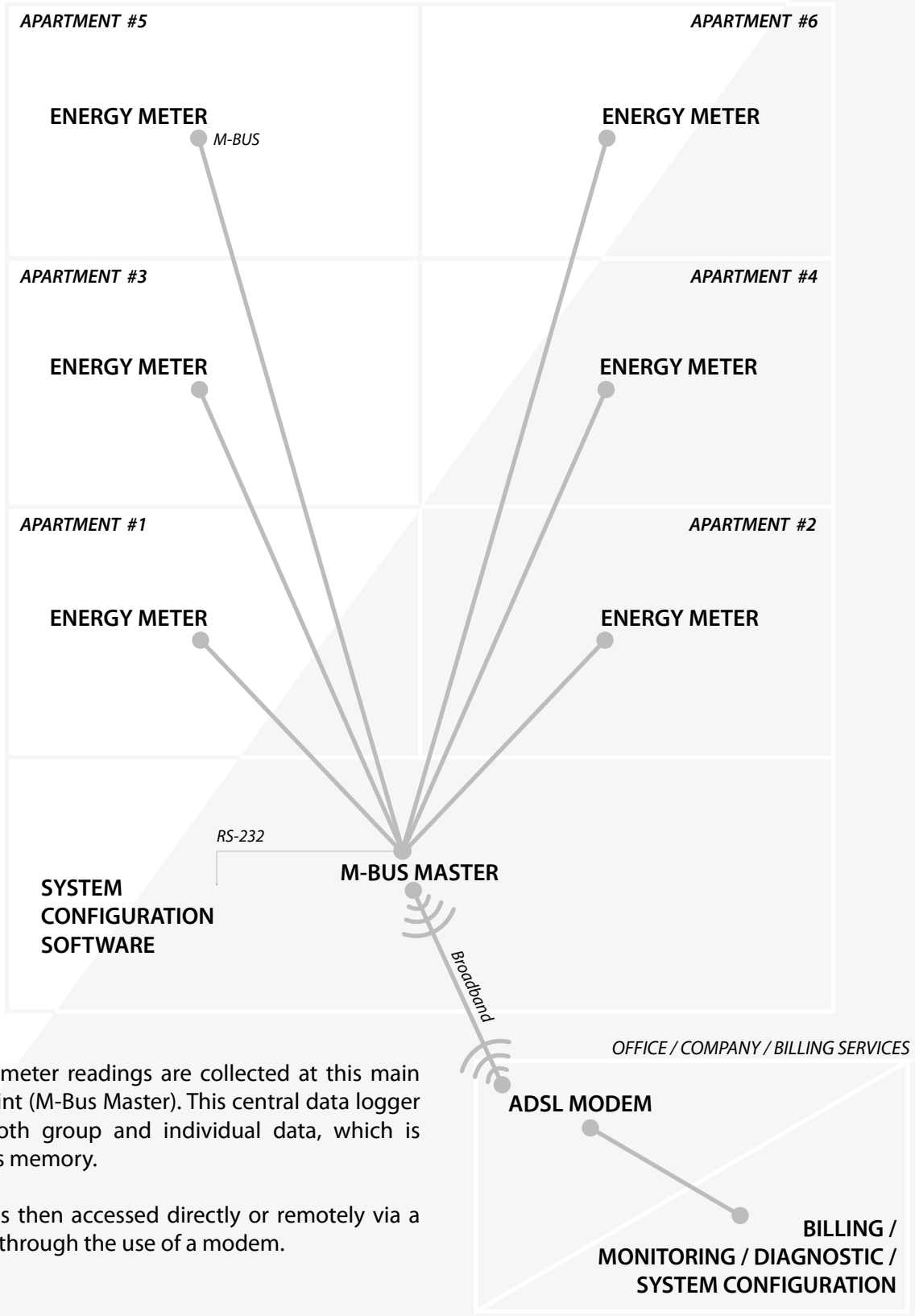
MOBILE DATA COLLECTOR
STATIONARY DATA COLLECTOR

The wireless M-Bus meters work without the need for operator intervention or battery replacement.

Please note: The diagrams shown are for example purposes only. Connection options will vary depending on the manufacturer.

M-BUS
WIRED METERING

M-Bus Metering offers a cost-effective method of collecting readings from multiple meters. An M-Bus meter is installed within each heat interface unit, which is then connected via a two-wire cable to a master system (M-Bus Master).



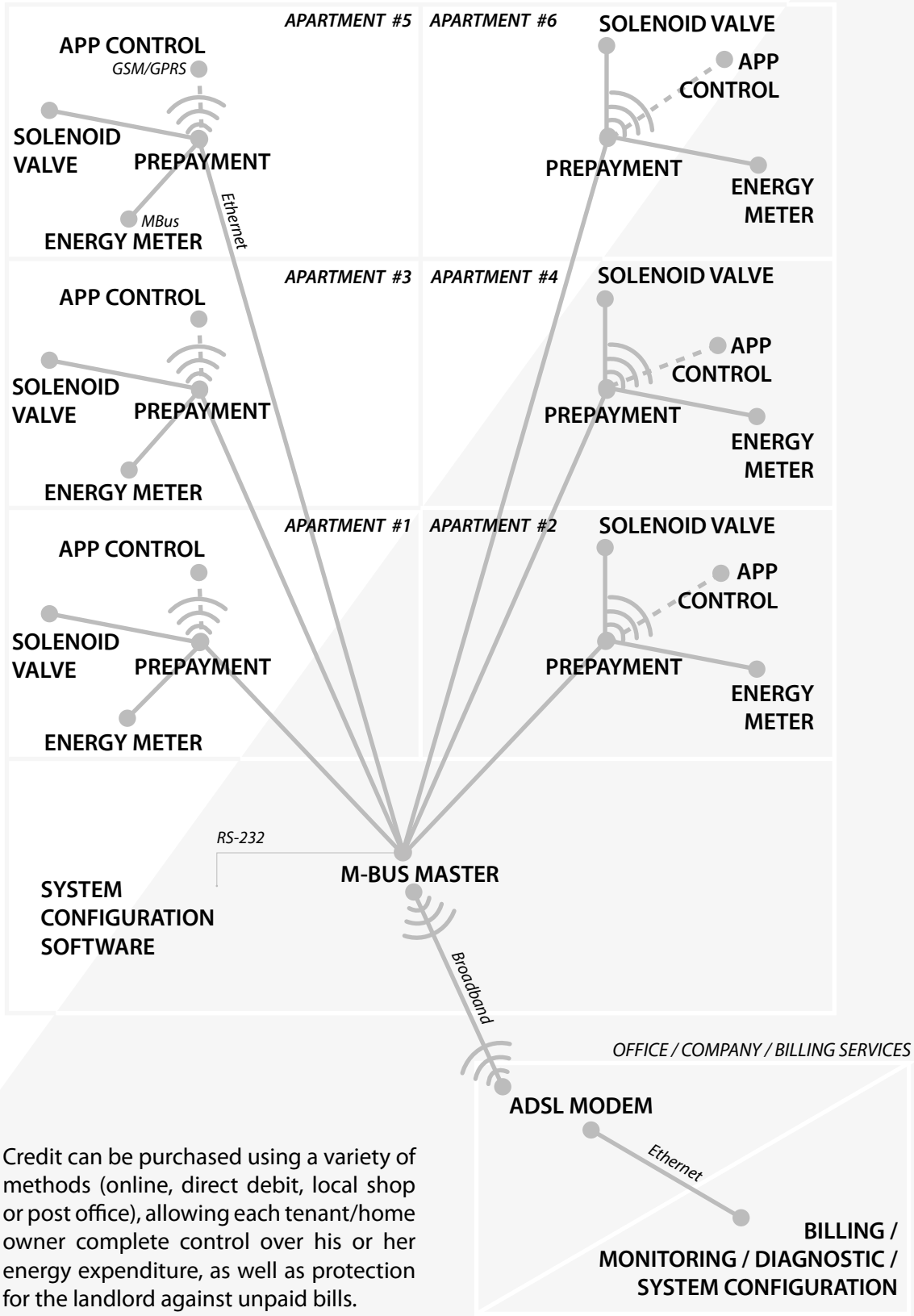
All M-Bus meter readings are collected at this main central point (M-Bus Master). This central data logger collects both group and individual data, which is saved in its memory.

This data is then accessed directly or remotely via a computer through the use of a modem.

LOCAL AREA NETWORK
WIRED PREPAYMENT METERING

WIRED
WIRELESS

HIU's can be adapted to work with **Pre-Payment Metering Systems.** Each apartment is fitted with a pre-payment meter, which uses smart technology to allow customers to top-up credit to their heating systems.



Credit can be purchased using a variety of methods (online, direct debit, local shop or post office), allowing each tenant/home owner complete control over his or her energy expenditure, as well as protection for the landlord against unpaid bills.

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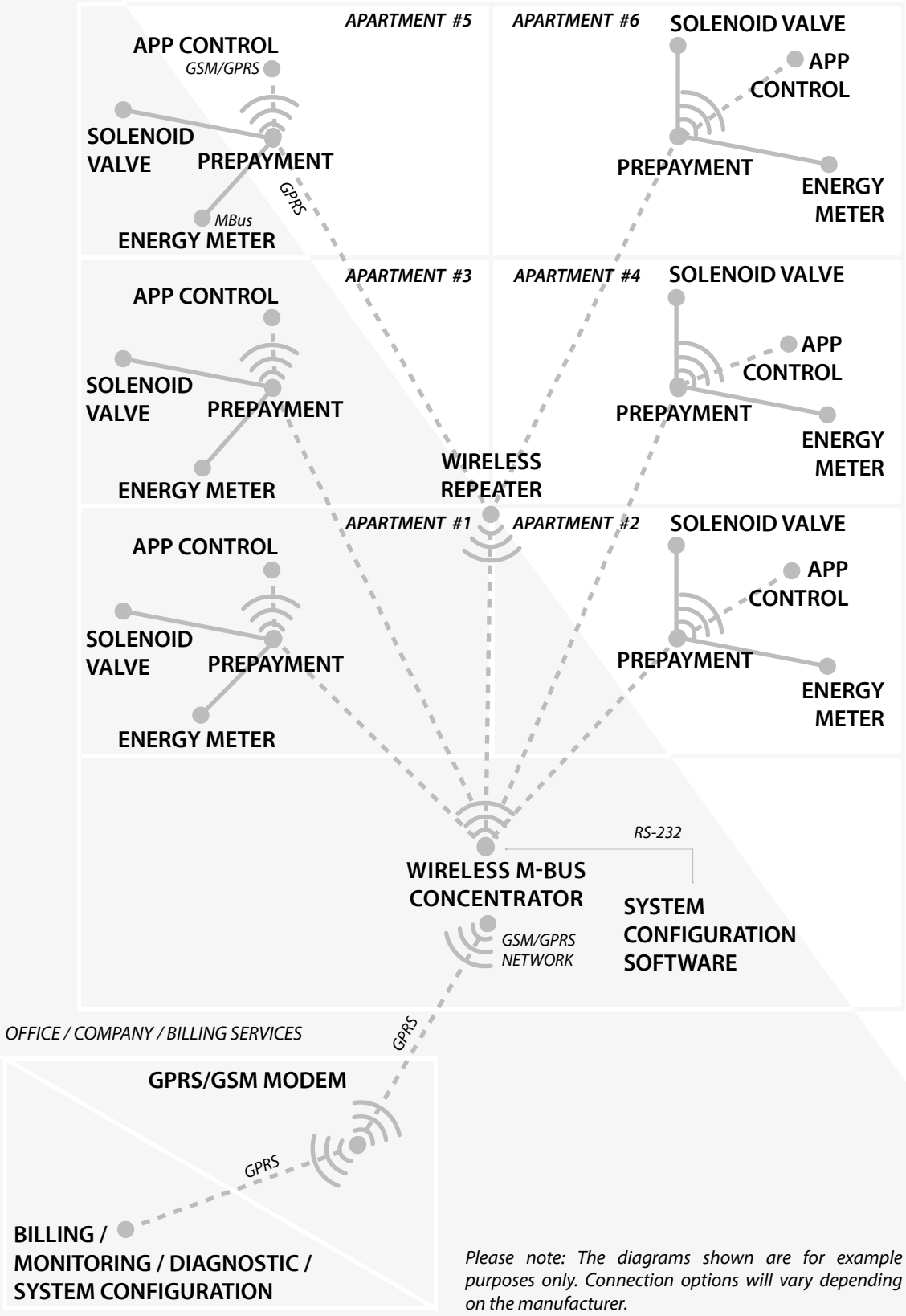
GSM/GPRS
WIRELESS PREPAYMENT METERING

To install a pre-payment system, an additional solenoid valve can be fitted to the heat interface unit. When all credit has been exhausted, the valve will shut off the primary heat supply to the unit, hence ensuring that the tenant doesn't accumulate debt.



Please note: The diagrams shown are for example purposes only. Connection options will vary depending on the manufacturer.

SUPPORT SERVICES

SUPPORT PACKAGE

Giacomini UK are happy to provide installation and commissioning training as part of the support package. The training aims to provide installers with a systematic method for commissioning HIUs that helps to streamline the process, maintain consistency and ensure that design requirements are being met.

The training session is demonstration led where a Giacomini engineer explains how the HIU operates. As part of the training, system flow rates and temperatures are measured through various outlets; valves are adjusted to demonstrate possible variations and functionality; and the heating system is filled. Time is then dedicated to fault finding and how to identify and resolve potential external influences that could cause problems.

Digital commissioning forms are provided, which generate individual commissioning certificates and guarantees for each unit.

QUALITY CONTROL

In order to meet the most stringent international standards, Giacomini's manufacturing facilities in Italy have obtained integrated quality, health & safety and environment certifications, in accordance with standards UNE-EN ISO 9001, OHSAS 18001 and EN ISO 14001.

All of Giacomini UKs Heat Interface Units are pressure tested, both before leaving the factory in Italy and prior to leaving the UK warehouse in Bristol.

Each individual HIU has a test sticker on it showing that it has been pressure tested and electronically tested. Each HIU has its own serial number for traceability purposes.

Giacomini UK offer a standard 2-year warranty on all HIUs.

An extended warranty period up to 5 years can be applied to projects that meet Giacomini UK's extended warranty criteria. For more information on these requirements please email, support@giacomini.co.uk.

ADDITIONAL CONSIDERATIONS

It is important to remember that a Heat Interface Unit is only as good as the system that is supplying it with energy. For the HIU to get enough thermal energy, it requires two things: flow and temperature.

Giacomini UK recommends that the below valves are included within the system to help ensure that the HIUs get an adequate flow, by keeping the water clean and the system well balanced.

For more information on the products mentioned below, please scan the individual codes displayed on this page, or visit **uk.giacomini.com/download-area** to view the latest **Flow Control Brochure.**

Boiler Safety Manifold (R555)

Hydraulic Separator (R146I)

Y-Strainers (R74A)

CIBSE CP1 recognises the importance of installing y-strainers by stating that large bodied strainers with fine mesh shall be specified on both direct and indirect systems, to reduce the risk of dirt accumulating on valves and heat exchangers.

Static Balancing Valves (R206B)

Differential Pressure Control Valves (R206C)

To design a system in accordance with **CIBSE CP1**, differential pressure control valves should be installed to limit maximum flow and to limit differential pressure across the 2-port control valves within the HIUs.

Pre-Settable TRVs (R401PTG, R402PTG, R411PTG, R412PTG & R415PTG)

CIBSE CP1 recommends using pre-settable TRV's and for these to be pre-set at a low enough flow rate to give the required (low) return temperature, whilst still giving the design heat output.

Magnetic Dirt Separators (R146C)

PLEASE DO NOT HESITATE TO CONTACT US
WITH ANY QUESTIONS OR ENQUIRIES

GIACOMINI
WATER E-MOTION

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