

# HUB RADIATOR POWER UNIT

High efficiency patented split system in the heat pump with direct refrigerant/water exchange to produce heating, air conditioning and DHW or to hybridize heat generators existing



## Technical and construction characteristics

HUB RADIATOR POWER UNIT is a patented system that uses high efficiency heat pumps and extremely compact inertial technical water accumulators, available in various sizes and dimensions. Through this innovative split solution it is possible to design multiple customized heating plants with the minimum space available in order to produce heating, air conditioning and domestic hot water for small, medium and large users.

This new patented technology can also be applied to existing summer and winter air conditioning systems in order to improve their performance and achieve a higher energy class through the use of renewable energy.

The application of this product in a thermal power plant allows, through a quick and minimally invasive intervention, to obtain great savings on management costs while simultaneously reducing the environmental impact.

HUB RADIATOR POWER UNIT is a product made up of a technical inertial accumulator with a parallelepiped section, with one or more copper immersion condensers on board which allow a direct and rapid heat exchange between the refrigerant gas and the technical water of the system.

The various Boosters can work on multiple thermo-cooling circuits in cascade, all managed separately and independently from each other to increase reliability.

These units are very compact and minimally invasive, easily applicable to any type of existing thermal power plant.

The HUB RADIATOR POWER UNIT internal units can be installed both horizontally and vertically and thanks to their particular configuration they can also be located inside special false ceilings. This technology can then be used as a heat generator and/or refrigerator to independently power hydronic terminals or produce domestic hot water.

HUB RADIATOR POWER UNIT can also act as a split heat pump water heater composed of one or more hot-only HR Booster external units that work with direct exchange on one or more extremely compact technical water accumulations within which it is possible to locate the "DHW exchanger" accessory in finned copper which guarantees maximum hygiene and completely avoids anti-legionella thermal shocks.

Model of internal technical inertial storage units (puffer) U.I.	Code	€
Indoor unit HUB RADIATOR POWER UNIT 80 LT - H 160	76011500	1.580,00
Indoor unit HUB RADIATOR POWER UNIT 105 LT - H 210	76012500	1.680,00
Indoor unit HUB RADIATOR POWER UNIT 130 LT - H 250	76011501	1.740,00
Indoor unit HUB RADIATOR POWER UNIT 165 LT - H 160 DOUBLE	76011505	1.890,00
Indoor unit HUB RADIATOR POWER UNIT 220 LT - H 210 DOUBLE	76012502	1.990,00
Indoor unit HUB RADIATOR POWER UNIT 315 LT - H 170	76012503	2.100,00











Model of external units split to HP U.E.

External unit Booster HR 2.5 only heating	76010240	2.000,00
External unit Booster HR 2.5 heating/cooling	76020240	2.430,00
External unit Booster HR 7.0 only heating	76010500	3.700,00
External unit Booster HR 7.0 heating/cooling	76020500	4.130,00
External unit Booster HR 9.0 only heating INVERTER	76030500	6.360,00
External unit Booster HR 9.0 heating/cooling INVERTER	76040500	6.560,00

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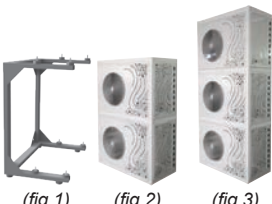
## Accessories HUB RADIATOR POWER UNIT

			Code	€
	230 V single-phase integrative electrical resistance IP 65 protection rating	mod. 1500 W	75050102	200,00
		mod. 2000 W	75050103	220,00
		mod. 3000 W	75060300	240,00
	Additional inverter electronic circulator, max flow rate 3.3 m <sup>3</sup> /h, max head 6.2 m, min. electrical absorption. 4W - max 45W		35006001	230,00
	High efficiency inverter electronic circulator wet rotor with ECM permanent magnet motor	mod. 3/6 Q <sub>max</sub> 3,2 m <sup>3</sup> /h H <sub>max</sub> 6,6 m	35006002	540,00
		mod. 9/10 Q <sub>max</sub> 9 m <sup>3</sup> /h H <sub>max</sub> 10,5 m	36576012	1.250,00
		mod. 18/12 Q <sub>max</sub> 18 m <sup>3</sup> /h H <sub>max</sub> 12,8 m	36576013	2.500,00
	Mixing valve for radiant systems	mod. fixed mechanical adjustment	75101032	120,00
		mod. motorized adjustment	75101033	600,00
	Removable DHW exchanger with inspection flange for the instantaneous production of domestic hot water made of finned copper, max operating pressure 12 bar, max operating temperature 90 °C	mod. 2,22 m <sup>2</sup>	37310031	560,00
		mod. 3,15 m <sup>2</sup>	37310010	750,00
		mod. 4,54 m <sup>2</sup>	37370012	1.400,00
	DHW mechanical thermostatic mixing valve	mod. 1/2"	75100023	170,00
		mod. 3/4"	75100031	170,00
		mod. 1"	75100027	180,00
	Forced circulation solar thermal exchanger	mod. 0,75 m <sup>2</sup>	75100002	390,00
		mod. 1,50 m <sup>2</sup>	75101002	644,00
	Additional condenser for Booster HR	mod. only heat HR 2.5	26505565	340,00
		mod. only heat HR 7.0 / 9.0	26515565	380,00
		mod. heating/cooling HR 2.5	26505567	440,00
		mod. heating/cooling HR 7.0 / 9.0	26515567	480,00
	Domestic hot water recirculation inverter electronic circulator with brass body max flow rate 0.4 m <sup>3</sup> /h max head 1.0 m		35006004	260,00
	3-way motorized diverter valve with 1" connections and spring return		16205308	204,00
	8 liter fixed membrane technical water expansion vessel - 3bar		75060307	110,00

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## Accessories HUB RADIATOR POWER UNIT

			Code	€
	Anchoring shelf for external Booster including rubber vibration dampers	mod. HR 2.5 mod. HR 7.0 - 9.0	37081060 37081061	50,00 90,00
	Anchoring shelf for sloping roof for external Boosters mod. HR 2.5 - 7.0 including rubber vibration dampers		37081064	218,00
	Vulcanized rubber anti-vibration floor base (height from the ground 95 mm) with level and screws for Booster HR 2.5 - HR 7.0 - HR 9.0 (pack of 2 pieces)		75100018	102,00
	Vibration dampers for installation on shelves		75100022	22,00
	Complete stainless steel spring vibration dampers of bolts, washers and nuts (pack of 2)	mod. HR 2.5 mod. HR 7.0 - 9.0	37081065 37081066	62,00 64,00
	Anti-freeze condensate heating cable with thermal sensor, (factory mounted)	mod. 3 m. 90 W mod. 6 m. 120 W	37081067 37081068	76,00 80,00
	Auxiliary tray for installation under shelf equipped with 90 W heating cable	mod. HR 2.5 mod. HR 7.0 - 9.0	37081069 37081070	280,00 300,00
	Floor support complete with auxiliary basin equipped with 90 W heating cable	mod. HR 2.5 H fix mod. HR 7.0 - 9.0 H fix mod. HR 7.0 - 9.0 H variable	37081071 37081073 37081074	320,00 350,00 370,00
	Additional heat generator electronic management kit with external temperature probe (for Booster 2.5 - 7.0)		75100024	220,00
	Flush-mounted command and remote control panel for 503 box		75100005	102,00
	Wall or wall adapter for control panel and remote control		75100029	24,00
	Load control relay for managing absorbed power	mod. Connection BUS mod. Radiofrequency	37081062 37081063	172,00 460,00
	Web server home automation control unit		75101005	580,00
	Flexible anti-vibration joint with connection plate and straight union	mod. HR 7.0 - 9.0 (5/8") mod. HR 2.5 (3/8")	75100014 75100015	120,00 60,00
	Flexible anti-vibration joint with connection plate and 90° curved union	mod. HR 7.0 - 9.0 (5/8") mod. HR 2.5 (3/8")	75100016 75100017	120,00 60,00
	Daily/weekly digital programmer clock		35639904	30,00
	Anchor brackets for ceiling installation		75100040	90,00
	Open shelf for n. 2 Booster external units mod. HR 7.0 - 9.0 complete with vibration dampers (fig.1)		75060406	290,00
	RACK 2 cabinet for n. 2 Booster external units mod. HR 2.5 - 7.0 - 9.0 (fig.2)		75060306	1.060,00
	RACK 3 cabinet for n. 3 Booster external units mod. HR 2.5 - 7.0 - 9.0 Height 210 cm Width 96 cm Depth 54 cm (fig.3)		75060206	1.200,00

# HUB RADIATOR POWER UNIT

High efficiency patented split system in the heat pump with direct refrigerant/water exchange to produce heating, air conditioning and DHW or to hybridize heat generators existing

## Configuration table HUB RADIATOR POWER UNIT

The extraordinary versatility and flexibility of the patented HUB RADIATOR POWER UNIT system allows for the creation of multiple applications both in conjunction with existing systems and on newly built systems.

The HUB RADIATOR POWER UNIT internal units can be coupled to one or more external HP Boosters (as per the table below) to be connected in split mode via special refrigeration lines.




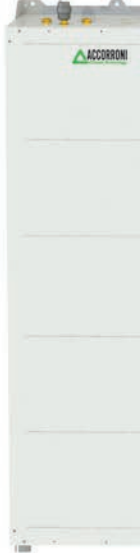

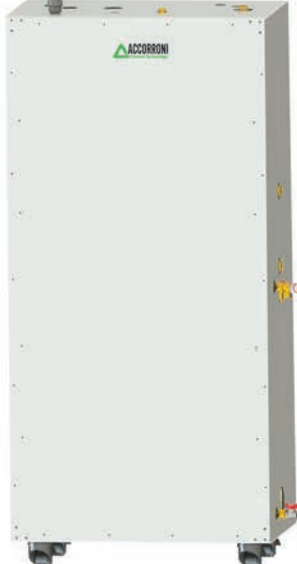
The HUB RADIATOR POWER UNIT internal units can be equipped with a finned copper sanitary exchanger of various sizes to choose from among the options and it is also possible to add a thermostatic mixing valve to allow you to refine the supply of domestic hot water.

The HUB RADIATOR POWER UNIT internal units can be equipped with a solar exchanger to connect one or two flat plate collectors that work with forced circulation.

All HUB RADIATOR POWER UNIT internal units are equipped as standard with a jolly valve for automatic air venting, a safety valve with 3 bar calibration, a drain tap and rubber adjustment feet.

To each HUB RADIATOR POWER UNIT internal unit it is possible to optionally apply up to two system circulators (direct or mixed) and a backup electric resistance.

## Description and representation of the POWER UNIT internal units in order to design the best possible technical solution for summer and winter air conditioning and for DHW production

80 LT	105 LT	130 LT	165 LT	220 LT	315 LT
					
79,2 l.	105,0 l.	132,0 l.	166,5 l.	224,4 l.	314,2 l.
Dimensions L 340,5 mm D 340,5 mm H 1656,2 mm	Dimensions L 340,5 mm D 340,5 mm H 2156,2 mm	Dimensions L 340,5 mm D 340,5 mm H 2524,3 mm	Dimensions L 594,6 mm D 340,5 mm H 1656,2 mm	Dimensions L 594,6 mm D 340,5 mm H 2156,2 mm	Dimensions L 803,4 mm D 461,1 mm H 1690,0 mm
n. max Booster ONLY HEAT 2	n. max Booster ONLY HEAT 2	n. max Booster ONLY HEAT 3	n. max Booster ONLY HEAT 2	n. max Booster ONLY HEAT 4	n. max Booster ONLY HEAT 2
n. max Booster HEAT./COOL. 1	n. max Booster HEAT./COOL. 2	n. max Booster HEAT./COOL. 2	n. max Booster HEAT./COOL. 2	n. max Booster HEAT./COOL. 2	n. max Booster HEAT./COOL. 2
n. max DHW EXCHAN. 1*	n. max DHW EXCHAN. 1*	n. max DHW EXCHAN. 1*	n. max DHW EXCHAN. 2*	n. max DHW EXCHAN. 2*	n. max DHW EXCHAN. 2*

\*It is possible to apply only one or two sanitary exchangers if the heat-only HR Boosters are combined inside the POWER UNIT



# HUB RADIATOR POWER UNIT

Patented high efficiency split heat pump system with direct refrigerant/water exchange to produce heating, air conditioning and DHW or to hybridize existing heat generators

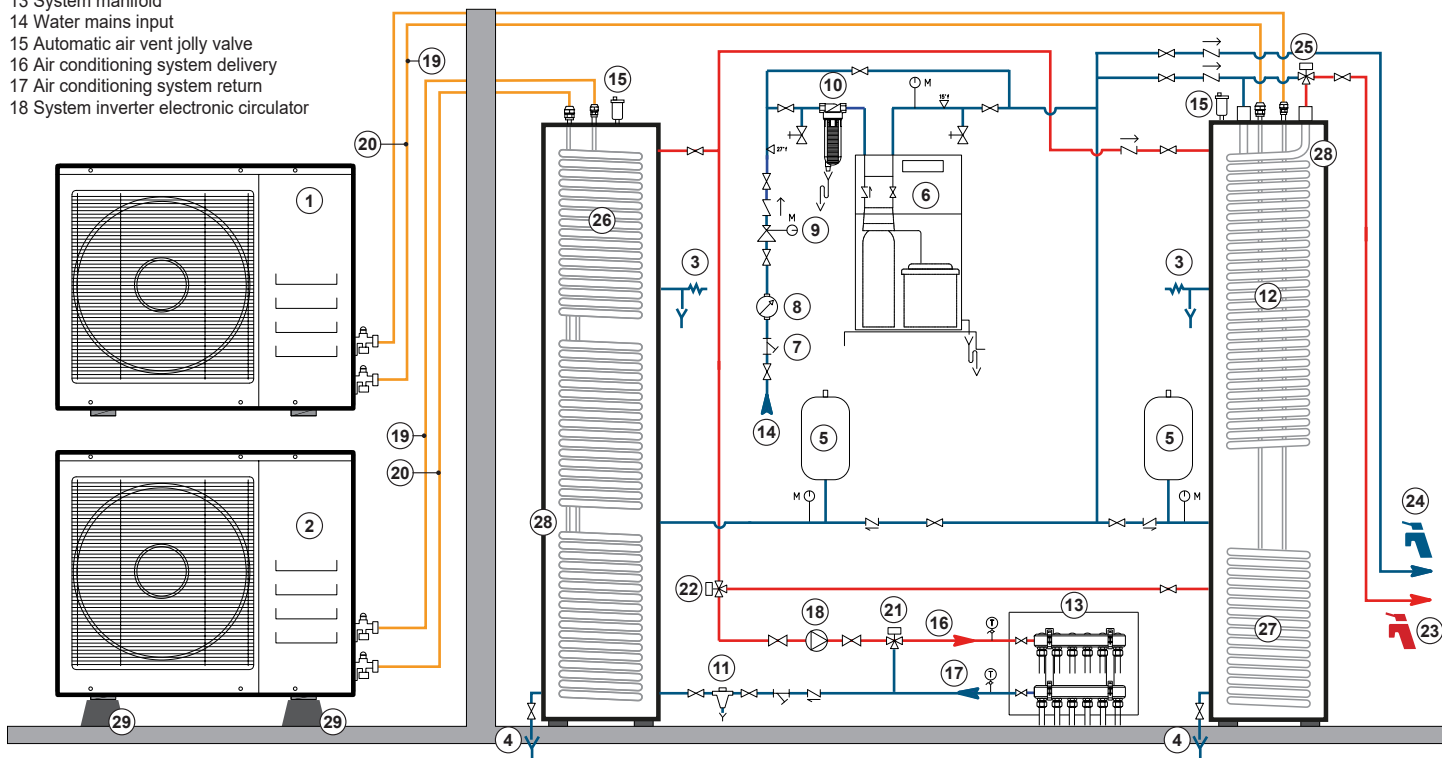
## New thermal power plant for summer/winter air conditioning and DHW production

- 1 Booster HR 2.5 hot only
- 2 Booster HR 2.5 hot/cold
- 3 Safety valve
- 4 Drainage tap
- 5 Technical water expansion tank
- 6 Volumetric softener
- 7 "Y" mechanical filter
- 8 Aqueduct meter
- 9 Automatic pressure reducer
- 10 Sand trap filter
- 11 Magnetic dirt separator
- 12 DHW finned exchanger 3.15 m<sup>2</sup>
- 13 System manifold
- 14 Water mains input
- 15 Automatic air vent jolly valve
- 16 Air conditioning system delivery
- 17 Air conditioning system return
- 18 System inverter electronic circulator

- 19 1/4" R410A refrigeration line (liquid)
- 20 3/8" R410A refrigeration line (gas)
- 21 DHW priority diverter valve
- 22 Summer/winter diverter valve
- 23 Domestic hot water delivery
- 24 Domestic cold water delivery
- 25 Thermostatic mixing valve
- 26 Patented HR hot/cold condenser
- 27 Patented HR hot only condenser
- 28 POWER UNIT 105 LT - H 210 I.U.
- 29 Vulcanized rubber anti-vibration base

HUB RADIATOR POWER UNIT system composed of two internal units model 105 LT - H 210 and two external Booster HR 2.5 units, one of which is hot only and one is hot/cold. This solution involves the application of two motorized diverter valves which allow the two inertial accumulations of technical water to be connected in the winter period and kept separate in the summer period.

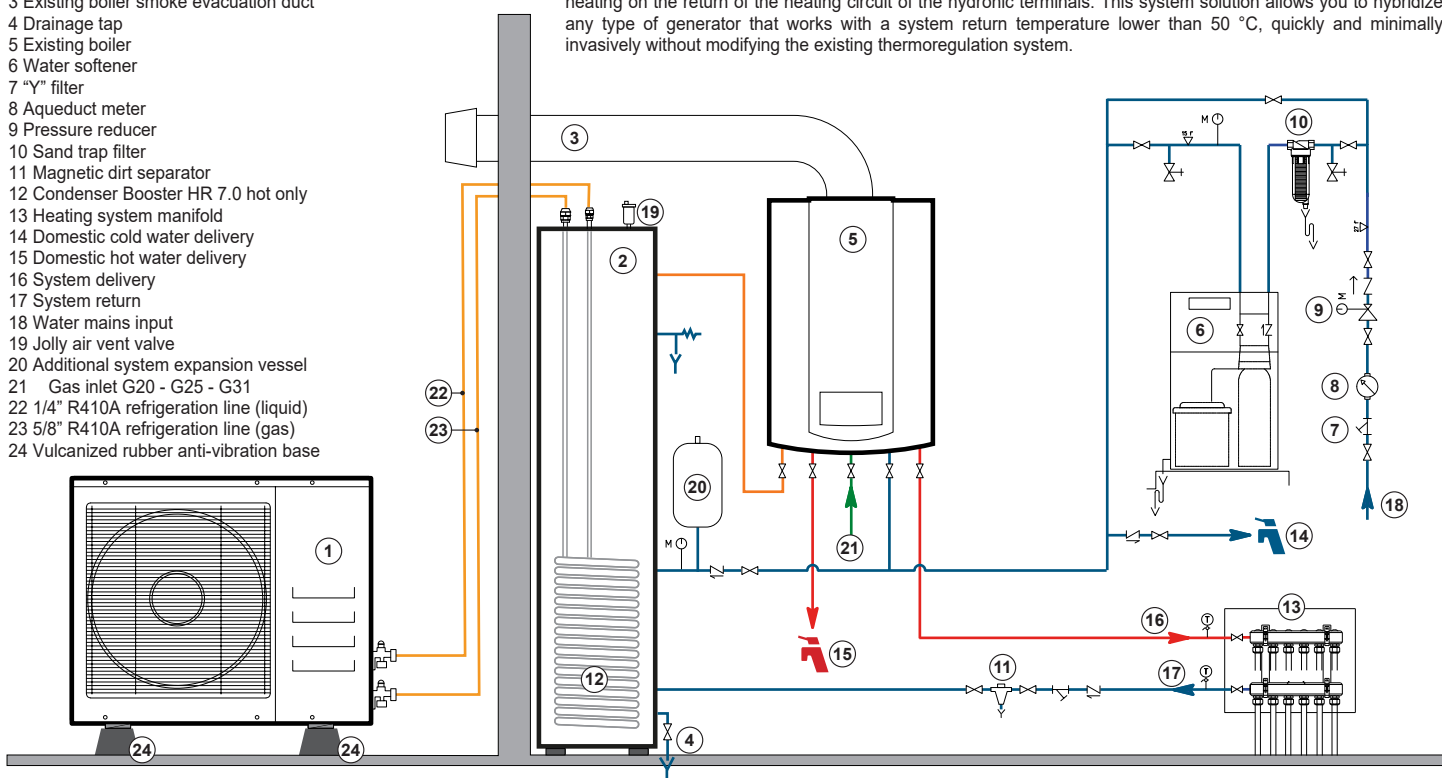
In the winter period, this innovative thermal power plant provides 210 liters of inertial flywheel at a maximum temperature of 55 °C which will be used both for winter air conditioning and for the production of DHW via a finned copper exchanger directly immersed in technical water without the need to carry out anti-legionella thermal shock cycles. In the summer period, a 105 liter storage tank will be dedicated for the production of DHW while the second 105 liter storage tank will be kept at a minimum temperature of 4 °C to power the air conditioning system.



## Transformation of existing heat generator into hybrid system

- 1 External moto-evaporator Booster HR 7.0 hot only
- 2 Internal unit HUB RADIATOR POWER UNIT 80 LT
- 3 Existing boiler smoke evacuation duct
- 4 Drainage tap
- 5 Existing boiler
- 6 Water softener
- 7 "Y" filter
- 8 Aqueduct meter
- 9 Pressure reducer
- 10 Sand trap filter
- 11 Magnetic dirt separator
- 12 Condenser Booster HR 7.0 hot only
- 13 Heating system manifold
- 14 Domestic cold water delivery
- 15 Domestic hot water delivery
- 16 System delivery
- 17 System return
- 18 Water mains input
- 19 Jolly air vent valve
- 20 Additional system expansion vessel
- 21 Gas inlet G20 - G25 - G31
- 22 1/4" R410A refrigeration line (liquid)
- 23 5/8" R410A refrigeration line (gas)
- 24 Vulcanized rubber anti-vibration base

HUB RADIATOR POWER UNIT system composed of an internal unit model 80 LT - H 160 and a heat-only Booster HR 7.0 external unit used to integrate an existing heat generator during the winter period, acting as pre-heating on the return of the heating circuit of the hydronic terminals. This system solution allows you to hybridize any type of generator that works with a system return temperature lower than 50 °C, quickly and minimally invasively without modifying the existing thermoregulation system.



# HUB RADIATOR POWER UNIT

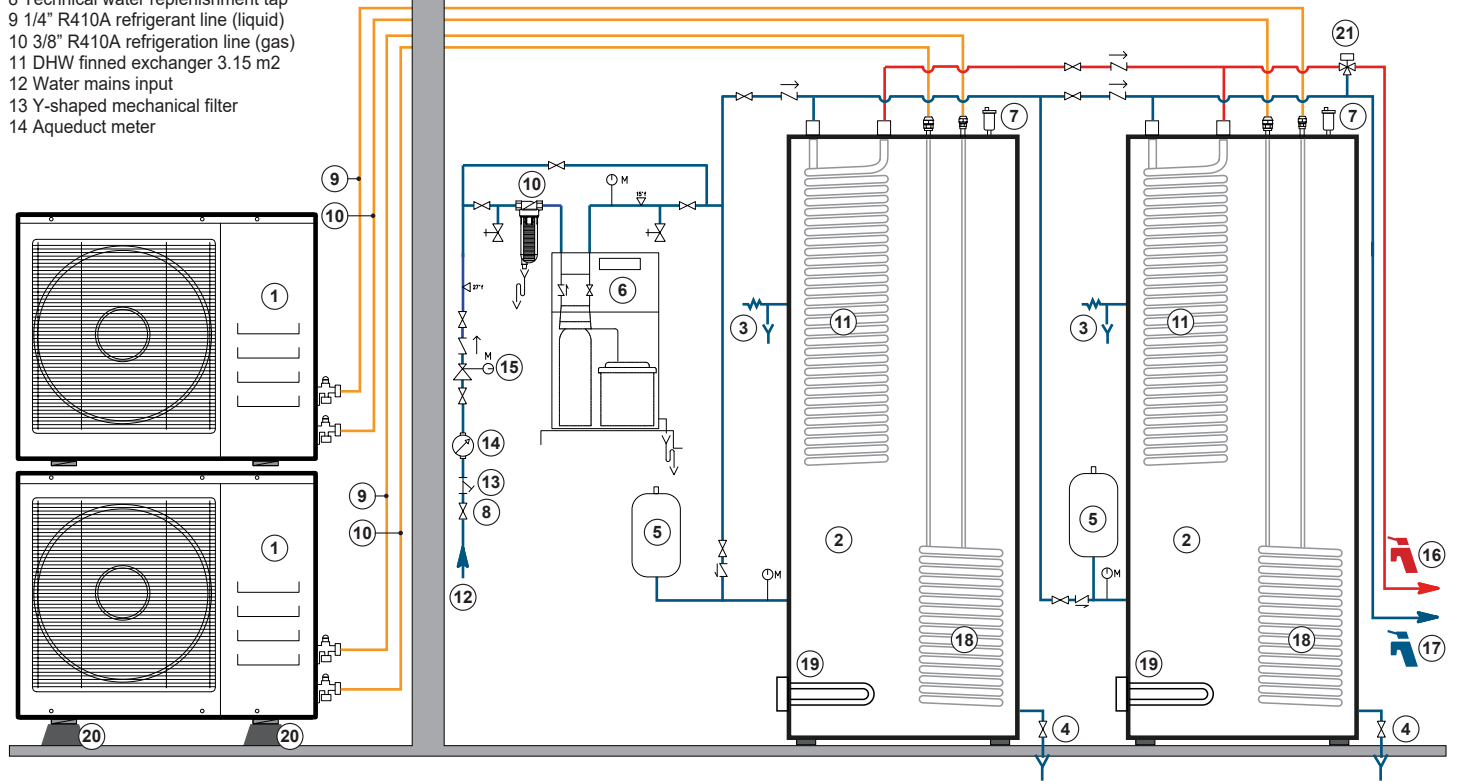
Patented high efficiency split heat pump system with direct refrigerant/water exchange to produce heating, air conditioning and DHW or to hybridize existing heat generators

## New thermal power plant for the production of domestic hot water with cascade accumulations

- 1 External moto-evaporator Booster HR 2.5 hot only
- 2 POWER UNIT 165 LT - H 210 Double I.U.
- 3 Safety valve
- 4 Drainage tap
- 5 System expansion vessel
- 6 Volumetric softener
- 7 Automatic air vent jolly valve
- 8 Technical water replenishment tap
- 9 1/4" R410A refrigerant line (liquid)
- 10 3/8" R410A refrigeration line (gas)
- 11 DHW finned exchanger 3.15 m<sup>2</sup>
- 12 Water mains input
- 13 Y-shaped mechanical filter
- 14 Aqueduct meter

- 15 Automatic pressure reducer
- 16 Domestic hot water delivery
- 17 Domestic cold water delivery
- 18 Patented HR hot-only condenser
- 19 Electrical backup resistor
- 20 Vulcanized rubber anti-vibration base
- 21 Thermostatic mixing valve

HUB RADIATOR POWER UNIT cascade system composed of 2 internal units model 165 LT - H 210 Double and 2 external units model Booster HR 2.5 hot only for the production of DHW via two finned copper exchangers (connected in parallel) directly immersed in technical water. This modular solution allows you to produce large quantities of domestic hot water with maximum hygiene without the need to carry out anti-legionella thermal shock cycles.

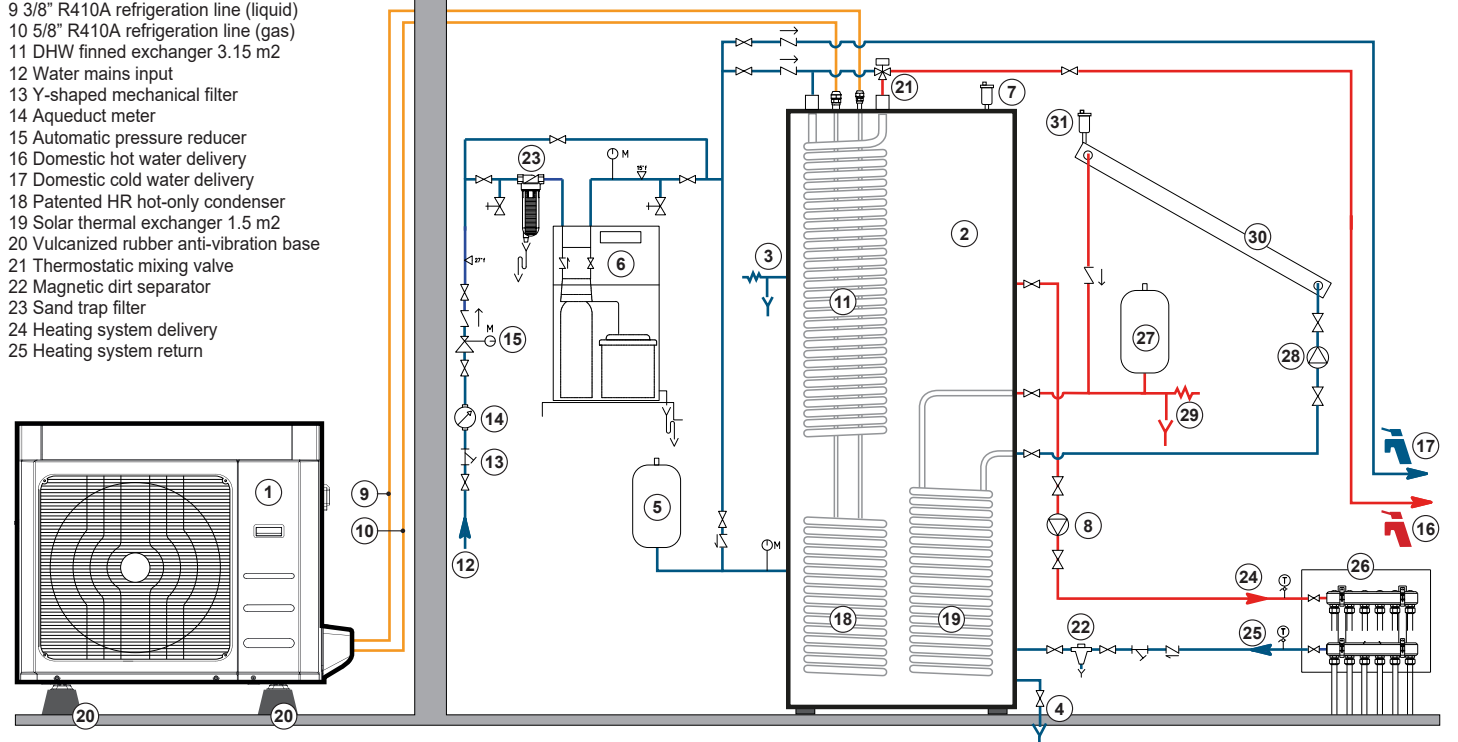


## New thermal power plant for heating and DHW production with solar thermal integration

- 1 External moto-evaporator Booster HR 9.0 hot only
- 2 POWER UNIT 220 LT - H 210 Double I.U.
- 3 System safety valve
- 4 Drainage tap
- 5 System expansion vessel
- 6 Volumetric softener
- 7 Automatic air vent jolly valve
- 8 System circulator
- 9 3/8" R410A refrigeration line (liquid)
- 10 5/8" R410A refrigeration line (gas)
- 11 DHW finned exchanger 3.15 m<sup>2</sup>
- 12 Water mains input
- 13 Y-shaped mechanical filter
- 14 Aqueduct meter
- 15 Automatic pressure reducer
- 16 Domestic hot water delivery
- 17 Domestic cold water delivery
- 18 Patented HR hot-only condenser
- 19 Solar thermal exchanger 1.5 m<sup>2</sup>
- 20 Vulcanized rubber anti-vibration base
- 21 Thermostatic mixing valve
- 22 Magnetic dirt separator
- 23 Sand trap filter
- 24 Heating system delivery
- 25 Heating system return

- 26 System manifold
- 27 Solar expansion vessel
- 28 Solar thermal circulator
- 29 Solar safety valve
- 30 Solar thermal collector
- 31 Solar thermal jolly valve

HUB RADIATOR POWER UNIT system composed of an internal unit model 220 LT - H 210 double and an external unit Booster HR 9.0 heat-only inverter for winter air conditioning and the production of domestic hot water, with solar thermal integration. This innovative, extremely compact thermal power plant provides 220 liters of inertial flywheel at a maximum temperature of 55 °C which will be used both for winter air conditioning and for the production of DHW via a finned copper exchanger directly immersed in technical water without the need to carry out anti-legionella thermal shock cycles.



# HUB RADIATOR POWER UNIT

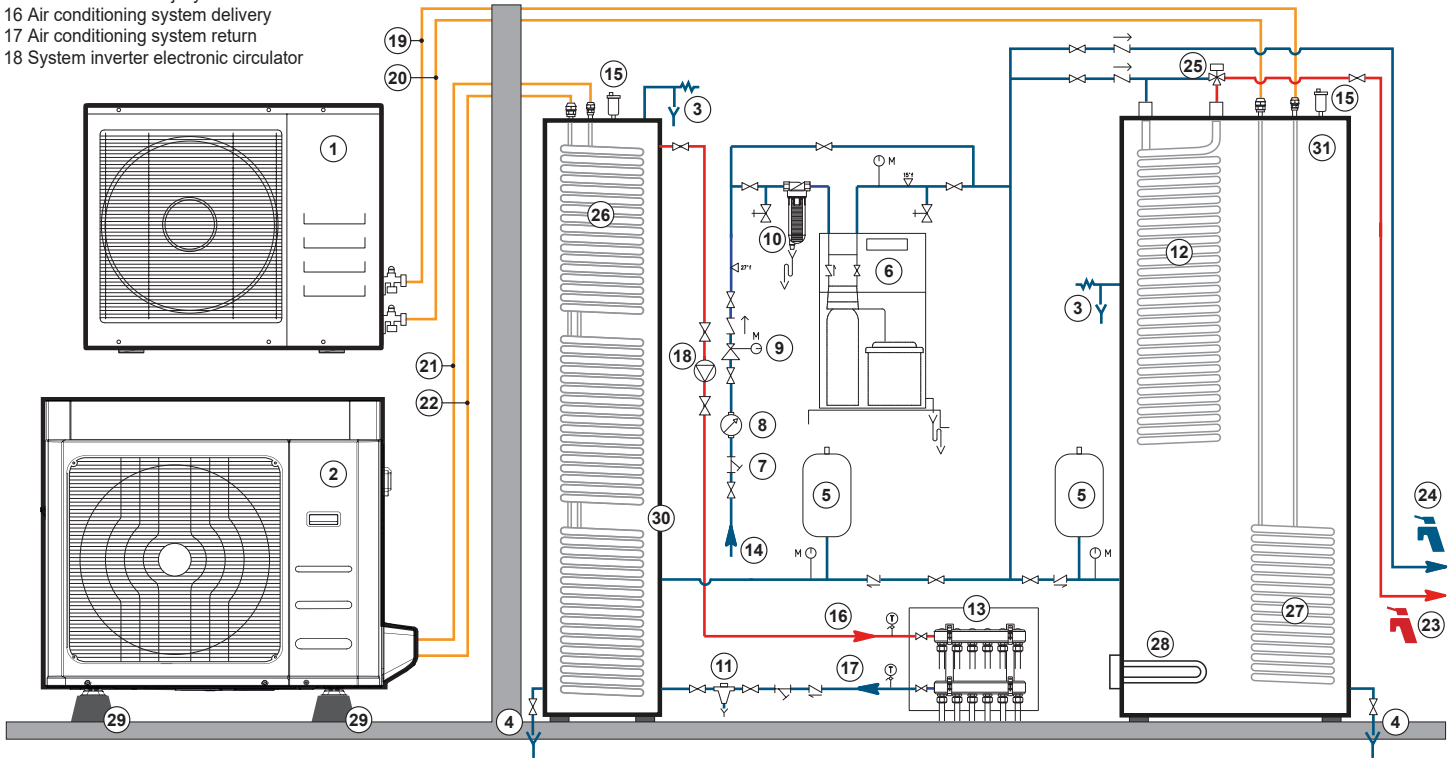
Patented high efficiency split heat pump system with direct refrigerant/water exchange to produce heating, air conditioning and DHW or to hybridize existing heat generators

## New thermal power plant for summer/winter air conditioning and DHW production

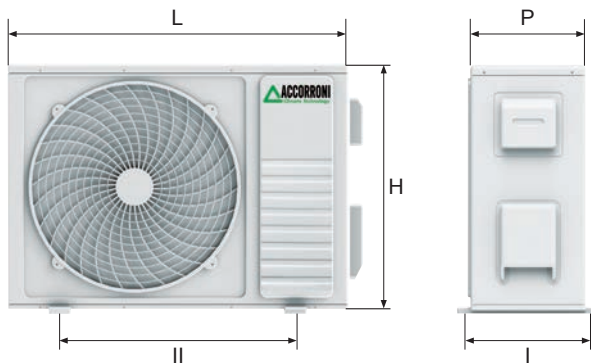
- 1 Booster HR 2.5 hot only
- 2 Booster HR 9.0 hot/cold inverter
- 3 Safety valve
- 4 Drainage tap
- 5 Technical water expansion tank
- 6 Volumetric softener
- 7 "Y" mechanical filter
- 8 Aqueduct meter
- 9 Automatic pressure reducer
- 10 Sand trap filter
- 11 Self-cleaning magnetic dirt separator
- 12 DHW finned exchanger 3.15 m<sup>2</sup>
- 13 Hot/cold radiant system manifold
- 14 Water mains inlet
- 15 Automatic air vent jolly valve
- 16 Air conditioning system delivery
- 17 Air conditioning system return
- 18 System inverter electronic circulator

- 19 1/4" R410A refrigeration line (liquid)
- 20 3/8" R410A refrigeration line (gas)
- 21 3/8" R410A refrigeration line (liquid)
- 22 5/8" R410A refrigeration line (gas)
- 23 Domestic hot water delivery
- 24 Domestic cold water delivery
- 25 Thermostatic mixing valve
- 26 Patented HR hot/cold capacitor
- 27 Patented HR hot only capacitor
- 28 Backup electrical resistor
- 29 Vulcanized rubber anti-vibration base
- 30 POWER UNIT 105 LT - H 210 I.U.
- 31 POWER UNIT 165 LT - H 210 Double I.U.

HUB RADIATOR POWER UNIT system composed of an internal unit model 105 LT - H 210 powered by a Booster HR 9.0 hot/cold inverter and an internal unit model 165 LT - H 210 double powered by a Booster HR 2.5 heating only. This solution is recommended if there is a summer and winter radiant air conditioning system; the design approach in this case is to divide the air conditioning system from the DHW production system. In the winter period, this innovative thermal power plant allows you to manage a double storage temperature, for example it is possible to keep the 105 liter accumulation directly at 35 °C (so as to power the radiant system without the application of a mixing valve), while the 165 liter storage tank equipped with a DHW finned exchanger can be maintained at 45 °C.

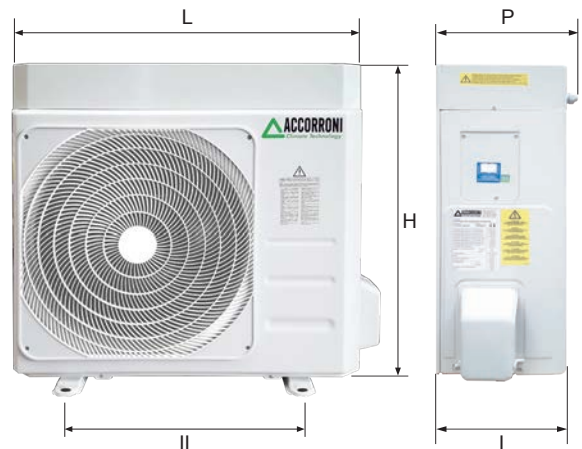


### Dimensions Booster outdoor HR 2.5 - 7.0



Models Outdoor units	L	H	P	I	II	Weight
Booster HR 2.5*	700	552	256	275	435	25
Booster HR 7.0*	830	585	300	330	515	43

### Dimensions Booster outdoor HR 9.0 INVERTER



Models Outdoor units	L	H	P	I	II	Weight
Booster HR 9.0 inverter*	925	785	380	358	540	62

\* Minimum distance between outdoor unit and indoor unit 2.5 m

\* Maximum distance between outdoor unit and indoor unit without additional charging 5.0 m

\* Maximum distance between outdoor unit and indoor unit with additional charging 15.0 m (20 g/m after the first 5 m)

\* Maximum height difference between outdoor unit and indoor unit 5.0 m (always respecting the maximum distance of 15 m)

# HUB RADIATOR POWER UNIT

Patented high efficiency split heat pump system with direct refrigerant/water exchange to produce heating, air conditioning and DHW or to hybridize existing heat generators

## Dimensions indoor units POWER UNIT 80 LT - 105 LT - 130 LT

B1 Exchanger connections for Booster HR\*

B2 Exchanger connections for Booster HR\*

F/DHW Exchanger connections for DHW\*\*

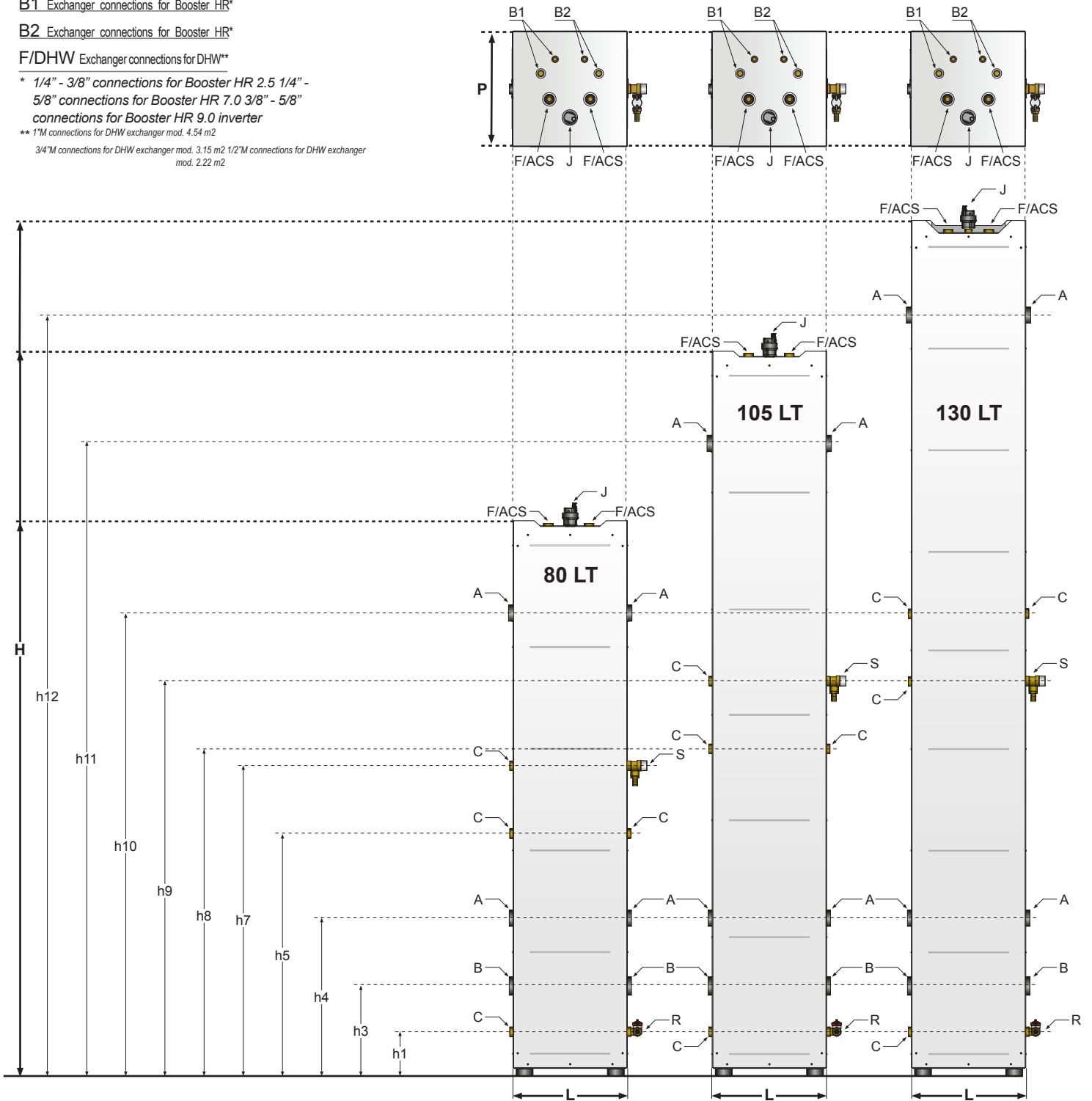
\* 1/4" - 3/8" connections for Booster HR 2.5 1/4" -

5/8" connections for Booster HR 7.0 3/8" - 5/8"

connections for Booster HR 9.0 inverter

\*\* 1" M connections for DHW exchanger mod. 4.54 m2

3/4" M connections for DHW exchanger mod. 3.15 m2 1/2" M connections for DHW exchanger mod. 2.22 m2



Models	L	P	H	h1	h3	h4	h5	h7	h8	h9	h10	h11	h12
80 LT	340,5	340,5	1656,2	130,0	265,0	465,0	715,0	915,0	-	-	1365,0	-	-
105 LT	340,5	340,5	2156,2	130,0	265,0	465,0	-	-	965,0	1165,0	-	1865,0	-
130 LT	340,5	340,5	2524,3	130,0	265,0	465,0	-	-	-	1165,0	1365,0	-	2245,0

Values expressed in mm

Models	Connections Used			Free Connections						Weight Kg		Litres	
	R - Drain cock*	J - Valve Jolly*	S - Safety valve*	A	B	C	D	E	F	Empty	Exercise		
80 LT											57,4	136,2	79,2
105 LT	1/2"	3/8"	1/2"	1 1/4"	1 1/2"	1/2"	3/8"	1"	3/4"		74,7	179,7	105,0
130 LT											86,9	218,5	132,0

\*Accessory supplied as standard, pre-assembled at the factory



# HUB RADIATOR POWER UNIT

Patented high efficiency split heat pump system with direct refrigerant/water exchange to produce heating, air conditioning and DHW or to hybridize existing heat generators

## Dimensions indoor units POWER UNIT 165 LT - 220 LT - 315 LT

B1 Exchanger connections for Booster HR\*

B2 Exchanger connections for Booster HR\*

B3 Exchanger connections for Booster HR\*

B4 Exchanger connections for Booster HR\*

ACS Exchanger connections for DHW\*\*

\* 1/4" - 3/8" connections for Booster HR 2.5

1/4" - 5/8" connections for Booster HR 7.0

3/8" - 5/8" connections

for Booster HR 9.0 inverter

\*\* 1" M connections for exchanger

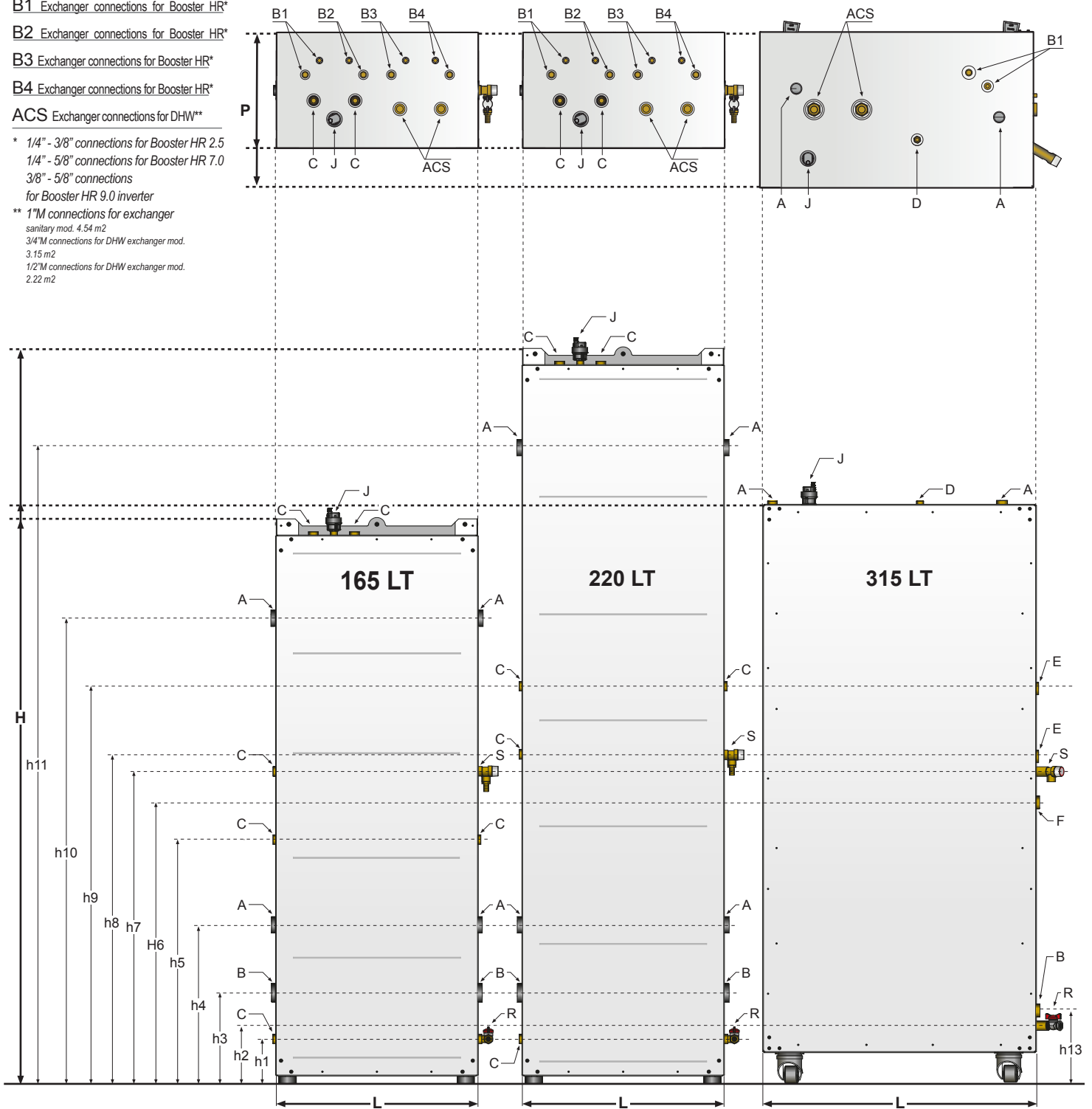
sanitary mod. 4.54 m2

3/4" M connections for DHW exchanger mod.

3.15 m2

1/2" M connections for DHW exchanger mod.

2.22 m2



Models	L	P	H	h1	h2	h3	h4	h5	h6	h7	h8	h9	h10	h11	h13
165 LT	594,6	340,5	1656,2	130,0	-	265,0	465,0	715,0	-	915,0	-	-	1365,0	-	-
220 LT	594,6	340,5	2156,2	130,0	-	265,0	465,0	-	-	915,0	965,0	1165,0	-	1865,0	-
315 LT	803,4	461,1	1690,0	-	165,0	-	-	-	815,0	915,0	965,0	1165,0	-	-	185,0

Values expressed in mm

Models	Connections Used			Free Connections						Weight Kg		Liters	
	R - Drain cock*	J - Jolly valve*	S - Safety valve*	A	B	C	D	E	F	Empty	Exercise		
165 LT											102,0	268,5	166,5
220 LT	1/2"	3/8"	1/2"	1 1/4"	1 1/2"	1/2"	3/8"	1"	3/4"	121,0	343,4	224,4	
315 LT										230,0	544,2	314,2	

\*Accessory supplied as standard, pre-assembled at the factory

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**External unit technical data table Booster HUB RADIATOR POWER UNIT**

DESCRIPTION	U.M.	HR 2.5 only heat	HR 7.0 only heat	HR 2.5 heat/cooling	HR 7.0 heat/cooling	HR 9.0 inverter only heat	HR 9.0 inverter heat/cooling
Thermal power (1)	kW	2,48	7,02	2,48	7,02	3,54/8,01/8,81*	3,54/8,01/8,81*
Absorbed power (1)	kW	0,60	1,70	0,60	1,70	1,89	1,89
C.O.P. (1)	W/W	4,14	4,12	4,14	4,12	4,24	4,24
Thermal power (2)	kW	2,37	6,79	2,37	6,79	2,85/7,92/8,71*	2,85/7,92/8,71*
Absorbed power (2)	kW	0,78	2,21	0,78	2,21	2,39	2,39
C.O.P. (2)	W/W	3,02	3,07	3,02	3,07	3,31	3,31
Thermal power (3)	kW	2,06	5,90	2,06	5,90	2,54/7,04/7,74*	2,54/7,04/7,74*
Absorbed power (3)	kW	0,63	1,75	0,63	1,75	2,00	2,00
C.O.P. (3)	W/W	3,28	3,37	3,28	3,37	3,52	3,52
Thermal power (4)	kW	2,24	6,44	2,24	6,44	2,46/6,82/7,50*	2,46/6,82/7,50*
Absorbed power (4)	kW	0,90	2,54	0,90	2,54	2,74	2,74
C.O.P. (4)	W/W	2,50	2,53	2,50	2,53	2,68	2,68
Thermal power (5)	kW	2,11	5,52	2,11	5,52	2,31/6,41/7,05*	2,31/6,41/7,05*
Absorbed power (5)	kW	0,75	2,00	0,75	2,00	2,54	2,54
C.O.P. (5)	W/W	2,81	2,76	2,81	2,76	3,04	3,04
Thermal power (6)	kW	1,99	5,20	1,99	5,20	2,25/6,25/6,88*	2,25/6,25/6,88*
Absorbed power (6)	kW	0,94	2,53	0,94	2,53	2,68	2,68
C.O.P. (6)	W/W	2,11	2,05	2,11	2,05	2,39	2,39
S.C.O.P. (7)	W/W	3,78	3,71	3,78	3,71	3,94	3,94
Seasonal heating efficiency ( $\eta_s$ )	%	153,1	150,3	153,1	150,3	159,62	159,62
Refrigeration power (8)	kW	-	-	2,35	6,35	-	4,91/7,72/8,49*
Absorbed power (8)	kW	-	-	0,62	1,69	-	1,76
E.E.R. (8)	W/W	-	-	3,78	3,76	-	4,38
Refrigeration power (9)	kW	-	-	2,63	5,84	-	3,80/6,08/6,69*
Absorbed power (9)	kW	-	-	0,89	2,20	-	1,99
E.E.R. (9)	W/W	-	-	2,95	2,65	-	3,05
S.E.E.R. (9)	W/W	-	-	3,67	3,32	-	4,25
Energy efficiency class (10)		A / A++				A++ / A+++	
Type compressor		Rotation ON-OFF				Twin Rotary DC INVERTER	
Compressors		1					
Refrigerant circuits		1					
Defrosting method		Cycle reversal with immersion condenser					
Type of refrigerant		R410A					
Technical water temperature min/max	°C	+ 30 / + 55		+ 4 / + 55		+ 30 / + 55	+ 4 / + 55
Refrigerant quantity (pre-inserted)	Kg	0,8	1,5	0,8	1,5	2,2	2,2
Min dist. between outdoor and indoor unit	m	3					
Max dist. betw. outdoor and indoor unit without charging	m	5					
Max dist. betw. external and internal unit with charging	m	15					
Max height diff. betw. ext. and internal unit	m	5					
Refrigerant gas line connection		3/8"	5/8"	3/8"	5/8"	5/8"	5/8"
Coolant line connection		1/4"	1/4"	1/4"	1/4"	3/8"	3/8"
Sound power (11)	dB(A)	65,1	68,4	65,1	68,4	64,0	64,0
Sound pressure at one meter (12)	dB(A)	51,2	54,7	51,2	54,7	49,8	49,8
External temperature operating limits	°C	-15 / +45				-20 / +45	
Power supply		230V/1/50Hz					
Max power absorbed	kW	0,94	2,53	0,94	2,53	4,70	4,70
Max current absorbed	A	4,30	11,57	4,30	11,57	20,40	20,40
Weight	Kg	25	43	25	43	62	62

- (1) Heating: external air temperature 7 °C d.b. - 6 °C b.u.; inlet/outlet water temperature 30/35 °C  
 (2) Heating: external air temperature 7 °C d.b. - 6 °C b.u.; inlet/outlet water temperature 40/45 °C  
 (3) Heating: external air temperature 0 °C db; inlet/outlet water temperature 30/35 °C  
 (4) Heating: external air temperature 0 °C db; inlet/outlet water temperature 40/45 °C  
 (5) Heating: external air temperature -7 °C db; inlet/outlet water temperature 30/35 °C  
 (6) Heating: external air temperature -7 °C db; inlet/outlet water temperature 40/45 °C  
 (7) Heating: average climatic conditions; inlet/outlet water temperature 30/35 °C  
 (8) Cooling: external air temperature 35 °C d.b.; inlet/outlet water temperature 23/18 °C  
 (9) Cooling: external air temperature 35 °C d.b.; inlet/outlet water temperature 12/7 °C

(10) Water 35°C / 55°C

- (11) Measurements carried out according to UNI EN 14511 in mode heating and boundary conditions (1)  
 (12) Value calculated according to ISO 3744: 2010 (\*) By activating the maximum HZ function