

# SUPER HUB RADIATOR

Patented high efficiency heat pump system with direct refrigerant / water exchange to produce heating and domestic hot water for medium and large users

## ENERGY RATING



## Technical and construction features

The many years of experience in the Green Economy sector has allowed us to understand the real needs of medium / large users (condominiums, sports centers, campsites, hotels, service sectors, etc.). In this context linked to energy saving and the use of renewable energy, the SUPER HUB RADIATOR system was born, capable of producing heating and domestic hot water according to the canons of new sustainable development. The main features of the SUPER HUB RADIATOR are:

### INTEGRATED SOLUTIONS

The SUPER HUB RADIATOR has been designed to function as a large thermal energy accumulator, also offering wide configuration possibilities in combination with solar thermal and biomass.

### HIGH PERFORMANCES

The particular construction of the patented multiple condensers with direct refrigerant / water exchange combined with the HR Booster in cascade guarantee energy savings, greater yield, great reliability and simplified maintenance.

### NO LEGIONELLA

The SUPER HUB RADIATOR with the first in - first out method guarantees maximum performance of the heat pump and maximum hygiene of the sanitary circuit which always works separated from the technical water. These particular copper exchangers allow to eliminate the big problem of legionella in the bud.

### ENERGY SAVING

The exclusive HUB RADIATOR patent redefines the performance parameters of air / water heat pumps by reaching the maximum performance levels of the system with the "direct exchange of the refrigerant / water condenser" even in very cold winters.

This allows you to return from the investment in a very short time. **BOOSTER IN THE CASCADE**

The high versatility and modularity of the SUPER HUB RADIATOR system allows all operators in the sector to configure their own heating plant by choosing from different A\_RM technical water inertial accumulators in which to connect several HR Boosters that work in direct exchange with load capacity steps to obtain the required heat output.



PATENTED SYSTEM



RENEWABLE ENERGY



ENERGY SAVING



MANY CONFIGURATIONS



BOOSTER INVERTER



ECOLOGICAL GAS



SOLAR THERMAL COMBI



PHOTOVOLTAIC COMBI



DHW WITHOUT LEGIONELLA



HEATING UP TO 58 °C

External moto-evaporating unit model

**Booster HR 3.0 only heat**

Codice

**76010240**

€

**2.000,00**

**Booster HR 7.8 only heat**

**76010500**

**3.700,00**

**Booster HR 9.0 only heat INVERTER**

**76030500**

**6.360,00**









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## Technical accumulation SUPER HUB RADIATOR

Models	DHW exchanger	Solar exchanger	Biomass exchanger	Code	€
<b>Accumulo ARM1 300</b>	Extractable from 4,54 m <sup>2</sup>	-	-	<b>37310300</b>	<b>2.870,00</b>
<b>Accumulo ARM1 500</b>	Extractable from 4,54 m <sup>2</sup>	-	-	<b>37310500</b>	<b>3.060,00</b>
<b>Accumulo ARM1 800</b>	Extractable from 5,26 m <sup>2</sup>	-	-	<b>37310800</b>	<b>4.060,00</b>
<b>Accumulo ARM1 1000</b>	Extractable from 5,26 m <sup>2</sup>	-	-	<b>37311000</b>	<b>4.320,00</b>
<b>Accumulo ARM1 1500</b>	Extractable from 6,34 m <sup>2</sup>	-	-	<b>37311500</b>	<b>5.070,00</b>
<b>Accumulo ARM1 2000</b>	Extractable from 6,34 m <sup>2</sup>	-	-	<b>37312000</b>	<b>6.380,00</b>
<b>Accumulo ARM2 300</b>	Extractable from 4,54 m <sup>2</sup>	Fixed of 1,40 m <sup>2</sup>	-	<b>37320300</b>	<b>3.160,00</b>
<b>Accumulo ARM2 500</b>	Extractable from 4,54 m <sup>2</sup>	Fixed of 2,00 m <sup>2</sup>	-	<b>37320500</b>	<b>3.610,00</b>
<b>Accumulo ARM2 800</b>	Extractable from 5,26 m <sup>2</sup>	Fixed of 2,50 m <sup>2</sup>	-	<b>37320800</b>	<b>4.430,00</b>
<b>Accumulo ARM2 1000</b>	Extractable from 5,26 m <sup>2</sup>	Fixed of 3,50 m <sup>2</sup>	-	<b>37321000</b>	<b>4.510,00</b>
<b>Accumulo ARM2 1500</b>	Extractable from 6,34 m <sup>2</sup>	Fixed of 4,00 m <sup>2</sup>	-	<b>37321500</b>	<b>6.340,00</b>
<b>Accumulo ARM2 2000</b>	Extractable from 6,34 m <sup>2</sup>	Fixed of 4,80 m <sup>2</sup>	-	<b>37322000</b>	<b>6.860,00</b>
<b>Accumulo ARM3 300</b>	Extractable from 4,54 m <sup>2</sup>	Fixed of 1,40 m <sup>2</sup>	Fixed of 1,10 m <sup>2</sup>	<b>37330300</b>	<b>3.370,00</b>
<b>Accumulo ARM3 500</b>	Extractable from 4,54 m <sup>2</sup>	Fixed of 2,00 m <sup>2</sup>	Fixed of 1,80 m <sup>2</sup>	<b>37330500</b>	<b>4.060,00</b>
<b>Accumulo ARM3 800</b>	Extractable from 5,26 m <sup>2</sup>	Fixed of 2,50 m <sup>2</sup>	Fixed of 2,00 m <sup>2</sup>	<b>37330800</b>	<b>4.680,00</b>
<b>Accumulo ARM3 1000</b>	Extractable from 5,26 m <sup>2</sup>	Fixed of 3,50 m <sup>2</sup>	Fixed of 2,50 m <sup>2</sup>	<b>37331000</b>	<b>4.970,00</b>
<b>Accumulo ARM3 1500</b>	Extractable from 6,34 m <sup>2</sup>	Fixed of 4,00 m <sup>2</sup>	Fixed of 2,80 m <sup>2</sup>	<b>37331500</b>	<b>6.860,00</b>
<b>Accumulo ARM3 2000</b>	Extractable from 6,34 m <sup>2</sup>	Fixed of 4,80 m <sup>2</sup>	Fixed of 3,80 m <sup>2</sup>	<b>37332000</b>	<b>7.180,00</b>

















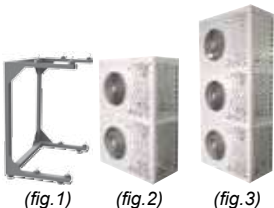


## Accessories SUPER HUB RADIATOR

	230 V single-phase integrative electrical resistance degree of protection IP 65	<b>mod. 1500 W</b> <b>mod. 2000 W</b> <b>mod. 3000 W</b>	<b>75050102</b> <b>75050103</b> <b>75060300</b>	<b>150,00</b> <b>160,00</b> <b>170,00</b>
	Additional inverter electronic circulator max flow rate 3.3 m <sup>3</sup> / h max head 6.2 m electrical absorption min. 4 W - max 45 W		<b>35006001</b>	<b>214,00</b>
	System pump kit which includes: Inverter electronic circulation pump complete with shut-off valves, air vent jolly valve, safety valve, threaded plugs and probe wells		<b>75100011</b>	<b>380,00</b>
	High head system pump kit which includes: complete inverter electronic circulation pump of shut-off valves, air vent jolly valve, safety valve, threaded plugs and probe wells		<b>75100009</b>	<b>674,00</b>
	High efficiency inverter electronic circulator with wet rotor and ECM permanent magnet motor	<b>mod. 3/6</b> <b>Q max 3,2 m<sup>3</sup>/h</b> <b>H max 6,6 m</b> <b>mod. 9/10</b> <b>Q max 9 m<sup>3</sup>/h</b> <b>H max 10,5 m</b> <b>mod. 18/12</b> <b>Q max 18 m<sup>3</sup>/h</b> <b>H max 12,8 m</b> <b>mod. 27/16</b> <b>Q max 27 m<sup>3</sup>/h</b> <b>H max 16,0 m</b> <b>mod. 30/18G</b> <b>Q max 30 m<sup>3</sup>/h</b> <b>H max 18,0 m</b>	<b>35006002</b> <b>36576012</b> <b>36576013</b> <b>36576014</b> <b>36576015</b>	<b>540,00</b> <b>1.220,00</b> <b>2.380,00</b> <b>3.780,00</b> <b>6.590,00</b>
	Command and remote control panel	<b>mod. incasso</b> <b>mod. a parete</b>	<b>75100005</b> <b>75100028</b>	<b>90,00</b> <b>110,00</b>
	Load control relay for managing the absorbed power	<b>mod. Collegamento BUS</b> <b>mod. Radiofrequenza</b>	<b>37081062</b> <b>37081063</b>	<b>148,00</b> <b>336,00</b>
	Web server home automation control unit		<b>75101005</b>	<b>580,00</b>

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## Accessories SUPER HUB RADIATOR

			Codice	€
	Mixing valve for radiant systems	<b>mod. fixed mechanical adjustment</b>	<b>75101032</b>	<b>90,00</b>
		<b>mod. motorized adjustment</b>	<b>75101033</b>	<b>530,00</b>
	Additional condenser for heat only HR Booster		<b>26505565</b>	<b>300,00</b>
	Anchoring shelf for external Booster including rubber anti-vibration mounts	<b>mod. HR 3.0</b>	<b>37081060</b>	<b>50,00</b>
		<b>mod. HR 7.8 - 9.0</b>	<b>37081061</b>	<b>90,00</b>
	Anchoring bracket for sloped roof for external Booster mod. HR 3.0 - 7.8 including rubber anti-vibration mounts		<b>37081064</b>	<b>130,00</b>
	Antivibration floor base in vulcanized rubber (height from the ground mm 95) with level and screws for Booster HR 3.0 - 7.8 - 9.0 (pack of 2 pieces)		<b>75100018</b>	<b>94,00</b>
	Anti-vibration kit for installation on shelves		<b>75100022</b>	<b>18,00</b>
	Spring anti-vibration kit in stainless steel complete with bolts, washers and nuts (pack of 2 pieces)	<b>mod. HR 3.0</b>	<b>37081065</b>	<b>52,00</b>
		<b>mod. HR 7.8 - 9.0</b>	<b>37081066</b>	<b>56,00</b>
	Condensate anti-freeze heating cable with thermal sensor, factory fitted	<b>mod. 3 meters 90 W</b>	<b>37081067</b>	<b>56,00</b>
		<b>mod. 6 meters 120 W</b>	<b>37081068</b>	<b>66,00</b>
	Auxiliary basin for installation under the shelf equipped with 90 W heating cable	<b>mod. HR 3.0</b>	<b>37081069</b>	<b>252,00</b>
		<b>mod. HR 7.8 - 9.0</b>	<b>37081070</b>	<b>272,00</b>
	Floor support complete with auxiliary basin equipped with 90 W heating cable	<b>mod. HR 3.0 H fixed</b>	<b>37081071</b>	<b>308,00</b>
		<b>mod. HR 7.8 - 9.0 H fixed</b>	<b>37081073</b>	<b>330,00</b>
		<b>mod. HR 7.8 - 9.0 H variable</b>	<b>37081074</b>	<b>354,00</b>
	DHW thermostatic mixer for anti-scald solar thermal systems	<b>mod. MIX L</b>	<b>50103015</b>	<b>370,00</b>
		<b>mod. MIX XL</b>	<b>50203015</b>	<b>396,00</b>
		<b>mod. MIX XXL</b>	<b>50303015</b>	<b>1.370,00</b>
	Electronic management kit and additional heat generator connection sleeves		<b>75100024</b>	<b>194,00</b>
	Anti-vibration flexible joint kit with flare and straight union	<b>mod. HR 7.8 - 9.0 (5/8")</b>	<b>75100014</b>	<b>120,00</b>
		<b>mod. HR 3.0 (3/8")</b>	<b>75100015</b>	<b>60,00</b>
	Antivibration flexible joint kit with flare and 90° curved union	<b>mod. HR 7.8 - 9.0 (5/8")</b>	<b>75100016</b>	<b>120,00</b>
		<b>mod. HR 3.0 (3/8")</b>	<b>75100017</b>	<b>60,00</b>
	Programmer clock kit		<b>35639900</b>	<b>40,00</b>
	AIR BOX cabinet for cylindrical internal unit - external frame covering the technical storage	<b>mod. 300 L 950 P 930 - H 1950</b>	<b>75060202</b>	<b>620,00</b>
		<b>mod. 500 L 950 P 930 - H 1950</b>	<b>75060203</b>	<b>990,00</b>
		<b>mod. 800 L 1200 P 1180 - H 2100</b>	<b>75060204</b>	<b>1.100,00</b>
	Open shelf for n. 2 Booster outdoor units mod. HR 7.8 - 9.0 complete with anti-vibration mounts (fig. 1)		<b>75060406</b>	<b>240,00</b>
	RACK 2 wardrobe for n. 2 Booster outdoor units mod. HR 3.0 - 7.8 - 9.0 (fig. 2)		<b>75060306</b>	<b>890,00</b>
	RACK 3 wardrobe for n. 3 external units Booster mod. HR 3.0 - 7.8 - 9.0 Height 210 cm Width 96 cm Depth 54 cm (fig.3)		<b>75060206</b>	<b>980,00</b>

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## Thermal solar kits to be combined with the systems SUPER HUB RADIATOR

	<b>solar thermal kit 1 x 2.0 m2</b>	<b>Kit Solar HR 1 x 2.0</b>	Code	€
	- N. 1 SELECTIVE H + 2.0 m2 flat sheet panel - Anchoring kit for 1 SELECTIVE H + 2.0 m2 manifold - 2-way solar station mod. UNIT 2 PLUS - CONTROL MULTI 06 S solar control unit - 12 liter expansion vessel - String fittings kit (1 string - 1 collector) - Concentrated glycol 1 tank of 3 liters	<b>Flat roof / 1 x 2.0</b>	<b>37318030</b>	<b>2.000,00</b>
Solar collector SELECTIVE	<b>solar thermal kit 1 x 2.5 m2</b>	<b>Kit Solar HR 1 x 2.5</b>	Code	€
	- N. 1 SELECTIVE HX + 2.5 m2 flat sheet panel - Anchoring kit for 1 SELECTIVE HX + 2.5 m2 manifold - 2-way solar station mod. UNIT 2 PLUS - CONTROL MULTI 06 S solar control unit - 18 liter expansion vessel - String fittings kit (1 string - 1 collector) - Concentrated glycol 1 tank of 4 liters	<b>Flat roof / 1 x 2.5</b>	<b>37318031</b>	<b>2.136,00</b>
	<b>solar thermal kit 2 x 2.0 m2</b>	<b>Kit Solar HR 2 x 2.0</b>	Code	€
	- N. 2 SELECTIVE H + 2.0 m2 flat sheet panels - Anchoring kit for 2 SELECTIVE HX + 2.0 m2 collectors - 2-way solar station mod. UNIT 2 PLUS - CONTROL MULTI 06 S solar control unit - 25 liter expansion vessel - String fittings kit (1 string - 2 collectors) - Concentrated glycol 2 tanks of 3 liters	<b>Flat roof / 2 x 2.0</b>	<b>37318032</b>	<b>2.888,00</b>
Anchoring kit SELECTIVE	<b>solar thermal kit 2 x 2.5 m2</b>	<b>Kit Solar HR 2 x 2.5</b>	Code	€
	- N. 2 SELECTIVE HX + 2.5 m2 flat sheet panels - Anchoring kit for 2 SELECTIVE HX + 2.5 m2 manifolds - 2-way solar station mod. UNIT 2 PLUS - CONTROL MULTI 06 S solar control unit - 25 liter solar expansion tank - String fittings kit (1 string - 2 collectors) - Concentrated glycol 2 tanks of 4 liters	<b>Flat roof / 2 x 2.5</b>	<b>37318033</b>	<b>3.158,00</b>
	<b>solar thermal kit 3 x 2.0 m2</b>	<b>Kit Solar HR 3 x 2.0</b>	Code	€
	- N. 3 pannelli in lastra piana SELECTIVE H+ 2.0 m2 - Kit ancoraggio 3 collettori SELECTIVE H+ 2.0 m2 - Stazione solare 2 vie mod. UNIT 2 PLUS - Centralina solare CONTROL MULTI 06 S - Vaso di espansione solare 25 litri - Kit raccordi di stringa (1 stringa - 3 collettori) - Glicole concentrato 3 taniche da 3 litri	<b>Flat roof / 3 x 2.0</b>	<b>37318034</b>	<b>3.782,00</b>
Solar station UNIT 2 PLUS	<b>solar thermal kit 3 x 2.5 m2</b>	<b>Kit Solar HR 3 x 2.5</b>	Code	€
	- N. 3 SELECTIVE HX + 2.5 m2 flat sheet panels - Anchoring kit for 3 SELECTIVE HX + 2.5 m2 collectors - 2-way solar station mod. UNIT 2 PLUS - CONTROL MULTI 06 S solar control unit - 25 liter solar expansion tank - String fittings kit (1 string - 3 collectors) - Concentrated glycol 3 tanks of 4 liters	<b>Flat roof / 3 x 2.5</b>	<b>37318035</b>	<b>4.188,00</b>
	<b>solar thermal kit 5 x 2.5 m2</b>	<b>Kit Solar HR 5 x 2.5</b>	Code	€
	- N. 5 SELECTIVE HX + 2.5 m2 flat sheet panels - Anchoring kit for 5 SELECTIVE HX collectors + 2.5 m2 - 2-way solar station mod. UNIT 2 PLUS - CONTROL MULTI 06 S solar control unit - 40 liter expansion vessel - String fittings kit (1 string - 5 collectors) - Concentrated glycol 2 canisters of 10 liters	<b>Flat roof / 5 x 2.5</b>	<b>37318036</b>	<b>6.263,00</b>
Solar control unit CONTROL MULTI 06 S	<b>solar thermal kit 6 x 2.5 m2</b>	<b>Kit Solar HR 6 x 2.5</b>	Code	€
	- N. 6 SELECTIVE HX + 2.5 m2 flat sheet panels - Anchoring kit for 6 SELECTIVE HX collectors + 2.5 m2 - 2-way solar station mod. UNIT 2 PLUS - CONTROL MULTI 06 S solar control unit - 60 liter expansion vessel - String fittings kit (1 string - 6 collectors) - Concentrated glycol 5 canisters of 5 liters	<b>Flat roof / 6 x 2.5</b>	<b>37318037</b>	<b>7.300,00</b>
	<b>solar thermal kit 10 x 2.5 m2</b>	<b>Kit Solar HR 10 x 2.5</b>	Code	€
	- N. 10 SELECTIVE HX + 2.5 m2 flat sheet panels - Anchoring kit for 10 SELECTIVE HX collectors + 2.5 m2 - 2-way solar station mod. UNIT 2 XL PLUS - CONTROL MULTI 06 S solar control unit - 100 liter expansion vessel - String fittings kit (2 strings - 10 collectors) - Concentrated glycol 4 tanks of 10 liters	<b>Flat roof / 10 x 2.5</b>	<b>37318038</b>	<b>12.526,00</b>
Solar expansion vessel	<b>solar thermal kit 12 x 2.5 m2</b>	<b>Kit Solar HR 12 x 2.5</b>	Code	€
	- N. 12 SELECTIVE HX + 2.5 m2 flat sheet panels - Anchoring kit for 12 SELECTIVE HX collectors + 2.5 m2 - 2-way solar station mod. UNIT 2 XL PLUS - CONTROL MULTI 06 S solar control unit - 100 liter expansion vessel - String fittings kit (2 strings - 12 collectors) - Concentrated glycol 5 canisters of 10 liters	<b>Flat roof / 12 x 2.5</b>	<b>37318039</b>	<b>14.300,00</b>
		<b>Pitched roof / 10 x 2.5</b>	<b>37308038</b>	<b>12.130,00</b>
	String fittings kit			
		<b>Pitched roof / 12 x 2.5</b>	<b>37308039</b>	<b>13.800,00</b>
	antifreeze glycol kit			

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## Pool heaters kit to be combined with SUPER HUB RADIATOR systems



316L stainless steel exchanger



Circulator inverter



Management unit



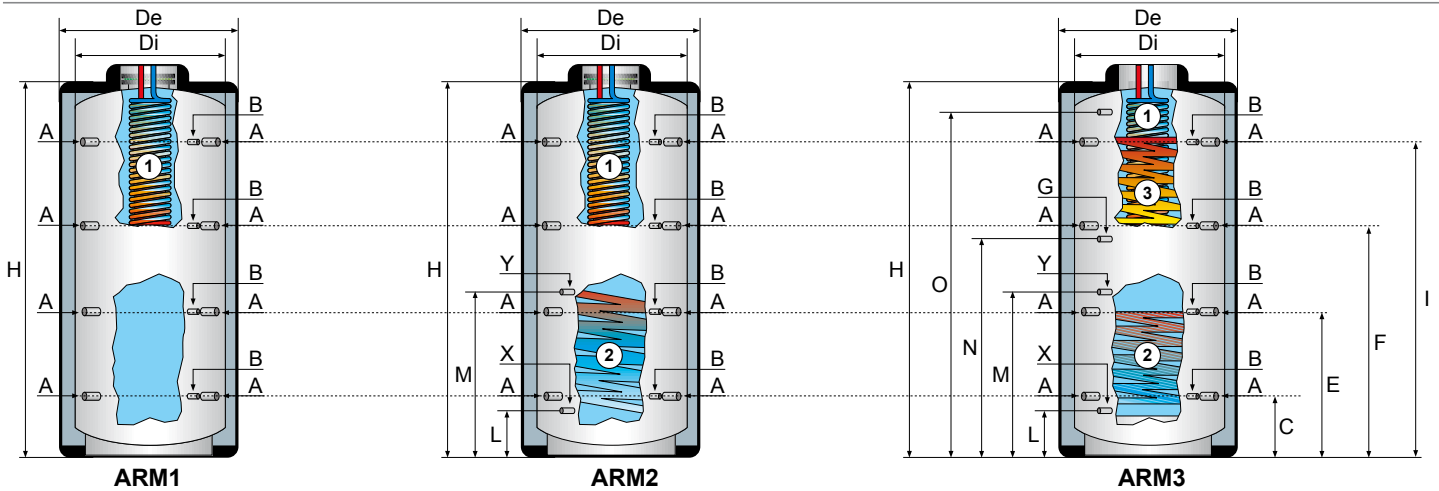
Hydraulic fittings kit

### pool heater kit mod. 20 kW

- N. 1 20 kW stainless steel exchanger
- N. 1 electronic inverter circulator of 2 m<sup>3</sup> / h
- N. 1 digital electronic control unit
- N. 1 kit of 3/4 "hydraulic fittings pool heater kit mod. 40 kW
- N. 1 40 kW stainless steel exchanger
- N. 1 electronic inverter circulator of 2 m<sup>3</sup> / h
- N. 1 digital electronic control unit
- N. 1 kit of 3/4 "hydraulic fittings pool heater kit mod. 70 kW
- N. 1 70 kW stainless steel exchanger
- N. 1 3 m<sup>3</sup> / h electronic inverter circulator
- N. 1 digital electronic control unit
- N. 1 kit of 1 "hydraulic fittings pool heater kit mod. 100 kW
- N. 1 100 kW stainless steel exchanger
- N. 1 electronic 5 m<sup>3</sup> / h inverter circulator
- N. 1 digital electronic control unit
- N. 1 kit of 1 "hydraulic fittings pool heater kit mod. 140 kW
- N. 2 stainless steel heat exchanger of 70 kW
- N. 2 electronic circulators reversers from 3 m<sup>3</sup>/h
- N. 1 digital electronic control unit
- N. 2 kit of 1 "hydraulic fittings

	Codice	€
<b>Pool heater kit 20 kW</b>	<b>75050800</b>	<b>890,00</b>
	Codice	€
<b>Pool heater kit 40 kW</b>	<b>75050810</b>	<b>990,00</b>
	Codice	€
<b>Pool heater kit 70 kW</b>	<b>75050820</b>	<b>1.390,00</b>
	Codice	€
<b>Pool heater kit 100 kW</b>	<b>75050830</b>	<b>1.890,00</b>
	Codice	€
<b>Pool heater kit 140 kW</b>	<b>75050840</b>	<b>2.990,00</b>

## Dimensions and technical characteristics of technical accumulations ARM1 - ARM2 - ARM3 SUPER HUB RADIATOR



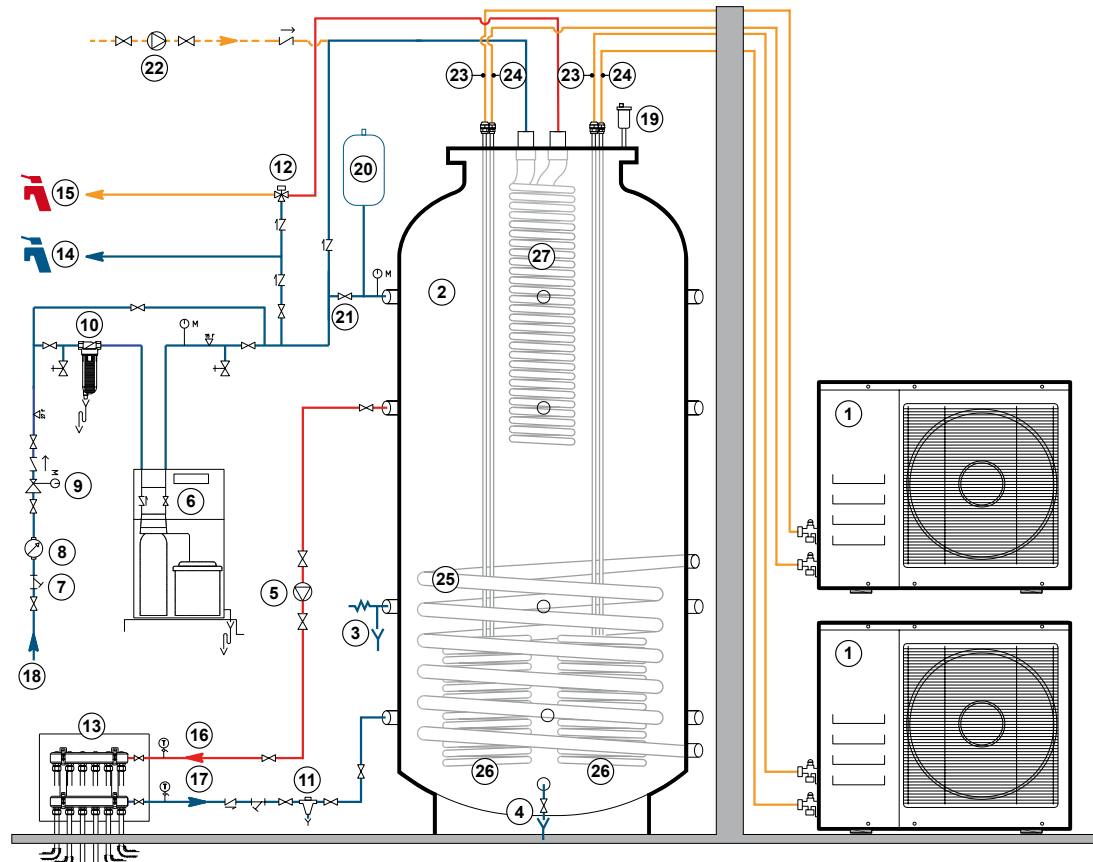
Technical accumulation dimensions	U.M.	300	500	800	1000	1500	2000
De	mm	600	750	1050	1050	1260	1360
Di	mm	500	650	790	790	1000	1100
H	mm	1595	1645	1750	2110	2115	2380
C	mm	215	240	275	275	340	370
E	mm	595	615	655	810	765	930
F	mm	1080	1105	1145	1355	1400	1435
I	mm	1350	1375	1410	1755	1725	1945
L	mm	290	315	355	350	420	450
M	mm	810	835	875	1035	1080	1090
N	mm	930	955	1015	1195	1220	1230
O	mm	1290	1315	1345	1675	1620	1710
X - Y - G - D		1"	1"	1"	1"	1"	1"
A		1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2
B		1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Technical water volume	l	289,8	499,8	749,3	931,0	1472,4	1950,0
Sup. Exchange removable DHW (1)	m <sup>2</sup>	4,54	4,54	5,26	5,26	6,34	6,34
Sup. Exchange fixed lower (2)	m <sup>2</sup>	1,4	2,0	2,5	3,5	4,0	4,8
Sup. Exchange fixed upper (3)	m <sup>2</sup>	1,1	1,8	2,0	2,5	2,8	3,8
Insulation thickness	mm	50	50	100	100	100	100
Accumulation operating pressure	bar	4	4	4	4	4	4
Max exercise temperature	°C	95	95	95	95	95	95
Working pressure fixed exchangers	bar	12	12	12	12	12	12
Thermal dispersion	W	57,3	69,7	109,9	113,8	132,8	143,5
Empty weight ARM1	Kg	81	115	148	186	232	308
Empty weight ARM2	Kg	92	129	168	208	260	356
Empty weight ARM3	Kg	101	143	186	231	288	386

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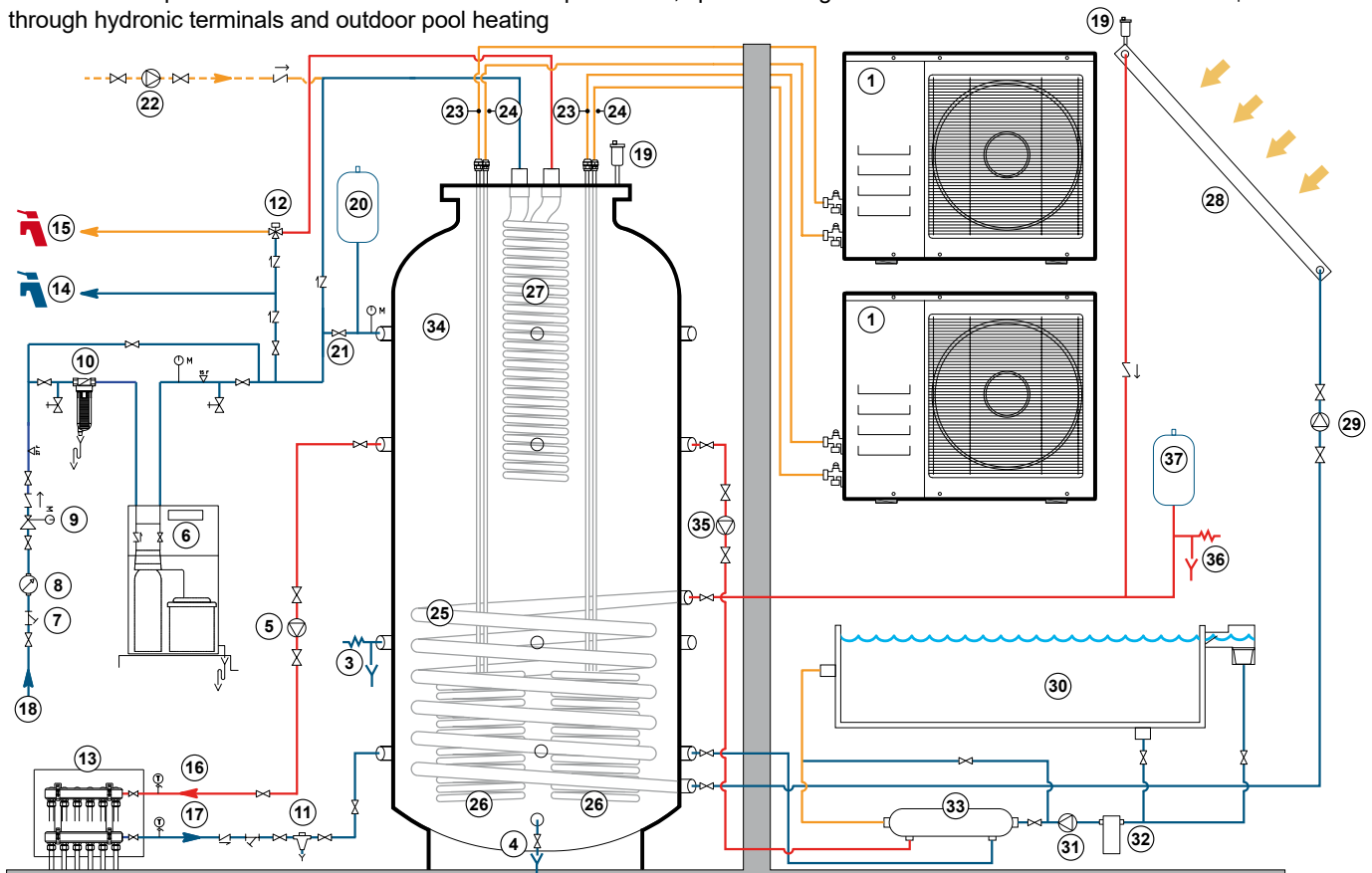
## Application examples SUPER HUB RADIATOR

SUPER HUB RADIATOR with 300 liter technical water storage powered by 2 external HR 7.8 boosters for DHW production and room heating via hydronic terminals



- 1 External moto-evaporator Booster HR 7.8 only hot
- 2 Technical storage unit from 300 l ARM2 300
- 3 Safety valve
- 4 Drain cock
- 5 Electronic circulator plant inverter
- 6 Softener
- 7 "Y" filter
- 8 Contatore acquedotto
- 9 Pressure reducer
- 10 Sand trap filter
- 11 Magnetic dirt separator
- 12 DHW mixing valve
- 13 System manifold
- 14 Cold water delivery
- 15 DHW delivery
- 16 System delivery
- 17 System return
- 18 Water mains inlet
- 19 Jolly air vent valve
- 20 System expansion tank
- 21 System make-up cock
- 22 DHW recirculation pump
- 23 R410A refrigeration line 1/4 "(liquid)
- 24 R410A refrigeration line 5/8 "(gas)
- 25 Fixed lower heat exchanger for solar thermal predisposition
- 26 Patented exchanger ad External immersion Booster
- 27 Finned copper exchanger for DHW production without legionella
- 28 Number 3 SKY solar collectors
- 29 Thermal solar pump
- 30 Outdoor swimming pool
- 31 Circulation group for the pool filter system
- 32 Pool filter system
- 33 Beam heat exchanger stainless steel tube technical water / chlorinated water
- 34 Technical storage unit from 500 l ARM2 500
- 35 Inverter electronic circulator pool exchanger
- 36 Solar safety valve
- 37 Solar expansion vessel

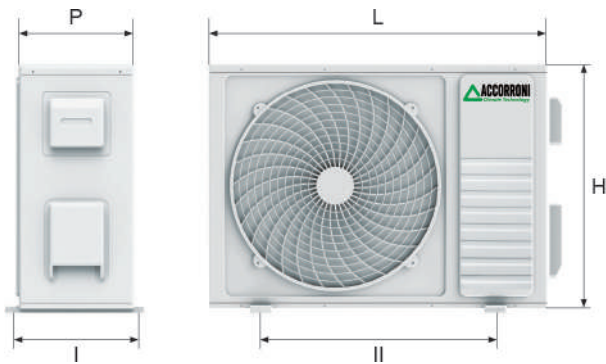
SUPER HUB RADIATOR with 500 liter technical water storage powered by 2 external HR 7.8 boosters and 3 SKY flat plate solar collectors for DHW production, space heating through hydronic terminals and outdoor pool heating



# SUPER HUB RADIATOR

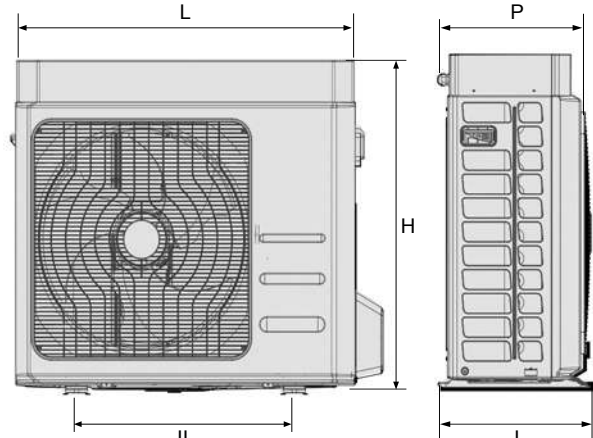
Patented high efficiency heat pump system with direct refrigerant / water exchange to produce heating and domestic hot water for medium and large users

## External booster dimensions HR 3.0 - 7.8



Outdoor unit models	L	H	P	I	II	Weight
	mm	mm	mm	mm	mm	kg
Booster HR 3.0	700	552	256	275	435	33
Booster HR 7.8	830	585	300	330	515	43

## External booster dimensions HR 9.0 INVERTER



Outdoor Unit Models	L	H	P	I	II	Weight
	mm	mm	mm	mm	mm	kg
Booster HR 9.0 inverter	925	785	380	358	540	62

## Examples of DHW production with finned exchanger and storage at 55 ° C

Mod. tank	Exchanger surface DHW	Booster HR installed	DHW available in a single withdrawal*	Recovery time**
300 l	4,54 m <sup>2</sup>	7.8	173 l	0,64 h
300 l	4,54 m <sup>2</sup>	9.0	176 l	0,59 h
500 l	4,54 m <sup>2</sup>	7.8 + 3.0	288 l	0,77 h
800 l	5,26 m <sup>2</sup>	7.8 x 2	482 l	0,86 h
800 l	4,54 m <sup>2</sup>	9.0 x 2	488 l	0,79 h
1000 l	5,26 m <sup>2</sup>	7.8 x 2	679 l	1,08 h
1000 l	5,26 m <sup>2</sup>	9.0 x 2	692 l	0,99 h
1500 l	6,34 m <sup>2</sup>	7.8 x 2	865 l	1,61 h
1500 l	6,34 m <sup>2</sup>	9.0 x 2	872 l	1,48 h
2000 l	6,34 m <sup>2</sup>	7.8 x 3	1210 l	1,43 h
2000 l	6,34 m <sup>2</sup>	9.0 x 3	1236 l	1,32 h

\* DHW withdrawn at 40 ° C, Technical starting water temp. At 55 ° C, Aqueduct temp. 10 ° C

\*\* Temp. external air 7 ° C, restore from 40 ° C to 55 ° C

## Hypothesis of lower fixed exchanger heat output

Mod. tank	exchanger surface	Power ΔT 10°C*	Power ΔT 15°C*	Power ΔT 20°C*	Flow	Pressure loss
300 l	1,4 m <sup>2</sup>	9,0 kW	13,4 kW	17,9 kW	620 l/h	2 kPa
500 l	2,0 m <sup>2</sup>	12,8 kW	19,2 kW	25,6 kW	880 l/h	4 kPa
800 l	2,5 m <sup>2</sup>	16,0 kW	24,0 kW	32,0 kW	1090 l/h	5 kPa
1000 l	3,5 m <sup>2</sup>	22,4 kW	33,6 kW	44,8 kW	1310 l/h	6 kPa
1500 l	4,0 m <sup>2</sup>	25,6 kW	38,4 kW	51,2 kW	1720 l/h	8 kPa
2000 l	4,8 m <sup>2</sup>	30,7 kW	46,0 kW	61,4 kW	1880 l/h	10 kPa

\*Thermal power referred to the differential between the average temperature of the heating fluid inside the exchanger and the average temperature of the heated fluid

## Ipotesi resa termica scambiatore fisso superiore

Mod. tank	exchanger surface	Power ΔT 10°C*	Power ΔT 15°C*	Power ΔT 20°C*	Flow	Pressure loss
300 l	1,1 m <sup>2</sup>	7,0 kW	10,6 kW	14,1 kW	400 l/h	1 kPa
500 l	1,8 m <sup>2</sup>	11,5 kW	17,3 kW	23,0 kW	700 l/h	3 kPa
800 l	2,0 m <sup>2</sup>	12,8 kW	19,2 kW	23,6 kW	900 l/h	3 kPa
1000 l	2,5 m <sup>2</sup>	16,0 kW	24,0 kW	32,0 kW	1100 l/h	6 kPa
1500 l	2,8 m <sup>2</sup>	17,9 kW	26,9 kW	35,8 kW	1400 l/h	8 kPa
2000 l	3,8 m <sup>2</sup>	24,3 kW	36,5 kW	48,6 kW	1600 l/h	10 kPa

\*Thermal power referred to the differential between the average temperature of the heating fluid inside the exchanger and the average temperature of the heated fluid

# SUPER HUB RADIATOR

Patented high efficiency heat pump system with direct refrigerant / water exchange to produce heating and domestic hot water for medium and large users

## Technical data table Booster SUPER HUB RADIATOR

DESCRIPTION	U.M.	HR 3.0	HR 7.8	HR 9.0 INVERTER
Thermal power (1)	kW	3,11	8,12	3,54 / 8,01 / 8,81*
Absorbed power(1)	kW	0,74	1,96	1,89
C.O.P. (1)	W/W	4,20	4,14	4,24
Thermal power (2)	kW	2,97	7,75	2,85 / 7,92 / 8,71*
Absorbed power (2)	kW	0,94	2,52	2,39
C.O.P. (2)	W/W	3,16	3,07	3,31
Thermal power (3)	kW	2,58	6,73	2,54 / 7,04 / 7,74*
Absorbed power (3)	kW	0,74	2,00	2,15
C.O.P. (3)	W/W	3,48	3,37	3,52
Thermal power (4)	kW	2,47	6,44	2,46 / 6,82 / 7,50*
Absorbed power (4)	kW	0,94	2,54	2,74
C.O.P. (4)	W/W	2,67	2,53	2,68
Thermal power (5)	kW	2,11	5,52	2,31 / 6,41 / 7,05*
Absorbed power(5)	kW	0,75	2,00	2,31
C.O.P. (5)	W/W	2,81	2,76	3,04
Thermal power (6)	kW	1,99	5,20	2,25 / 6,25 / 6,88*
Absorbed power (6)	kW	0,94	2,53	2,78
C.O.P. (6)	W/W	2,11	2,05	3,39
SCOP (7)	W/W	3,78	3,71	3,94
Seasonal heating efficiency (η <sub>s</sub> )	%	153,10	150,30	159,62
Energy efficiency class (8)		A++ / A		A++ / A+++
Compressor type		Rotation ON-OFF		Twin Rotary DC INV.
Compressors	n.	1		
Refrigerant circuits	n.	1		
Defrost method		Reverse cycle with immersion condenser		
Type of refrigerant		R410A		
Technical water temperature min / max	°C	+30 / +58		
Refrigerant quantity (pre-inserted)	kg	1,1	2,0	2,2
Min distance between outdoor and indoor unit	m	3		
Max distance between outdoor and indoor unit without charging	m	5		
Max distance between outdoor and indoor unit with recharge	m	15		
Max difference in height between outdoor and indoor unit	m	5		
R410A refrigerant gas line connection		3/8"	5/8"	5/8"
R410A refrigerant liquid line connection		1/4"	1/4"	3/8"
Sound power(9)	dB(A)	65,1	68,4	64,0
Sound pressure at one meter (10)	dB(A)	51,2	54,7	32,8
External temperature operating limits	°C	-15 / +45		-20 / +46
Power supply		230V/1/50Hz		
Max absorbed power	kW	0,94	2,53	4,70
Max absorbed current	A	4,30	11,57	20,40
Weight	Kg	33	55	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 d.b. ; inlet / outlet water temperature 30/35 °C

(4) Heating: external air temperature 0 °C d.b. ; inlet / outlet water temperature 40/45 °C

(5) Heating: external air temperature -7 °C d.b. ; inlet / outlet water temperature 30/35 °C

(6) Heating: external air temperature -7 °C d.b. ; inlet / outlet water temperature 40/45 °C

(7) Heating: average climatic conditions; inlet / outlet water temperature 30/35 °C

(8) Water 35 °C / 55 °C

(9) Measurements carried out according to UNI EN 14511 in heating mode and boundary conditions (1)

(10) Value calculated according to ISO 3744: 2010

(11) (\*) By activating the maximum HZ function