

# HUB RADIATOR BLACK

Domestic hot water producers with patented high efficiency system  
in heat pump with direct refrigerant/water exchange for medium and large users



## Technical and construction features

HUB RADIATOR BLACK is a patented product capable of offering the market the best response concerning energy efficiency in the production of instant domestic hot water for medium / large users. This system was created to supply large DHW production to power the users of condominiums, large buildings for civil, industrial, hotel, sports fields and wellness centers. The HUB RADIATOR BLACK units are mainly composed of very thick FE360 steel accumulators with one or more immersion exchangers / condensers on board connected to as many external boosters in cascade that produce thermal energy separately and independently to obtain power modulation with maximum reliability in case of malfunction.

The systems with HUB RADIATOR BLACK technical water accumulator in heat pump can be suitably combined with solar thermal and / or biomass collectors thanks to the models with single or double additional exchanger (S - 2S).

The steel accumulators are also designed to power a heating system with hydronic terminals.



PATENTED SYSTEM



RENEWABLE ENERGY



ENERGY SAVING



WIDE CONFIGURATIONS



COMBINABLE WITH INVERTER BOOSTER



HIGH EFFICIENCY



ECOLOGICAL GAS



SOLAR THERMAL COMBINATION



PHOTOVOLTAIC COMBINATION



DHW WITHOUT LEGIONELLA



HEATING UP TO 58 °C



HR BLACK



HR BLACK S



HR BLACK 2S

## Technical accumulation HUB RADIATOR BLACK

Models	Solar exchanger	Biomass exchanger	Codice	€
Accumulo HR BLACK 300	-	-	37306000	1.470,00
Accumulo HR BLACK 500	-	-	37306001	1.660,00
Accumulo HR BLACK 800	-	-	37306002	2.460,00
Accumulo HR BLACK 1000	-	-	37306003	2.720,00
Accumulo HR BLACK 1500	-	-	37306004	3.120,00
Accumulo HR BLACK 2000	-	-	37306005	4.430,00
Accumulo HR BLACK 2500	-	-	37306012	4.650,00
Accumulo HR BLACK 3000	-	-	37306013	5.060,00
Accumulo HR BLACK 4000	-	-	37306014	5.840,00
Accumulo HR BLACK 5000	-	-	37306015	7.050,00
Accumulo HR BLACK 300 S	Fixed by 1,40 m <sup>2</sup>	-	37306100	1.760,00
Accumulo HR BLACK 500 S	Fixed by 2,00 m <sup>2</sup>	-	37306101	2.210,00
Accumulo HR BLACK 800 S	Fixed by 2,50 m <sup>2</sup>	-	37306102	2.830,00
Accumulo HR BLACK 1000 S	Fixed by 3,50 m <sup>2</sup>	-	37306103	2.910,00
Accumulo HR BLACK 1500 S	Fixed by 4,00 m <sup>2</sup>	-	37306104	4.390,00
Accumulo HR BLACK 2000 S	Fixed by 4,80 m <sup>2</sup>	-	37306105	4.910,00
Accumulo HR BLACK 2500 S	Fixed by 4,80 m <sup>2</sup>	-	37306112	5.280,00
Accumulo HR BLACK 3000 S	Fixed by 6,00 m <sup>2</sup>	-	37306113	5.680,00
Accumulo HR BLACK 4000 S	Fixed by 7,00 m <sup>2</sup>	-	37306114	6.470,00
Accumulo HR BLACK 5000 S	Fixed by 8,00 m <sup>2</sup>	-	37306115	7.690,00
Accumulo HR BLACK 300 2S	Fixed by 1,40 m <sup>2</sup>	Fixed by 1,10 m <sup>2</sup>	37306200	1.970,00
Accumulo HR BLACK 500 2S	Fixed by 2,00 m <sup>2</sup>	Fixed by 1,80 m <sup>2</sup>	37306201	2.660,00
Accumulo HR BLACK 800 2S	Fixed by 2,50 m <sup>2</sup>	Fixed by 2,00 m <sup>2</sup>	37306202	3.080,00
Accumulo HR BLACK 1000 2S	Fixed by 3,50 m <sup>2</sup>	Fixed by 2,50 m <sup>2</sup>	37306203	3.370,00
Accumulo HR BLACK 1500 2S	Fixed by 4,00 m <sup>2</sup>	Fixed by 2,80 m <sup>2</sup>	37306204	4.910,00
Accumulo HR BLACK 2000 2S	Fixed by 4,80 m <sup>2</sup>	Fixed by 3,80 m <sup>2</sup>	37306205	5.230,00
Accumulo HR BLACK 2500 2S	Fixed by 4,80 m <sup>2</sup>	Fixed by 3,80 m <sup>2</sup>	37306212	5.920,00
Accumulo HR BLACK 3000 2S	Fixed by 6,00 m <sup>2</sup>	Fixed by 3,80 m <sup>2</sup>	37306213	6.660,00
Accumulo HR BLACK 4000 2S	Fixed by 7,00 m <sup>2</sup>	Fixed by 4,50 m <sup>2</sup>	37306214	7.590,00
Accumulo HR BLACK 5000 2S	Fixed by 8,00 m <sup>2</sup>	Fixed by 5,00 m <sup>2</sup>	37306215	8.850,00








# HUB RADIATOR BLACK

Domestic hot water producers with patented high efficiency system  
in heat pump with direct refrigerant/water exchange for medium and large users

External moto-evaporating unit model	Codice	€
<b>Booster HR 3.0 solo caldo</b>	<b>76010240</b>	<b>2.000,00</b>
<b>Booster HR 7.8 solo caldo</b>	<b>76010500</b>	<b>3.700,00</b>
<b>Booster HR 9.0 solo caldo INVERTER</b>	<b>76030500</b>	<b>4.760,00</b>

DHW exchanger model		
<b>Finned exchanger ACS 4.54 m<sup>2</sup> for tank mod. 300/500 litri</b>	<b>37370012</b>	<b>1.400,00</b>
<b>Finned exchanger ACS 5.26 m<sup>2</sup> for tank mod. 800/1000 litri</b>	<b>37370013</b>	<b>1.600,00</b>
<b>Finned exchanger ACS 6.34 m<sup>2</sup> for tank mod. 1500/2000 litri</b>	<b>37370014</b>	<b>1.950,00</b>
<b>Finned exchanger ACS 12.64 m<sup>2</sup> for tank mod. 2500÷5000 litri</b>	<b>37370015</b>	<b>3.900,00</b>



















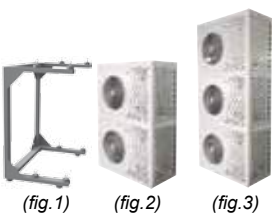
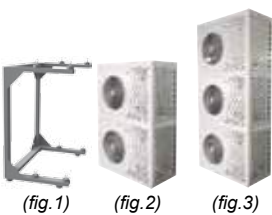
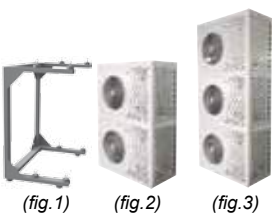
## Accessories HUB RADIATOR BLACK

	First mandatory ignition (net price)	da 1 a 2 Booster HR	<b>35639901</b>	<b>100,00</b>		
		da 3 a 4 Booster HR	<b>35639902</b>	<b>150,00</b>		
		da 5 a 8 Booster HR	<b>35639903</b>	<b>250,00</b>		
	Integrative single-phase 230 V electrical resistance IP 65 protection degree	mod. 1500 W	<b>75050102</b>	<b>150,00</b>		
		mod. 2000 W	<b>75050103</b>	<b>160,00</b>		
		mod. 3000 W	<b>75060300</b>	<b>170,00</b>		
	Integrative three-phase electrical resistance 400 V degree of protection IP 65	mod. 6000 W	<b>75050105</b>	<b>300,00</b>		
		mod. 9000 W	<b>75050106</b>	<b>320,00</b>		
	Additional inverter electronic circulator max flow rate 3.3 m <sup>3</sup> / h, max head 6.2 m 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>		
	Hot / cold inverter system pump kit which includes: electronic circulation pump complete with shut-off valves, air vent jolly valve, safety valve, threaded caps and probe holders		<b>75100009</b>	<b>674,00</b>		
	High efficiency inverter electronic circulator with wet rotor and motor magnet permanent ECM	mod. 3/6	<b>Q max 3,2 m<sup>3</sup>/h</b>	<b>H max 6,6 m</b>	<b>35006002</b>	<b>540,00</b>
		mod. 9/10	<b>Q max 9 m<sup>3</sup>/h</b>	<b>H max 10,5 m</b>	<b>36576012</b>	<b>1.220,00</b>
		mod. 18/12	<b>Q max 18 m<sup>3</sup>/h</b>	<b>H max 12,8 m</b>	<b>36576013</b>	<b>2.380,00</b>
		mod. 27/16	<b>Q max 27 m<sup>3</sup>/h</b>	<b>H max 16,0 m</b>	<b>36576014</b>	<b>3.780,00</b>
		mod. 30/18G	<b>Q max 30 m<sup>3</sup>/h</b>	<b>H max 18,0 m</b>	<b>36576015</b>	<b>6.590,00</b>

# HUB RADIATOR BLACK

Domestic hot water producers with patented high efficiency system  
in heat pump with direct refrigerant/water exchange for medium and large users

## Accessories HUB RADIATOR BLACK

			Codice	€
	Command and remote control panel	<b>mod. built-in</b> <b>mod. wall</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. BUS connection</b> <b>mod. Radio frequency</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>
	Mixing valve for radiant systems	<b>mod. fixed mechanical adjustment</b> <b>mod. motorized adjustment</b>	<b>75101032</b> <b>75101033</b>	<b>90,00</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>mod. HR 7.8 - 9.0</b>	<b>37081060</b> <b>37081061</b>	<b>50,00</b> <b>90,00</b>
	Anchoring bracket for sloped roof for external Booster mod. HR 3.0 - 7.8 - 9.0 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>mod. HR 7.8 - 9.0</b>	<b>37081065</b> <b>37081066</b>	<b>52,00</b> <b>56,00</b>
	Condensate anti-freeze heating cable with thermal sensor, factory fitted	<b>mod. 3 metri 90 W</b> <b>mod. 6 metri 120 W</b>	<b>37081067</b> <b>37081068</b>	<b>56,00</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>mod. HR 7.8 - 9.0</b>	<b>37081069</b> <b>37081070</b>	<b>252,00</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>mod. HR 7.8 - 9.0 H fixed</b> <b>mod. HR 7.8 - 9.0 H variable</b>	<b>37081071</b> <b>37081073</b> <b>37081074</b>	<b>308,00</b> <b>330,00</b> <b>354,00</b>
	DHW thermostatic mixer for anti-scald solar thermal systems	<b>mod. MIX L</b> <b>mod. MIX XL</b> <b>mod. MIX XXL</b>	<b>50103015</b> <b>50203015</b> <b>50303015</b>	<b>370,00</b> <b>396,00</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>mod. HR 3.0 (3/8")</b>	<b>75100014</b> <b>75100015</b>	<b>120,00</b> <b>60,00</b>
	Anti-vibration flexible joint kit with connecting flange and 90° curved union	<b>mod. HR 7.8 - 9.0 (5/8")</b> <b>mod. HR 3.0 (3/8")</b>	<b>75100016</b> <b>75100017</b>	<b>120,00</b> <b>60,00</b>
	Programmer clock kit		<b>35639900</b>	<b>40,00</b>
	<i>Open shelf for n. 2 Booster outdoor units mod. HR 7.8 - 9.0 complete with anti-vibration mounts (fig. 1)</i>		<b>75060406</b>	<b>240,00</b>
	<i>RACK 2 wardrobe for n. 2 Booster outdoor units mod. HR 3.0 - 7.8 - 9.0 (fig. 2)</i>		<b>75060306</b>	<b>890,00</b>
	<i>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)</i>		<b>75060206</b>	<b>980,00</b>

# HUB RADIATOR BLACK

Domestic hot water producers with patented high efficiency system in heat pump with direct refrigerant/water exchange for medium and large users

## Kit solari termici da abbinare ad accumuli esistenti



Collettore solare  
SELECTIVE

- solar thermal kit 1 x 2.0 m<sup>2</sup>**
- N. 1 SELECTIVE H + 2.0 m<sup>2</sup> flat sheet panel
  - Anchoring kit for 1 SELECTIVE H + 2.0 m<sup>2</sup> 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

- kit solare termico 1 x 2.5 m<sup>2</sup>**
- N. 1 SELECTIVE HX + 2.5 m<sup>2</sup> flat sheet panel
  - Anchoring kit for 1 SELECTIVE HX + 2.5 m<sup>2</sup> 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



Kit ancoraggio  
SELECTIVE

- solar thermal kit 2 x 2.0 m<sup>2</sup>**
- N. 2 SELECTIVE H + 2.0 m<sup>2</sup> flat sheet panels
  - Anchoring kit for 2 SELECTIVE H + 2.0 m<sup>2</sup> 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



Stazione solare  
UNIT 2 PLUS

- solar thermal kit 2 x 2.5 m<sup>2</sup>**
- N. 2 SELECTIVE HX + 2.5 m<sup>2</sup> flat sheet panels
  - Anchoring kit for 2 SELECTIVE HX + 2.5 m<sup>2</sup> 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 - 2 collectors)
  - Concentrated glycol 2 tanks of 4 liters



Centralina solare  
CONTROL  
MULTI 06 S

- solar thermal kit 3 x 2.0 m<sup>2</sup>**
- N. 3 SELECTIVE H + 2.0 m<sup>2</sup> flat sheet panels
  - Anchoring kit for 3 SELECTIVE H + 2.0 m<sup>2</sup> 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 3 liters

- solar thermal kit 3 x 2.5 m<sup>2</sup>**
- N. 3 SELECTIVE HX + 2.5 m<sup>2</sup> flat sheet panels
  - Anchoring kit for 3 SELECTIVE HX collectors + 2.5 m<sup>2</sup>
  - 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



Vaso  
di espansione  
solare

- solar thermal kit 5 x 2.5 m<sup>2</sup>**
- N. 5 SELECTIVE HX + 2.5 m<sup>2</sup> flat sheet panels
  - Anchoring kit for 5 SELECTIVE HX collectors + 2.5 m<sup>2</sup>
  - 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

- solar thermal kit 6 x 2.5 m<sup>2</sup>**
- N. 6 SELECTIVE HX + 2.5 m<sup>2</sup> flat sheet panels
  - Anchoring kit for 6 SELECTIVE HX collectors + 2.5 m<sup>2</sup>
  - 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



Kit raccordi  
di stringa

- solar thermal kit 10 x 2.5 m<sup>2</sup>**
- N. 10 SELECTIVE HX + 2.5 m<sup>2</sup> flat sheet panels
  - Anchoring kit for 10 SELECTIVE HX collectors + 2.5 m<sup>2</sup>
  - 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



Kit glicole  
antigelo

- solar thermal kit 12 x 2.5 m<sup>2</sup>**
- N. 12 SELECTIVE HX + 2.5 m<sup>2</sup> flat sheet panels
  - Anchoring kit for 12 SELECTIVE HX collectors + 2.5 m<sup>2</sup>
  - 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

Kit Solar HR 1 x 2.0	Codice	€
Flat roof / 1 x 2.0	37318030	2.000,00
Pitched roof / 1 x 2.0	37308030	1.994,00

Kit Solar HR 1 x 2.5	Codice	€
Flat roof / 1 x 2.5	37318031	2.136,00
Pitched roof / 1 x 2.5	37308031	2.122,00

Kit Solar HR 2 x 2.0	Codice	€
Flat roof / 2 x 2.0	37318032	2.888,00
Pitched roof / 2 x 2.0	37308032	2.782,00

Kit Solar HR 2 x 2.5	Codice	€
Flat roof / 2 x 2.5	37318033	3.158,00
Pitched roof / 2 x 2.5	37308033	3.066,00

Kit Solar HR 3 x 2.0	Codice	€
Flat roof / 3 x 2.0	37318034	3.782,00
Pitched roof / 3 x 2.0	37308034	3.600,00

Kit Solar HR 3 x 2.5	Codice	€
Flat roof / 3 x 2.5	37318035	4.188,00
Pitched roof / 3 x 2.5	37308035	4.016,00

Kit Solar HR 5 x 2.5	Codice	€
Flat roof / 5 x 2.5	37318036	6.263,00
Pitched roof / 5 x 2.5	37308036	6.036,00

Kit Solar HR 6 x 2.5	Codice	€
Flat roof / 6 x 2.5	37318037	7.300,00
Pitched roof / 6 x 2.5	37308037	7.002,00

Kit Solar HR 10 x 2.5	Codice	€
Flat roof / 10 x 2.5	37318038	12.526,00
Pitched roof / 10 x 2.5	37308038	12.130,00

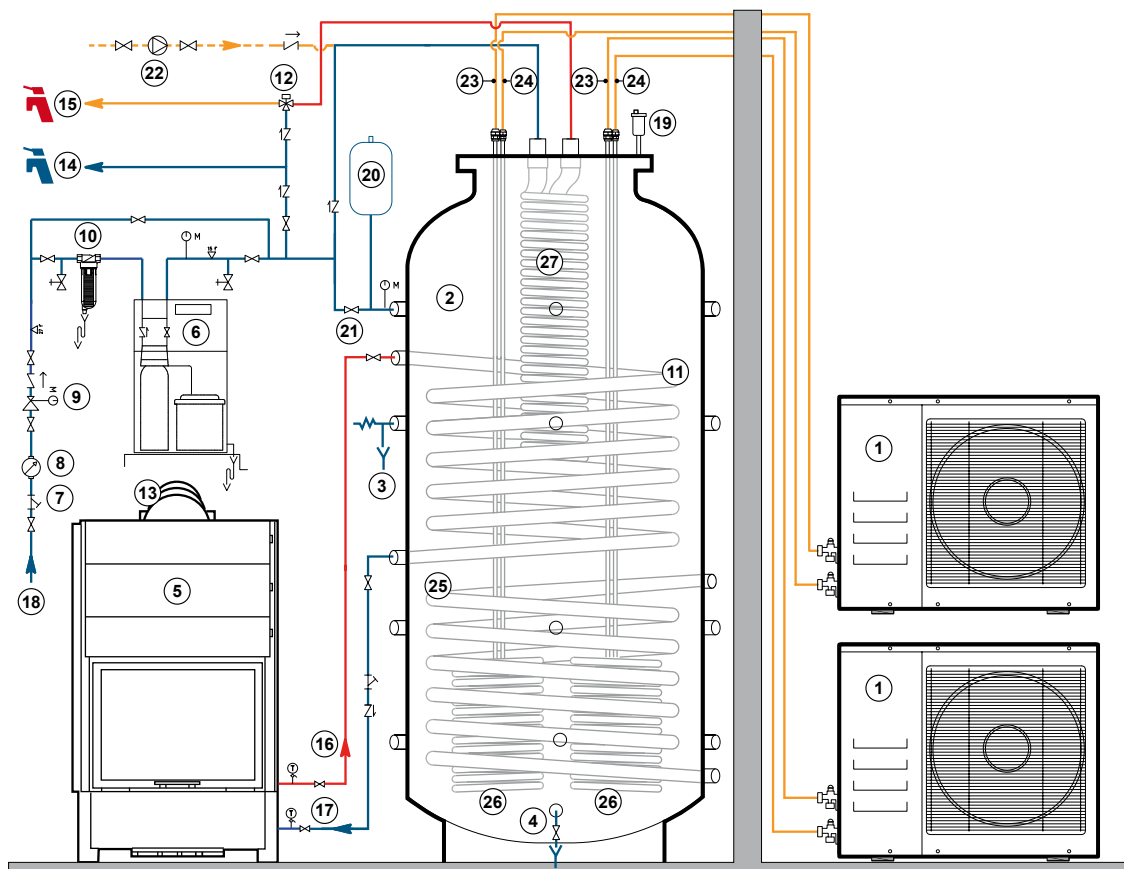
Kit Solar HR 12 x 2.5	Codice	€
Flat roof / 12 x 2.5	37318039	14.300,00
Pitched roof / 12 x 2.5	37308039	13.800,00

# HUB RADIATOR BLACK

Domestic hot water producers with patented high efficiency system in heat pump with direct refrigerant/water exchange for medium and large users

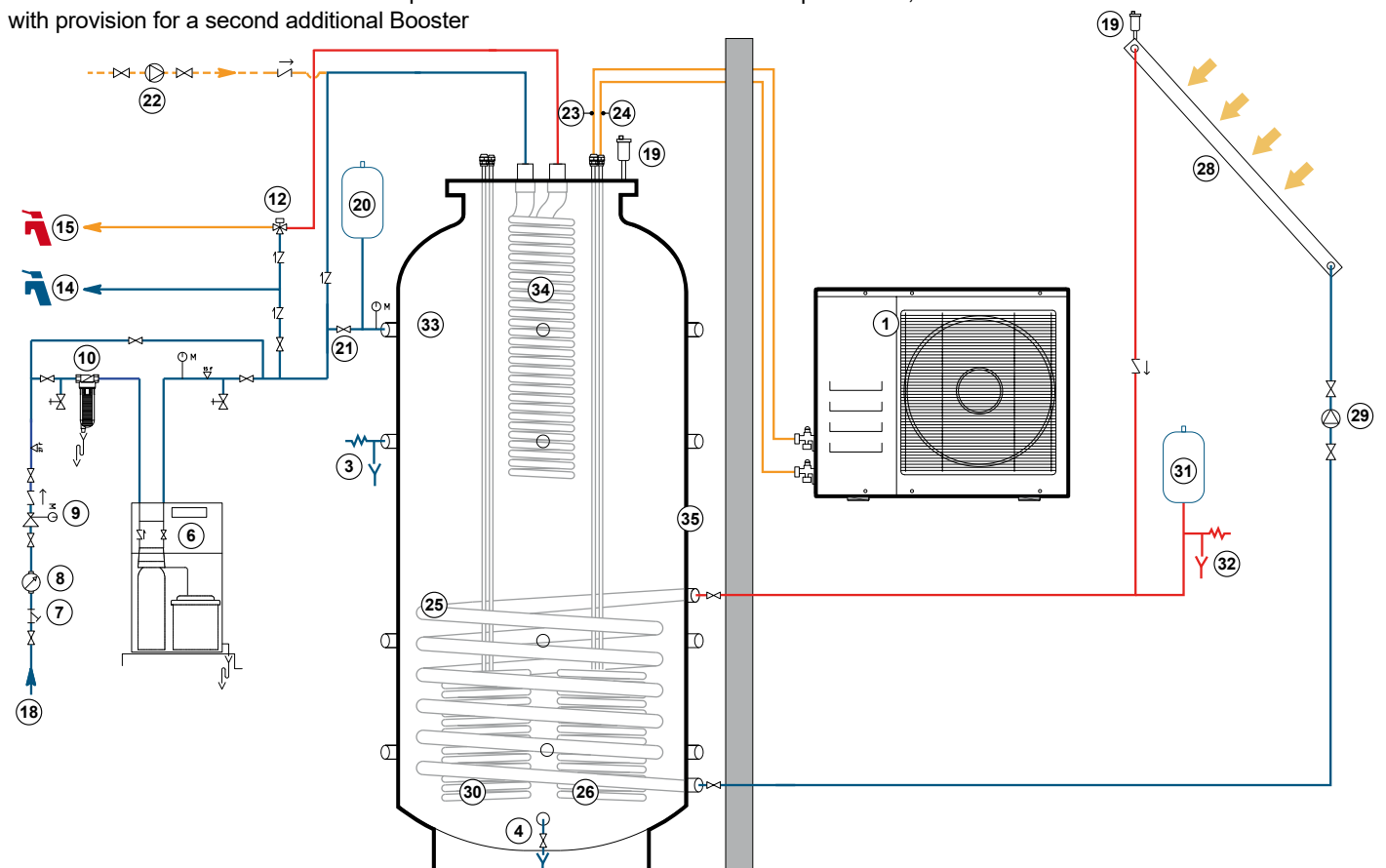
## Application diagrams HUB RADIATOR BLACK

HUB RADIATOR BLACK with 800 liter technical water storage mod. A\_RM3 800 powered by 2 external HR 7.8 boosters and by an open vessel hydro fireplace and solar thermal predisposition



- 1 External moto-evaporator Booster HR 7.8 only heat
- 2 800 l technical storage unit A\_RM3 800
- 3 Safety valve
- 4 Drain cock
- 5 Open vessel hydro fireplace
- 6 Softener
- 7 "Y" Filter
- 8 Aqueduct meter
- 9 Pressure reducer
- 10 Sand trap filter
- 11 Fixed upper exchanger 12 DHW mixing valve
- 13 Thermal fireplace flue 14 Cold water delivery
- 15 DHW delivery
- 16 Integration mandate
- 17 Return integration
- 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 5.26 m2 legionella
- 28 Number 3 SKY solar collectors
- 29 Thermal solar circulator
- 30 Booster exchanger additional
- 31 Solar expansion tank
- 32 Solar safety valve
- 33 Technical storage unit from 500 l A\_RM2 500
- 34 Finned copper exchanger for DHW production without legionella of 4.54 m2

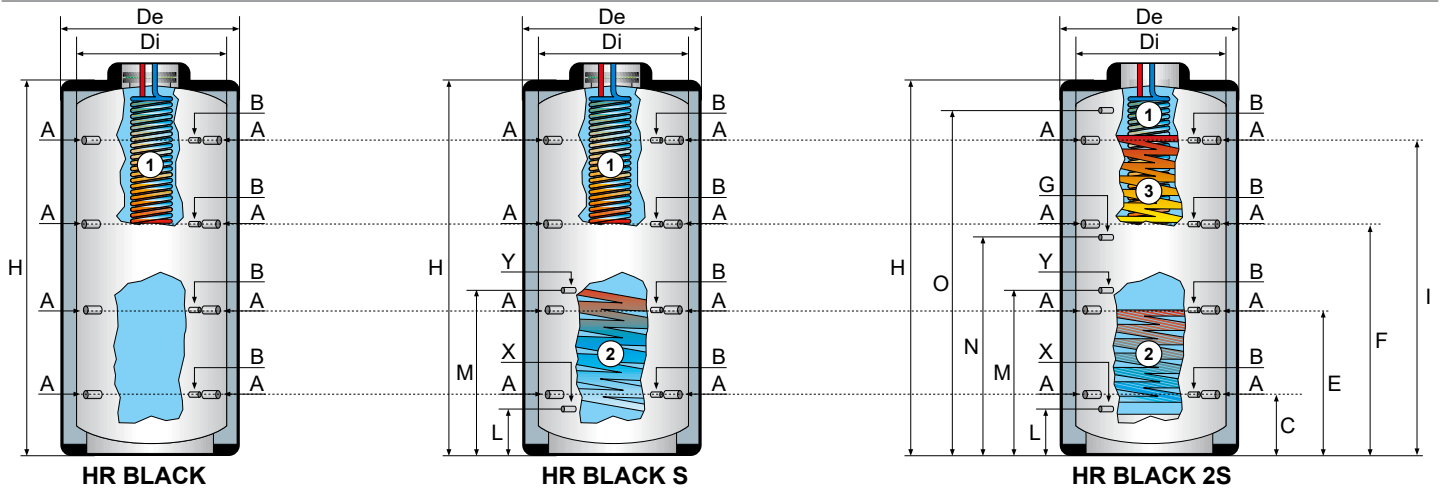
HUB RADIATOR BLACK with 500 liter technical water storage mod. A\_RM2 500 powered by 1 external HR 7.8 booster and 3 SKY flat plate solar thermal collectors for DHW production, with provision for a second additional Booster



# HUB RADIATOR BLACK

Domestic hot water producers with patented high efficiency system  
in heat pump with direct refrigerant/water exchange for medium and large users

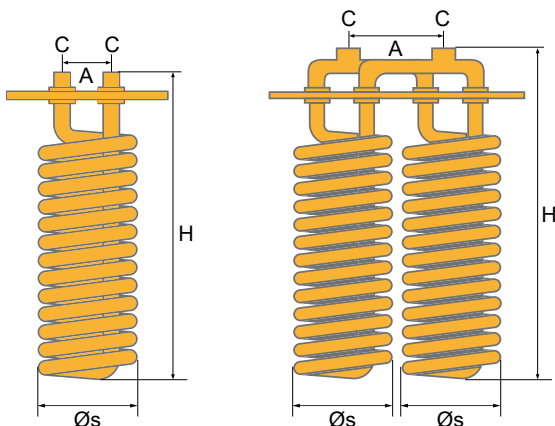
## Dimensions and technical characteristics of technical accumulations HUB RADIATOR BLACK



Technical accumulation dimensions	U.M.	300	500	800	1000	1500	2000	2500	3000	4000	5000
De	mm	600	750	1050	1050	1260	1360	1400	1450	1600	1800
Di	mm	500	650	790	790	1000	1100	1200	1250	1400	1600
H	mm	1595	1645	1750	2110	2115	2380	2495	2710	2820	2850
C	mm	215	240	275	275	340	370	385	400	460	465
E	mm	595	615	655	810	765	930	940	1015	1085	1080
F	mm	1080	1105	1145	1355	1400	1435	1500	1645	1710	1710
I	mm	1350	1375	1410	1755	1725	1945	2050	2255	2315	2320
L	mm	290	315	355	350	420	450	480	490	550	555
M	mm	810	835	875	1035	1080	1090	1120	1210	1270	1275
N	mm	930	955	1015	1195	1220	1230	1300	1430	1490	1495
O	mm	1290	1315	1345	1675	1620	1710	1700	1830	1930	1895
X - Y - G - D		1"	1"	1"	1"	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	2"	2"	2"	2"
B		1/2"	1/2"	1/2"	1/2"	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	2493,5	2957,5	3894,4	5005,2
Sup. Exchange DHW * recommended (1)	m <sup>2</sup>	4,54	4,54	5,26	5,26	6,34	6,34	6,34	12,68	12,68	12,68
Sup. Exchange bottom (2)	m <sup>2</sup>	1,4	2,0	2,5	3,5	4,0	4,8	4,8	6,0	7,0	8,0
Sup. Exchange higher (3)	m <sup>2</sup>	1,1	1,8	2,0	2,5	2,8	3,8	3,8	3,8	4,5	5,0
Insulation thickness	mm	50	50	100	100	100	100	100	100	100	100
Accumulation operating pressure	bar	4	4	4	4	4	4	4	4	4	4
Max operating temperature	°C	95	95	95	95	95	95	95	95	95	95
Max pressure fixed exchangers	bar	12	12	12	12	12	12	12	12	12	12
Thermal dispersion	W	57,3	69,7	109,9	113,8	132,8	143,5	-	-	-	-
Accumulation empty weight BLACK 2S	Kg	81	115	148	186	232	308	327	345	407	495
Accumulation empty weight BLACK S	Kg	92	129	168	208	260	356	375	393	457	537
Accumulation empty weight BLACK 2S	Kg	101	143	186	231	288	386	405	423	492	572

\*Optional exchanger to be purchased separately from the storage unit.

## Dimensions and overall dimensions of ACS finned exchangers



Sup. (m <sup>2</sup> )	H (mm)	Øs (mm)	C	A (mm)
4,54	750	190	1" Ø esterno	90
5,26	850	190	1" Ø esterno	90
6,34	980	190	1" Ø esterno	90
12,68	980	190	2" Ø esterno	120

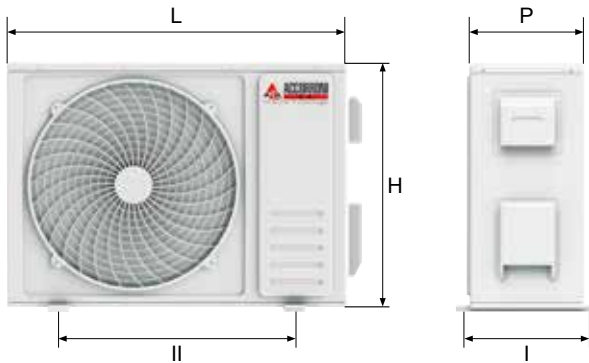
Mod. 4,54 - 5,26 , 6,34

Mod. 12,64

# HUB RADIATOR BLACK

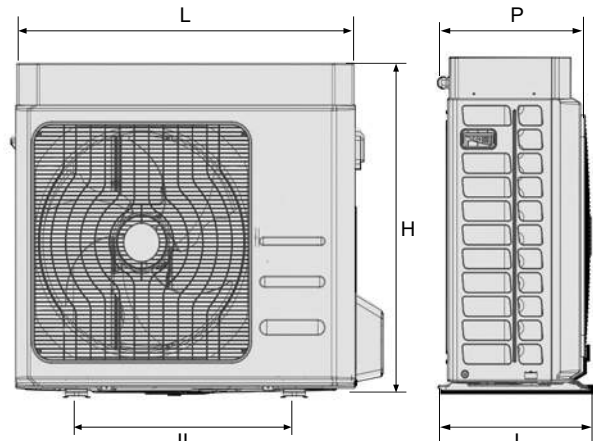
Domestic hot water producers with patented high efficiency system  
in heat pump with direct refrigerant/water exchange for medium and large users

## External booster dimensions HR 3.0 - 7.8



Outdoor Unit Models	L	H	P	I	II	Peso
	mm	mm	mm	mm	mm	kg
Booster HR 3.0	700	552	256	275	435	33
Booster HR 7.8	902	650	307	350	620	55

## External booster dimensions HR 9.0 INVERTER



Outdoor Unit Models	L	H	P	I	II	Peso
	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	DHW exchanger surface	HR boosters 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	5,26 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
2500 l	6,34 m <sup>2</sup>	7.8 x 3	1510 l	1,79 h
3000 l	12,68 m <sup>2</sup>	7.8 x 3	1810 l	2,15 h
4000 l	12,68 m <sup>2</sup>	7.8 x 3	2420 l	2,88 h
5000 l	12,68 m <sup>2</sup>	7.8 x 3	3026 l	3,58 h

\*DHW withdrawn at 40 ° C, Technical starting water temp. At 55 ° C, Aqueduct temp. 10 ° C \*\* External air temp. 7 ° C, reset from 40 ° C to 55 ° C

## Hypothesis of lower fixed exchanger heat output

Mod. Tank	DHW exchanger surface	Power ΔT 10°C*	Power ΔT 15°C*	Power ΔT 20°C*	Flow	Perdita di carico
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
2500 l	4,8 m <sup>2</sup>	30,7 kW	46,0 kW	61,4 kW	1880 l/h	10 kPa
3000 l	6,0 m <sup>2</sup>	38,4 kW	57,6 kW	76,7 kW	2350 l/h	12 kPa
4000 l	7,0 m <sup>2</sup>	44,8 kW	67,6 kW	89,5 kW	2740 l/h	13 kPa
5000 l	8,0 m <sup>2</sup>	51,2 kW	76,7 kW	10,23 kW	3103 l/h	14 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

## Hypothesis of thermal output of the upper fixed exchanger

Mod. Tank	DHW exchanger surface	Power ΔT 10°C*	Power ΔT 15°C*	Power ΔT 20°C*	Flow	Perdita di carico
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
2500 l	3,8 m <sup>2</sup>	24,3 kW	36,5 kW	48,6 kW	1600 l/h	10 kPa
3000 l	3,8 m <sup>2</sup>	24,3 kW	36,5 kW	48,6 kW	1600 l/h	10 kPa
4000 l	4,5 m <sup>2</sup>	28,8 kW	43,2 kW	57,6 kW	1890 l/h	11 kPa
5000 l	5,0 m <sup>2</sup>	32,0 kW	48,0 kW	64,0 kW	2100 l/h	13 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

# HUB RADIATOR BLACK

Domestic hot water producers with patented high efficiency system  
in heat pump with direct refrigerant/water exchange for medium and large users

**Tabella dati tecnici Booster HUB RADIATOR BLACK**

DESCRIZIONE	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
S.C.O.P. (7)	W/W	3,78	3,71	3,94
Seasonal heating efficiency (η <sub>s</sub> )	%	153,10	150,30	159,62
Energy efficiency (8)		A++ / A		A++ / A+++
Type of compressor		Rotation ON-OFF		Twin Rotary DC INV.
Number of compressor		1		
Defrosting Method		1		
Defrosting method		Inversione di ciclo con condensatore ad immersione		
Type of refrigerant	n.	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		
Refrigerant gas line connection		3/8"	5/8"	5/8"
Coolant fluid 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
Outdoor 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

(10) Value calculated according to ISO 3744: 2010

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