NEW GENERATION OF HOT WATER TANKS FOR HEAT PUMPS AND SOLAR WATER HEATERS FROM 100 LTRS TO 5000 LTRS

ASSOS BOILERS

Greek Product

1st Award for Business Excellence

Ministry of Development
General Secretariat of Industry

Group of Companies HELIOAKMI SA

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ASSOS BOILERS introduces the New Generation of hot water tanks for heat pumps

With an ergonomic and innovative design, it has eight unique advantages over the common hot water tanks with steel exchanger

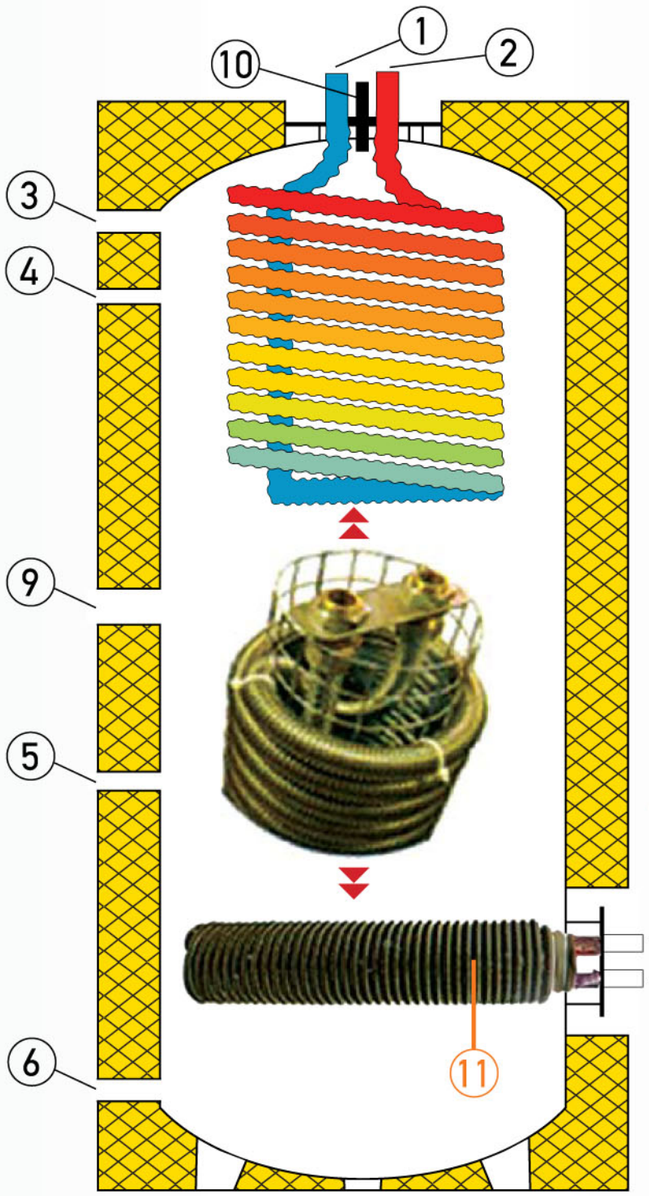
1 Economical mode of operation
They operate with simple heat pumps of constant speed and lower cost in comparison to ordinary tanks with steel exchanger which demand only INVERTER heat pumps and have higher costs.

2 Continuous operation without interruption and ALARMS
The design of the hot water tank ASSOS BOILERS enables the heat pump to operate without interruption or reduction of compressor speed without overheating ALARMS, something that happens in most hot water tank usage with fixed metal exchanger (coil), especially if the heat pump is not an INVERTER.

3 Lower Electricity Consumption
The immediate loading of the tank from the heat pump and without the mediation of the metal exchanger allows the pump to have greater operation intervals (without stop and start) of the compressor or without lowering the speed when it comes to heat pumps of the INVERTER type, thus offering lower consumption of electric power.

4 They do not require annual service costs
The water in use comes into contact with the stainless steel exchanger and not with the interior of the boiler, which would require anode protection (anode) which must be replaced every 1-2 years with additional costs.

5 Economical installation costs
The ASSOS BOILERS hot water tanks (Fresh Water) are cheaper to install because they do not require cold water (blue) Expansion Tanks as well as pressure reducer because of the stainless steel exchanger that has smaller capacity and the operating pressure is 10 bar.



① COLD WATER ENTRANCE 3/4"
② HOT WATER OUTLET 3/4"
③ ADDUCTION FROM HEAT PUMP 1"

6 30% greater savings, 30% fewer losses
ASSOS BOILERS products, Buffer tanks and boilers provide 65 to 70mm insulation compared with most buffer -boiler tanks where the insulation does not exceed 50 mm, resulting in heat losses and energy consumption of 25 to 30% more.

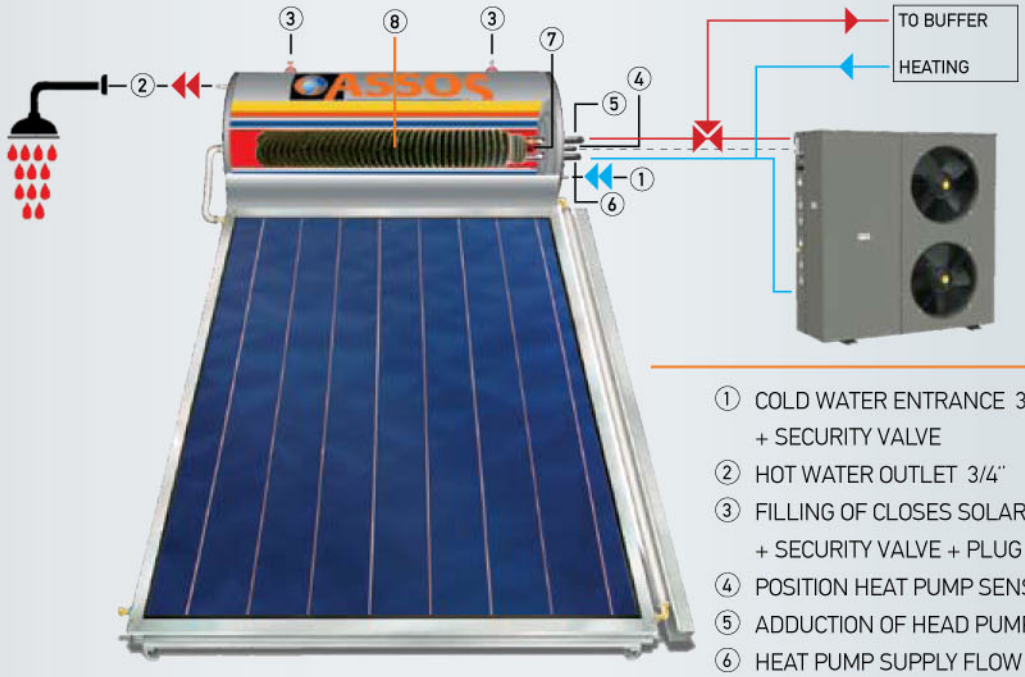
7 Clean, Hot Water
The water used passes through the stainless steel exchanger 316L without being stored permanently and thus preventing the development of dangerous bacteria (Legionella phenomena). Moreover, the spiral design of the heat exchanger does not allow deposits that would require a calcium collection filter with additional cost.

8 Expansion capability of the system also after installation
The design of the container allows the installation of a solar exchanger or other heat source (gas, wood boiler, fireplace, etc.) over the existing flange that each tank has for this purpose, even following its installation.

The Lower exchanger (11) is ONLY available upon order.

④ POSITION SENSOR DHW 1/2"
⑤ LOCATION SOLAR SENSOR 1/2"
⑥ RETURN FROM HEAT PUMP 1"
⑦ SUPPLY FLOW FROM SOLAR PANELS 3/4"
⑧ RETURN FROM SOLAR PANELS 3/4"
⑨ POSITION OF ELECTRICAL BACKUP 1 1/2"
⑩ POSITION OF VENT 1/2"
⑪ LOWER EXCHANGER

SOLAR WATER HEATERS FOR CONNECTION TO HEAT PUMPS (INVERTER)



① COLD WATER ENTRANCE 3/4"
+ SECURITY VALVE
② HOT WATER OUTLET 3/4"
③ FILLING OF CLOSES SOLAR CIRCUIT 1/2"
+ SECURITY VALVE + PLUG
④ POSITION HEAT PUMP SENSOR Φ6
⑤ ADDUCTION OF HEAD PUMP 3/4"
⑥ HEAT PUMP SUPPLY FLOW 3/4"
⑦ ELECTRICAL BACKUP + THERMOSTAT
+ ANODE
⑧ STAINLESS STEEL EXCHANGER

Solar water heaters ASSOS BOILERS provide a large flange Φ 170 which fits a specially designed stainless steel spiral heat exchanger that can work perfectly with heat pumps (INVERTER).

The large surface area of the heat exchanger allows continuous operation of the pump (without stops and starts), working with a satisfactory temperature difference (supply and return), offering up to **four times the electricity savings** for days with little or no sunshine or when the requirements of hot water is much greater than can be offered by a solar panel even with full sunshine.

MODEL	SOLAR HEAT EXCHANGER POWER IN KW	ELECTRICAL RESISTANCE POWER IN KW	INSTALLATION CAPACITY OF SOLAR COLLECTORS m²
ASSOS 120	7,8	4	2,10
ASSOS 160M	9,4	4	2,10
ASSOS 160	9,4	4	2,60
ASSOS 200	9,4	4	2,60
ASSOS 200E	9,4	4	4,20
ASSOS 300	12,3	4	4,20
ASSOS 300E	12,3	4	5,20

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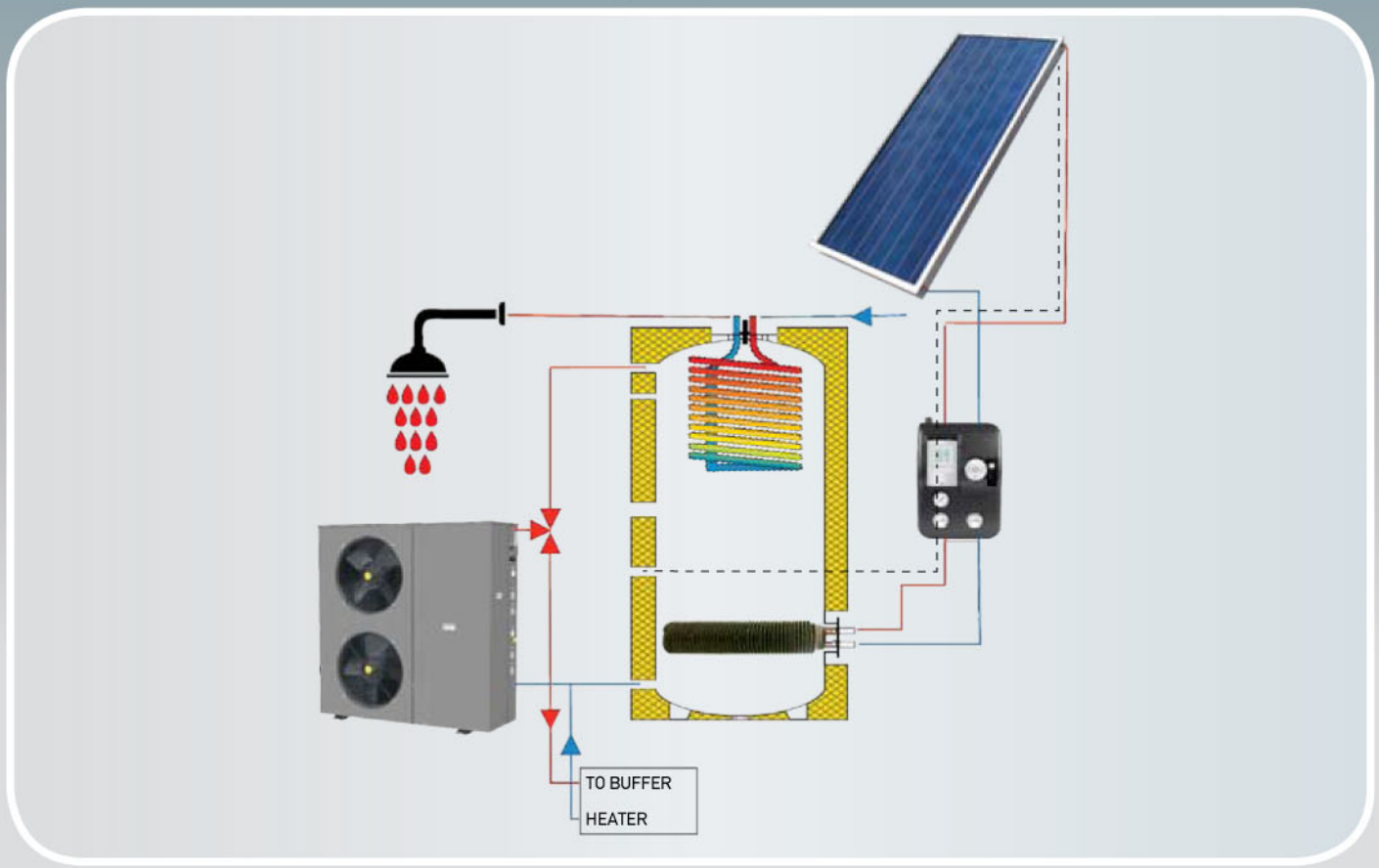
QUALITY ASSURANCE SYSTEM ISO 9001

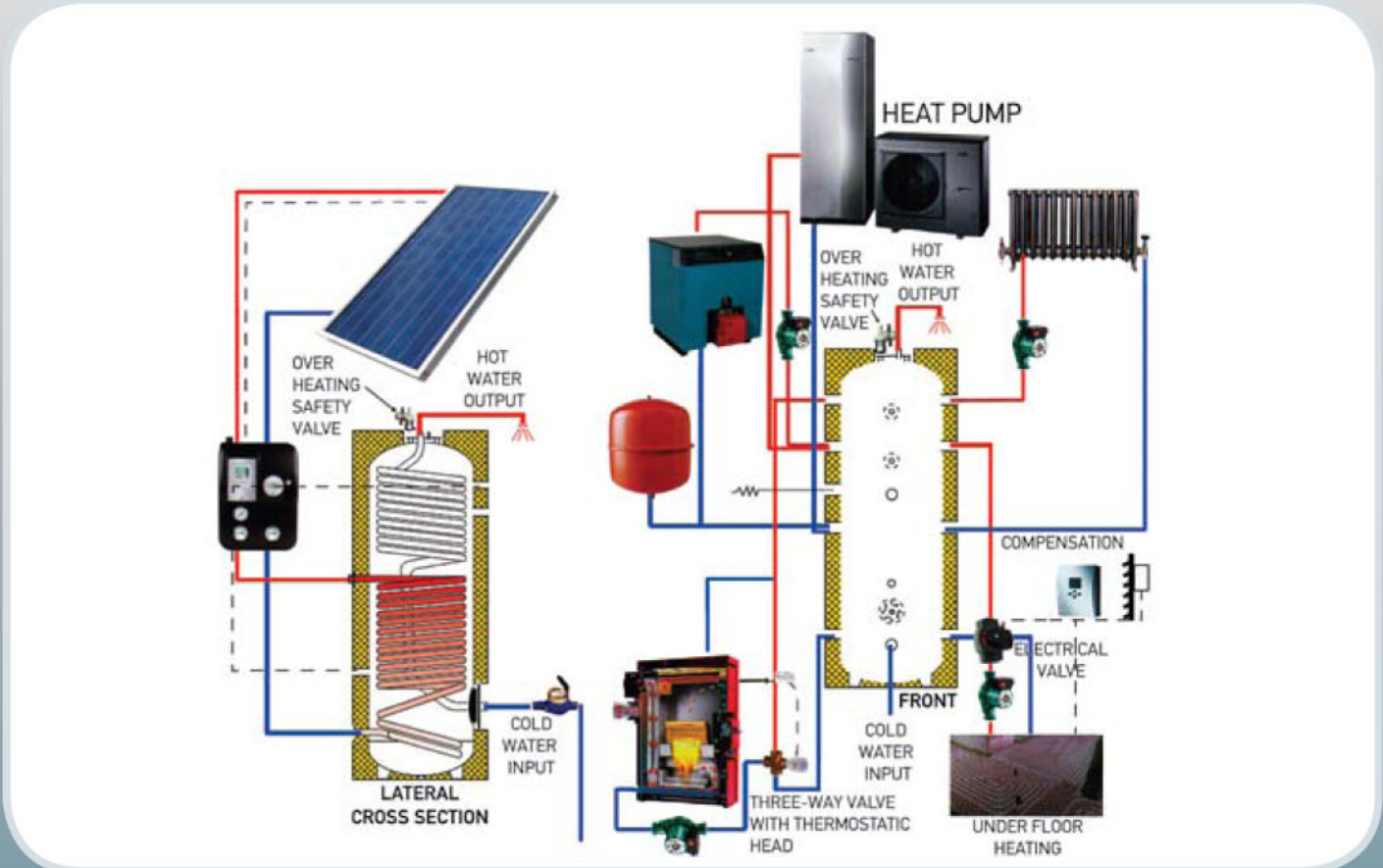
Typical Installation of Hot Water Tank FRW (Fresh Water) for connection to heat pump and solar water heaters



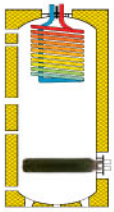
Typical Installation Buffer-1 Tank

with INOX heat exchanger for Domestic Hot Water

To connect with solid fuel boiler, diesel/gas boiler, heat pump, high temperature heating system (radiators), low temperature heating systems (under floor heating) and solar heating system



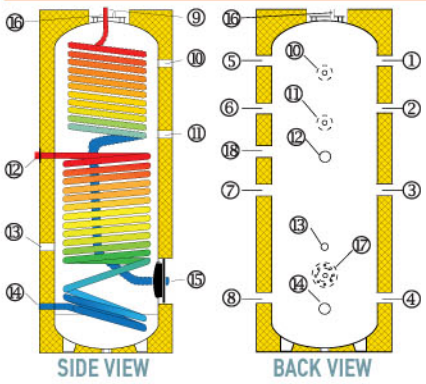
HOT WATER TANKS – BUFFER TANKS – SOLAR WATER HEATERS



FRW (Fresh Water) 150L - 200L - 300L

Hot water tank for heat pump - solar water heaters.

MODEL	CONTINUOUS SUPPLY H.W.T. LITERS/MINUTE*	SOLAR HEAT EXCHANGER POWER IN KW	POSSIBILITY OF INSTALLATION OF SOLAR COLLECTORS m²
FRW 1 150	7,5	9,4	2,50 to 3,00
FRW 1 200	10	9,4	2,60 to 4,20
FRW 1 300	11	9,4	5,20 to 6,30
Addition of stainless steel exchanger (coil for solar)			



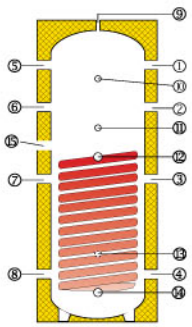
Buffer1 - INOX 300L - 500L - 800L - 1000L

Buffer-1 Tank with INOX hot water exchanger for connection to boiler (using diesel/gas, wood boiler-pellets), heat pump-solar panels for high temperature heating system (radiators) or low temperature (underfloor).

MODEL	CONTINUOUS SUPPLY H.W.T. LITERS/MINUTE*	SOLAR HEAT EXCHANGER POWER IN KW	POSSIBILITY OF INSTALLATION OF SOLAR COLLECTORS m²
BUF 1 INOX 300	16	25	5,20 to 6,30
BUF 1 INOX 500	18,5	32,2	7,80 to 10,50
BUF 1 INOX 800	19,5	43	15,60 to 16,80
BUF 1 INOX 1000	20,5	53	16,80 to 21,00

*STORAGE TEMPERATURE 55 DEGREES CELCIUS. TEMPERATURE H.W.T. 43 DEGREES CELCIUS.

1. Buffer connection (Hot) 1 ½"
2. Buffer connection (Hot Lower Level) 1 ½"
3. Buffer connection (Return Upper Level) 1 ½"
4. Buffer connection (Return) 1 ½"
5. Buffer connection (Hot) 1 ½"
6. Buffer connection (Hot Lower Level) 1 ½"
7. Buffer connection (Return Upper Level) 1 ½"
8. Buffer connection (Return) 1 ½"
9. Air ventilator ½"
10. Sensor connection (Upper Level) 1/2"
11. Sensor connection ½"
12. Inlet from Solar (Hot) 1 ¼"
13. Solar Water Heater's Sensor Connection ½"
14. Return to Solar Water Heater (Cold) 1 ¼"
15. Domestic Water Inlet (supply) 1"
16. Domestic hot water outlet 1"
17. Cleaning flange
18. Position of Electrical resistance 1 ½"

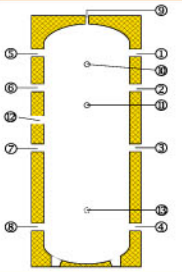


Buffer1 300L - 420L - 500L - 800L - 1000L

Buffer Tank for connection to boiler (diesel/gas, wood boiler-pellets-biomass), heat pump-solar panels.

MODEL	CONTINUOUS SUPPLY H.W.T. LITERS/MINUTE*	SOLAR HEAT EXCHANGER POWER IN KW	POSSIBILITY OF INSTALLATION OF SOLAR COLLECTORS m²
BUF 1 300	NOT AVAILABLE H.W.T.	25	5,20 to 6,30
BUF 1 420	NOT AVAILABLE H.W.T.	32,2	7,80 to 10,50
BUF 1 500	NOT AVAILABLE H.W.T.	32,2	7,80 to 10,50
BUF 1 800	NOT AVAILABLE H.W.T.	43	15,60 to 16,80
BUF 1 1000	NOT AVAILABLE H.W.T.	53	16,80 to 21,00

1. Buffer connection (Hot) 1 ½"
2. Buffer connection (Hot Lower Level) 1 ½"
3. Buffer connection (Return Upper Level) 1 ½"
4. Buffer connection (Return) 1 ½"
5. Buffer connection (Hot) 1 ½"
6. Buffer connection (Hot Lower Level) 1 ½"
7. Buffer connection (Return Upper Level) 1 ½"
8. Buffer connection (Return) 1 ½"
9. Air ventilator ½"
10. Sensor connection ½"
11. Sensor connection 1/2"
12. Inlet from Solar (Hot) 1 ¼"
13. Solar Water Heater's Sensor Connection 1/2"
14. Return to Solar Water Heater (Cold) 1 ¼"
15. Position of Electrical resistance 1 ½"



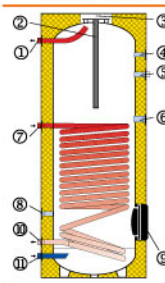
Buffer0 100L - 150L - 200L - 300L - 420L - 500L - 800L - 1000L

Buffer tank for connection to boiler (diesel/gas, wood boiler-pellets-biomass), heat pump.

MODEL
BUF 0 100
BUF 0 150
BUF 0 200
BUF 0 300
BUF 0 420
BUF 0 500
BUF 0 800
BUF 0 1000

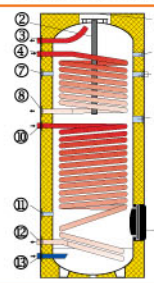
1. Buffer connection (Hot) 1 ½"
2. Buffer connection (Hot Lower Level) 1 ½"
3. Buffer connection (Return Upper Level) 1 ½"
4. Buffer connection (Return) 1 ½"
5. Buffer connection (Hot) 1 ½"
6. Buffer connection (Hot Lower Level) 1 ½"
7. Buffer connection (Return Upper Level) 1 ½"
8. Buffer connection (Return) 1 ½"
9. Air ventilator ½"
10. Sensor connection ½"
11. Sensor connection ½"
12. Position of Electrical resistance 1 ½"

* In the model Buffer 0-100L there are 4 BUFFER connections and the diameter is 1"



BL1 150/200/300/420/500/800/1000

1. Hot water outlet
2. Magnesium rod
3. Top flange Φ115
4. Sensor inlet
5. Recirculation connection
6. Electric back-up inlet
7. Collector inlet
8. Sensor inlet (for the exchanger)
9. Side flange Φ115
10. Collector outlet
11. Cold water inlet

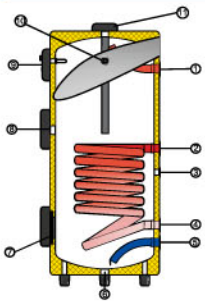


BL2 150/200/300/420/500/800/1000

1. Top flange Φ115
2. Magnesium rod
3. Hot water outlet
4. Heater inlet
5. Sensor inlet
6. Recirculation connection
7. Sensor inlet
8. Heater outlet
9. Electric back-up inlet
10. Collector inlet
11. Sensor inlet
12. Collector outlet
13. Cold water inlet
14. Side flange Φ115

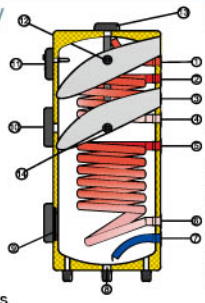
HYDRAULIC CONNECTIONS BL 150/200/300/420/500/800/1000

	150L	200L	300L	420L	500L	800L	1000L
Sensor	½"	½"	½"	½"	½"	½"	½"
Exchangers	1"	1"	1"	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Hot-Cold inlet-outlet	1"	1"	1 "	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Resistance	1 ½"	1 ½"	1 ½"	1 ½"	1 ½"	1 ½"	1 ½"
Recirculation	1"	1"	1"	1"	1"	1"	1"



BL1 1500/2000/2500/3000/4000/5000

1. Hot water outlet 2"
2. Collector or Heater Inlet 1 ¼"
3. Recirculation connection 1 ¼"
4. Collector or Heater Outlet 1 ¼"
5. Cold water inlet 2"
6. Discharge 1 ¼"
7. Cleaning flange Φ170
8. Electric back-up inlet 2 X 1 ½" (at 2000 ltrs 3 pcs one of them under cleaning flange)
9. Position for Control Panel
10. Sensor inlet ½"
11. Magnesium rod



BL2 1500/2000/2500/3000/4000/5000

1. Hot water outlet 2"
2. Heater inlet 1 ¼"
3. Recirculation connection 1 ¼"
4. Heater outlet 1 ¼"
5. Collector inlet 1 ¼"
6. Collector outlet 1 ¼"
7. Cold water inlet 2"
8. Discharge 1 ¼"
9. Cleaning flange Φ170
10. Electric back-up inlet 2 X 1 ½"(at 2000 ltrs 3 pcs one of them under cleaning flange)
11. Position for Control Panel
12. Sensor inlet ½"
13. Magnesium rod
14. Sensor inlet ½"

* at 2000 ltrs 3 pcs one of them under cleaning flange

HYDRAULIC CONNECTIONS BL1 1500/2000/2500/3000/4000/5000

1	Hot water outlet	2"
2	Collector or Heater Inlet	1 ¼"
3	Recirculation connection	1 ¼"
4	Collector or Heater Outlet	1 ¼"
5	Cold water inlet	2"
6	Discharge	1 ¼"
7	Cleaning flange	Φ170
8	Electric back-up inlet *	2 X 1 ½"
9	Position for Control Panel	
10	Sensor inlet	½"
11	Magnesium rod	

HYDRAULIC CONNECTIONS BL2 1500/2000/2500/3000/4000/5000

1	Hot water outlet	2"
2	Heater inlet	1 ¼"
3	Recirculation connection	1 ¼"
4	Heater outlet	1 ¼"
5	Collector inlet	1 ¼"
6	Collector outlet	1 ¼"
7	Cold water inlet	2"
8	Discharge	1 ¼"
9	Cleaning flange	Φ170
10	Electric back-up inlet *	2 X 1 ½"
11	Position for Control Panel	
12	Sensor inlet	½"
13	Magnesium rod	
14	Sensor	½"