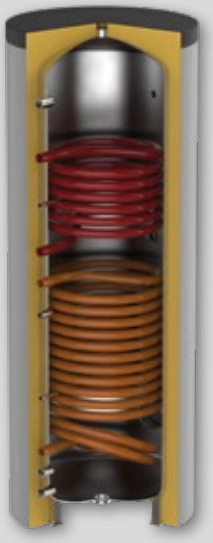
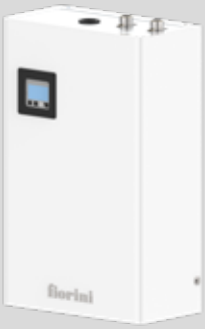
Hot water systems













fiorini


fiorini
fiorini

Hot water systems

A broad range of options which make it possible to efficiently produce Domestic Hot Water for both domestic and professional use and to manage water for technical use in heating systems.

We have numerous series of products dedicated to the production and storage of hot water. Those products meet people's needs and bring comfort to users, in individual housing, as well as public and private residential structures, the tertiary sector and the industrial sector. Our product lines consist of DHW systems, hot water storage tanks, thermal solar power systems which are designed to efficiently operate in all different applications.

Our products are well-thought-out. We try to come up with new conceptual solutions and to think over the materials we use. In this way we aim for:
- high performance
- a minimum heat loss
- high quality and a long life span

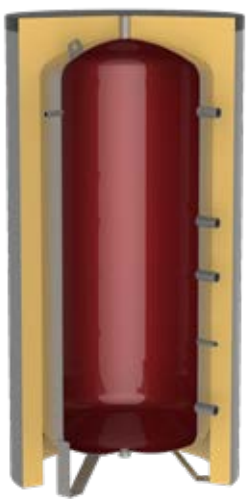
Energy labels
All products for hot water production are provided with an energy label in accordance with the CE directive and the specific regulations for the devices. The label certifies the energy efficiency class which helps the professionals and the users consciously choose the most efficient solution to their requirements. For more information see pag. 11.

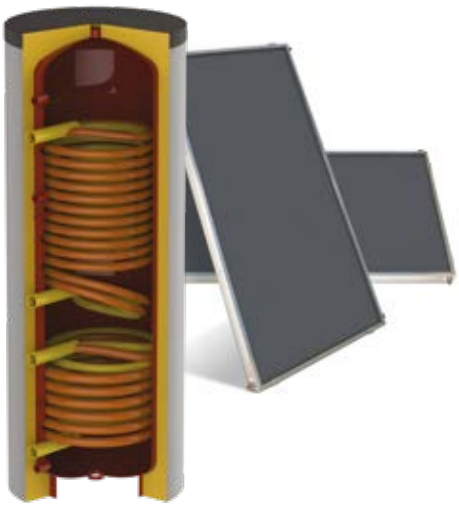
Special materials and internal treatment of the tanks
We offer products with a finishing touch adapted to every possible application: high quality stainless steel and glass lining (enamel vitrified at a temperature of more than 800°C) which ensure a maximum hygiene and life span even when the water temperature is elevated. Moreover there is Bluetech, an innovative and efficient treatment with high elasticity. It is made from thermosetting resins and ensures a 100 % cleanliness of water for domestic use.

Insulation
The following types of insulation are available:
- rigid polyurethane foam, high density, thermal insulation
- Thick flexible polyurethane, also for large tanks (up to 10.000 litres) or for special projects
- Other materials, on the client's request

Protective equipment
There are sets with protective equipment which guarantee the safety and correct use of the products, such as protection against overpressure, safety valves, expansion vessels, protection against water hammering, antifreeze protection, cathodic protection against corrosion, etc If necessary, our clients can solicit the help of the consultancy service provided by our staff during the design and selection phase. They will help you look for the perfect solution to your problem and will send you the information needed to properly and efficiently manage the product and/or the device.

You can find more details in the following part of the brochure.



Inertial tanks for Domestic Hot Water FLEXY

The FLEXY range consists of inertial tanks for domestic hot water, available in version with or without inspection hole (allowing easy access during inspection and maintenance), in different capacities, from 200 to 10000 litres. They are equipped with rigid or flexible insulation and PVC outer coating, magnesium anode for protection against galvanic currents.



Material: S 235 JR carbon steel

Treatment for internal protection

- up to 1000 Inorganic glass lining in accordance with DIN 4753.3
- from 1500 litres up Bluetech enamelling with thermosetting resins, suitable for domestic hot water

WRAS APPROVED MATERIAL

Insulation

Capacity (l)	Type
from 200 to 1000	Highly rigid polyurethane foam
from 1500 to 5000	Polyester Fiber
from 6000	Flexible polyurethane foam

Operational limits

Capacity (l)	Max. temperature	Max. pressure
up to 1000	95°C	10 bar
from 1500	80°C	6 bar

Supplied accessories: Safety valve and thermometer for sizes up to 1000 l, magnesium sacrificial anode for all sizes. For models with only one inspection hole, a blank plate is supplied.

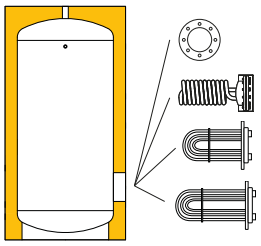
Standard accessories: see pag 294

Special versions: see pag 296



Integration with AQUAFAST
See page 212

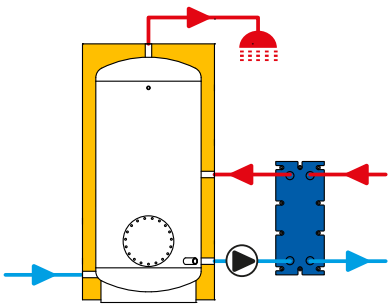
MATCH YOUR EXCHANGER
(see page 204)



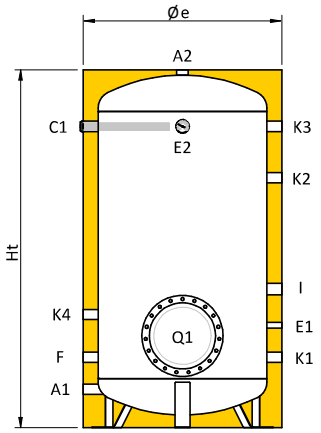
Capacity l	FLEXY with inspection hole			Vertical Packaging		FLEXY without inspection hole			Vertical Packaging	
	Code*	Price	Energy label	Dimensions cm	Weight kg	Code	Price	Energy label	Dimensions cm	Weight kg
200	817060032X		A	75x75x125	74	817060027X		A	75x75x125	64
300	817060033X		A	75x75x150	84	817060028X		A	75x75x150	73
500	817060034X		B	85x85x170	122	817060029X		B	85x85x170	110
750	817060035X		C	100x100x170	199	817060030X		C	100x100x170	182
1000	817060036X		C	110x110x200	243	817060031X		C	110x110x200	225
1500	817080112X		C	140x140x245	256	817080098X		C	140x140x245	245
2000	817080099X		C	132x132x275	324	817080115X		C	132x132x275	314
2500	817080100X			147x147x278	359	817080116X			147x147x278	349
3000	817080101X			147x147x299	400	817080117X			147x147x299	391
4000	817080102X			163x163x306	564	817080118X			163x163x306	553
5000	817080103X			183x183x310	649	817080119X			183x183x310	639
6000	817080120X			282x203x218	760	-				
8000	817080121X			352x203x218*	895	-				
10000	817080122X			427x203x218*	983	-				

*Shipping by container requires open top containers

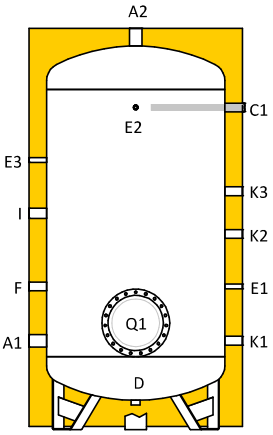
Inertial tanks for DHW
FLEXY



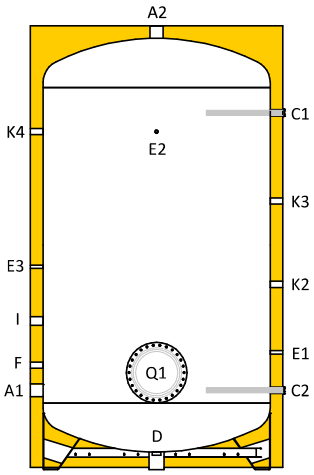
200 ≤ cap. ≤ 1000



1500 ≤ cap. ≤ 5000



6000 ≤ cap. ≤ 10000



Legend couplings

A1	DHW inlet
A2	DHW outlet
C1	Anode
C2	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
Q1	Inspection hole

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	C2 inch	D inch	E1 inch	E2 inch	E3 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	Q1 (Øext/Øint) mm
200	1"1/4	1"1/4	1"1/4	-	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
300	1"1/4	1"1/4	1"1/4	-	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
500	1"1/4	1"1/4	1"1/4	-	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
750	1"1/4	1"1/4	1"1/4	-	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1000	1"1/4	1"1/4	1"1/4	-	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1500	2"	2"	1"1/4	-	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	Ø380/Ø300
2000	2"	2"	1"1/4	-	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	Ø430/Ø350
2500	2"1/2	2"1/2	1"1/4	-	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	Ø430/Ø350
3000	3"	3"	1"1/4	-	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	Ø430/Ø350
4000	3"	3"	1"1/4	-	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	Ø430/Ø350
5000	3"	3"	1"1/4	-	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	Ø430/Ø350
6000	3"	3"	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	-	1"1/4	1"1/4	1"1/4	Ø480/Ø400
8000	3"	3"	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	-	1"1/4	1"1/4	1"1/4	Ø480/Ø400
10000	3"	3"	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	-	1"1/4	1"1/4	1"1/4	Ø480/Ø400

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	C2 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	Q1** mm
200	710	1105	1315	150	885	-	-	295	885	-	295	645	150	595	990	465	345
300	710	1355	1530	150	1135	-	-	445	1135	-	295	645	295	795	1135	465	355
500	810	1635	1825	145	1390	-	-	460	1390	-	690	610	310	1150	1390	510	370
750	950	1675	1925	180	1410	-	-	480	1410	-	710	650	330	1170	1410	530	430
1000	1010	1965	2210	200	1680	-	-	500	1680	-	730	670	350	1190	1680	550	450
1500	1250	2280	2600	500	1810	-	165	805	1810	1515	805	1215	500	1100	1340	-	600
2000	1350	2600	2930	505	2115	-	155	805	2115	1805	805	1505	505	1105	1345	-	620
2500	1400	2655	3000	565	2150	-	175	865	2150	1850	850	1550	565	1165	1405	-	680
3000	1450	2870	3215	575	2350	-	180	800	2350	2050	850	1750	575	1050	1415	-	690
4000	1600	2940	3350	600	2380	-	160	900	2380	2080	870	1780	600	1200	1440	-	715
5000	1800	2980	3480	610	2385	-	140	910	2160	2085	885	1785	610	1210	1450	-	725
6000	2000	2820	3460	630	2230	630	140	930	2080	1470	880	1230	-	1470	1930	2080	770
8000	2000	3520	4050	630	2830	630	140	930	2680	1610	830	1180	-	1470	2130	2680	770
10000	2000	4270	4720	630	3580	630	140	930	3430	1610	830	1180	-	1470	2880	3430	770

R*: Reversal quota

Q1**: Height from inspection hole center to the ground

Inertial tanks for DHW
FLEXY 2F

The FLEXY 2F range consists of inertial tanks for domestic hot water with double inspection hatch, in different capacities, from 200 to 5000 litres. The two inspection flanges allow easy access during inspection and maintenance and the possible insertion of one or more exchangers. They are equipped with high insulating power insulation and external PVC coating, magnesium anode for protection against galvanic currents.

Material: S 235 JR carbon steel

Treatment for internal protection: Bluetech enamelling with thermosetting resins, suitable for domestic hot water

WRAS APPROVED MATERIAL



TESTED

Insulation

Capacity (l)	Type
from 200 to 5000	Polyester Fiber

Operational limits

Max. temperature	Max. pressure
80°C	6 bar

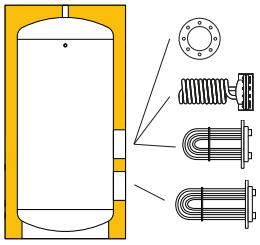
Supplied accessories: magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296

Warning! The heads are not included, but can be purchased and combined using the selection tables on page. 183

MATCH YOUR EXCHANGER (see page 204)

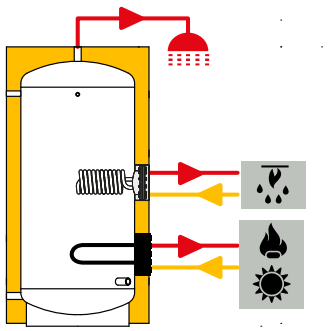


Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm	Vertical Packaging Weight kg
200	817080134X		B	68x68x156	55
300	817080135X		B	78x78x164	80
500	817080136X		C	88x88x193	105
750	817080191X		C	99x99x199	160
1000	817080138X		C	99x99x230	180
1500	817080139X		C	123x123x238	230
2000	817080140X		C	132x132x270	280
2500	817080141X			147x147x278	315
3000	817080142X			147x147x299	350
4000	817080143X			163x163x306	505
5000	817080144X			183x183x310	595

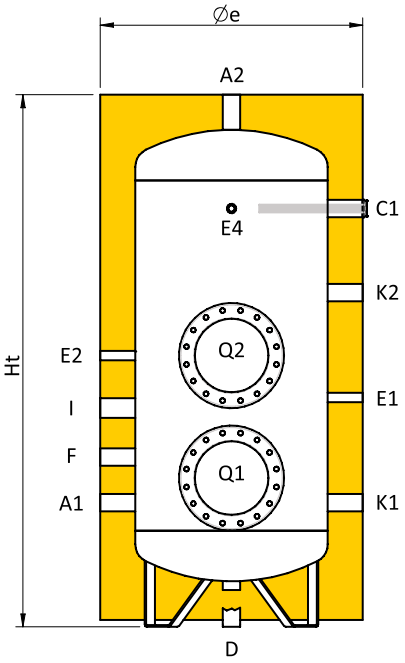


Integration with AQUAFAST
See page 212

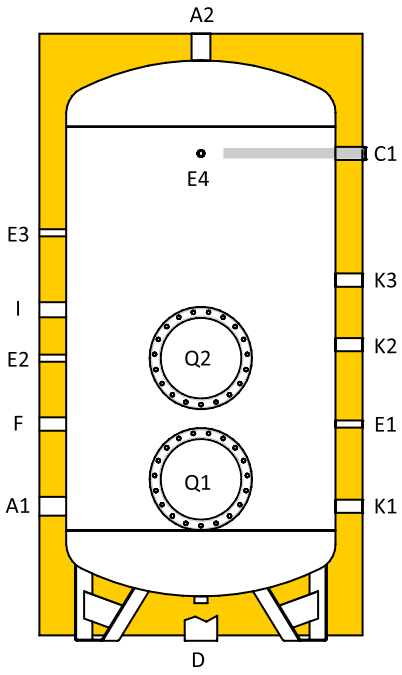
Inertial tanks for DHW
FLEXY 2F



200 ≤ cap. ≤ 300



500 ≤ cap. ≤ 5.000



Legend couplings

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
Q1	Inspection hole
Q2	Inspection hole

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	E4 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	Q1 - Q2 (Øext/Øint) mm
200	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	-	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	-	Ø300/Ø220
300	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	-	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	-	Ø300/Ø220
500	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø300/Ø220
750	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1000	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
2000	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
2500	2"1/2	2"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
4000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
5000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	E4 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	Q1** mm	Q2** mm
200	650	1435	1580	310	1150	125	620	730	-	1150	440	555	310	930	-	380	730
300	750	1520	1695	355	1195	130	655	775	-	1195	485	625	355	955	-	425	775
500	850	1805	2000	375	1445	135	675	795	1145	1445	675	960	375	975	1215	445	795
750	990	1840	2090	390	1470	130	710	980	1360	1470	710	1160	390	1010	1230	500	980
1000	1050	2120	2370	415	1675	120	715	985	1445	1675	745	1175	415	1015	1255	515	985
1500	1250	2280	2605	500	1810	165	805	1050	1515	1810	805	1230	500	1100	1340	600	1050
2000	1350	2600	2930	505	2115	155	805	1150	1805	2115	805	1505	505	1105	1345	620	1150
2500	1400	2655	3005	565	2150	175	865	1210	1850	1850	850	1550	565	1165	1405	680	1210
3000	1450	2870	3220	575	2350	180	800	1220	2050	2050	850	1750	575	1050	1415	690	1220
4000	1600	2940	3350	600	2380	160	900	1245	2080	2080	870	1780	600	1200	1440	715	1245
5000	1800	2980	3485	610	2385	140	910	1255	2085	2085	885	1785	610	1210	1450	725	1255

R*: Reversal quota
Q1**: Height from inspection hole center to the ground

Inertial tanks for Domestic Hot Water FLEXY Container

The FLEXY Container range consists of buffer tanks for domestic hot water systems with lowered heights and dimensions that are specifically designed to guarantee installation in heating plants with reduced heights. In addition, the reduction in height makes them suitable for container transportation. The PN 6 bar range is also available in layouts suitable for transportation in High Cube containers. The range includes an inspection hatch (which allows easy access during inspection and maintenance), in a variety of capacities, from 1,500 to 5,000 litres. They are insulated using high-power rigid or flexible insulation and include a PVC external coating, and a magnesium anode for protection against galvanic currents. Handling of Flexy containers is carried out using cross-pieces positioned under the feet of the tank, which thus reduces the overall dimensions of the packaged product to a minimum.



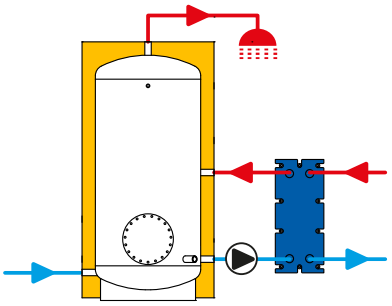
Material: S 235 JR carbon steel
Treatment for internal protection: Bluetech enamelling using thermosetting resins, suitable for domestic hot water
Insulation

Capacity (l)	Type
da 1500 a 5000	Polyester Fiber

TESTED

Operational limits

Model	Max. temperature	Max. pressure
PN 6 bar	80°C	6 bar
PN 6 bar High Cube	80°C	6 bar
PN 8 bar	80°C	8 bar



Supplied accessories: magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296

FLEXY container PN 6 bar

				Vertical Packaging	
Capacity l	Code	Price	Energy label	Dimensions cm	Weight kg
1500	817080196X		C	135x135x205	200
2050	817080197X			145x145x212	250
2500	817080198X			160x160x199	325
3000	817080199X			180x180x199	395
4000	817080200X			200x200x202	510
5000	817080201X			210x210x219	600

FLEXY container PN 6 bar High Cube

				Vertical Packaging	
Capacity l	Code	Price	Energy label	Dimensions cm	Weight kg
1500	817080196X		C	135x135x205	200
2050	817080211X			140x140x223	260
2500	817080198X			160x160x220	325
3000	817080208X			160x160x240	420
4000	817080209X			180x180x242	500
5000	817080210X			200x200x244	605

FLEXY container PN 8 bar

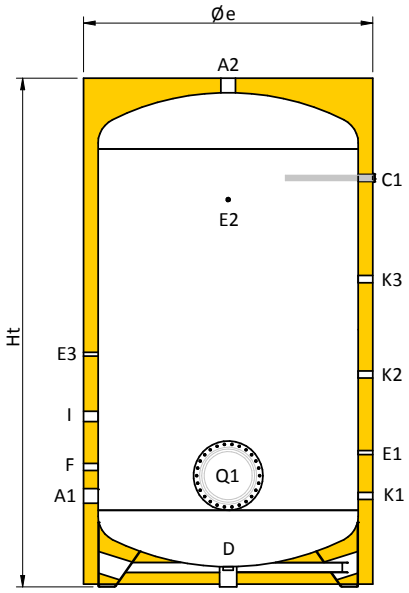
				Vertical Packaging	
Capacity l	Code	Price	Energy label	Dimensions cm	Weight kg
1500	817080202X		C	135x135x205	223
2050	817080203X			145x145x212	303
2500	817080204X			160x160x220	388
3000	817080205X			180x180x199	453
4000	817080206X			200x200x202	585
5000	817080207X			210x210x219	673



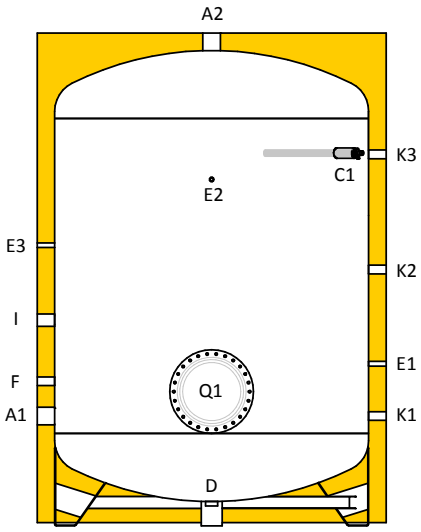
Integration with AQUAFAST
See page 212

FLEXY Container PN 6 bar
Size

1500 ≤ cap. ≤ 2500



3000 ≤ cap. ≤ 5000



Legend couplings

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
Q1	Inspection hole

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	Q1 (Øext/Øint) mm
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
2050	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
2500	2"1/2	2"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
4000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
5000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350

Size chart

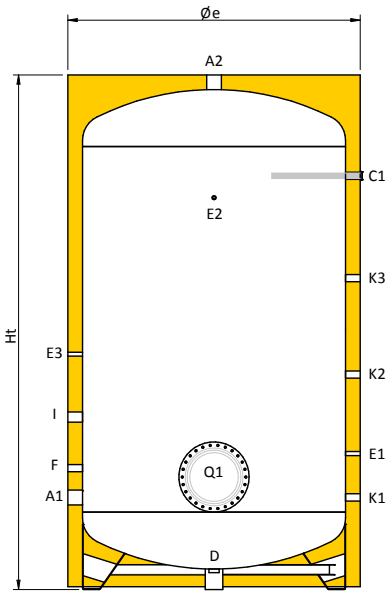
Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	Q1** mm
1500	1350	2050	2455	505	1575	155	805	1575	1505	805	1165	505	1105	1345	605
2050	1450	2120	2568	575	1635	180	800	1635	1475	850	1175	575	1050	1415	690
2500	1600	2195	2716	605	1665	165	905	1665	1405	875	1205	605	1205	1445	720
3000	1800	1985	2680	615	1435	145	895	1435	1315	815	1115	595	1195	1435	730
4000	2000	2020	2843	630	1450	140	910	1450	1370	880	1130	610	1160	1450	745
5000	2100	2186	3031	685	1525	155	925	1525	1485	885	1185	685	1225	1525	800

R*: Reversal quota

Q1**: Height from inspection hole center to the ground

FLEXY Container PN 6 bar High Cube Size

1500 ≤ cap. ≤ 5000



Legend couplings

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
Q1	Inspection hole

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	Q1 (Øext/Øint) mm
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
2050	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
2500	2"1/2	2"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
4000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
5000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350

Size chart

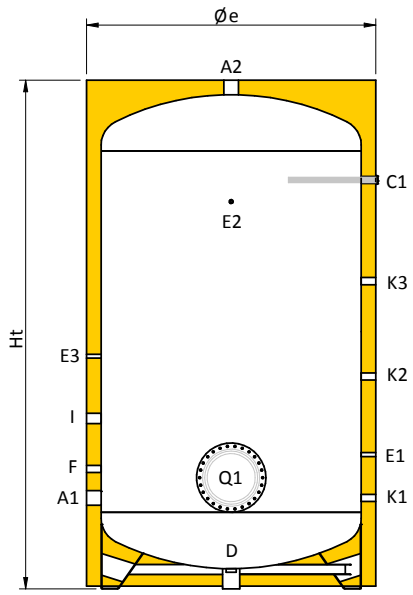
Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	Q1** mm
1500	1350	2050	2455	505	1575	155	805	1575	1505	805	1165	505	1105	1345	605
2050	1400	2230	2535	540	1740	150	840	1740	1375	825	1075	540	1140	1380	655
2500	1600	2195	2716	605	1665	165	905	1665	1405	875	1205	605	1205	1445	720
3000	1600	2395	2775	605	1865	165	905	1865	1405	875	1205	605	1205	1445	720
4000	1800	2420	2900	630	1830	140	910	1830	1370	880	1130	630	1160	1450	745
5000	2000	2435	3030	615	1865	145	895	1865	1315	815	1115	615	1195	1435	730

R*: Reversal quota

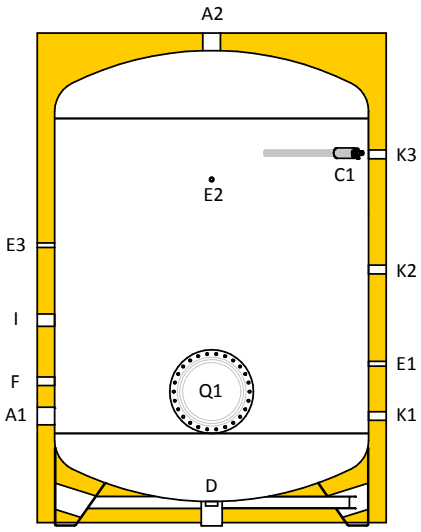
Q1**: Height from inspection hole center to the ground

FLEXY Container PN 8 bar
Size

1500 ≤ cap. ≤ 2500



3000 ≤ cap. ≤ 5000



Legend couplings

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
Q1	Inspection hole

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	Q1 (Øext/Øint) mm
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø480/Ø400
2050	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø480/Ø400
2500	2"1/2	2"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø480/Ø400
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø480/Ø400
4000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø480/Ø400
5000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø480/Ø400

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	Q1** mm
1500	1350	2050	2455	505	1575	155	805	1575	1505	805	1165	505	1105	1345	655
2050	1450	2120	2568	575	1635	180	800	1635	1475	850	1175	575	1050	1415	715
2500	1600	2195	2716	605	1665	165	905	1665	1405	875	1205	605	1205	1445	745
3000	1800	1985	2680	615	1435	145	895	1435	1315	815	1115	595	1195	1435	755
4000	2000	2020	2843	630	1450	140	910	1450	1370	880	1130	610	1160	1450	780
5000	2100	2186	3031	685	1525	155	925	1525	1485	885	1185	685	1225	1525	825

R*: Reversal quota

Q1**: Height from inspection hole center to the ground

Inertial tanks for DHW
FLEXY INOX

The FLEXY INOX range consists of inertial tanks for domestic hot water made of stainless steel which is highly resistant against corrosion. The tanks are available in several capacities from 200 to 5000 litres. They are equipped with very powerful flexible insulation, externally covered in PVC and provided with a magnesium anode for protection against galvanic currents and an inspection flange for easy access during the control or maintenance phase.



Material: AISI 316 stainless steel

Treatment for internal protection: Pickling and passivation

Insulation

Capacity (l)	Type
from 200 to 5000	Polyester Fiber

Operational limits

Max. temperature	Max. pressure
95°C	6 bar

Supplied accessories: Magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

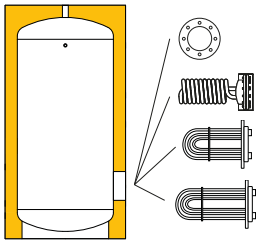
Special versions: see pag 296



Integration with AQUAFAST
See page 212

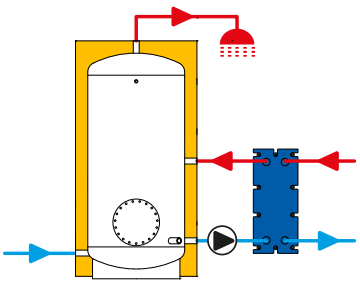
TESTED

MATCH YOUR EXCHANGER
(see page 204)

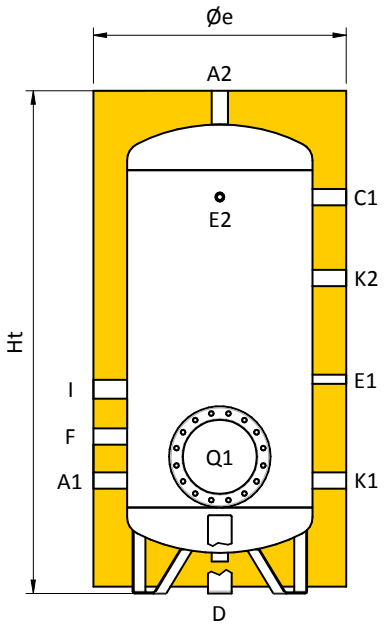


Cap. l	With inspection hole			Vertical Packaging	Without inspection hole			Vertical Packaging
	Code*	Price	Energy label	Dimensions cm	Code	Price	Energy label	Dimensions cm
200	817040188X		B	70x70x143	817040177X		B	70x70x143
300	817040189X		B	80x80x160	817040178X		B	80x80x160
500	817040190X		C	90x90x195	817040179X		C	90x90x195
800	817040191X		C	100x100x200	817040180X		C	100x100x200
1000	817040192X		C	110x110x230	817040181X		C	110x110x230
1500	817040193X		C	130x130x240	817040182X		C	130x130x240
2000	817040194X		C	150x150x250	817040183X		C	150x150x250
2500	817040195X			150x150x280	817040184X			150x150x280
3000	817040196X			150x150x300	817040185X			150x150x300
4000	817040197X			170x170x305	817040186X			170x170x305
5000	817040198X			190x190x310	817040187X			190x190x310

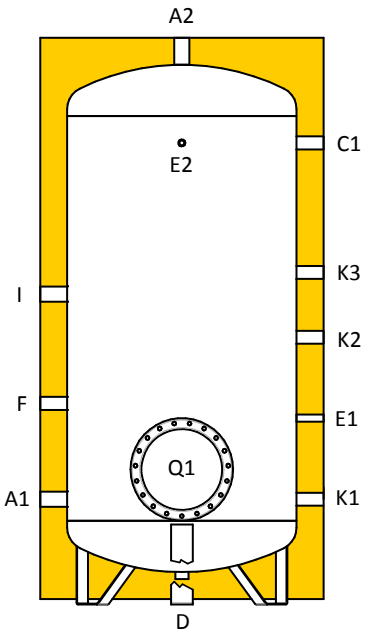
Inertial tanks for DHW
FLEXY INOX



200 ≤ cap. ≤ 300



500 ≤ cap. ≤ 5000



Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
Q1	Inspection hole

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	Q1 (Øext/Øint) mm
200	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	-	Ø300/Ø220
300	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	-	Ø300/Ø220
500	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø300/Ø220
800	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1000	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
2000	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
2500	2"1/2	2"1/2	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
4000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
5000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	E1 mm	E2 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	Q1** mm
200	650	1410	1535	295	1135	595	1135	425	540	295	915	-	365
300	750	1490	1650	335	1175	635	1175	465	605	335	935	-	405
500	850	1770	1945	350	1420	650	1420	650	935	350	950	1190	420
800	990	1810	2045	370	1440	670	1440	700	1150	370	990	1210	480
1000	1050	2100	2330	390	1710	690	1710	745	1150	390	990	1230	500
1500	1250	2235	2555	490	1800	795	1800	795	1205	490	1090	1330	590
2000	1450	2315	2725	525	1835	830	1835	830	1240	525	1125	1365	650
2500	1400	2640	2895	560	2145	860	2145	845	1545	560	1160	1400	670
3000	1450	2850	3155	565	2340	790	2340	840	1740	565	1040	1405	680
4000	1600	2920	3295	590	2370	890	2370	860	1770	590	1190	1430	705
5000	1800	2960	3425	600	2375	900	2375	875	1775	600	1200	1440	715

R*: reversal quota

Q1**: Height from inspection hole center to the ground

Inertial tanks for DHW
FLEXY INOX 2F

The FLEXY INOX 2F range consists of inertial tanks for domestic hot water with double inspection hole, in different capacities, from 200 to 5000 litres. The two inspection holes allow easy access during inspection and maintenance and the possible insertion of one or more exchangers. They are equipped with high insulating power insulation and external PVC coating, magnesium anode for protection against galvanic currents.

Material: AISI 316 stainless steel
Treatment for internal protection: Pickling and passivation



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Insulation

Capacity (l)	Type
da 200 a 5000	Polyester Fiber

Operational limits

Max. temperature	Max. pressure
95°C	6 bar

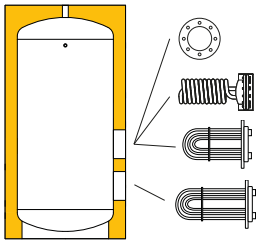
Supplied accessories: Magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

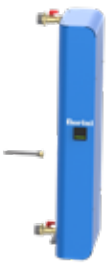
Special versions: see pag 296

Warning! The heads are not supplied, but can be purchased and combined using the selection tables on page. 183

MATCH YOUR EXCHANGER (see page 204)

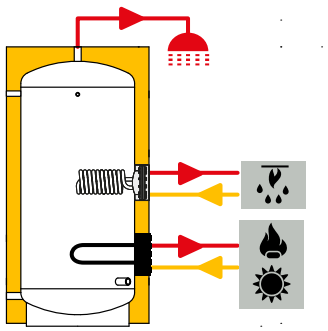


Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm
200	817040199X		B	70x70x155
300	817040200X		B	80x80x165
500	817040201X		C	90x90x195
750	817040202X		C	105x105x195
1000	817040203X		C	105x105x225
1500	817040204X		C	130x130x240
2000	817040205X		C	150x150x250
2500	817040206X			145x145x280
3000	817040207X			150x150x300
4000	817040208X			165x165x310
5000	817040209X			185x85x315

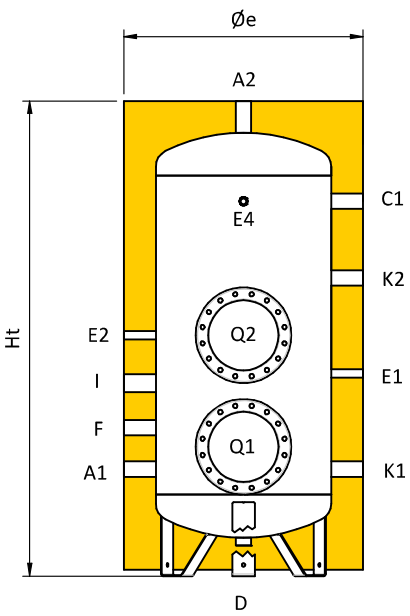


Integration with AQUAFAST
See page 212

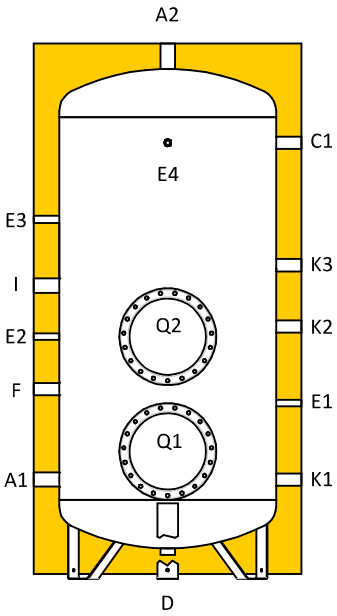
Inertial tanks for DHW
FLEXY INOX 2F



200 ≤ cap. ≤ 300



500 ≤ cap. ≤ 5.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
Q1	Inspection hole
Q2	Inspection hole

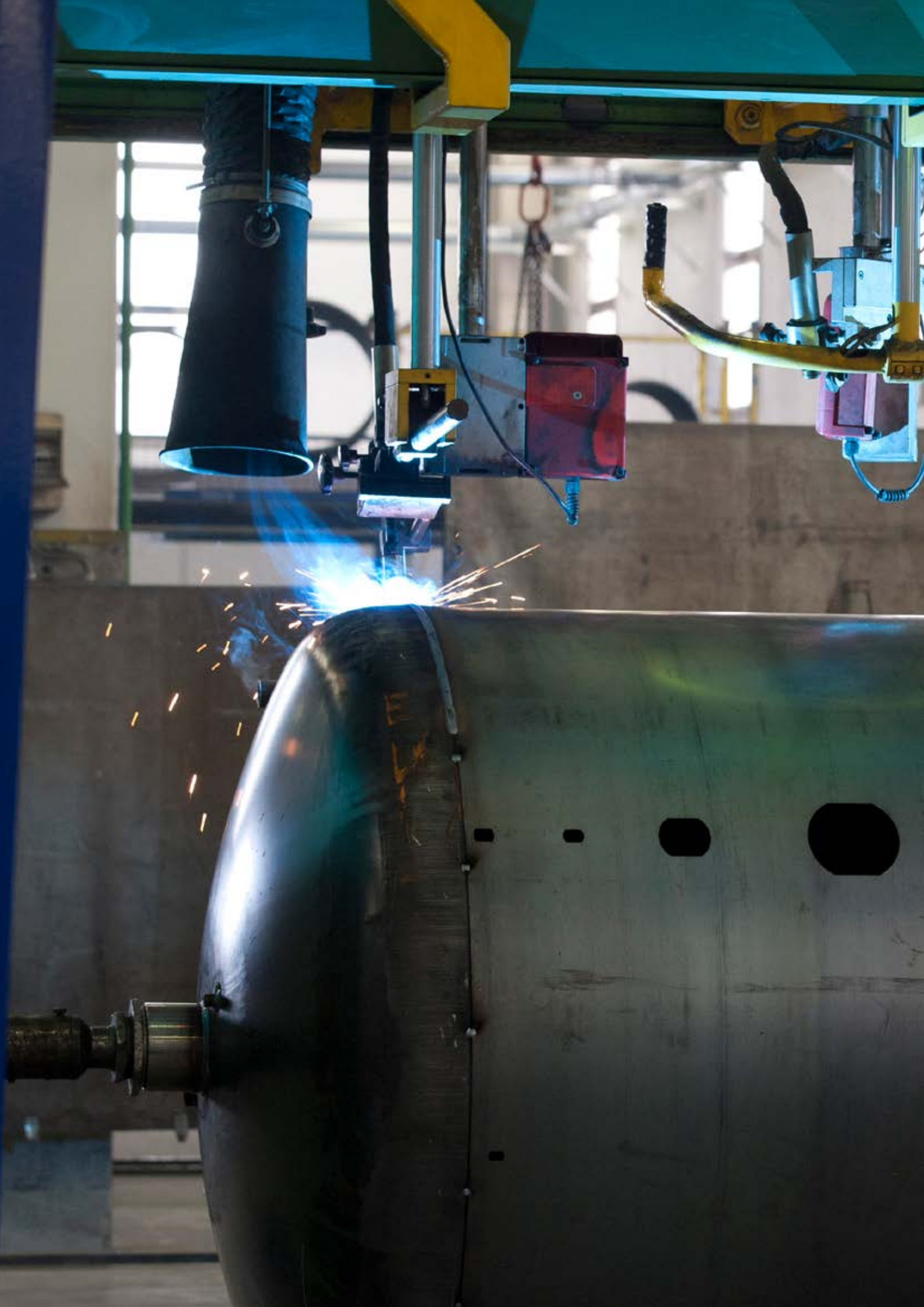
Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	E4 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	Q1 - Q2 (Øext/Øint) mm
200	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	-	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	-	Ø300/Ø220
300	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	-	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	-	Ø300/Ø220
500	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø300/Ø220
750	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1000	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø380/Ø300
2000	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
2500	2"1/2	2"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
4000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350
5000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	Ø430/Ø350

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	E1 mm	E2 mm	E3 mm	E4 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	Q1** mm	Q2** mm
200	650	1410	1535	295	1135	605	715	-	1135	425	540	295	915	-	365	715
300	750	1490	1650	335	1175	635	755	-	1175	465	605	335	935	-	405	755
500	850	1770	1945	350	1420	650	770	1120	1420	650	935	350	950	1190	420	770
750	990	1810	2045	370	1440	690	930	1400	1440	690	1150	370	990	1210	480	930
1000	1050	2100	2330	390	1710	690	950	1410	1710	745	1150	390	990	1230	500	950
1500	1250	2235	2555	490	1800	795	1005	1465	1800	795	1205	490	1090	1330	590	1070
2000	1450	2315	2725	525	1835	830	1040	1500	1835	830	1240	525	1125	1365	650	1180
2500	1400	2640	2895	555	2140	855	1340	1800	2140	840	1540	555	1155	1395	670	1200
3000	1450	2850	3155	565	2340	790	1540	2000	2340	840	1740	565	1315	1040	680	1210
4000	1600	2920	3295	590	2370	890	1570	2030	2370	860	1770	590	1190	1430	705	1235
5000	1800	2960	3425	600	2375	900	1575	2035	2375	875	1775	600	1600	1440	715	1245

R*: reversal quota
Q1/Q2**: Height from inspection hole center to the ground



Water heaters

Contents

- Domestic Hot Water Storages pag. 155
- Fixed Exchangers Water Heaters pag. 170


SMART 1
pag. 170


SMART 2
pag. 174


SMART 1 HP
pag. 178


SMART 2 HP
pag. 182


SMART 1 INOX
pag. 186


SMART 2 INOX
pag. 190


SMART UP
pag. 194

- Removable Exchangers Water Heaters pag. 196


BOIL
pag. 196


BOIL INOX
pag. 198


BOIL CUSTOM
pag. 202

- Electric water heaters pag. 208


FLEXY VOLT
pag. 208

- Fast Heaters for DHW pag. 211
- Fresh Water Stations for DHW pag. 227
- Thermal Solar Systems pag. 275
- Accessories and Insights pag. 293

Glass lined water heater with fixed internal heat exchanger – SMART 1

The Smart 1 range consists of water heaters for the production of domestic hot water with a single fixed heat exchanger, available in several capacities, from 200 to 3000 litres. They are equipped with different type of insulation (see chart below), external PVC coating, a magnesium anode for protection against galvanic currents and an inspection flange to make access in the control and maintenance phase easier.



TESTED

Material: S 235 JR carbon steel

Treatment for internal protection: The boilers up to 1000l are treated with food grade inorganic glass lining in accordance with DIN 4753.3. The tanks with a capacity between 1500 and 3000 litres are varnished with Bluetech.

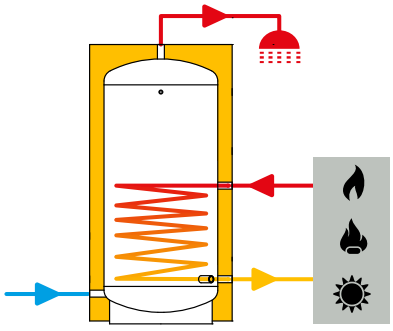
WRAS APPROVED MATERIAL

Insulation

Capacity (l)	Type
from 200 to 1000	Highly rigid polyurethane foam
from 1500	Polyester Fiber

Operational limits

	Storage		Primary circuit	
Capacity (l)	temp. max.	pressure max.	temp. max.	pressure max.
from 200 to 1000	95°C	10 bar	110°C	12 bar
from 1500 to 3000	80°C	6 bar	110°C	12 bar



Supplied accessories: Safety valve and thermometer for sizes up to 1000 l, magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296

Capacity l				Vertical Packaging	
	Code	Price	Energy label	Dimensions cm	Weight kg
200	819060318X		B	60X60X150	74
300	819060319X		B	70X70X150	103
500	819060320X		C	80X80X180	143
750	819060321X		C	95X95X185	213
1000	819060322X		C	110X110X210	251
1500	819080001X		C	130X130X240	295
2000	819080002X		C	140X140X275	380
3000	819080005X			150X150X300	469

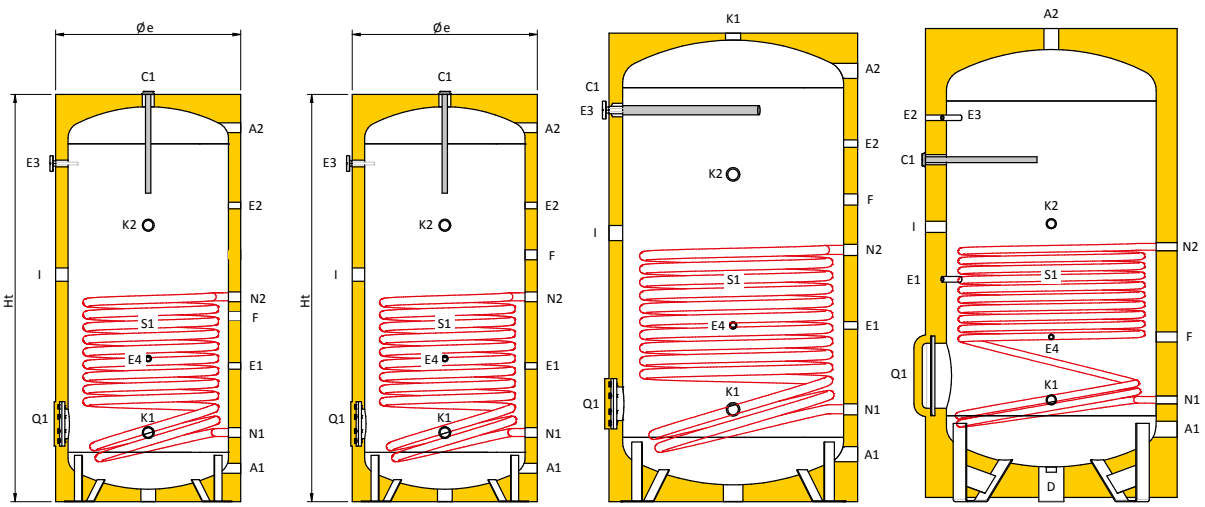


Integration with AQUAFAST

See page 212

Glass lined water heater with fixed internal heat exchanger – SMART 1

cap. = 200 | 200 ≤ cap. ≤ 500 | 750 ≤ cap. ≤ 1.000 | 1.500 ≤ cap. ≤ 3.000



Couplings legend

A1	DHW inlet	**F**	Recirculation
A2	DHW outlet	**I**	Electrical resistor
C1	Anode	**K1**	Auxiliary
D	Drain	**K2**	Auxiliary
E1	Probe / Thermometer	**N1**	Exchanger outlet
E2	Probe / Thermometer	**N2**	Exchanger inlet
E3	Probe / Thermometer	**Q1**	Inspection hole
E4	Probe / Thermometer	**S1**	Lower exchanger

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	E4 inch	F inch	I inch	K1 inch	K2 inch	N1 inch	N2 inch	Q (Øext/Øint) mm
200	1"	1"	1"1/4	-	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/4	1"1/4	1"	1"	Ø180/Ø120
300	1"	1"	1"1/4	-	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/4	1"1/4	1"	1"	Ø180/Ø120
500	1"	1"	1"1/4	-	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/4	1"1/4	1"	1"	Ø180/Ø120
750	1"1/2	1"1/2	1"1/4	-	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/4	1"1/4	1"	1"	Ø180/Ø120
1000	1"1/2	1"1/2	1"1/4	-	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/4	1"1/4	1"	1"	Ø180/Ø120
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"	1"	Ø380/Ø300
2000	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"	1"	Ø380/Ø300
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"	1"	Ø380/Ø300

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	A2 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	E4 mm	F mm	I mm	K1 mm	K2 mm	N1 mm	N2 mm	Q1** mm
200	560	1325	1440	120	1220	1325	-	385	970	1115	525	555	840	225	1065	225	705	270
300	660	1380	1530	130	1260	1380	-	500	1095	1145	555	925	855	255	1095	255	800	305
500	760	1650	1820	135	1515	1650	-	550	1200	1370	580	1000	920	280	1120	280	830	315
750	910	1675	1910	170	1540	1400	-	630	1280	1400	630	1080	960	330	1170	330	900	350
1000	1010	1965	2210	190	1810	1670	-	660	1300	1670	650	1100	980	350	1190	350	920	370
1500	1250	2280	2605	345	-	1630	165	1060	1830	1830	785	785	1310	485	1325	485	1215	600
2000	1350	2600	2930	345	-	1965	155	1165	2150	2150	780	815	1495	480	1320	490	1325	605
3000	1450	2870	3220	400	-	2120	180	1375	2410	2410	850	875	1625	550	1390	550	1540	665

R*: reversal quote

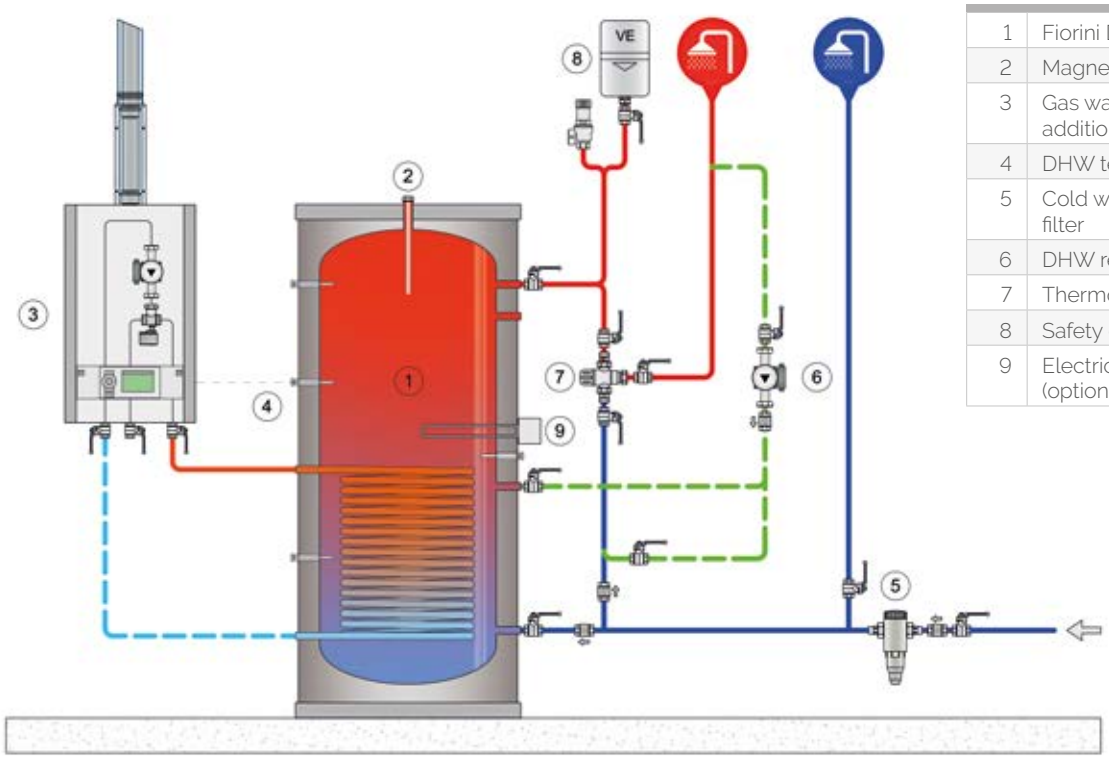
Q1**: Height from inspection hole center to the ground

Technical information for SMART 1 series

		DHW production TiACS = 10°C						Exchanger	
Capacity	Ti	TuACS= 45°C		TuACS = 60°C		Ta = 50°C TuACS = 45°C	Ta = 60°C TuACS = 45°C	Surface area	Nominal flow
l	°C	l/h (a)	kW (b)	l/h (c)	kW (d)	l/10 min. (e)	l/10 min. (f)	m²	mc/h
200	70	810	33	395	23	347	390	1	3
	80	1081	44	602	35	392	435		
	90	1253	51	739	43	421	464		
300	70	810	33	395	23	454	517	1,3	3
	80	1081	44	602	35	499	563		
	90	1253	51	739	43	527	591		
500	70	1179	48	584	34	728	834	1,8	3
	80	1572	64	877	51	793	900		
	90	1842	75	1083	63	838	945		
750	70	1400	57	688	40	1031	1190	2,5	3
	80	1867	76	1032	60	1109	1268		
	90	2186	89	1290	75	1162	1321		
1000	70	1572	64	774	45	1325	1538	2,7	3
	80	2113	86	1169	68	1415	1628		
	90	2481	101	1462	85	1477	1690		
1500	70	2137	87	1049	61	1951	2271	3,7	4
	80	2874	117	1599	93	2074	2393		
	90	3390	138	1995	116	2160	2479		
2000	70	2506	102	1221	71	2545	2970	4,3	4
	80	3341	136	1840	107	2684	3110		
	90	3931	160	2287	133	2782	3208		
3000	70	3022	123	1479	86	3695	4333	5,2	4
	80	4029	164	2236	130	3862	4501		
	90	4717	192	2786	162	3977	4615		

- a continuous DHW flow with TuACS= 45°C
- b power of the exchanger with TuACS=45°C
- c continuous DHW flow with TuACS= 60°C
- d power of the exchanger with TuACS=60°C
- e amount of DHW at 45°C in the first 20 min. with a storage temperature of 50°C
- f amount of DHW at 45°C in the first 10 min. with a storage temperature of 60°C
- Exchanger capacity: 6,40 L/m²

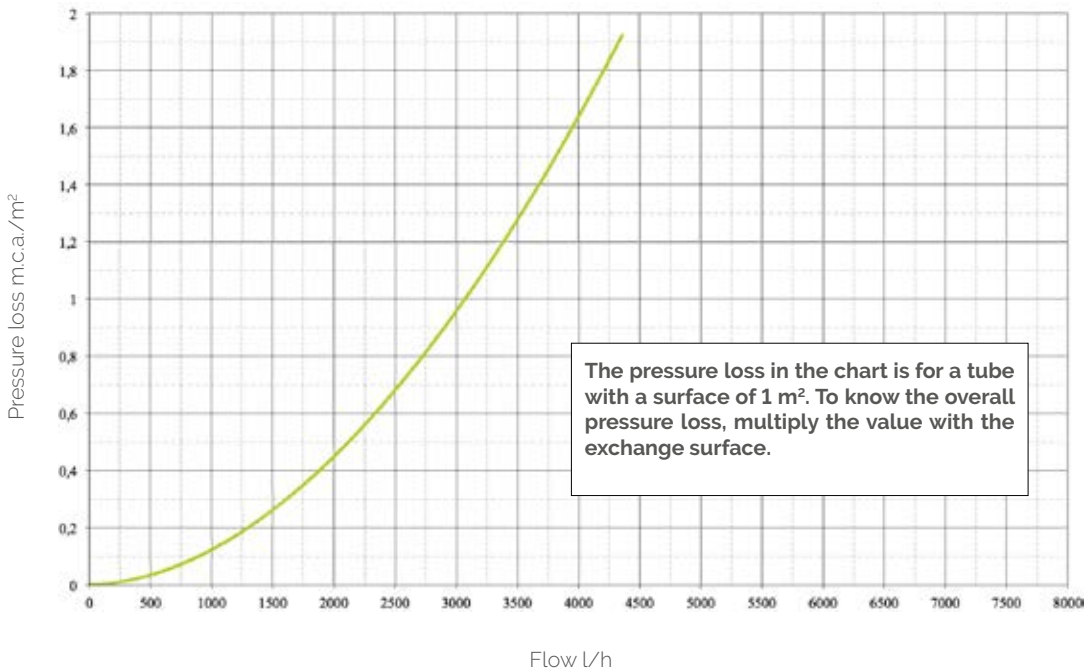
Technical information for SMART 1 series



Legend

1	Fiorini DHW storage tank
2	Magnesium anode
3	Gas water heater / additional source
4	DHW temperature probe
5	Cold water bacteriostatic filter
6	DHW recirculation pump
7	Thermostatic DHW mixer
8	Safety group
9	Electrical resistor (optional)

Pressure loss fixed heat exchanger



Glass lined water heater with two fixed internal heat exchangers – SMART 2

The Smart 2 range consists of Water heaters for the production of domestic hot water with a double fixed heat exchanger, available in several capacities (from 200 up to 3000 litres). They are equipped with different type of insulation (see chart below), external PVC coating, a magnesium anode for protection against galvanic currents, an inspection flange for easy access during the control and maintenance phase.



Material: S 235 JR carbon steel

Treatment for internal protection: The boilers with a capacity of up to 1000 l are treated with food grade inorganic glass lining in accordance with DIN 4753.3, those with a capacity of 1500 to 3000 l with Bluetech.

WRAS APPROVED MATERIAL

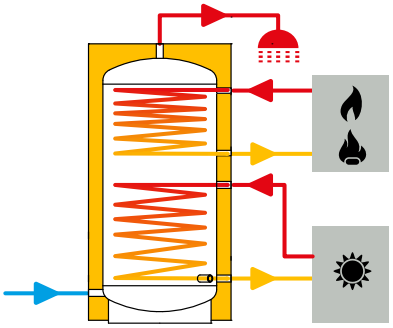
TESTED

Insulation

Capacity (l)	Type
from 200 to 1000	Highly rigid polyurethane foam
from 1500	Polyester Fiber

Operational limits

	Storage		Primary circuit	
Capacity (l)	temp. max.	pressure max.	temp. max.	pressure max.
from 200 to 1000	95°C	10 bar	110°C	12 bar
from 1500 to 3000	80°C	6 bar	110°C	12 bar



Supplied accessories: Safety valve and thermometer for sizes up to 1000 l, magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296

Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm	Vertical Packaging Weight kg
200	819060323X		B	60x60x150	84
300	819060324X		B	70x70x155	119
500	819060325X		C	80x80x180	158
750	819060326X		C	95x95x185	229
1000	819060327X		C	110x110x210	270
1500	819080003X		C	130x130x245	320
2000	819080004X		C	140x140x275	417
3000	819080006X			150x150x300	504

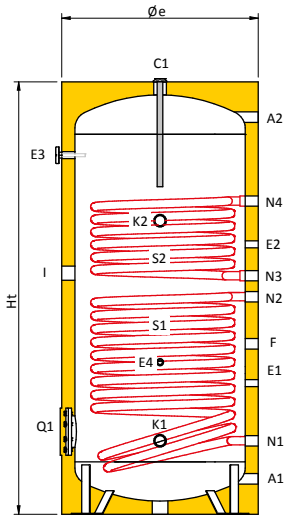


Integration with AQUAFAST

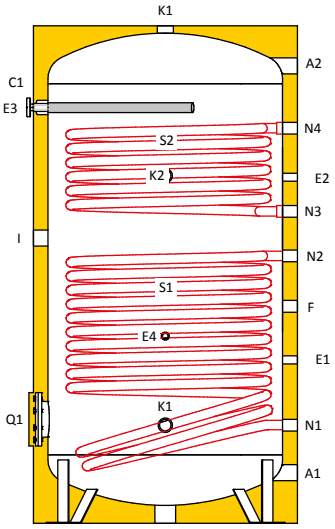
See page 212

Glass lined water heater with two fixed internal heat exchangers – SMART 2

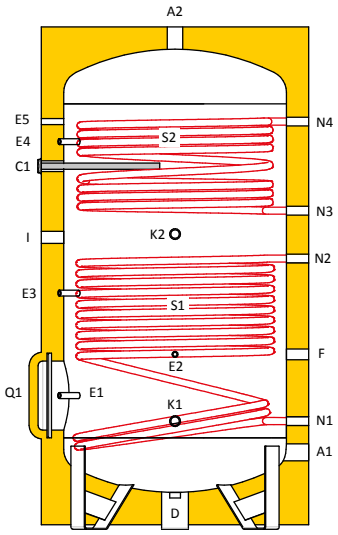
200 ≤ cap. ≤ 500



750 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 3.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
E5	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
N3	Upper exchanger outlet
N4	Upper exchanger inlet
Q1	Inspection hole
S1	Lower exchanger
S2	Upper exchanger

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	E4 inch	E5 inch	F inch	I inch	K1 inch	K2 inch	N1 inch	N2 inch	N3 inch	N4 inch	Q1 (Øext/Øint) mm
200	1"	1"	1"1/4	-	1/2"	1/2"	1/2"	-	-	1"	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø180/Ø120
300	1"	1"	1"1/4	-	1/2"	1/2"	1/2"	-	-	1"	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø180/Ø120
500	1"	1"	1"1/4	-	1/2"	1/2"	1/2"	-	-	1"	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø180/Ø120
750	1"1/2	1"1/2	1"1/4	-	1/2"	1/2"	1/2"	-	-	1"	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø180/Ø120
1000	1"1/2	1"1/2	1"1/4	-	1/2"	1/2"	1/2"	-	-	1"	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø180/Ø120
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø380/Ø300
2000	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø380/Ø300
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø380/Ø300

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	A2 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	E4 mm	E5 mm	F mm	I mm	K1 mm	K2 mm	N1 mm	N2 mm	N3 mm	N4 mm	Q1 mm
200	560	1325	1440	120	1220	1325	-	390	910	1115	-	-	520	755	230	1070	230	710	810	1045	280
300	660	1380	1530	130	1260	1380	-	415	985	1145	-	-	545	770	245	1085	245	720	820	1100	295
500	760	1650	1820	135	1515	1650	-	500	1030	1350	-	-	650	860	280	1120	280	810	910	1195	320
750	910	1675	1910	170	1540	1400	-	550	1165	1400	-	-	730	980	330	1170	330	900	1050	1330	350
1000	1010	1965	2210	190	1810	1670	-	570	1235	1670	-	-	730	970	350	1190	350	920	1070	1400	380
1500	1250	2280	2605	345	2280	1630	165	600	785	1060	1740	1830	785	1310	485	1325	485	1215	1430	1830	600
2000	1350	2600	2930	345	2600	1965	155	605	780	1165	2065	2150	815	1495	480	1320	480	1325	1690	2150	605
3000	1450	2870	3220	400	2870	2120	180	665	850	1375	2225	2410	875	1625	550	1390	550	1540	1680	2410	665

R*: reversal quota

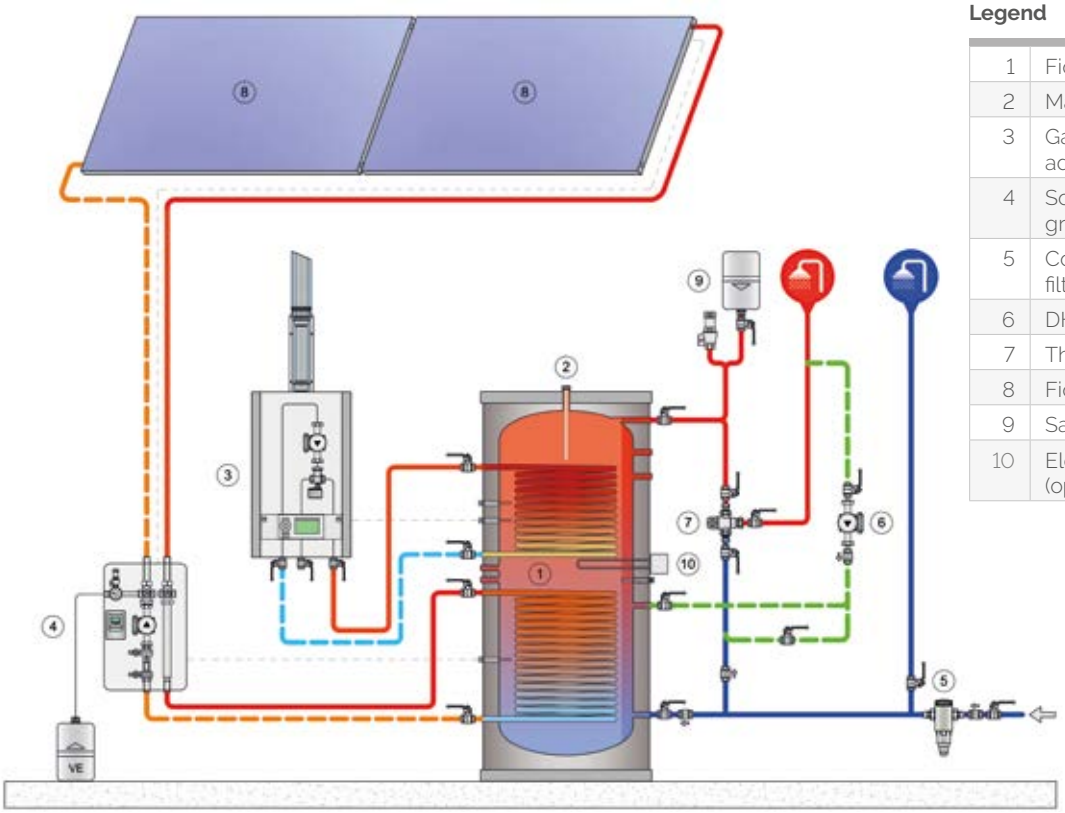
Q1**: Height from inspection hole center to the ground

Technical information for SMART 2 series

		DHW production TiACS = 10°C						Upper Exchanger	Lower Exchanger	
Capacity	Ti	TuACS= 45°C		TuACS = 60°C		Ta = 50°C TuACS = 45°C	Ta = 60°C TuACS = 45°C	Surface area	Surface area	Nominal flow
l	°C	l/h (a)	kW (b)	l/h (c)	kW (d)	l/10 min. (e)	l/10 min. (f)	m²	m²	mc/h
200	70	417	17	206	12	282	324	0,5	1	3
	80	540	22	292	17	302	345			
	90	614	25	361	21	315	357			
300	70	638	26	309	18	425	489	0,8	1,3	3
	80	860	35	481	28	462	526			
	90	1007	41	584	34	486	550			
500	70	638	26	309	18	638	744	1	1,8	3
	80	860	35	481	28	675	781			
	90	1007	41	584	34	699	806			
750	70	688	28	344	20	912	1072	1,2	2,5	3
	80	933	38	516	30	953	1112			
	90	1081	44	636	37	978	1137			
1000	70	884	36	430	25	1211	1423	1,5	2,7	3
	80	1179	48	653	38	1260	1473			
	90	1376	56	808	47	1293	1505			
1500	70	1326	54	653	38	1816	2135	2,3	3,7	6,0
	80	1793	73	980	57	1894	2213			
	90	2113	86	1238	72	1947	2267			
2000	70	1744	71	860	50	2418	2843	3	4,3	8,0
	80	2334	95	1290	75	2516	2942			
	90	2727	111	1599	93	2582	3007			
3000	70	2211	90	1083	63	3559	4198	3,8	5,2	8,0
	80	2948	120	1634	95	3682	4321			
	90	3440	140	2029	118	3764	4403			

- a continuous DHW flow with TuACS= 45°C
- b power of the exchanger with TuACS=45°C
- c continuous DHW flow with TuACS= 60°C
- d power of the exchanger with TuACS=60°C
- e amount of DHW at 45°C in the first 10 min. with a storage temperature of 50°C
- f amount of DHW at 45°C in the first 10 min. with a storage temperature of 60°C
- Exchanger capacity: 6,40 L/m²

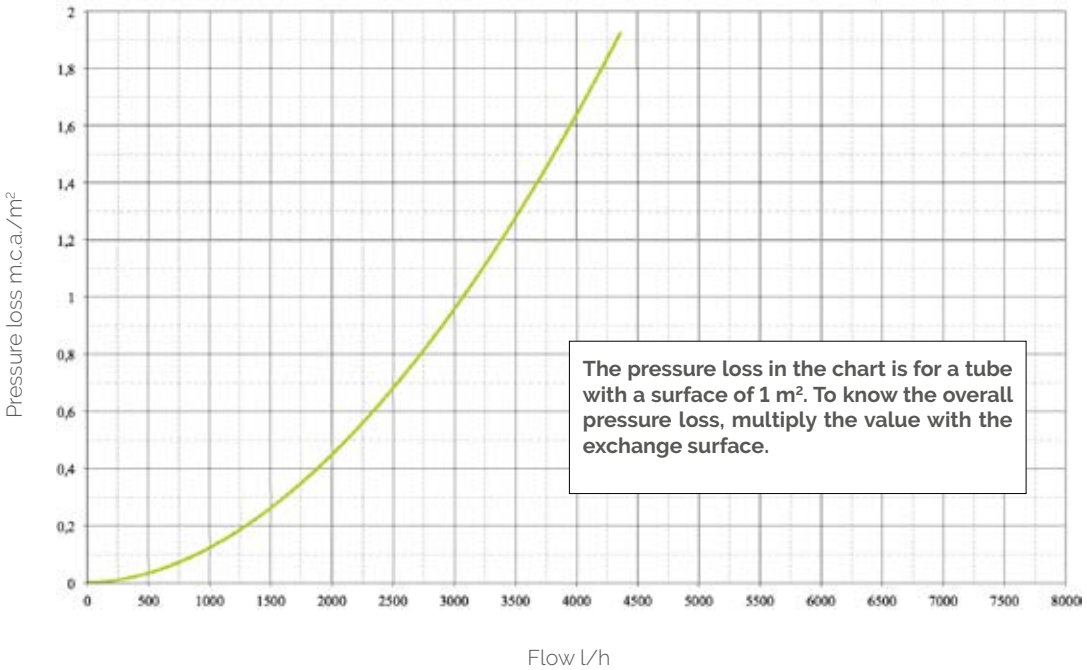
Technical information for SMART 2 series



Legend

1	Fiorini DHW storage tank
2	Magnesium anode
3	Gas water heater / additional source
4	Solar thermal return group
5	Cold water bacteriostatic filter
6	DHW recirculation pump
7	Thermostatic DHW mixer
8	Fiorini solar panel
9	Safety group
10	Electrical resistor (optional)

Pressure loss fixed heat exchanger



Glass lined water heater with a fixed heat exchanger for Heat pumps – SMART HP

The HP range consists of water heaters for the production of domestic hot water with a double spiral single heat exchanger with a large surface, to be connected with a heat pump. The heaters are available in several capacities, from 300 to 1000 l and are insulated with very thick high density rigid polyurethane, externally covered with PVC and provided with a magnesium anode to protect against galvanic currents and an inspection flange for easy access during the inspection and maintenance phase.



Material: S 235 JR carbon steel

Treatment for internal protection: Food grade inorganic glass lining according to DIN 4753.3

WRAS APPROVED MATERIAL

TESTED

Insulation

Capacity (l)	Type
from 300 to 1000	Highly rigid polyurethane foam

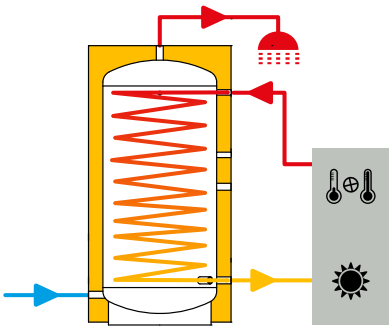
Operational limits

	Storage		Primary circuit	
Cap. l	max. temperature	max. pressure	max. temperature	max. pressure
from 300 to 1000	95°C	10 bar	110°C	12 bar

Supplied accessories: Safety valve and thermometer, magnesium sacrificial anode.

Standard accessories: see pag 294

Capacity l				Vertical Packaging	
	Code	Price	Energy label	Dimensions cm	Weight kg
300	819060303X		B	70X70X155	128
500	819060304X		C	80x80x180	179
750	819060305X		C	95x95x185	252
1000	819060306X		C	105X105X210	291



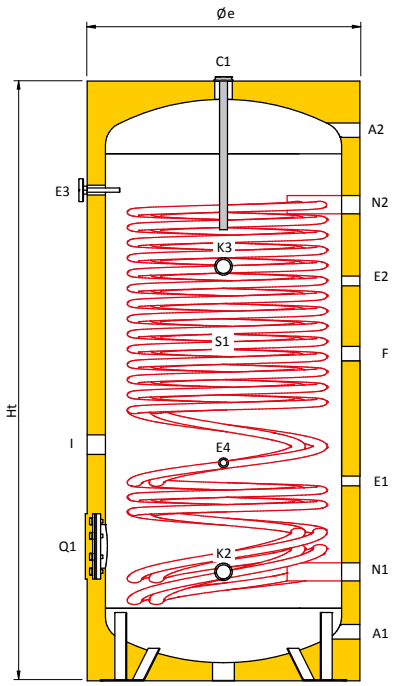


Integration with AQUAFAST

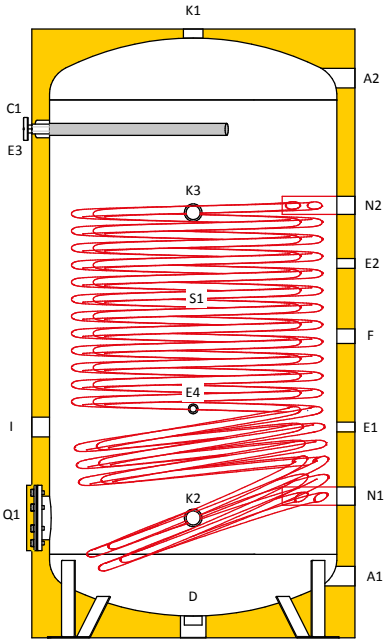
See page 212

Glass lined water heater with a fixed heat exchanger for Heat pumps – SMART HP

300 ≤ cap. ≤ 500



750 ≤ cap. ≤ 1.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
Q1	Inspection hole
S1	Lower exchanger

Couplings chart

Cap. l	A1 inch	A2 inch	C1 mm	E1 inch	E2 mm	E3 inch	E4 mm	F inch	I inch	K1 inch	K2 mm	K3 inch	N1 inch	N2 inch	Q1 (Øext/Øint) mm
300	1"	1"	1"1/4	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	-	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
500	1"	1"	1"1/4	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	-	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
750	1"1/2	1"1/2	1"1/4	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
1000	1"1/2	1"1/2	1"1/4	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	A2 mm	C1 mm	E1 mm	E2 mm	E3 mm	E4 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	N1 mm	N2 mm	Q1** mm
300	660	1380	1530	130	1260	1380	375	965	1145	545	795	545	-	245	1085	245	1145	335
500	760	1650	1820	135	1515	1650	550	1100	1350	600	900	650	-	300	1140	300	1310	370
750	910	1675	1910	170	1540	1400	580	1030	1400	630	830	580	1675	330	1170	390	1190	330
1000	1010	1965	2210	190	1810	1670	580	1000	1670	650	800	590	1965	350	1190	400	1150	350

R*: reversal quota

Q1**: Height from inspection hole center to the ground

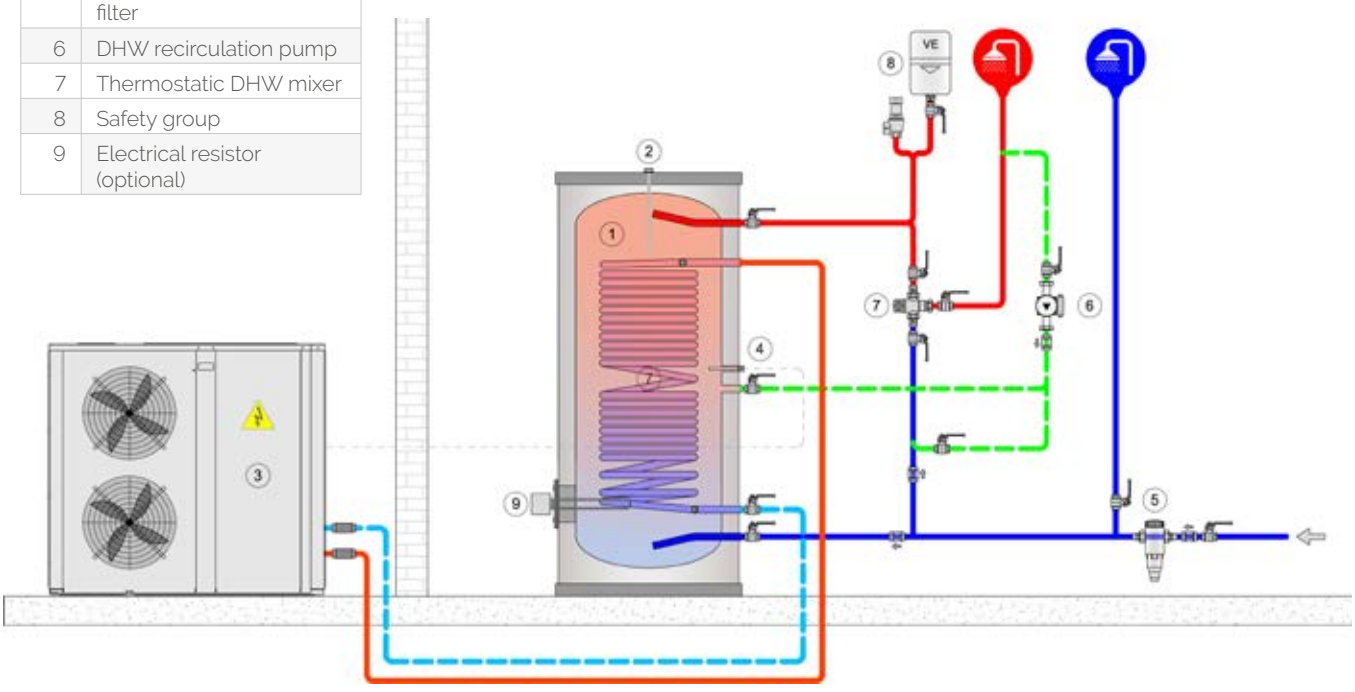
Technical information for SMART HP series

		DHW production TiDHW = 10°C			Exchanger	
Capacity	Ti	TuDHW= 45°C		Ta = 50°C TuDHW = 45°C	Surface area	Nominal flow
l	°C	l/h (a)	kW (b)	l/10 min. (e)	m²	mc/h
300	50	688	28	433	3,65	4,0
	80	2236	91	691		
500	50	958	39	691	5,2	4,0
	80	2432	99	937		
750	50	982	40	961	6	4,0
	80	3390	138	1362		
1000	50	982	40	1227	6	4,0
	80	3390	138	1628		

- a continuous DHW flow with TuDHW= 45°C
- b power of the exchanger with TuACS=45°C
- e amount of DHW at 45°C in the first 10 min. with a storage temperature of 50°C
- Exchanger capacity: 6,40 L/m²

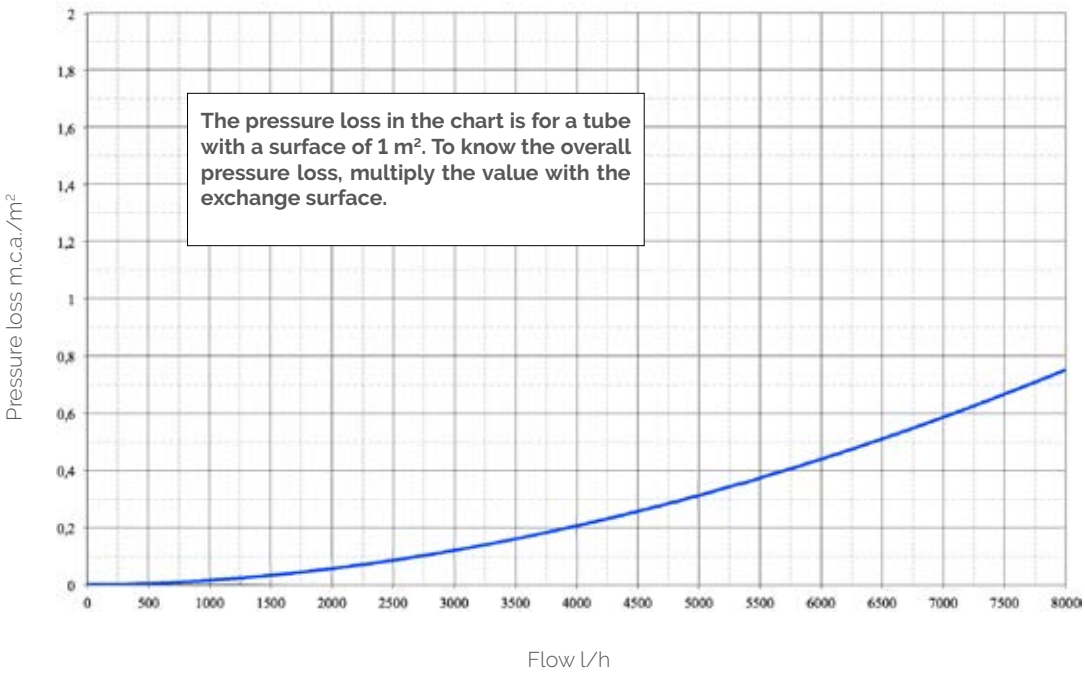
Legend

1	Fiorini DHW storage tank
2	Magnesium anode
3	Heat pump / additional source
4	DHW temperature probe
5	Cold water bacteriostatic filter
6	DHW recirculation pump
7	Thermostatic DHW mixer
8	Safety group
9	Electrical resistor (optional)



Technical information for SMART HP series

Pressure loss fixed heat exchanger



Glass lined water heater with fixed double heat exchanger for Heat pumps – SMART HP 2

The HP 2 range consists of water heaters for the production of domestic hot water with a double fixed heat exchangers, one simple and one with double spiral with a large surface, to be coupled with a heat pump together with additional sources (solar, gas water heater). The heaters are available in the capacities of 300 and 500 l and are insulated with very thick high density rigid polyurethane, externally covered with PVC and provided with a magnesium anode to protect against galvanic currents and an inspection flange for easy access during the inspection and maintenance phase.

Material: S 235 JR carbon steel

Treatment for internal protection: Food grade inorganic glass lining according to DIN 4753.3

WRAS APPROVED MATERIAL

Insulation

Capacity (l)	Type
from 300 to 1000	Highly rigid polyurethane foam

Operational limits

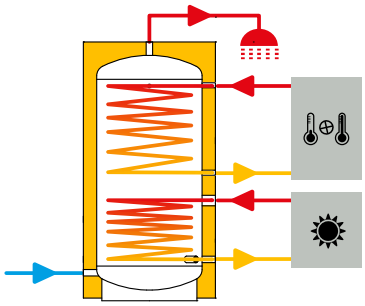
Cap. l	Storage		Primary circuit	
	max. temperature	max. pressure	max. temperature	max. pressure
from 300 to 1000	95°C	10 bar	110°C	12 bar

Supplied accessories: Safety valve and thermometer, magnesium sacrificial anode.

Standard accessories: see pag 294



TESTED



Capacity l	Code	Price	Energy label	Vertical Packaging	
				Dimensions cm	Weight kg
300	819060307X		B	70X70X155	129
500	819060308X		C	80X80X180	182
750	819060309X		C	95X95X185	264
1000	819060310X		C	105X105X210	314

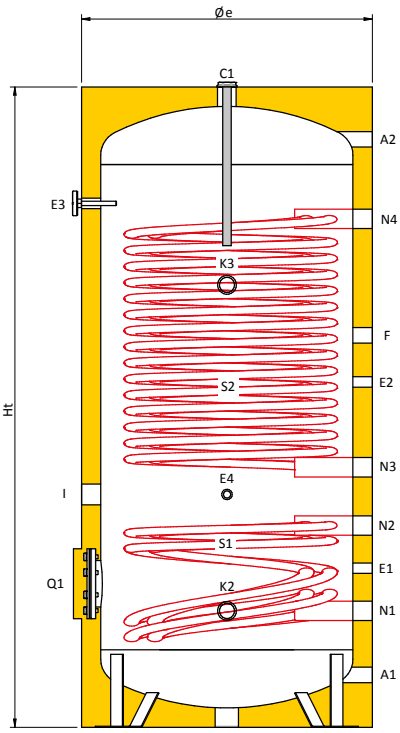


Integration with AQUAFAST

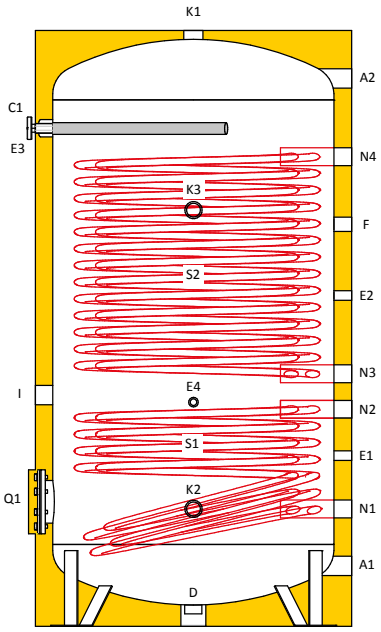
See page 212

Glass lined water heater with fixed double heat exchanger for Heat pumps – SMART HP 2

300 ≤ cap. ≤ 500



750 ≤ cap. ≤ 1.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
N3	Upper exchanger outlet
N4	Upper exchanger inlet
Q1	Inspection hole
S1	Lower exchanger
S2	Upper exchanger

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	E1 inch	E2 inch	E3 inch	E4 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	N1 inch	N2 inch	N3 inch	N4 inch	Q1 (Øext/Øint) mm
300	1"	1"	1"1/4	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	-	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
500	1"	1"	1"1/4	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	-	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
750	1"1/2	1"1/2	1"1/4	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
1000	1"1/2	1"1/2	1"1/4	1/2"	1/2"	1/2"	1/2"	1"	1"1/2	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	A2 mm	C1 mm	E1 mm	E2 mm	E3 mm	E4 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	N1 mm	N2 mm	N3 mm	N4 mm	Q1** mm
300	660	1380	1530	130	1260	1380	355	945	1145	545	795	530	-	245	1085	245	465	595	1145	345
500	760	1650	1820	135	1515	1650	410	890	1350	600	1010	600	-	300	1140	300	520	670	1310	370
750	910	1675	1910	170	1540	1400	480	930	1400	650	1130	650	1675	330	1170	330	610	710	1320	350
1000	1010	1965	2210	190	1810	1670	500	945	1670	630	1150	680	1965	350	1190	350	635	735	1390	360

R*: reversal quota

Q1**: Height from inspection hole center to the ground

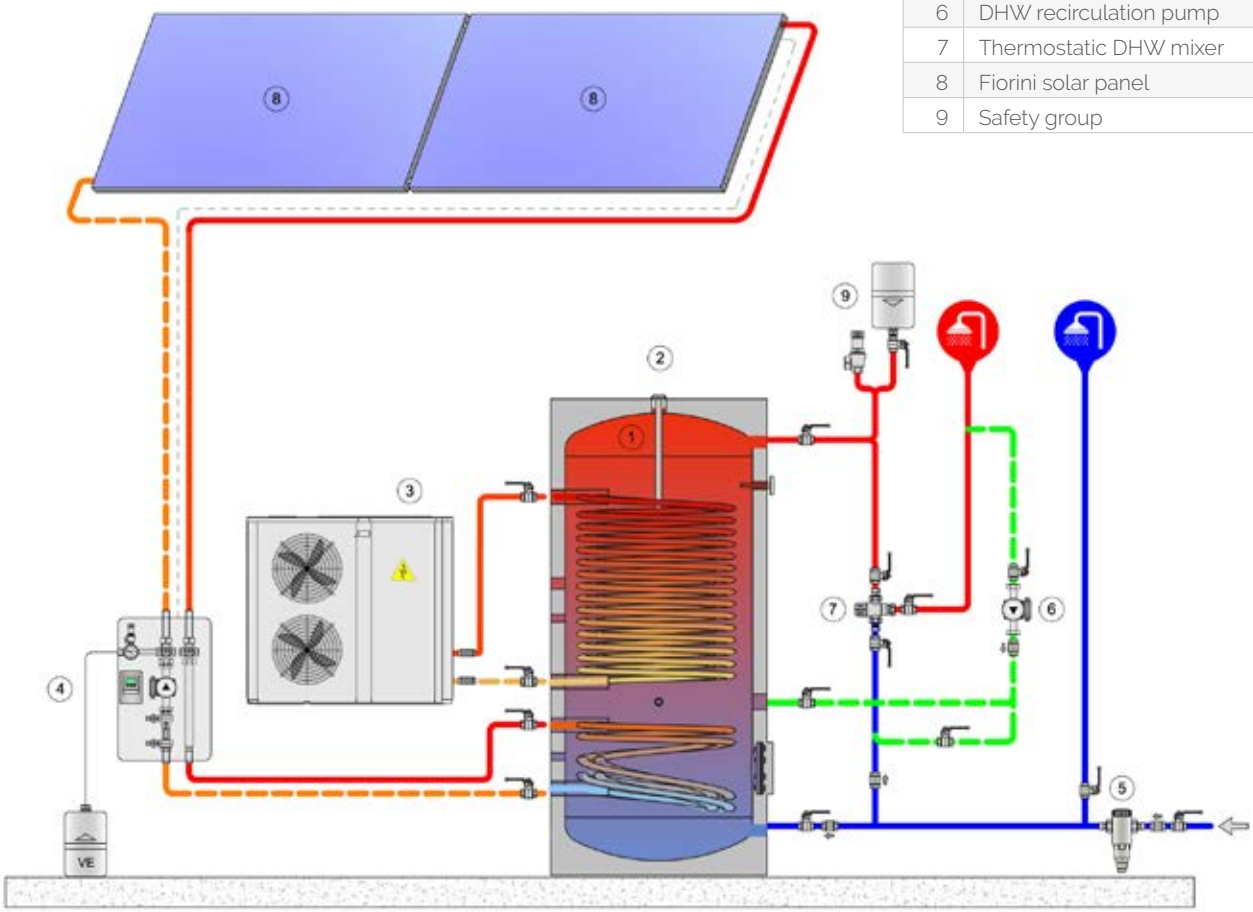
Technical information for SMART HP 2 series

		DHW production TiACS = 10°C			Exchanger		
Capacity	Ti	TuACS= 45°C		Ta = 50°C TuACS = 45°C	Upper exchanger surface	Lower exchanger surface	Nominal flow
l	°C	l/h (a)	kW (b)	l/10 min. (e)	m²	m²	mc/h
300	50	553	22,5	435	2,7	0,98	1,6
	80	1501	61,1	593			2,6
500	50	860	35	715	4,1	1,1	1,5
	80	2334	95	960			4,1
750	50	1380	52	920	4,9	2,2	3
	80	2800	115	1170			4,1
1000	50	1580	62	1080	5,5	2,5	3
	80	3000	135	1310			4,1

- a continuous DHW flow with TuDHW= 45°C
- e amount of DHW at 45°C in the first 10 min. with a storage temperature of 50°C
- Exchanger capacity: 6,40 L/m²

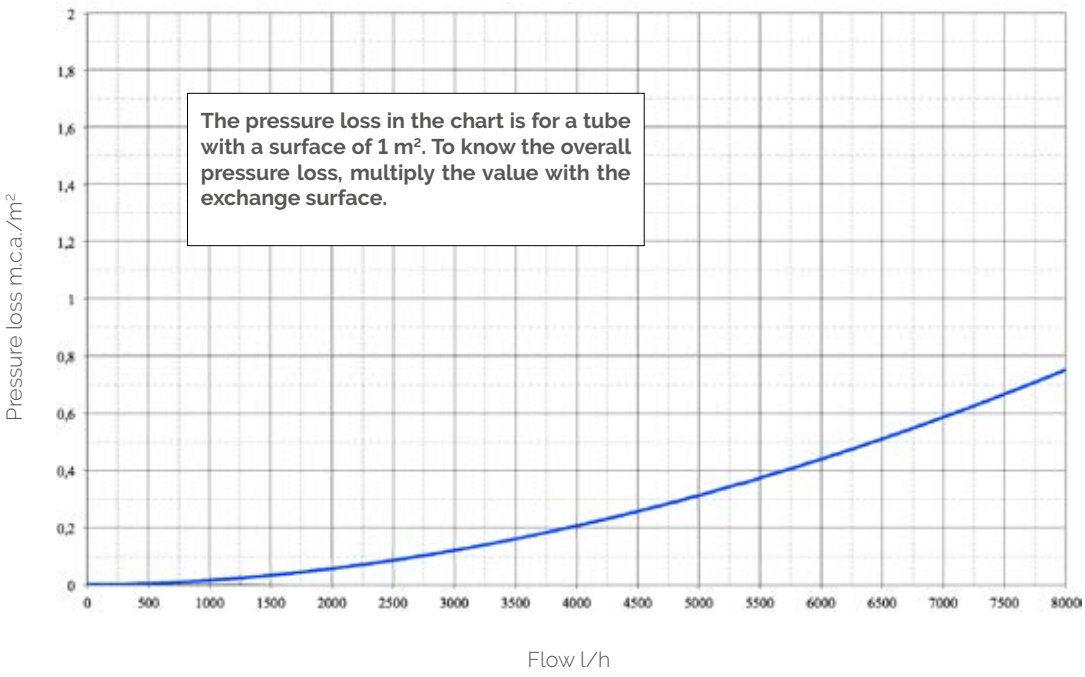
Key

1	Fiorini DHW storage tank
2	Magnesium anode
3	Heat pump
4	Solar thermal return group
5	Cold water bacteriostatic filter
6	DHW recirculation pump
7	Thermostatic DHW mixer
8	Fiorini solar panel
9	Safety group



Technical information for SMART HP 2 series

Pressure loss fixed heat exchanger



Stainless steel water heater with fixed heat exchanger - SMART INOX 1

The SMART INOX 1 range consists of water heaters for the production of sanitary hot water with a single fixed heat exchanger. They are available in several capacities, from 200 up to 3000 litres and have different insulation with respect to capacity (see chart below) and coated externally in PVC and equipped with a magnesium anode for the protection against galvanic currents, an inspection flange for the easy access during the inspection and maintenance phase.

Material: AISI 316 stainless steel

Treatment for internal protection: Pickling and passivation



Capacity (l)	Type
from 200 to 3.000	Polyester Fiber

Insulation

Storage		Primary circuit	
max. temperature	max. pressure	max. temperature	max. pressure
95°C	6 bar	110°C	12 bar

Operational limits

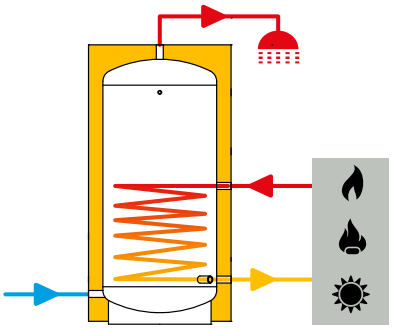
Supplied accessories: Magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296

Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm
200	819040114X		B	70x70x165
300	819040115X		B	80x80x170
500	819040116X		C	90x90x190
750	819040117X		C	100x100x210
1000	819040118X		C	110x110x230
1500	819040119X		C	130x130x240
2000	819040120X		C	150x150x250
2500	819040121X			150x150x275
3000	819040122X			150x150x300

TESTED



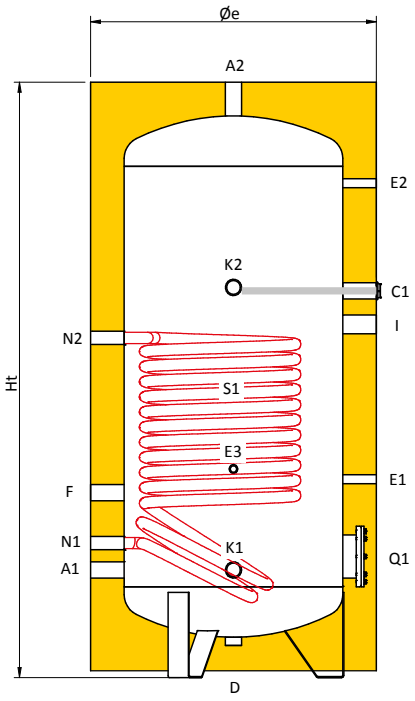


Integration with AQUAFAST

See page 212

Stainless steel water heater with fixed heat exchanger - SMART INOX 1

200 ≤ cap. ≤ 3.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
N1	Exchanger outlet
N2	Exchanger inlet
Q1	Inspection hole
S1	Lower exchanger (see pag. 188)

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	F inch	I inch	K1 inch	K2 inch	N1 inch	N2 inch	Q1 (Øext/Øint) mm
200	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	3/4"	3/4"	Ø180/Ø120
300	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	3/4"	3/4"	Ø180/Ø120
500	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"	1"	Ø180/Ø120
750	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
1000	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
1500	1"1/2	1"1/2	1"1/4	1"1/2	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
2000	1"1/2	1"1/2	1"1/4	2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
2500	1"1/2	1"1/2	1"1/4	2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
3000	1"1/2	1"1/2	1"1/4	2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	N1 mm	N2 mm	K1 mm	K2 mm	Q1 mm
200	650	1410	1535	265	880	120	535	1165	565	495	800	345	775	265	1105	305
300	750	1490	1650	305	920	120	575	1205	605	535	840	385	815	305	1145	345
500	850	1770	1945	320	1150	120	590	1470	620	550	1050	400	1010	320	1160	360
750	990	1810	2045	340	1090	120	610	1490	640	570	1010	420	970	340	1180	380
1000	1050	2100	2350	390	1320	120	630	1760	690	620	1220	470	1180	390	1230	400
1500	1250	2235	2560	480	1400	165	840	1850	780	710	1300	560	1210	480	1320	560
2000	1450	2315	2735	515	1455	155	875	1885	815	765	1355	615	1275	515	1355	595
2500	1400	2615	2970	515	1555	155	875	2155	815	765	1455	615	1385	515	1355	595
3000	1450	2850	3200	545	1715	180	905	2385	845	805	1615	655	1480	545	1385	625

R*: reversal quota

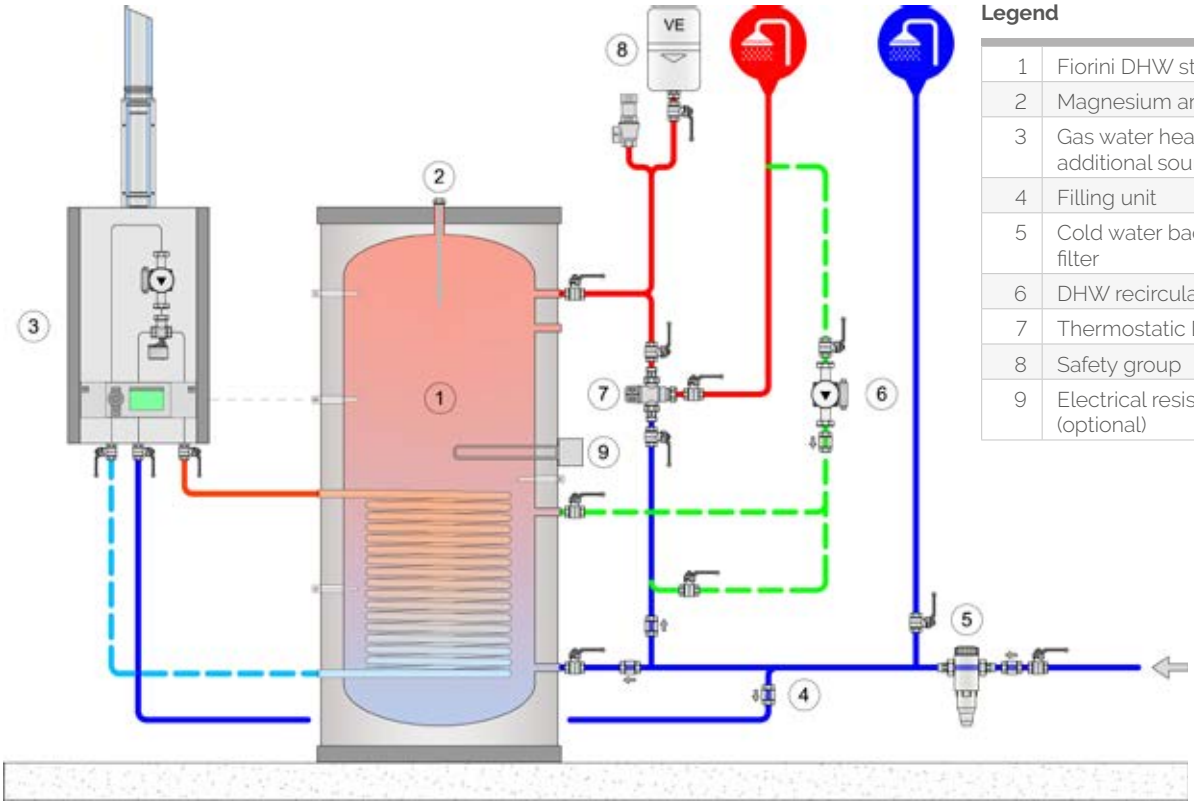
Q**: Height from inspection hole center to the ground

Technical information for SMART INOX 1 series

		DHW production TiDHW = 10°C						Exchanger	
Capacity	Ti	TuDHW= 45°C		TuDHW = 60°C		Ta = 50°C TuDHW = 45°C	Ta = 60°C TuDHW = 45°C	Surface area	Nominal flow
l	°C	l/h (a)	kW (b)	l/h (c)	kW (d)	l/10 min. (e)	l/10 min. (f)	m²	mc/h
200	70	565	23	275	16	306	349	0,8	3,0
	80	761	31	430	25	339	382		
	90	884	36	516	30	360	402		
300	70	737	30	361	21	441	505	1,2	3,0
	80	982	40	550	32	482	546		
	90	1154	47	670	39	511	575		
500	70	1105	45	550	32	716	822	1,8	3,0
	80	1474	60	825	48	777	883		
	90	1744	71	1014	59	822	928		
800	70	1400	57	688	40	1084	1254	2,7	4,0
	80	1867	76	1032	60	1162	1332		
	90	2186	89	1290	75	1215	1385		
1000	70	1842	75	911	53	1370	1583	3,5	6,0
	80	2481	101	1376	80	1477	1690		
	90	2924	119	1720	100	1551	1763		
1500	70	2309	94	1135	66	1980	2299	4,0	6,0
	80	3120	127	1720	100	2115	2434		
	90	3661	149	2150	125	2205	2525		
2000	70	2801	114	1376	80	2594	3020	4,8	8,0
	80	3734	152	2064	120	2749	3175		
	90	4373	178	2562	149	2856	3282		
2500	70	3292	134	1634	95	3208	3740	5,6	8,0
	80	4398	179	2442	142	3392	3924		
	90	5160	210	3027	176	3519	4051		
3000	70	3734	152	1823	106	3813	4452	6,4	8,0
	80	4963	202	2752	160	4018	4656		
	90	5823	237	3440	200	4161	4800		

- a continuous DHW flow with TuDHW= 45°C
- b exchanger power with TuDHW=45°C
- c continuous DHW flow with TuDHW= 60°C
- d exchanger power with TuDHW=60°C
- e amount of DHW at 45°C in the first 10 min. with a storage temperature of 50°C
- f amount of DHW at 45°C in the first 10 min. with a storage temperature of 60°C
- Exchanger capacity: 6,40 L/m²

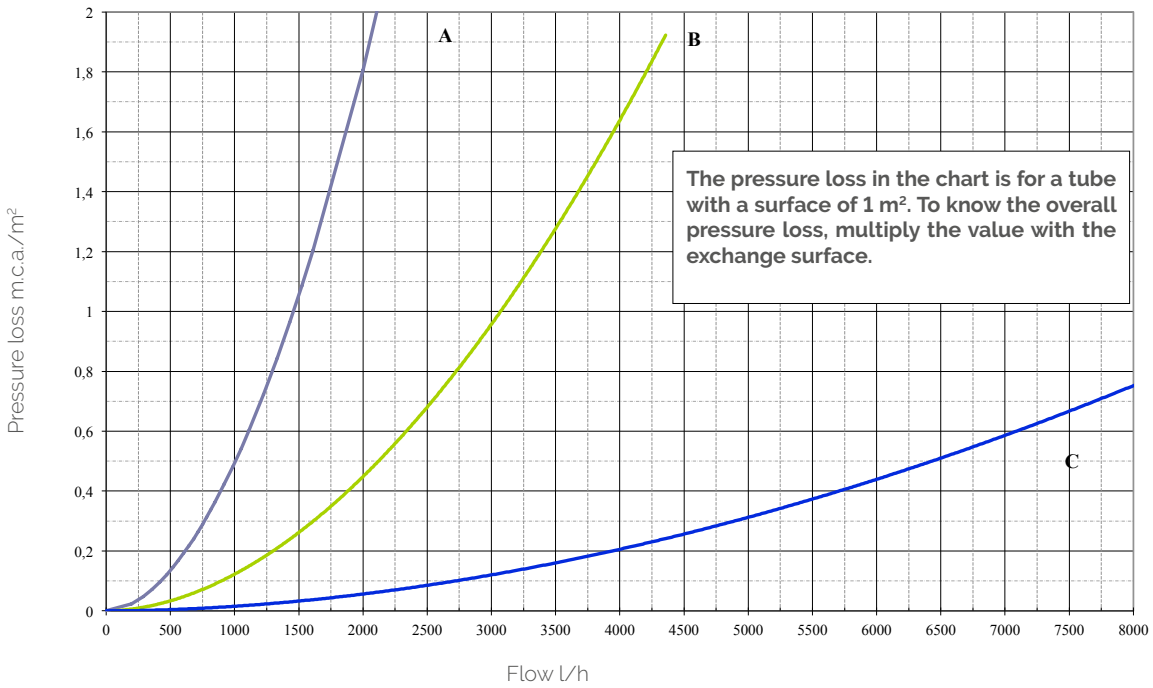
Technical information for SMART INOX 1 series



Legend

1	Fiorini DHW storage tank
2	Magnesium anode
3	Gas water heater / additional source
4	Filling unit
5	Cold water bacteriostatic filter
6	DHW recirculation pump
7	Thermostatic DHW mixer
8	Safety group
9	Electrical resistor (optional)

Pressure loss fixed heat exchanger



A) 200 l tank B) 300 - 500 l tank C) 800 - 3000 l tank

Stainless steel water heater with double fixed heat exchanger - SMART INOX 2

The SMART INOX 2 range consists of water heaters for the production of domestic hot water with a double fixed heat exchanger. They are available in several capacities, from 200 up to 3000 litres and have different insulation with respect to capacity (see chart below) and coated externally in PVC and equipped with a magnesium anode for the protection against galvanic currents, an inspection flange for the easy access during the inspection and maintenance phase.

Material: AISI 316 stainless steel

Treatment for internal protection: Pickling and passivation



TESTED

Insulation

Capacity (l)	Type
from 200 to 3.000	Polyester Fiber

Operational limits

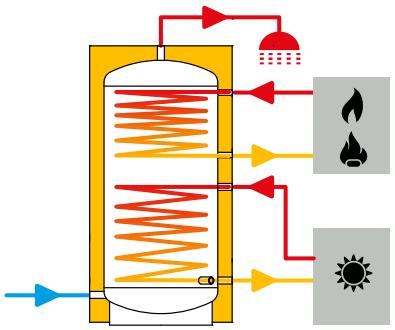
Storage		Primary circuit	
max. temperature	max. pressure	max. temperature	max. pressure
95°C	6 bar	110°C	12 bar

Supplied accessories: Magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296

Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm
200	819040123X		B	70x70x160
300	819040124X		B	80x80x165
500	819040125X		C	90x90x195
750	819040126X		C	100x100x200
1000	819040127X		C	110x110x225
1500	819040128X		C	130x130x240
2000	819040129X		C	150x150x245
2500	819040130X			150x150x275
3000	819040131X			150x150x300



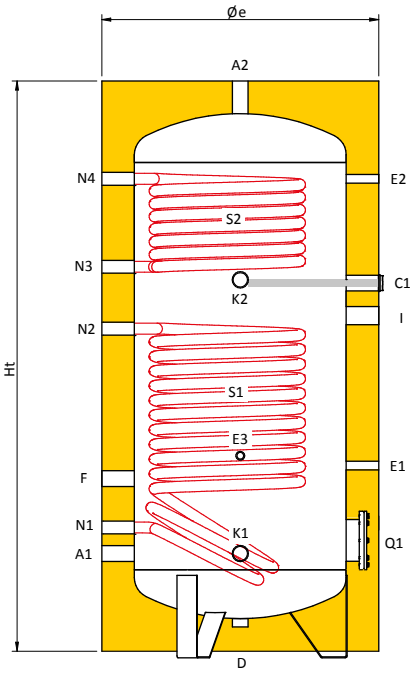


Integration with AQUAFAST

See page 212

Stainless steel water heater with double fixed heat exchanger - SMART INOX 2

200 ≤ cap. ≤ 3.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
D	Drain
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
N3	Upper exchanger outlet
N4	Upper exchanger inlet
Q1	Inspection hole
S1	Lower exchanger
S2	Upper exchanger

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	F inch	I inch	K1 inch	K2 inch	N1 inch	N2 inch	N3 inch	N4 inch	Q1 (Øext/Øint) mm
200	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	3/4"	3/4"	3/4"	3/4"	Ø180/Ø120
300	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	3/4"	3/4"	3/4"	3/4"	Ø180/Ø120
500	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"	1"	1"	1"	Ø180/Ø120
750	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
1000	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø180/Ø120
1500	1"1/2	1"1/2	1"1/4	1"1/2	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
2000	1"1/2	1"1/2	1"1/4	2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
2500	1"1/2	1"1/2	1"1/4	2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220
3000	1"1/2	1"1/2	1"1/4	2"	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø220

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	K1 mm	K2 mm	N1 mm	N2 mm	N3 mm	N4 mm	Q1** mm
200	650	1410	1535	265	880	120	535	1165	565	495	800	265	1105	920	1165	265	1105	305
300	750	1490	1650	305	920	120	575	1205	605	535	840	305	1145	995	1205	305	1145	345
500	850	1770	1945	320	1150	120	590	1470	620	550	1050	320	1160	1200	1470	320	1160	360
750	990	1810	2045	340	1090	120	610	1490	640	570	1010	340	1180	1160	1490	340	1180	380
1000	1050	2100	2350	390	1320	120	630	1760	690	620	1220	390	1230	1430	1760	390	1230	400
1500	1250	2235	2560	480	1400	165	840	1850	780	710	1300	480	1320	1490	1820	480	1320	560
2000	1450	2315	2735	515	1455	155	875	1885	815	765	1355	515	1355	1585	1855	515	1355	595
2500	1400	2615	2970	515	1555	155	875	2155	815	765	1455	515	1355	1830	2155	515	1355	595
3000	1450	2850	3200	545	1715	180	905	2385	845	805	1615	655	1385	2040	2365	545	1385	625

R*: reversal quota

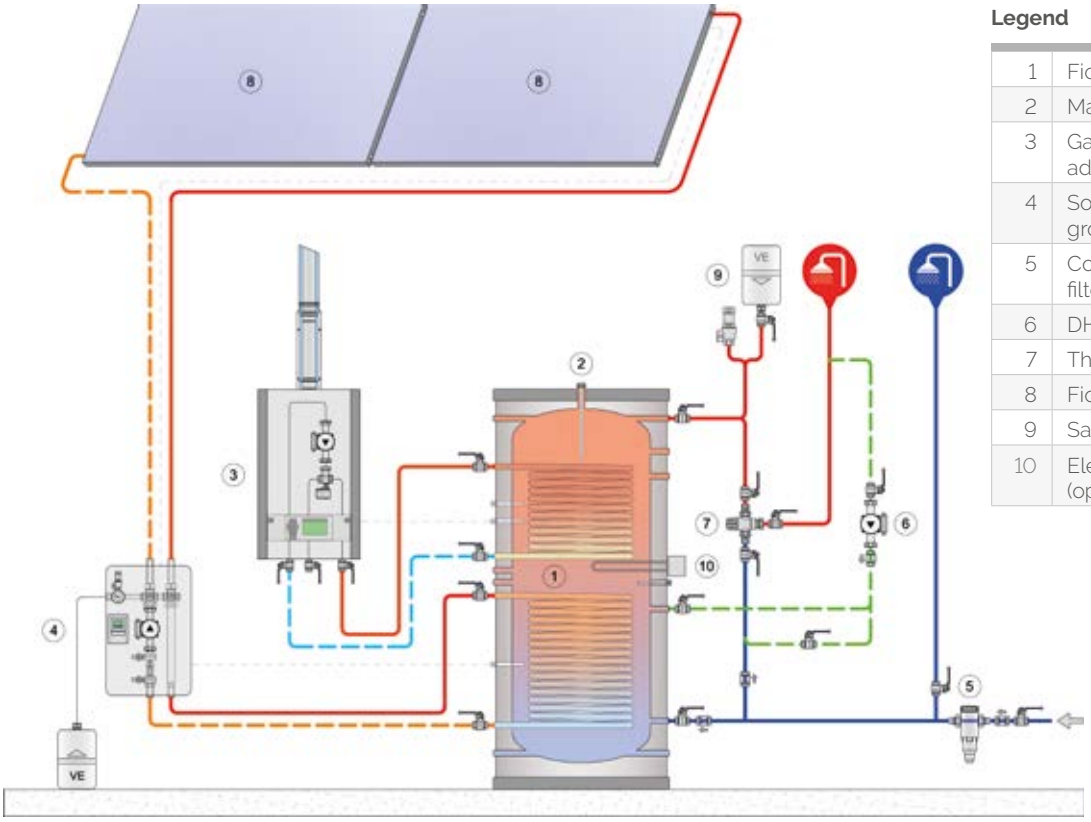
Q1**: Height from inspection hole center to the ground

Technical information for SMART INOX 2 series

		DHW production TiDHW = 10°C (upper exchanger)						Upper exchanger	Lower exchanger	
Capacity	Ti	TuDHW= 45°C		TuDHW = 60°C		Ta = 50°C TuDHW = 45°C	Ta = 60°C TuDHW = 45°C	Surface area	Surface area	Nominal flow
l	°C	l/h (a)	kW (b)	l/h (c)	kW (d)	l/10 min. (e)	l/10 min. (f)	m²	m²	mc/h
200	70	270	11	137	8	257	300	0,5	0,8	3,0
	80	368	15	206	12	274	316			
	90	442	18	258	15	286	328			
300	70	344	14	154	9	376	440	0,7	1,2	3,0
	80	442	18	258	15	392	456			
	90	516	21	309	18	405	468			
500	70	589	24	292	17	630	736	1,0	1,8	3,0
	80	786	32	430	25	662	769			
	90	909	37	533	31	683	789			
800	70	688	28	344	20	965	1135	1,6	2,7	4,0
	80	933	38	516	30	1006	1176			
	90	1081	44	636	37	1031	1201			
1000	70	688	28	344	20	1178	1391	1,8	3,5	6,0
	80	933	38	516	30	1219	1432			
	90	1081	44	636	37	1243	1456			
1500	70	909	37	447	26	1747	2066	1,6	4,0	6,0
	80	1228	50	688	40	1800	2119			
	90	1449	59	860	50	1837	2156			
2000	70	1154	47	567	33	2319	2745	2,0	4,8	8,0
	80	1548	63	860	50	2385	2811			
	90	1818	74	1066	62	2430	2856			
2500	70	1400	57	688	40	2892	3424	2,4	5,6	8,0
	80	1867	76	1049	61	2970	3502			
	90	2211	90	1290	75	3028	3559			
3000	70	1400	57	688	40	3424	4063	2,4	6,4	8,0
	80	1867	76	1032	60	3502	4140			
	90	2186	89	1290	75	3555	4194			

- a continuous DHW flow with TuDHW= 45°C
- b exchanger power with TuDHW=45°C
- c continuous DHW flow with TuDHW= 60°C
- d exchanger power with TuDHW=60°C
- e amount of DHW at 45°C in the first 10 min. with a storage temperature of 50°C
- f amount of DHW at 45°C in the first 10 min. with a storage temperature of 60°C
- Exchanger capacity: 6,40 L/m²

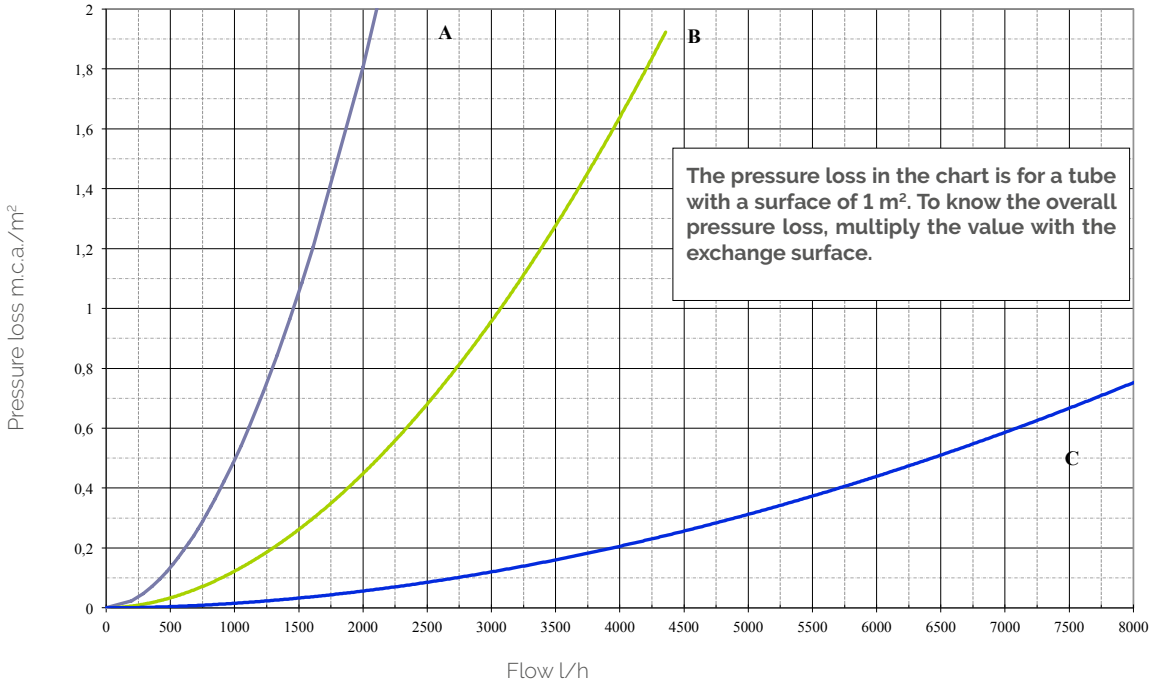
Technical information for SMART INOX 2 series



Legend

1	Fiorini DHW storage tank
2	Magnesium anode
3	Gas water heater / additional source
4	Solar thermal return group
5	Cold water bacteriostatic filter
6	DHW recirculation pump
7	Thermostatic DHW mixer
8	Fiorini solar panel
9	Safety group
10	Electrical resistor (optional)

Pressure loss fixed heat exchanger



A) 200 l tank B) 300 - 500 l tank C) 800 - 3000 l tank

Water heater with fixed heat exchanger
SMART UP

SMART UP is the fixed-coil water heater with a compact design, specifically created for under-boiler installation. Thanks to its dimensions, it easily fits into narrow niches, as all hydraulic connections are located on the top, offering convenient access during installation. The use of efficient rigid polyurethane foam insulation ensures long-term water temperature retention and economical operation. The porcelain-glass-coated boiler body provides accurate protection of the internal surface, while the replaceable magnesium anode offers additional corrosion protection. The external casing is made of white-painted metal sheet.



TESTED

Material: S 235 JR carbon steel
Treatment for internal protection: glass lining

Insulation

Capacity (l)	Type
from 100 to 200	Highly rigid polyurethane foam

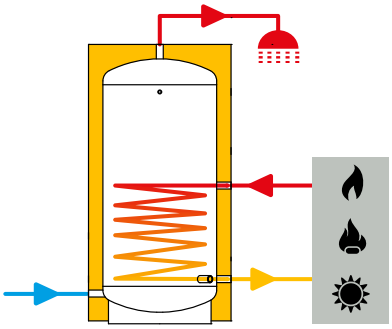
Operational limits

Storage		Primary circuit	
max. temperature	max. pressure	max. temperature	max. pressure
95°C	6 bar	110°C	12 bar

Supplied accessories: Sacrificial Magnesium Anode and Thermometer.

Standard accessories: see page 294

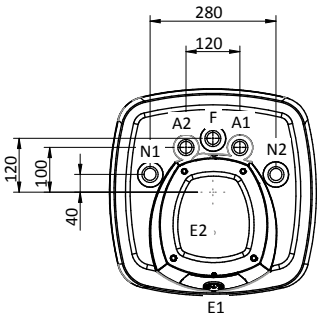
Special executions: see page 296

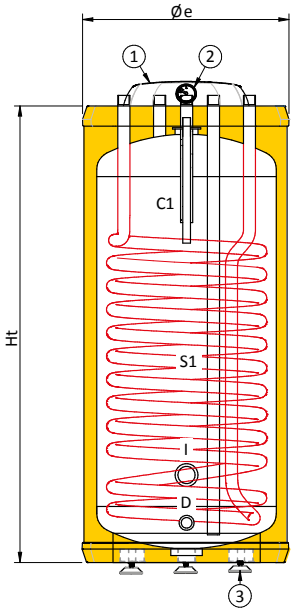


Capacity l	Code	Price	Energy label	Net weight kg
100	819060192X		C	57
120	819060193X		C	62
140	819060190X		C	67
200	819060191X		C	85

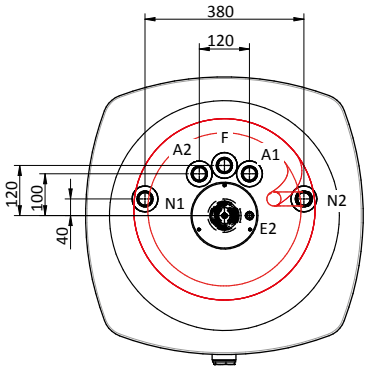
Water heater with fixed heat exchanger
SMART UP

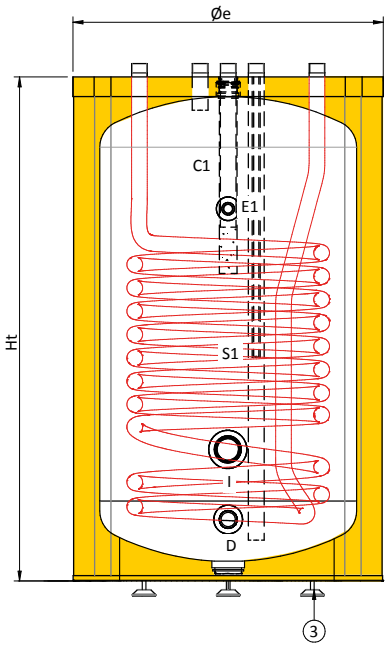
100 ≤ cap. ≤ 140





cap. = 200





Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Thermometer
E2	Probe
F	Recirculation
I	Electrical resistor
N1	Exchanger outlet
N2	Exchanger inlet
S1	Exchanger
1	Flange Cover Cap
2	Thermometer
3	Adjustable feet

Couplings chart

Cap. l	A1 inches	A2 inches	C1 inches	D inches	E1 inches	E2 inches	F inches	I inches	N1 inches	N2 inches
100	3/4"	3/4"	1"1/4	3/4"	3/8"	3/8"	3/4"	1"1/4	3/4"	3/4"
120	3/4"	3/4"	1"1/4	3/4"	3/8"	3/8"	3/4"	1"1/4	3/4"	3/4"
140	3/4"	3/4"	1"1/4	3/4"	3/8"	3/8"	3/4"	1"1/4	3/4"	3/4"
200	1"	1"	1"1/4	1"	1/2"	3/8"	1"	1"1/2	1"	1"

Size chart

Cap. l	Øe mm	Ht mm	D mm	I mm	S1 m²
200	455	1030	90	195	1,2
300	455	1130	90	195	1,2
500	455	1280	90	195	1,2
750	650	1130	130	280	1,6

Water heater with tube heat exchanger – BOIL

The BOIL range consists of water heaters with a tube heat exchanger for the production of domestic hot water. There are several capacities, from 200 up to 5000 litres. They are equipped, depending on the capacity, with insulation (see chart below), an external cover in PVC and a magnesium anode for the protection against galvanic currents.



TESTED

Materials

The boilers are made from high quality materials such as:

- Tank: carbon steel S 235 JR
- Tube heat exchanger: galvanized stainless steel AISI 304
- Exchanger head: galvanized carbon steel S 235 JR

Internal protective treatment

- up to 1000 litres inorganic **glass lining**, according to DIN 4753.3
- from 1500 litres **Bluetech enamelling** with thermosetting resins, suitable for DHW

WRAS APPROVED MATERIAL

Insulation

Capacity (l)	Type
from 200 to 1000	Highly rigid polyurethane foam
from 1500	Polyester Fiber

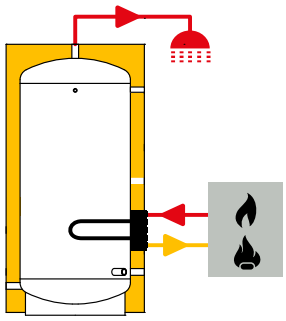
Operational limits

	Storage		Primary circuit	
Capacity l	max. temperature	max. pressure	max. temperature	max. pressure
up to 1000	95°C	10 bar	110°C	12 bar
from 1500	80°C	6 bar	110°C	12 bar

Supplied accessories: Safety valve and thermometer for sizes up to 1000 l, magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296



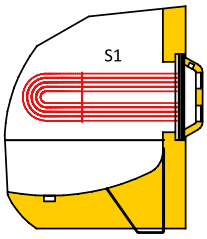
Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm	Vertical Packaging Weight kg
200	818060081X		A	75X75X125	84
300	818060082X		A	75x75x150	96
500	818060083X		B	85x85x180	136
750	818060084X		C	100x100x180	221
1000	818060085X		C	105x105x210	269
1500	818080375X		C	130x130x245	289
2000	818080361X		C	140x140x275	368
2500	818080362X			145x145x280	410
3000	818080363X			150x150x300	459
4000	818080364X			165x165x310	638
5000	818080365X			185x185x315	738



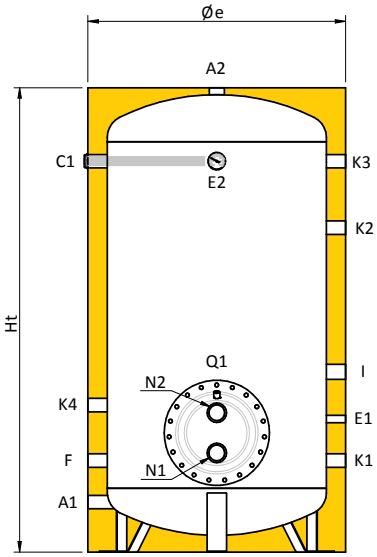
Integration with AQUAFAST

See page 212

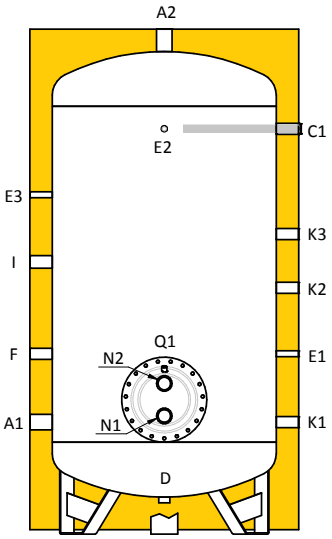
Water heater
with tube heat exchanger – BOIL

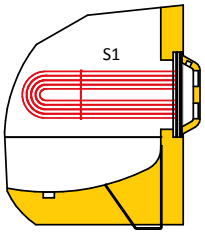


200 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000





Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
C2	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
Q1	Inspection hole
S1	Lower exchanger

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	E3 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	N1 inch	N2 inch	Q1 (Øext/Øint) mm
200	1"1/4	1"1/4	1"1/4	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"	1"	Ø300/Ø220
300	1"1/4	1"1/4	1"1/4	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"	1"	Ø300/Ø220
500	1"1/4	1"1/4	1"1/4	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"	1"	Ø300/Ø220
750	1"1/4	1"1/4	1"1/4	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	2"	2"	Ø380/Ø300
1000	1"1/4	1"1/4	1"1/4	-	1/2"	1/2"	-	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	2"	2"	Ø380/Ø300
1500	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	2"	2"	Ø380/Ø300
2000	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	2"	2"	Ø430/Ø350
2500	2"1/2	2"1/2	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	2"	2"	Ø430/Ø350
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	2"	2"	Ø430/Ø350
4000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	2"	2"	Ø430/Ø350
5000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	-	2"	2"	Ø430/Ø350

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	N1 mm	N2 mm	Q1** mm
200	710	1105	1315	150	885	-	295	885	-	295	445	150	595	990	495	285	405	345
300	710	1355	1530	150	1135	-	445	1135	-	295	595	295	795	1135	495	295	415	355
500	810	1635	1825	145	1390	-	460	1390	-	310	610	310	1150	1390	510	310	430	370
750	950	1675	1925	180	1410	-	480	1410	-	330	650	330	1170	1410	530	358	503	430
1000	1010	1965	2210	200	1680	-	500	1680	-	350	670	350	1190	1680	550	378	523	450
1500	1250	2280	2600	500	1810	165	805	1810	1515	805	1215	500	1100	1340	-	5287	673	600
2000	1350	2600	2930	505	2115	155	805	2115	1805	805	1505	505	1105	1345	-	525	715	620
2500	1400	2655	3000	565	2150	175	865	2150	1850	850	1550	565	1165	1405	-	585	775	680
3000	1450	2870	3215	575	2350	180	800	2350	2050	850	1750	575	1050	1415	-	595	785	690
4000	1600	2940	3350	600	2380	160	900	2380	2080	870	1780	600	1200	1440	-	620	810	715
5000	1800	2980	3480	610	2385	140	910	2385	2085	885	1785	610	1210	1450	-	630	820	725

R*: reversal quota

Q1**: Height from inspection hole center to the ground

Stainless steel water heater with tube heat exchanger - BOIL INOX

The BOIL INOX range consists of water heaters with tube heat exchanger for the production of domestic hot water. They are available in several capacities, from 200 up to 5000 litres and equipped with Polyester Fiber insulation, external cover in PVC and a magnesium anode for protection against galvanic currents.



TESTED

Materials

The boilers are made from high quality materials such as:

- Tank: AISI 316 stainless steel
- Tube heat exchanger: AISI 316 stainless steel
- Exchanger head: galvanized carbon steel S235 JR

Treatment for internal protection: Pickling and passivation

Insulation

Capacity (l)	Type
from 200 to 5000	Polyester Fiber

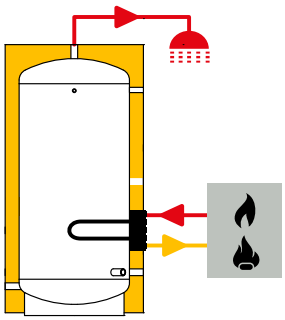
Operational limits

Storage		Primary circuit	
max. temperature	max. pressure	max. temperature	max. pressure
95°C	6 bar	110°C	12 bar

Supplied accessories: Magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296



Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm
200	818040113X		B	70x70x143
300	818040114X		B	80x80x160
500	818040115X		C	90x90x195
750	818040116X		C	100x100x200
1000	818040117X		C	110x110x230
1500	818040118X		C	130x130x240
2000	818040119X		C	150x150x250
2500	818040120X			150x150x280
3000	818040121X			150x150x300
4000	818040122X			170x170x305
5000	818040123X			190x190x310

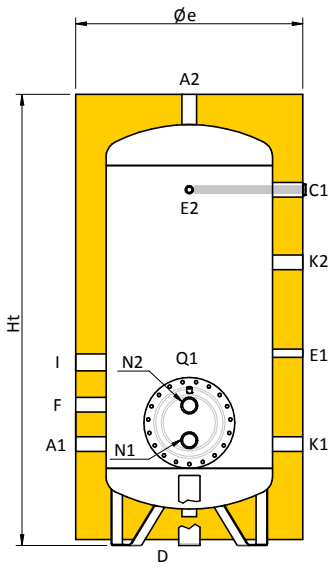


Integration with AQUAFAST

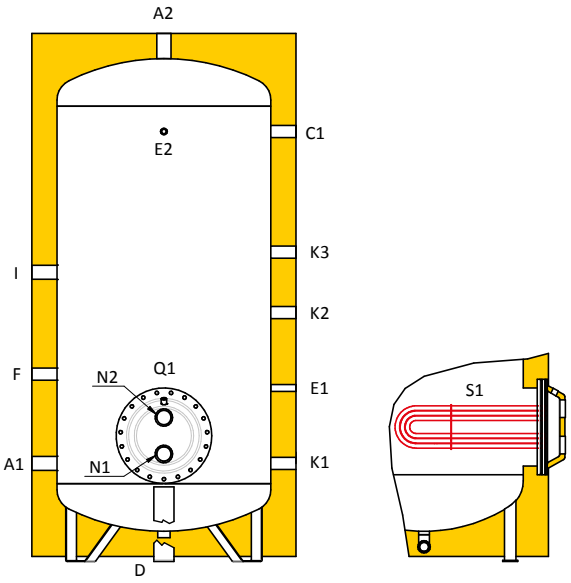
See page 212

Stainless steel water heater with tube heat exchanger - BOIL INOX

200 ≤ cap. ≤ 300



500 ≤ cap. ≤ 5000



Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
F	Recirculation
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
Q1	Inspection hole
S1	Lower exchanger

Couplings chart

Cap. l	A1 inch	A2 inch	C1 inch	D inch	E1 inch	E2 inch	F inch	I inch	K1 inch	K2 inch	K3 inch	N1 inch	N2 inch	Q1 (Øext/Øint) mm
200	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	-	1"	1"	Ø300/Ø220
300	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	-	1"	1"	Ø300/Ø220
500	1"1/4	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"	1"	Ø300/Ø220
750	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	2"	2"	Ø380/Ø300
1000	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	2"	2"	Ø380/Ø300
1500	1"1/2	1"1/2	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	2"	2"	Ø380/Ø300
2000	2"	2"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	2"	2"	Ø430/Ø350
2500	2"1/2	2"1/2	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	2"	2"	Ø430/Ø350
3000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	2"	2"	Ø430/Ø350
4000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	2"	2"	Ø430/Ø350
5000	3"	3"	1"1/4	1"1/4	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	2"	2"	Ø430/Ø350

Size chart

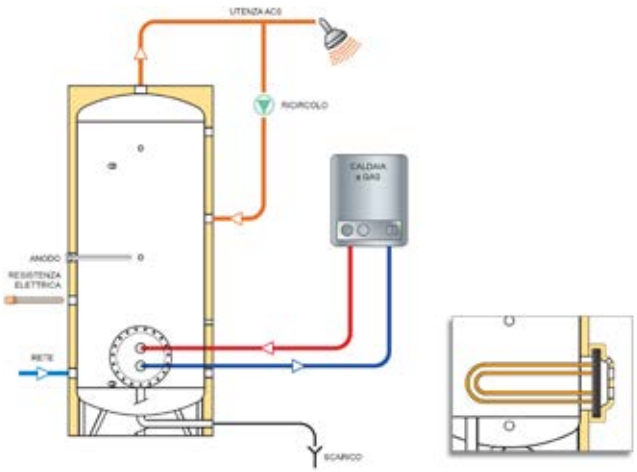
Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	E1 mm	E2 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	N1 mm	N2 mm	Q1** mm
200	650	1410	1535	295	1135	595	1135	425	540	295	915	-	305	425	365
300	750	1490	1650	335	1175	635	1175	465	605	335	935	-	345	465	405
500	850	1770	1945	350	1420	650	1420	650	935	350	950	1190	360	480	420
750	990	1810	2045	370	1440	670	1440	700	1150	370	990	1210	407,5	552,5	480
1000	1050	2100	2330	390	1710	690	1710	745	1150	390	990	1230	427,5	572,5	500
1500	1250	2235	2555	490	1800	795	1800	795	1205	490	1090	1330	517,5	662,5	590
2000	1450	2315	2725	525	1835	830	1835	830	1240	525	1125	1365	555	745	650
2500	1400	2640	2895	560	2145	860	2145	845	1545	560	1160	1400	575	765	670
3000	1450	2850	3155	565	2340	790	2340	840	1740	565	1040	1405	585	775	680
4000	1600	2920	3295	590	2370	890	2370	860	1770	590	1190	1430	610	800	705
5000	1800	2960	3425	600	2375	900	2375	875	1775	600	1200	1440	620	810	715

R*: reversal quota

Q1**: Height from inspection hole center to the ground

Technical information for BOIL and BOIL INOX series

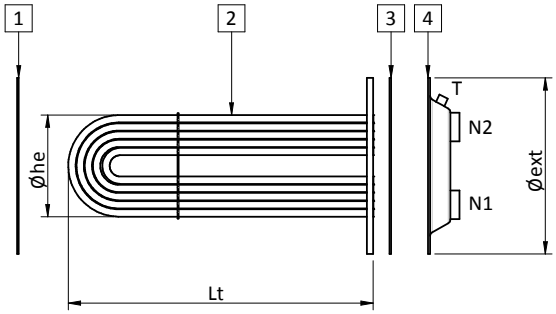
		DHW production TiDHW = 10°C						Exchanger		
Capacity	Ti	TuDHW= 45°C		TuDHW = 60°C		Ta = 50°C TuDHW = 45°C	Ta = 60°C TuDHW = 45°C	Surface area	Capacity	Nominal flow
l	°C	l/h (a)	kW (b)	l/h (c)	kW (d)	l/10 min. (e)	l/10 min. (f)	m²	l	mc/h
200	70	241	9,8	119	4,9	258	315	0,5	2	0,5
	80	300	12,2	169	6,9	266	323			0,6
	90	362	14,7	214	8,7	273	330			0,7
300	70	364	14,8	181	7,4	384	470	0,75	2,8	0,7
	80	453	18,4	252	10,3	395	480			0,8
	90	544	22,1	322	13,1	405	491			1
500	70	482	19,6	240	9,8	620	763	1	3,6	0,9
	80	602	24,5	336	13,7	632	775			1,1
	90	580	23,6	343	14	644	787			1,1
750	70	723	29,4	358	14,6	983	1212	1,5	5,9	1,3
	80	902	36,7	506	20,6	1001	1229			1,6
	90	1084	44,1	642	26,2	1018	1247			1,9
1000	70	964	39,2	480	19,6	1224	1510	2	7,2	1,7
	80	1204	49	675	27,5	1245	1531			2,2
	90	1445	58,8	857	34,9	1266	1552			2,6
1500	70	1445	58,8	728	29,7	1837	2266	3	10,9	2,6
	80	1806	73,5	1020	41,6	1869	2297			3,2
	90	2168	88,2	1292	52,6	1899	2328			3,8
2000	70	1927	78,4	976	39,8	2421	2992	4	14,7	3,4
	80	2408	98	1368	55,7	2454	3026			4,3
	90	2890	117,6	1731	70,5	2488	3059			5,1
2500	70	2408	98	1232	50,2	3014	3728	5	18,5	4,3
	80	3010	122,5	1722	70,1	3053	3767			5,3
	90	3612	147	2178	88,7	3091	3805			6,4
3000	70	2890	117,6	1478	60,2	3577	4434	6	22	5,1
	80	3612	147	2066	84,1	3614	4471			6,4
	90	4335	176,4	2613	106,4	3650	4507			7,6
4000	70	3853	156,8	2020	82,3	4775	5918	8	30,1	6,8
	80	4816	196	2802	114,1	4824	5967			8,5
	90	5780	235,2	3530	143,7	4872	6015			10,2
5000	70	4816	196	2978	121,2	5938	7366	10	36,4	8,5
	80	6020	245	4099	166,9	5990	7419			10,6
	90	7224	294	5138	209,2	6042	7470			12,7



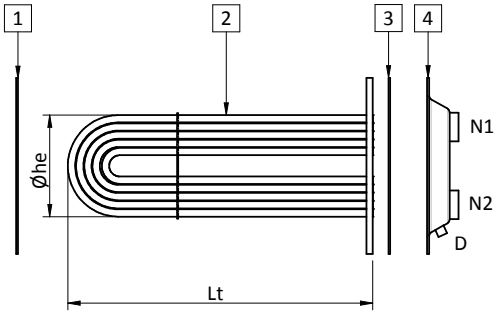
- a continuous DHW flow with TuDHW= 45°C
- b exchanger power with TuDHW=45°C
  c continuous DHW flow with TuDHW= 60°C
- d exchanger power with TuDHW=60°C
- e amount of DHW at 45°C in the first 10 min. with a storage temperature of 50°C
- f amount of DHW at 45°C in the first 10 min. with a storage temperature of 60°C
- Exchanger capacity: 6,40 L/m²

Technical information for BOIL and BOIL INOX series

Water only



Steam only



Couplings legend

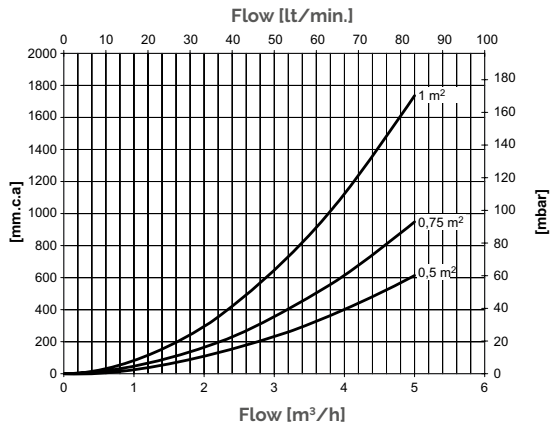
D	Drain
N1	Exchanger inlet/outlet
N2	Exchanger inlet/outlet
T	Vent
1	Gasket without cross-beam
2	Bundle tube heat exchangers
3	Gasket with cross-beam
4	Head

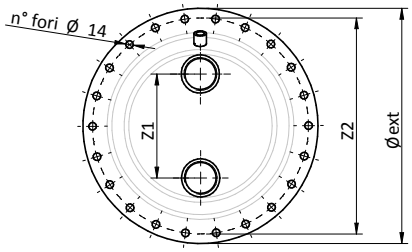
Technical information tube heat exchanger

Surf. m²	Power* kW	Lt mm	Øext mm	Øhe mm	N1 inch	N2 inch	T, D inch	Z1 mm	Z2 mm	n° holes	Vol. l	dp mca
0,5	12,2	460	300	166	1"	1"	3/8"	120	262	16	1,84	0,65
0,75	18,4	445	300	202	1"	1"	3/8"	120	262	16	2,44	0,65
1	24,5	475	300	202	1"	1"	3/8"	120	262	16	3,23	0,7
1,5	36,7	600	380	270	2"	2"	3/8"	145	345	19	5,36	0,75
2	49	600	380	270	2"	2"	3/8"	145	345	19	6,51	0,8
3	73,5	720	380	278	2"	2"	3/8"	145	345	19	9,8	0,9
4	98	750	430	316	2"	2"	3/8"	190	395	22	13,2	1
5	122,5	780	430	324	2"	2"	3/8"	190	395	22	16,68	1,1
6	147	895	430	324	2"	2"	3/8"	190	395	22	19,2	1,2
8	196	1250	430	324	2"	2"	3/8"	190	395	22	27	1,3
10	245	1510	430	324	2"	2"	3/8"	190	395	22	32,7	1,4

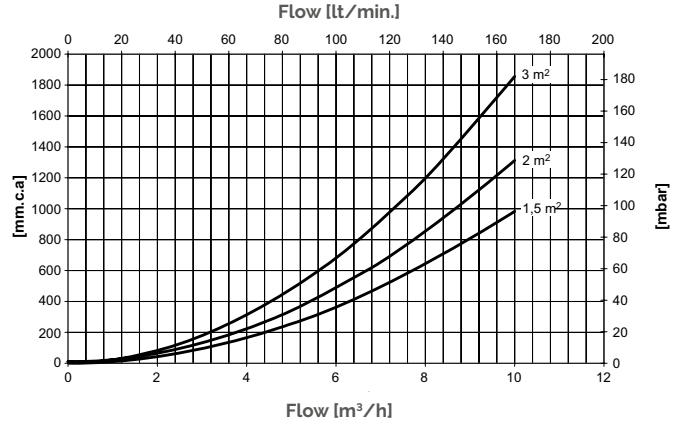
Pressure loss tube heat exchanger

Exchanger surface 0,5 - 1 m²

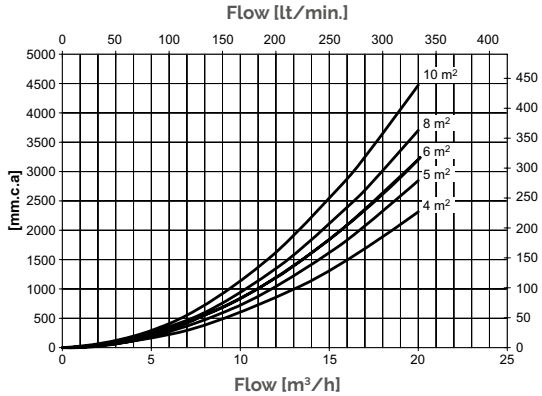




Exchanger surface 1,5 - 3 m²



Exchanger surface 5 - 10 m²



Custom water heaters with 1 or 2 inspection holes and tube heat exchanger

The Boil custom range has been designed to give the user the possibility of composing the system for the production of domestic hot water that best suits the project requirements. The selection concerns the type of accumulation, volume and power of the desired exchanger. This makes it possible to create flexible solutions in terms of storage type, volume and power of the exchanger.

BOIL CUSTOM 1 INSPECTION HOLE

This solution makes it possible to couple the domestic hot water storage with a tube bundle or copper spiral exchanger.

BOIL CUSTOM 2 INSPECTION HOLES

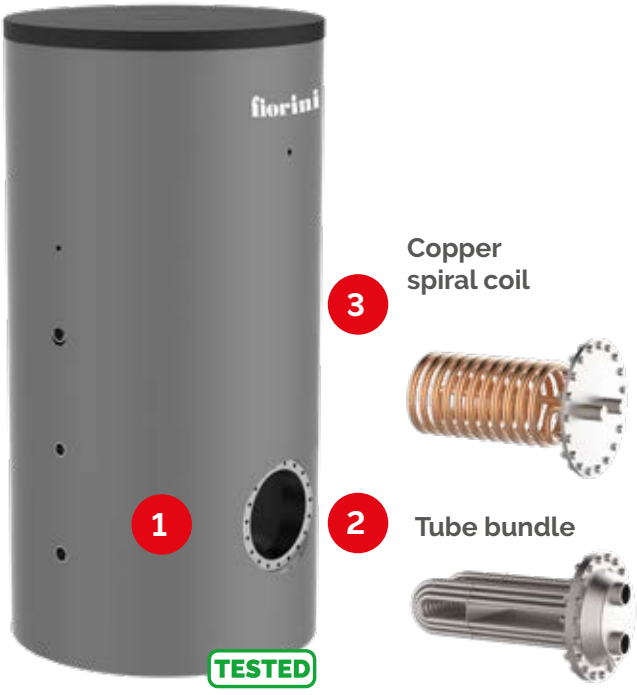
This solution makes it possible to couple each of the two hatches of the sanitary water storage. with a tube bundle or copper spiral heat exchanger. It is also possible to install just one exchanger, allocating the remaining hatch to the inspection function: in this case it is necessary to provide a blank closing plate.

❖ HOW TO CONFIGURE BOIL CUSTOM WITH 1 INSPECTION HOLE

1. Select a FLEXY or FLEXY INOX storage tank with 1 hole from the following page
2. Select the suitable exchanger model based on compatibility with the storage tank and the thermal power to be exchanged:
   - Tube bundle (See page 204)
   - Coiled copper coil (See page 206)

❖ HOW TO CONFIGURE BOIL CUSTOM WITH 2 INSPECTION HOLES

1. Select a FLEXY or FLEXY INOX tank with 2 hatches from the following page
2. For each hatch, select the suitable exchanger model based on compatibility with the storage tank and the thermal power to be exchanged:
   - Tube bundle (See page 204)
   - Coiled copper coil (See page 206)
3. Optionally select the blanking plate from the following page





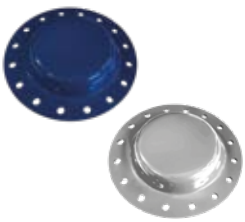
Custom water heaters with 1 or 2 inspection holes and tube heat exchanger



	ENAMELLED FLEXY 1 INSPECTION HOLE (PAG 156)				ST. STEEL FLEXY 1 INSPECTION HOLE (PAG 164)			
Cap. l	Code	Price	Energy label	Inspection hole Øext mm	Code	Price	Energy label	Inspection hole Øext mm
200	817060032X		B	Ø300	817040188X		B	Ø300
300	817060033X		B	Ø300	817040189X		B	Ø300
500	817060034X		C	Ø300	817040190X		C	Ø300
750	817060035X		C	Ø380	817040191X		C	Ø380
1000	817060036X		C	Ø380	817040192X		C	Ø380
1500	817080112X		C	Ø380	817040193X		C	Ø380
2000	817080099X		C	Ø430	817040194X		C	Ø430
2500	817080100X			Ø430	817040195X			Ø430
3000	817080101X			Ø430	817040196X			Ø430
4000	817080102X			Ø430	817040197X			Ø430
5000	817080103X			Ø430	817040198X			Ø430



	ENAMELLED FLEXY 2 INSPECTION HOLES (PAG 164)				ST. STEEL FLEXY 2 INSPECTION HOLES (PAG 166)			
Cap. l	Code	Price	Energy label	Inspection hole Øext mm	Code	Price	Energy label	Inspection hole Øext mm
200	817080134X		B	Ø300	817040199X		B	Ø300
300	817080135X		B	Ø300	817040200X		B	Ø300
500	817080136X		C	Ø300	817040201X		C	Ø300
750	817080191X		C	Ø380	817040202X		C	Ø380
1000	817080138X		C	Ø380	817040203X		C	Ø380
1500	817080139X		C	Ø380	817040204X		C	Ø380
2000	817080140X		C	Ø430	817040205X		C	Ø430
2500	817080141X			Ø430	817040206X			Ø430
3000	817080142X			Ø430	817040207X			Ø430
4000	817080143X			Ø430	817040208X			Ø430
5000	817080144X			Ø430	817040209X			Ø430

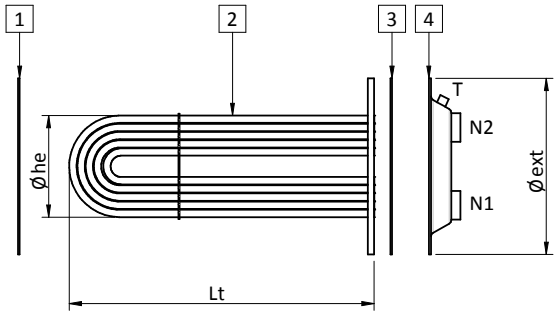


		Enamelled heads		Stainless steel heads	
Diametre mm	Tank capacity	Code	Price	Code	Price
Ø300	from 200 to 500 l	843030018X		843040019X	
Ø380	from 750 to 1500 l	843030019X		843040020X	
Ø430	from 2000 to5000 l	843030020X		843040021X	

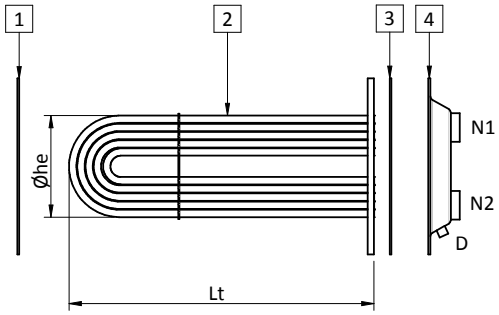
The heads are supplied complete with bolts and gasket.

Bundle tube heat exchanger

Water only

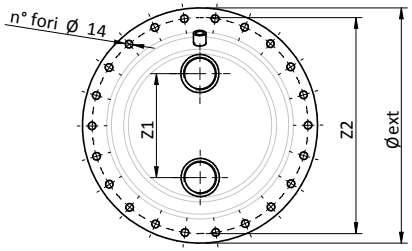


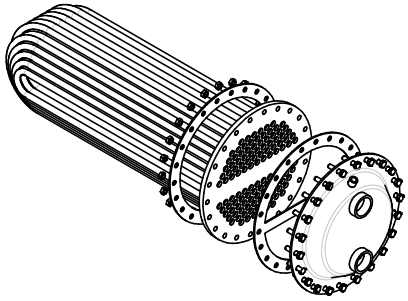
Steam only



Couplings legend

D	Drain
N1	Exchanger inlet/outlet
N2	Exchanger inlet/outlet
T	Vent
1	Gasket without cross-beam
2	Bundle tube heat exchangers
3	Gasket with cross-beam
4	Head





Technical information tube heat exchanger

Surf. m²	Power* kW	Lt mm	Øext mm	Øhe mm	N1 inch	N2 inch	T, D inch	Z1 mm	Z2 mm	n° holes	Vol. l	dp mca
0,5	12,2	460	300	166	1"	1"	3/8"	120	262	16	1,84	0,65
0,75	18,4	445	300	202	1"	1"	3/8"	120	262	16	2,44	0,65
1	24,5	475	300	202	1"	1"	3/8"	120	262	16	3,23	0,7
1,5	36,7	600	380	270	2"	2"	3/8"	145	345	19	5,36	0,75
2	49	600	380	270	2"	2"	3/8"	145	345	19	6,51	0,8
3	73,5	720	380	278	2"	2"	3/8"	145	345	19	9,8	0,9
4	98	750	430	316	2"	2"	3/8"	190	395	22	13,2	1
5	122,5	780	430	324	2"	2"	3/8"	190	395	22	16,68	1,1
6	147	895	430	324	2"	2"	3/8"	190	395	22	19,2	1,2
8	196	1250	430	324	2"	2"	3/8"	190	395	22	27	1,3
10	245	1510	430	324	2"	2"	3/8"	190	395	22	32,7	1,4

Performance calculated with primary 80°C and domestic water 10-45°C

Compatibility between (1) the tube heat exchanger and (4) the storage tank

	Surface m²										
Cap. l	0,5	0,75	1	1,5	2	3	4	5	6	8	10
200	✔	✔	✔								
300	✔	✔	✔								
500	✔	✔	✔								
800				✔	✔	✔					
1000				✔	✔	✔					
1500				✔	✔	✔					
2000							✔	✔	✔		
2500							✔	✔	✔		
3000							✔	✔	✔	✔	
4000							✔	✔	✔	✔	
5000							✔	✔	✔	✔	✔

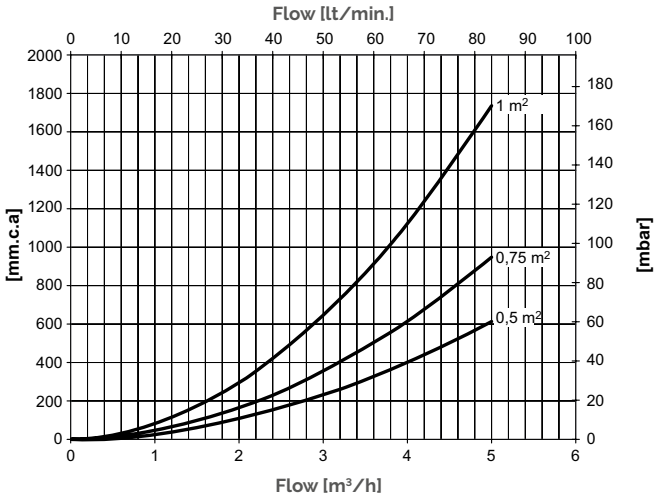
✔ Combination is possible

	Version 1 Stainless steel AISI 304		Version 2 Stainless steel AISI 316		Version with steam P ≤ 6 bar			Version with steam P ≤ 12 bar		
surf. m²	Code	Price	Code	Price	Code	Price	cat. P.E.D.	Code	Price	cat. P.E.D.
0,5	821030379X		821030393X		821030285X		Art.4 par.3	821030405X		Cat. I
0,75	821030380X		821030394X		821030286X		Art.4 par.3	821030406X		Cat. I
1	821030381X		821030395X		821030287X		Art.4 par.3	821030407X		Cat. I
1,5	821030382X		821030396X		821030288X		Cat. I	821030408X		Cat. I
2	821030383X		821030397X		821030289X		Cat. I	821030409X		Cat. I
3	821030385X		821030399X		821030291X		Cat. I	821030411X		Cat. I
4	821030386X		821030400X		821030292X		Cat. I	821030412X		Cat. II
5	821030387X		821030401X		821030293X		Cat. I	821030413X		Cat. II
6	821030388X		821030402X		821030294X		Cat. I	821030414X		Cat. II
8	821030389X		821030403X		821030296X		Cat. I	821030416X		Cat. II
10	821030390X		821030404X		821030418X		Cat. II	821030418X		Cat. II

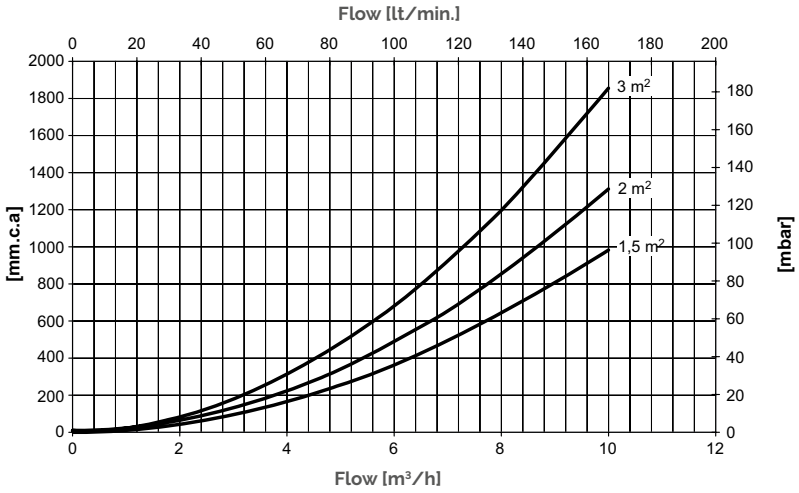
Version 1: AISI 304 stainless steel tube heat exchanger, assembled on a varnished plate with galvanised head
Version 2 and version with steam: AISI 306 stainless steel tube heat exchanger on a AISI 316 steel plate and AISI 304 steel head

Bundle tube heat exchanger
Curve: pressure loss

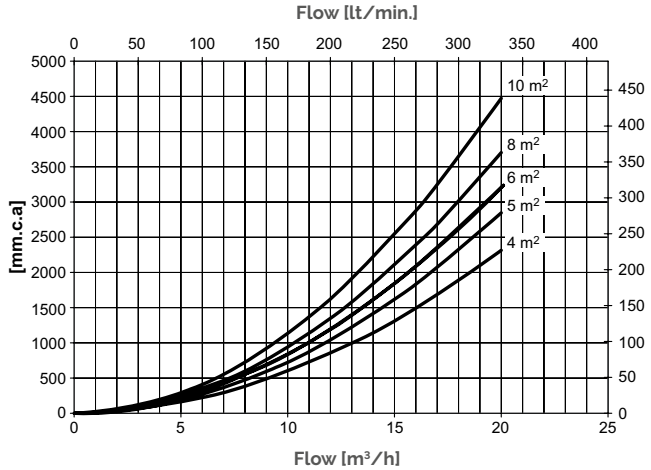
Exchanger surface 0,5 - 1 m²



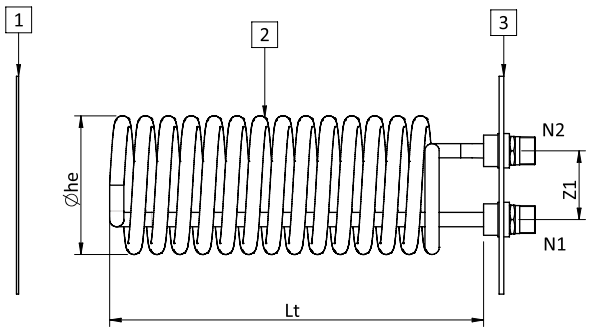
Exchanger surface 1,5 - 3 m²

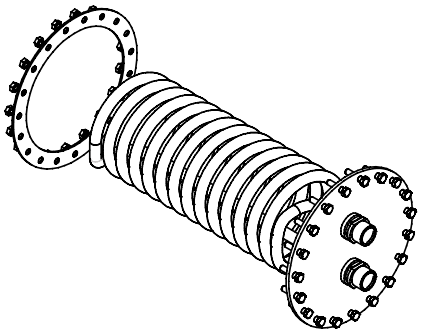


Exchanger surface 4 - 10 m²



Copper spiral coil





Compatibility chart for copper spiral coil and storage tank

Capacity l	Surface m²							
	0,82	1,38	1,53	2,27	3,1	4,54	5,26	6,34
200	✔	✔	✔					
300	✔	✔	✔					
500	✔	✔	✔	✔	✔			
800	✔	✔	✔	✔	✔	✔	✔	✔
1000	✔	✔	✔	✔	✔	✔	✔	✔
1500	✔	✔	✔	✔	✔	✔	✔	✔
2000	✔	✔	✔	✔	✔	✔	✔	✔
2500	✔	✔	✔	✔	✔	✔	✔	✔
3000	✔	✔	✔	✔	✔	✔	✔	✔
4000	✔	✔	✔	✔	✔	✔	✔	✔
5000	✔	✔	✔	✔	✔	✔	✔	✔

✔ Combination is possible

Couplings legend

N1	Ingresso/uscita scambiatore
N2	Ingresso/uscita scambiatore
1	Guarnizione S/T (senza traverso)
2	Serpentino rame alettato
3	Piastra di montaggio

Technical information copper spiral coil

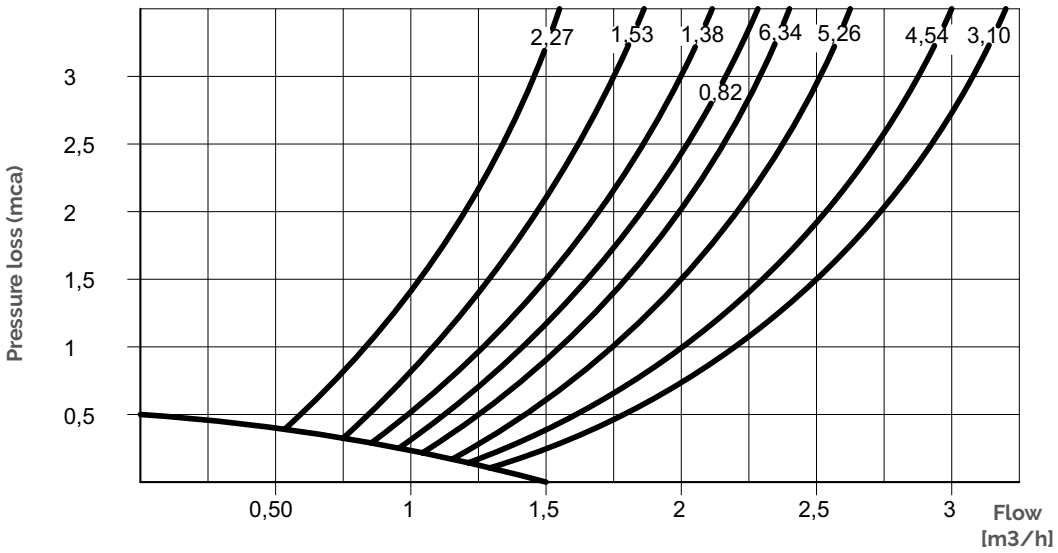
Surf. m²	Lt mm	Øhe mm	Z1 mm	N1 inch	N2 inch	Type of coil	Internal volume l	Dp kPa	Thermal eff. (*) kW	T max °C	P max bar
0,82	380	160	75	3/4"	3/4"	Single coil	0,7	25	15	99	9
1,38	420	170	75	3/4"	3/4"	Single coil	1,2	30	21,6	99	9
1,53	450	170	75	3/4"	3/4"	Single coil	1,4	35	24	99	9
2,27	570	170	75	3/4"	3/4"	Single coil	2	35	27	99	9
3,1	550	180	90	1"1/4	1"1/4	Double coil	2,7	26	35	99	9
4,54	570	242	120	1"1/4	1"1/4	Double coil	3,9	35	55	99	9
5,26	660	242	120	1"1/4	1"1/4	Double coil	4,5	35	57,5	99	9
6,34	780	242	120	1"1/4	1"1/4	Double coil	5,5	35	61,5	99	9

*Performance calculated with the following temperatures: primary 80°C and domestic water 10-45°C

Surface area m²	Assembled on a plate Ø300		Assembled on a plate Ø380		Assembled on a plate Ø430	
	Code	Price	Code	Price	Code	Price
0,82	821040017		821040254X		821040259X	
1,38	821040019		821040255X		821040260X	
1,53	821040020		821040256X		821040261X	
2,27	821040252X		821040021		821040262X	
3,1	821040253X		821040022		821040263X	
4,54	-		821040023		821040027	
5,26	-		821040257X		821040024	
6,34	-		821040258X		821040025	

The copper coils are supplied with plates, bolts, nuts and gaskets

Copper spiral coil
Curve: pressure loss



Electric water heater
FLEXY VOLT

The new FLEXY VOLT series of electric water heaters is designed to ensure versatility of use and quick water heating. These devices are equipped with one (FLEXY VOLT 1) or two (FLEXY VOLT 2) electric heating elements with appropriate power ratings and two externally adjustable thermostats.
The magnesium anode is easily accessible and provides additional cathodic protection against corrosion.



TESTED

Capacity: from 200 to 1000 l
Power: from 2 to 20 kW
Material: S 235 JR carbon steel
Treatment for internal protection: glass lining
Insulation

Capacity (l)	Type
from 200 to 1000	Highly rigid polyurethane foam

Operational limits

max. temperature	max. pressure
95°C	10 bar



Supplied accessories: Sacrificial Magnesium Anode and Thermometer.

Standard accessories: see page 294

Special executions: see page 296

Cap. l	Voltage V	FLEXY VOLT 1					FLEXY VOLT 2					Packaging	
		Code	Price	Power kW	Heating time Δt=35°C	Heating time Δt=25°C	Code	Price	Power kW	Heating time Δt=35°C	Heating time Δt=25°C	Dimensions cm	Weight kg
200	220	855050044X		2	4h-05'	2h-50'	855050052X		2x2	2h-03'	1 h-45'	75x75x125	74
300	220	855050045X		3	4h-05'	2h-50'	855050053X		2x3	2h-03'	1 h-45'	75x75x150	84
300	380	855050051X		3	4h-05'	2h-50'	855050057X		2x3	2h-03'	1 h-45'	75x75x150	84
500	380	855050046X		5	4h-05'	2h-50'	855050054X		2x5	2h-03'	1 h-45'	85x85x175	122
750	380	855050047X		8	3h-40'	2h-40'	855050055X		2x8	1 h-50'	1 h-20'	100x100x185	199
1000	380	855050048X		10	4h-05'	2h-50'	855050056X		2x10	2h-03'	1 h-30'	105x105x210	243

Primary temperature: 80-60°C - Secondary temperature: 10-45°C
Primary temperature: 55-50°C - Secondary temperature: 10-45°C

Integration of rapid DHW (Domestic Hot Water) generator

AQUAFAST consists of a compact and high-efficiency heat exchange unit for the rapid production of domestic hot water, which can be paired with any Fiorini thermal storage tank from the Flexy series or any water heater from the Boil or Smart series.
The ability to combine Aquafast with different types of tanks and volumes allows for a wide range of solutions for the rapid production of domestic hot water. The rapid generator is ideal for small and large communities (homes, restaurants, hotels, sports centers, etc.).

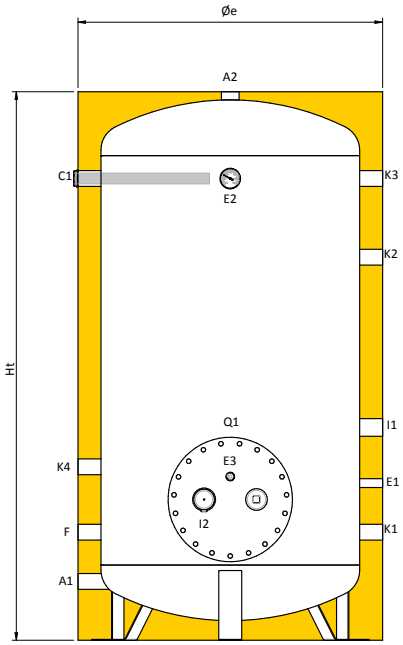


Integration with AQUAFAST

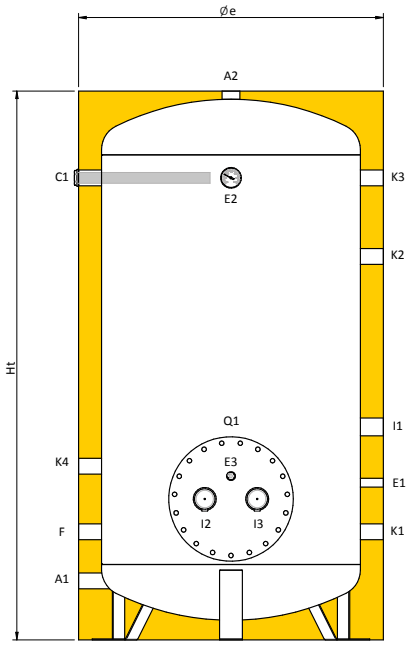
See page 212

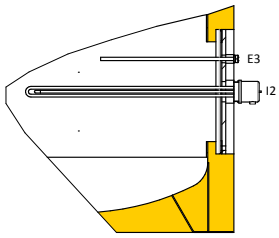
Electric water heater
FLEXY VOLT

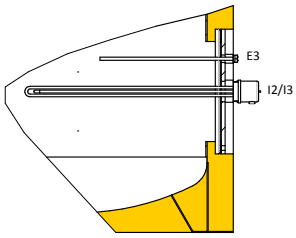
FLEXY VOLT 1



FLEXY VOLT 2







Couplings legend

A1	DHW inlet
A2	DHW outlet
C1	Anode
D	Drain
E1	Probe/Thermometer
E2	Probe/Thermometer
E3	Probe/Thermometer
F	Recirculation
I1	Electrical resistor
I2	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
Q1	Inspection hole

Couplings chart

Cap. l	A1 inches	A2 inches	C1 inches	E1 inches	E2 inches	E3 inches	F inches	I1 inches	I2-I3 inches	K1 inches	K2 inches	K3 inches	K4 inches	Q1 (Øext/Øint) inches
200	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø200
300	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø200
500	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	2"	1"1/4	1"1/4	1"1/4	1"1/4	Ø300/Ø200
750	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	2"	1"1/4	1"1/4	1"1/4	1"1/4	Ø380/Ø300
1000	1"1/4	1"1/4	1"1/4	1/2"	1/2"	1/2"	1"1/4	1"1/2	2"	1"1/4	1"1/4	1"1/4	1"1/4	Ø380/Ø300

Size chart

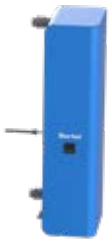
Cap. l	Øe mm	Ht mm	R mm	A1 mm	C1 mm	E1 mm	E2 mm	F mm	I1 mm	K1 mm	K2 mm	K3 mm	K4 mm	Q1 mm
200	710	1105	1315	150	885	295	885	295	445	150	595	990	495	345
300	710	1355	1530	150	1135	445	1135	295	595	295	795	1135	495	355
500	810	1635	1825	145	1390	460	1390	310	610	310	1150	1390	510	370
750	950	1675	1925	180	1410	480	1410	330	650	330	1170	1410	530	430
1000	1010	1965	2210	200	1680	500	1680	350	670	350	1190	1680	550	450


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Fast Heaters for DHW

Contents

- Domestic Hot Water Storages pag. 155
- Indirect Water Heater pag. 169
- Fast Heaters for DHW pag. 211



AQUAFAST
pag. 212



FST
pag. 221

- Fresh Water Stations for DHW pag. 227
- Thermal Solar Systems pag. 275
- Accessories and Insights pag. 293

Fast heater for DHW AQUAFAST

AQUAFAST consists of a compact and highly efficient heat exchange unit for the rapid production of domestic hot water which can be combined with any Fiorini thermal storage tank from the Flexy series or with any boiler from the Boil or Smart series.
The possibility of combining Aquafast with different types of tanks and volumes allows for a wide range of solutions for the rapid production of domestic hot water. The rapid preparer is ideal for small and large communities (houses, restaurants, hotels, sports centres,..).

Aquafast system consists of:
- ✔ Plate heat exchanger
- ✔ Electronic controller
- ✔ Sturdy container in painted and insulated sheet metal
- ✔ High efficiency DHW circulator
- ✔ Fittings and valves

model	Max pressure primary circuit	Max pressure secondary circuit
AQUAFAST 12/35 – 25/100	6 bar	10 bar
AQUAFAST 30/120 – 80/350	10 bar	10 bar



Aquafast 12/35

TESTED

Aquafast 50/200

Codes

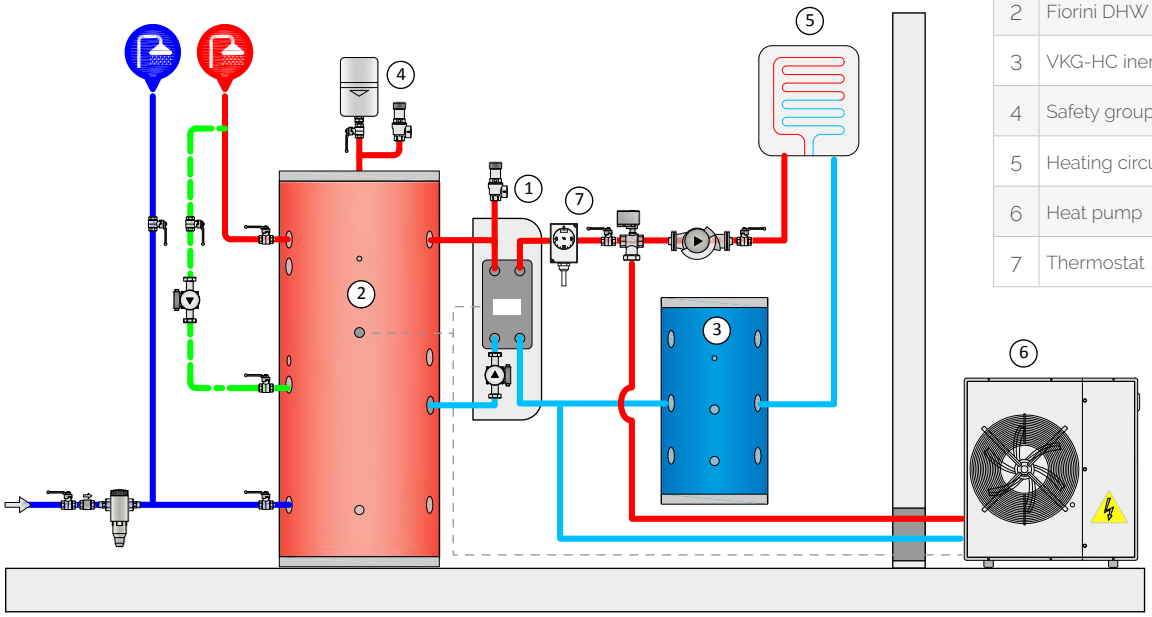
Model	Code	Price	With packaging	
			Dimensions cm	Weight kg
AQUAFAST 12/35	841060070X		100X40X35	18
AQUAFAST 18/70	841060071X		100X40X35	19
AQUAFAST 25/100	841060072X		100X40X35	21
AQUAFAST 30/120	841060073X		110x50x45	47
AQUAFAST 40/150	841060074X		110x50x45	48
AQUAFAST 50/200	841060075X		110x50x45	51
AQUAFAST 60/250	841060076X		110x50x45	53
AQUAFAST 70/300	841060077X		110x50x45	56
AQUAFAST 80/350	841060078X		110x50x45	57

Accessories

Description	Code	Price
CONTACT THERMOSTAT ACCESSORY	C22010050	
IMMERSION THERMOSTAT ACCESSORY	C22010004	

Key

1	Fast heater Aquafast
2	Fiorini DHW tank
3	VKG-HC inertial tank
4	Safety group
5	Heating circuit
6	Heat pump
7	Thermostat

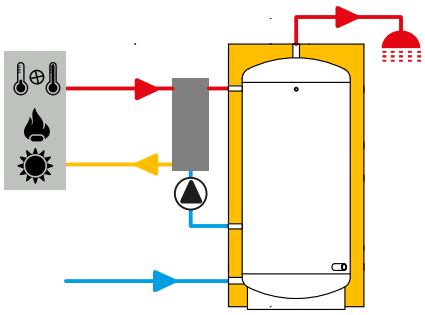


Fast heater for DHW
AQUAFAST

	Heat pump water temp. 55-50°C			Boiler water temp 80-60°C						
Model	Power kW	Primary flow l/h	dP primary kPa	Power kW	Primary flow l/h	dP primary kPa	Couplings inch	Pump power max W	Voltage V/Ph/Hz	Current max A
AQUAFAST 12/35	12	2064	38	35	1505	20	1"1/4	120	230/1/50	0,52
AQUAFAST 18/70	18	3096	39	70	3010	37	1"1/4	120	230/1/50	0,52
AQUAFAST 25/100	25	4300	36	100	4300	36	1"1/4	120	230/1/50	0,52
AQUAFAST 30/120	30	5160	32	120	5160	32	1"1/4	140	230/1/50	1,1
AQUAFAST 40/150	40	6880	40	150	6450	35	1"1/4	140	230/1/50	1,1
AQUAFAST 50/200	50	8600	38	200	8600	38	1"1/4	140	230/1/50	1,1
AQUAFAST 60/250	60	10320	38	250	10750	40	1"1/4	140	230/1/50	1,1
AQUAFAST 70/300	70	12040	39	300	12900	43	1"1/4	140	230/1/50	1,1
AQUAFAST 80/350	80	13760	44	350	15050	52	1"1/4	140	230/1/50	1,1

The second set point can be adjusted via the digital input and can be used to carry out the anti-legionella cycle.

DESCRIPTION



Aquafast models for small and medium users (Aquafast 12/35, 18/70 and 25/100) use a brazed plate heat exchanger, made up of corrugated plates in AISI 316 stainless steel, joined by a pure copper brazing. The larger size models (Aquafast from 30/120 to 80/350) use inspectable plate heat exchangers, made up of corrugated plates in AISI 316 stainless steel enclosed in a carbon steel frame painted with epoxy powders.

Compared to traditional solutions, the Aquafast system has important advantages:

- ✔ Minimization of the time required for the sanitary water to become fully operational;
- ✔ Optimization of the combination between generator power (heat pump or boiler) and heat exchanger performance;
- ✔ Possibility to choose the optimal power within a wide range of standard solutions;
- ✔ Possibility of using a smaller storage volume.
- ✔ Possibility to start Aquafast upon request from the primary system (remote ON/OFF).
- ✔ All parameters and values are accessible for reading and writing – where possible – via Modbus.

HOW TO COMPOSE THE AQUAFAST SYSTEM

To compose the desired system it is necessary to identify:

1. the AQUAFAST code of the required power (see next page)
2. the code of the tank or boiler to be combined (see sections FLEXY page 156, BOIL page 196 and SMART page 170)

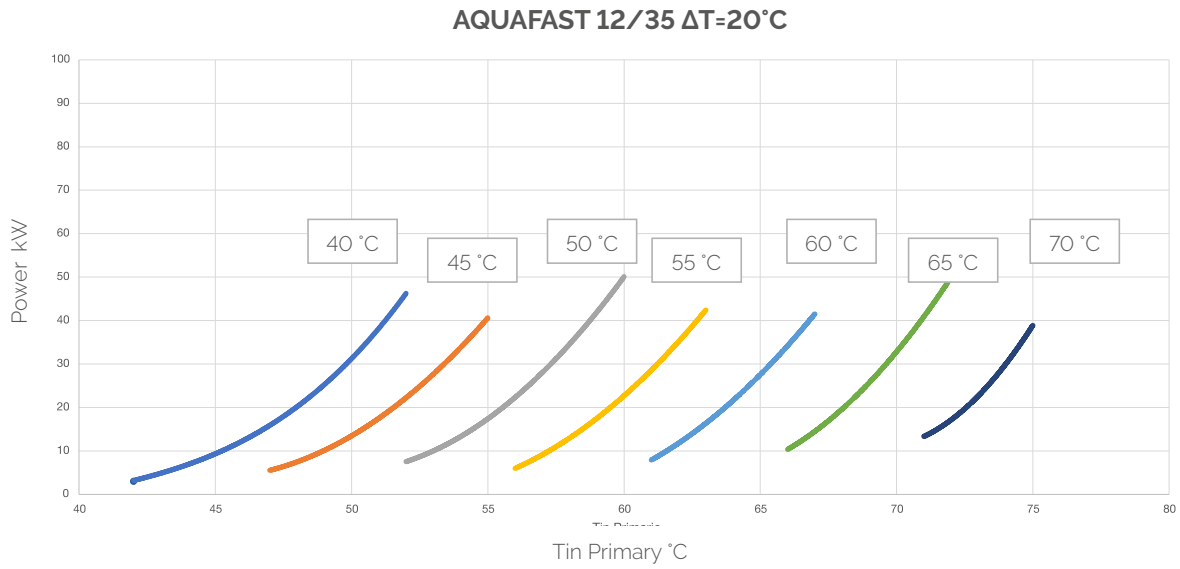
AQUAFAST performances and matching to the tank

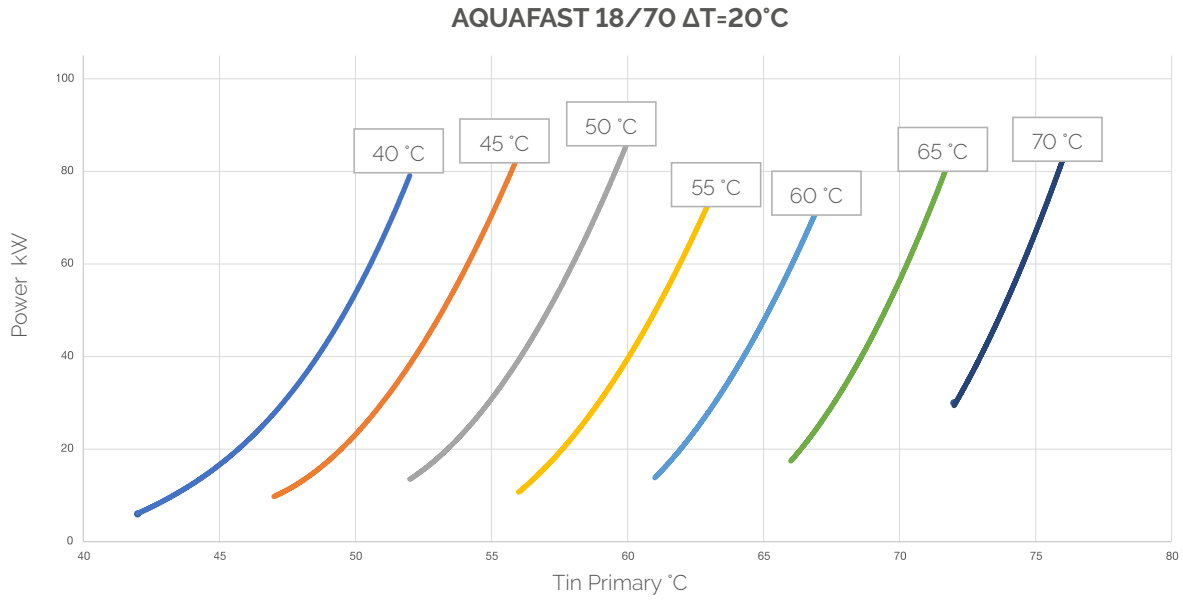


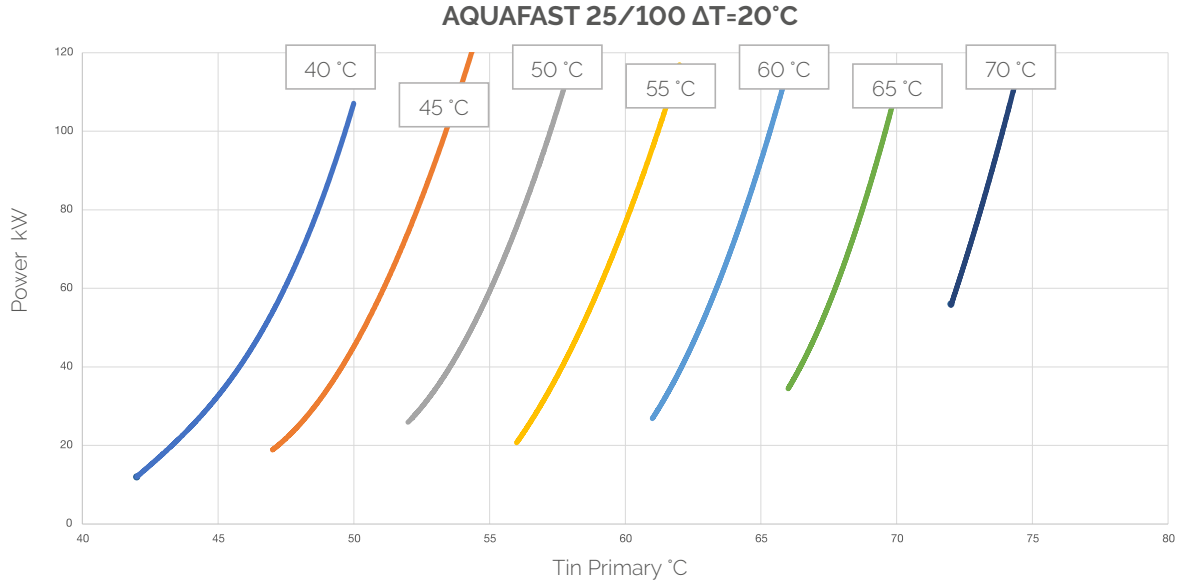
AQUAFAST can be paired with storage tanks of various capacities: this table serves as a guideline, but the pairing is flexible depending on requirements.

	POWER with primary at 55-50°C	Tank capacity	TA 50°C; Tout ACS 45°C: Tin ACS 10°C			POWER with primary at 80-60°C	Tank capacity	TA 50°C; Tout ACS 45°C: Tin ACS 10°C		
Model	kW	l	l/10 min.	l/60 min.	Recovery time DHW	kW	l	l/10 min.	l/60 min.	Recovery time DHW
AQUAFAST 12/35	12	200	278	523	46	35	200	429	1150	20
		300	392	640	70		300	572	1290	30
		500	621	870	116		500	858	1575	50
AQUAFAST 18/70	18	500	645	1015	77	70	500	1001	2433	25
		750	931	1300	116		750	1358	2790	37
		1000	1217	1585	155		1000	1715	3150	50
AQUAFAST 25/100	25	750	960	1470	84	100	750	1481	3530	26
		1000	1245	1760	112		1000	1838	3900	35
		1500	1817	2330	167		1500	2552	4600	52
AQUAFAST 30/120	30	1000	1266	1880	93	120	1000	1920	4377	29
		1500	1837	2451	139		1500	2634	5091	44
		2000	2409	3023	186		2000	3349	5805	58
AQUAFAST 40/150	40	1500	1878	2697	105	150	1500	2757	5829	35
		2000	2450	3269	139		2000	3471	6543	46
		2500	3021	3840	174		2500	4186	7257	58
AQUAFAST 50/200	50	2000	2490	3514	112	200	2000	3676	7771	35
		2500	3062	4086	139		2500	4390	8486	44
		3000	3633	4657	167		3000	5105	9200	52
AQUAFAST 60/250	60	2000	2531	3760	93	250	2000	3881	9000	28
		3000	3674	4903	139		3000	5310	10429	42
		4000	4817	6046	186		4000	6738	11857	56
AQUAFAST 70/300	70	3000	3715	5149	120	300	3000	5514	11657	35
		4000	4858	6291	159		4000	6943	13086	46
		5000	6001	7434	199		5000	8371	14514	58
AQUAFAST 80/350	80	3000	3756	5394	105	350	3000	5719	12886	30
		4000	4899	6537	139		4000	7148	14314	40
		5000	6042	7680	174		5000	8576	15743	50

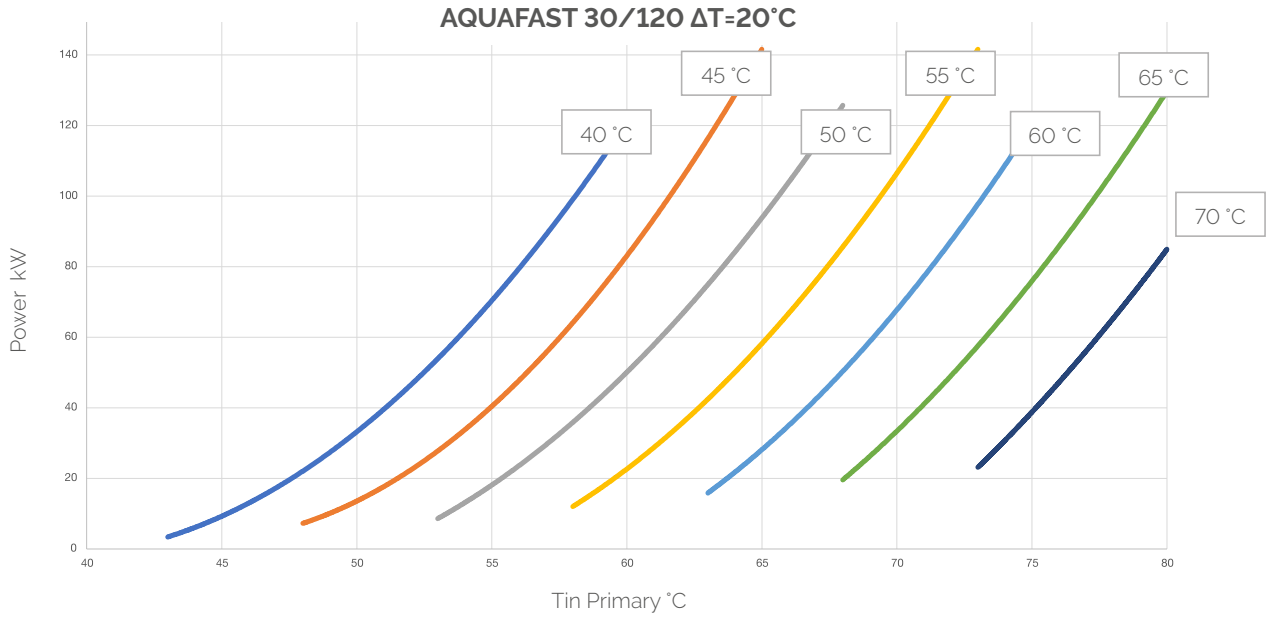
AQUAFAST performances

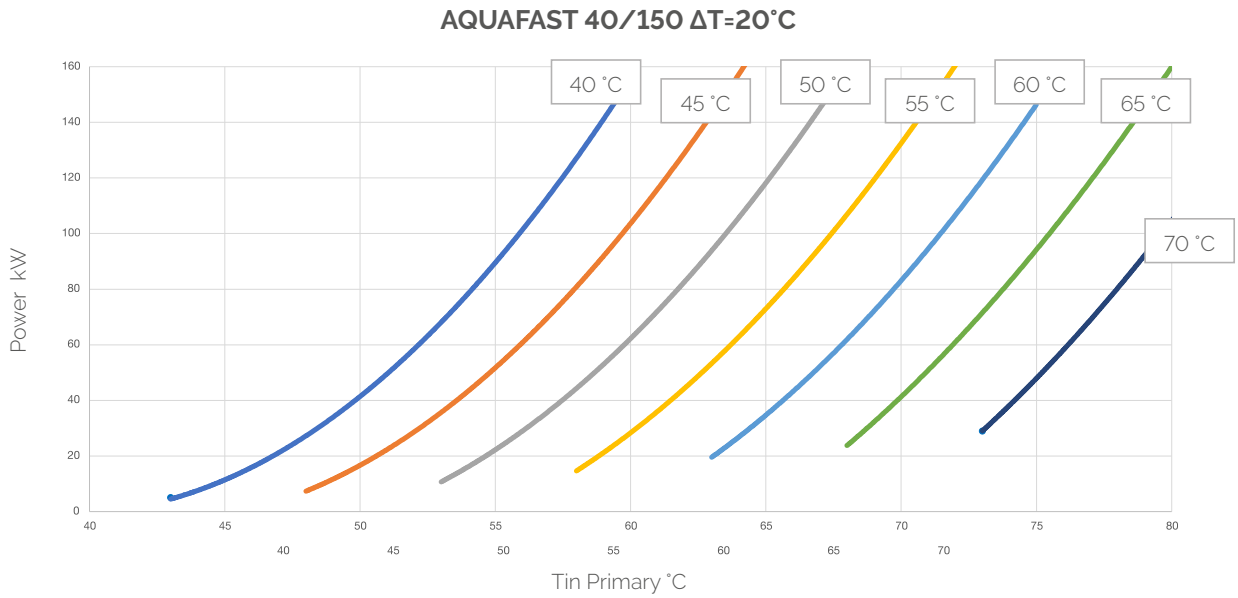


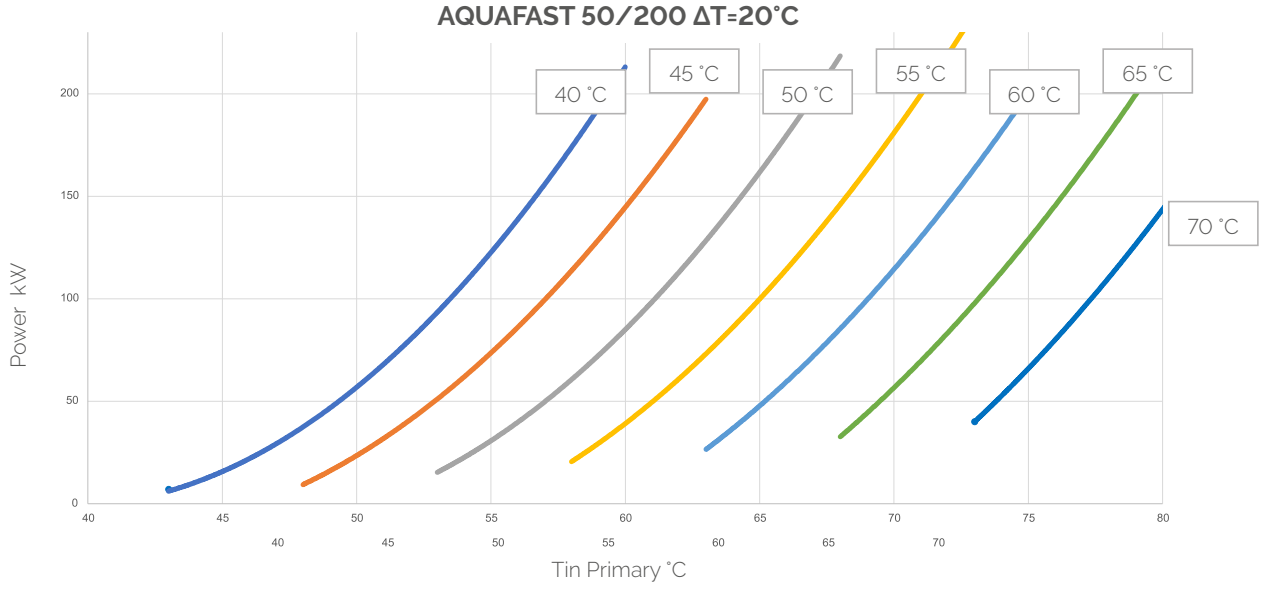




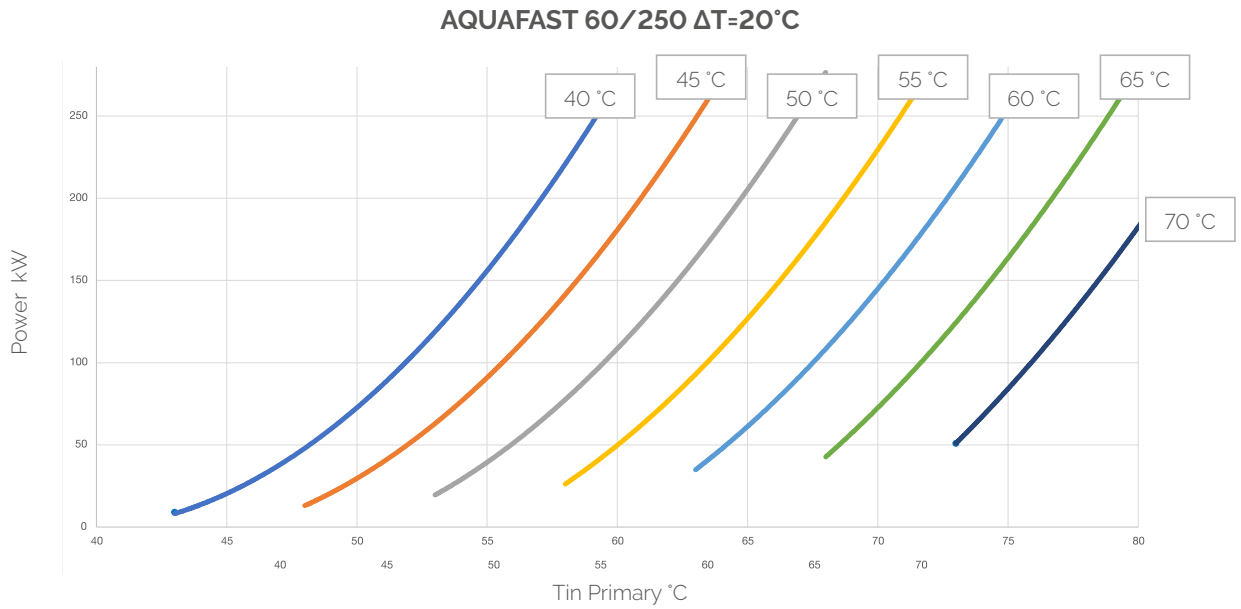
AQUAFAST performances

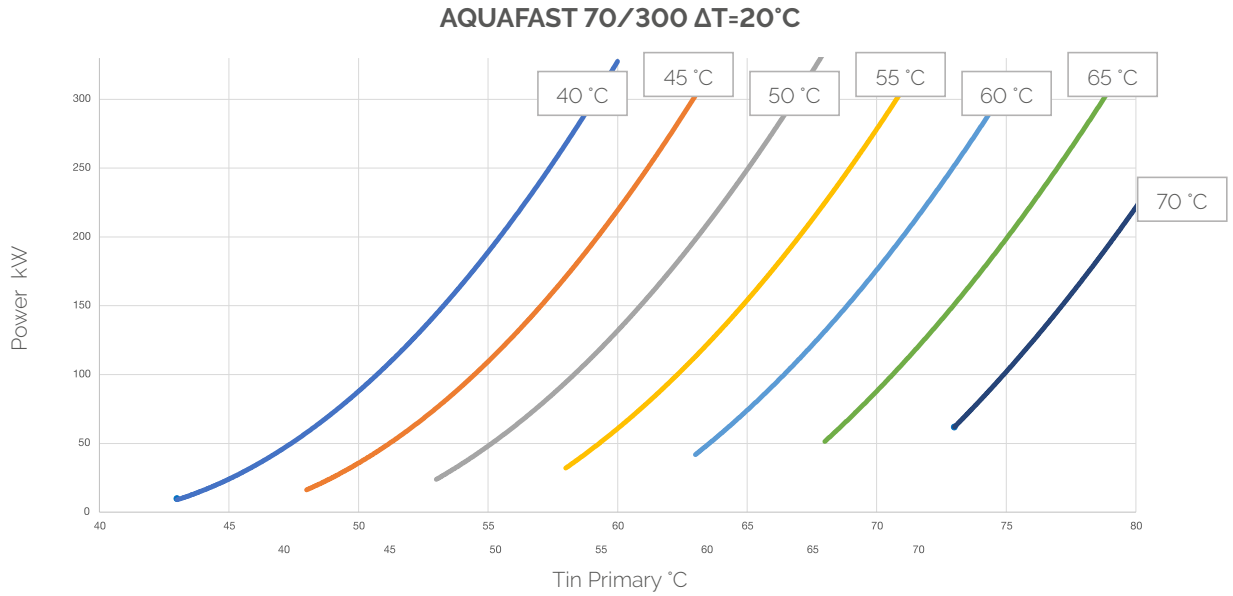


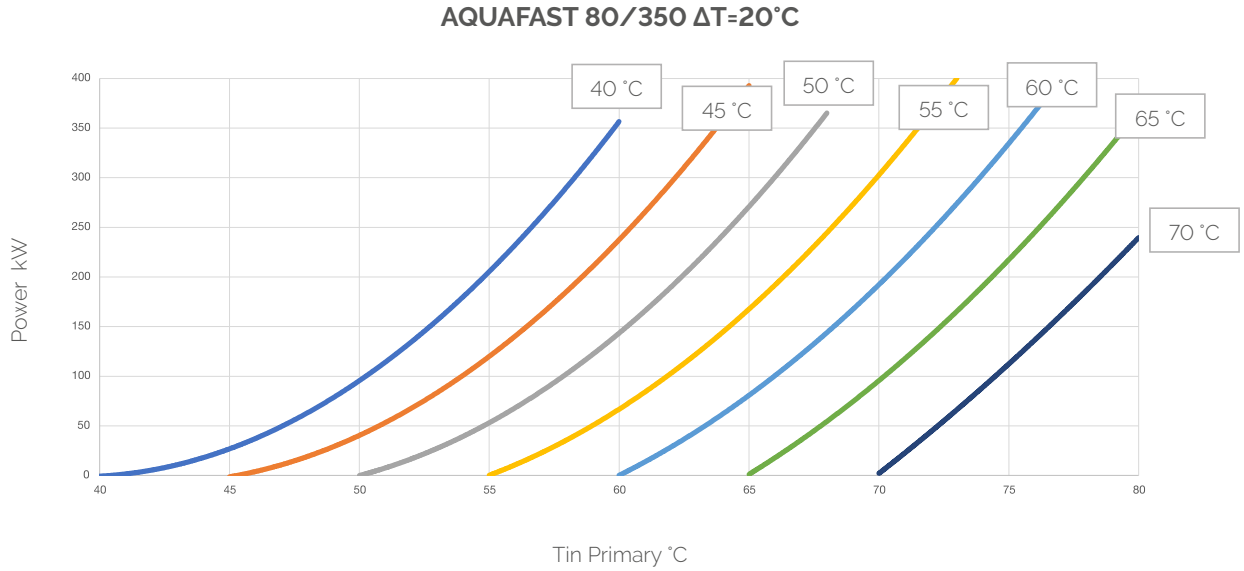




AQUAFAST performances







AQUAFAST working



Startup

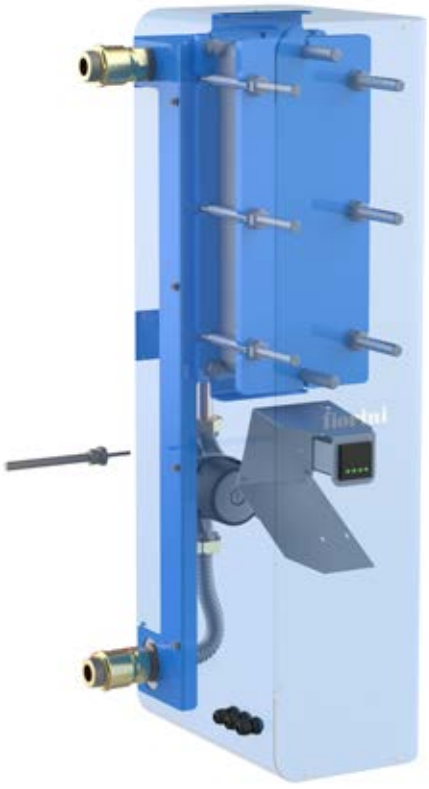
The product is Plug & Play! To start using Aquafast, simply:

1. Mount the Aquafast fittings, sump and valves on the tank
2. Connect Aquafast to the valves via quick couplings (adjust distance if necessary)
3. For Aquafast models from 30/120 to 80/350, connect the pump cable and mount the closing casing
4. Make electrical connections:
   4.a Insert the temperature probe into the well
   4.b Connect power supply
   4.c Connect the primary start enable

Startup: first start recommended. See p. 361

Operation

Aquafast is a rapid preparer made up of fittings and plate heat exchanger and equipped with a control unit, from which it is possible to adjust the desired set point.
The Set Point indicates the storage tank temperature below which water temperature reset is required.
Aquafast set point temperature is pre-set by default at 55°C, with Δt=5°C (hysteresis). It is possible to vary this set point temperature by setting the one desired by the control unit.
Optional: It is possible to connect a primary temperature thermostat so that the Aquafast circulator is activated only when the primary temperature is suitable for the storage load.



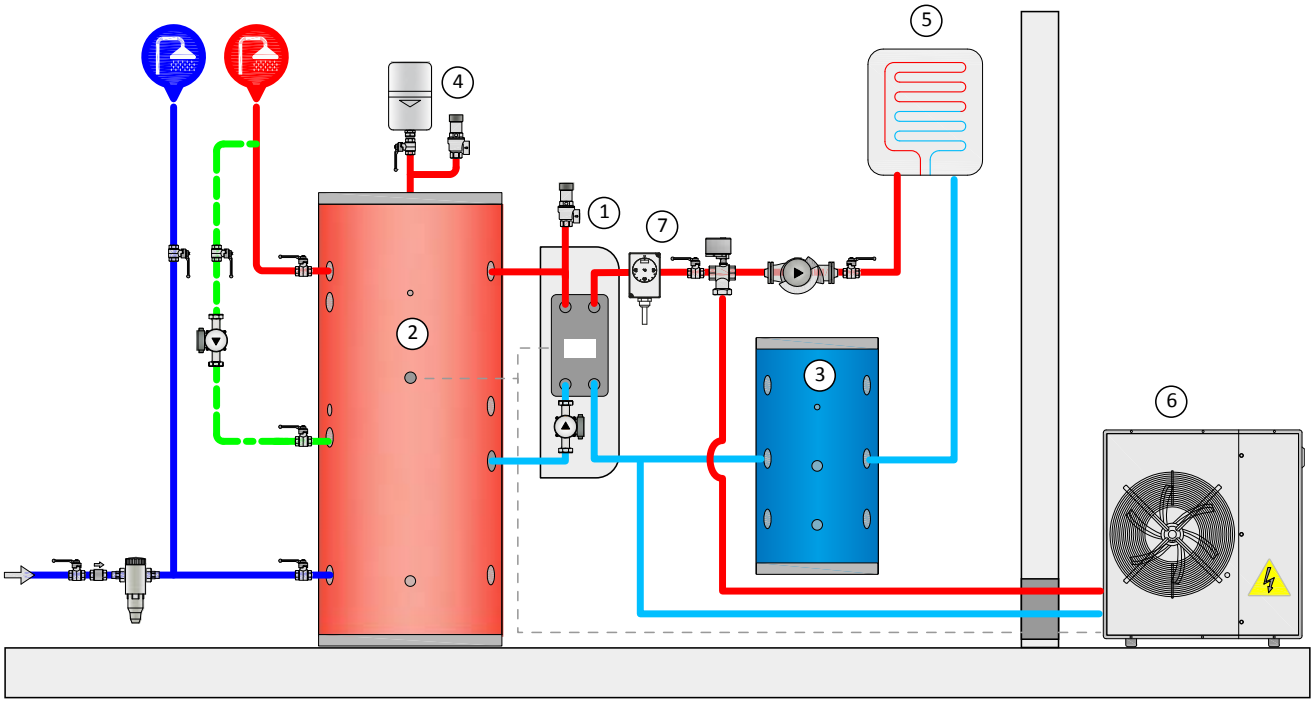
Why choose Aquafast over a fixed coil boiler?

Compared to traditional domestic hot water production systems, such as fixed coil boilers, Aquafast allows you to:

- ✔ Save money: it is not necessary to equip the tank system with large coils, this coincides with a reduction in the final price
- ✔ It can also be used in large-scale systems: depending on the model selected, it is possible to satisfy the domestic hot water demand of a residential system as well as that of a heating plant (such as, for example, for a condominium or a sports facility);
- ✔ Eliminate the stringent volume/surface constraint: the volume of the tank is linked to the power of the rapid preparer but the exchange takes place externally;
- ✔ Carry out quicker and less invasive maintenance or replacement operations: with Aquafast it is sufficient to replace the preparation group to satisfy greater power requests, or to carry out repairs.
- ✔ Facilitate installation thanks to the Plug & Play system and the lower weight of the tank (without coil)
- ✔ Reduce the environmental impact: the exchange system is more efficient, can be activated when the set point limit temperature is reached and can be integrated with modern heating and cooling systems combined with the heat pump.
- ✔ Minimize the time to restore the water temperature in the storage tank

Schemes and combinations of AQUAFAST system

Key	
1	Fast heater Aquafast
2	Fiorini DHW tank
3	VKG-HC inertial tank
4	Safety group
5	Heating circuit
6	Heat pump



Schemes and combinations

Scenario	number of bathrooms/ showers	Number of person	Heat pump power kW	Fast heater selected model	Fiorini DHW tank capacity l	Inertial tank capacity VKG-HC l
Residential						
Apartment	1	3	4	Aquafast 12/35	100	100
Condominium of 3 apartments/villa	3	12	8	Aquafast 12/35	300	100
Condominium of 4 apartments / semi-detached house	12	16	12	Aquafast 12/35	300	200
Condominium of 7 apartments	7	28	18	Aquafast 18/70	1000	200
Condominium of 15 apartments	15	60	25	Aquafast 25/100	1000	300
Condominium of 19 apartments	19	76	30	Aquafast 30/120	1500	300
Condominium of 25 apartments	25	104	40	Aquafast 40/150	2000	400
Condominium of 33 apartments	33	132	50	Aquafast 50/200	2500	500
Condominium of 40 apartments	40	160	60	Aquafast 60/250	3000	750
Condominium of 45 apartments	45	180	70	Aquafast 70/300	3000	750
Condominium of 55 apartments	55	220	80	Aquafast 80/350	4000	750
Sports Center						
Sport center with 6 showers	6	12	12	Aquafast 12/35	1000	100
Sport center with 9 showers	9	18	18	Aquafast 18/70	1500	100
Sport center with 15 showers	15	30	30	Aquafast 30/120	2500	300
Sport center with 19 showers	19	38	40	Aquafast 40/150	3000	300
Hotel						
Hotel with 19 showers	19	60	50	Aquafast 50/200	3000	500
Hotel with 25 showers	25	75	60	Aquafast 60/250	4000	750
Hotel with 35 showers	35	105	70	Aquafast 70/300	5000	750
Hotel with 38 showers	38	111	80	Aquafast 80/350	5000	750

AQUAFAST combinations with tanks



The AQUAFAST fast water heater can be combined with any tank.
This page shows the Fiorini models of ACS accumulators and boilers and the connections dedicated to AQUAFAST, i.e. the pair of connections that have the right interaxis.

FLEXY and BOIL		
Capacity (l)	Couplings	
200	K1	K3
300	K1	K3
500	K1	K2
750	K1	K2
1000	K1	K2
1500	K1	K3
2000	K1	K3
2500	K1	K3
3000	K1	K3
4000	K1	K3
5000	K1	K3
6000	n.d.	n.d.
8000	n.d.	n.d.
10000	n.d.	n.d.

FLEXY 2F and BOIL CUSTOM		
Capacity (l)	Couplings	
200	n.d.	n.d.
300	n.d.	n.d.
500	K1	K3
750	K1	K3
1000	K1	K3
1500	K1	K3
2000	K1	K3
2500	K1	K3
3000	K1	K3
4000	K1	K3
5000	K1	K3

FLEXY INOX and BOIL INOX		
Capacity (l)	Couplings	
200	n.d.	n.d.
300	n.d.	n.d.
500	K1	K3
800	K1	K3
1000	K1	K3
1500	K1	K3
2000	K1	K3
2500	K1	K3
3000	K1	K3
4000	K1	K3
5000	K1	K3

FLEXY INOX 2F and BOIL CUSTOM INOX		
Capacity (l)	Couplings	
200	n.d.	n.d.
300	n.d.	n.d.
500	K1	K3
750	K1	K3
1000	K1	K3
1500	K1	K3
2000	K1	K3
2500	K1	K3
3000	n.d.	n.d.
4000	K1	K3
5000	K1	K3

FLEXY CONTAINER		
Capacity (l)	Couplings	
1500	K1	K3
2050	K1	K3
2500	K1	K3
3000	K1	K3
4000	K1	K3
5000	K1	K3

SMART 1		
Capacity (l)	Couplings	
200	K1	K2
300	K1	K2
500	K1	K2
750	K1	K2
1000	K1	K2
1500	K1	K2
2000	K1	K2
3000	K1	K2

SMART 2		
Capacity (l)	Couplings	
200	K1	K2
300	K1	K2
500	K1	K2
750	K1	K2
1000	K1	K2
1500	K1	K2
2000	K1	K2
3000	K1	K2

SMART 1 INOX		
Capacity (l)	Couplings	
200	K1	K2
300	K1	K2
500	K1	K2
750	K1	K2
1000	K1	K2
1500	K1	K2
2000	K1	K2
2500	K1	K2
3000	K1	K2

SMART HP		
Capacity (l)	Couplings	
300	K2	K3
500	K2	K3
750	K2	K3
1000	K2	K3

SMART HP 2		
Capacity (l)	Couplings	
300	K2	K3
500	K2	K3
750	K2	K3
1000	K2	K3

Fast DHW heaters
FST

FST domestic hot water heaters are pre-assembled units which, together with a storage tank of the desired volume, make it possible to quickly produce and store large quantities of domestic hot water at a predefined temperature, ensuring space optimisation.



FST DHW heaters consist of a:
- ✔ Gasketed plate heat exchanger in AISI 316 stainless steel;
- ✔ High-efficiency electronic pump on the primary circuit
- ✔ High-efficiency electronic pump for DHW storage tank loading
- ✔ Height-adjustable electrical control panel, fully wired and connected to pumps, servomotor and probes fitted with an electronic control unit with graphic display, and anti-legionella function;
- ✔ Self-supporting frame.
- ✔ Insulation on pipes and fittings (standard), exchanger insulation (optional)
- ✔ Three-way motorised mixing valve (optional)

The FST units are also available in the following versions:
- ✔ 1P+1P: semi-fast DHW heater with single circulator on the primary and secondary circuits
- ✔ 0+1P: semi-fast DHW heater with single circulator on the secondary circuit

If there is no pump on the primary, it is not possible to install the mixing kit.

In short, the main advantages of the FST unit are the following:
- ✔ Very compact monoblock unit with reduced overall control panel dimensions;
- ✔ Easy maintenance owing to easy access to the components utilised;
- ✔ Easy installation;
- ✔ Option of increasing power by adding exchanger plates;
- ✔ Adjustable control panel for easier use.





Start-up: the first start-up is recommended. See page 361

Primary circuit		Secondary circuit	
max. temperature	max. pressure	max. temperature	max. pressure
95°C	10 bar	90°C	10 bar

360°

Line up the QR code
for a 360° video of the product

FST

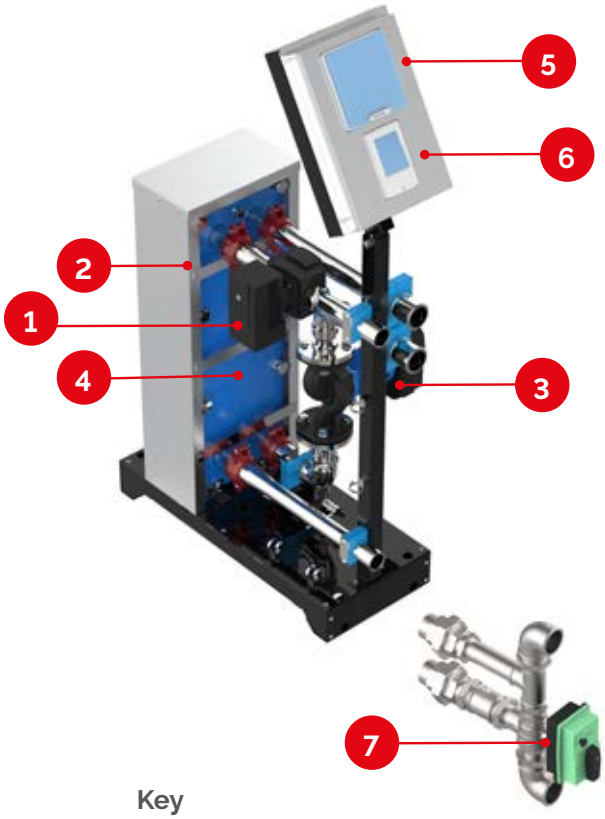
Codes and Prices

Model	Size	Code	Price	Packed	
				Dimensions cm	Weight kg
1P+1P	55	842010050X		100x65x110	68
	100	842010052X		100x65x110	71
	150	842010120X		100x65x110	73
	240	842010054X		100x65x110	78
	330	842010122X		100x65x110	83
	500	842010059X		100x65x150	231
	600	842010061X		100x65x150	236
	700	842010063X		100x65x150	252
0P+1P	55	842010140X		100x65x110	65
	100	842010142X		100x65x110	68
	150	842010143X		100x65x110	70
	240	842010146X		100x65x110	75
	330	842010148X		100x65x110	80
	500	842010152X		100x65x150	217
	600	842010154X		100x65x150	222
	700	842010157X		100x65x150	238

Accessories

Description	Code	Price
3WAY MIX VALVE FST 55 - FST 330	842040001X	
3WAY MIX VALVE FST 500 - FST 700	842040002X	
INSULATION FST 55 - FST 330	821080137X	
INSULATION FST 500 - FST 700	821080138X	

NOTE: The 3-way mixing valve cannot be used in 0P+1P setup.



Key

1	Plate exchanger
2	Heat exchanger insulation (optional)
3	Primary circuit pump
4	Secondary circuit pump (fast version)
5	Electrical control and monitoring panel
6	Regulator
7	Three-way motorised mixing valve (optional)

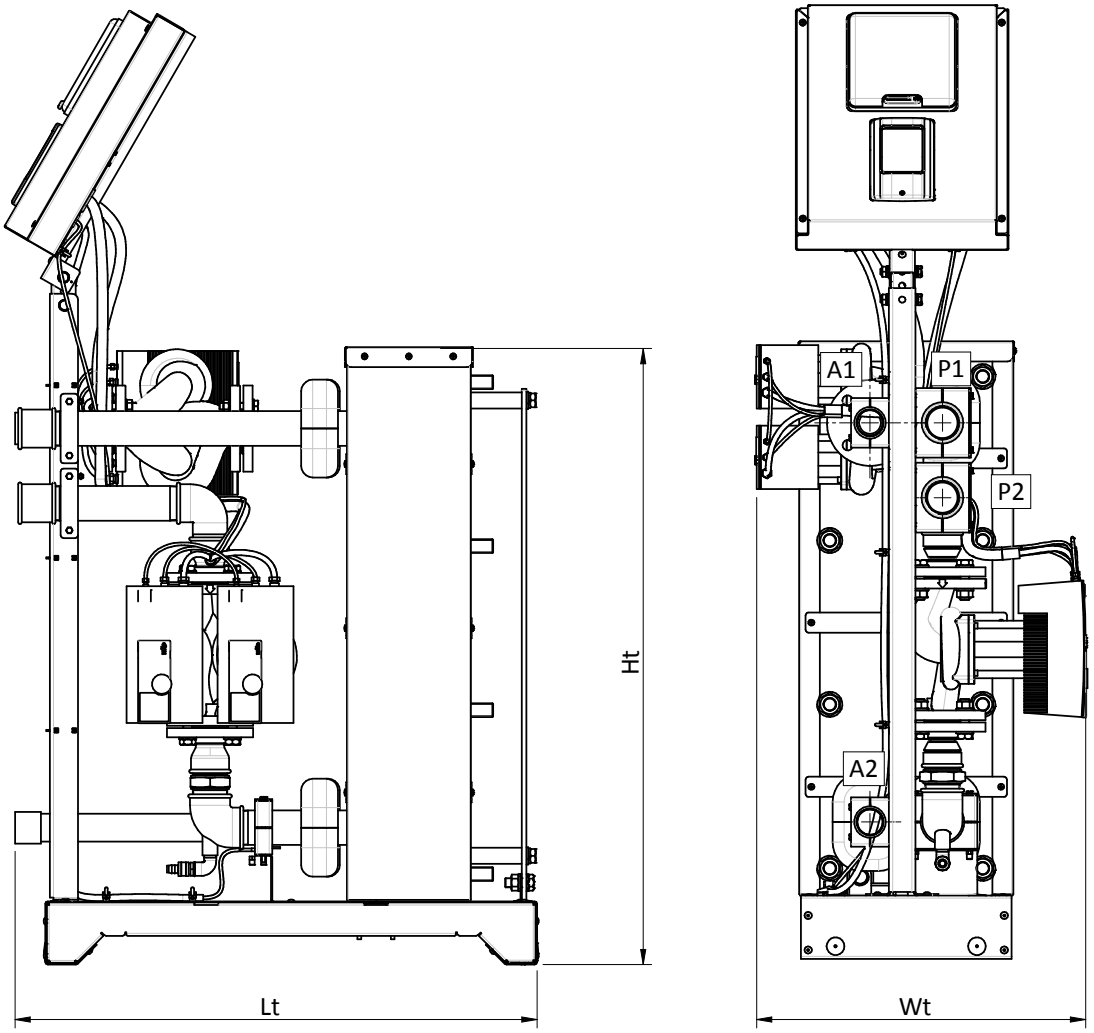
Features of the control unit

FST Fiorini units are equipped with an electronic control unit to control and command the device as follows:

- ✔ Adjust the temperature set-point based on different time bands;
- ✔ Adjust the circulator flow rate on the hot water side to optimise the stratification of the DHW storage tank;
- ✔ Control the primary and secondary circuit pumps, shutting them off them when the set-point is reached;
- ✔ Programme the anti-legionella process using thermal shock treatment;
- ✔ Display an on-screen notification when the anti-legionella treatment is running;
- ✔ Provide an error alert in the event of a unit malfunction;
- ✔ Control a DHW recirculating pump (pump not supplied)
- ✔ Compatibility with MULTIGATEWAY, the module for remote management see p. 256



FST
Components and dimensions



Legend

A1	DHW inlet
A2	DHW outlet
P1	To energy source
P2	From energy source

Technical features

Version	size	Ht mm	Lt mm	Wt mm	A1 mm	A2 mm	P1 mm	P2 mm	A1 inch	A2 inch	P1 inch	P2 inch
1P+1P	55-330	650	910	365	475	95	610	515	1"	1"	1"1/4	1"1/4
	500-700	1070	910	445	932	238	932	802	1"1/2	1"1/2	2"	2"
0P+1P	55-330	650	910	365	475	95	475	95	1"	1"	1"1/4	1"1/4
	500-700	1070	910	500	932	238	932	802	1"1/2	1"1/2	2"	2"

FST performance

Nominal power in kW under different temperature conditions

	Nominal power in kW under different temperature conditions							
Temp. primary inlet	FST 55				FST 100			
°C	10-65 °C	10-60 °C	10-55 °C	10-45 °C	10-65 °C	10-60 °C	10-55 °C	10-45 °C
80	50	58	68	86	100	117	133	165
70	20	35	45	65	50	70	90	124
60	-	-	20	40	-	-	40	82
50	-	-	-	19	-	-	-	40

	Nominal power in kW under different temperature conditions							
Temp. primary inlet	FST 150				FST 240			
°C	10-65 °C	10-60 °C	10-55 °C	10-45 °C	10-65 °C	10-60 °C	10-55 °C	10-45 °C
80	115	135	154	190	185	215	245	245
70	55	80	105	145	95	130	165	200
60	-	-	45	95	-	-	80	150
50	-	-	-	46	-	-	-	74

	Nominal power in kW under different temperature conditions							
Temp. primary inlet	FST 330				FST 500			
°C	10-65 °C	10-60 °C	10-55 °C	10-45 °C	10-65 °C	10-60 °C	10-55 °C	10-45 °C
80	250	295	330	380	365	438	500	500
70	130	180	225	300	180	255	333	450
60	-	-	110	190	-	-	158	290
50	-	-	-	103	-	-	-	144

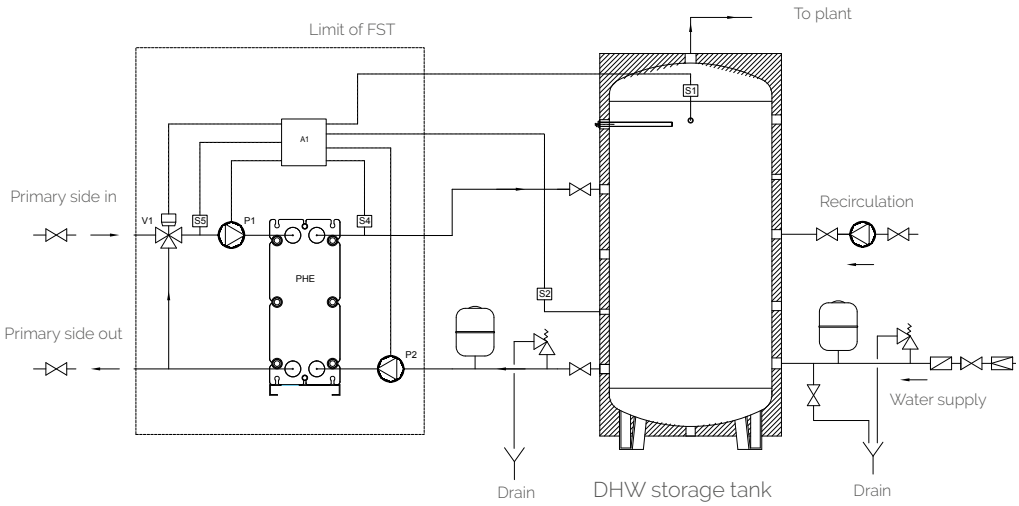
	Nominal power in kW under different temperature conditions							
Temp. primary inlet	FST 600				FST 700			
°C	10-65 °C	10-60 °C	10-55 °C	10-45 °C	10-65 °C	10-60 °C	10-55 °C	10-45 °C
80	452	540	613	650	560	665	740	740
70	225	330	412	560	330	410	505	620
60	-	-	185	371	-	-	280	430
50	-	-	-	176	-	-	-	255

Installation diagrams

1P+1P version

Key

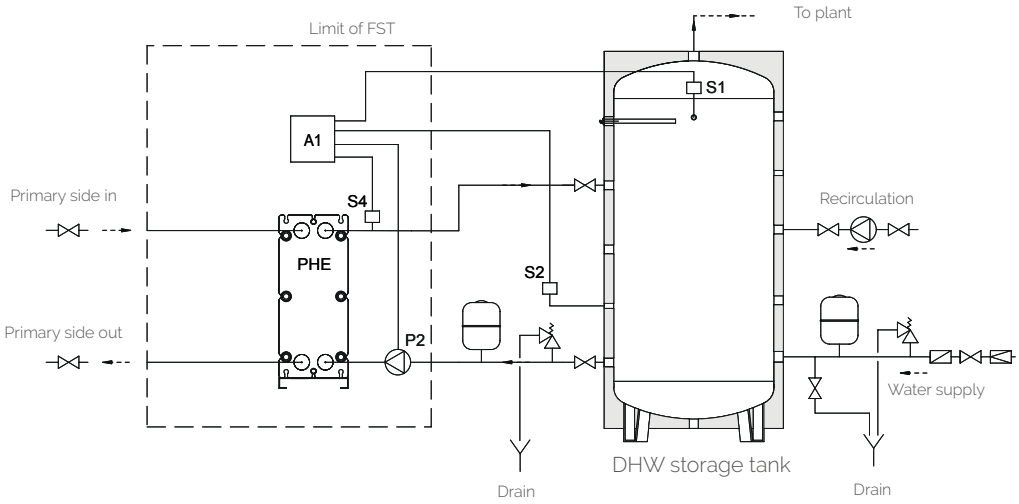
PHE	Plate exchanger
P1	Pump on primary side
P2	Pump on secondary side
V1	3-way mixing valve (optional)
S1	Temperature probe (supplied unassembled)
S2	Temperature probe (optional)
S4	Temperature probe
S5	Temperature probe (optional with V1)



0P+1P version

Key

PHE	Plate exchanger
P2	Pump on secondary side
S1	Temperature probe (supplied unassembled)
S2	Temperature probe (optional)
S4	Temperature probe



Installation and use

Install the product on a flat surface which is suitable for supporting the weight of the product and its content (see data plate with technical specifications).
Connect the circuit supply and return pipes so that they do not weigh on the product and allow access and the dismantling of accessories, if present.
Fit a safety valve on the installation with a suitable working pressure, in accordance with Directive 97/23/EC and an opening with a suitable diameter.
When storage tanks are used, equip the installation or the tank with expansion vessels in compliance with Directive 97/23/EC, with a maximum working pressure that is no lower than that of the storage tank itself and with a capacity commensurate with the volume and temperature of the installation to protect the latter from possible overpressures.
The electrical connections must be carried out by authorised personnel in compliance with the regulations in force.

Maintenance

It is recommended that the following maintenance tasks be performed to ensure that the FST heat exchange units function correctly:

- A periodic check of the water hardness values which must be between 10 and 15° F
- A periodic check that the safety valve on the installation is functioning;
- A periodic inspection of the expansion vessel load pressure;
- A periodic check that there are no leaks;
- A periodic cleaning of the exchanger using suitable solutions available on the market (contact us for further information);
- A periodic anti-legionella heat treatment to disinfect the installation

WARNING

Disconnect the heat exchanger from the system before carrying out any electrical welding on installation pipes.

CE mark

The product bears the CE mark in accordance with the specific European Union directives.


VALLICELLI
FORLI'

Fresh Water Stations for DHW

Contents

- Domestic Hot Water Storages pag. 155
- Indirect Water Heater pag. 169
- Fast Heaters for DHW pag. 211
- Fresh Water Stations for DHW pag. 227



AQUAMATIC
pag. 228



T-SET
pag. 244



SET
pag. 249



Floor standing SET
pag. 260

- Thermal Solar Systems pag. 275
- Accessories and Insights pag. 293

AQUAMATIC

Instantaneous DHW (Domestic Hot Water) production unit with integrated storage tank

Italian style, innovation and technology



AQUAMATIC is an innovative product consisting of an inertial heat storage system coupled with an instantaneous hot water production unit. Everything is enclosed in a uniquely designed element, which combines style, innovation, and technology. AQUAMATIC is used in heating systems, even multi-energy ones, which are powered by sources (heat pump, solar heating, biomass boilers, and so on) requiring the use of a heat storage unit for optimal function. In the event of heat pump systems, which also furnish hydronic cooling, an inertial storage system is also available that perfectly integrates with the AQUAMATIC base and is suitable for containing hot or cold water, depending on the season.

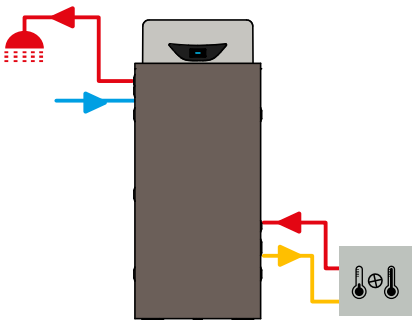
The production of domestic hot water occurs within a plate heat exchanger with stainless steel plates that guarantee:

- ✔ maximum hygiene
- ✔ high production of domestic hot water without the need for a high level of installed power

The heart of the system is the integrated display through which the user sets and controls all of the AQUAMATIC functions

Main features of the AQUAMATIC:

- ✔ Compact and original design
- ✔ Simple installation, thanks to already integrated elements
- ✔ Easy and intuitive use, thanks to the graphic display
- ✔ Activates automatically even with a low demand for domestic water (2 litres/min)
- ✔ Guarantees maximum hygiene and prevents the formation of legionella
- ✔ Easy access to internal parts for maintenance
- ✔ Minimum heat dispersion (B energy class)
- ✔ Ability to communicate with control systems
- ✔ Can be used with various energy sources
- ✔ Produces a quantity of domestic water at a comfortable temperature, greater than any other traditional system (heaters) of equal capacity
- ✔ Communication with bms supervision systems; Modbus as standard
- ✔ Digital inputs (clean contacts) for remote control of:
- ✔ Device ON/OFF management
- ✔ Electrical resistance disabling
- ✔ Disabling of the DHW recirculation pump
- ✔ Enabling of a second Set Point, useful for improving the comfort of use or for increasing (maximizing) the use of renewable energy sources.
- ✔ Disabling the heat source (boiler)

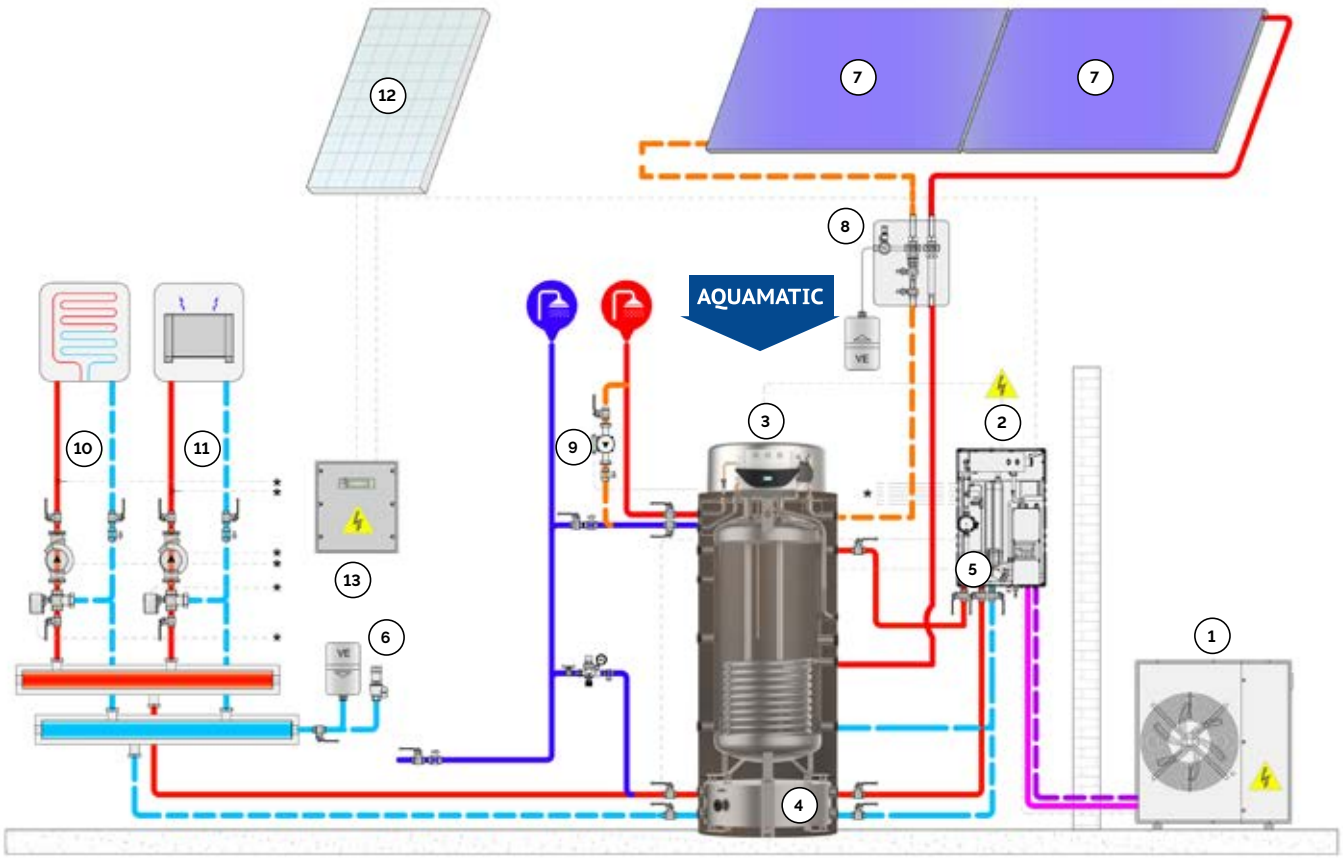


Available accessories see pag. 238

Start-up: the first start-up is recommended. See page 361

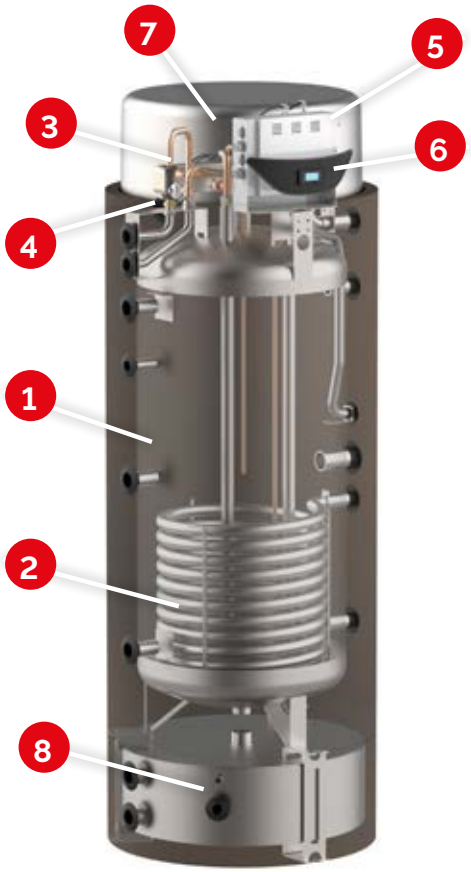
				With vertical packaging	
Model	Capacity l	Code	Price	Dimensions cm	Weight kg
AQUAMATIC	200	842030104X		75x75x140	80
	300	842030105X		75x75x180	94
	500	842030106X		90x90x185	121
AQUAMATIC PLUS	300	842030107X		75x75x180	101
	500	842030108X		90x90x185	136
AQUAMATIC SOLAR	300	842030109X		75x75x180	106
	500	842030110X		90x90x185	141

Aquamatic
Installation schema and components



Legend

1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC
4	Built-in inertial tank AQUAMATIC
5	Built-in three way diverter valve
6	Safety group
7	Fiorini solar panel
8	Solar station no pump
9	DHW recirculation pump
10	Heating circuit 1
11	Heating circuit 2
12	Photovoltaic modules
13	Inverter for photovoltaic system



Components list

1	Storage tank
2	Coil (SOLAR and PLUS versions)
3	DHW exchanger
4	flow/temp gauge
5	electric board
6	electronic regulator
7	circulation pump
8	Built-in storage tank

AQUAMATIC
Available Versions

The AQUAMATIC system is available with three different storage capacities and in three different versions. The versions differ in the presence of a second heat exchanger for additional sources and in the possibility of managing the additional heat source through an electronic pump and the specially programmed software.

- **AQUAMATIC (1 source): see pag. 234**
- **AQUAMATIC Plus (2 sources): see pag. 235**
- **AQUAMATIC Solar (2 sources for solar circulation): see pag. 236**

Next to those three devices, an integrative resistor is also available, which can meet the highest heat requirements.

Code	Description	Primary pump	Primary exchanger	Electronic regulation	Additional exchanger	Additional cric. pump
842030104X	**AQUAMATIC 200**	✔	✔	✔		
842030105X	**AQUAMATIC 300**	✔	✔	✔		
842030106X	**AQUAMATIC 500**	✔	✔	✔		
842030107X	**AQUAMATIC "Plus" 300**	✔	✔	✔	✔	
842030108X	**AQUAMATIC "Plus" 500**	✔	✔	✔	✔	
842030109X	**AQUAMATIC "Solar" 300**	✔	✔	✔	✔	✔
842030110X	**AQUAMATIC "Solar" 500**	✔	✔	✔	✔	✔

The AQUAMATIC system is delivered packed in cardboard boxes on pallets.
It is equipped with electric cable with plug SHUCO, length 1.5 m.

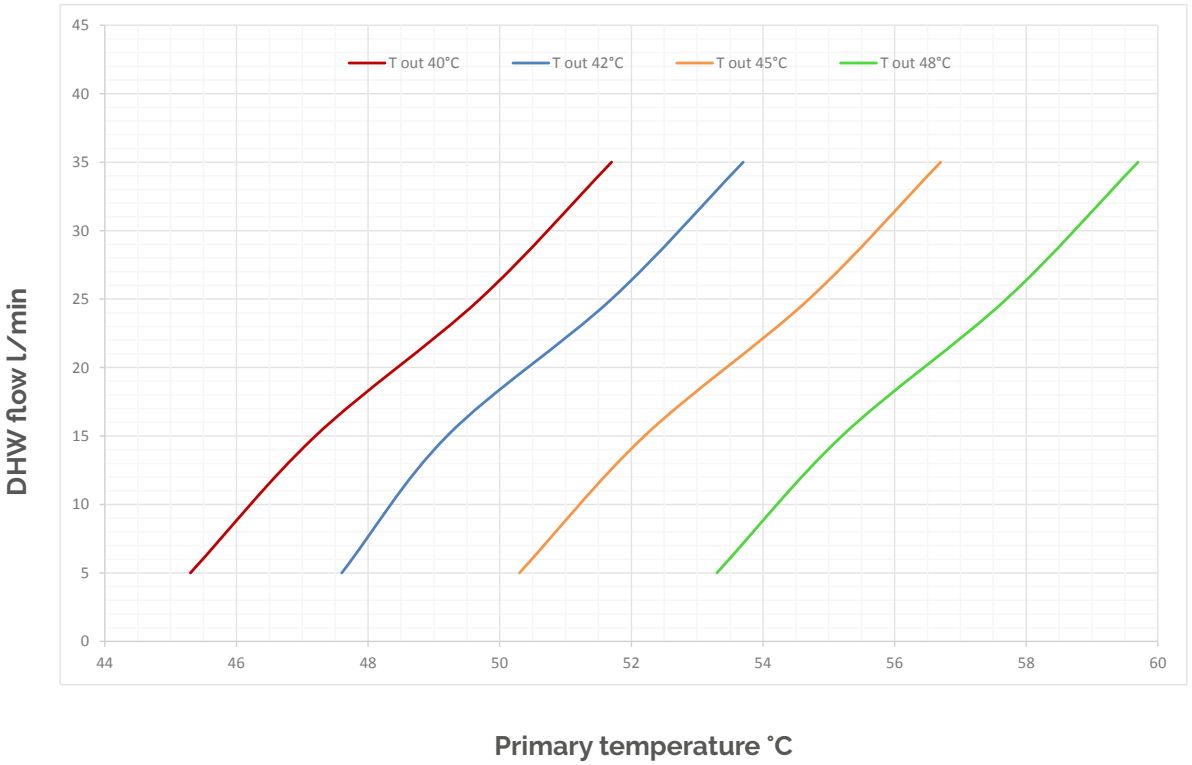
Technical information

		AQUAMATIC			AQUAMATIC PLUS		AQUAMATIC SOLAR	
		200	300	500	300	500	300	500
Electrical supply	V/Ph/Hz	230/1/50			230/1/50		230/1/50	
Absorbed power min/max	W	25/75			25/75		27/127	
Absorbed current min/max	A	0,14/0,53			0,14/0,53		0,18/1,05	
Min DHW flow rate at start-up	l/min	2			2		2	
Max DHW flow rate	l/min	35			35		35	
Max operating pressure primary circuit	bar	6			6		6	
Max operating pressure DHW circuit	bar	10			10		10	
Max operating temperature	°C	95			95		95	
Capacity of the tank	l	199	290	480	290	480	290	480
Deliverable flow rate*	l/m	18,5	18,5	18,5	18,5	18,5	18,5	18,5
Deliverable litres*	l	153	214	337	214	337	214	337
Empty weight	kg	75	89	116	96	131	101	136
Integr. Heat Exchanger Surf.	m^2	-	-	-	1,4	1,9	1,4	1,9
Sound pressure at 1 m	dB(A)	25			25		25	
Heat loss **	W	59	68	80	68	80	68	80
Energy class		B	B	B	B	B	B	B
Electronic regulation of the pump velocity		●			●		●	
Graphic display		●			●		●	
Settings for DHW temperature		●			●		●	
Possibility to set antilegionella treatments		●			●		●	

*Working conditions in accordance with EN 16417 (DHW 42°C, tank 50°C)
**Working conditions in accordance with UE N. 812/2013 and N.814/2013 (ambient air 20°C, tank 65°C)

Performance AQUAMATIC

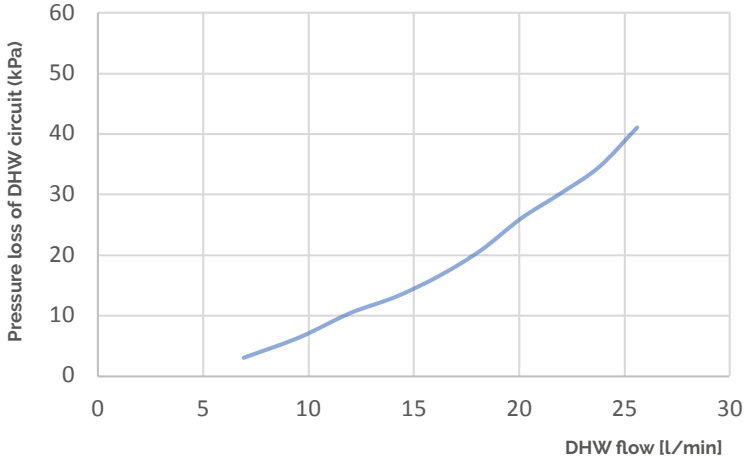
Quantity of domestic water produced in l/m with different storage temperatures and different outlet temperatures



Deliverable DHW flow in function of the storage temperature fluctuations and the various outlet temperatures (can be set as setpoint for domestic hot water)
Inlet temperature domestic 10°C

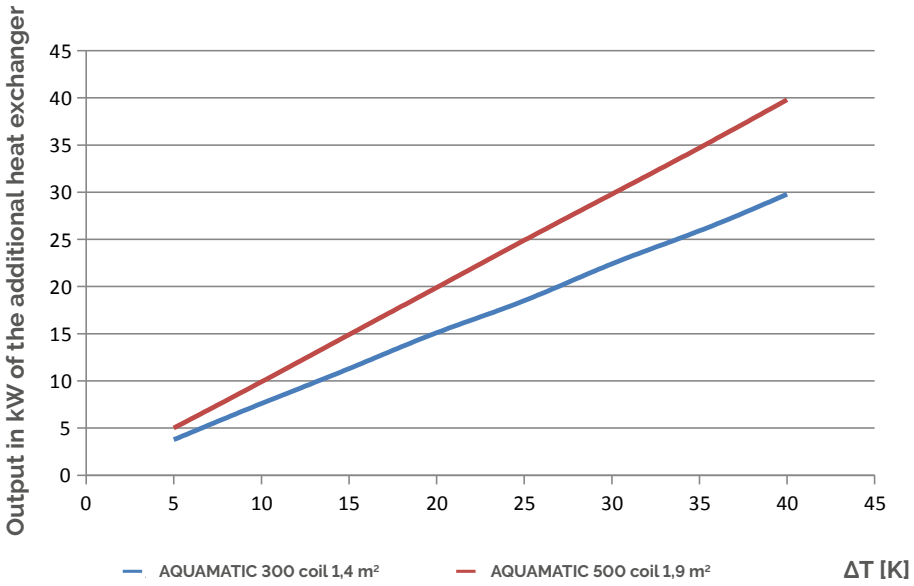
For example, if Taccumulo =52°C
And TDHW =45°C, the AQUAMATIC guarantees a flow of approximately 14 l/min
And TDHW = 42°C, the AQUAMATIC guarantees a flow of approximately 26 l/min

Hydraulic performance



Performance AQUAMATIC

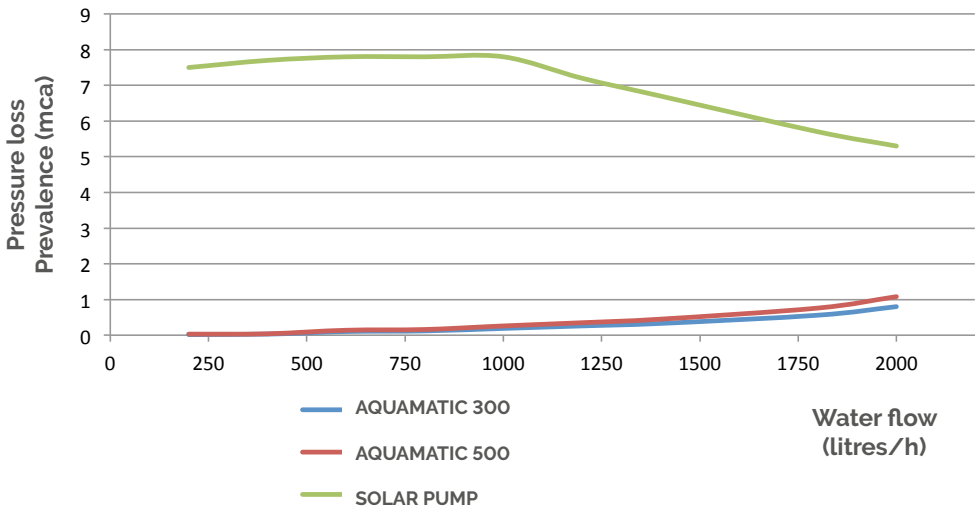
Output in kW of the additional heat exchanger in fucntion of the variation of the value ΔT between the temperature of the integrative source and the storage temperatore.
Only for AQUAMATIC PLUS and AQUAMATIC SOLAR.



For example, if $T_{AVERAGE\ IN\ TANK}$ = 30°C
Suppose the integrative coil is supplied with water at a temperature of 60°C (inlet) and that water cools to 40°C (outlet).
We can consider an average temperature on the integrative circuit of 50°C.
As such, we can refer to an indicative average DT of 50-30 = 20 K
In this case the performance of the additional heat exchangers would be:
AQUAMATIC 300: 15 kW on average
AQUAMATIC 500: 20 kW on average

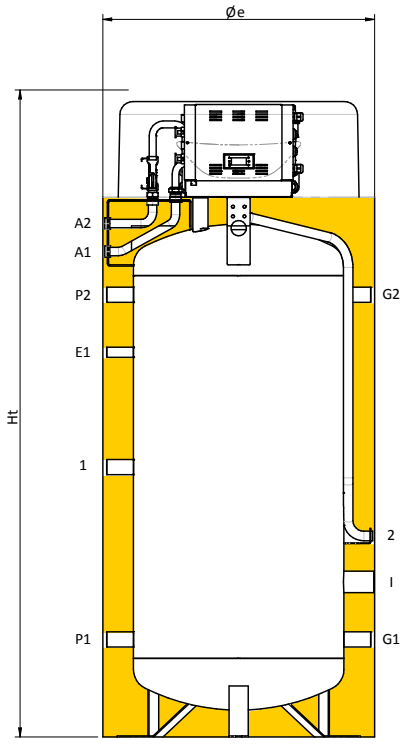
ΔT : temperature difference between the average temperatures in the primary circuit (coil) and secondary circuit (tank).

Pressure loss in integrative coils and characteristic graphic of solar circulator

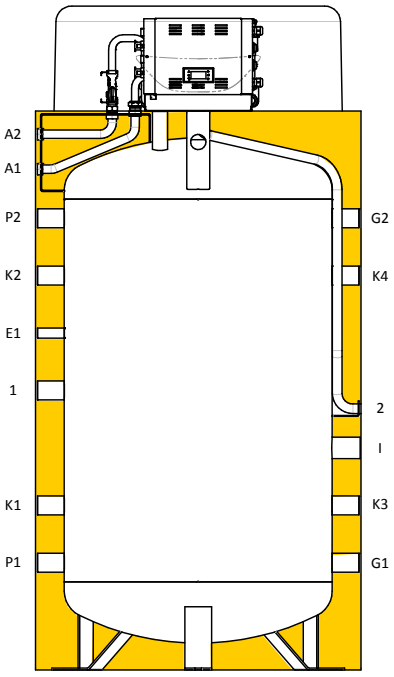


Dimensions Aquamatic

200 l ≤ cap. ≤ 300 l



cap. = 500 l



Couplings legend

A1	DHW inlet
A2	DHW outlet
E1	Service/inlet probe
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary circuit outlet
K2	Auxiliary circuit inlet
K3	Auxiliary system inlet
K4	Auxiliary system outlet
P1	To energy source
P2	From energy source
1	Coupling kit with deviation valve for stratification
2	Inlet resistor cable

Insulation

Capacity (l)	Type	Thick. (mm)
from 200 to 500	High density rigid polyurethane foam	80

Couplings chart

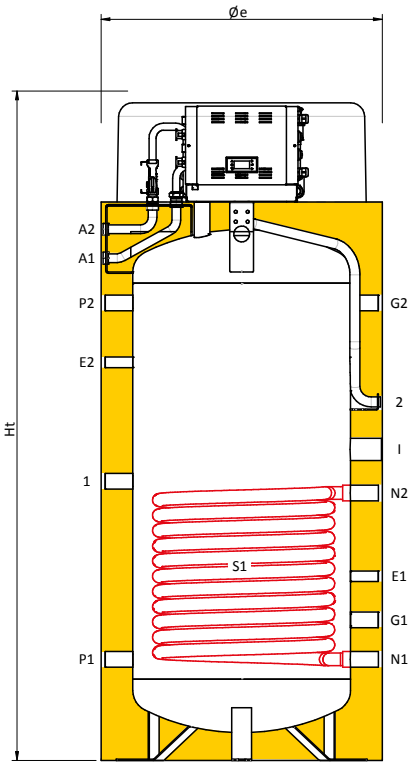
Cap. l	A1 inch	A2 inch	E1 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	P1 inch	P2 inch	1 inch	2
200	3/4"	3/4"	1/2"	1"	1"	1"1/2	-	-	-	-	1"	1"	1"	Case Ø20
300	3/4"	3/4"	1/2"	1"	1"	1"1/2	-	-	-	-	1"	1"	1"	Case Ø20
500	3/4"	3/4"	1/2"	1"1/4	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	Case Ø20

Size chart

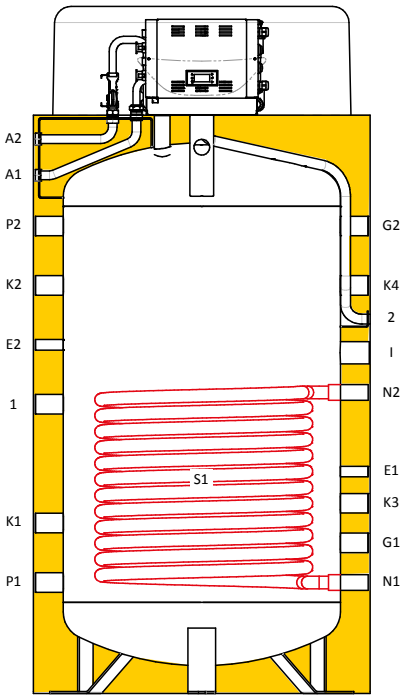
Cap. l	Øe mm	Ht mm	A1 mm	A2 mm	E1 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	P1 mm	P2 mm	1 mm	2 mm
200	710	1315	890	965	629	255	780	405	-	-	-	-	255	780	518	525
300	710	1690	1270	1340	1005	255	1155	405	-	-	-	-	255	1155	705	525
500	850	1740	1310	1400	880	280	1180	580	430	1030	430	1030	280	1180	730	683

Dimensions AQUAMATIC Plus

cap. = 300 l



cap. = 500 l



Couplings legend

A1	DHW inlet
A2	DHW outlet
E1	Service/inlet probe
E2	Service/inlet probe
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary circuit outlet
K2	Auxiliary circuit inlet
K3	Auxiliary system inlet
K4	Auxiliary system outlet
N1	Additional exchanger outlet
N2	Additional exchanger inlet
P1	To energy source
P2	From energy source
S1	Lower exchanger
1	Coupling kit with deviation valve for stratification
2	Inlet resistor cable

Insulation

Capacity (l)	Type	Thick. (mm)
from 300 to 500	High density rigid polyurethane foam	80

Couplings chart

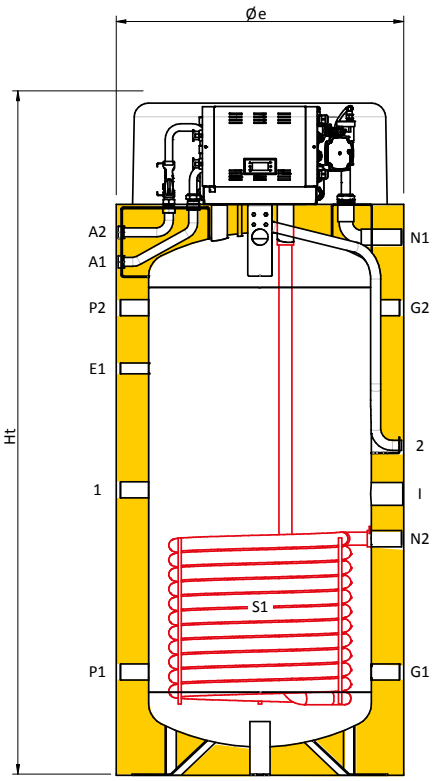
Cap. l	A1 inch	A2 inch	E1 inch	E2 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	N1 inch	N2 inch	P1 inch	P2 inch	1 inch	2
300	3/4"	3/4"	1/2"	1/2"	1"	1"	1"1/2	-	-	-	-	1"	1"	1"	1"	1"	Case Ø20
500	3/4"	3/4"	1/2"	1/2"	1"1/4	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"	1"	1"1/4	1"1/4	1"1/4	Case Ø20

Size chart

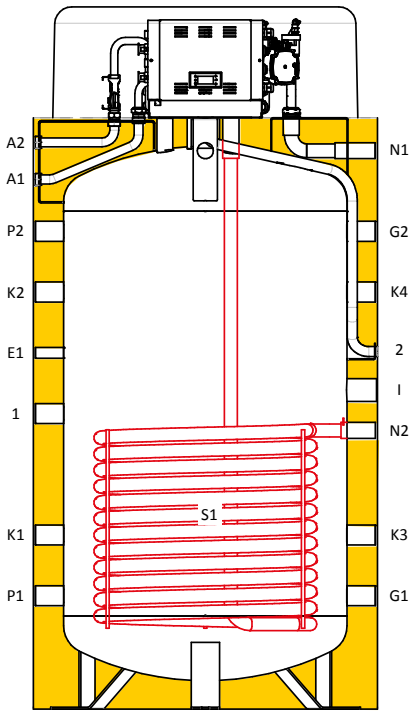
Cap. l	Øe mm	Ht mm	A1 mm	A2 mm	E1 mm	E2 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	N1 mm	N2 mm	P1 mm	P2 mm	1 mm	2 mm	S1 m²
300	710	1690	1290	1345	465	1005	355	1155	785	-	-	-	-	255	675	255	1155	705	905	1,4
500	850	1740	1340	1395	560	880	380	1180	860	430	1030	480	1030	280	760	280	1180	730	945	1,9

Dimensions AQUAMATIC Solar

cap. = 300 l



cap. = 500 l



Couplings legend

A1	DHW inlet
A2	DHW outlet
E1	Service/inlet probe
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary circuit outlet
K2	Auxiliary circuit inlet
K3	Auxiliary system inlet
K4	Auxiliary system outlet
N1	Solar exchanger inlet
N2	Solar exchanger outlet
P1	To energy source
P2	From energy source
S1	Lower exchanger
1	Coupling kit with deviation valve for stratification
2	Inlet resistor cable

Insulation

Capacity (l)	Type	Thick. (mm)
from 300 to 500	High density rigid polyurethane foam	80

Couplings chart

Cap. l	A1 inch	A2 inch	E1 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	N1 inch	N2 inch	P1 inch	P2 inch	1 inch	2
300	3/4"	3/4"	1/2"	1"	1"	1"1/2	-	-	-	-	3/4"	3/4"	1"	1"	1"	Case Ø20
500	3/4"	3/4"	1/2"	1"1/4	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	3/4"	3/4"	1"1/4	1"1/4	1"1/4	Case Ø20

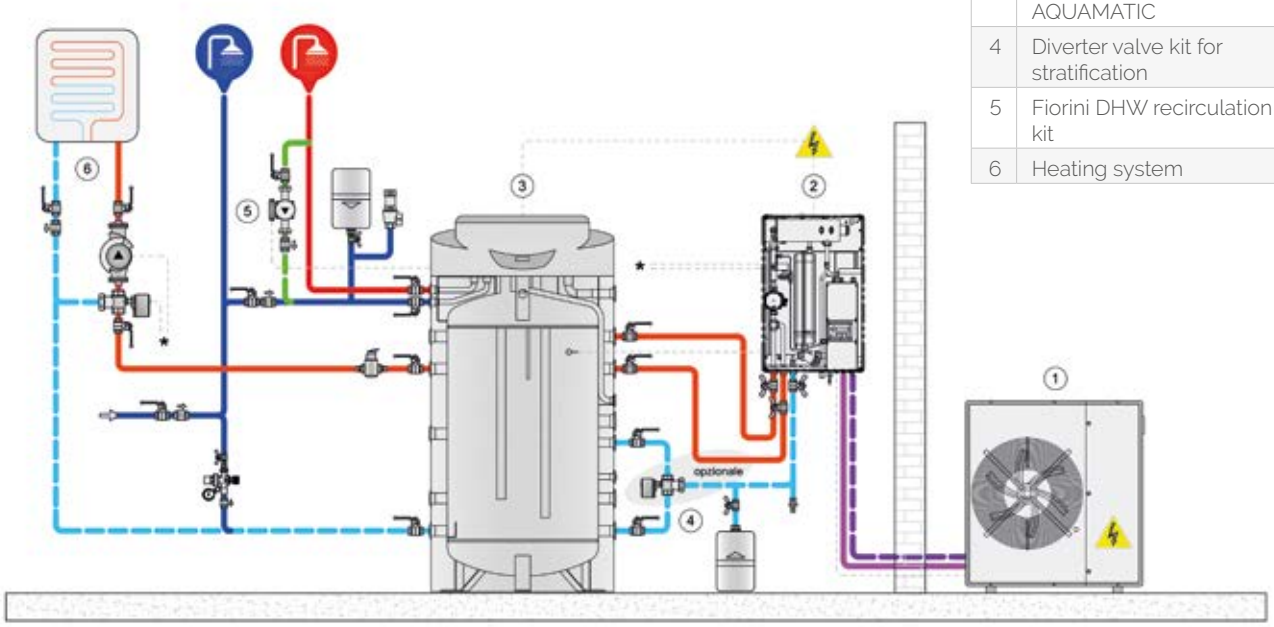
Size chart

Cap. l	Øe mm	Ht mm	A1 mm	A2 mm	E1 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	N1 mm	N2 mm	P1 mm	P2 mm	1 mm	2 mm	S1 m²
300	710	1690	1270	1340	1005	255	1155	695	-	-	-	-	1329	584	255	1155	705	815	1,4
500	850	1740	1310	1400	880	280	1180	788	430	1030	430	1030	1379	688	280	1180	730	883	1,9

Installation chart AQUAMATIC

Legend

1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC
4	Diverter valve kit for stratification
5	Fiorini DHW recirculation kit
6	Heating system

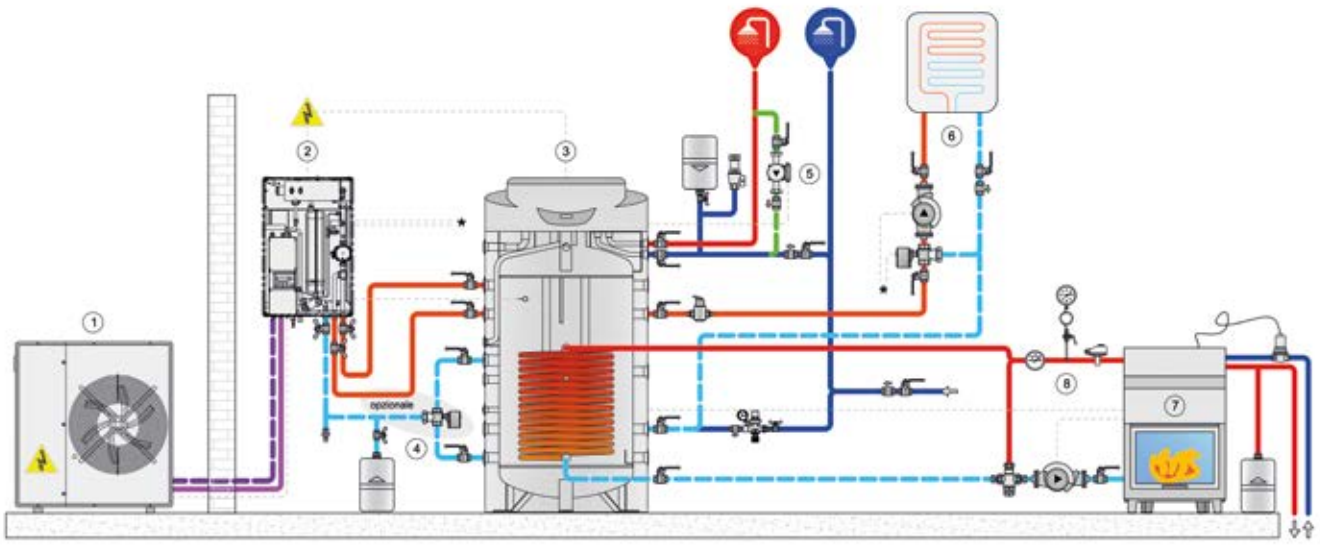


Installation chart AQUAMATIC Plus Example 1 (Heating fireplace / stove)

Legend

1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC PLUS
4	Diverter valve kit for stratification

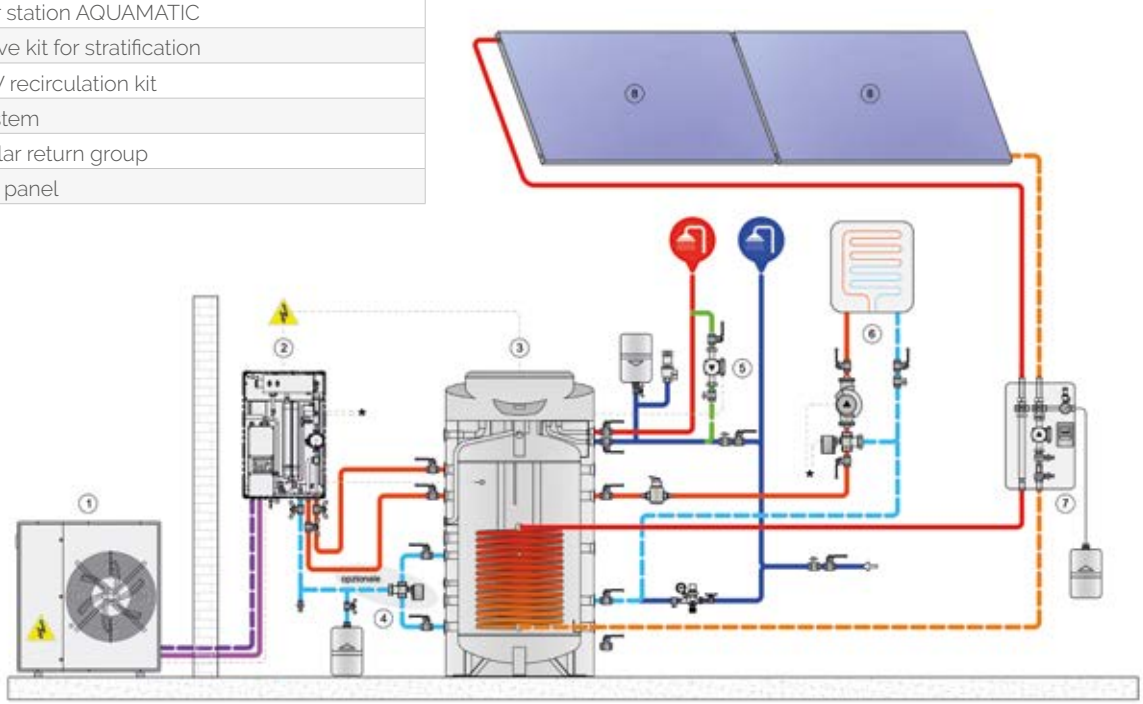
5	Fiorini DHW recirculation kit
6	Heating system
7	Heating fireplace / stove
8	Plant components for biomass generators



Installation chart AQUAMATIC Plus Example 2 (Thermal solar)

Legend

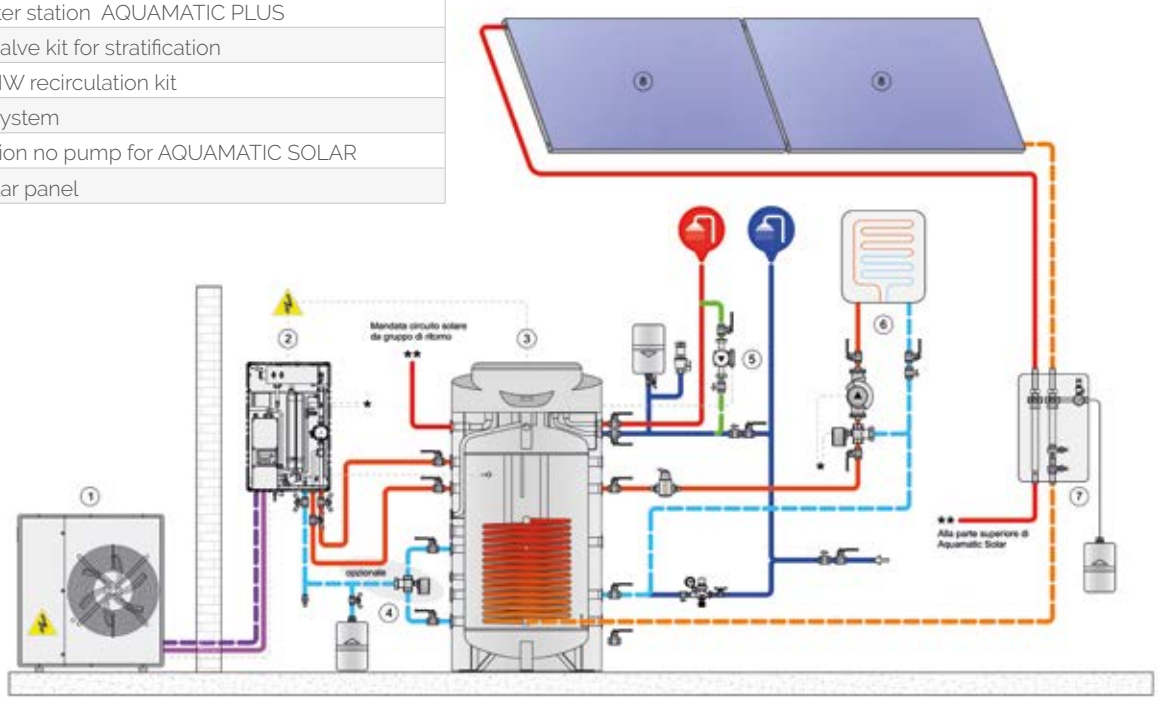
1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC
4	Diverter valve kit for stratification
5	Fiorini DHW recirculation kit
6	Heating system
7	Thermal solar return group
8	Fiorini solar panel



Installation chart AQUAMATIC Solar

Legend

1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC PLUS
4	Diverter valve kit for stratification
5	Fiorini DHW recirculation kit
6	Heating system
7	Solar station no pump for AQUAMATIC SOLAR
8	Fiorini solar panel



Standard Accessories AQUAMATIC

Several kits with accessories that can be connected to the AQUAMATIC are available.
Some of those can be supplied already assembled in our factory.

Kit Electrical Resistor

The kit with an electrical resistor (integrated) guarantees a constant storage temperature, even in case of insufficient energy supply by the primary heat source. The resistor can be managed directly by the AQUAMATIC control unit, simply by activating it through the display.

The kit can be assembled in our factory or supplied after delivery.

It contains:
✔ 1200 W single-phased 230 V electrical resistor with regulation thermostate
✔ fuses and wiring for integration in the electrical switchboard

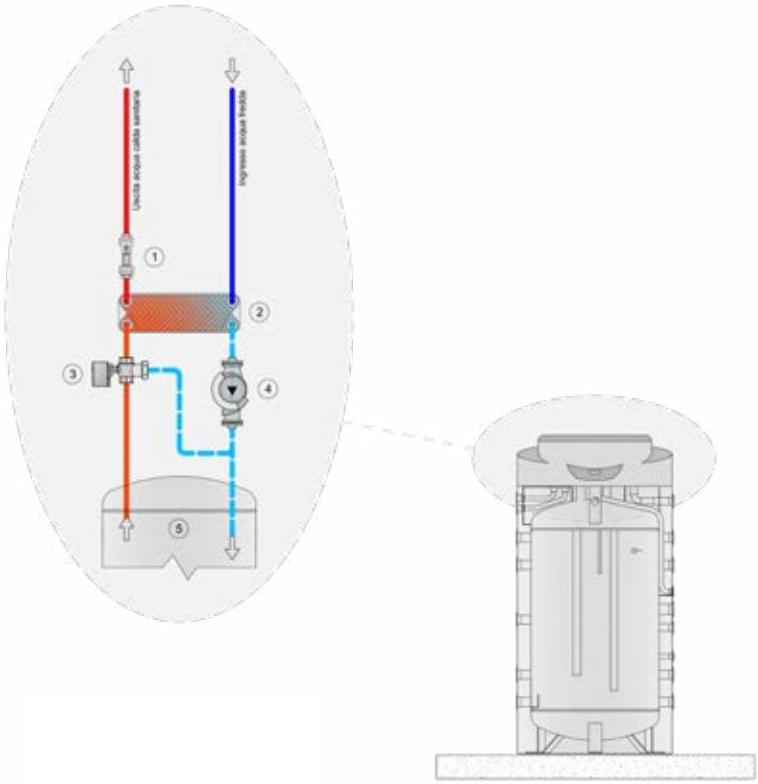
NB The AQUAMATIC has a small channel through the insulation of the tank in order to pass the cable for connecting the resistor to the electronic switchboard.

Kit mixing valve on primary circuit

The kit with mixing valve (integrated) makes it possible to regulate the inlet temperature of the domestic heat exchanger. In this way, especially in installations that can reach high temperatures in the primary circuit, the precision of the regulation of the production unit improves. This leads to a larger comfort and reduces the chalk formation in the domestic circuit. We recommend the use of this device when the temperature in the primary circuit teaches values higher than 60°C.

The kit can either be pre-assembled in our factory or supplied later on.

It contains:
✔ DN20 three way mixing valve
✔ Servo drive 24Vac/dc Signal 0.10 V
✔ kit with tubes for installing the kit to the top part of the AQUAMATIC
✔ temperature probe
✔ Pre-cabled gudgeon pin for connection to the electric switchboard



Legend

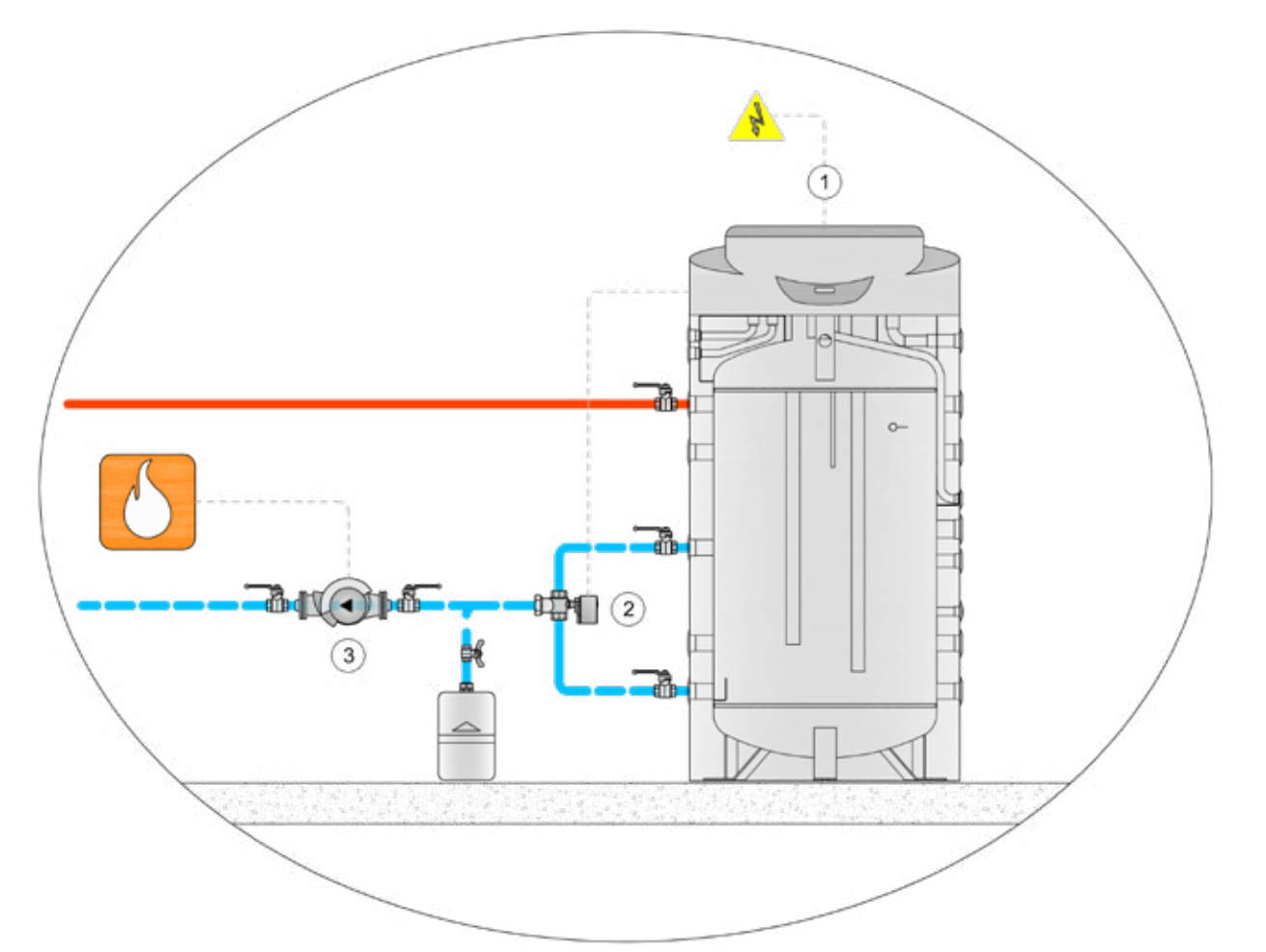
1	Flowmeter
2	Domestic plate heat exchanger
3	Primary mixing valve
4	Pump
5	Tank

Kit External deviation valve for stratification

The kit with external deviation valve makes it possible to take the water for the return to the heat pump from the lower parts of the tanks instead of the middle in function of the temperature difference between the two zones in the tank.
In this way the temperature of the water that returns to the heat pump makes it possible to produce hot water at a higher temperature than the storage temperature. This maximizes the efficiency of the entire heating installation.

N.B. In case of connection in series, you should provide a deviation valve kit for every AQUAMATIC.

Contains:
✔ DN32 three-way valve
✔ On/off servo drive 230V



Legend

1	AQUAMATIC (all versions)
2	Kit External deviation valve for stratification
3	Pump AQUAMATIC (system)

Accessory – storage tank for installation

A tank that can be put under the AQUAMATIC when you need an inertial flywheel dedicated exclusively to the heating installation of cool water installation. Reccommended in all cases in which you have a heat pump as thermal source. Its installation makes it possible for the heat pump to operate at a low temperature when it has to reach the thermal demand of the installation. In this way the operation at high temperature is limited to the production of domestic hot water. Moreover, the tank serves as a thermal flywheel in summer mode in order to guarantee an optimal modulation of the heat pump.



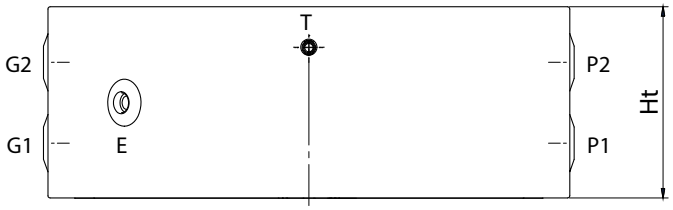
✔ Energetic efficiency
✔ Easy installation
✔ Does not take a lot of space
✔ Same design as the AQUAMATIC

In carbon steel without internal treatments of the surface area, insulated with 30 mm thick rigid polyurethane, externally covered in thick coloured PVC. Two available capacities in function of the size of the selected AQUAMATIC. Supplied with manual air vent valve and coupling for probe pit.

✔ **Material:** carbon steel
✔ **insulation:** 30 mm thick rigid foam
✔ **external covering:** coloured PVC

User limitations
Min temperature -10 °C
Max temperature 95 °C
Max pressure 3 bar

TESTED



Couplings legend

P1	To energy source
P2	From energy source
E	Probe
G1	From plant
G2	To plant
T	Vent

Chart with dimensions and couplings

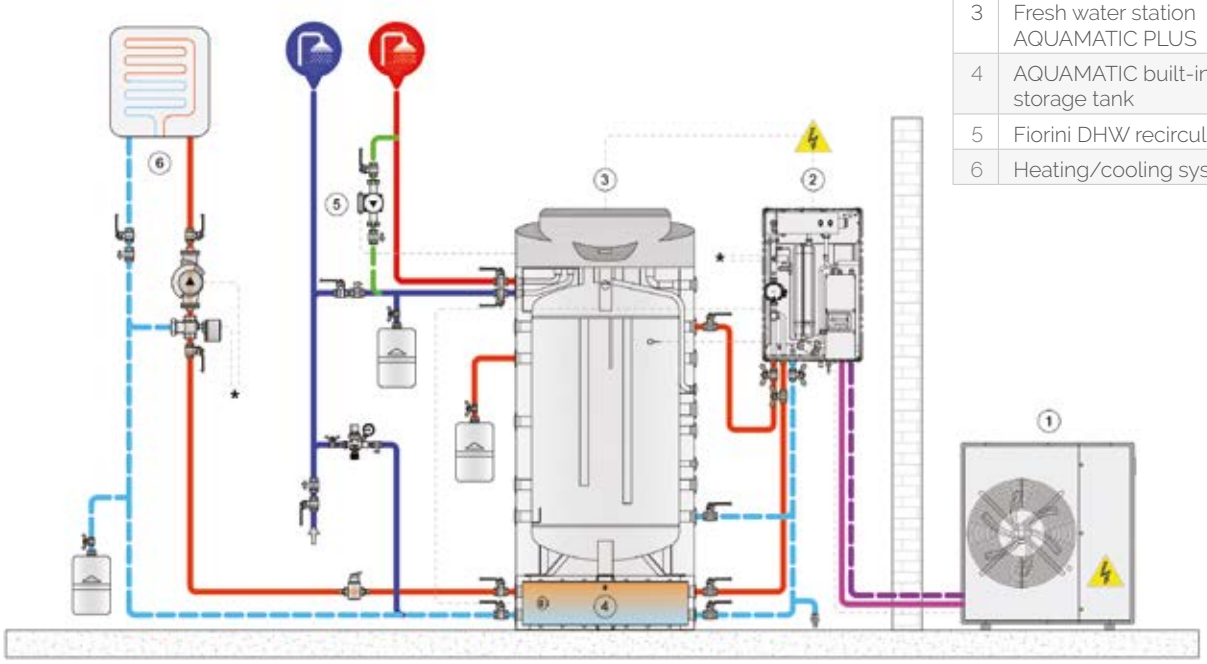
Cod.	cap. l	pairing AQUAMATIC	Øe mm	Ht mm	P1 mm	P2 mm	G1 mm	G2 mm	E mm	T mm	P1 inch	P2 inch	E inch	G1 inch	G2 inch	T inch
817010158X	66	200 l - 300 l	710	260	75	185	75	185	130	205	1"	1"	1/2"	1"	1"	1/4"
817010159X	93	500 l	850	260	75	185	75	185	130	205	1"1/4	1"1/4	1/2"	1"1/4	1"1/4	1"1/4

Installation chart accessory

Accessory Storage with AQUAMATIC (1 source)

Legend

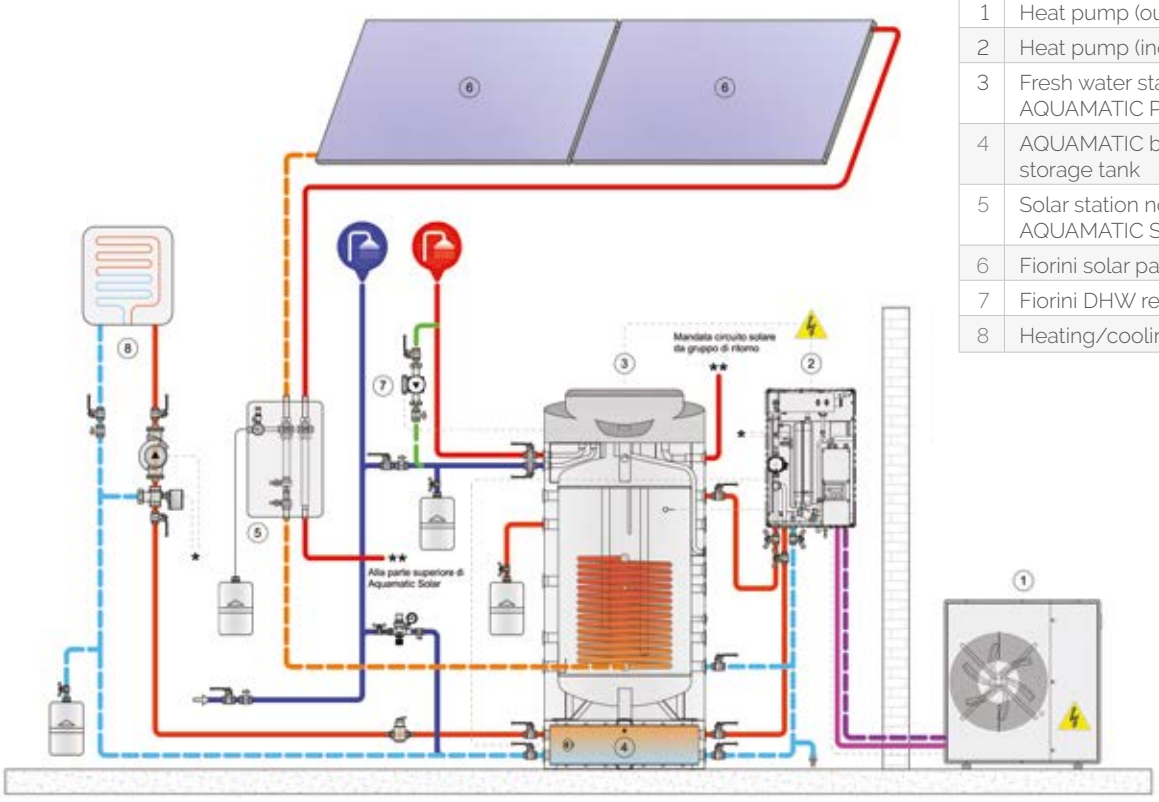
1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC PLUS
4	AQUAMATIC built-in-storage tank
5	Fiorini DHW recirculation kit
6	Heating/cooling system



Accessory Storage with AQUAMATIC SOLAR

Legend

1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC PLUS
4	AQUAMATIC built-in-storage tank
5	Solar station no pump for AQUAMATIC SOLAR
6	Fiorini solar panel
7	Fiorini DHW recirculation kit
8	Heating/cooling system



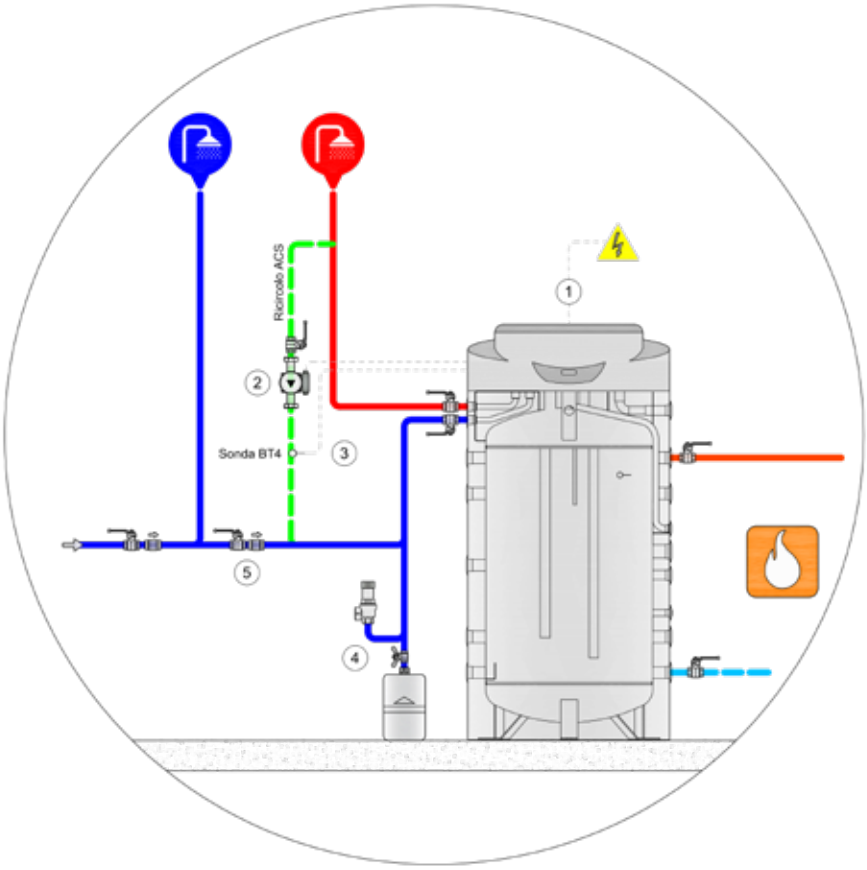
Recirculation kit

The recirculation kit makes it possible to check the pump of the domestic recirculation circuit (circulator not supplied). Possible settings:

✔ Programming the recirculation in time slots
✔ Programming the recirculation based on the temperature of the recirculation ring.
✔ Programming the recirculation based on a combinations of the two above-mentioned settings
✔ Recirculation pump always running.
The kit is supplied separately and not assembled.

It contains:
✔ Temperature probe to be put on the recirculation ring
✔ Instructions

Recirculation pump
The recirculation pump is not supplied with the kit because the device has to be selected based on the specifics of the installation. However, because it is controlled by the regulator of the AQUAMATIC group, it has to have the following features
✔ Power supply 230V/50hz/1ph
✔ Max absorption 200 W



Legend

1	AQUAMATIC (all versions)
2	Recirculation pump (not included)
3	NTC temprature probe
4	Safety group
5	Non-return valve

Kit serial port RS485 Modbus

KIT Modbus, allows the creation of an RS485 Modbus serial port as an alternative to the one already installed as standard.

Kit web (remote control)

Makes it possible to check and monitor the device via internet

Solar unit without pump for AQUAMATIC SOLAR

Solar unit with double tube to couple with the AQUAMATIC SOLAR when a pre-assembled solar station is needed that integrates and completes the functions already present in the AQUAMATIC SOLAR.

The solar unit with double tube, completely assembled and tested, consists of:



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Return circuit:
✔ Flow meter and regulator with couplings for the filling and emptying of the installation
✔ Ball valve with non-return valve which can be excluded by turning the handle with 45° (useful in the filling phase of the installation)
✔ 6 bar safety valve with manometer Ø50 mm 0-10 bar and drain outlet ¾"F
✔ coupling for expansion vessel ¾"M
✔ Thermometer 0-120°C

Flow circuit:
✔ Ball valve with non-return valve which can be excluded by turning the handle with 45° (useful in the filling phase of the installation)
✔ Thermometer 0-120°C
✔ Brass deaerator with manual vent valve
✔ Connecting hose and coupling

Min/max flow	2-12 l/min
Max pressure	6 bar
Max temp	120 °C
Couplings	1" Male
Wheelbase	125 mm
Insulation box	in EPP
Dimensions	277x425x150 mm

Codes and prices for AQUAMATIC accessories

Code	Description	Price
829000209X	Kit resistor	
842030116X	Kit internal primary mixing valve	
842030120X	Kit external deviation valve for stratification	
842030119X	Recirculation kit (pump not included)	
817010158X	Accessory puffer 70 litres AQUAMATIC 200/300 (Energy class C)	
817010159X	Accessory puffer 90 litres AQUAMATIC 500 (Energy class C)	
838110069X	Solar station no pump	
452010010	Kit serial port RS485	
452010006	Kit web (remote control)	

T-SET
Instant DHW production units

The **T-SET** is an instant domestic hot water production unit that uses a brazed stainless steel plate heat exchanger.
Domestic hot water **temperature is regulated** using a **three-way, thermostatic mixing valve** installed on the primary circuit (hot water buffer tank side).
The module, connected to a hot water buffer tank from which it draws power, includes all the components required for its operation: a pump on the primary circuit operated by a flow switch positioned on the DHW circuit inlet, and a mixing valve operated by a **thermostatic actuator**, which allows the user to keep the set DHW temperature at a constant level.
For optimal ease of use, accessories are available for the management of domestic hot water **recirculation** that can be combined with each other, or used individually, according to the needs of the user.



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Plus

- ✔ Compact wall module
- ✔ Accurate regulation of domestic hot water temperature
- ✔ Pre-painted, aluminium cladding case
- ✔ Closed-cell, polyethylene foam insulation, which insulates the entire hydraulic system
- ✔ STAINLESS STEEL domestic hot water circuit
- ✔ Fitted for internal assembly of the recirculation kit
- ✔ Shut-off valves on each connection
- ✔ Integrated safety valve on DHW circuit
- ✔ Easy Plug and Play installation
- ✔ Simple and economical use

Main features

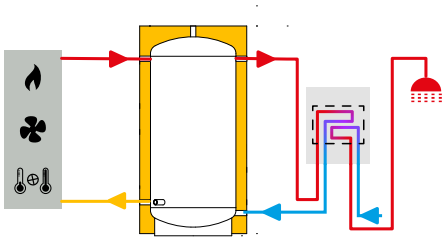
The main features are outlined below:

- ✔ Very simple factory setting: the set point is set using a knob that allows selection of the desired DHW usage temperature
- ✔ A mechanical stop positioned on the valve allows the maximum temperature of the SET POINT, which is selectable by the user, to be set

Available accessories from page 248

Start-up: the first start-up is recommended. See page 361

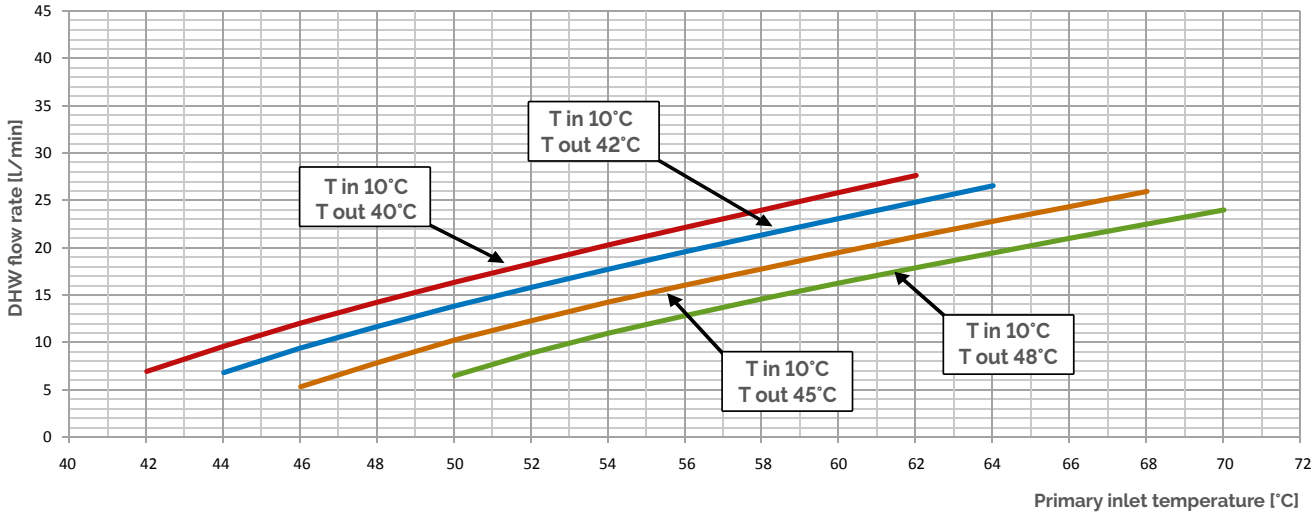
				With packaging	
Model	**DHW nominal flow**	**Code**	**Price**	**Dimensions cm**	**Weight kg**
T-SET 20	(20 l/min. DHW)	842030152X		63x40x21	19
T-SET 30	(30 l/min. DHW)	842030153X		63x40x21	20



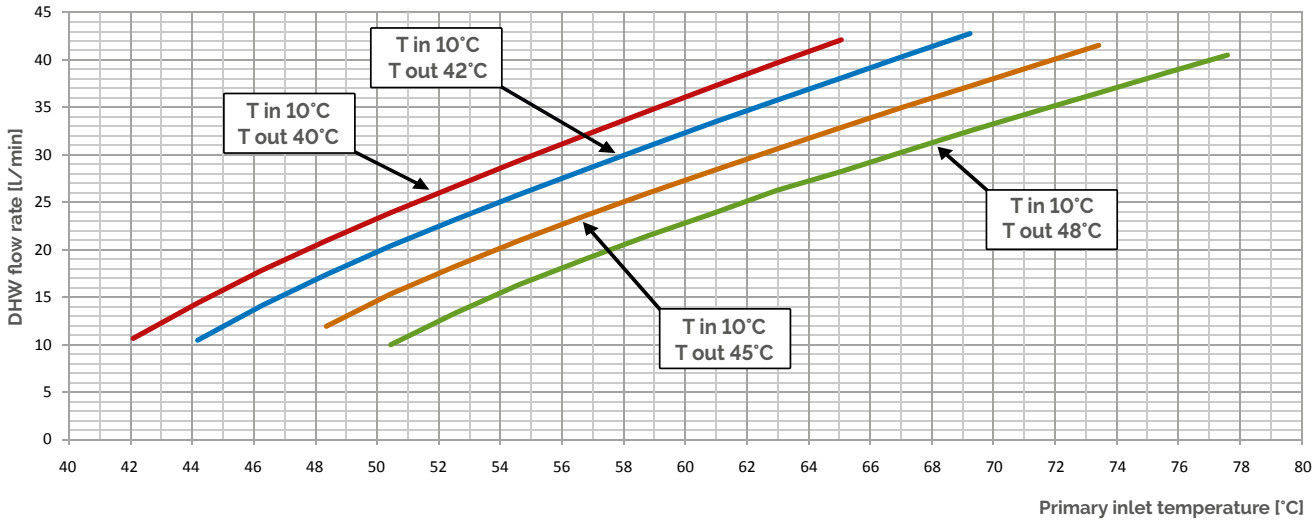
T-SET

Thermal performances

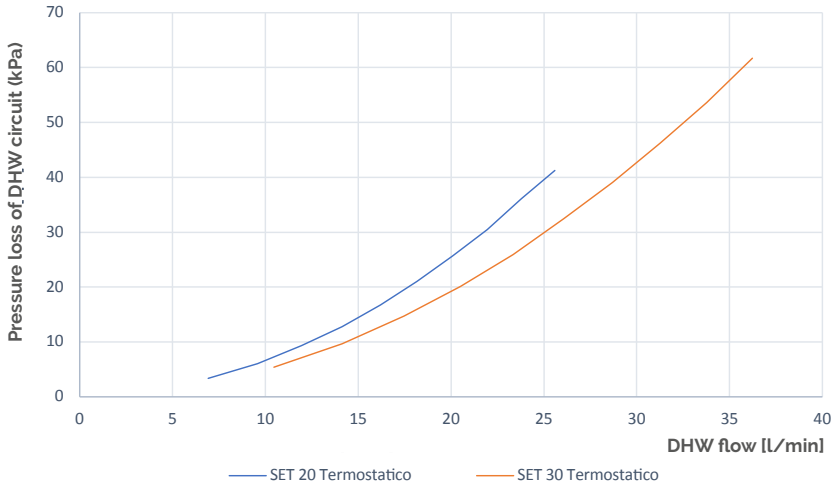
Thermal performance T-SET 20



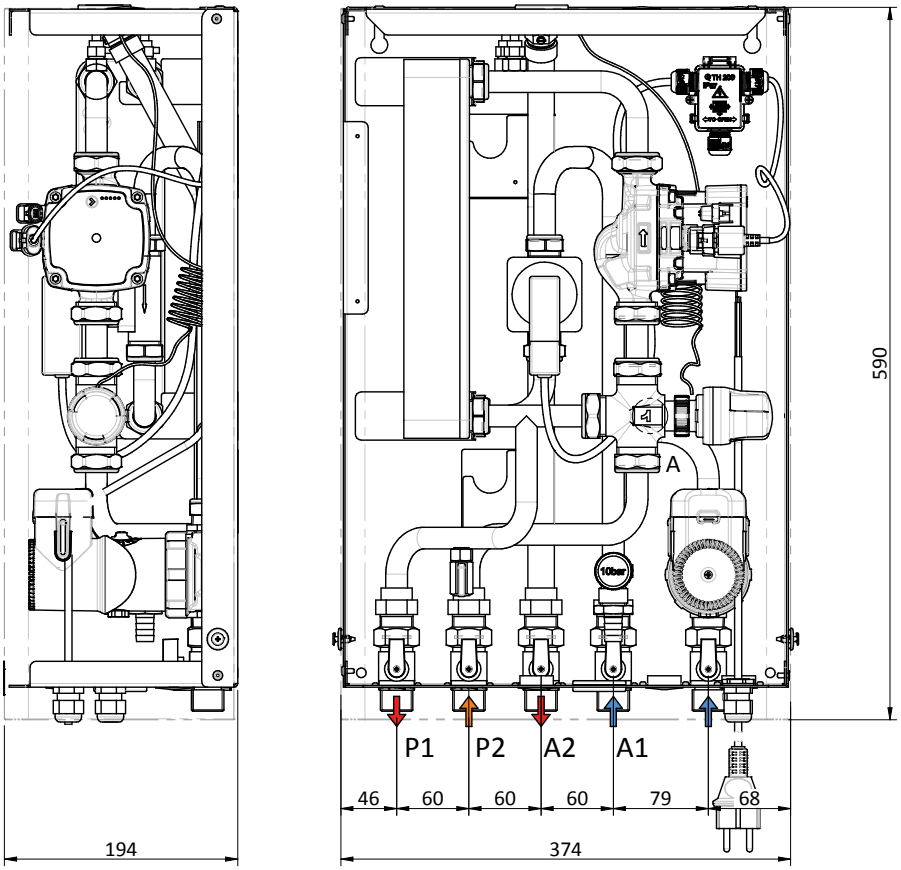
Thermal performance T-SET 30



Hydraulic performances



T-SET
Dimensions



Key

A1	DHW inlet
A2	DHW outlet
P1	To energy source
P2	From energy source

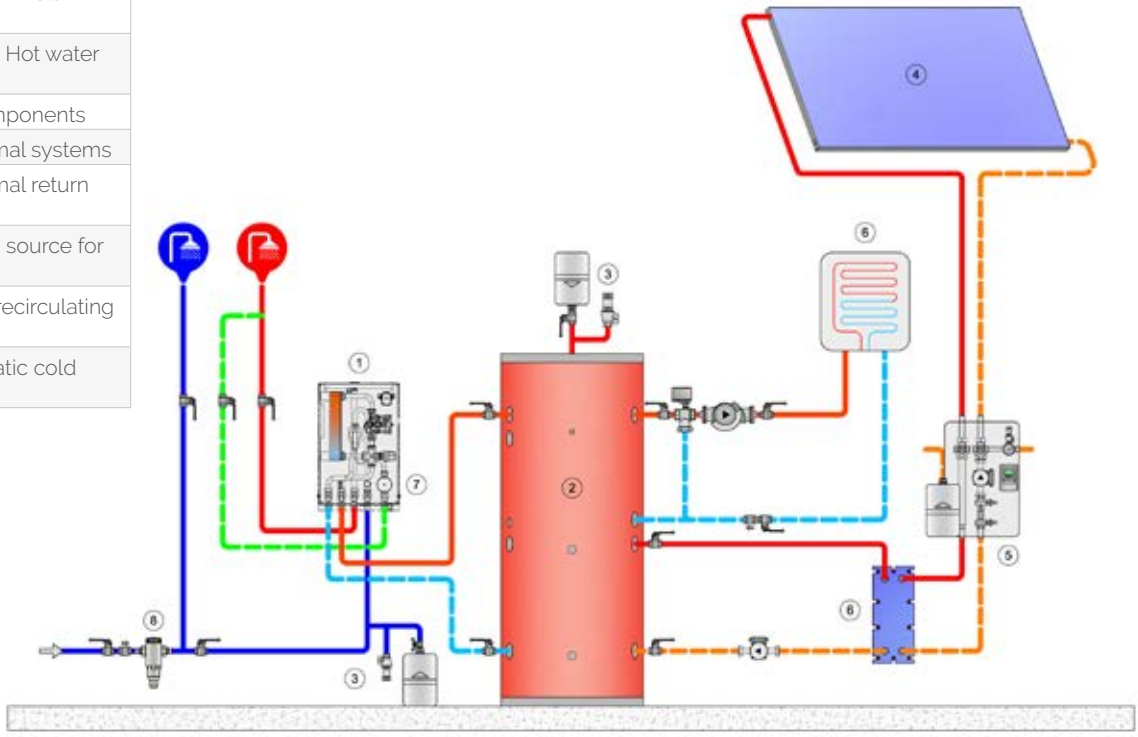
Technical Data Table

		T-SET 20	T-SET 30
Power supply	V/Ph/Hz	230/1/50	
Primary pump power min/max	W	10-75	
Primary pump consumption min/max	A	0.03-0.66	
Maximum system recirculating pump power managed by the control unit	W	460	
Primary flow rate	l/h	1500	1600
Primary circuit residual head	mH_2O	1.5	
Weight without packaging/with packaging	kg	18/19	19/20
Primary circuit volume	l	0.7	1
Domestic circuit volume	l	0.6	0.9
Maximum operating pressure primary circuit	bar	5	
Maximum operating pressure domestic circuit		10	
Primary circuit connections	inches	UNI ISO 228/1 – G 3/4	
Secondary circuit connections	inches	UNI ISO 228/1 – G 3/4	
Maximum operating temperature	°C	95	
Electrical protection rating		IP40	
Type of electric plug		SCHUKO 10-16A/250V	
Electrical cable length	m	1.5	
Min DHW ignition flow	l/min	2	
Dimensions (HxLxW)	mm	590X374X194	

T-SET
Installation diagram
in combination with hot water buffer tank

Key

1	T-SET DHW instant heaters
2	Fiorini PFB Hot water buffer tank
3	Safety components
4	Solar thermal systems
5	Solar thermal return unit
6	Alternative source for heating
7	Domestic recirculating pumps
8	Bacteriostatic cold water filter



N.B.: Installation of an expansion vessel on the cold water line is mandatory

Standard supply

The T- SET instant water heater is shipped in a cardboard box and includes:
- ✔ Complete instant water heater with power cord and Schuko plug
- ✔ Template for easy layout of wall holes to mount the instant DHW heater
- ✔ Rawlplugs and L-hooks to mount the instant DHW heater to the wall
- ✔ Use and maintenance manual

T-SET
Accessories on request

The T-SET may be integrated with three accessories to manage recirculation. Recirculation increases comfort for the end user by the immediate supply of hot water when a tap is opened with no cold water being wasted. Three accessory codes are available:

1. recirculation kit consisting of circulator, valves and instructions (can be integrated internal to the T-SET),
2. recirculation control unit consisting of an electronic board and 2 PT 1000 probes, one contact and one immersion probe
3. PT 1000 contact probe for the recirculation loop

These three accessories provide the installer with a great degree of freedom of choice. They may, for example, purchase a recirculation kit coupled to the control unit, or a recirculation kit coupled to the probe, to decide freely how to best manage the kit. The T-SET recirculation kit (1) is not supplied with a probe as the installer is left free to manage the pump: if the circulator needs to be controlled electronically, a recirculation control unit may be purchased (equipped with probes) (2) or possibly only a recirculation probe (3).

(1) T-SET recirculation kit

The recirculation kit can be integrated internal to the T-SET body using the supplied hydraulic fittings. The kit is supplied separately, unassembled and includes:

- ✔ Recirculating pump
- ✔ Shut-off valve
- ✔ Non-return valve
- ✔ Instructions

NB: A temperature probe is not supplied with this Kit. The Kit is designed to be easily installed inside the unit. To obtain the Complete Recirculation Kit and optimise consumption, it is advisable to combine the **Recirculation kit with the Probe accessory for the recirculation kit** and set up a panel with thermostat (and/or timer).



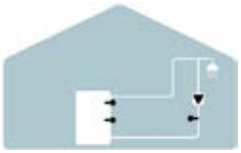
(2) Control unit for recirculation kit

The kit is supplied separately, unassembled and includes:

- ✔ CC Control unit
- ✔ 1 PT1000 immersion temperature probe to be installed on the upper part of the tank
- ✔ 1 PT1000 contact temperature probe to be positioned on the recirculation loop
- ✔ Instructions

NB: When purchasing the control unit kit, purchasing probes separately is not required.





(3) Probe for recirculation kit

The kit is supplied separately, unassembled and includes:

- ✔ PT1000 temperature probe to be positioned on the recirculation loop
- ✔ Instructions

NB: The recirculating pump is not supplied with this Kit.
Fittings for assembly are, however, provided inside the T-SET heater.
When purchasing the control unit kit, purchasing probes separately is not required.

Accessory codes and prices

Description	Code	Price
T-SET RECIRCULATION KIT	842040003X	
PROBE FOR RECIRCULATION KIT – T-SET /SET	842040009X	
CC CONTROL UNIT - FOR DHW RECIRCULATION	C22120034	

SET
Instant DHW production units

The new SET is an instant domestic hot water production unit that uses a brazed stainless steel plate heat exchanger.

The SET comes with a control unit for DHW temperature regulation, time bands, accessory management and much more. The SET model has the same compact components and dimensions as the T-SET model but includes a greater number of options and adjustment possibilities.

Special **electronic regulation** is carried out by means of a control unit and flow meter on the secondary circuit. The graphic display on control unit allows the user to monitor operations as well as easily set the parameters of use.

For optimal ease of use, a variety of accessories is available, including the new domestic hot water **RECIRCULATION KIT**, which is to be installed inside the unit. Find out more on page 257



TESTED

SET 20, 30, 40



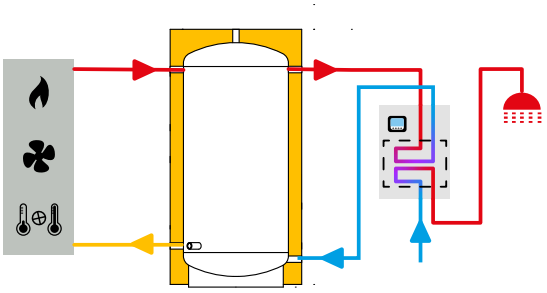
SET 80



Plus

- ✔ Compact wall module with reduced overall dimensions
- ✔ Pre-painted, aluminium cladding case
- ✔ Fitted for assembly of DHW recirculation kit
- ✔ Closed-cell, polyethylene foam insulation, which insulates the entire hydraulic system
- ✔ STAINLESS STEEL domestic hot water pipes
- ✔ Shut-off valves on each connection
- ✔ Integrated safety valve on DHW circuit
- ✔ Easy Plug and Play installation
- ✔ Simple and economical use
- ✔ Ultrasonic flowmeter (SET 80 only)

Start-up: the first start-up is recommended. See page 361



The SET is available in 4 models

				With packaging	
Model	DHW nominal flow rate	Code	Price	Dimensions cm	Weight kg
SET 20	(DHW 20 l/minute)	842030149X		63x40x21	18
SET 30	(DHW 30 l/minute)	842030150X		63x40x21	19
SET 40	(DHW 40 l/minute)	842030151X		63x40x21	20
SET 80	(DHW 80 l/minute)	842030180X		63x40x21	30

SET
Main features

Efficient electronic control of the pump speed

Option of controlling a recirculating pump for the domestic water loop, by setting the pump operating times and the temperature of the recirculation loop below which the pump is activated

Option of managing anti-legionella treatment by means of thermal shocks along the entire DHW adduction line (activation of a supplemental heat source is possible when anti-legionella treatment is active): the anti-legionella function can be activated if there is a heat source above 65°C

High-efficiency electronic pump controlled using PWM signal

Wall assembly using rawlplugs and L-hooks, supplied with the unit

Graphic display including:
- Setting the DHW usage temperature
- Setting the maximum DHW temperature. This is a safety setting that stops the unit if the temperature reaches the maximum value entered

Solar power system circulator command and control
Heat generator management (boiler, heat pump, heating elements, etc.): option of activating and deactivating a heat generator when the storage tank temperature falls below the set point
Managing cascade kits
Managing the mixing valve kit on the primary circuit
Storage tank stratification kit management



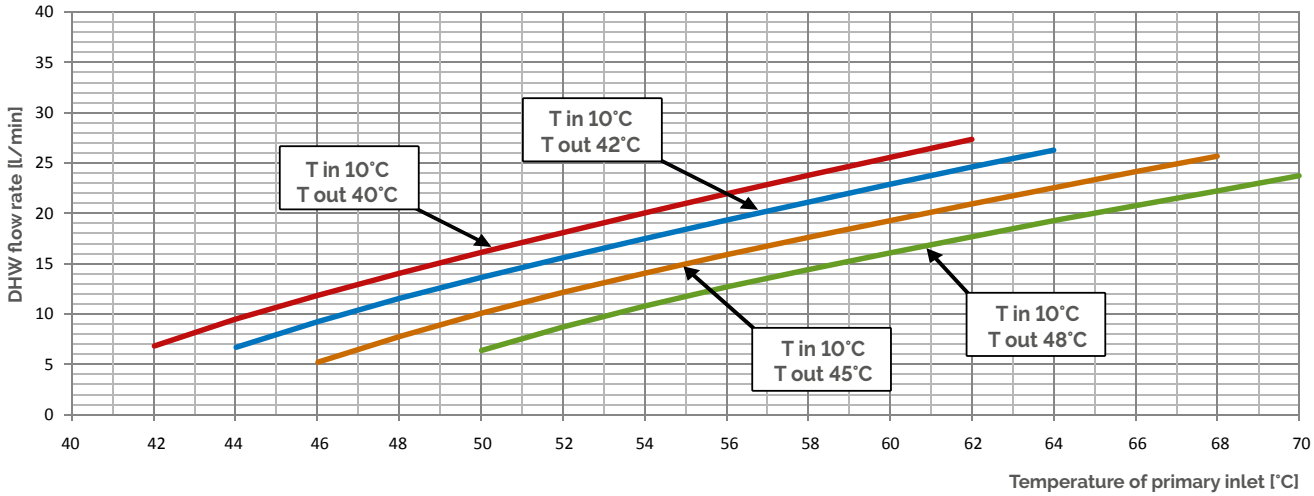
Specific features of SET 80

The new **Ultrasonic Flowmeter**, installed on the secondary circuit, is free of mechanical components vulnerable to pressure changes, ensuring greater durability and reliability of the product over time. The flowmeter has an extremely high detection sensitivity: it activates starting from 1 l/min and reaches up to 80 l/min.

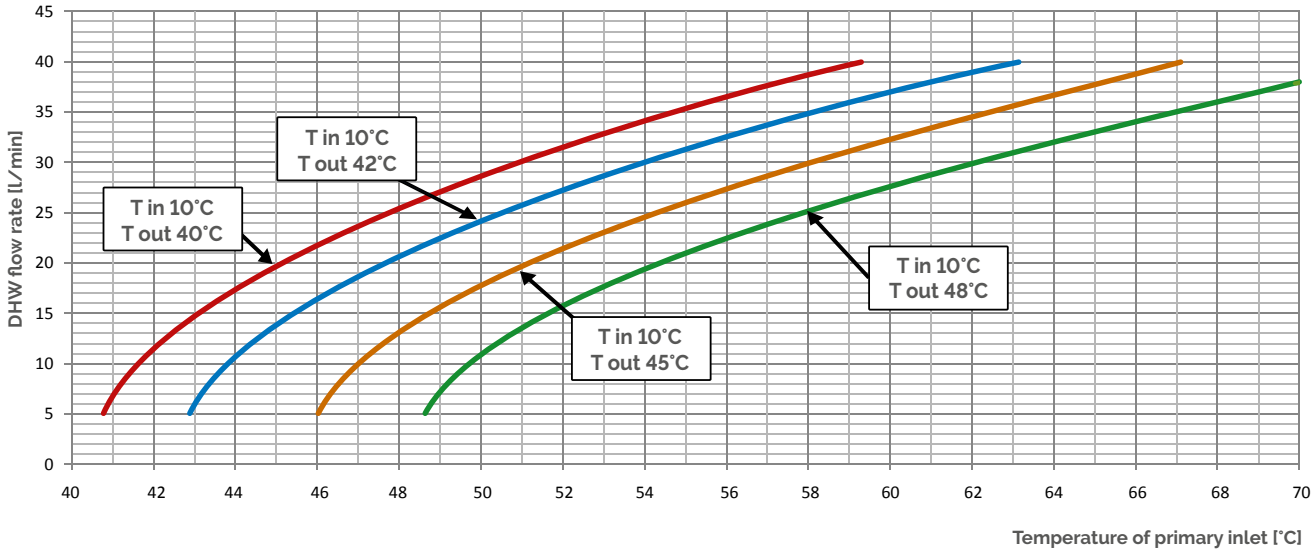


SET
Thermal performance

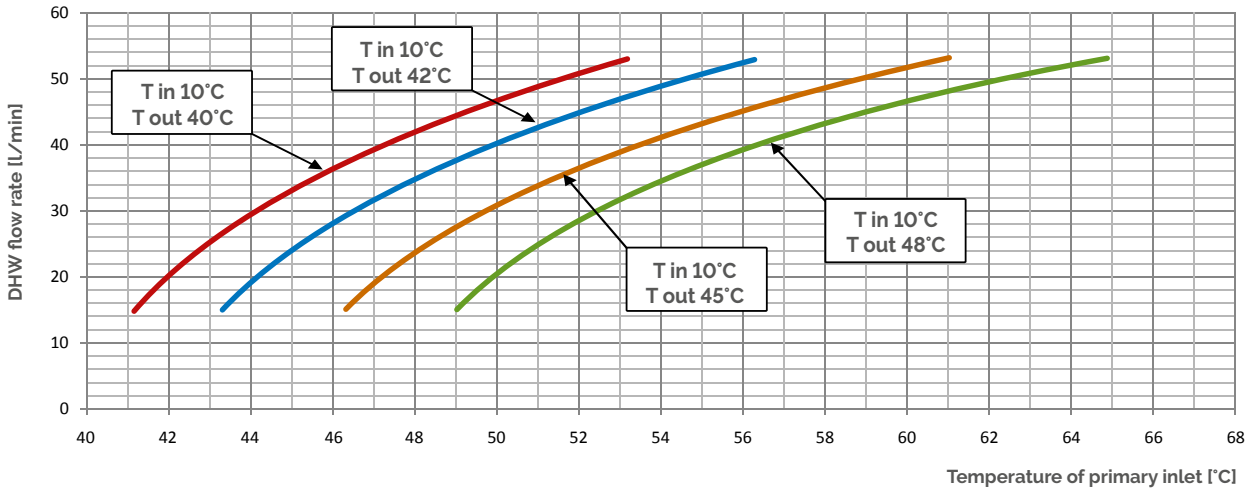
Thermal performance SET 20



Thermal performance SET 30

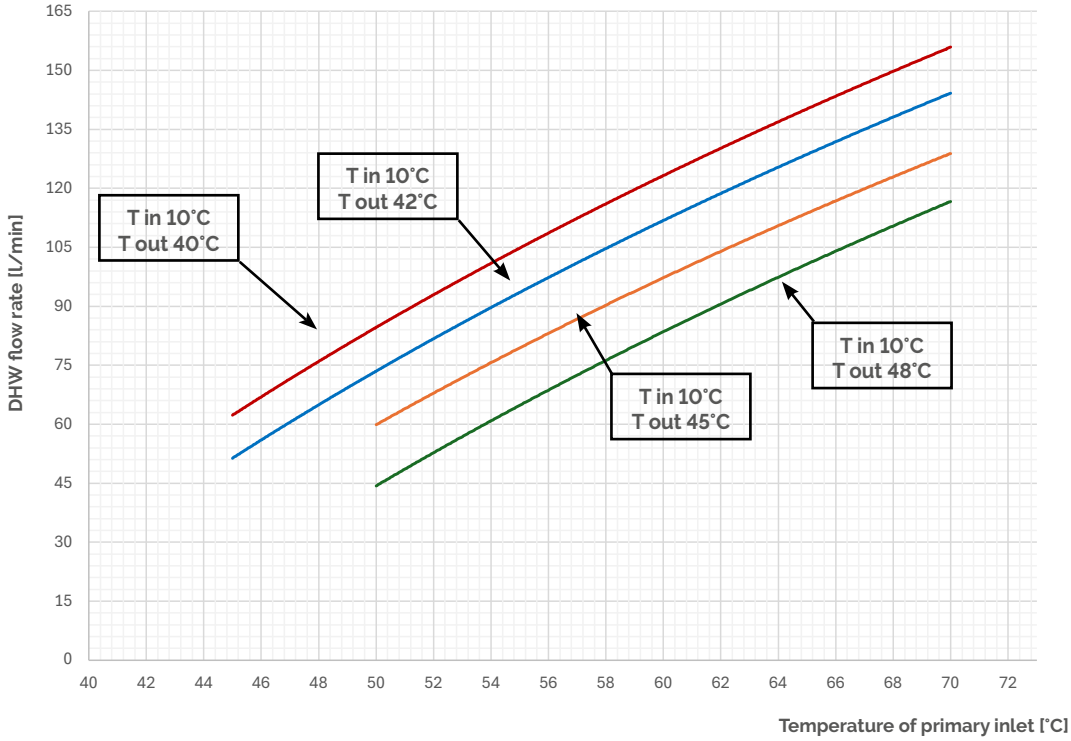


Thermal performance SET 40

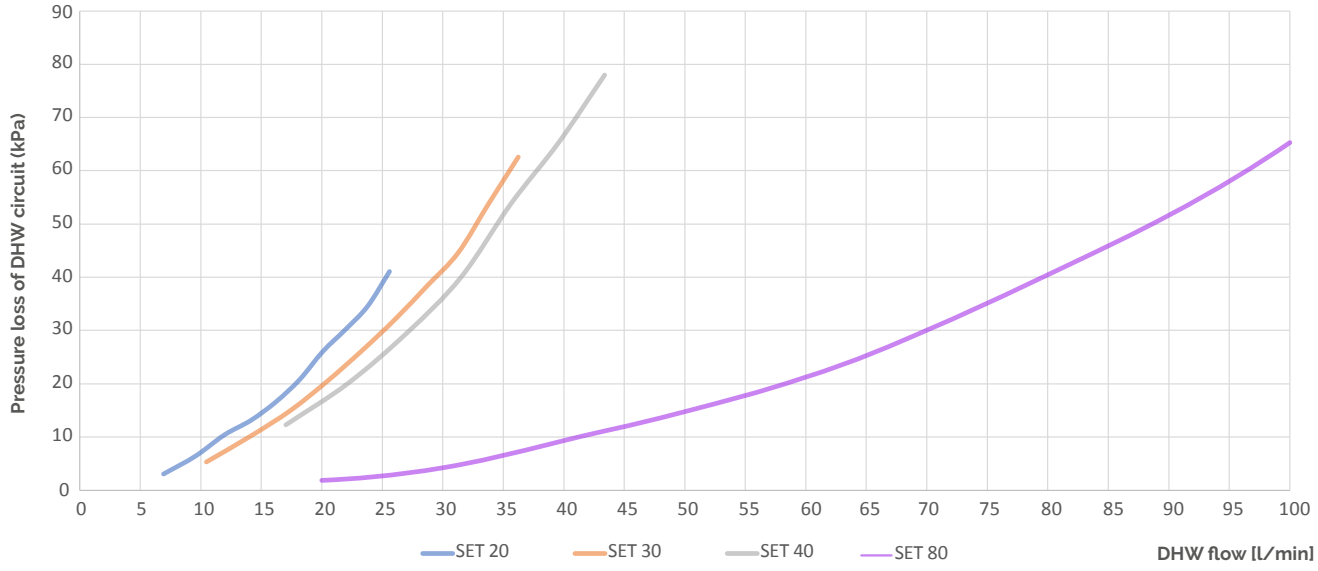


SET
Thermal performance

Thermal performance SET 80

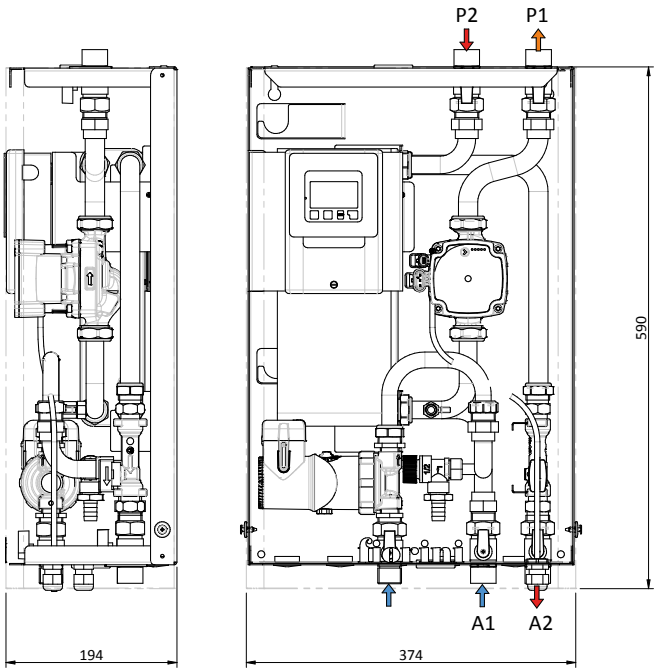


SET
Hydraulic performance



SET
Dimensions

SET 20, 30, 40



SET 80

Key

A1	DHW inlet
A2	DHW outlet
P1	To energy source
P2	From energy source

The domestic recirculating pump shown in the drawing is optional

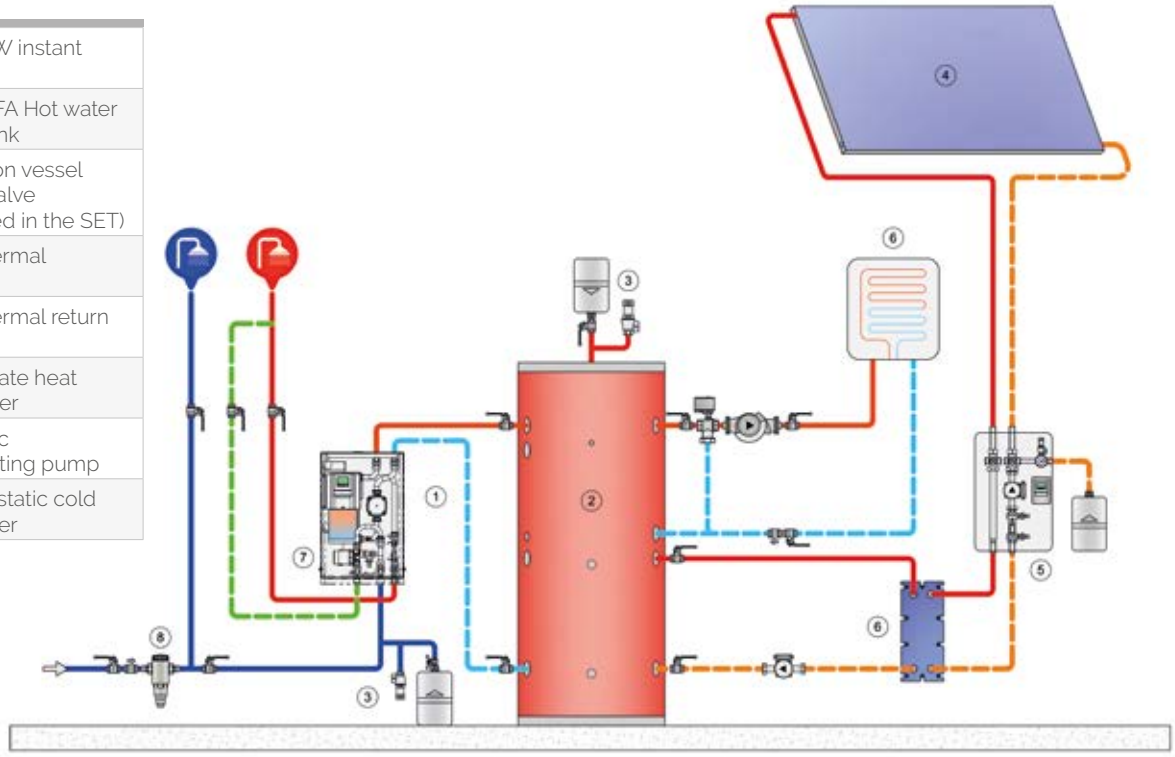
Technical Data Table

		SET 20	SET 30	SET 40	SET 80
Power supply	V/Ph/Hz	230/1/50			
Primary pump power min/max	W	10-75			3-180
Primary pump consumption min/max	A	0,03-0,66			0,04-1,42
Maximum system recirculating pump power managed by the control unit	W	460			
Primary flow rate	l/h	1500	1600	2500	5400
Primary circuit residual head	m.c.a.	5	4	3	4
Weight without packaging/with packaging	kg	17/18	18/19	19/20	27/28
Primary circuit volume	l	0,6	0,8	1,2	2,8
Domestic circuit volume	l	0,7	0,9	1,4	2,9
Maximum operating pressure primary circuit	bar	6			10
Maximum operating pressure domestic circuit	bar	10			10
Primary circuit connections	inches	UNI ISO 228/1 – G 3/4			UNI ISO 228/1 – G 1
Secondary circuit connections	inches	UNI ISO 228/1 – G 3/4			UNI ISO 228/1 – G 1
Maximum operating temperature	°C	95			
Electrical protection rating		IP40			
Length of the power supply cable	m	1,5			
Min DHW ignition flow	l/min	2			2
Max DHW flow	l/min	25	35	45	80
Dimensions (HxLxW)	mm	590X374X194			

SET
Installation diagram
in combination with hot water buffer tank

Key

1	SET DHW instant heater
2	Fiorini PFA Hot water buffer tank
3	Expansion vessel (safety valve integrated in the SET)
4	Solar thermal systems
5	Solar thermal return unit
6	Fiorini plate heat exchanger
7	Domestic recirculating pump
8	Bacteriostatic cold water filter



Standard supply

The SET instant water heater is shipped in a cardboard box and includes:

- ✔ Complete instant water heater with power cord
- ✔ Template for easy layout of holes on the wall to secure the instant DHW heater
- ✔ Rawlplugs and L-hooks to mount the instant DHW heater to the wall
- ✔ Use and maintenance manual

SET
Accessories on request

A number of accessory kits are available to be combined exclusively with the SET heater to improve efficiency, optimise consumption and enhance ease of use for the end user:

1. SET connection kit in cascade
2. SET recirculation kit
3. Mixing valve kit on primary circuit
4. Stratification buffer tank kit (with external deviation valve)
5. External relay

N.B.: The SET electronic control unit manages up to 3 digital outputs, so it is necessary to check how many outputs are engaged by each chosen accessory according to their requirements. The new SET model may be integrated with the external relay accessory to add a digital output to the control unit.

The following pages outline detailed specifications for each accessory: codes and prices can be found on page 259

SET connection kit in cascade

The SET connection Kit in cascade (not usable on T-SET units), is the ideal solution for all applications where the demand for domestic hot water is highly variable. It is possible to connect up to a maximum of 8 instant DHW heaters, guaranteeing a production of DHW from a minimum of 2 l/min up to 360 l/min*. The electronic control units installed on each instant DHW heater communicate with one another via CanBus. The electronics can, thus, decide how many and which DHW heaters must start working depending on the conditions of use.

Advantages and benefits:

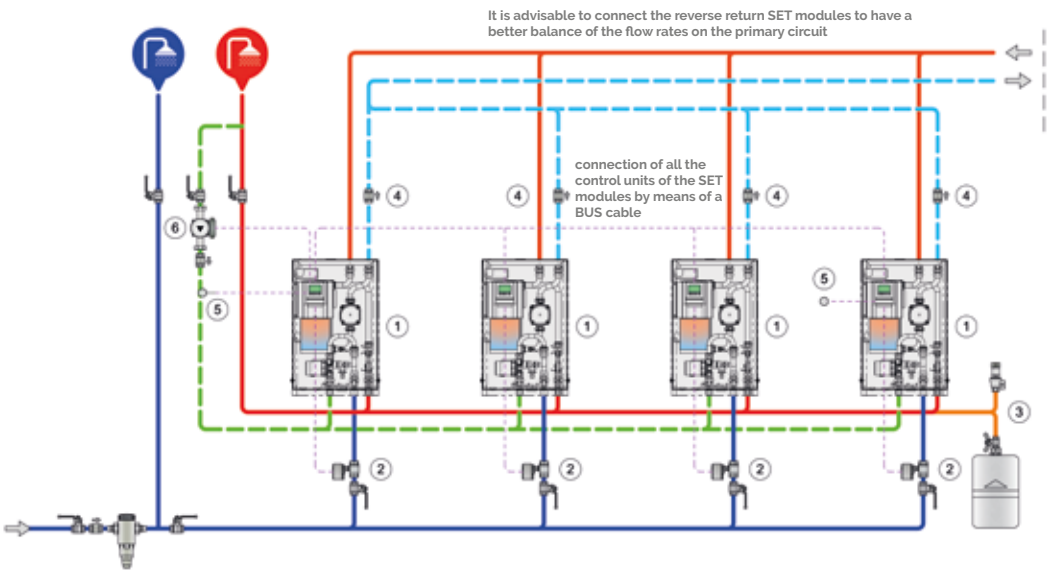
- ✔ Wide DHW production range: from 2 to 360 l/min
- ✔ Maximum reliability. Thanks to the self-diagnosis performed by the control unit, if a DHW heater malfunctions, it is automatically switched off and another one is started. Continuity in the production of DHW is thus guaranteed
- ✔ Even more precise temperature adjustment. Adjustment means that the correct number of instant DHW heaters are started based on the flow rate and DHW temperature requested. Each DHW heater, therefore, only operates in close-to-nominal conditions, improving efficiency and adjustment accuracy.
- ✔ The system designed with DHW heaters in cascade can be expanded by adding other units later on.
- ✔ Possibility of performing scheduled maintenance on DHW heaters without halting the supply of DHW.
- ✔ Each DHW heater works for the same number of hours, guaranteeing maximum system durability.

Kit supplied.

Install one kit for every instant DHW heater. The kit is supplied separately, unassembled and includes:
- ✔ 1 x motorized zone valve with fast 230 V motor
- ✔ 1 x fittings for coupling
- ✔ 1 x CanBus cable and 2 x CanBus line terminal resistors
- ✔ Instructions

*The flow rate of DHW that can be delivered by a cascade system is equal to the sum of the flow rates that can be delivered by each
single active heater included in the Thermal performance section.

Installation diagram



Key

1	DHW production unit SET
2	2-way valve for waterfall kit
3	Expansion tank
4	Non-return valve
5	Temperature probe
6	DHW circulation pump

MULTIGATEWAY -Remote management for SET fresh water stations

The Multigateway is a device with a touchscreen display for remote management of devices that communicate with the CAN protocol. Once the Multigateway is installed, it is possible to manage the system directly via the App or with the integration of a BMS (Building Management System) that communicates using the Modbus protocol. In the case of a SET cascade, it is sufficient to use 1 Multigateway.

Operating conditions

- ✔ Protection class: IP 20
- ✔ Temperatures: 0°C - 50°C
- ✔ CAN cable length < 3 m, or you need to use shielded cable

Main features

- ✔ Data Logger
- ✔ Fieldbus CAN
- ✔ Modbus RTU RS 485
- ✔ WiFi module
- ✔ Display touchscreen
- ✔ 12/24 V Power supply
- ✔ Android & iOS app
- ✔ Dimensions: 75 x 95 x 19 mm
- ✔ ABS body and glass front

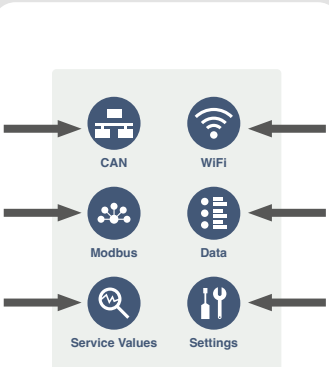


Main menu

CAN
Add devices to the network

Modbus
Protocol specific settings

Service values
System messages and data



WiFi
WiFi settings

Data
Data storage settings

Settings
Device parameters such as language, brightness, etc.

SET recirculation kit

The SET can be integrated into an internal or external recirculation system: the internal recirculation kit (1) is equipped with probe and circulator, while the external recirculation kit (2) consists of a probe that controls an external circulator. The two KITs are individually selectable but NOT combinable.
The recirculation kits make it possible to exploit the many options provided by the electronic control unit to control the pump of the domestic recirculation circuit.
The possible settings of the electronic control unit include, among others:

- Time band recirculation programming: the recirculating pump is activated only during the enabled times and when the recirculation temperature is below the set temperature.
- Recirculation pump always on

(1) Internal SET recirculation kit

The recirculation kit can be integrated internal to the SET body using the supplied hydraulic fittings. In case of installation of SET in cascade, the internal recirculation kit cannot be used, but the external kit must be used. In any case, it must be checked that the performance of the recirculation pump is sufficient to deliver a flow rate that is adequately higher than the minimum flow rate of the flowmeter.
The kit is supplied separately, unassembled and includes:

✔ Circulator
✔ Temperature probe to place on the recirculation loop
✔ Recirculation connection pipe
✔ Shut-off valve
✔ Instructions



(2) External SET recirculation kit

The kit is supplied separately, unassembled and includes:

✔ PT1000 temperature probe to be positioned on the recirculation loop
✔ Instructions

A recirculating pump is not supplied with the external kit. A single-phase pump with a maximum power of 460W must be used
N.B.: In the case of several SETS connected in cascade, a common recirculation pump can be installed, managed by the control unit of any of the groups.

Mixing valve kit on primary circuit

The mixing kit allows you to regulate the inlet temperature to the DHW heater. The adjustment precision of the DHW heater is consequently improved, thus ensuring greater comfort, especially in systems that can reach high temperatures in the primary circuit.

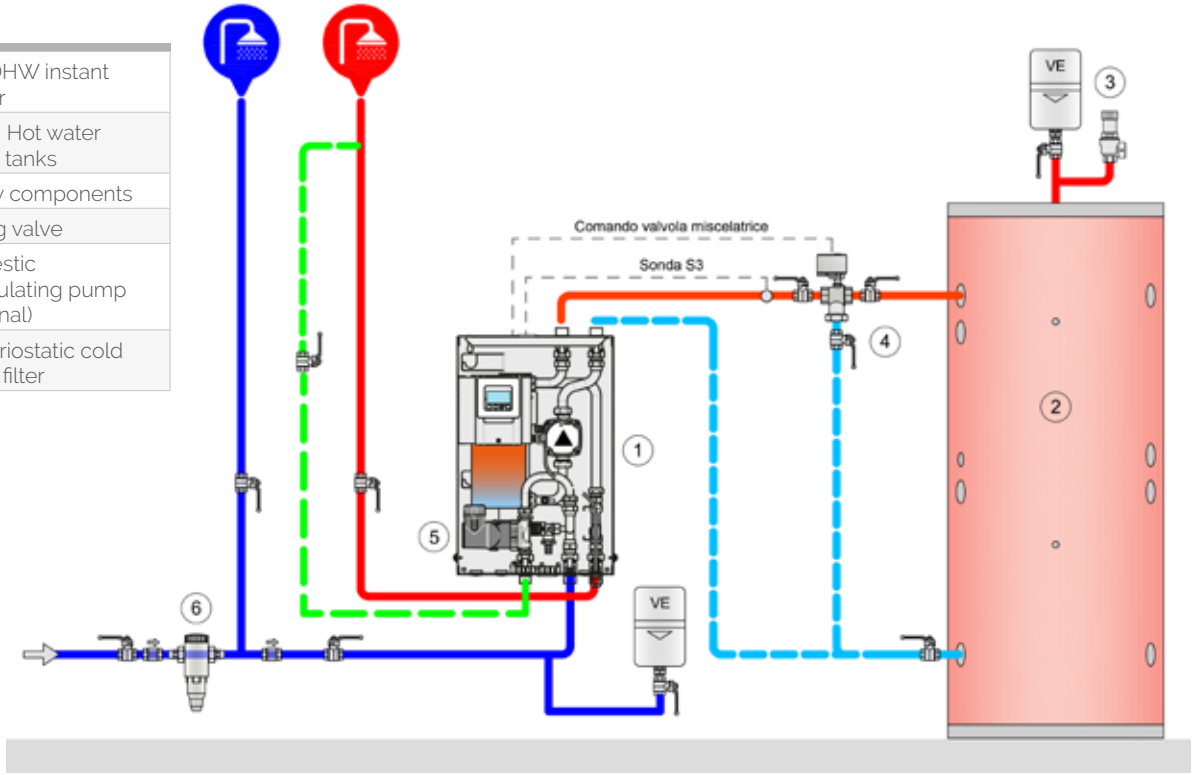
N.B.: If several SETs are installed in cascade to manage the inlet temperature of the primary, a mixing kit must be provided for each SET installed.

Kit supplied

The kit is supplied separately, unassembled and includes:
- ✔ S3 temperature probe to be placed at the exchanger inlet on the primary circuit
- ✔ Instructions
- ✔ Motorised mixing valve

Key

1	SET DHW instant heater
2	Fiorini Hot water buffer tanks
3	Safety components
4	Mixing valve
5	Domestic recirculating pump (optional)
6	Bacteriostatic cold water filter



Stratification buffer tank kit (with external deviation valve)

The stratification kit on the primary circuit (storage tank) directs the return from the instant heaters to 2 points at different heights of the storage tank, thus favouring the phenomenon of stratification inside the hot water buffer tank and optimising the efficiency of the entire heating system.

N.B.: If several SETs are installed in cascade, it is possible to install a single stratification kit managed by the control unit of any SET.

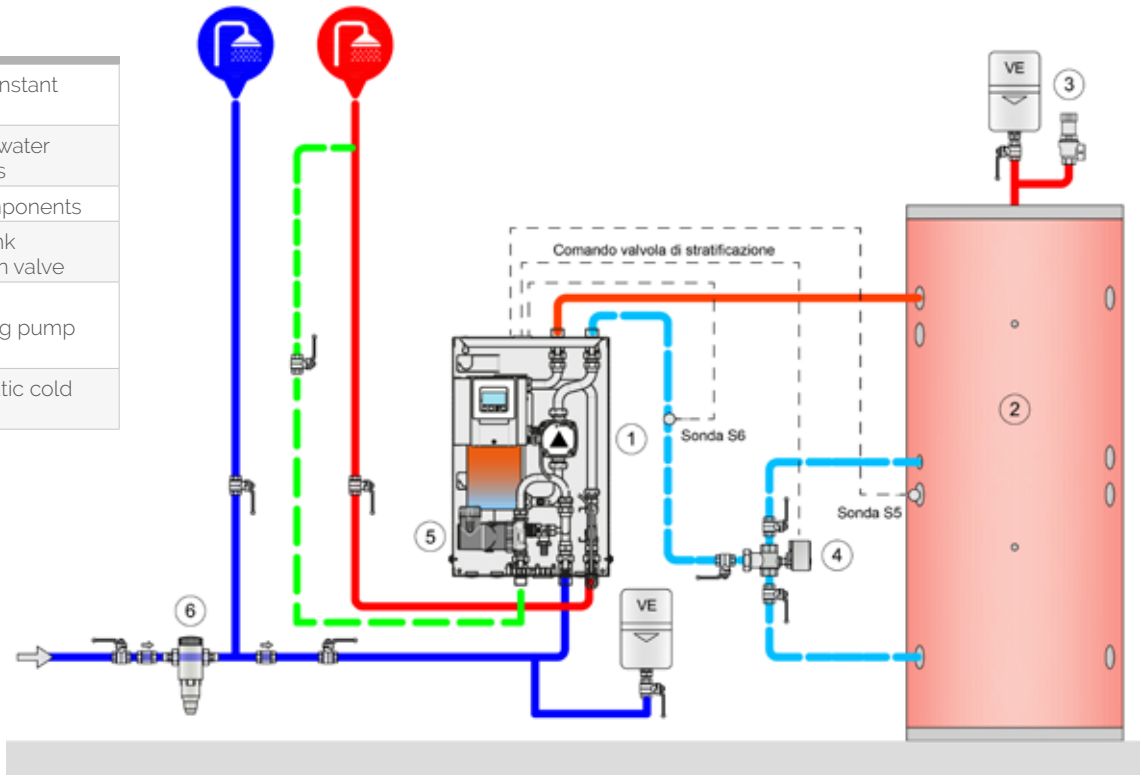
Kit supplied

The kit is supplied separately, unassembled and includes:

- ✔ S5 probe temperature to be placed in the middle of the buffer tank
- ✔ S6 probe temperature on the return of the primary circuit
- ✔ Instructions
- ✔ Motorised stratification valve

Key

1	SET DHW instant heater
2	Fiorini Hot water buffer tanks
3	Safety components
4	Storage tank stratification valve
5	Domestic recirculating pump (optional)
6	Bacteriostatic cold water filter



SET - Accessory codes and prices

Description	Digital ports	Code	Price
SET 20,30,40 EXTERNAL CASCADE KIT	-1	842040006X	
SET 80 EXTERNAL CASCADE KIT	-1	842030092X	
SET INTERNAL RECIRCULATION KIT	-1	842040004X	
T-SET/SET EXTERNAL RECIRCULATION KIT	-1	842040009X	
SET EXTERNAL MIXING VALVE KIT	-2	842040007X	
SET EXTERNAL STORAGE TANK STRATIFICATION KIT	-1	842040008X	
MULTIGATEWAY	0	C22120078	
EXTERNAL RELAY 1W 6A OUTPUT 0-10V IP55	+1	C24090225	

N.B.: The control unit manages up to 3 digital outputs: check the availability of the free outputs and the requirements of the various accessories. The following accessory is available: **External relay** 1W 6A OUTPUT 0-10V IP55, which converts one of the unused analogue outputs (V2) from 0-10V / PWM into an exchange contact (allows the increase of the digital outputs of the control unit by 1 unit)

Floor standing SET
DHW fresh water station

A plug and play system for transferring heat from the technical water storage tank with a programmable control unit and a circulator. The SET unit ensures the DHW production with a limited formation of chalk and at a temperature chosen by the user. The heat exchange is carried out by the AISI 316 stainless steel plate heat exchanger in a high performance and hygienic manner.

The unit, connected to the water storage tank from which it takes energy, is composed of all necessary parts. Through a control unit with a graphical display the user can monitor the functioning or easily impose user parameters. The heart of the SET unit is the special electronic control unit which keeps up the imposed DHW temperature by modulating the flow in the primary circuit.



TESTED

The Floor standing SET unit is available in several sizes (60, 70, 80, 100, 120, 160 and 200*)
(*): DHW production of 10 to 45C with a temperature of 55°C in the primary circuit

The innovative and qualifying element of the SET unit is the electronic control unit which guarantees the DHW temperature through the modulation of the flow in the primary circuit.
In this way the following is guaranteed:

- ✔ max heat drop in the primary circuit in order the optimize the efficiency of the generator (solar thermal power, heat pump, biomass,etc.)
- ✔ precise and trustworthy management

Thanks to the high efficiency heat exchanger the unit is ideal for installations with heat pumps or solar panels that use water storage tanks for low temperatures (50-55°C)

Plus

- ✔ regulation of the hot water temperature
- ✔ easy and cheap in use
- ✔ high efficiency circulation pump (in accordance with the 2005-35/CE directive) and with an electronic control of the number of turns
- ✔ synoptically graphical display with the indication of the temperatures in the installation and of the power
- ✔ easy Plug and Play installation
- ✔ insulated pipe fittings
- ✔ vessel with a metal structure and thermoform panels for mounting to the wall
- ✔ possibility to manage the sanitary recirculation pump

Available accessories see pag. 270

			Packed	
Code	Description	Price	Dimensions cm	Weight kg
842030004X	SET 60 - DHW FRESH WATER STATION		110x60x100	166
842030005X	SET 70 - DHW FRESH WATER STATION		110x60x100	168
842030006X	SET 80 - DHW FRESH WATER STATION		110x60x100	189
842030007X	SET 100 - DHW FRESH WATER STATION		110x60x100	193
842030008X	SET 120 - DHW FRESH WATER STATION		110x60x100	198
842030046X	SET 160 - DHW FRESH WATER STATION		140x60x100	198
842030016X	SET 200 - DHW FRESH WATER STATION		139x63x125	200

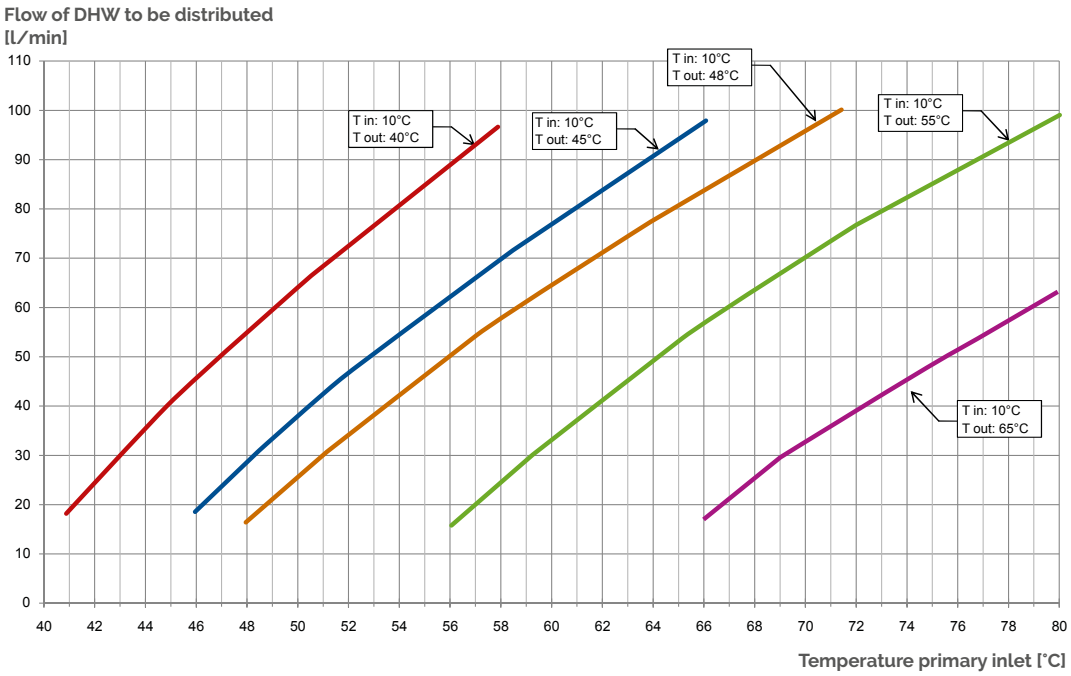
Functions of the regulator

The SET fresh water station is equipped with a regulator that can execute the following functions:

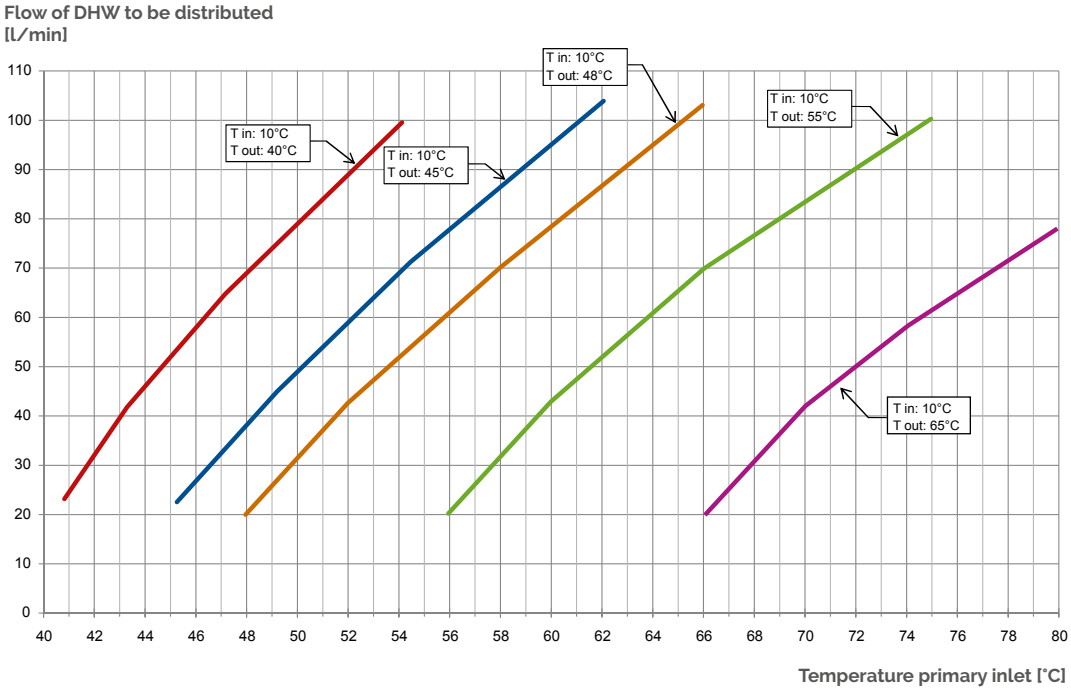
Efficient, electronic regulation of the velocity of the pump
Graphical display
Imposing the temperature of the DHW
Imposing the max temperature of the DHW. This is a safety option which stops the unit in case the max value is reached.
Management kit in series
Management kit Mixing valve on the primary circuit
Management kit stratification of the tank
Possibility to control the recirculation pump for sanitary purposes by fixing the activation times of the pump and the temperature of the recirculation circuit
Anti-legionella: carry out anti-legionella treatments through thermal shocks along the DHW adduction line
AL heating: activation of an integrative heat source when the anti-legionella treatment is carried out
Comfort function: when activated, the exchanger is kept warm in order to guarantee a fast recuperation
Anti-chalk protection: when activated, the circulator keeps on running even when the DHW distribution time is up in order to reduce chalk formation
Solar: control and command the circulator of a solar power device
Management of the heat generator: activate and deactivate a heat generator when the temperature in the tank is below the set point
Consumption accounting functions

Floor standing SET thermal performance

SET 60 performance

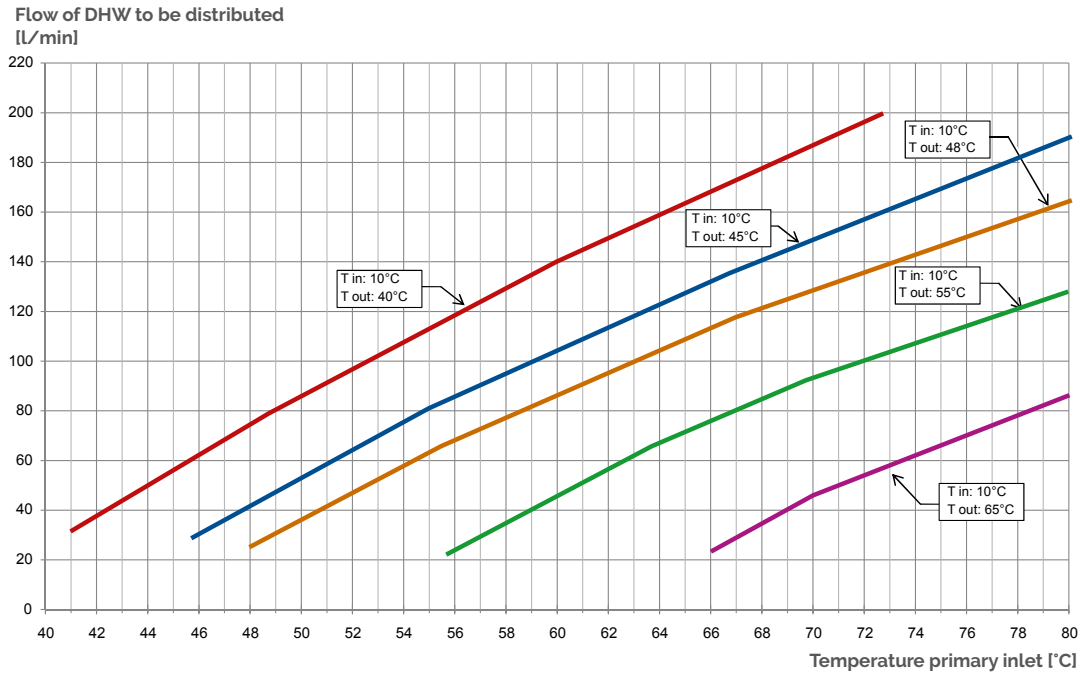


SET 70 performance

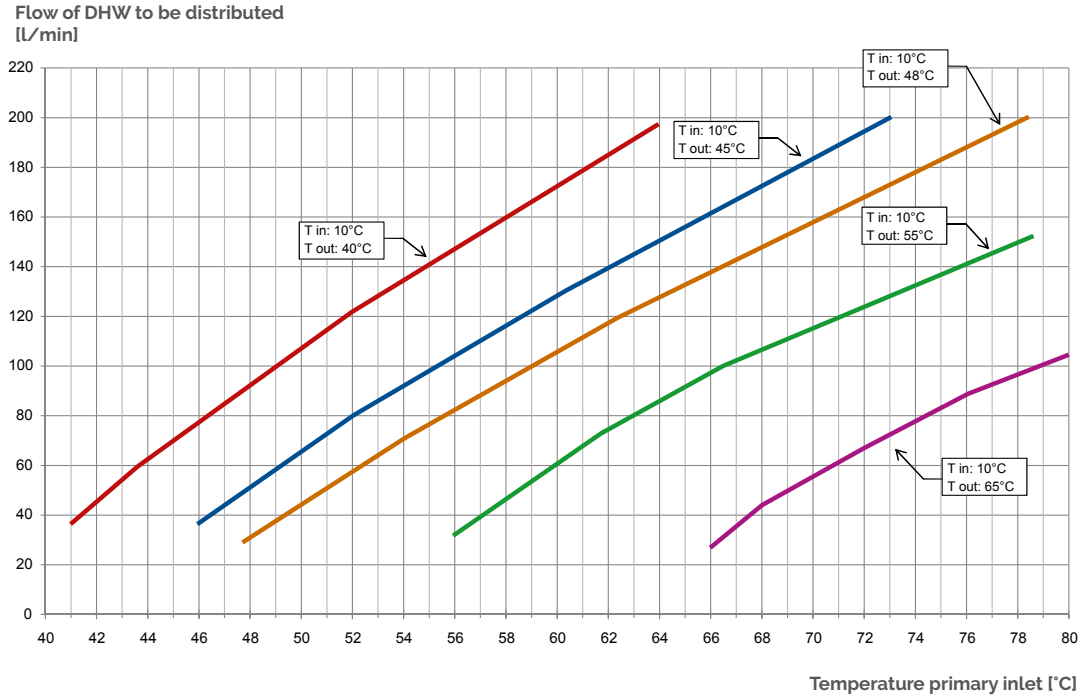


Floor standing SET thermal performance

SET 80 performance

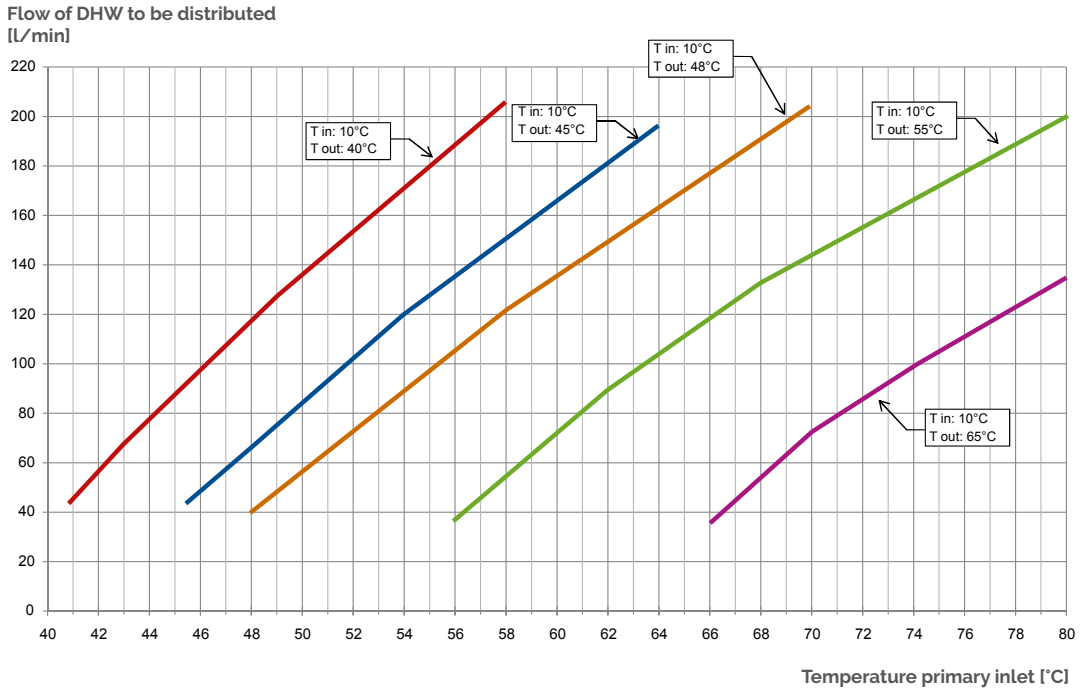


SET 100 performance

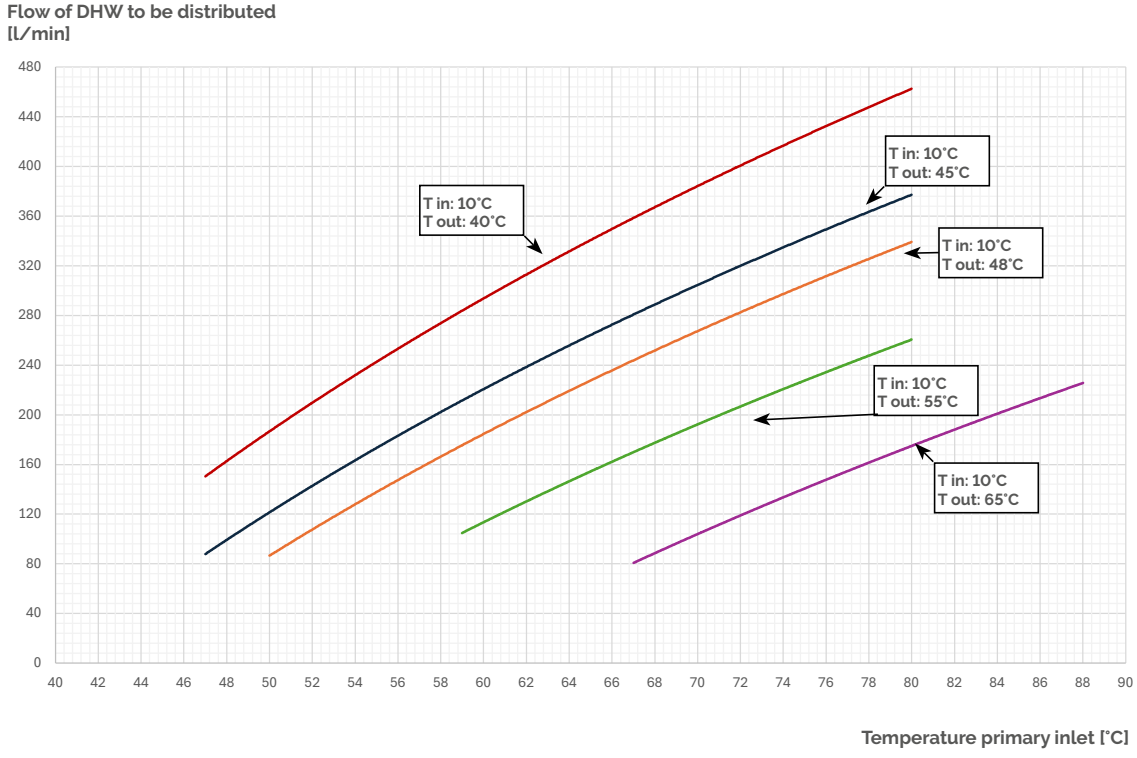


Floor standing SET thermal performance

SET 120 performance

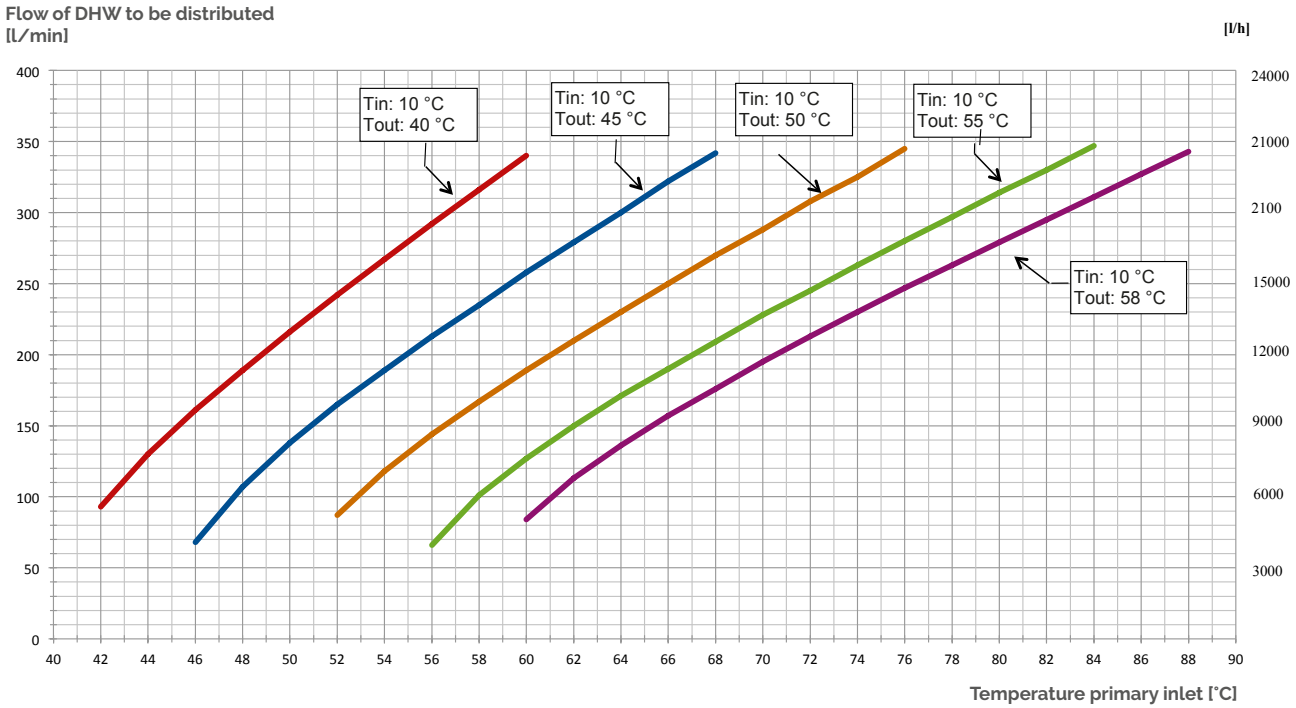


SET 160 performance

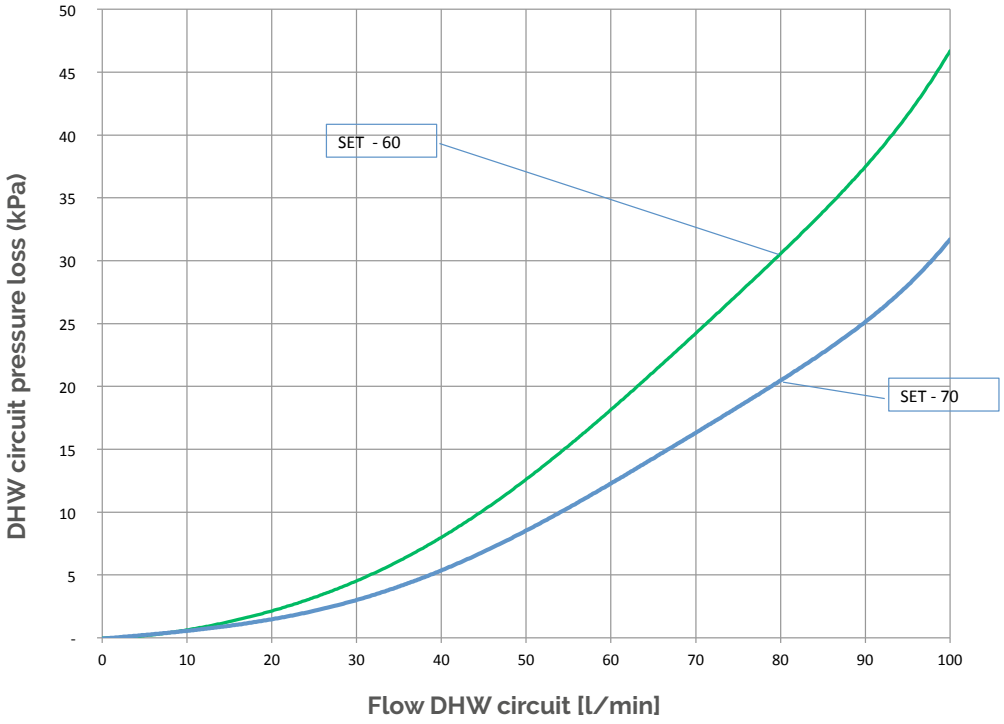


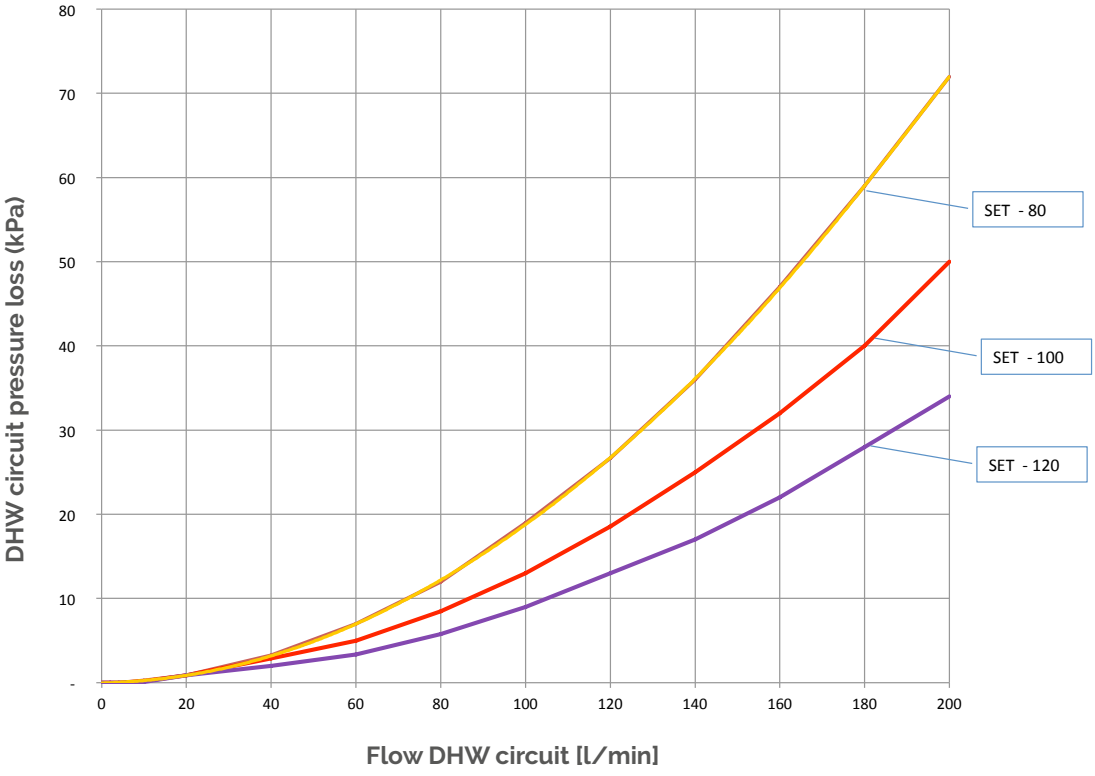
Floor standing SET thermal performance

SET 200 performance

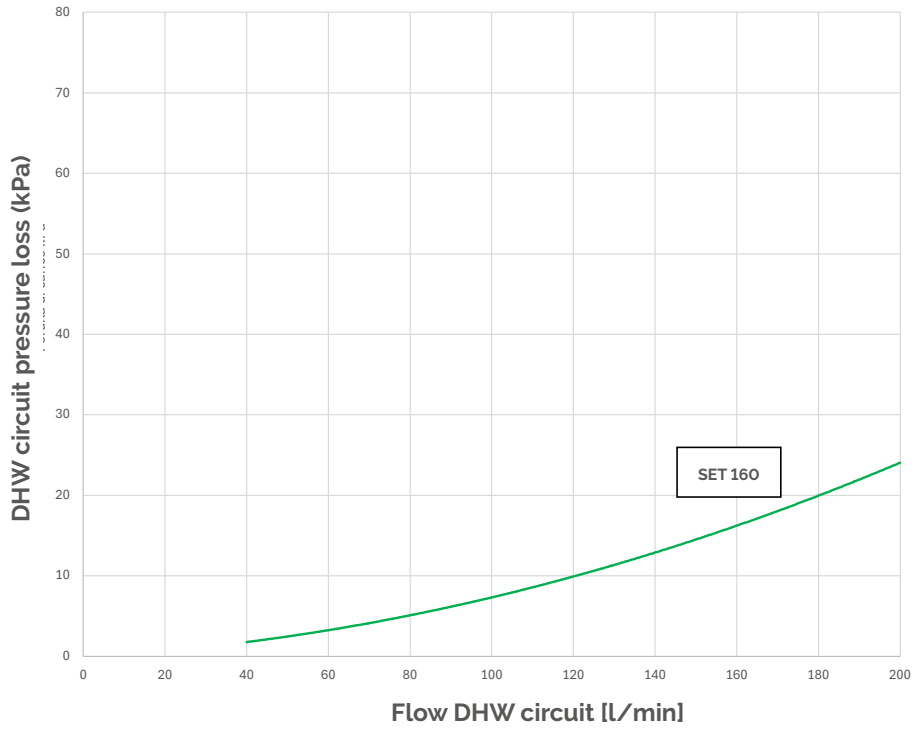


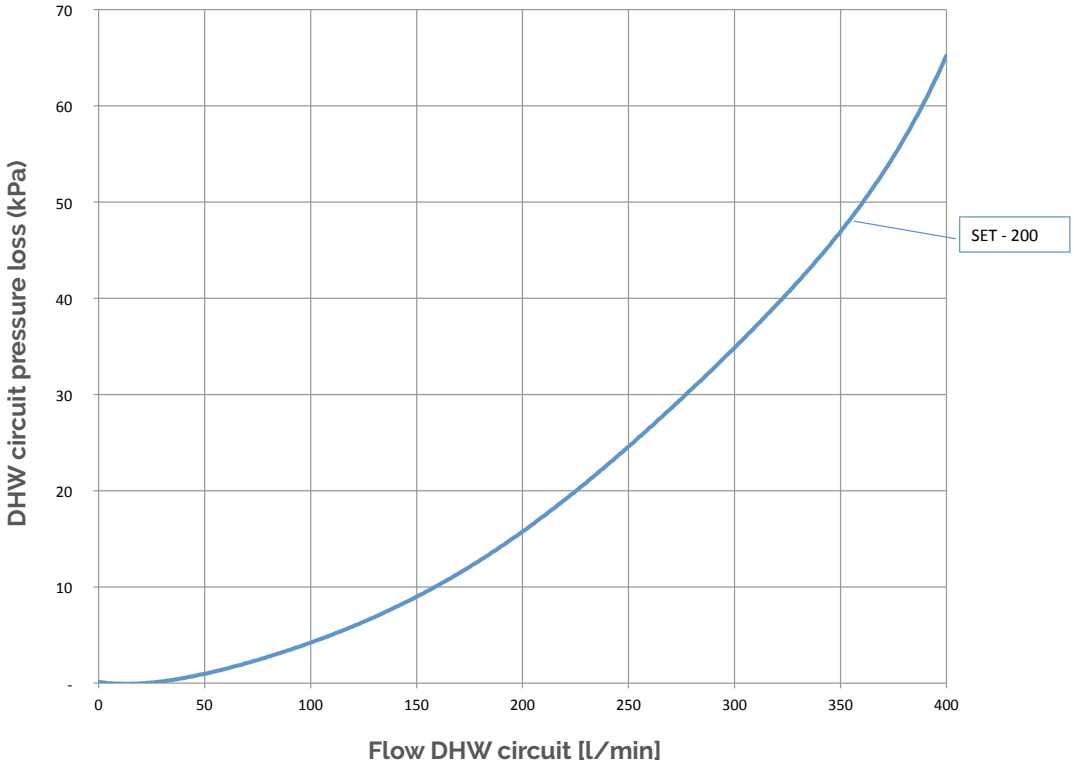
Hydraulic performance SET



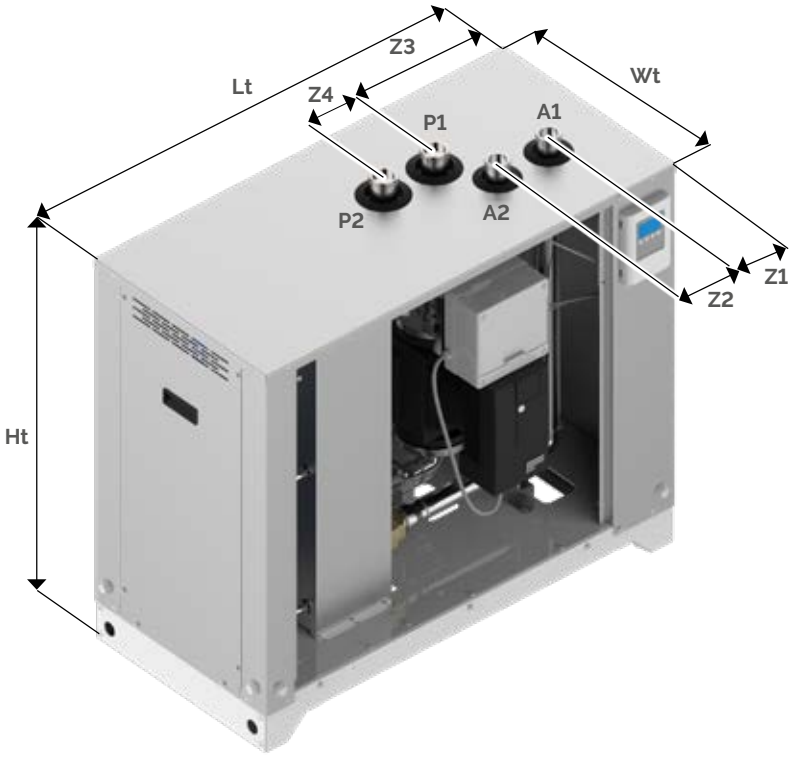


Hydraulic performance SET





Dimensions



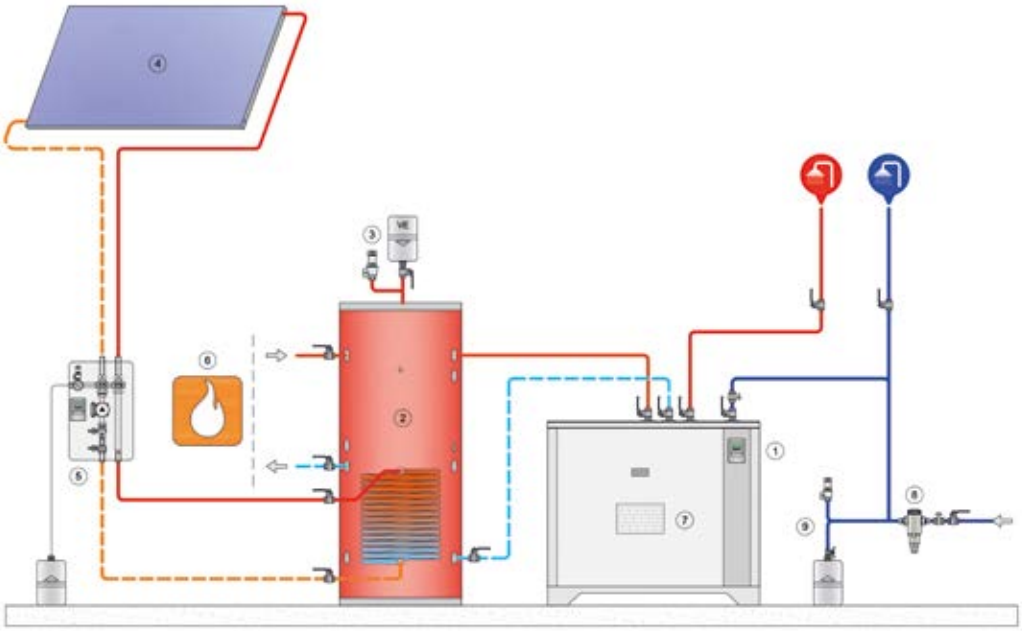
Couplings legend

A1	DHW inlet
A2	DHW outlet
P1	To energy source
P2	From energy source

Model	Lt mm	Ht mm	Wt mm	Z1 mm	Z2 mm	Z3 mm	Z4 mm
SET 60	1004	871	484	153	125	346	125
SET 70	1004	871	484	153	125	346	125
SET 80	1004	871	484	153	125	346	125
SET 100	1004	871	484	153	125	346	125
SET 120	1004	871	484	153	125	346	125
SET 200	1220	1100	550	90	125	389	125

Technical information	Floor standing SET						
	60	70	80	100	120	160	200
Electrical supply (V/Ph/Hz)	230/1/50						
Power of primary pump max (W)	310			450		480	600
Absorption of primary pump max (A)	1,37			2,01		2,2	2,7
Max power of the recirculation pump (can be managed from the control unit)(pump not supplied)	460						
Primary flow (litres/h)	6700	8200	9000	11000	14000	14000	22000
Residual prevalence of the primary circuit (m.c.a.)	2,0	4,0	2,0	2,0	4,0	4,0	2,0
Volume of the primary circuit (l)	2,66	2,90	3,15	3,87	4,84	6,1	6,55
Volume of the domestic circuit (l)	2,54	2,14	3,06	3,77	4,71	6,3	6,37
Max operating pressure primary and DHW (bar)	10						
Couplings primary circuit (inch)	1" 1/2 GAS M						2" 1/2 GAS M
Couplings secondary circuit (inch)	1" 1/4 GAS M						2" GAS M
Max operating temperature (°C)	95						
Category of electrical protection	IP40						
Min DHW ignition flow (l/min)	5	5	10	10	10	10	20
Max DHW flow (l/min)	100	100	200	200	200	200	400

Installation chart
In combination with the water storage tank



Legend

1	SET fresh water station
2	Fiorini PFB water storage tank
3	Heating side safety devices: expansion tank and safety valve
4	Solat thermal collectors
5	Solat thermal return
6	Heating from primary or additional source
7	DHW recirculation pump
8	Cold water bacteriostatic filter
9	Sanitary side safety devices: expansion tank and safety valve

N.B.: Installation of an expansion vessel on the cold water line is mandatory

Equipment

The Floor standing SET fresh water station is delivered in a cardboard box with:
✔ Fresh water station with electric switchboard for connection to the electric grid
✔ User guide

Accessories on request

Several accessory kits are available that can be combined with the SET fresh water station.

Description	Digital output
kit to connect the SET in series	1
recirculation kit	1
kit with mixing valve on the primary circuit	2
kit storage tank stratification (with external diverter valve)	1
Multigateway	1

* The control unit handles up to 3 digital outputs: check the availability of free outputs and the requirements of the various accessories.

Kit to connect the SET in series

The kit to connect the SET in series is the option for all applications in which the need for domestic hot water is very variable, for example in sport centres, etc. In this way it is possible to connect max 8 fresh water stations and ensure a DHW production of min 5 l/m and max 3200 l/min*. The electronic control units that are mounted on every fresh water station enables communication between the stations via Modbus. As such, the electronics decide how many and which fresh water stations are activated, depending on the user conditions.

Advantages and benefits

✔ variable DHW production: from 5 to 3200 l/min
✔ The production by several SET connected in series depends on the temperature in the primary circuit and the production of DHW. The DHW flow that is to be distributed by a system in series is equal to the sum of the flow of all fresh water station as indicated in the graphic Hydraulic Performance
✔ trustworthy. Because the control unit carries out diagnoses by itself, in case of malfunctioning of one of the stations, the station is automatically deactivated and another station is activated. In this way, every fresh water station always operates in circumstances that approach the nominal circumstances and the precision and efficiency of the regulation is improved.
✔ The installation with the fresh water system in series can be expanded. You can add more units, even after the initial installation.
✔ The programmed maintenance of the fresh water stations can be executed without interrupting the DHW distribution.
✔ Every fresh water station operates for an equal number of hours which guarantees a long life span of the system.
✔ Regulation of the temperature is even more precise. The regulation makes it possible to activate the right number of fresh water station based on the flow and the temperature of the DHW.

Installation of the Kit

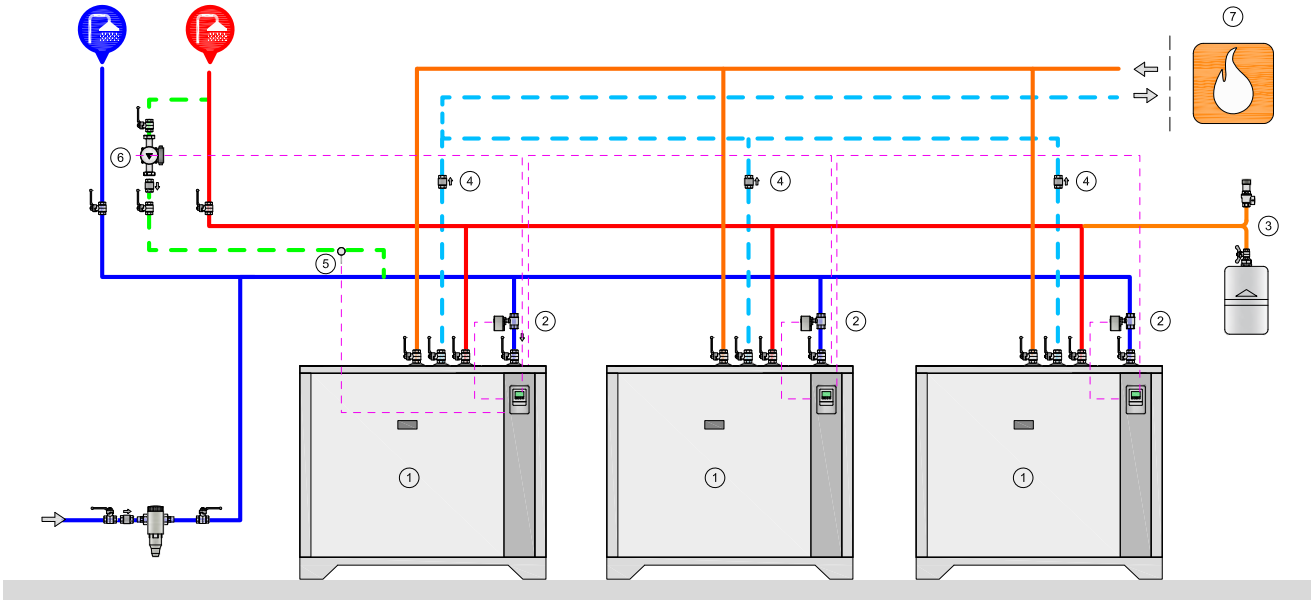
Install one kit for every fresh water station. The kit is supplied in parts, non-assembled and is composed of:

✔ one motorized zone valve with a fast 230V motor
✔ one CanBus cable
✔ the instructions

Key

1	DHW production unit SET
2	2-way valve for waterfall kit
3	Expansion tank
4	Non-return valve
5	Temperature probe for DHW recirculation
6	DHW circulation pump

Installation chart



MULTIGATEWAY -Remote management for SET fresh water stations

The Multigateway is a device with a touchscreen display for remote management of devices that communicate with the CAN protocol. Once the Multigateway is installed, it is possible to manage the system directly via the App or with the integration of a BMS (Building Management System) that communicates using the Modbus protocol. In the case of a SET cascade, it is sufficient to use 1 Multigateway.



Operating conditions

- ✔ Protection class: IP 20
- ✔ Temperatures: 0°C - 50°C
- ✔ CAN cable length < 3 m, or you need to use shielded cable

Main features

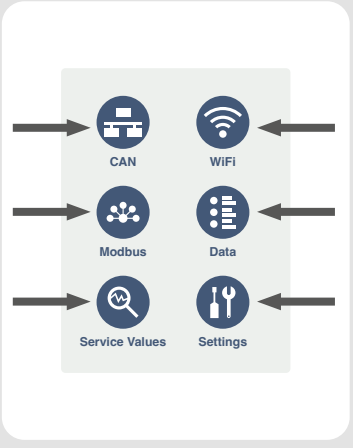
- ✔ Data Logger
- ✔ Fieldbus CAN
- ✔ Modbus RTU RS 485
- ✔ WiFi module
- ✔ Display touchscreen
- ✔ 12/24 V Power supply
- ✔ Android & iOS app
- ✔ Dimensions: 75 x 95 x 19 mm
- ✔ ABS body and glass front

Main menu

CAN
Add devices to the network

Modbus
Protocol specific settings

Service values
System messages and data



WiFi
WiFi settings

Data
Data storage settings

Settings
Device parameters such as language, brightness, etc.

Recirculation kit

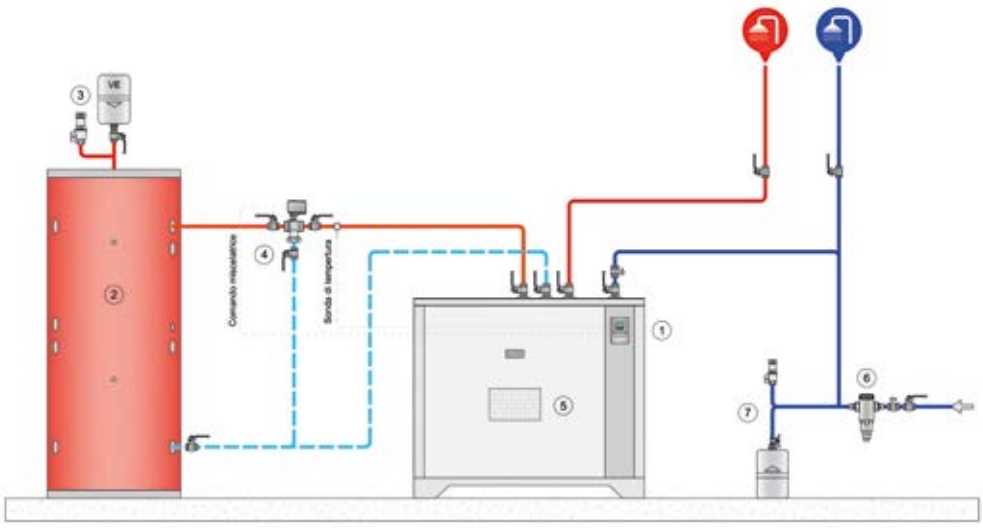
The recirculation kit makes it possible to opt for one of the multiple option offered by the electronic control station to control the pump of the sanitary recirculation circuit (circulator not supplied).

Possible settings
✔ Programming the recirculation in time slots. The recirculation pump is activated only during the indicated time slots and when the recirculation temperature is below the programmed temperature
✔ recirculation pump is always activated
✔ activation of the recirculation pump after a brief sampling period.
This option activates the recirculation pump only when strictly necessary, as such heating the domestic circuit without wasting drinking water.

Composition of the kit
The kit is supplied in parts, non-assembled and is composed of:
✔ temperature probe to be put on the recirculation ring
✔ instructions

Recirculation pump
The recirculation pump is not supplied with the kit because the pump has to be selected on the basis of the specifics of your installation. However, because the pump is to be controlled by the SET regulator, it has to have the following features
✔ power supply 230V/50hz/1ph
✔ max power 460 W
Alternatively, the controller output could be used to activate a contactor coil.

Kit with mixing valve on the primary circuit



Legend

1	DHW production SET module
2	Fiorini water storage tank
3	Heating side safety devices: expansion tank and safety valve
4	Primary circuit mixing valve
5	DHW recirculation pump integrated in the SET module
6	Bacteriostatic cold water mains filter
7	Sanitary side safety devices: expansion tank and safety valve

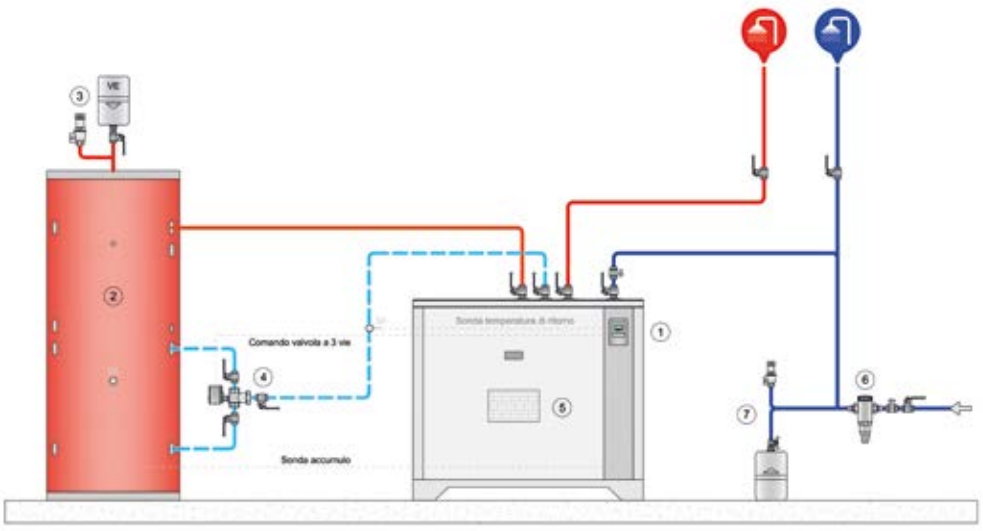
N.B.: Installation of an expansion vessel on the cold water line is mandatory

The kit helps regulate the temperature at the entrance of the fresh water station. In this way, especially in installations that can reach high temperatures in the primary circuit, the precision of the regulation is improved, which guarantees higher comfort.

Composition of the kit
The kit is supplied in parts, non-assembled and is composed of:
✔ S3 temperature probe to be placed at the entrance of the exchanger on the primary circuit
✔ instructions
✔ Mixing valve

Kit with stratification valve for the storage tank

The kit makes it possible to direct the return from the fresh water station to the lower part instead of the mid part of the storage tank. Because of this, the stratification phenomenon in the storage tank is favoured and the efficiency of the entire heating system is maximized.



Legend

1	DHW production SET module
2	Fiorini water storage tank
3	Heating side safety devices: expansion tank and safety valve
4	Three-way valve for accumulation stratification
5	DHW recirculation pump integrated in the SET module
6	Bacteriostatic cold water mains filter
7	Sanitary side safety devices: expansion tank and safety valve

N.B.: Installation of an expansion vessel on the cold water line is mandatory

Composition of the kit

The kit is supplied in parts, non-assembled and is composed of:

✔ S6 temperature probe to be placed in the middle of the storage tank
✔ S6 temperature probe on the return of the primary circuit
✔ instructions
✔ Stratification valve

Codes and prices for the accessories of SET wall-mounted

	External accessories	Digital output*	Price
842030092X	KIT SET SERIES DN32 - Models 60 - 70 - 80 - 100 - 120 - 160	-1	
842030140X	KIT SET SERIES DN50 - Model 200	-1	
842040009X	Recirculation kit SET (NO PUMP)	-1	
842030096X	Kit storage tank with stratification with external diverter valve) SET DN40	-1	
842030098X	Kit with mixing valve SET DN40	-2	
C24090225	EXTERNAL RELAY 1W 6A OUTPUT 0-10V IP55	+1	
C22120078	MULTIGATEWAY	0	

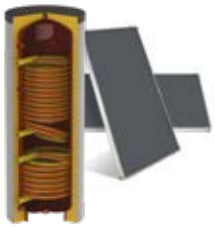
* The L control unit handles up to 3 digital outputs: check the availability of free outputs and the requirements of the various accessories.



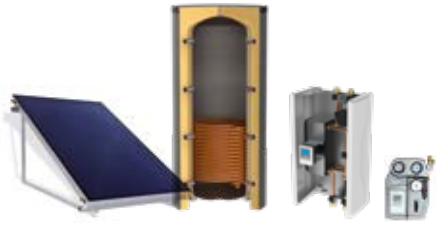
Solar Thermal Systems

Contents

- Domestic Hot Water Storages pag. 155
- Indirect water heater pag. 169
- Fast Heaters pag. 211
- Fresh Water Stations for DHW pag. 227
- Thermal Solar Systems pag. 275



AQUA SUN - Kit for DHW production
pag. 278



COMBI SUN - Kit for DHW production and heating
pag. 280



H2000 - solar panel
pag. 282



H2500 - solar panel
pag. 284



MTDC - control unit
pag. 288



S1 SOLAR 1
pag. 289



S2 SOLAR 30
pag. 290



S2 SOLAR 2
pag. 291

Thermal Solar Kit for DHW production

HOT WATER AND SOLAR HEATING SYSTEM

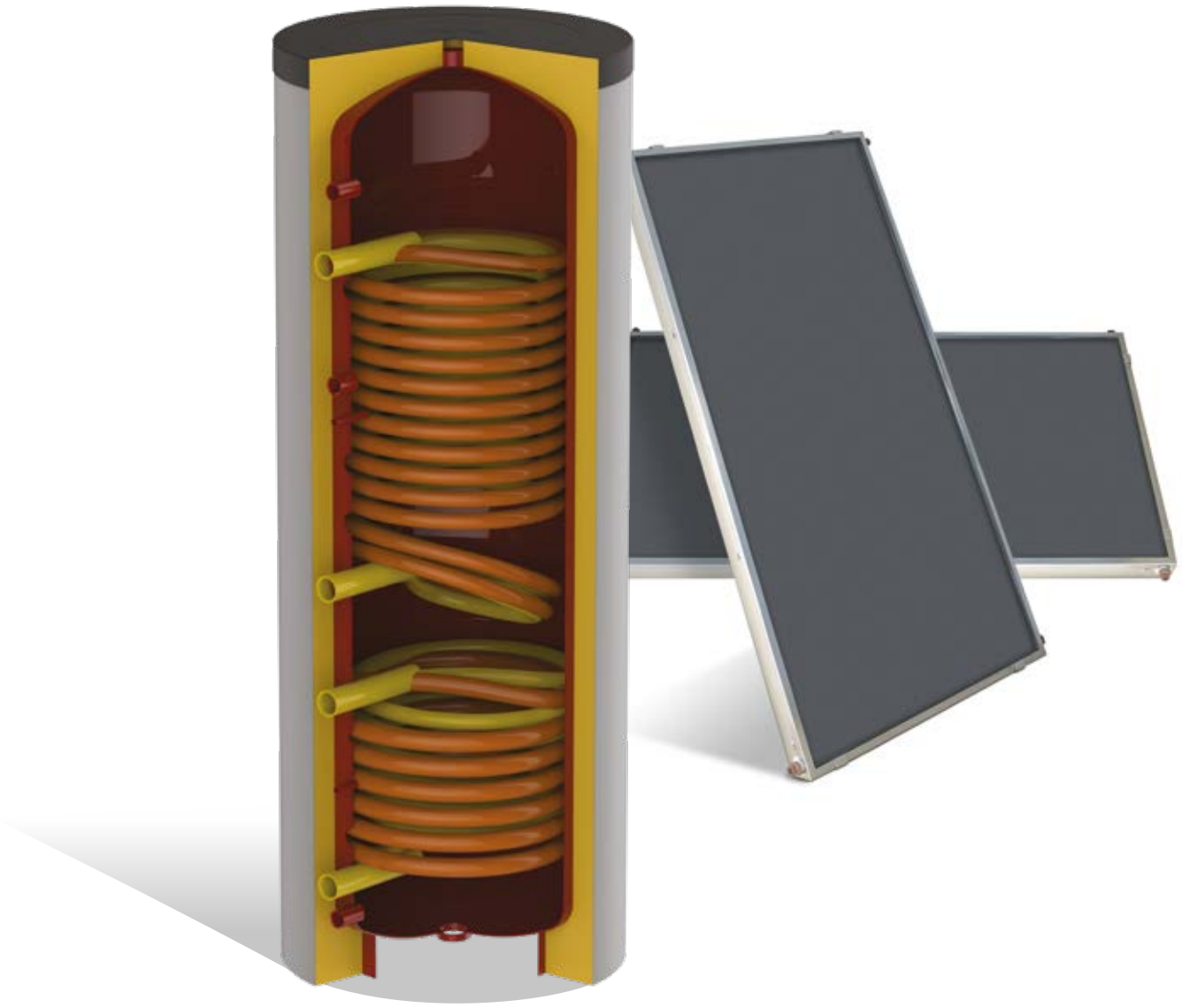
Solar energy is an inexhaustible source of energy that can be easily used both in hot water preparation and in the heating process. Solar energy helps protect the environment and ensures significant energy savings.

OUR SOLUTIONS

Fiorini has designed two product lines: the Aqua Sun line for domestic hot water production and the Combi Sun line for domestic hot water production and heating. Both solutions are available in different versions which are realized based on the user's consumption and the heating system typology, in order to meet a wide range of needs.

WHY THE SOLAR THERMAL KIT

In order to facilitate the choice of the most efficient solution and to make the installation of a solar thermal system easier, faster and therefore cheaper we conceived a series of devices which have many benefits and satisfy users' needs (single housing, multi-family houses, artisanal or commercial activities, accommodation facilities).



Thermal Solar Kit for DHW production

ADVANTAGES

✪ Saving money. The technology we use ensures high efficiency. Acqua Sun and Combi Sun solutions make your working environment or your household more energy-efficient which saves you money every day. The solar Thermal Kit is not expensive and can be written off.

✪ Value of the property. The installation of a system based on renewable energy can improve the energetic classification of the household and working environments which makes the property value and commercial value increase.

✪ Respect for the environment. Solar energy is clean and eco-friendly. It helps reducing polluting emissions.

✪ Energy autonomy. Solar energy is an energy source which is always available and it is not subject to restrictions or conditioning. For this reason, it helps reaching energy autonomy. Consequently, thermal energy production is low-cost and not subject to price increases.

✪ Fast and easy installation. The production of devices in a Kit facilitates the assembly which also reduces installation time.

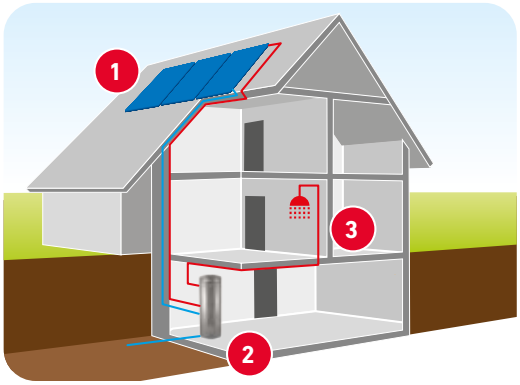
✪ Minimal maintenance. The equipment (collectors, regulators, pumps) and accessories require minimal maintenance.





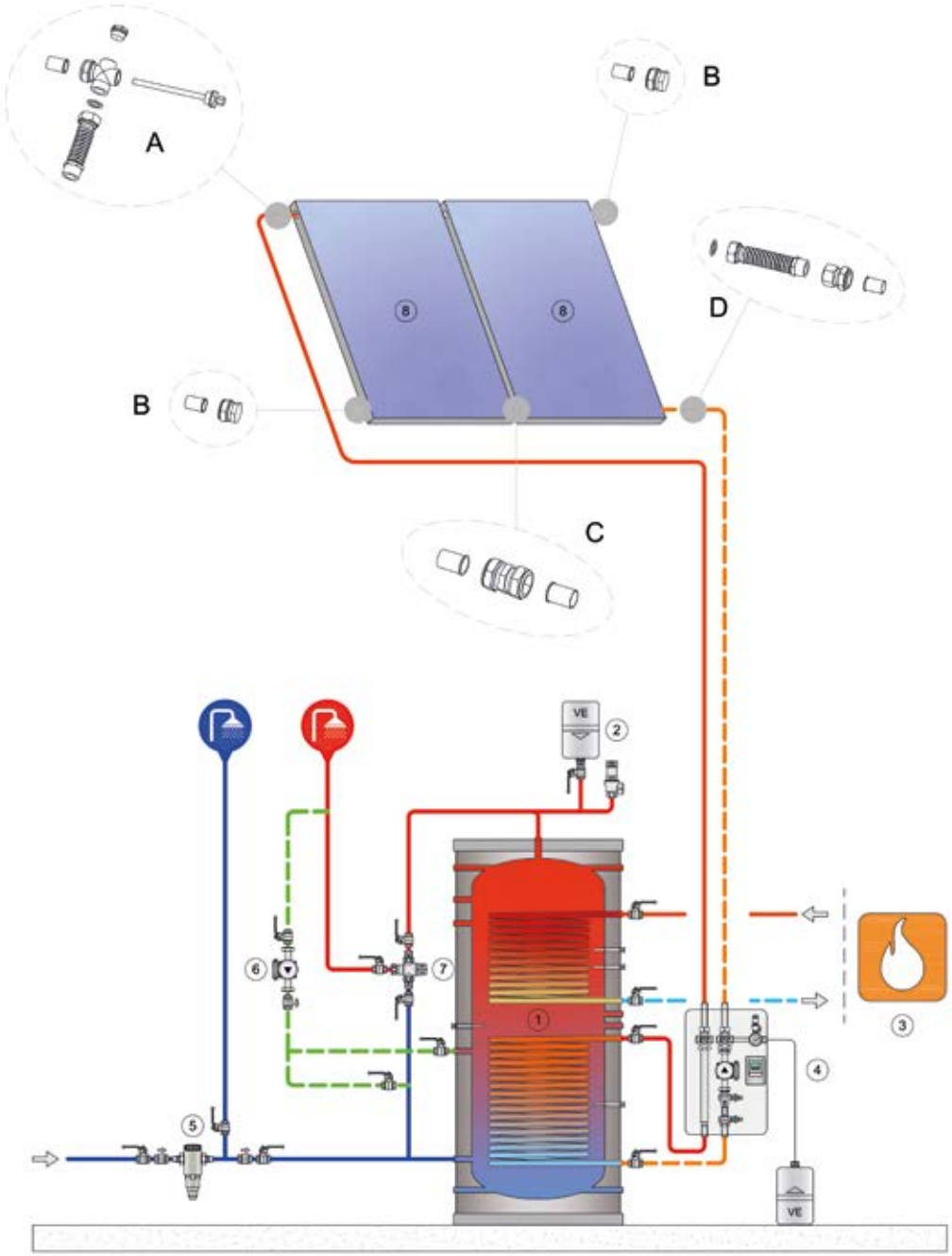
AQUA SUN Thermal Solar kit for DHW production

The Aqua Sun Kit is the easiest and most efficient way to produce hot water using solar power. There are two versions of the Aqua Sun systems which correspond to different daily needs (see 'daily needs' chart).



Principles

1. The sun heats the solar liquid in the solar collectors
2. The solar liquid reaches the storage tank and heats the water with help of the exchanger.
3. The hot water is available for domestic use.



List of components
A) kit outlet for the assembly of the collectors
B) kit plug for the assembly of the collectors
C) connection between collectors
D) kit inlet for the assembly of the collectors

List of components
1. Fiorini domestic water storage tank
2. safety unit
3. heating from alternative source
4. return unit solar thermal system
5. bacteriostatic cold water filter
6. sanitary recirculation pump
7. DHW thermostatic mixer
8. Fiorini solar collectors

AQUA SUN Thermal Solar kit for DHW production

Rif.	Series Energy label Composition Number of persons*	Aqua Sun 1 C 1 H2000+SMART2 200 x 2		Aqua Sun 1.1 C 1 H2500+SMART2 200 x 3	
8	Solar collector	1xH2000	pag. 282	1xH2500	pag. 284
A+B+D	Kit for basic connections	1 piece		1 piece	
C	Joint	-		-	
4	Solar station for pumping and regulation	S2 SOLAR 30 - 25/6.0	pag. 290	S2 SOLAR 30 - 25/6.0	pag. 290
-	Anti-freeze liquid	20 litres	pag. 300	20 litres	pag. 300
9	Expansion vessel	18 litres	pag. 300	18 litres	pag. 300
10	Set for fixing the vessel	SSTOAS	pag. 300	SSTOAS	pag. 300
1	Solar power water heater	SMART2 200	pag. 168	SMART2 200	pag. 168

Rif.	Series Energy label Composition Number of persons*	Aqua Sun 2 C 2 H2000+SMART2 300 x 4		Aqua Sun 2.1 C 2 H2500+SMART2 300 x 5	
8	Solar collector	2xH2000	pag. 282	2xH2500	pag. 284
A+B+D	Kit for basic connections	1 piece		1 piece	
C	Joint	1 piece		1 piece	
4	Solar station for pumping and regulation	S2 SOLAR 30 - 25/6.0	pag. 290	S2 SOLAR 30 - 25/6.0	pag. 290
-	Anti-freeze liquid	20 litres	pag. 300	20 litres	pag. 300
9	Expansion vessel	18 litres	pag. 300	18 litres	pag. 300
10	Set for fixing the vessel	SSTOAS	pag. 300	SSTOAS	pag. 300
1	Solar power water heater	SMART 2 300	pag. 168	SMART 2 300	pag. 168

Rif.	Series Energy label Composition Number of persons*	Aqua Sun 3 C 3 H2000+SMART2 500 x 6		Aqua Sun 3.1 C 3 H2500+SMART2 500 x 7	
8	Solar collector	3xH2000	pag. 282	3xH2500	pag. 284
A+B+D	Kit for basic connections	1 piece		1 piece	
C	Joint	2 pieces		2 pieces	
4	Solar station for pumping and regulation	S2 SOLAR 30 - 25/6.0	pag. 290	S2 SOLAR 30 - 25/6.0	pag. 290
-	Anti-freeze liquid	20 litres	pag. 300	20 litres	pag. 300
9	Expansion vessel	18 litres	pag. 300	18 litres	pag. 300
10	Set for fixing the vessel	SSTOAS	pag. 300	SSTOAS	pag. 300
1	Solar power water heater	SMART2 500	pag. 168	SMART2 500	pag. 168

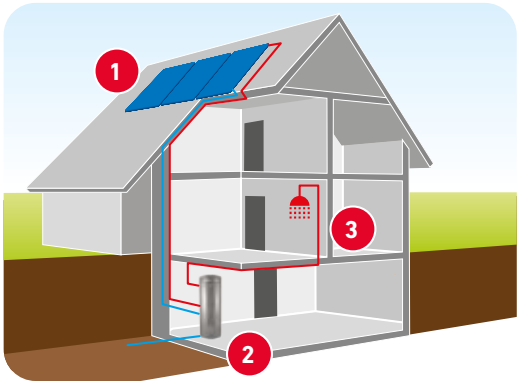
NOTE: Collector fixing kit not included (pag. 275)

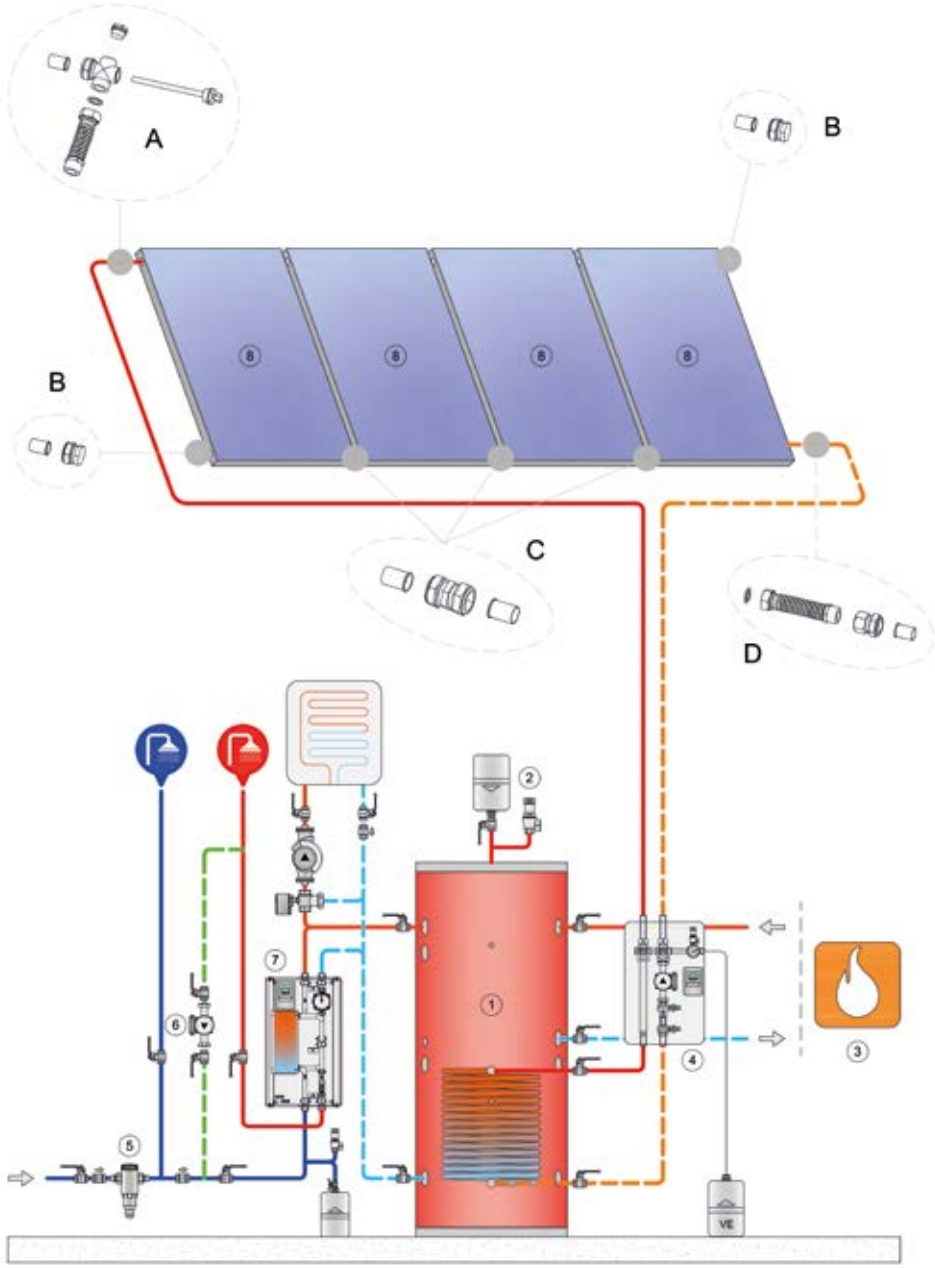
Thermal Solar power kit for DHW production and heating – COMBI SUN

The Combi Sun kit is the solution which makes it possible to heat domestic water and water for the heating system. There are three versions of the Combi Sun system which correspond to different daily needs and different compositions/surfaces.

Principles

1. The sun heats the solar fluid in the solar collectors.
2. The solar fluid reaches the storage tank and heats the water with the exchanger.
3. The hot water in the storage tank can be used to heat domestic water and to heat the surroundings.





List of components
A) kit outlet for the assembly of the collectors
B) kit plug for the assembly of the collectors
C) connection between collectors
D) kit inlet for the assembly of the collectors

List of components
1. Fiorini domestic water storage tank
2. safety unit
3. heating from alternative source
4. return unit solar thermal system
5. bacteriostatic cold water filter
6. sanitary recirculation pump
7. DHW thermostatic mixer
8. Fiorini solar collectors

Thermal Solar power kit for DHW production and heating – COMBI SUN

	Series Energy label Composition	Combi Sun 4 C 4 H2500+PFB800+SET30		Combi Sun 6 C 6 H2500+PFB1000+SET30		Combi Sun 8 C 8 H2500+PFB1500+SET40	
Rif.	**Residence***	**small**		**medium**		**large**	
8	Solar collector	4xH2500	pag. 284	6xH2500	pag. 284	8xH2500	pag. 284
A+B+D	Kit for basic connections	1 piece	pag. 282	1 piece	pag. 282	2 piece	pag. 282
C	Joint	3 pieces	pag. 282	5 pieces	pag. 282	6 pieces	pag. 282
4	Solar station for pumping and regulation	S2 SOLAR 30 - 25/6.0	pag. 290	S2 SOLAR 30 - 25/6.0	pag. 290	S2 SOLAR 30 - 25/7	pag. 290
	Anti-freeze liquid	40 litres	pag. 300	60 litres	pag. 300	60 litres	pag. 300
9	Expansion vessel	25 litres	pag. 300	50 litres	pag. 300	50 litres	pag. 300
10	Set for fixing the vessel	SSTOAS	pag. 300	N.D.	-	N.D.	-
1	Puffer storage tank	PFB 800	pag. 89	PFB 1000	pag. 89	PFB 1500	pag. 89
7	SET fresh water station	SET 30	pag. 249	SET 30	pag. 249	SET 40	pag. 249

N.A. Not Available













NOTE: Collector fixing kit not included (pag. 287)

H2000 - High efficiency flat plate solar panels with aluminium tank

H2000 high performance solar collector – 2 m² with an aluminium frame for vertical and horizontal installation

The new solar collector is made of profiles in high quality anticorrosive aluminium (Al Mg). It is endowed with a closing system with integrated perimeter gasket in vulcanized EPDM, and it is resistant to temperature swings and UV rays. It consists of a solar glass with antireflex safety, high transparency, a low iron content and insulation in qualitative mineral wool without formaldehyde and adhesives. The absorber is covered in highly selective vacuum aluminium and the product is endowed with connections. The collector is suitable for installation on the roof, for integration into the roof or for positioning on a structure. Performance and quality tested.



Features

- ✔ Unique and intelligent design
- ✔ Unbeatable price/quality ratio
- ✔ Precise manufacturing: construction on a motorized product line
- ✔ Intelligent fixing system: reduced installation time
- ✔ Several installation possibilities: up to 6 connected collectors, on tile, flat roofs...

	H2000 Vertical	
Gross surface	**code**	**price**
2 m²	821120058X	

Available models	
Article	**External dimensions**
H2000	1730 x 1170 x 83 mm

	Set for coupling collectors H2000/H2500	
	code	**price**
base	843070274X	
joint	843070275X	
expansion	843070277X	
horizontal joint	843070276X	

Connection options

Parallel connection



Max 6 collectors

Series connection



Based on pressure drop

Combined connection

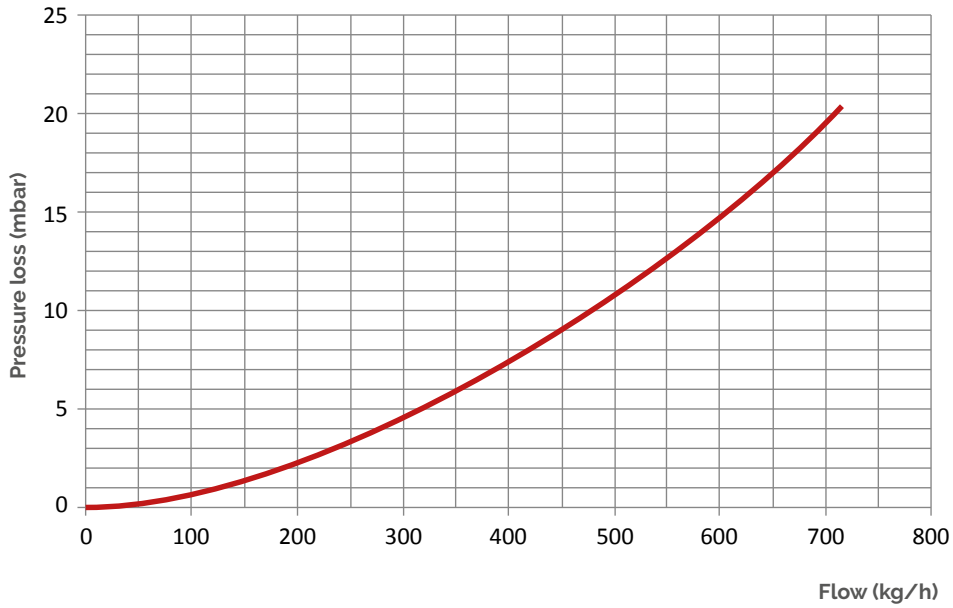


Based on pressure drop

H2000 - High efficiency flat plate solar panels with aluminium tank

Technical information	
Gross surface (m^2)	2,02
Exposed surface (m^2)	1,84
Net surface (m^2)	1,84
Capacity (l)	1,56
Flow	high flow/low flow
Glass thickness	3,2 mm
Glass transmission coefficient	91%
Thickness of insulation	40 mm piano
Absorber	covered in highly selective vacuum aluminium
Absorption	95%
Emission	5%
Connections	4 x 22 mm
Operating pressure	10 bar
Testing pressure	15 bar
Max temperature	192°C
Weight	35 kg
Certificates	EN 12975 + Keymark
Warranty	10 years (glass not included)

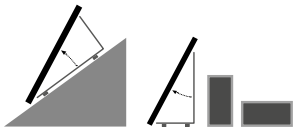
Efficiency coefficient	Opening	Absorber
η_0	0,814	0,814
a_1	4,061	4,061
a_2	0,013	0,013



Assembly



On the roof
Horizontal, vertical
Fixing kit, frames and accessories



Supported
Frame for horizontal or vertical structure

H2500 - High efficiency flat plate solar panels with aluminium tank

H2500 high performance solar collector – 2,5 m^2 with an aluminium frame for vertical and horizontal installation

The new solar collector is made of profiles in high quality anticorrosive aluminium (Al Mg). It is endowed with a closing system with integrated perimeter gasket in vulcanized EPDM, and it is resistant to temperature swings and UV rays. It consists of a solar glass with antireflex safety, high transparency, a low iron content and insulation in qualitative mineral wool without formaldehyde and adhesives. The absorber is covered in highly selective vacuum aluminium and the product is endowed with connections. The collector is suitable for installation on the roof, for integration into the roof or for positioning on a structure. Performance and quality tested.



Features

- ✔ Unique and intelligent design
- ✔ Unbeatable price/quality ratio
- ✔ Precise manufacturing: construction on a motorized product line
- ✔ Intelligent fixing system: reduced installation time
- ✔ Several installation possibilities: up to 6 connected collectors, on tile, flat roofs...

	H2500 Vertical	
Gross surface	**code**	**price**
2.51 m2	821120067X	

Available models	
Article	**External dimensions**
H2500	2150 x 1170 x 83 mm

	Set for coupling collectors H2000/H2500	
	code	**price**
base	843070274X	
joint	843070275X	
expansion	843070277X	
horizontal joint	843070276X	

Connection options

Parallel connection



Max 6 collectors

Series connection



Based on pressure drop

Combined connection

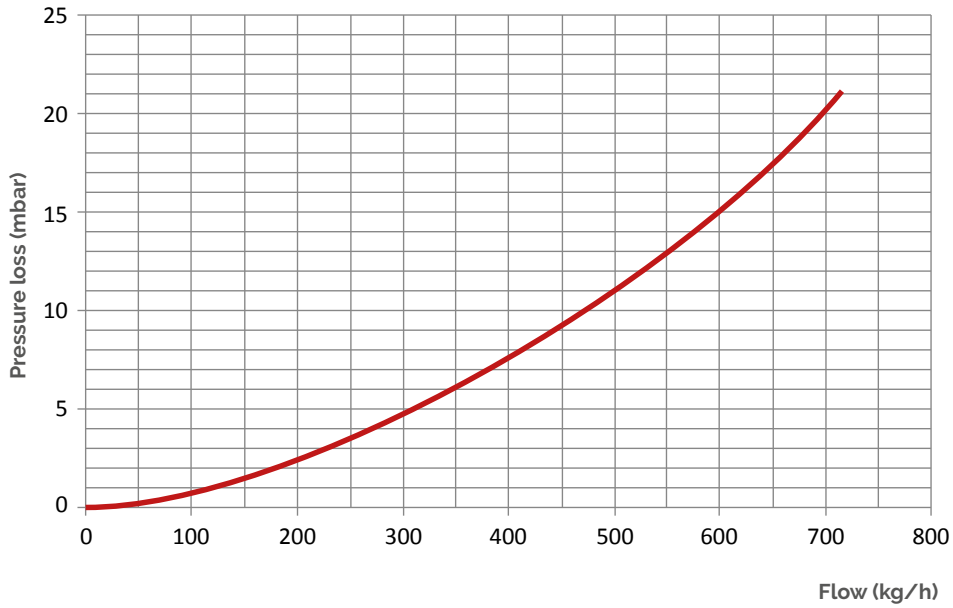


Based on pressure drop

H2500 - High efficiency flat plate solar panels with aluminium tank

Technical information	
Gross surface (m^2)	2,51
Exposed surface (m^2)	2,31
Net surface (m^2)	2,31
Capacity (l)	1,95
Flow	high flow/low flow
Glass thickness	3,2 mm
Glass transmission coefficient	91%
Thickness of insulation	50 mm piano
Absorber	covered in highly selective vacuum aluminium
Absorption	95%
Emission	5%
Connections	4 x 22 mm
Operating pressure	10 bar
Testing pressure	15 bar
Max temperature	192°C
Weight	35 kg
Certificates	EN 12975 + Keymark
Warranty	10 years (glass not included)

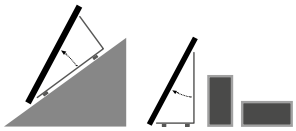
Efficiency coefficient	Opening	Absorber
η_0	0,807	0,807
a_1	4,04	4,04
a_2	0,012	0,012



Assembly



On the roof
Horizontal, vertical
Fixing kit, frames and accessories



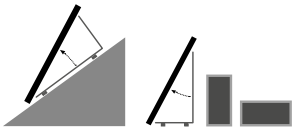
Supported
Frame for horizontal or vertical structure

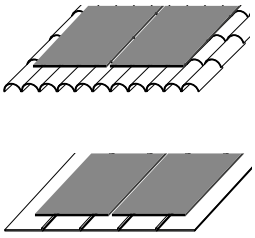
Assembly and materials

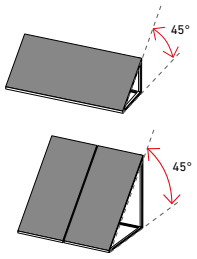
Assembly and materials

A broad range of installation solutions All models of the collector are available in several versions in terms of installation, fixing and materials. Depending on the functional characteristics and the type of roof (flat roof, pitched roof with tile, on sheet, etc.) it is possible to choose from a broad range of solutions to ensure the maximum structural strength of the system and efficient heat exchanging of the collector. Custom solutions are meant to match the solar power system with the rest of the architecture to minimize the visual impact and structural obstructions.

Installation	On the roof			Integrated	On a frame		
Models	On tile	On frame (roof)	Stainless steel sheet	Galvanized steel sheet	Stainless steel structure	Galvanized steel structure	Aluminium structure
H2000	✔	✔	✔	✔	✔	✔	✔
H2500	✔	✔	✔	✔	✔	✔	✔

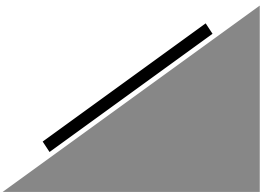
Installation	
 On the roof vertical/horizontal installation kit, frame and accessories	On tile System for fixing the solar collector on a tiled pitched roof by means of sturdy hooks and frames. On sheet System for fixing the solar collector on a pitched sheet roof, with resistant aluminium structures and shaped welded stainless steel clamps.
 On a frame vertical/horizontal frame	Supporting structure for mounting the solar collector in 45° from the flat surface. Suitable with flat and pitched roof.

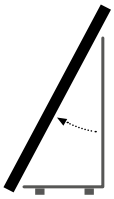




Collector fixing systems

Standard solar collector fixing systems H2000/H2500				
Arrangement			Vertical	
Installation		Num. Panels	code	price
On the roof	On tile	■	843070210X	
		■■	843070211X	
		■■■	843070212X	
		■■■■	843070213X	
		■■■■■	843070214X	
		■■■■■■	843070215X	
	On tile/sheet	■	843070301X	
		■■	843070294X	
		■■■	843070293X	
		■■■■	843070302X	
		■■■■■	843070303X	
		■■■■■■	843070304X	
On support (structure to be put on flat surfaces)	45° pitched aluminium	■	843070242X	
		■■	843070243X	
		■■■	843070244X	
		■■■■	843070245X	
		■■■■■	843070246X	
		■■■■■■	843070247X	





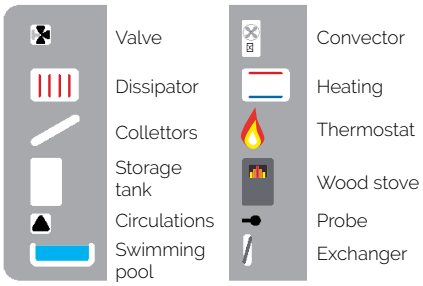
MTDC Solar regulator

The MTDC differential controller is an electronic regulator for solar power systems. It is equipped with a large LED screen which enables an efficient control of the solar power system. A very useful wizard will guide you during the start-up of the system. Step by step the wizard program will configure your system using one of the various pre-set hydraulic diagrams indicated in the following list.

Technical data	
Temperature sensor Pt1000	3
Relay outputs 230VAC	1
0-10V or PWM outputs	1
Power supply	230 VAC
Protection Category	IP 40

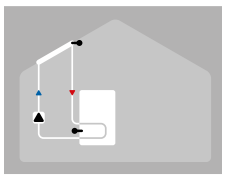
Code	Price
C22130020	

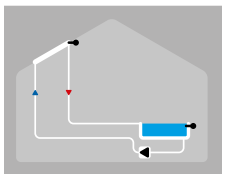


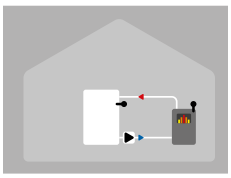


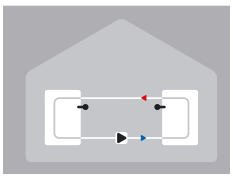
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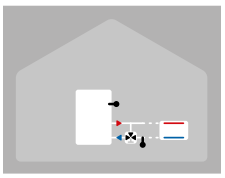
Pre-set installations

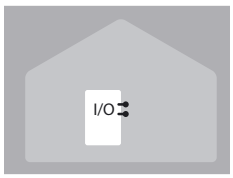

Solar + tank


Solar + pool


Wood-fired boiler with tank


Tank recharge

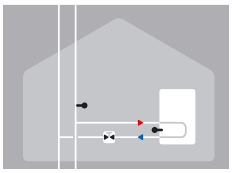

Solar with heating circuit

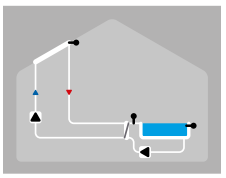


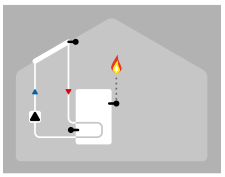
Thermostat

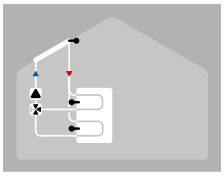


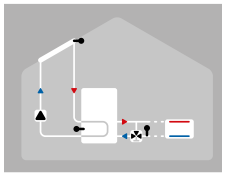
Universal temperature

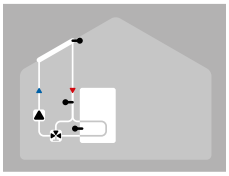

Cut-off valve

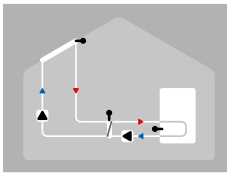

Solar with heat exchanger (sensor on secondary) and pool

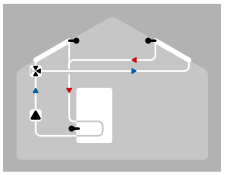

Solar with thermostat (auxiliary heating)

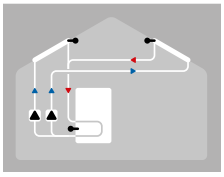

Solar with double zone tank

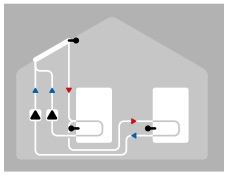

Solar with heating circuit

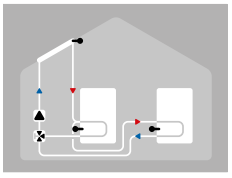

Solar with bypass

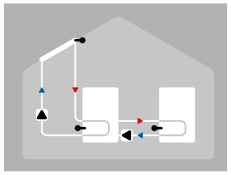

Solar with exchanger

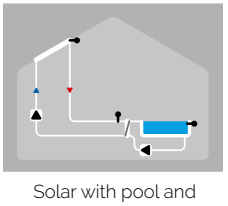

Solar with two collectors

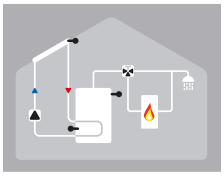

Solar with two collectors and two pumps

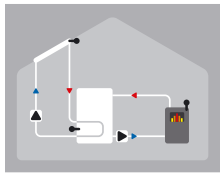

Solar with two tanks and two pumps

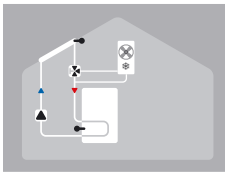

Solar with two tanks and valve

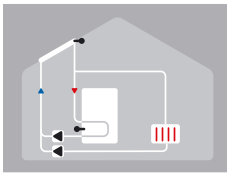

Solar with storage tank

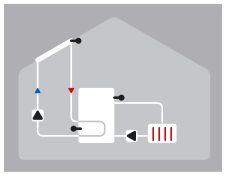

Solar with pool and exchanger


Solar with thermostat and valve


Solar with wood-fired boiler


Solar with cooling 1 (panel cooling)


Solar with cooling 2 (panel cooling)


Solar with cooling 3 (panel cooling)

S1 SOLAR 1
Solar module

The Solar module S1 SOLAR 1 is pre-assembled, tested and can be used for small solar installations.

The unit consists of a single return circuit.
The return circuit is equipped with:

- Flow meter and flow regulator, together with fill and drain couplings
- Solar circulation pump
- Ball valve with check valve. The check valve can be deactivated by turning the handle 45° (useful when filling the device)
- Thermometer 0-120 °C
- Safety valve (6 bar) with manometer Ø50 mm 0-10 bar and screwed drain 3/4" F
- Coupling for expansion vessel 3/4" M



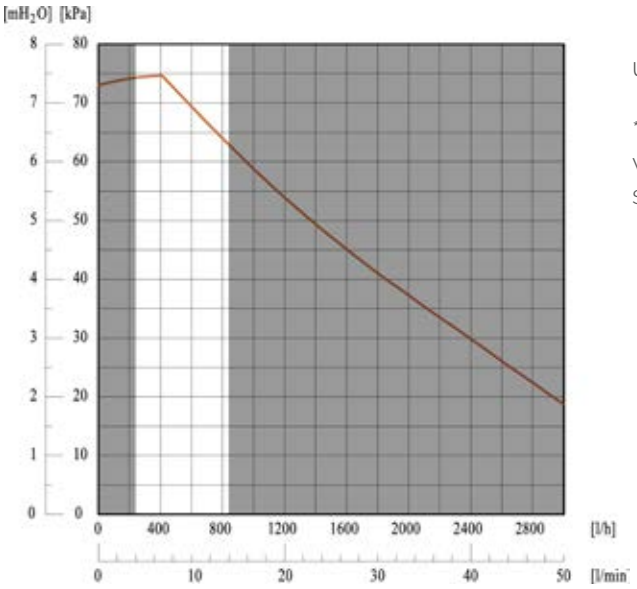
TESTED

The solar module is available in one version

Code	Model	Flow (l/min)		Power min/max W	Price	P. max	T. max
		Min.	Max.				
838110001X	S1 SOLAR 1	2	12	3 / 45		6 bar	120°C(*)

For a brief period (20s) the max T is 160°C

Flow/performance curve



up to 16 m²*

* approximate value, to be verified based on the installation conditions

S2 SOLAR 30
Solar module

The Solar module S2 SOLAR 30 is pre-assembled, tested and can be used in small and medium solar installations. It is equipped with a pre-wired regulator and temperature sensors.

The unit consists of a RETURN and DELIVERY circuit.
The delivery circuit comes with:

- Ball valve with check valve. The check valve can be de-activated by turning the handle 45° (useful when filling the device)
- Thermometer 0-120 °C
- Deaerator made of brass, with manual vent valve
- Piping and couplings

Return circuit comes with:
- Flow meter and flow regulator, equipped with fill and drain connections
- Solar circulation pump
- Ball valve with check valve. The check valve can be de-activated by turning the handle 45° (useful when filling the device)
- Safety valve (6 bar) with manometer
- Coupling for expansion vessel ¾" M
- Thermometer 0-120 °C

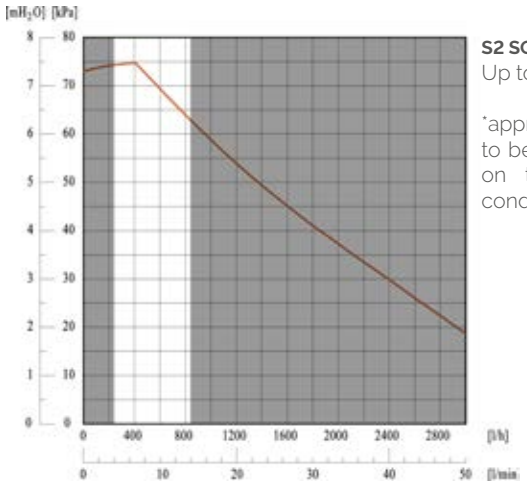


The solar module is available in two versions depending on the flowmeter

Code	Model	Flow (l/min)		Potenza min / max W	Price	max. press.	max. temp.
		Min.	Max.				
838110064X	S2 SOLAR 30 - 25/6	2	12	3 / 45		6 bar	120 °C (*)
838110065X	S2 SOLAR 30 - 25/7	8	28	3 / 45		6 bar	120 °C (*)

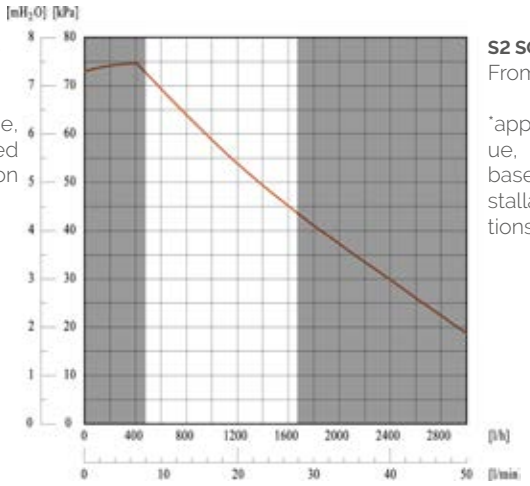
(*) For a brief period (20s) the max T is 160°C

Flow/performance curve



S2 SOLAR 30 - 25/6
Up to 16m²

*approximate value, to be verified based on the installation conditions



S2 SOLAR 30 - 25/7
From 8 up to 35m²*

*approximate value, to be verified based on the installation conditions

S2 SOLAR 2
Solar module

The two-pipe solar station consists of the following components:

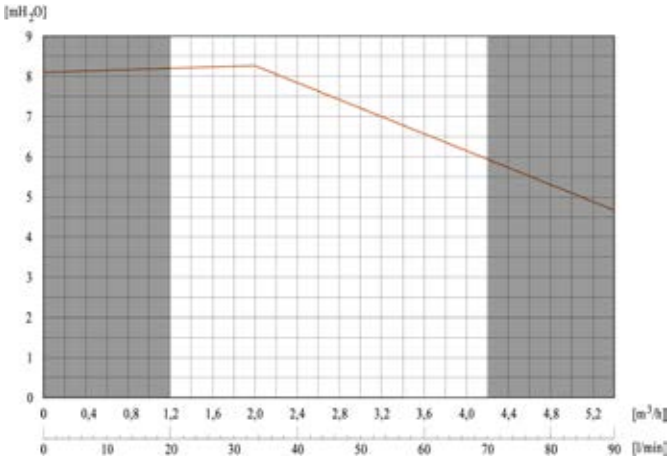
Return:
- Flow regulator gauge 20-70 l/min
- high efficiency synchronous solar circulator 0-10V command
- ball valve with non-return valve 18 bar (the non-return
- valve can be left out by turning the handle for 45 degrees) with a thermometer handle (thermometer with blue ring; 0°C-120°C).
- T coupling for the safety unit
- 6 bar safety unit with 0-10 bar manometer - ¾" male connection for expansion vessel. Drain outlet 1"F

Delivery:
- T coupling for well probe holder
- ball valve with non-return valve 18 mbar (the non-return valve can be left out by turning the handle for 45 degrees) with a thermometer handle (thermometer with red ring; 0°C-120°C).
- coupling tube and coupling

Other features:
- EPP insulation box (dimensions: 125x250x400 mm).
- Wall mount set.
- Nominal pressure: 10 bar.
- Continuous temperature: 120°C (brief period: 160°C for 20 sec.).
- External couplings: 22 mm compression coupling and 1"¼ female coupling.
- WILO TOP S 30/10 solar thermal pump (can be closed, does not have to be drained when serviced)
- Power: 195 / 270 / 380 W

Dimensions:
- Couplings: 11/4"
- Wheelbase: 125 mm
- Width with insulation: 285 mm
- Height with insulation: 500 mm





From 30 up to 90m2*
*approximate value, to be verified based on the installation conditions

Code	Model	Flow (l/min)		Potenza min / max W	Price	max. press.	max. temp.
		Min.	Max.				
838110068X	S2 SOLAR2	20	70	8/130		6 bar	120°C(*)


450
550
650
790
850
300°
315°

Accessories and Insights

Contents

- Domestic Hot Water Storages pag. 155
- Indirect Water Heater pag. 169
- Fast Heaters for DHW pag. 211
- Fresh Water Stations for DHW pag. 227
- Thermal Solar Systems pag. 275
- Accessories and Insights pag. 293



for DHW storage
pag. 294



storage special versions
pag. 296



for fresh water stations
pag. 287



for solar thermal
pag. 298

insights
pag.301

Standard accessories for DHW storages

Anode replacement



Capacity	Description	Code	Price
200-300l	ISOLATED ANODE 22X400 + PLUG	R22100012	
500-3000l	ISOLATED ANODE 33X500 + PLUG	R22100013	
6000-10000 l	ISOLATED ANODE 33X500 + PLUG	R22100013	

Anode replacement with simpletest

Capacity	Description	Code	Price
200-300l	ANODE SIMPLETEST 22X400 T<"1/4	R22100006	
500-3000l	ANODE SIMPLETEST 33X500 T 1"1/4	R22100008	
6000-10000 l	ANODE SIMPLETEST 33X500 T 1"1/4	R22100008	

Spare parts compatible with all standard tanks and water heaters from the Flexy, Smart, and Boil families, both enamelled and stainless steel.

Current impressed cathodic protection (2021 version)





Description	Length (mm)	Code	Price
Up to 1000 litres	450	822100014	
From 1500 to 5000 litres	750	822100015	

New 2021 version:

- Separate components (Power supply and cable)
- Working time indicator
- "Anti Hydrogen" protection system
- Alarm signals: Anode Disconnected; Short circuit; Anomalies Protection (possibility of remote control of alarms via dedicated port).

Thermometer



Description	Code	Price
thermometer for hot water	C22050001	
thermometer for cold water	C22050004	

Thermostats



Description	Temperature range	Safety range	Code	Price
Thermostat	0 ÷ 90 °C	-	C22010004	
Contact thermostat	30 ÷ 90 °C	-	822010050	
Bithermostat	0 ÷ 90 °C	fix 100 °C	C22010006	
Antifreeze Bithermostat	-30 ÷ 30 °C	0 ÷ 90 °C	C22010007	

Standard accessories for DHW storages

Single-phase electrical heaters that can be integrated with the boilers, copper heating elements, safety thermostat (manual reset), electric cable and Schuko plug 16A/250V



Code	Price	Power W	Length L mm	Connection GAS M	Temperature safety thermostat °C	Tension V	Max. sleeve length mm	Protection class	Regulating thermostat °C
C24100166		1200	290	1"1/2	95	220-240 V SINGLE PHASE	55	IP44	20-70
C24100167		2000	295	1"1/2	95			IP54	20-65
C24100168		3000	345	1"1/2	95			IP54	20-65
C24100178		3000	413	1"1/4	85			IP44	20-70

Three-phase electrical heaters that can be integrated with the boilers, copper heating elements, supplied with regulation thermostat, safety thermostat (manual reset), electric cable and no plug.



Code	Price	Power W	Length L mm	Connection GAS M	Temperature safety thermostat °C	Tension V	Max. sleeve length mm	Protection class	Regulating thermostat °C
C24100169		2000	290	1"1/2	96	400 V THREE PHASE	90	IP44	30-75
C24100170		3000	290	1"1/2	96			IP44	30-75
C24100171		4500	430	1"1/2	96			IP54	30-65
C24100172		6000	430	1"1/2	96			IP54	30-65
C24100173		9000	660	1"1/2	96			IP54	30-65
C24100317		12000	840	1"1/2	95		84	IP54	30-65
C24100318		15000	900	1"1/2	95		90	IP54	30-65
C24100319		18000	1050	1"1/2	95		105	IP54	30-65

Heads





Diam. mm	Enamelled Code	Enamelled Price	Stainless steel Code	Stainless steel Price
Ø300	843030018X		843040019X	
Ø380	843030019X		843040020X	
Ø430	843030020X		843040021X	

They are supplied with nuts, bolts and gaskets.

Tube heat exchanger and exchanger with copper spiral see pag. 184-186





Gaskets with or without crossbeam

Diameter mm	Asbestos free Without crossbeam Code	Asbestos free Without crossbeam Price	Asbestos free With crossbeam Code	Asbestos free With crossbeam Price	Asbestos free steam Without crossbeam Code	Asbestos free steam Without crossbeam Price	Asbestos free steam With crossbeam Code	Asbestos free steam With crossbeam Price
Ø300	R08020036		R08020037		R08060026		R08060001	
Ø380	R08020038		R08020039		R08060027		R08060002	
Ø430	R08020040		R08020041		R08060028		R08060003	

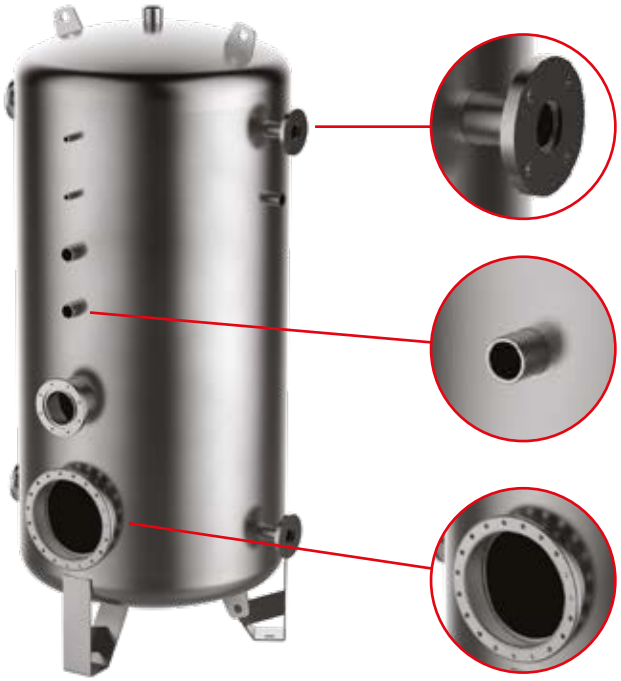
The copper coils have a gasket without cross-beam with the same diameter as the assembly plate.
The tube heat exchangers have two gaskets: one with and one without a cross-beam. Both have the same diameter as the closing head.
The blind closing heads have one gasket without cross-beam with the same diameter as the assembly plate.

Special versions of DHW storages

Special executions change the conformation of the products and hence the sales code will be different depending on the special execution required. Fiorini is able to meet any out-of-the-box request quickly, providing the customer with the assistance they need to guide them to the solution that best suits their needs. Here are some examples of special executions:

- Flanged (in various materials)
- Grooved (in various materials)
- Larger size
- Customized on request





ALUMINIUM sheet coatings

Accessory for outdoor installation.
It is mandatory to provide a wooden cage for transportation.



Packed in wooden cage

Guarantees greater product protection during transport



Accessories compatibles with product ranges: FLEXY, SMART, BOIL, PUFFER, COMBI

Standard accessories for fresh water stations

AQUAMATIC Accessories
See pag 228

Code	Description	Price
829000209X	Kit resistor	
842030116X	Kit internal primary mixing valve	
842030120X	Kit external deviation valve for stratification	
842030119X	Kit recirculation pump	
817010158X	Accessory puffer 70 litres AQUAMATIC 200/300 (Energy class C)	
817010159X	Accessory puffer 90 litres AQUAMATIC 500 (Energy class C)	
838110069X	Solar station no pump	
452010010	Kit serial port RS485	
452010006	Kit web (remote control)	

T-SET Accessories
See pag 244

Description	Code	Price
Recirculation kit for T-SET	842040003X	
Probe for Recirculation kit – T-SET /SET	842040009X	
CC control unit - for DHW recirculation	C22120034	

SET Accessories
See pag 249

Description	Digital outputs	Code	Price
External kit in series SET	-1	842040006X	
Inner recirculation kit SET	-1	842040004X	
Outer recirculation kit T-SET/SET	-1	842040009X	
External kit mixing valve SET	-2	842040007X	
External kit stratification SET	-1	842040008X	
External relay 1W 6A output 0-10V IP55	+1	C24090225	
MULTIGATEWAY	-1	C22120078	

Floor standing SET Accessories
See pag 260

External accessories kit		Digital outputs	Price
842030092X	External kit in series SET DN32 models 60 - 70 -80 -100 -120	-1	
842030140X	External kit in series SET DN50 models 200	-1	
842040009	External kit recirculation SET (no pump)	-1	
842030096X	External kit deviation valve SET	-2	
842030098X	External kit mixing valve SET	-1	
C22120078	MULTIGATEWAY	-1	

Standard accessories for Solar Thermal

Drain valve



Code	Description	Price
C09040007	Permanent drain valve for solar power system DN20	
C09040012	Permanent drain valve for solar power system DN25	

Technical data		
	C09040007	C09040012
Material	stainless steel	brass
Max operating temperature	from -30°C to +200°C	180°C
Max operating pressure	10 bar	10 bar
Fitting	2 x 3/4" FF DN20	2 x 1" IG, 1 x ½" FE

Expansion vessel



Code	Description	Price
C11010061	Expansion vessel for solar power system 18 LT	
C11010062	Expansion vessel for solar power system 25 LT	
C11010094	Expansion vessel for solar power system 50 LT	
C11010065	Expansion vessel for solar power system 80 LT	

Technical information				
	C11010061	C11010062	C11010094	C11010065
Capacity	18 lt	25 lt	50 lt	80 lt
Pre-load pressure	2,5 bar			
Max. operating pressure	8 bar	10 bar		
Fittings	1 x 3/4" AG			

Set of fittings for expansion vessel



Code	Description	Price
843070019	Set of fittings for expansion vessel	

Set of fittings for expansion vessel 18 and 25 l with brass quick-fit coupling for changing the vessel when the device is under pressure.

Included in the set:
- galvanized steel wall mount
- stainless steel flexible pipe with 2 x ¾" IG end fittings for direct connection of expansion tank to pump
- Screws, anchors, brass reductions from 1" IG to ¾" AG.

Pre-mixed antifreeze liquid (46%)



Code	Description	Price
C30040032	Can of 10 l	
C30040031	Can of 20 l	

Description	
Mix of protective liquid, anticorrosive liquid and antifreeze liquid. Ready for use, non-toxic and biodegradable	
Technical data	
Components	Propanidol and a lot of propylene glycol in a liquid solution
Colour	green
Ph	da 7,5 a 9 (not diluted, at 20°C) (DIN 51369)
Pour point	-34° C (DIN 51583)
Boiling point	ca. / approx. +107° C (with atmospheric pressure)
Continuous temperature	max. 180° C
Vapour pressure	ca. 20 hPa (at 20° C)
Density	ca. 1,065 g/cm3 (a/at 20° C) (DIN 51757)
Viscosity/ kinematics	from 6 to 8 mm2/s (a 20° C) (DIN 51562)

Tank treatments

Bluetech

Bluetech is an innovative treatment, which is obtained from thermo-setting resins. It offers a lot of advantages in comparison to traditional treatments:

- excellent resistance and stability under high temperature
- excellent adhesion to the carbonized steel and high elasticity
- hermetically closed
- effective barrier against cathodic delamination
- long life span

It is specifically designed for coating the inside of our water heaters and Domestic Hot Water tanks (DHW) and can be used with drinking water. Bluetech is conform with DM 174/2004 and therefore suitable for use with drinking water as prescribed by DLgs 31/2001 (att.dir. 98/83/CE.





Properties

The following data apply to a coating on 3 mm thick carbonized steel sheets as in the standard conditions.

Application	Electrostatic
Firing	20 min/200°C
Film thickness	100 ÷ 140 µm
Look	Smooth / Glossy
Pencil hardness	H ÷ 2 H
Color	Blue RAL 5002

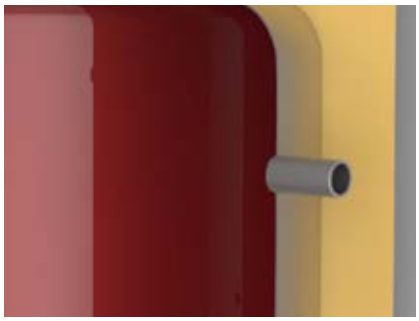
Stainless steel

In some cases when chlorides are present, even stainless steel can be damaged due to corrosion. In order to eliminate this risk our water heaters are made with special austenitic steel, such as AISI 316L (low carbon) and for more aggressive water for special versions, AISI 316 Ti (with Titanium). We use AISI 316L .4404 EN 10088-2 steel for installations with drinking water (suitable for drinking water in accordance with DM 174/2004).



Glass-lining

The solution guarantees protection against corrosion. The enamel is vitrified, by firing it at more than 800°C. The enamel is different from other kinds, i.e. the chemical composition is inorganic (no carbon) and there are chemical links. Glass-lining is only applied to tanks of a medium capacity. The enamel is inorganic (DIN 4753.3) and therefore suitable for use with drinking water (DM 174/2004)



User conditions

If you want to properly use the storage tanks and prevent malfunctions or damage, you should respect the following limitations:

a) the storage tank has to be equipped with an efficient cathodic protection.
b) The quality requirements for drinking and food-grade water has to be in accordance with DLgs 31/01 (att. Dir 98/83/CE) and in particular they should respect the following parameters.

Hydrogen-Ion concentration pH (*)	6,5 ÷ 9,5
Electrical conductivity µS cm-1 (a 20°c)	< 2500
Chlorides mg/l ci	< 250
Sulphates mg/l SO4	< 250
Total hardness °Fr (*)	required min. 15

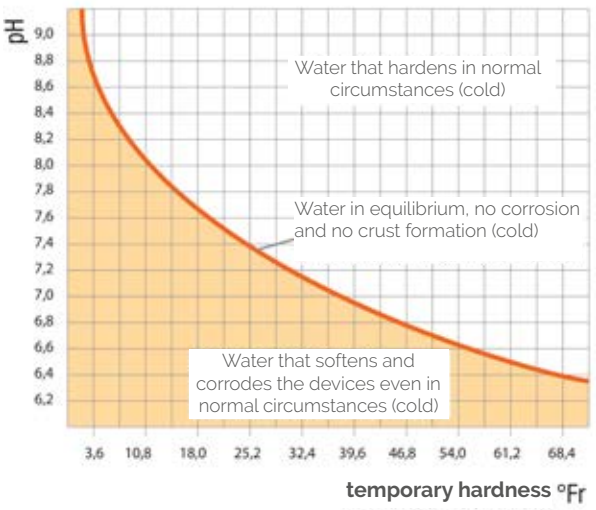
(*) The water is treated according to the Tillmann diagram to satisfy the hygienic requirements and to ensure an equilibrium (no crust formation, no hardness). The prescribed treatments (UNI 8065) cannot hinder the use of the water for food preparation and have to be carried out with the right devices. In case of softening or desalination the total hardness of the treated water cannot be less than 15°Fr (DM 443/90)

c) The max operating temperature should always be respected. It should be kept in mind that the water aggressiveness soars when the temperature increases, especially above 60°C.

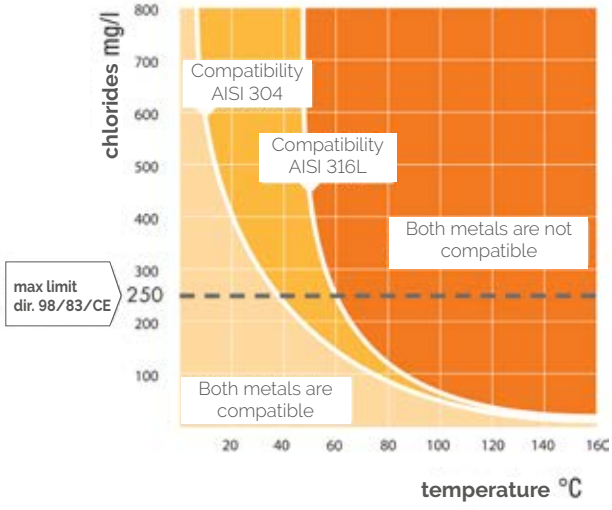
Water and usage

The different types of water, hard water and soft water, are classified on the basis of their Ph value and their temporary hardness. The compatibility of AISI 304/316 L steel is based on the presence of chlorides and the water temperature.

Tilmann diagram (UNI 9182 Art.17)



Compatibility diagram



Available protection equipment

Overpressure protection

To prevent undesirable effects caused by overpressure, it is recommended to use protective devices, such as a safety valve. Since water is incompressible and it expands when heated, an adequate expansion system should be installed which can prevent a rupture in the water heater. We suggest you respect the ISPESL norms (collection R-Cap R.1.A) which state that expansion systems in heaters with water for consumption can be created with a pressure relieve valve, a counterweight or a spring with a diameter calculated with the following formula:

$$d \geq \sqrt{\frac{V}{5}}$$

V = volume of the heater in litres
D = diameter of the valve orifice (minimum 15 mm)

N.B. The valve's calibration pressure should not exceed the max operating pressure of the water heater.



Expansion vessel
To prevent a continuous drainage by the safety valve, chalk formation and strain on the water heater, you should also provide a closed expansion vessel with a non-toxic valve (for food-grade water). The volume should not exceed 10 % of the storage tank's volume.

Device to soften water hammering
When the water flow is stopped brusquely or suddenly, that can cause "pressure waves", which can damage or rupture the device. Because of this, all systems for chilled and hot water distribution have to be equipped with a device to soften water hammering, either mechanical (with a spring) or even better hydro pneumatic (permanent or resettable air cushion) (UNI 9182 Art. 15).

Antifreeze protection
If the storage tank is exposed to temperatures below zero for extended periods, the device should be protected with heating devices or a continuous flow which makes sure that the water does not stay still. (UNI 9182 Art. 20.4.3.)

Electrical protection
To protect the users against possible fault currents, the metallic mass should be properly floor-grounded. (as by law DM 37/08)

Cathodic Protection against corrosion
Corrosion is an electro-chemical phenomenon which especially affects water heaters because in water tanks which are constantly refilled the softness of water increases very much when the temperature increases (especially above 60°C). Therefore, it is recommended to provide 'cathodic protection'.

Magnesium Anodes
In order to make the storage tanks cathodically protected, one or more sacrificial magnesium anodes are supplied. Those protect the structure against corrosion. Our anodes are produced in a particular Magnesium alloy of the AZ 63 type and guarantee physiological innocuousness, electrode potential (≤ -0,9 V) and loss of mass ((≤ 30 g· m-2 ·d-1) in accordance with the DIN 4753-6 norms.



Correx® Impressed Current Anode
Permanent cathodic protection can be realized with a Correx Impressed Current Anode. Since the Correx is not subject to corrosion, it is strongly advised to use it for the protection of ZANI tanks and heaters that work with highly aggressive water (even those which are already installed). An electrical socket near the water heater is required and, in case of a power outage, the current should be re-engaged and sustained. Cables cannot be tampered with or modified. An instruction manual is supplied with the product.

Regulation and precaution

Below the suggestions and information are described on how to properly manage and use the devices in accordance with the DM 37/08 law.

Hot water storage

Heat generators used for the production of hot water for hygienic and domestic use by various users in a residential environment have to have particular dimensions in accordance with the UNI 9182 technical norms. They have to be equipped with a hot water storage tank with an adequate capacity (DPR 412/93 Art. 5.7.)

Drinking Water

The quality requirements for drinking water used for food preparation have to be in accordance with D Lgs 31/01 (Dir. 98/83/CE)

Tanks

The tanks for fuel and diesel for thermal installations have to be in accordance with the norms emitted by the Department of the Interior 28-04-05.

Couplings

The couplings between the piping and the devices (water heater, storage tank…) have to be equipped with flanges or with a three piece union coupling (UNI 9182 Art. 20.3.7)

Storage tank dimensions

The dimensions have to be considered based on: the total amount of water during the peak period, the duration of the pre-heating period, the temperature of the cold water, the distributed hot water and the stored hot water. (UNI 9182 Art. 9.3.1)

Separate generators

The central production of thermal energy for the air conditioning of places and the production of hot water for hygienic and domestic use by various users have to be executed by separate heat exchangers (DPR 412/93 Art. 5.6)

Floor-grounded

Electrical devices have to be floor-grounded and have to be equipped with differential circuit breakers or an equivalent protective system (DM 37/08)

Anti-legionella protection

To eliminate the presence of the legionella bacterium the World Health Organization has suggested as follows (WHO Bulletin OMS, vol.681990)
- heat the water with a storage temperature of 60°C
- ensure that the water never reaches a temperature below 50°C.

Antifreeze protection

Because frozen water has a greater volume, the internal pressure in the closed storage tanks would cause damage and ruptures. In order to prevent this possibility the device has to be produced and managed in such a way that the temperature never hits below 0°C.

Recirculation

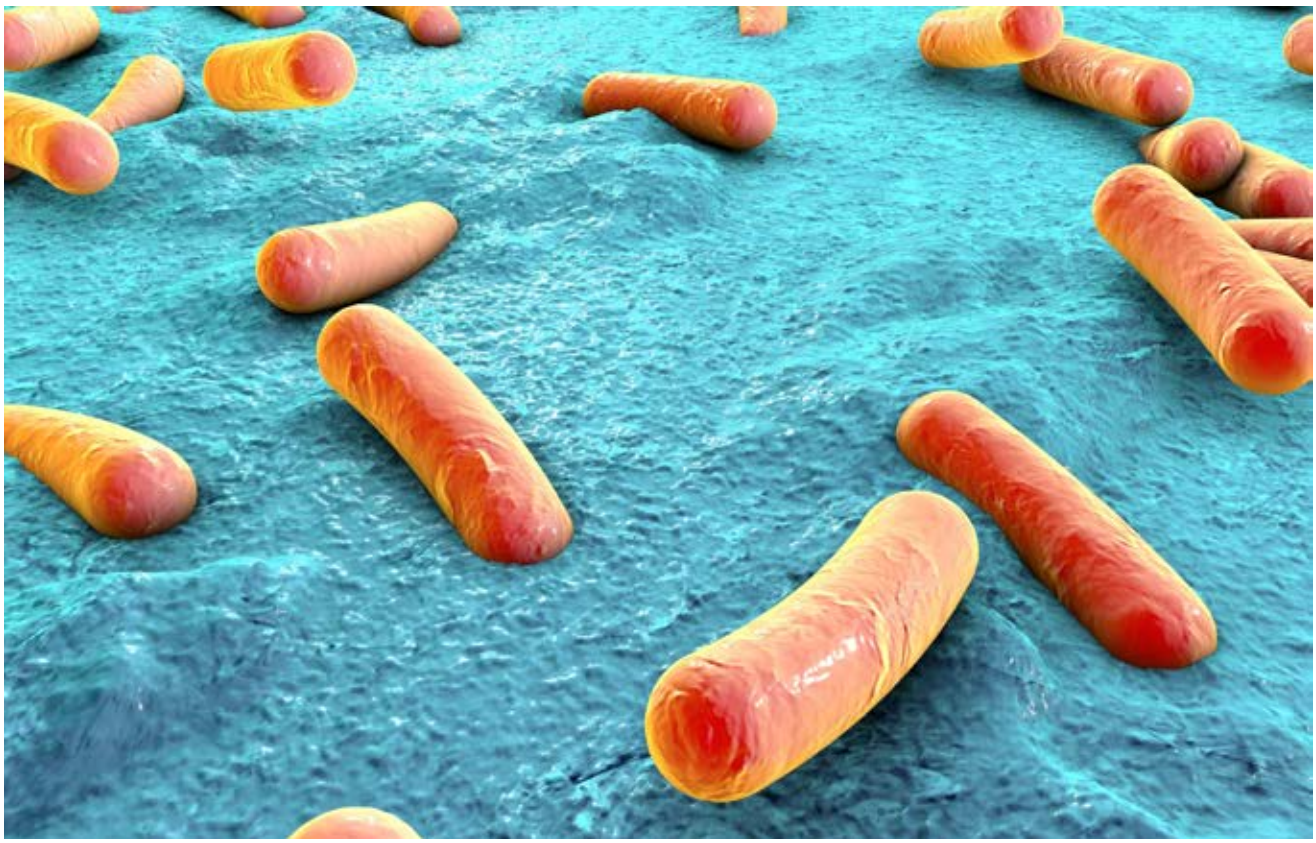
In case of central distribution, a recirculation system has to be provided. In this way the water is continuously in movement and the consequences of heat loss in case of stagnation are prevented.

Distribution temperature

The heat exchangers for the central production of hot water for hygienic and domestic use by various users in a residential setting have to be designed and managed in a way to ensure that the water temperature, measured at the entry point of the distribution system, does not go above 48°C, with a 5°C tolerance. (DPR 412/93 Art. 5.7)

Storage temperature

(UNI 9182 – appendix L) Even though the norms recommend storage temperatures of up to 65°C, we advise not to exceed 60°C in order to save energy, prevent chalk formation and reduce electrochemical corrosion. In order to not exceed the desired temperature, the boiler has to have the right dimensions. Moreover, (appendix U) it is forbidden to send water with a temperature over 60°C through galvanized steel tubes.



Guidelines for Legionella prevention and control

Environmental Conditions

The conditions that favour the development and proliferation of Legionella bacteria are the following:

- Water temperature between 25°C and 42°C
- Aerobic environment
- Presence of nutritive elements (slag, biofilm, iron ions, and limestone)

Methods for preventing and controlling water system contamination

Short-term measures

In the absence of structural interventions, the following short-term measures must be implemented:

- Decalcification of the lesser worn elements through immersion in a solution and subsequent disinfection
- Replacement of couplings, tap filters, worn shower heads and flexible tubes

In carrying out the above specified procedures, Legislative Decree 81/2008 and its amendments must be followed.

Long-term measures

› Heat shock

Consists in raising water temperature to 70°C-80°C for three consecutive days, making sure that it flows out from all dispensing points for at least 30 min. per day. Verify that the temperature reaches or exceeds 60°C at the distal points of the system.

Advantages: does not require any special equipment and, therefore, can be immediately implemented.

Disadvantages: while this procedure is considered effective, it requires a high consumption of energy.

› Heat disinfection

This is easy to apply to systems with a double adjustment control for the water temperature. The production temperature for DHW is increased to 65° C inside the heaters (primary adjustment). Water recirculation is carried out at 55-60° C throughout the entire distribution system, preferably for at least 30 min. per day.

Advantages: in systems equipped with a double temperature control system, it can be immediately implemented.

Disadvantages: this procedure requires a high consumption of energy. In the event of installations where hot water is produced and distributed at 48°C-50° C, the Legionella bacteria can colonize both the

heaters, as well as the distribution and recirculation networks.

› Filtration at point-of-use
Micro-filtration allows to eliminate Legionella in the water in output at the point-of-use by employing a mechanical barrier (0.2 µm). It is a localized treatment system and easy to install.

› UV irradiation
UV rays are able to inactivate the bacteria by dimensionally reducing the thymine in DNA, therefore, preventing replication. This is an alternative method of effective disinfection in proximity of the point of application. Since this method does not have a residual effect, it is not suitable alone to treat an entire building, since Legionella persists in the biofilm, in dead spots, and in the stagnant sections of the system.
Advantages: It can be easily installed in pre-existing water systems.
Disadvantages: UV irradiation is effective if the density of the fluid is limited and if the water is scarcely turbid.

› Hyperchlorination shock
Advantages: Hyperchlorination shock is a strong disinfecting treatment.
Disadvantages: It is a systemic disinfecting method that is, however, temporary.

› Continuous hyperchlorination
Advantages: Continuous hyperchlorination is a general disinfecting method that guarantees a residual concentration of disinfectant throughout the entire water distribution system, in order to minimize the colonization of Legionella at distal points.
Disadvantages: Chlorine is corrosive and can cause damage to the pipes. It is also necessary to prevent potable DHW from being used (especially when preparing food and hot beverages), and the user must be notified.

› Disinfection with chlorine dioxide
Chlorine dioxide has been successfully used in aqueducts and subsequently applied in controlling Legionella contamination in domestic water production plants. Chlorine has the advantage of being more active against biofilm.
Advantages: The action does not influence the water's pH level and reduces the growth of biofilm.
Disadvantages: It causes the formation of inorganic by-products (chlorite and chlorate) from disinfection.

› Ozonation
Ozone is a excellent biocide capable of irreversibly damaging the DNA of microorganisms. It does not present any residual effect, therefore, it cannot be used to systemically treat the system. It has a minimum impact on biofilm, produces by-products and, at high quantities, can damage pipes. Its effectiveness seems moderately influenced by the pH levels and temperature of the water.

› Copper-silver ionization
Metals such as copper and silver are known bactericides. The effect achieved is mainly due to the action on the cell wall of the microorganism, which causes a distortion in the permeability of the cell.
Advantages: This method can be easily applied and is not influenced by water temperature. Furthermore, due to an accumulation of copper in the biofilm, the bactericide effect persists for a few weeks even after the treatment system is deactivated, reducing the possibility of a recolonization. To date, the formation of by-products from disinfection has not been detected.
Disadvantages: Since the concentration of copper and silver ions are subjected to fluctuations, their levels must be systematically verified, along with the pH level of the water (optimum value: 6-8). Both free residual chlorine and corrosion inhibitors can alter the concentration of copper ions, reducing its effectiveness. This technique is not suitable for treating water mains in stainless steel, galvanized steel, and copper because of the redox reaction that can be triggered between the pipes and the disinfectant.

› Disinfection with hydrogen peroxide and silver ions
This treatment is carried out using a stable and concentrated solution containing hydrogen peroxide and silver ions, exploiting the bactericide action of each component and the synergy that develops between them. The use of this disinfectant is relatively recent and requires further experimental confirmation.
Advantages: the oxidizing action of hydrogen peroxide is less aggressive than that exerted by chlorine dioxide or chlorine. To date, the formation of inorganic and organic by-products has not been reported.
The concentration of silver ions is extremely modest and, if well-managed, does not have a polluting effect.
Disadvantages: Currently, exhaustive evidence is not available regarding the dynamic behaviour of this type of disinfectant over time. Since the concentrations of hydrogen peroxide and silver ions are subjected to fluctuation, their levels must be systematically verified. This technique is not suitable for treating water mains in galvanized steel, since zinc is capable of removing silver through a chemical reaction.



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