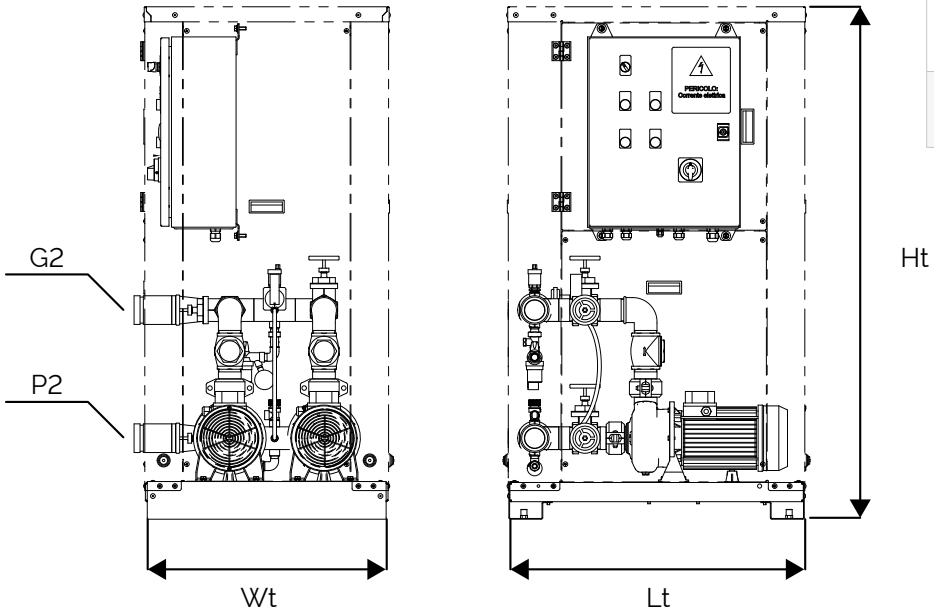
# Pressure tanks
# AK - Compressed Air




fiorini

# HP 2.0 hydronic system: dimensions

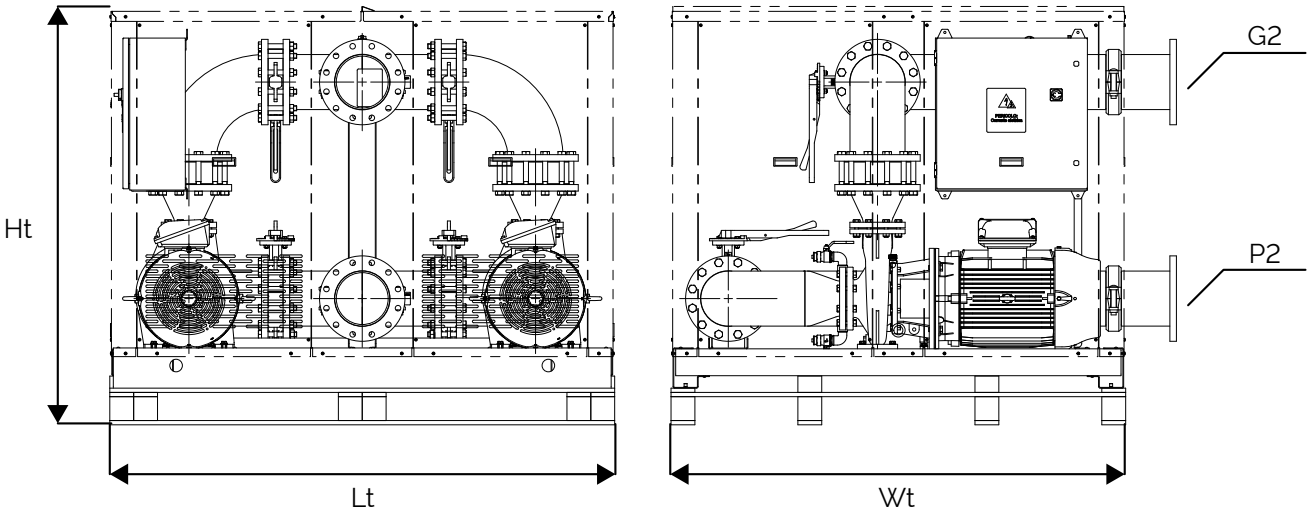
### Layout of pump models PT2, PT3, from P1 to P18




**Couplings legend**

| | |
|---|---|
| **G2** | To plant<br>Grooved connection |
| **P2** | From energy source<br>Grooved connection |

### Layout of pump models from P19 to P21




| | 1 pump Dimensions | | | 2 pumps (1 redundant) Dimensions | | | | |
|---|---|---|---|---|---|---|---|---|
| **Pump model** | **Lt mm** | **Wt mm** | **Ht mm** | **Lt mm** | **Wt mm** | **Ht mm** | **G2 inch** | **P2 inch** |
| PT2-PT3 | 790 | 650 | 1360 | 790 | 650 | 1360 | 1"1/2 | 1"1/2 |
| P1-P2-P3-P4-P5 | 790 | 650 | 1360 | 790 | 650 | 1360 | 2"1/2 | 2"1/2 |
| P6-P7-P8-P9 | 1200 | 790 | 1360 | 1200 | 790 | 1360 | 3" | 3" |
| P10-P11-P12-P13-P14-P15-P16-P17-P18 | 1280 | 790 | 1360 | 1280 | 790 | 1600 | 4" | 4" |
| P19-P20-P21 | 1300 | 1800 | 1560 | 2000 | 1800 | 1575 | DN 200 UNI PN16 | DN 200 UNI PN16 |

# HP 2.0 hydronic systems: technical information

| | | | 1 pump | | | 2 pumps (1 redundant) | | |
|---|---|---|---|---|---|---|---|---|
| Pump model | F.L.I kW | F.L.A. (400/3/50) A | Code | Price | Weight kg | Code | Price | Weight kg |
| PT2* | 0,45 | 1,3 | 838060261X | | 100 | 838060262X | | 114 |
| PT3* | 0,45 | 1,3 | 838060263X | | 100 | 838060264X | | 114 |
| P1 | 1,1 | 3,3 | 838060129X | | 129 | 838060119X | | 150 |
| P2 | 1,5 | 3,8 | 838060130X | | 130 | 838060120X | | 151 |
| P3 | 1,5 | 3,8 | 838060131X | | 131 | 838060121X | | 153 |
| P4 | 2,2 | 4,7 | 838060132X | | 135 | 838060122X | | 157 |
| P5 | 3 | 6,4 | 838060133X | | 137 | 838060123X | | 163 |
| P6 | 3 | 6,1 | 838060107X | | 183 | 838060193X | | 256 |
| P7 | 4 | 8,7 | 838060108X | | 190 | 838060194X | | 272 |
| P8 | 5,5 | 10,4 | 838060109X | | 208 | 838060195X | | 311 |
| P9 | 7,5 | 13,6 | 838060110X | | 224 | 838060196X | | 343 |
| P10 | 5,5 | 10,4 | 838060111X | | 215 | 838060197X | | 323 |
| P11 | 7,5 | 13,6 | 838060112X | | 231 | 838060198X | | 355 |
| P12 | 9,2 | 17,2 | 838060235X | | 284 | 838060236X | | 407 |
| P13 | 11 | 21,3 | 838060183X | | 284 | 838060217X | | 412 |
| P14 | 15 | 27,7 | 838060184X | | 309 | 838060218X | | 503 |
| P15 | 11 | 20,2 | 838060227X | | 279 | 838060228X | | 460 |
| P16 | 15 | 26,6 | 838060185X | | 316 | 838060219X | | 549 |
| P17 | 18,5 | 33 | 838060186X | | 319 | 838060220X | | 569 |
| P18 | 22 | 40,4 | 838060187X | | 340 | 838060221X | | 587 |
| P19 | 18,5 | 33 | 838060229X | | 903 | 838060230X | | 1265 |
| P20 | 30 | 53,5 | 838060231X | | 1030 | 838060232X | | 1519 |
| P21 | 37 | 65,6 | 838060233X | | 1055 | 838060234X | | 1557 |

**Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0**
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase version on request**

## Legend

F.L.I. Max absorbed power
F.L.A. Max absorbed current
Pve Preload of expansion vessel
Ps Max operating pressure
Tmin Min temperature of the liquid

# HP 2.0 hydronic systems: technical information

| | | | 1 pump | | | 2 pumps (1 redundant) | | |
|---|---|---|---|---|---|---|---|---|
| Pump model | F.L.I kW | F.L.A. (400/3/50) A | Code | Price | Weight kg | Code | Price | Weight kg |
| PT2* | 0,45 | 1,3 | 838060290X | | 100 | 838060291X | | 114 |
| PT3* | 0,45 | 1,3 | 838060269X | | 100 | 838060278X | | 114 |
| P1 | 1,1 | 3,3 | 838060161X | | 129 | 838060095X | | 150 |
| P2 | 1,5 | 3,8 | 838060162X | | 130 | 838060096X | | 151 |
| P3 | 1,5 | 3,8 | 838060163X | | 131 | 838060097X | | 153 |
| P4 | 2,2 | 4,7 | 838060164X | | 135 | 838060099X | | 157 |
| P5 | 3 | 6,4 | 838060165X | | 137 | 838060100X | | 163 |
| P6 | 3 | 6,1 | 838060171X | | 183 | 838060205X | | 256 |
| P7 | 4 | 8,7 | 838060172X | | 190 | 838060206X | | 272 |
| P8 | 5,5 | 10,4 | 838060173X | | 208 | 838060207X | | 311 |
| P9 | 7,5 | 13,6 | 838060174X | | 224 | 838060208X | | 343 |
| P10 | 5,5 | 10,4 | 838060175X | | 215 | 838060209X | | 323 |
| P11 | 7,5 | 13,6 | 838060176X | | 231 | 838060210X | | 355 |
| P12 | 9,2 | 17,2 | 838060250X | | 284 | 838060254X | | 407 |
| P13 | 11 | 21,3 | 838060141X | | 284 | 838060151X | | 412 |
| P14 | 15 | 27,7 | 838060142X | | 309 | 838060152X | | 503 |
| P15 | 11 | 20,2 | 838060251X | | 279 | 838060255X | | 460 |
| P16 | 15 | 26,6 | 838060143X | | 316 | 838060153X | | 549 |
| P17 | 18,5 | 33 | 838060144X | | 319 | 838060154X | | 569 |
| P18 | 22 | 40,4 | 838060145X | | 340 | 838060155X | | 587 |
| P19 | 18,5 | 33 | 838060292X | | 903 | 838060296X | | 1265 |
| P20 | 30 | 53,5 | 838060293X | | 1030 | 838060297X | | 1519 |
| P21 | 37 | 65,6 | 838060295X | | 1055 | 838060299X | | 1557 |

**Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0**
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase version on request**

## Legend

F.L.I. Max absorbed power
F.L.A. Max absorbed current
Pve Preload of expansion vessel
Ps Max operating pressure
Tmin Min temperature of the liquid

# Hydronic systems
# HP 2.0: accessories

## 1 Programmable timer for alternating pumps

In the dual pump configuration, the timer can be used to handle alternating pump operation at specified time intervals. Without the timer, the alternating pump operation occurs at each startup of the group. Default alternation every 48 hours programmable.

* **WARNING:** If the system operates 24 hours a day, 7 days a week, the pump alternation is not guaranteed by the standard group. In this case, we recommend the use of this accessory.

| Code | Description | Price |
|---|---|---|
| 838081104X | TIMER OPTION 48H | |

## 2 Differential pressure switch

Security device that allows you to verify that there is flow inside the system. The device generates an alarm signal but does not automatically stop the machine.

| Code | Description | Price |
|---|---|---|
| 838081000X | DIFFERENTIAL PRESSURE SWITCH | |

## 3 Anti-vibrating feet

Set of anti-vibrating feet to be placed on the machine's support points. The feet are supplied disassembled.

| Code | Description | Price |
|---|---|---|
| 838080861X | ANTI-VIBRATING FOR HP PT2/PT3 AND FOR P1 A P18 | |
| 838081286X | ANTI-VIBRATING FOR HP P19/P20/P21 | |

## 4 Expansion vessel kit

| Code | Description | Compatible with | Price |
|---|---|---|---|
| 838081187X | EXPANSION VESSEL 12L INNER | HP 2.0 UP TO P18 | |
| 838081195X | EXPANSION VESSEL 25L INNER | HP 2.0 UP TO P18 | |
| 838081480X | EXPANSION VESSEL 2x25L INNER | HP 2.0 UP TO P18 | |
| 838081616X | EXPANSION VESSEL 3x25L INNER | HP 2.0 UP TO P18 | |
| 838081234X | EXPANSION VESSEL 2x25L INNER | HP 2.0 FOR P19/P20/P21 VERSIONS | |

## 5 Manometer kit

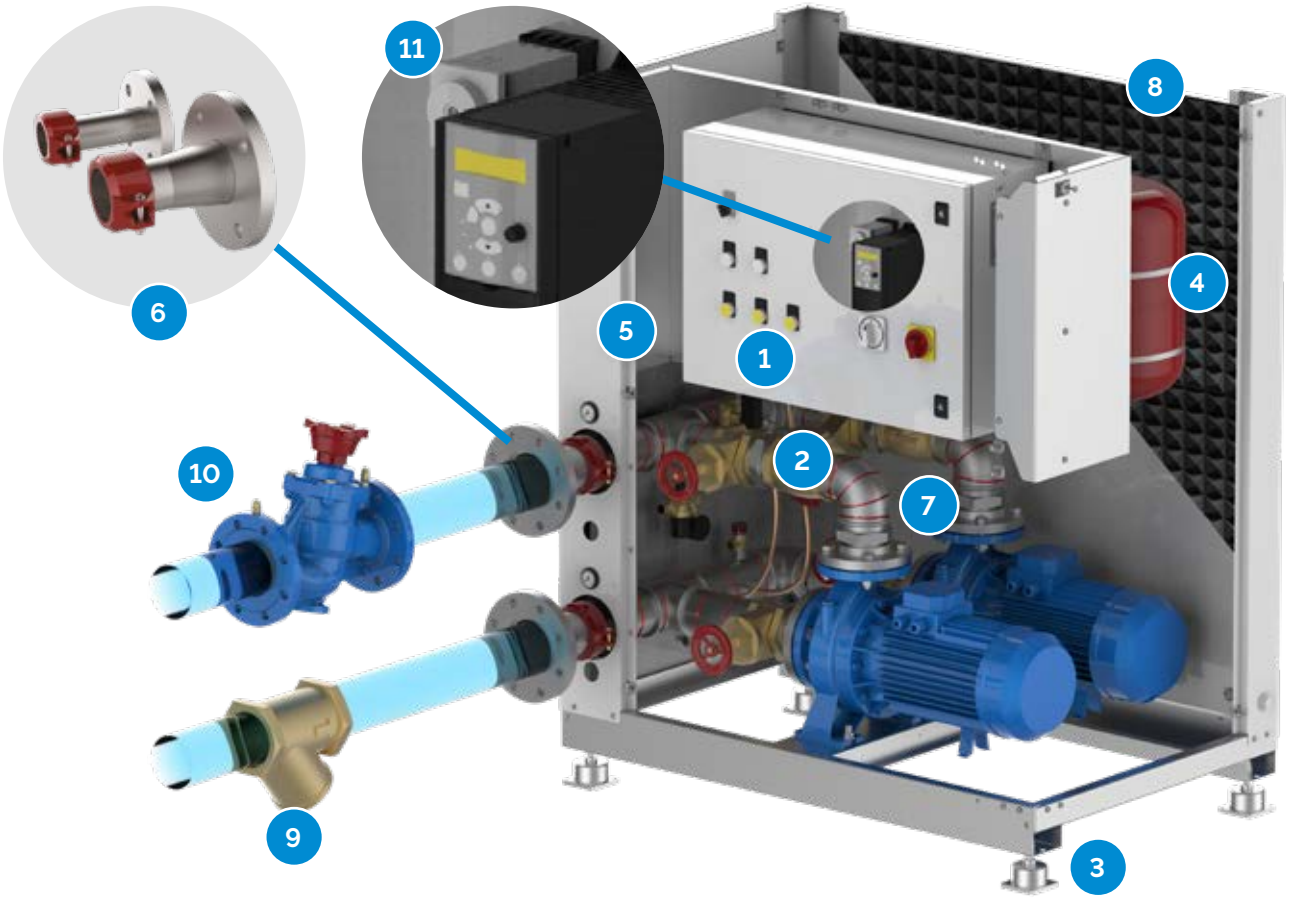
| Code | Description | Price |
|---|---|---|
| 838081583X | MANOMETER KIT | |

## 6 Transformation of painted grooved connections

They transform the grooved connections into UNI-EN PN 16 flanged connections. A version with the same diameter and one with a larger diameter is available. The codes and prices below are for single piece.

| Original conncetion Grooved (Victaulic) | Transformed connection UNI-EN PN 16 | Code | Price |
|---|---|---|---|
| 1"1/2 | DN40 | 838081247X | |
| | DN50 | 838081248X | |
| 2" | DN50 | 838081249X | |
| | DN65 | 838081250X | |
| 2"1/2 | DN65 | 838081251X | |
| | DN80 | 838081252X | |
| 3" | DN80 | 838081253X | |
| | DN100 | 838081254X | |
| 4" | DN100 | 838081255X | |
| | DN125 | 838081256X | |






**7** **Antifreeze kit (special version)** The kit provides protection against freezing by means of a heating cable wound around piping. The kit also includes a bi-thermostatic antifreeze adjustment (-35 / + 35 ° C) and is supplied assembled, wired and tested.
**see page: 150**

**8** **Soundproof coating (special version)**
The soundproofing is available, which attenuates the sound level of the machine significantly.
**see page: 150**

**9** **Filter (special version)**
Mesh filter, with 1000 micron holes, can be placed outside the unit to protect the pumps from any impurities in the equipment.
**see page: 150**

**10** **Balancing valves (special version)**
Valve can be connected externally to balance the flow within the circuit.
**see page: 150**

**11** **Standard switchboard with BMS**
Integration of BMS module to control remotely pumps and availability to check pump status remotely (pump on and/or alarms). In the case of application with an inverter, it is also possible to vary the pressure set point. Communication protocol Modbus through serial port RS-485.

**Wooden box packing (special version)**
Extra protective packing suitable for risky and long-distance transport.
**see page: 150**

**Stainless steel execution**
In projects where the fluid temperature is between -11°C and -20°C, the hydronic kits are produced in a special configuration by replacing the standard hydraulic components with components suitable for working at low temperatures by exploiting the characteristics of the stainless steel material.
**see page: 150**

**Increased insulation**
This increased insulation compared to the standard allows the use of the kit in particularly harsh temperature conditions (from +4°C to -20°C), avoiding the formation of ice or condensation.
**see page: 150**

**Low temperature pump**
In projects where the fluid temperature is between -11°C and -20°C, the standard pump is replaced with a special pump suitable for working in the aforementioned conditions.
**see page: 150**

# Hydronic systems
# VKB 2.0

The VKB 2.0 units are buffer storage tanks with accessories (without circulation pump) designed in order to significantly reduce the set-up time for the conditioning and cooling devices.

**Standard equipment**

**Capacity:** from 250 to 1.500 l
**Tank material:** carbon steel
**Fluid types:**
- water
- Ethylene glycol up to 40%
- Propylene glycol up to 40%

**Insulation:** anti-condensate elastomer
**Execution:** Layout 1

**Standard equipment usage limit**

| Fluid temperature | Environment temp. | Max. pressure |
|---|---|---|
| 5°C / +60°C | 10°C / +40°C | 3 bar |

Complete with all hydraulic components which are indispensable for the correct functioning of the hydraulic circuit for the distribution of chilled water, the components can be coupled with all kind of water coolers. The units consist of an insulated buffer tank, an expansion vessel, a safety valve, a deaerator, a fill/drain valve and a manometer.

The VKB 2.0 units are enveloped in a supporting structure in a galvanized steel and powder coated panels and base. They are designed to guarantee an easy inspection and maintenance of the components. The tank, which is hydraulically inserted between the cooling station and the fan-coils, makes the water content in the entire installation increase, by increasing the pause between the shutdown of the compressor and the next start-up. In this way, the number of start-ups is significantly reduced, which improves the life span and performance of the compressor. The broad range of storage tanks makes it possible to meet every requirement. Every unit is assembled in our factory and tested to guarantee our trustworthiness.

**Accessories**: See pag. 146 for the list of available accessories




**Special equipment usage limit available on configurator (see page 108)**

| Fluid temperature | Environment temp. | Max. pressure |
|---|---|---|
| -20°C / +60°C | -20 / +40°C | 3 bar |

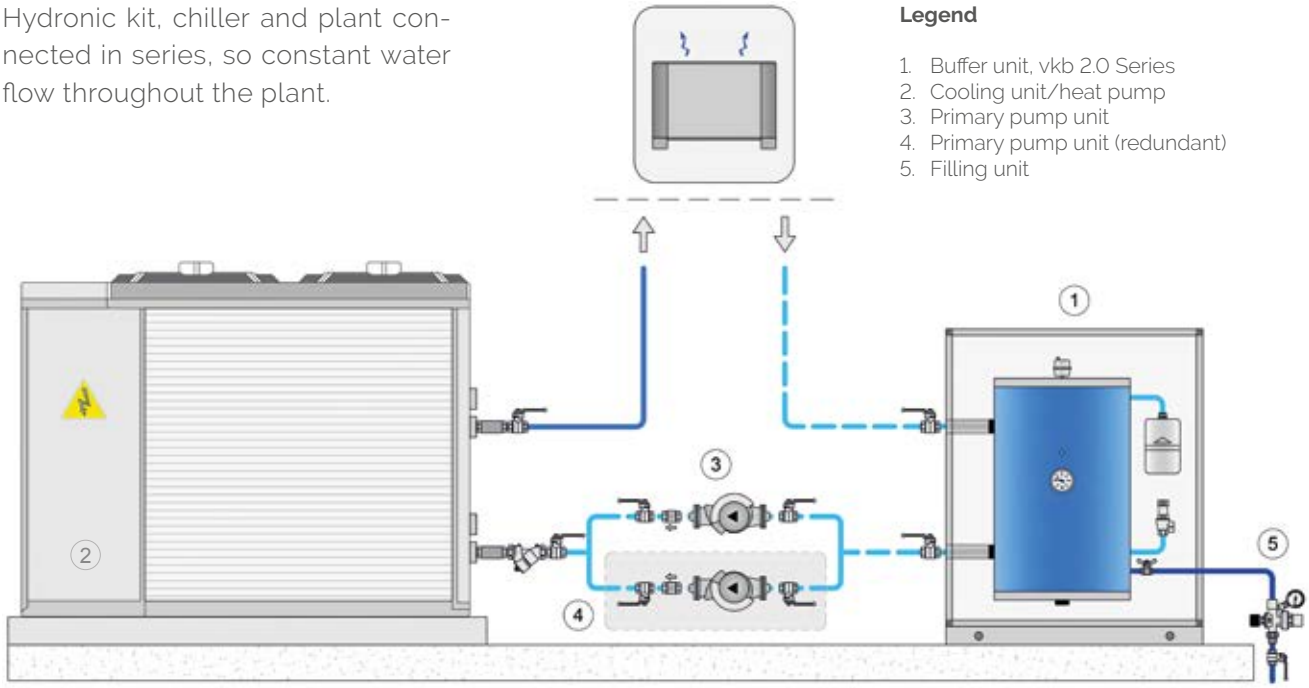
Upon request, it is possible to produce versions with special equipment to operate at temperatures and pressures outside the standard usage limits. These equipments include, for example, increased insulation, antifreeze kits, stainless steel connections and tank.

# Hydronic systems
# VKB 2.0 Layout 1 STANDARD

Hydronic kit, chiller and plant connected in series, so constant water flow throughout the plant.

**Legend**

1. Buffer unit, vkb 2.0 Series
2. Cooling unit/heat pump
3. Primary pump unit
4. Primary pump unit (redundant)
5. Filling unit

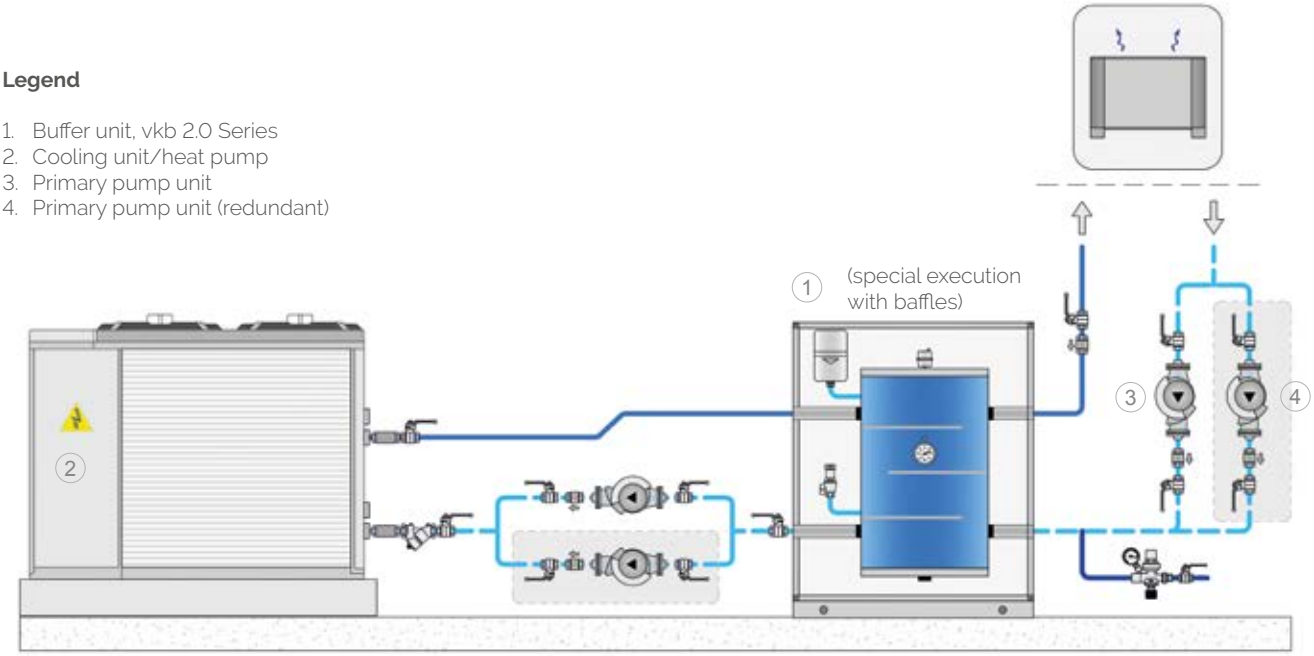



# Hydronic systems
# VKB 2.0 Layout 2 SPECIAL VERSION

Hydronic Kit and Chiller create the primary circuit, Hydronic Kit and Plant create the secondary circuit. Hence, the two circuits have independent flow rates. The VKB shown below is a special execution with baffles.

**Legend**

1. Buffer unit, vkb 2.0 Series
2. Cooling unit/heat pump
3. Primary pump unit
4. Primary pump unit (redundant)

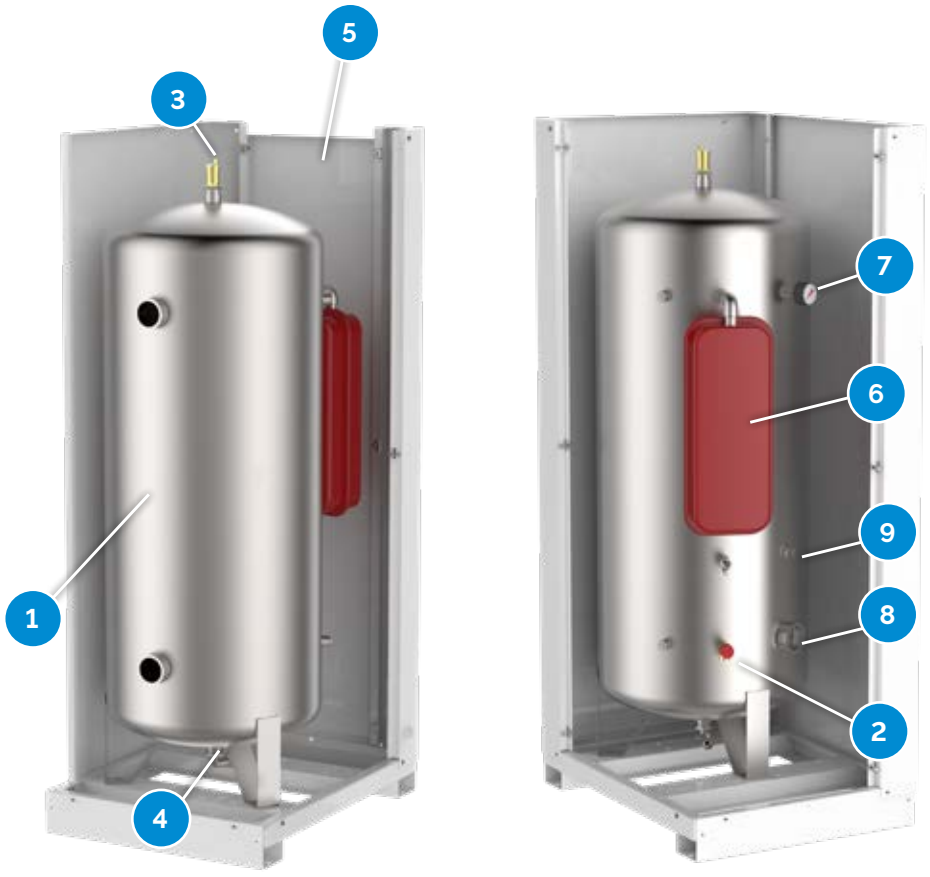


# Hydronic systems
# VKB 2.0

### VKB 2.0 Description of the main components

- **Storage tank**
  The storage tank is made of varnished carbon steel plates and is insulated with closed cell elastomer . This type of insulation, guarantees an excellent resistance to condensate formation.
- **Fill up valve**
  This valve refills the hydraulic circuit in the demand peak phase as well as during normal functioning.
- **Safety valve**
  Calibrated at 6 bar and with canalised drain. It protects the unit from possible overpressure.
- **Automatic valve for air drain**
  Placed on the upper part of the unit, it drains air from the unit.
- **Drain valve**
  It drains air from the lowest point of the tank to make drainage possible.
- **Supporting structure**
  The base is made of thick steel plates varnished. The basement and panels are made in galvanized steel and powder coated which are resistant to atmospheric agents. All this makes it possible for the VKB 2.0 to be installed in non-technical spaces and in places exposed to atmospheric agents.
- **Expansion vessel**
  Supplied with a membrane, preloaded nitrogen and with dimensions that can absorb varying volumes of liquid derived from the various temperatures.
- **Manometer**
  This device is placed on the tank and indicates the internal pressure.

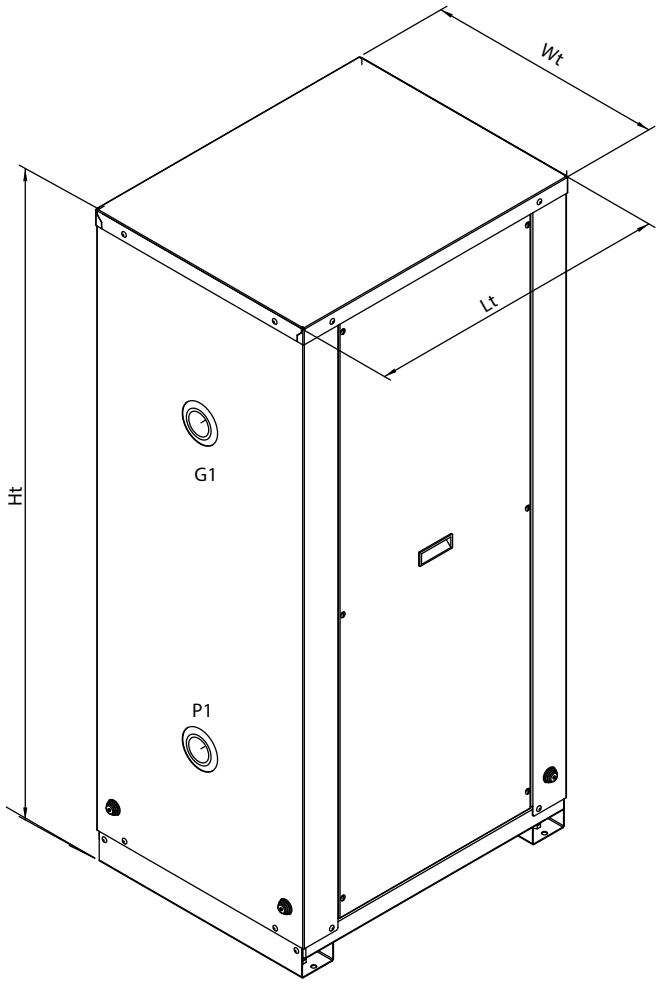
| Components | |
|---|---|
| 1 | Storage tank |
| 2 | Safety valve |
| 3 | Automatic safety valve |
| 4 | Drain |
| 5 | Supporting structure |
| 6 | Expansion vessel |
| 7 | Manometer |
| 8 | Predisposition for electrical resistance |
| 9 | Predisposition for thermostat |



# Hydronic systems
# VKB 2.0

| Capacity l | Vessel l | Vessel calibration bar | Safety valve bar | Couplings inch | Wt mm | Lt mm | Ht mm | P1 mm | G1 mm |
|---|---|---|---|---|---|---|---|---|---|
| 250 | 12 | 1 | 6 | 2" | 590 | 750 | 1600 | 420 | 1220 |
| 500 | 18 | 1,5 | 6 | 3" | 750 | 1000 | 1850 | 420 | 1470 |
| 1000 | 25 | 1,5 | 6 | 4" | 1100 | 1100 | 1850 | 610 | 1410 |
| 1500 | 2x25 | 1,5 | 6 | 4" | 1200 | 1200 | 1950 | 650 | 1450 |

| Capacity l | Code | Price | Dimensions with packaging mm | Weight kg |
|---|---|---|---|---|
| 250 | 838050090X | | 625x785x1670 | 95 |
| 500 | 838050091X | | 800x1050x1920 | 155 |
| 1000 | 838050092X | | 1150x1150x1920 | 255 |
| 1500 | 838050016 | | 1250X1250X2020 | 313 |




**Couplings legend**

| | |
|---|---|
| **G1** | From plant<br>Threaded connection |
| **P1** | To energy source<br>Threaded connection |

# Hydronic systems
# VKB 2.0 accessories

## 1 From threaded to flanged galvanized connections

The codes and prices below are for single item. The adapter must be screwed onto the existing connection. The adapter is not welded on the ferrule, for special executions ask for a quote.



| Original connection | Transformed connection uni-en pn 16 | Code | Price |
|---|---|---|---|
| 1"1/2 | DN 40 | 838081200X | |
| | DN 50 | 838081201X | |
| 2" | DN 50 | 838081202X | |
| | DN 65 | 838081203X | |
| 2"1/2 | DN 65 | 838081204X | |
| | DN 80 | 838081205X | |
| 3" | DN 80 | 838081206X | |
| | DN 100 | 838081207X | |
| 4" | DN 100 | 838081208X | |
| | DN 125 | 838081209X | |

## 2 From threaded to Grooved galvanized connections

The codes and prices below are for single item.
The adapter must be screwed onto the existing connection. The adapter is not welded on the ferrule, for special executions ask for a quote.



| Original connection | Transformed connection | Code | Price |
|---|---|---|---|
| 1"1/2 | 1"1/2 | 838081211X | |
| | 2" | 838081212X | |
| 2" | 2" | 838081213X | |
| | 2"1/2 | 838081214X | |
| 2"1/2 | 2"1/2 | 838081215X | |
| | 3" | 838081216X | |
| 3" | 3" | 838081217X | |
| | 4" | 838081218X | |
| 4" | 4" | 838081219X | |
| | 5" | 838081220X | |

## 3 Electrical resistor

IP 65 Protection



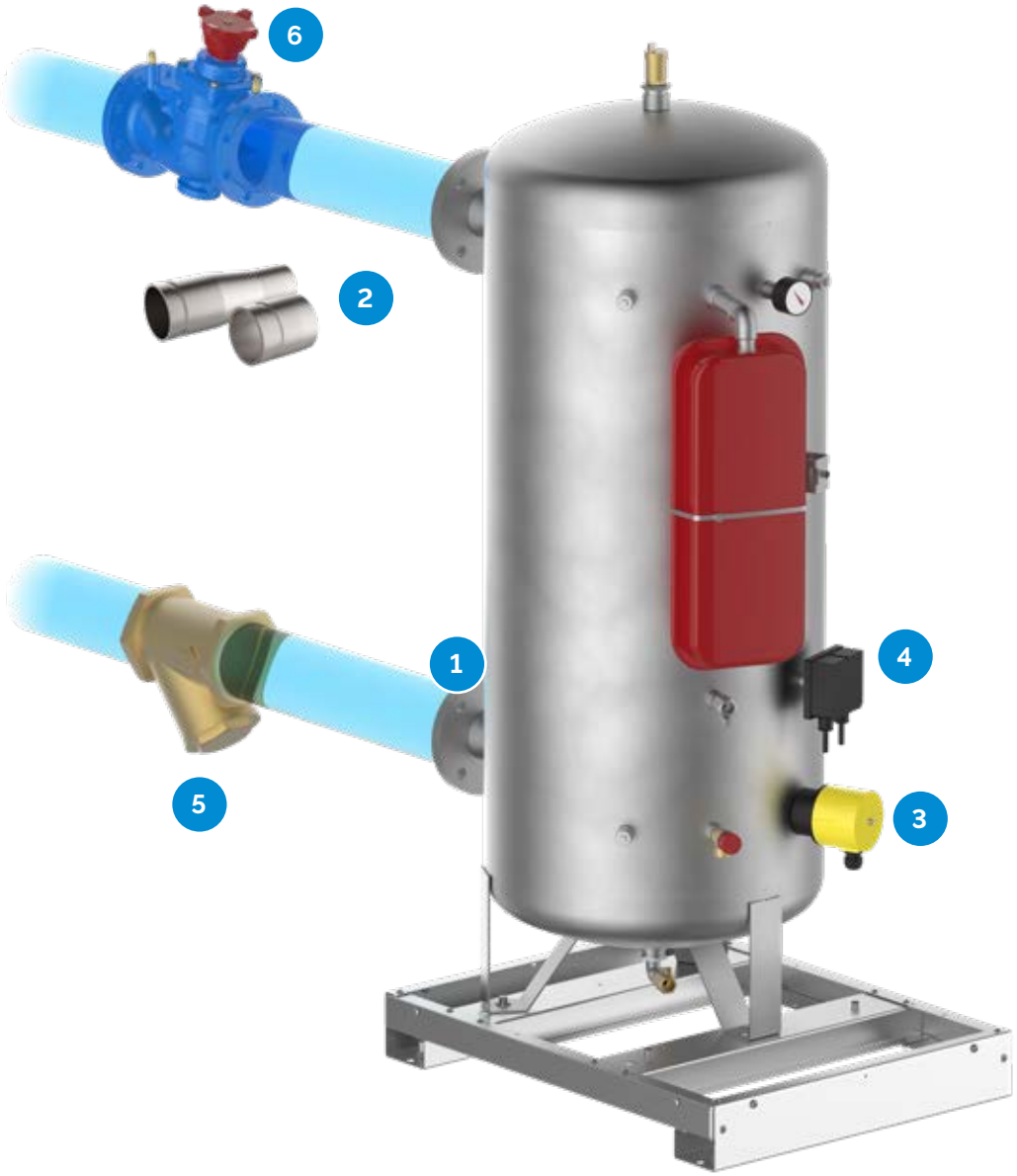
| Power W | Voltage V | Element number | Connection diameter inch | Length mm | Code | Price |
|---|---|---|---|---|---|---|
| 1300 | 230/380 | 3 | 2" | 220 | C24100008 | |
| 2000 | 230/380 | 3 | 2" | 290 | C24100009 | |
| 3000 | 230/380 | 3 | 2" | 340 | C24100010 | |
| 4000 | 230/380 | 3 | 2" | 390 | C24100012 | |

## 4 Temperature controls



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

# Hydronic systems
# VKB 2.0 accessories




**5** **Filter (special version)**
Mesh filter, with 1000 micron holes, can be placed outside the unit to protect the pumps from any impurities in the equipment.
**see page: 133**

**6** **Balancing valves (special version)**
Valve can be connected externally to balance the flow within the circuit.
**see page: 133**

**Tailored connections (special version)**
Flangiate (in various materials), Grooved (in various materials), Larger
**see page: 133**

**Stainless steel execution**
In projects where the fluid temperature is between -11°C and -20°C, the hydronic kits are produced in a special configuration by replacing the standard hydraulic components with components suitable for working at low temperatures by exploiting the characteristics of the stainless steel material.
**see page: 133**

**Increased insulation**
This increased insulation compared to the standard allows the use of the kit in particularly harsh temperature conditions (from +4°C to -20°C), avoiding the formation of ice or condensation.
**see page: 133**

# Standard Accessories for Hydronic kits HPT and HP

## Accessories for HPT kit

| Code | Description | Price |
|---|---|---|
| 838081000X | DIFFERENTIAL PRESSURE SWITCH | |
| 838081104X | TIMER OPTION 48H* | |
| 838080917X | ANTIVIBRATING FEET FOR HPT 300/500L | |
| 838080936X | ANTIVIBRATING FEET FOR HPT 750/1000L | |
| 838080938X | ANTIVIBRATING FEET FOR HPT 1500/2500L | |

* WARNING If the system operates 24 hours a day, 7 days a week, the pump alternation is not guaranteed by the standard group. In this case, we recommend the use of this accessory

**Compatible with HPT kit see pag. 128**



## Accessories for HP 2.0 kit

| Code | Description | Price |
|---|---|---|
| 838081000X | DIFFERENTIAL PRESSURE SWITCH | |
| 838081104X | TIMER OPTION 48H* | |
| 838081583X | MANOMETER KIT | |
| 838080861X | ANTIVIBRATING FEET UP TO P18 | |
| 838081286X | ANTIVIBRATING FEET FOR P19, P20, P21 | |
| 838081187X | EXPANSION VESSEL 12L UP TO P18 | |
| 838081195X | EXPANSION VESSEL 25L UP TO P18 | |
| 838081480X | EXPANSION VESSEL 2x25L UP TO P18 | |
| 838081234X | EXPANSION VESSEL 2x25L FOR P19, P20, P21 | |

* WARNING If the system operates 24 hours a day, 7 days a week, the pump alternation is not guaranteed by the standard group. In this case, we recommend the use of this accessory

**Compatible with HP kit see pag. 140**



## Transformation in flange connection for HP 2.0 kit

The codes and prices below are for single item.



| Original connection Grooved (Victaulic) | Transformed connection UNI-EN PN 16 | Code | Price |
|---|---|---|---|
| 1"1/2 | DN40 | 838081247X | |
| | DN50 | 838081248X | |
| 2" | DN50 | 838081249X | |
| | DN65 | 838081250X | |
| 2"1/2 | DN65 | 838081251X | |
| | DN80 | 838081252X | |
| 3" | DN80 | 838081253X | |
| | DN100 | 838081254X | |
| 4" | DN100 | 838081255X | |
| | DN125 | 838081256X | |

**Compatible with HP kit see pag. 140**

# Standard Accessories for Hydronic kits VKB

## Galvanized Connections Adapters from threaded to flanged type

The codes and prices below are for single item.
The adapter must be screwed onto the existing connection.
The adapter is not welded on the ferrule, for special executions ask for a quote.



| Original connection | Transformed connection uni-en pn 16 | Code | Price |
|---|---|---|---|
| 1"1/2 | DN 40 | 838081200X | |
| | DN 50 | 838081201X | |
| 2" | DN 50 | 838081202X | |
| | DN 65 | 838081203X | |
| 2"1/2 | DN 65 | 838081204X | |
| | DN 80 | 838081205X | |
| 3" | DN 80 | 838081206X | |
| | DN 100 | 838081207X | |
| 4" | DN 100 | 838081208X | |
| | DN 125 | 838081209X | |



## Galvanized Connection Transformation from threaded to Grooved (Victaulic)

The codes and prices below are for single item.
The adapter must be screwed onto the existing connection.
The adapter is not welded on the ferrule, for special executions ask for a quote.



| Original connection | Transformed connection | Code | Price |
|---|---|---|---|
| 1"1/2 | 1"1/2 | 838081211X | |
| | 2" | 838081212X | |
| 2" | 2" | 838081213X | |
| | 2"1/2 | 838081214X | |
| 2"1/2 | 2"1/2 | 838081215X | |
| | 3" | 838081216X | |
| 3" | 3" | 838081217X | |
| | 4" | 838081218X | |
| 4" | 4" | 838081219X | |
| | 5" | 838081220X | |

## Electrical resistors for VKB 2.0 kit

IP 65 Protection



| Power W | Voltage V | Element number | Connection Diameter inch | Length mm | Code | Price |
|---|---|---|---|---|---|---|
| 1300 | 230/380 | 3 | 2" | 220 | C24100008 | |
| 2000 | 230/380 | 3 | 2" | 290 | C24100009 | |
| 3000 | 230/380 | 3 | 2" | 340 | C24100010 | |
| 4000 | 230/380 | 3 | 2" | 390 | C24100012 | |

## Temperature controls for VKB 2.0 kit



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

**Compatible with VKB kit see pag. 146**

# Special versions for Hydronic kits

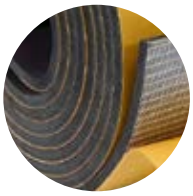
Special versions change the conformation of the products and hence the sales code will be different depending on the customisation required. Fiorini is able to provide any tailored solution quickly, providing the customer with the support they need to guide them to the solution that best suits their needs.
Here are some examples of special executions:



**Antifreeze Kit**
This specification is aimed at the operation of the machine in severe temperature conditions (from +4°C to -20 °C) avoiding the formation of ice especially during the starting and stopping phases of the machine. The resistors and the cable heating are activated via the fluid side bit-thermostat, while the heater is managed by the electrical panel, via a room thermostat, already included in the supply of the electrical panel.
The antifreeze kit is composed as follows:
• **For HPT from 100 to 1000 L**: 1.3kW electric resistance complete with antifreeze bit-thermostat (-35+35°C) wired to the electrical panel; heating cables wrapped around pipes, wired to the electrical panel; Heater in the electrical panel.
• **For HPT from 1500 to 2500 L**: 2x 1.3kW electric heaters complete with anti-freeze bit-thermostat (-35+35°C) wired to the electrical panel; heating cables wrapped around pipes, wired to the electrical panel; Heater in the electrical panel
• **For HP:** Heating cables wrapped around the pipes, wired to the electrical panel; anti-freeze bit-thermostat (-30+35°C); Heater in the electrical panel.



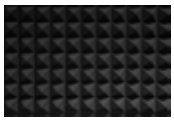
**Stainless steel execution**
In projects where the fluid temperature is between -11°C and -20°C, the hydronic kits are produced in a special configuration by replacing the standard hydraulic components with components suitable for working at low temperatures by exploiting the characteristics of the stainless steel material.
In particular, in cases of particularly severe fluid and ambient temperatures, the hydronic kit will be supplied as follows:
• Pipes and fittings in AISI304 stainless steel (HP and HPT);
• AISI304 stainless steel tank (HPT and VKB);
• Expansion tank(s) in AISI304 stainless steel
• AISI304 stainless steel valves



**Increased insulation**
This increased insulation compared to the standard allows the use of the kit in particularly harsh temperature conditions (from +4°C to -20°C), avoiding the formation of ice or condensation.
The majority insulation option includes:
• Double layer of anti-condensation insulation applied on the tank (for HPT and VKB);
• Double layer of anti-condensation insulation applied on the pipes and fittings (for HP and HPT);
• Insulation applied to each accessory included in the kit: expansion tanks, valves, vent, drain, brackets, tank feet;



**Low temperature pump**
In projects where the fluid temperature is between -11°C and -20°C, the standard pump is replaced with a special pump suitable for working in the aforementioned conditions.



**Soundproof coating**
Soundproofing is available and attenuates significantly the sound level of the machine.



**Filter**
Mesh filter, with 1000 micron holes, can be placed outside the unit to protect the pumps from any impurities in the equipment.



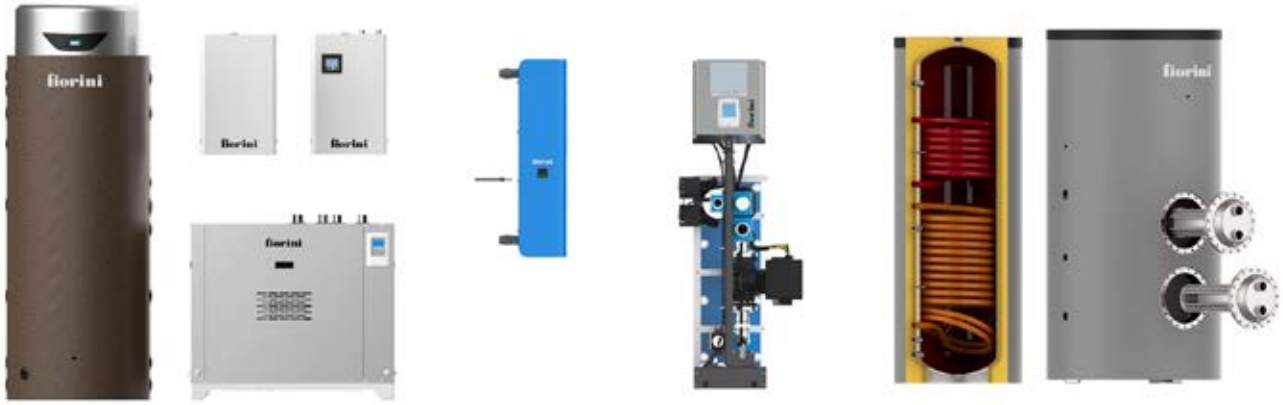
**Balancing valves**
Valve can be connected externally to balance the flow within the circuit.



**Wooden box packing**
Extra protective packing suitable for risky and long-distance transport.

# DHW SYSTEM CONFIGURATOR

## An advanced tool for sizing and accessorizing Fiorini Industries DHW production systems



The ACS system configurator is a web application that allows you to select and accessorize Fiorini standard products based on your project conditions.

**Advantages**

- ✔ Simple and intuitive wizard
- ✔ Wide range of application scenarios
- ✔ Solution sized to your project
- ✔ Get the technical data sheet and specification description in PDF immediately
- ✔ Match the accessories correctly
- ✔ Codes and prices are always up to date
- ✔ Available in 6 languages
- ✔ No software installation required




**Access the configurator now**
from the reserved area of Fiorini Industries

go.fiorinigroup.it/ita/login

# Hot water systems

## Contents


- Domestic Hot Water Storages pag. 155


FLEXY
pag. 156


FLEXY 2F
pag. 158


FLEXY Container
pag. 160


FLEXY INOX
pag. 164


FLEXY INOX 2F
pag. 166

- 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


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

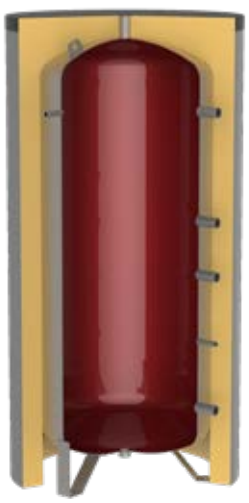
**Energy labels**
All products for hot water production are provided with an energy label in accordance with the CE directive and the specific regulations for the devices. The label certifies the energy efficiency class which helps the professionals and the users consciously choose the most efficient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

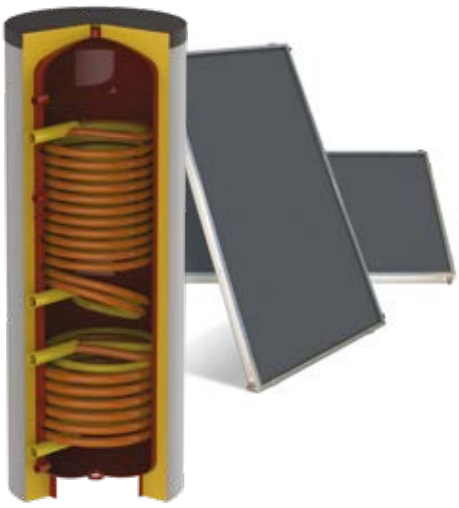
**Special materials and internal treatment of the tanks**
We offer products with a finishing touch adapted to every possible application: high quality stainless steel and glass lining (enamel vitrified at a temperature of more than 800°C) which ensure a maximum hygiene and life span even when the water 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.

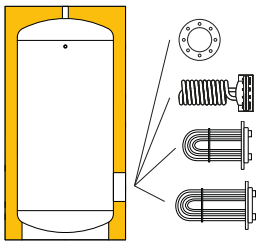
**Standard accessories:** see pag 294

**Special versions:** see pag 296



**Integration with AQUAFAST**
See page 212

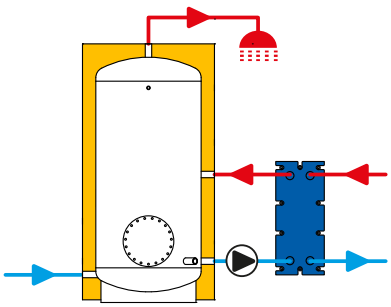
**MATCH YOUR EXCHANGER**
(see page 204)



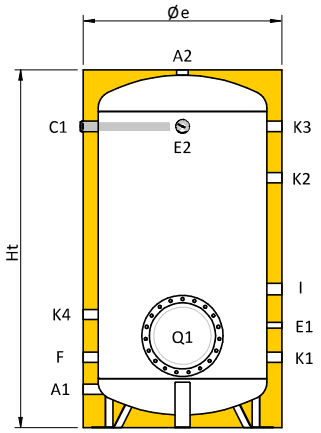
| Capacity l | FLEXY with inspection hole | | | Vertical Packaging | | FLEXY without inspection hole | | | Vertical Packaging | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Code* | Price | Energy label | Dimensions cm | Weight kg | Code | Price | Energy label | Dimensions cm | Weight kg |
| 200 | 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

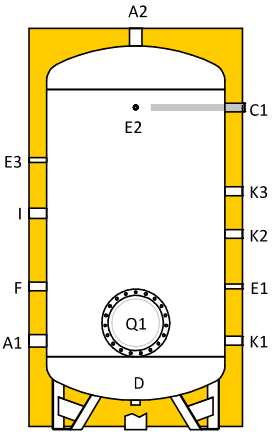
# Inertial tanks for DHW
# FLEXY



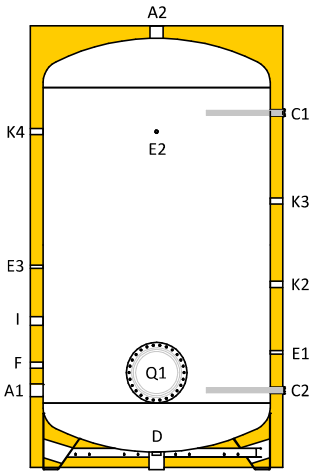
### 200 ≤ cap. ≤ 1000




### 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 |

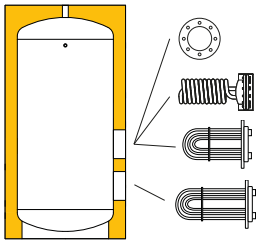
**Supplied accessories:** magnesium sacrificial anode for all sizes.

**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)

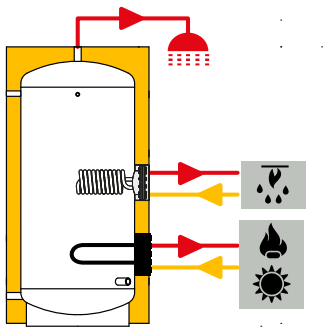


| Capacity l | Code | Price | Energy label | Vertical Packaging Dimensions cm | Vertical Packaging Weight kg |
|---|---|---|---|---|---|
| 200 | 817080134X | | B | 68x68x156 | 55 |
| 300 | 817080135X | | B | 78x78x164 | 80 |
| 500 | 817080136X | | C | 88x88x193 | 105 |
| 750 | 817080191X | | C | 99x99x199 | 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 |

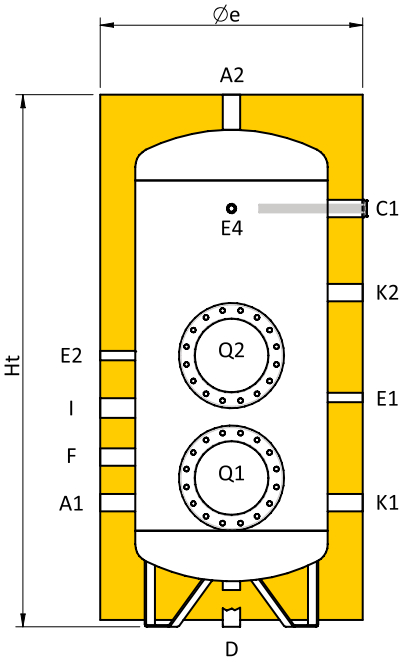


**Integration with AQUAFAST**
See page 212

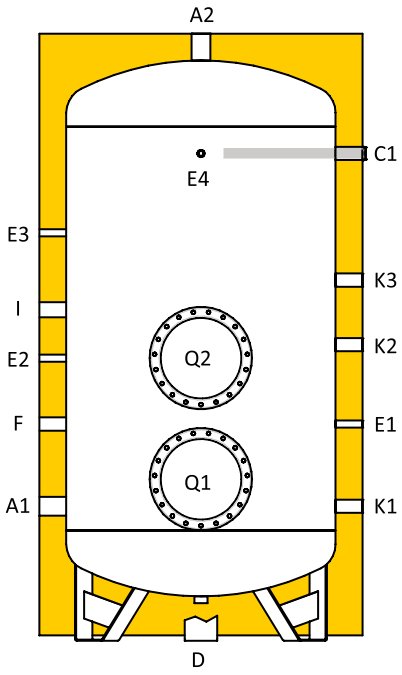
# Inertial tanks for DHW
# FLEXY 2F



**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.



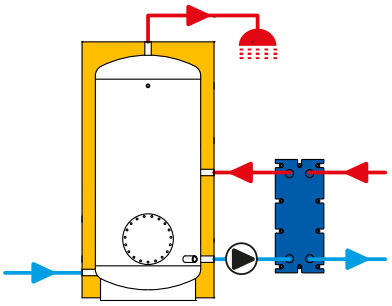
**Material:** S 235 JR carbon steel
**Treatment for internal protection:** Bluetech enamelling using thermosetting resins, suitable for domestic hot water
**Insulation**

| 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

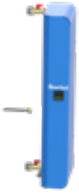
| | | | | Vertical Packaging | |
|---|---|---|---|---|---|
| Capacity l | Code | Price | Energy label | Dimensions cm | Weight kg |
| 1500 | 817080196X | | C | 135x135x205 | 200 |
| 2050 | 817080197X | | | 145x145x212 | 250 |
| 2500 | 817080198X | | | 160x160x199 | 325 |
| 3000 | 817080199X | | | 180x180x199 | 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

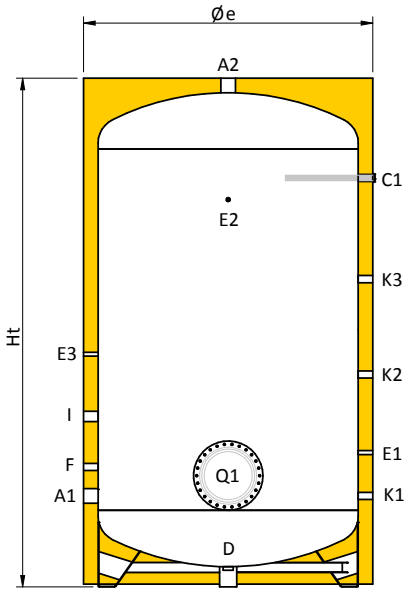
| | | | | Vertical Packaging | |
|---|---|---|---|---|---|
| Capacity l | Code | Price | Energy label | Dimensions cm | Weight kg |
| 1500 | 817080202X | | C | 135x135x205 | 223 |
| 2050 | 817080203X | | | 145x145x212 | 303 |
| 2500 | 817080204X | | | 160x160x220 | 388 |
| 3000 | 817080205X | | | 180x180x199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



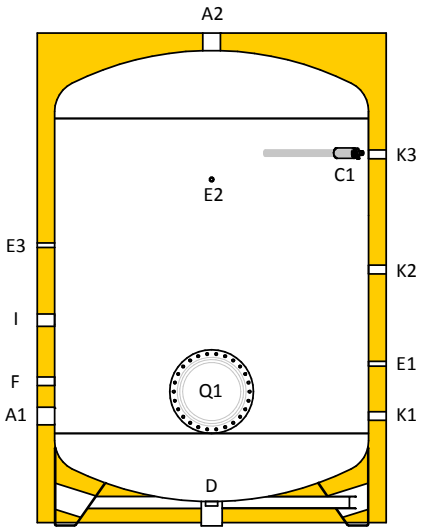
**Integration with AQUAFAST**
See page 212

# 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**

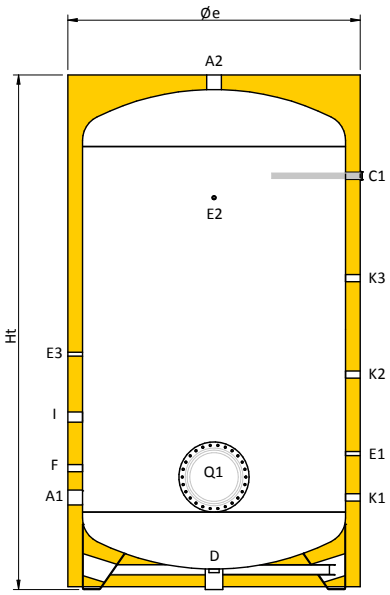
| Cap. l | Øe mm | Ht mm | R* mm | A1 mm | C1 mm | D mm | E1 mm | E2 mm | E3 mm | F mm | I mm | K1 mm | K2 mm | K3 mm | Q1** mm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 1350 | 2050 | 2455 | 505 | 1575 | 155 | 805 | 1575 | 1505 | 805 | 1165 | 505 | 1105 | 1345 | 605 |
| 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**

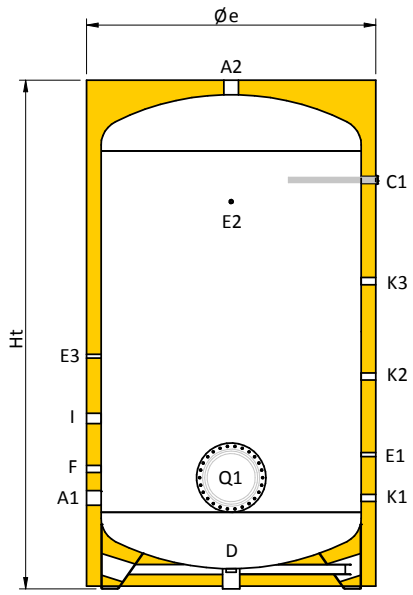
| Cap. l | Øe mm | Ht mm | R* mm | A1 mm | C1 mm | D mm | E1 mm | E2 mm | E3 mm | F mm | I mm | K1 mm | K2 mm | K3 mm | Q1** mm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 1350 | 2050 | 2455 | 505 | 1575 | 155 | 805 | 1575 | 1505 | 805 | 1165 | 505 | 1105 | 1345 | 605 |
| 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

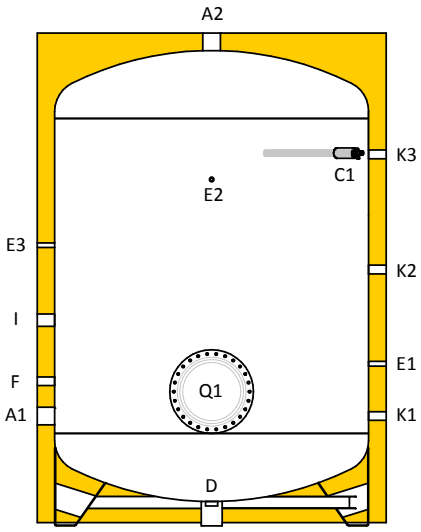
Q1**: Height from inspection hole center to the ground

# 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

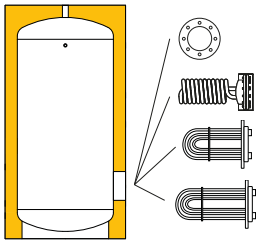
**Special versions:** see pag 296



**Integration with AQUAFAST**
See page 212

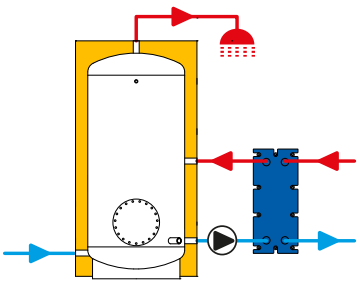
TESTED

**MATCH YOUR EXCHANGER**
**(see page 204)**

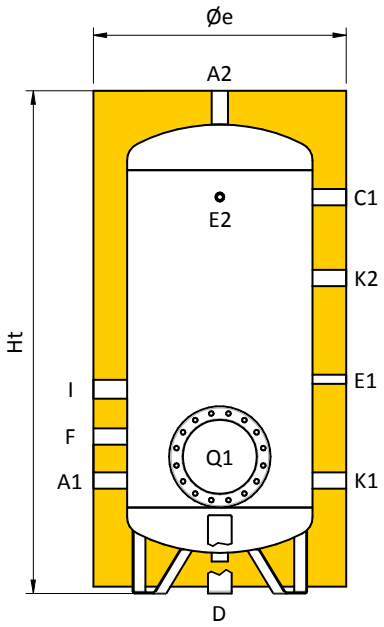


| Cap. l | With inspection hole | | | Vertical Packaging | Without inspection hole | | | Vertical Packaging |
|---|---|---|---|---|---|---|---|---|
| | Code* | Price | Energy label | Dimensions cm | Code | Price | Energy label | Dimensions cm |
| 200 | 817040188X | | B | 70x70x143 | 817040177X | | B | 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 |

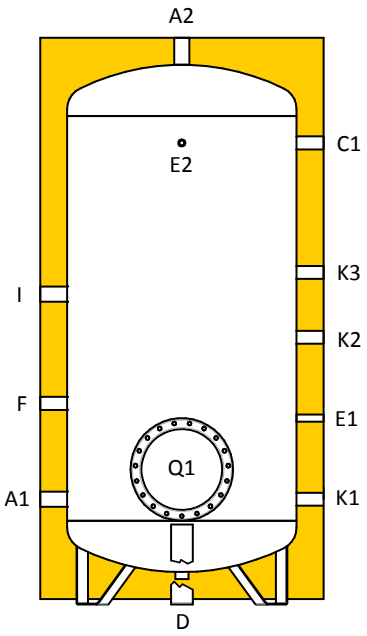
# Inertial tanks for DHW
# FLEXY INOX



### 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



TESTED

### Insulation

| Capacity (l) | Type |
|---|---|
| da 200 a 5000 | Polyester Fiber |

### Operational limits

| Max. temperature | Max. pressure |
|---|---|
| 95°C | 6 bar |

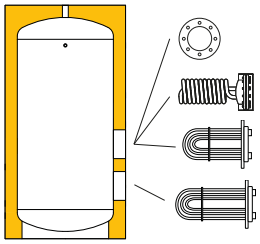
**Supplied accessories:** Magnesium sacrificial anode for all sizes.

**Standard accessories:** see pag 294

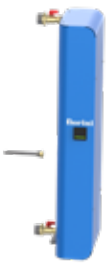
**Special versions:** see pag 296

**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)

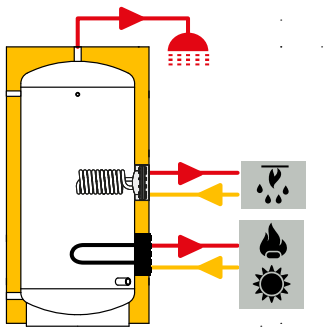


| Capacity l | Code | Price | Energy label | Vertical Packaging Dimensions cm |
|---|---|---|---|---|
| 200 | 817040199X | | B | 70x70x155 |
| 300 | 817040200X | | B | 80x80x165 |
| 500 | 817040201X | | C | 90x90x195 |
| 750 | 817040202X | | C | 105x105x195 |
| 1000 | 817040203X | | C | 105x105x225 |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

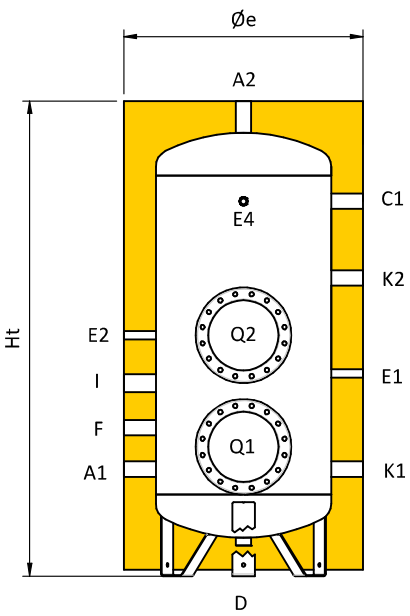


**Integration with AQUAFAST**
See page 212

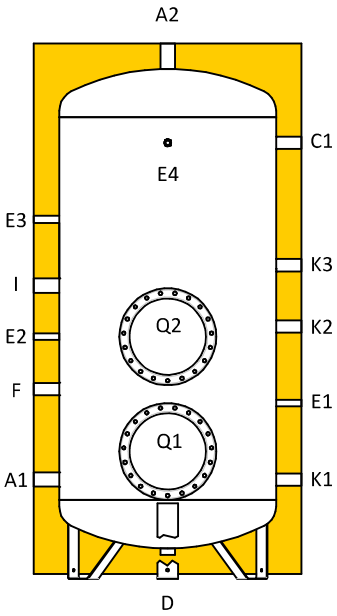
# Inertial tanks for DHW
# FLEXY INOX 2F



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 |

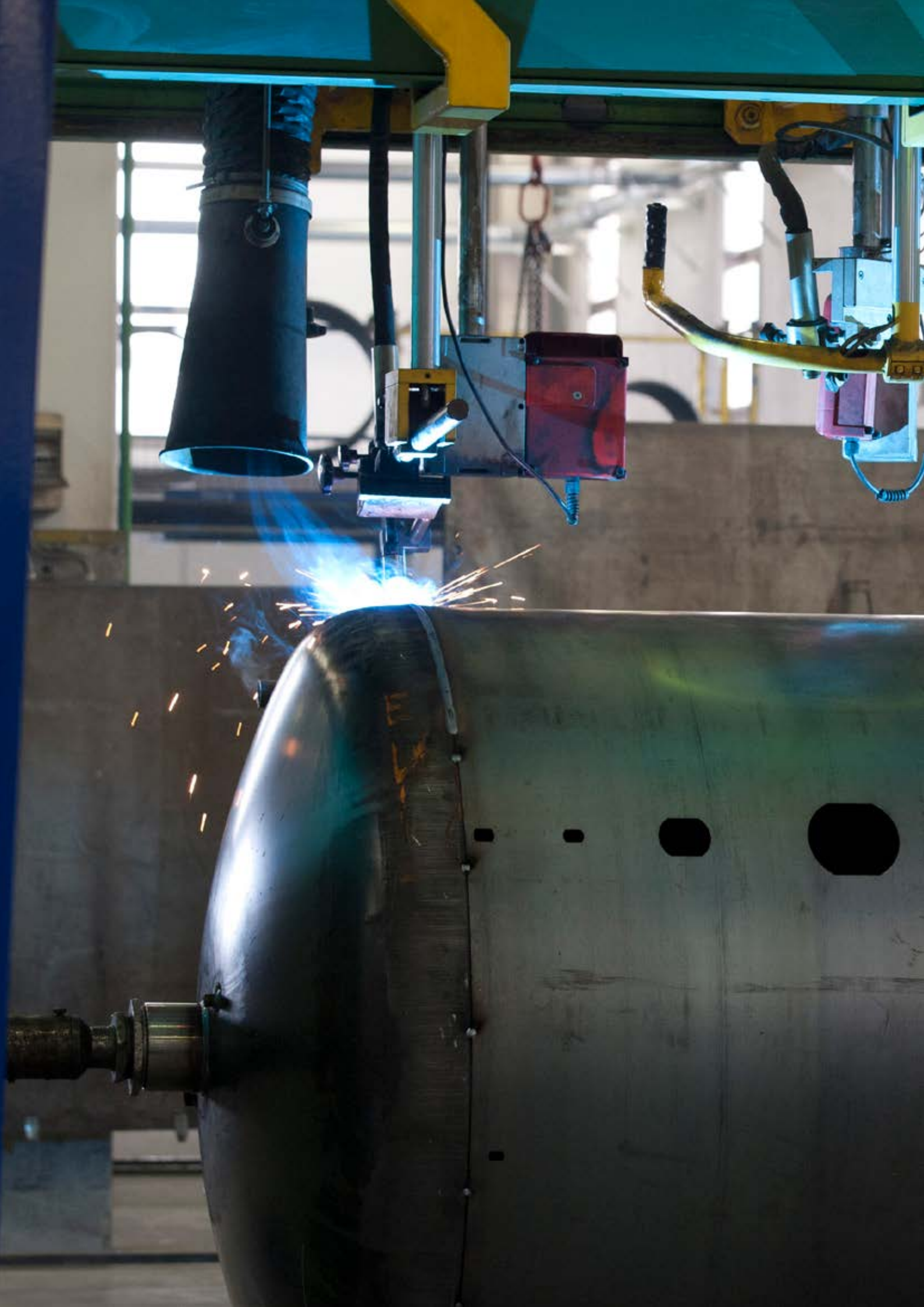
### Couplings chart

| 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.

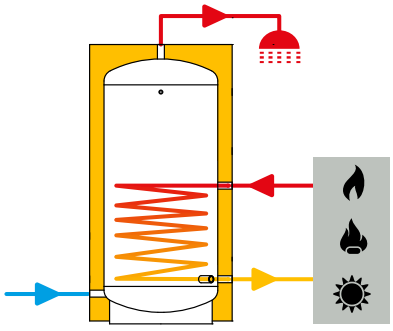
WRAS APPROVED MATERIAL

## 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 |

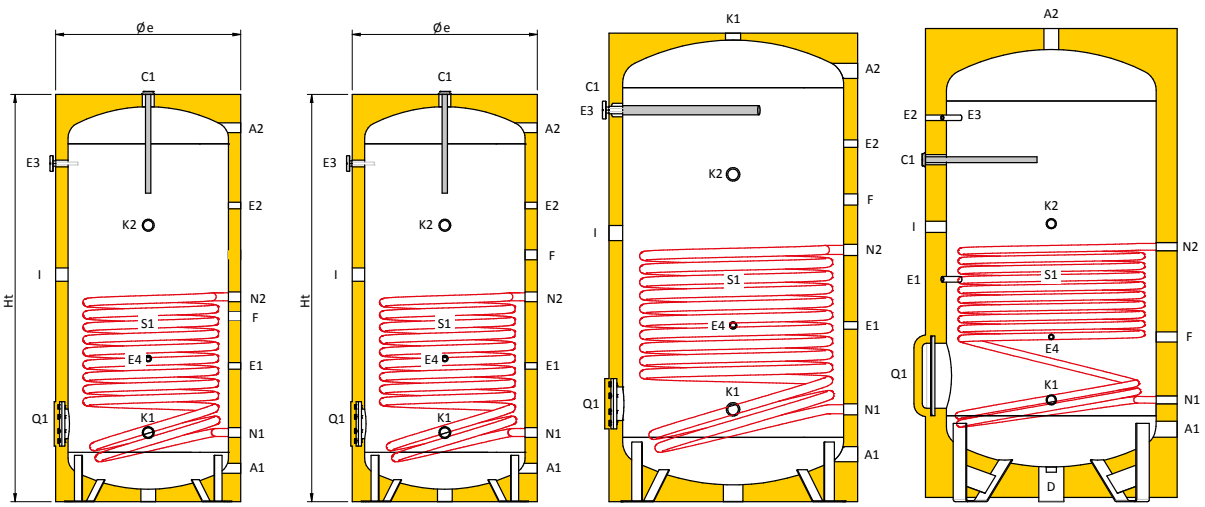


**Integration with AQUAFAST**

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

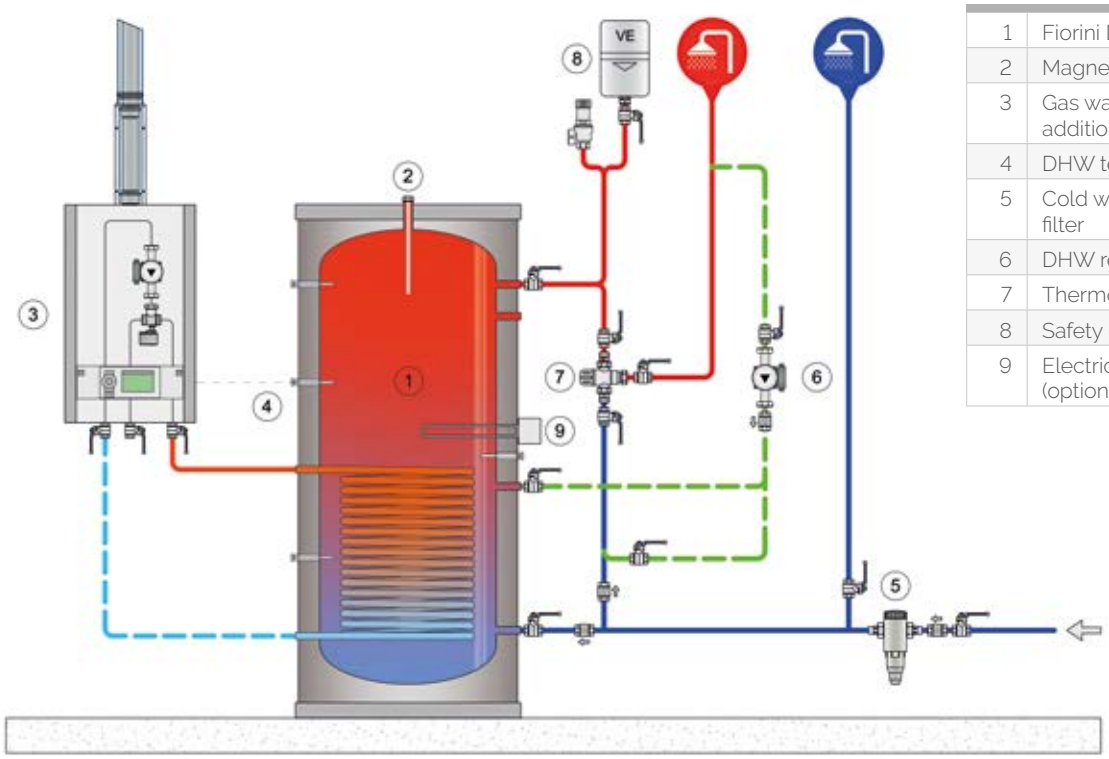
Q1**: Height from inspection hole center to the ground

# 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

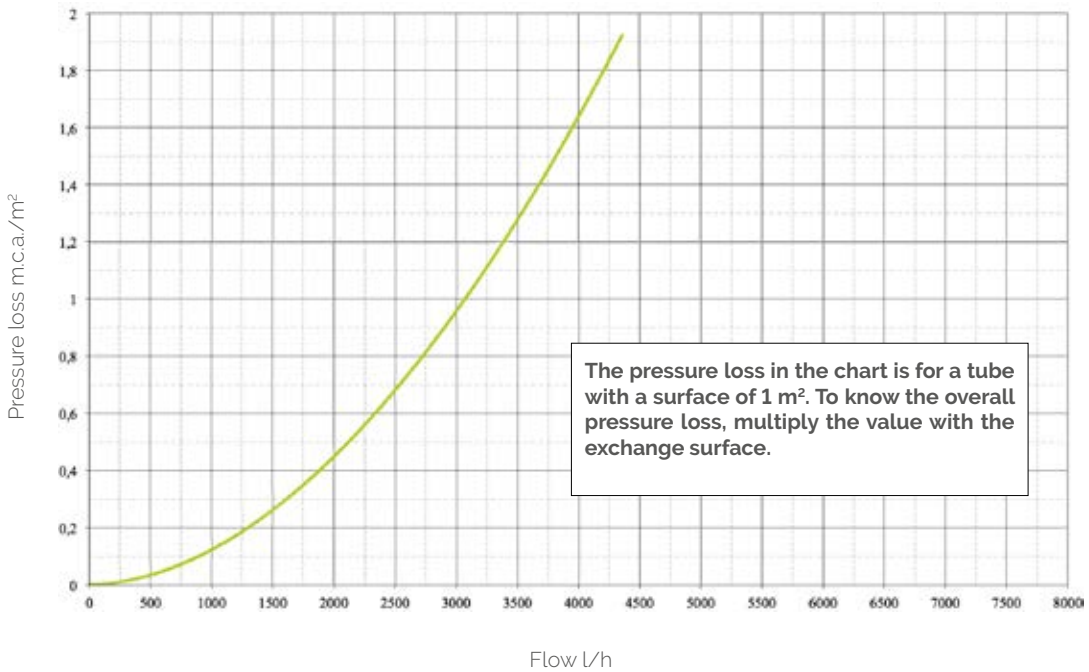
# Technical information for SMART 1 series




**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

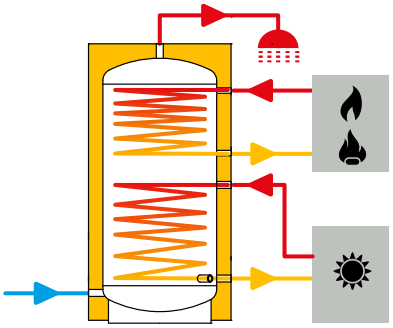
TESTED

## 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 |

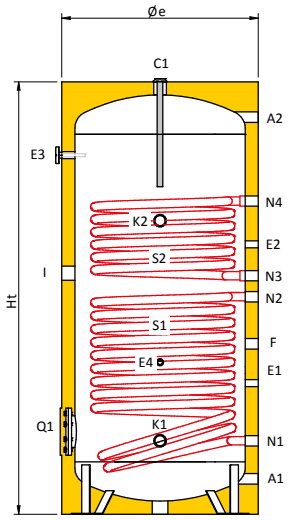


**Integration with AQUAFAST**

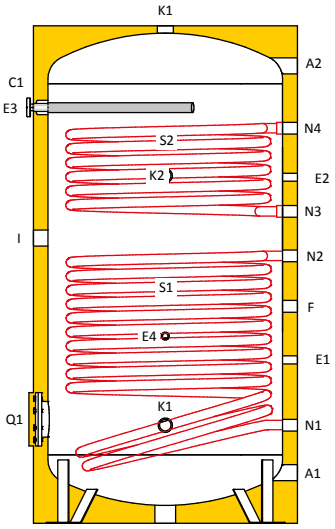
See page 212

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

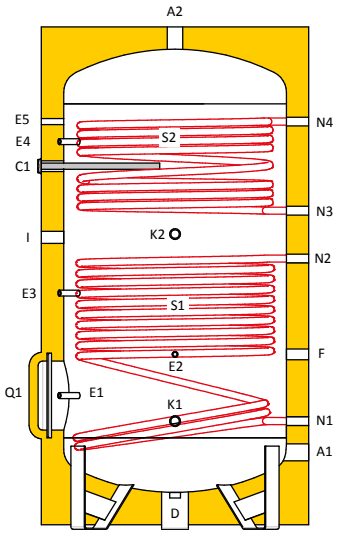
200 ≤ cap. ≤ 500




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

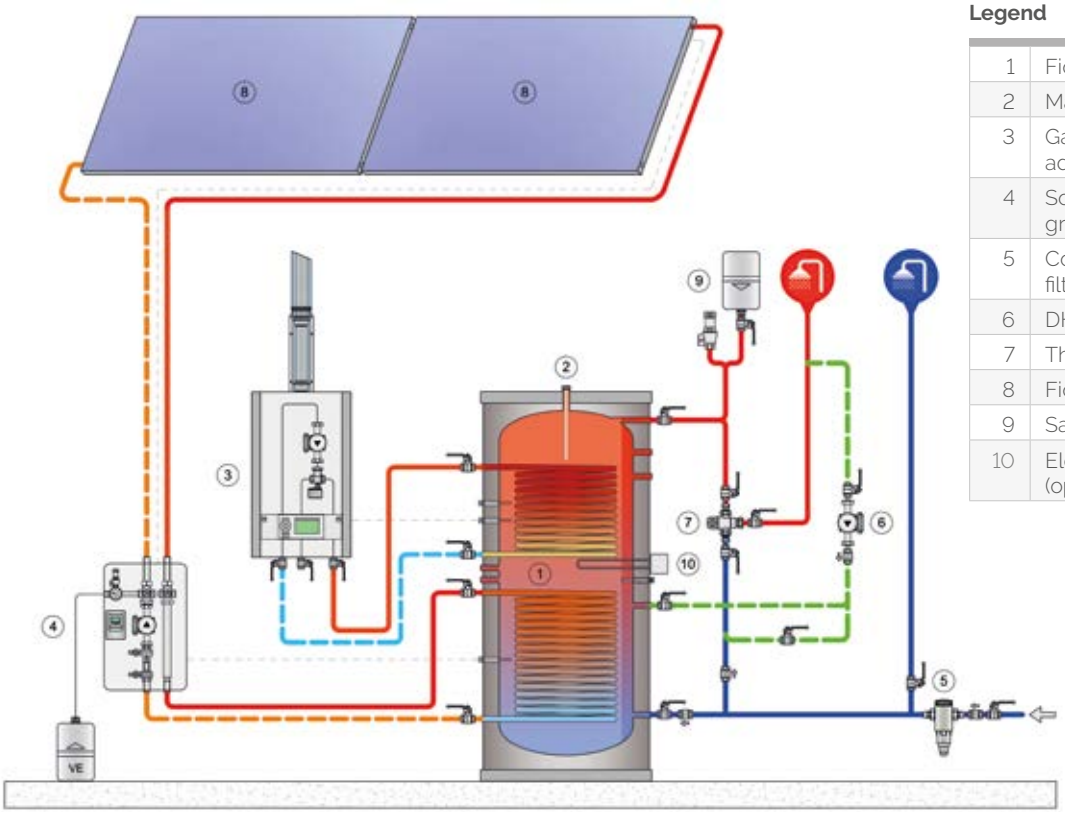
Q1**: Height from inspection hole center to the ground

# 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

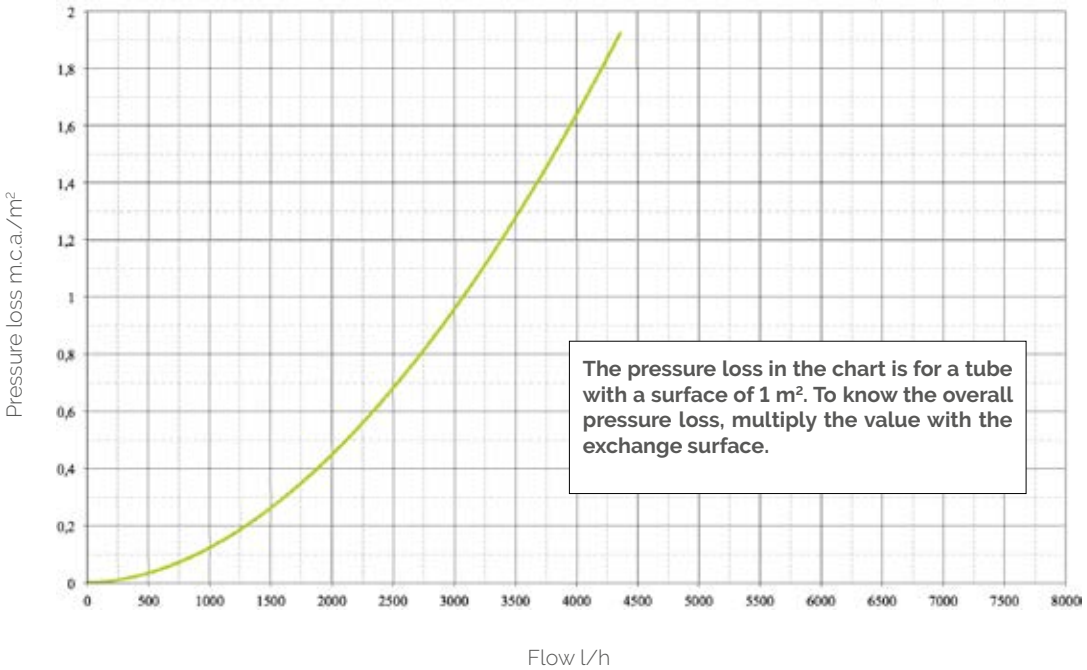
# Technical information for SMART 2 series




**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 |

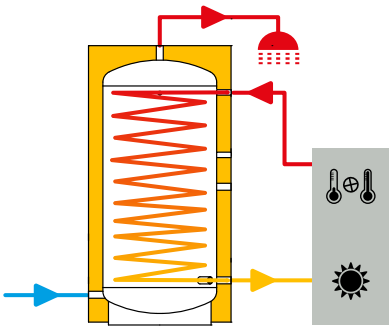
### Operational limits

| | 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 |



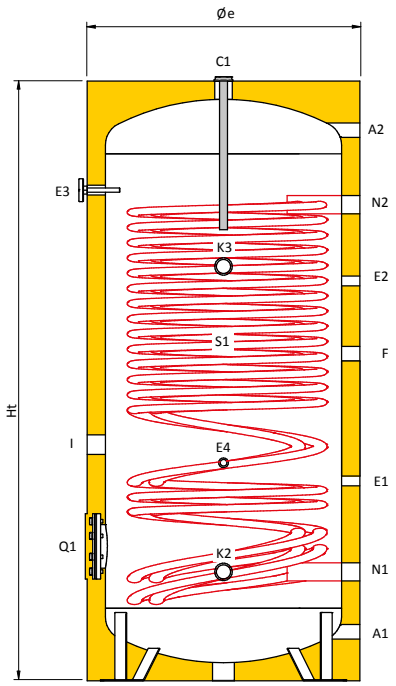


**Integration with AQUAFAST**

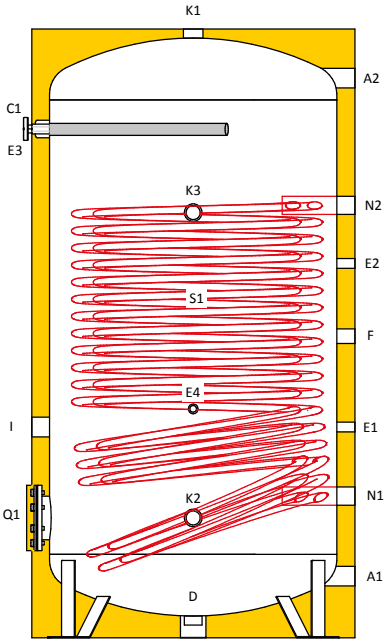
See page 212

# 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

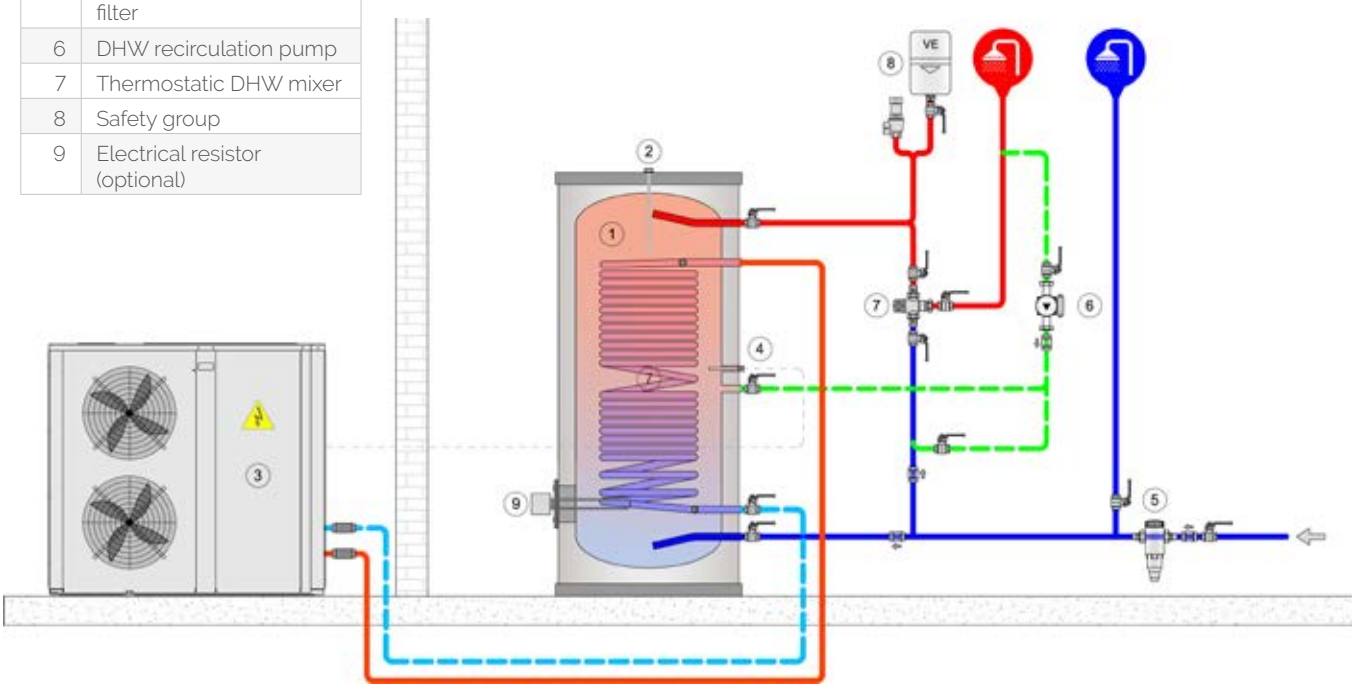
# Technical information for SMART HP series

| | | 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

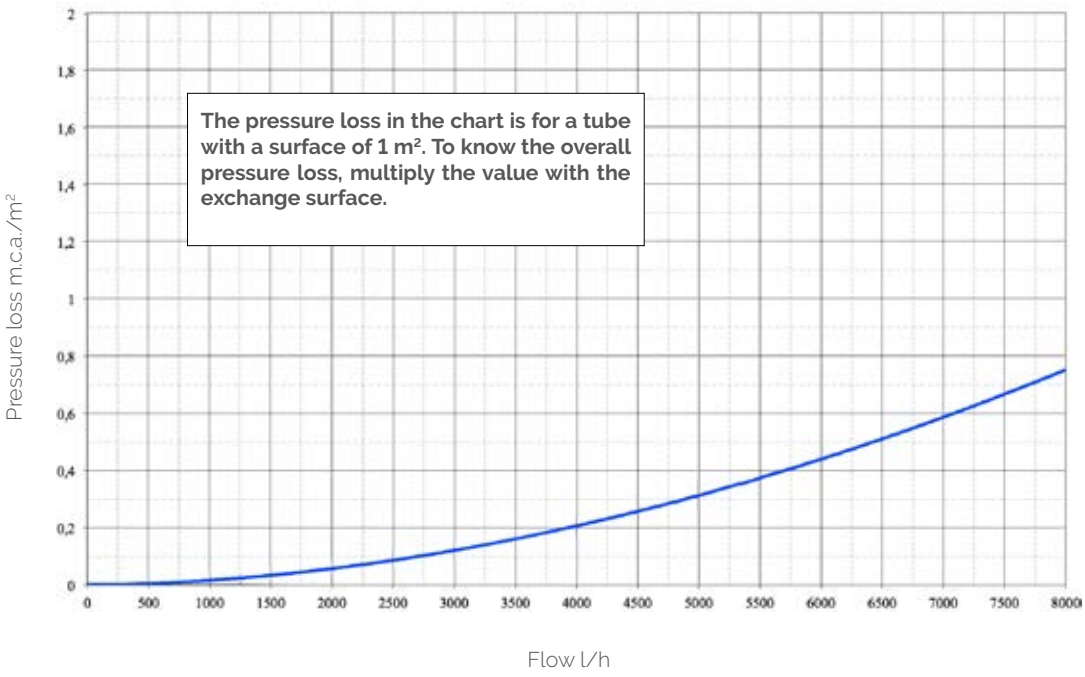
**Legend**

| | |
|---|---|
| 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

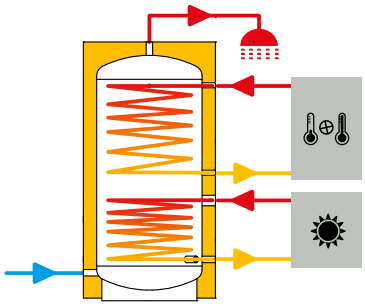
| Cap. l | Storage | | Primary circuit | |
|---|---|---|---|---|
| | max. temperature | max. pressure | max. temperature | max. pressure |
| from 300 to 1000 | 95°C | 10 bar | 110°C | 12 bar |

**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 |

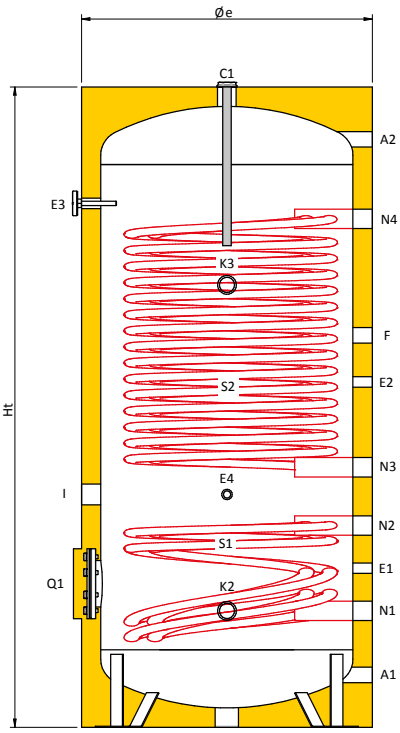


**Integration with AQUAFAST**

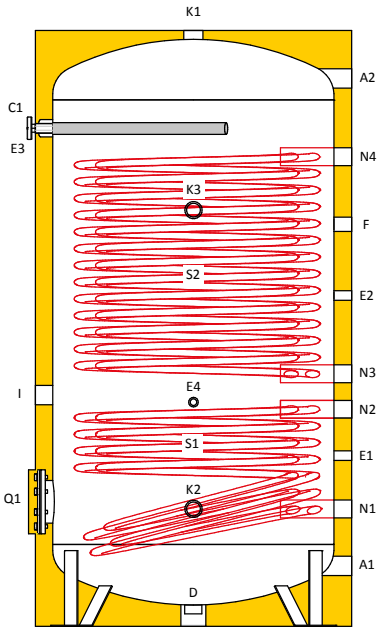
See page 212

# 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

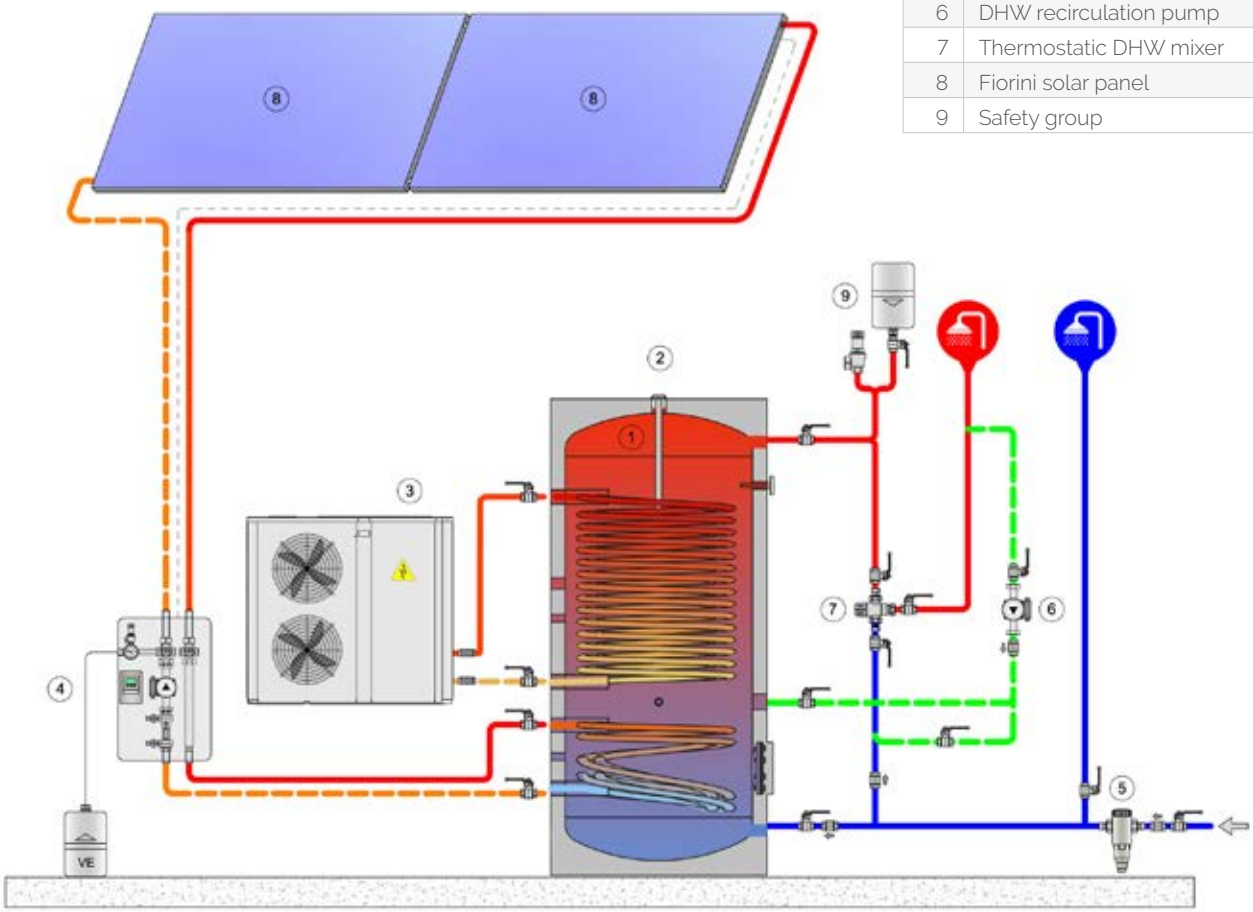
# Technical information for SMART HP 2 series

| | | 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

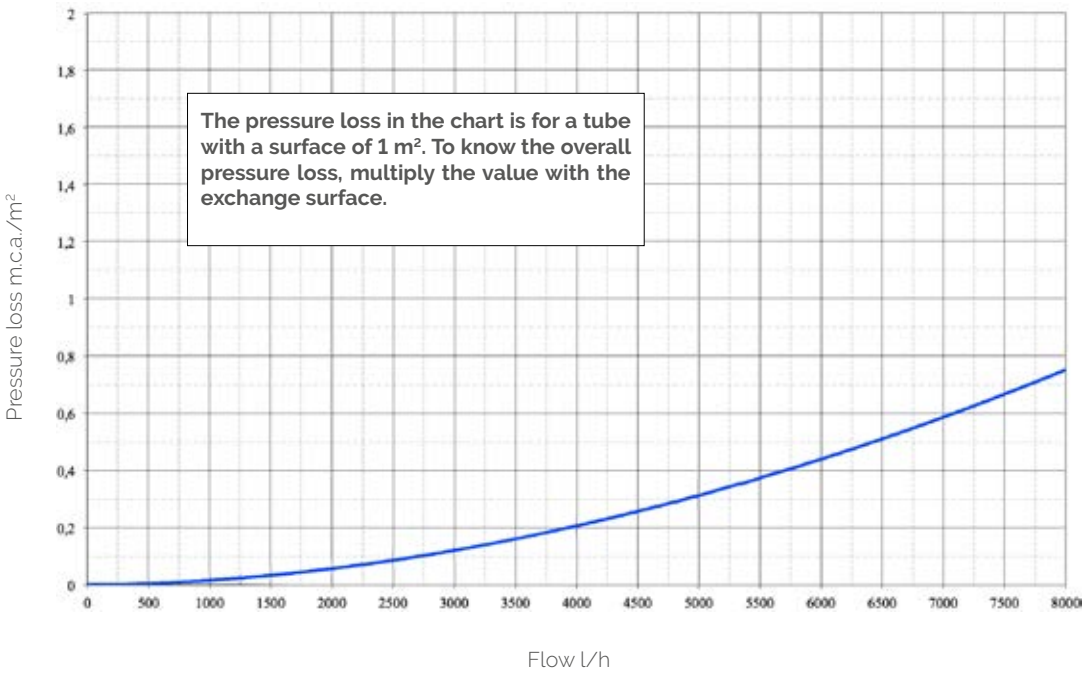
**Key**

| | |
|---|---|
| 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

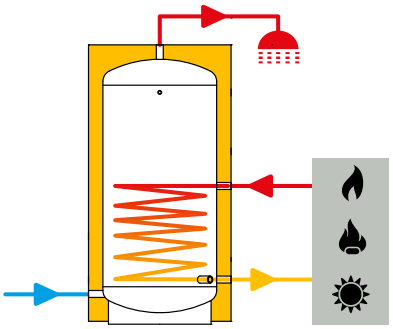
**Supplied accessories:** Magnesium sacrificial anode for all sizes.

**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



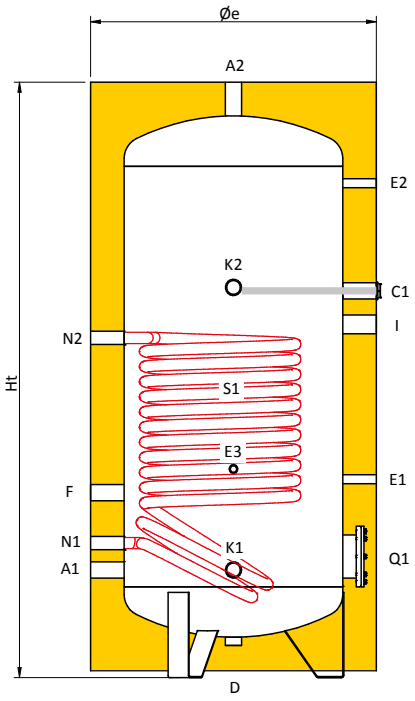


**Integration with AQUAFAST**

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

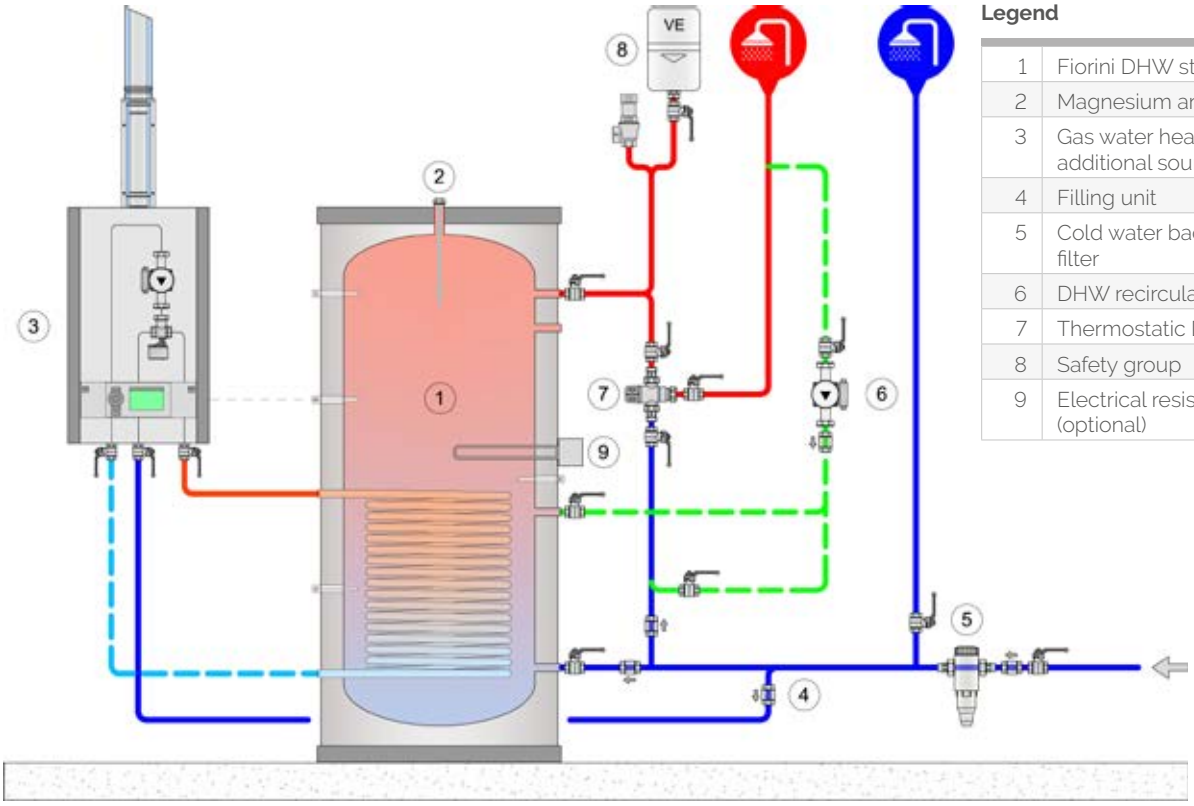
Q**: Height from inspection hole center to the ground

# 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

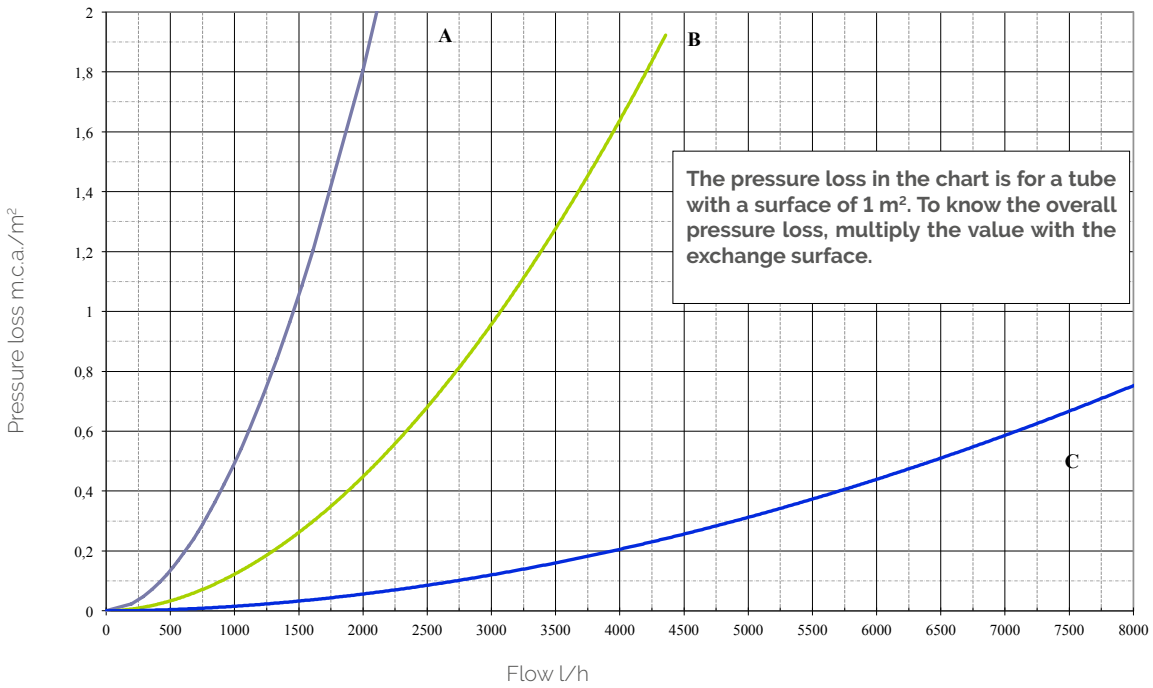
# Technical information for SMART INOX 1 series




**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

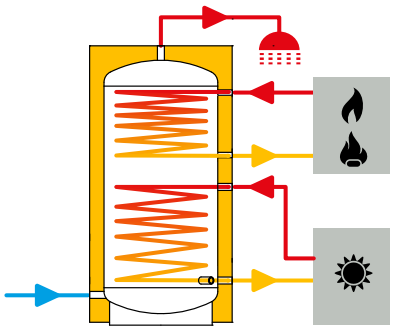
| Storage | | Primary circuit | |
|---|---|---|---|
| max. temperature | max. pressure | max. temperature | max. pressure |
| 95°C | 6 bar | 110°C | 12 bar |

**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 |



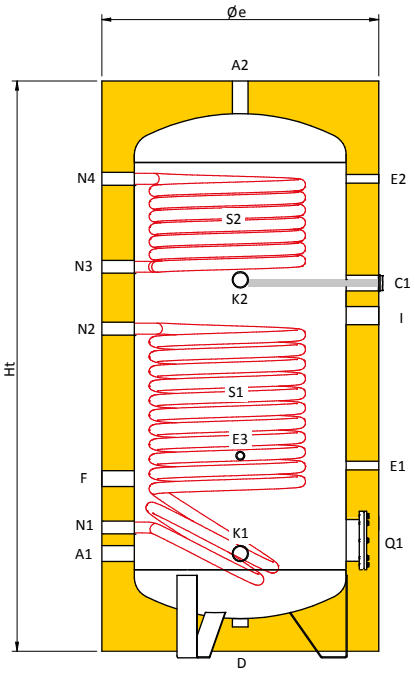


**Integration with AQUAFAST**

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

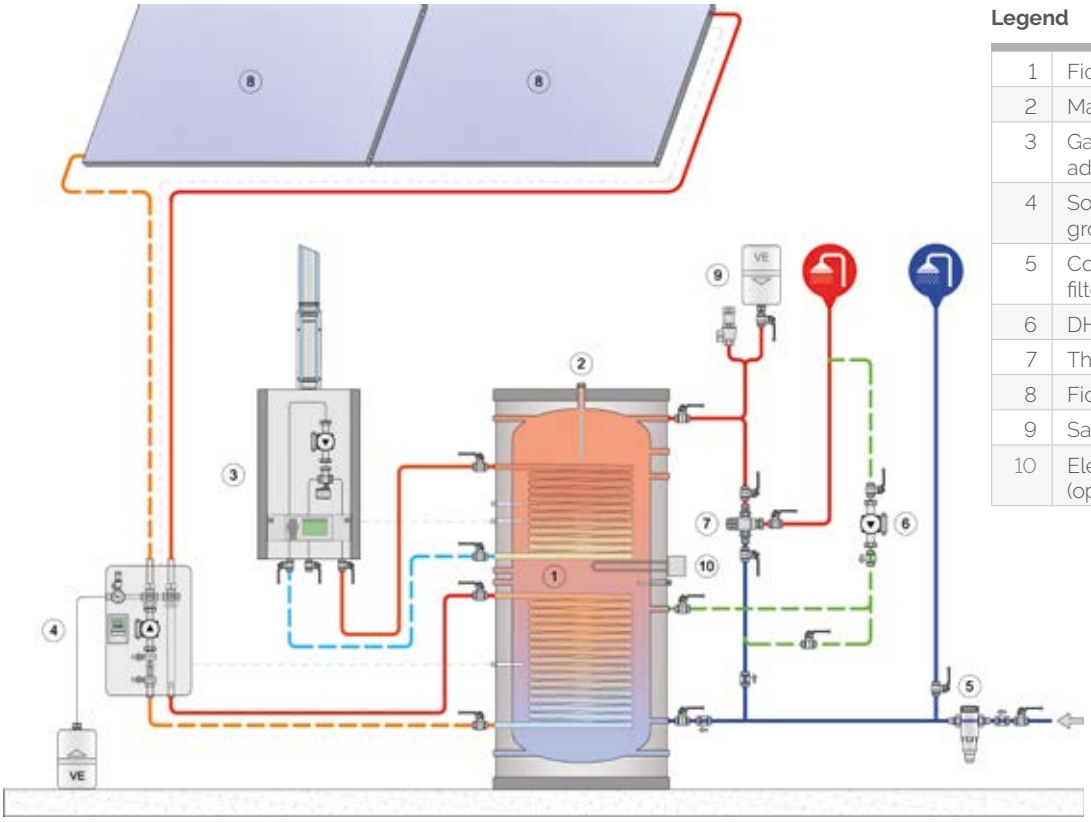
Q1**: Height from inspection hole center to the ground

# 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

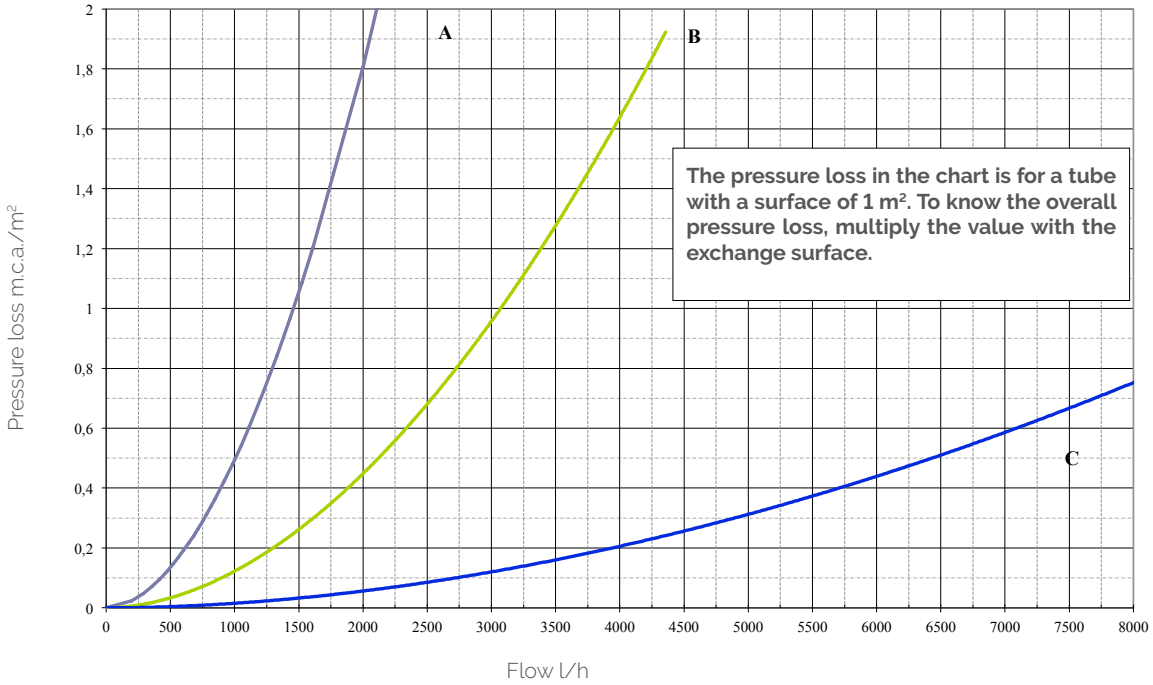
# Technical information for SMART INOX 2 series




**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 |

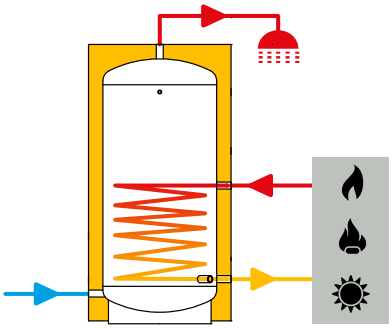
### Operational limits

| 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

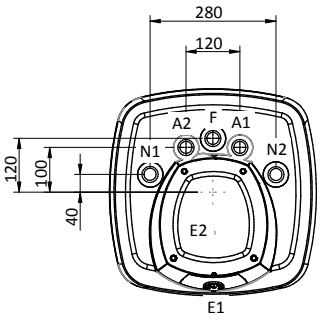
**Special executions:** see page 296

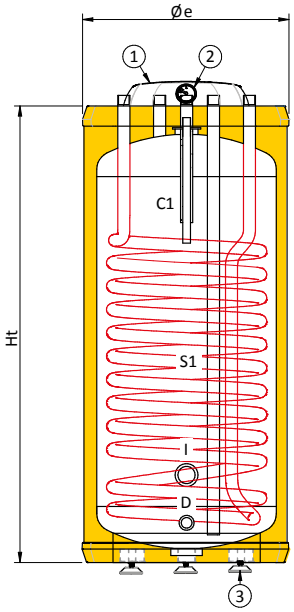


| Capacity l | Code | Price | Energy label | Net weight kg |
|---|---|---|---|---|
| 100 | 819060192X | | C | 57 |
| 120 | 819060193X | | C | 62 |
| 140 | 819060190X | | C | 67 |
| 200 | 819060191X | | C | 85 |

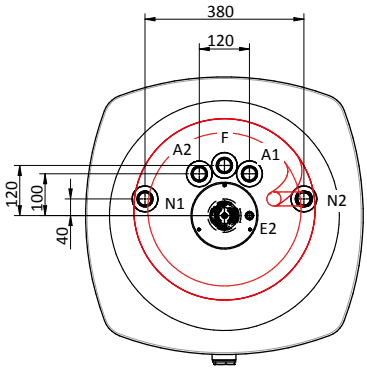
# Water heater with fixed heat exchanger
# SMART UP

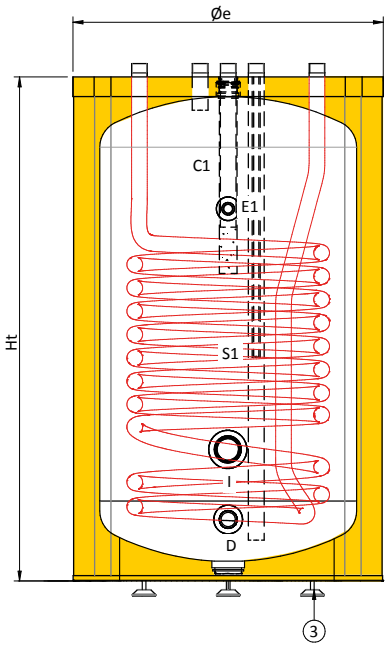
**100 ≤ cap. ≤ 140**




**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 |

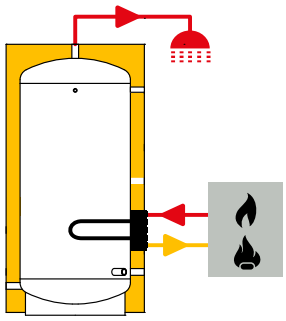
### Operational limits

| | 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



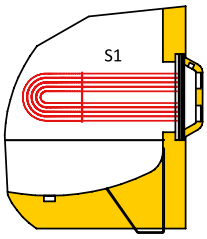
| Capacity l | Code | Price | Energy label | Vertical Packaging Dimensions cm | Vertical Packaging Weight kg |
|---|---|---|---|---|---|
| 200 | 818060081X | | A | 75X75X125 | 84 |
| 300 | 818060082X | | A | 75x75x150 | 96 |
| 500 | 818060083X | | B | 85x85x180 | 136 |
| 750 | 818060084X | | C | 100x100x180 | 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 |



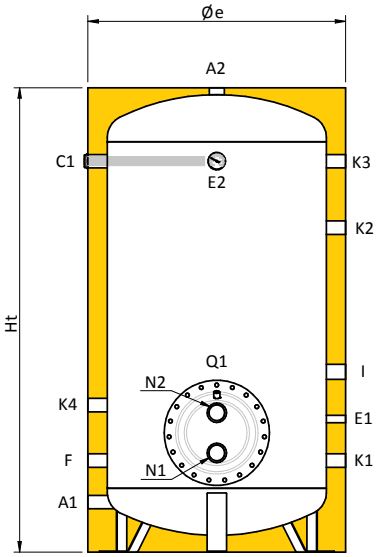
**Integration with AQUAFAST**

See page 212

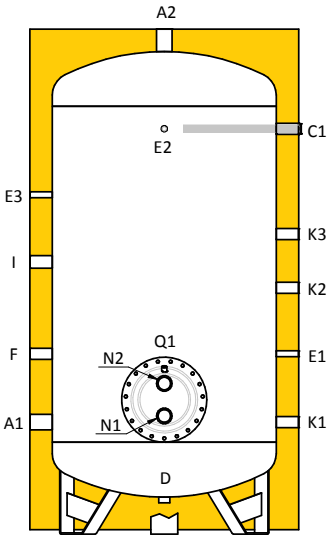
# Water heater
# with tube heat exchanger – BOIL

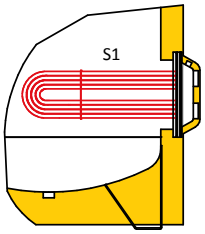



**200 ≤ cap. ≤ 1.000**




**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 |

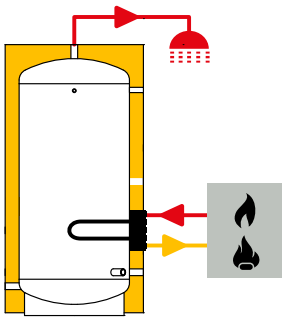
### Operational limits

| 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 |

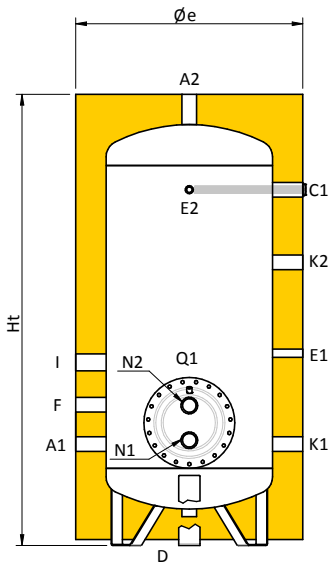


**Integration with AQUAFAST**

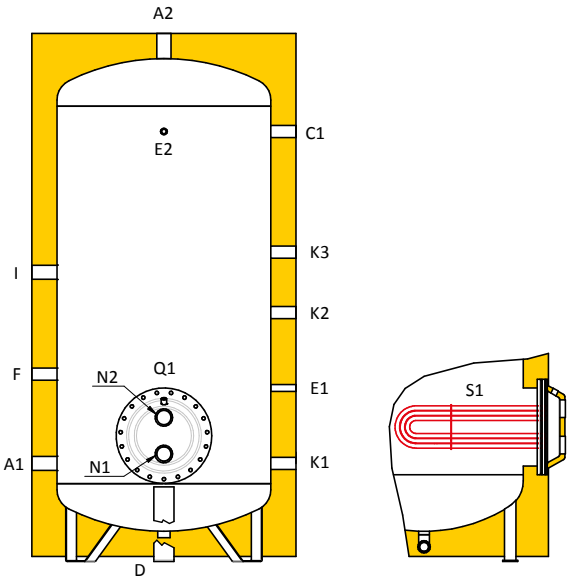
See page 212

# 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

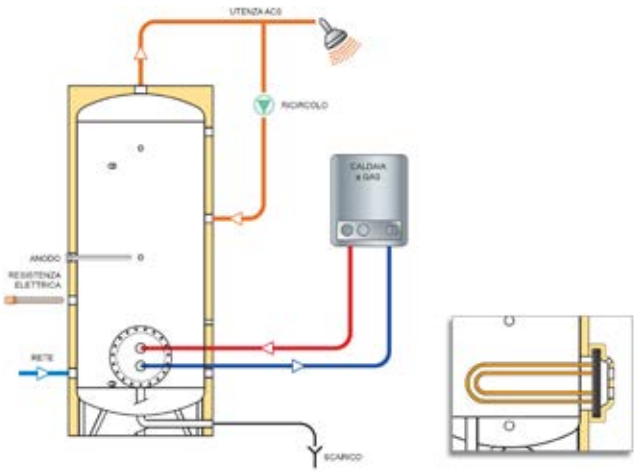
| Cap. l | Øe mm | Ht mm | R* mm | A1 mm | C1 mm | E1 mm | E2 mm | F mm | I mm | K1 mm | K2 mm | K3 mm | N1 mm | N2 mm | Q1** mm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | 650 | 1410 | 1535 | 295 | 1135 | 595 | 1135 | 425 | 540 | 295 | 915 | - | 305 | 425 | 365 |
| 300 | 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

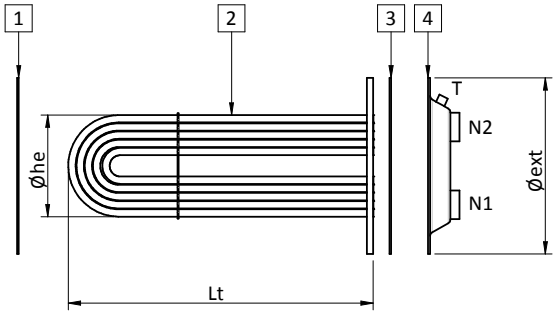
| | | DHW production TiDHW = 10°C | | | | | | Exchanger | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | Ti | TuDHW= 45°C | | TuDHW = 60°C | | Ta = 50°C TuDHW = 45°C | Ta = 60°C TuDHW = 45°C | Surface area | Capacity | Nominal flow |
| l | °C | l/h (a) | kW (b) | l/h (c) | kW (d) | l/10 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 |



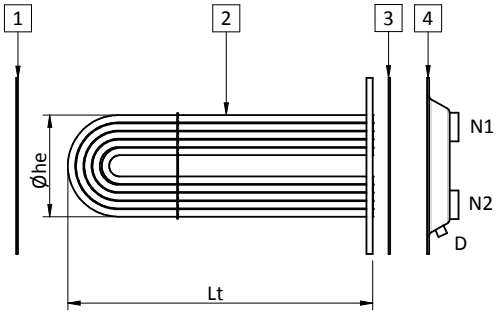

- a continuous DHW flow with TuDHW= 45°C
- b exchanger power with TuDHW=45°C
  c continuous DHW flow with TuDHW= 60°C
- d exchanger power with TuDHW=60°C
- e amount of DHW at 45°C in the first 10 min. with a storage temperature of 50°C
- f amount of DHW at 45°C in the first 10 min. with a storage temperature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

# Technical information for BOIL and BOIL INOX series

## Water only




## Steam only




## Couplings legend

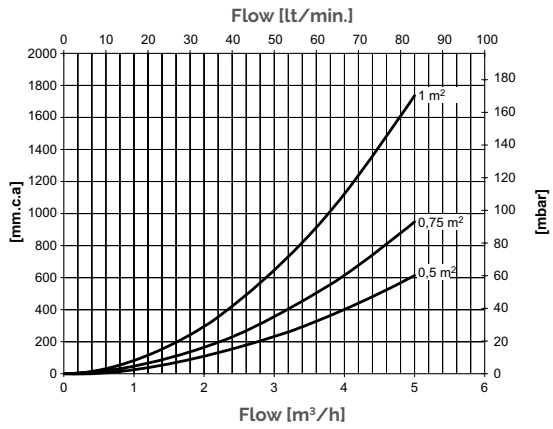
| | |
|---|---|
| **D** | Drain |
| **N1** | Exchanger inlet/outlet |
| **N2** | Exchanger inlet/outlet |
| **T** | Vent |
| **1** | Gasket without cross-beam |
| **2** | Bundle tube heat exchangers |
| **3** | Gasket with cross-beam |
| **4** | Head |

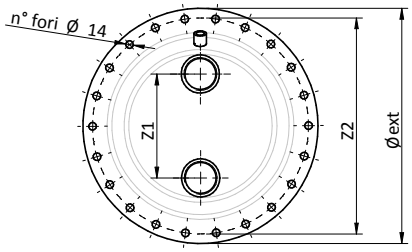
## Technical information tube heat exchanger

| 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 |

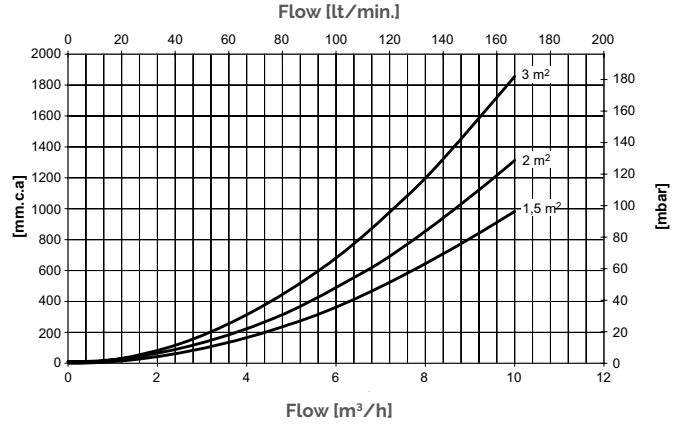
## Pressure loss tube heat exchanger

### Exchanger surface 0,5 - 1 m²

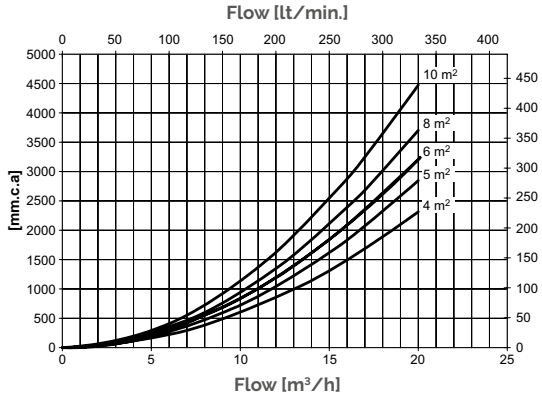



### Exchanger surface 1,5 - 3 m²




### 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

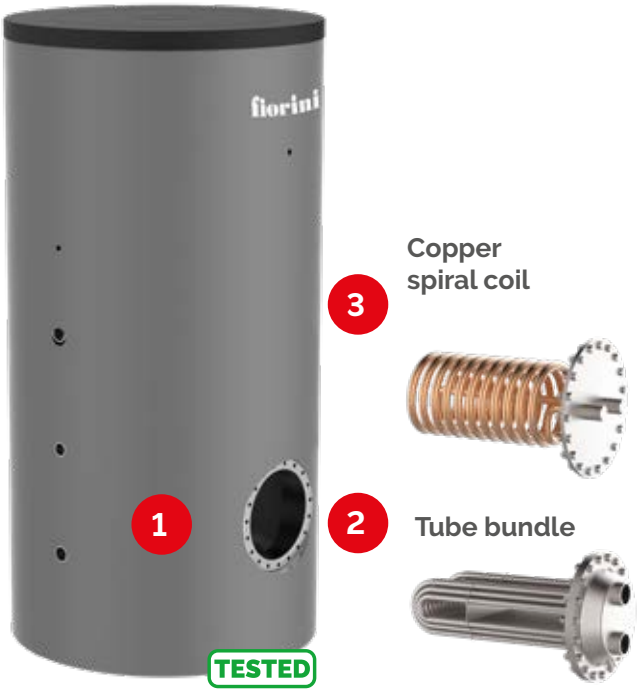
This solution makes it possible to couple each of the two hatches of the sanitary water storage. with a tube bundle or copper spiral heat exchanger. It is also possible to install just one exchanger, allocating the remaining hatch to the inspection function: in this case it is necessary to provide a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





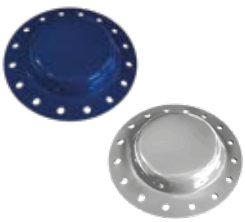

# Custom water heaters with 1 or 2 inspection holes and tube heat exchanger




| | 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 |

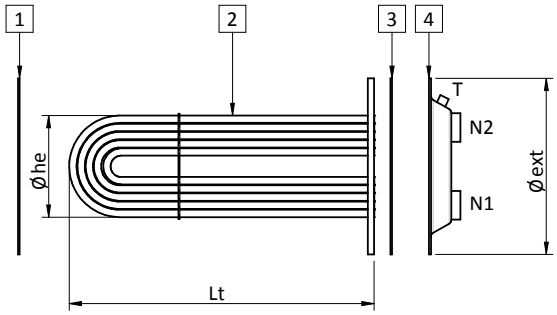


| | | Enamelled heads | | Stainless steel heads | |
|---|---|---|---|---|---|
| Diametre mm | Tank capacity | Code | Price | Code | Price |
| Ø300 | from 200 to 500 l | 843030018X | | 843040019X | |
| Ø380 | from 750 to 1500 l | 843030019X | | 843040020X | |
| Ø430 | from 2000 to5000 l | 843030020X |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

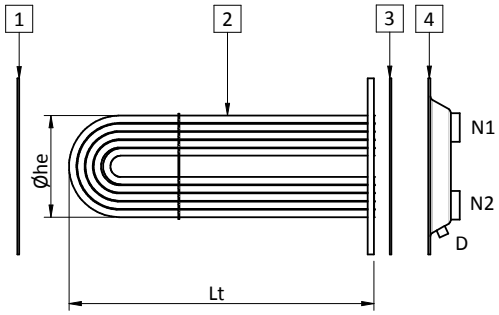
The heads are supplied complete with bolts and gasket.

# Bundle tube heat exchanger

## Water only

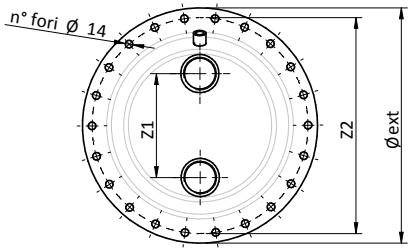


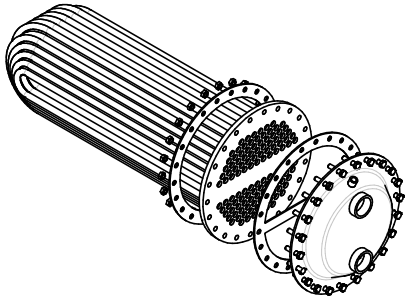

## Steam only




## 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 | | | | | | | ✔ | ✔ | ✔ | ✔ | ✔ |

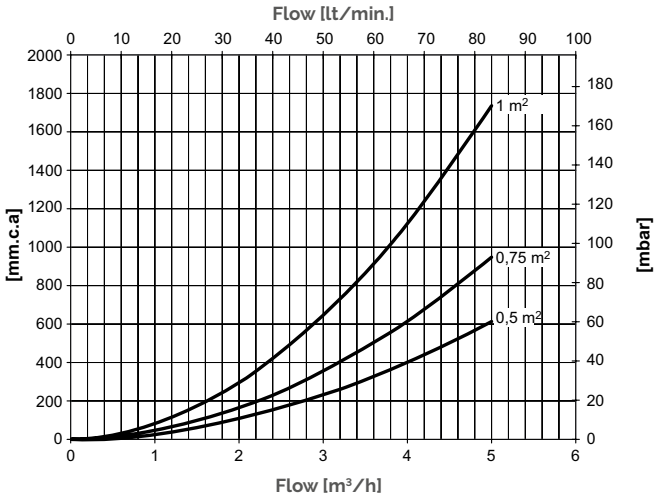
✔ Combination is possible

| | 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 |

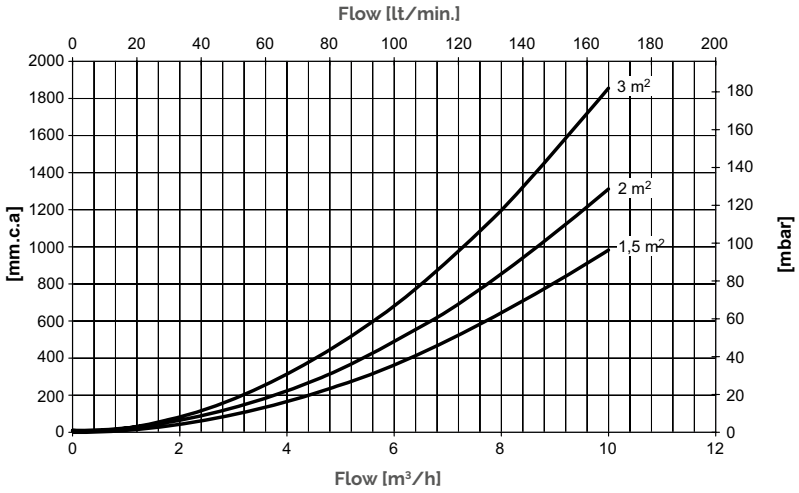
Version 1: AISI 304 stainless steel tube heat exchanger, assembled on a varnished plate with galvanised head
Version 2 and version with steam: AISI 306 stainless steel tube heat exchanger on a AISI 316 steel plate and AISI 304 steel head

# Bundle tube heat exchanger
# Curve: pressure loss

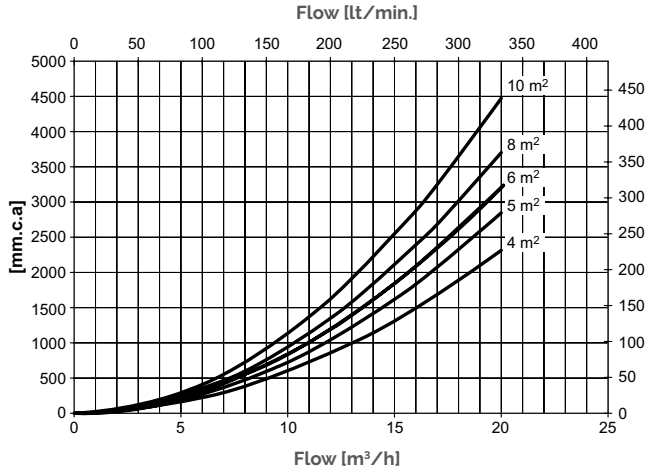
## Exchanger surface 0,5 - 1 m²



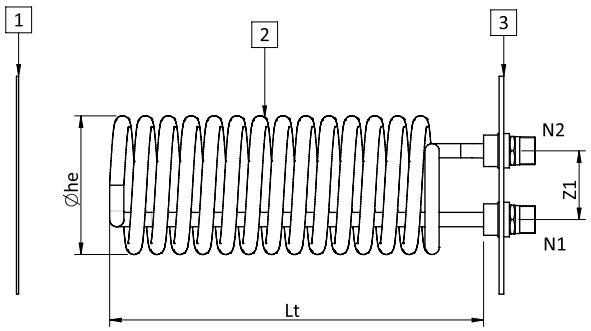

## Exchanger surface 1,5 - 3 m²

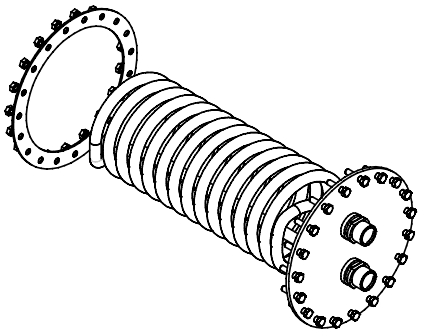



## Exchanger surface 4 - 10 m²



# 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

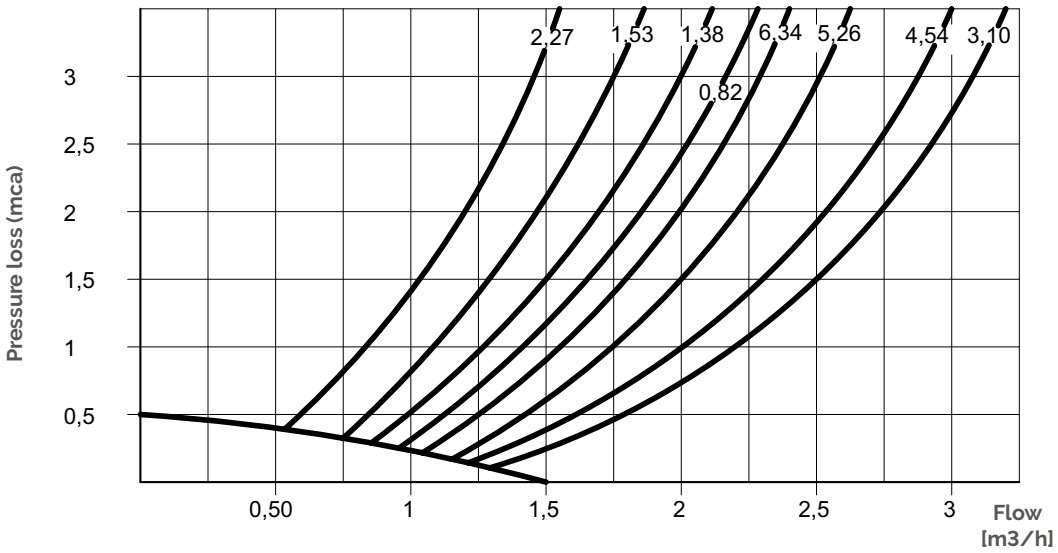
| Surf. m² | Lt mm | Øhe mm | Z1 mm | N1 inch | N2 inch | Type of coil | Internal volume l | Dp kPa | Thermal eff. (*) kW | T max °C | P max bar |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0,82 | 380 | 160 | 75 | 3/4" | 3/4" | Single coil | 0,7 | 25 | 15 | 99 | 9 |
| 1,38 | 420 | 170 | 75 | 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.).

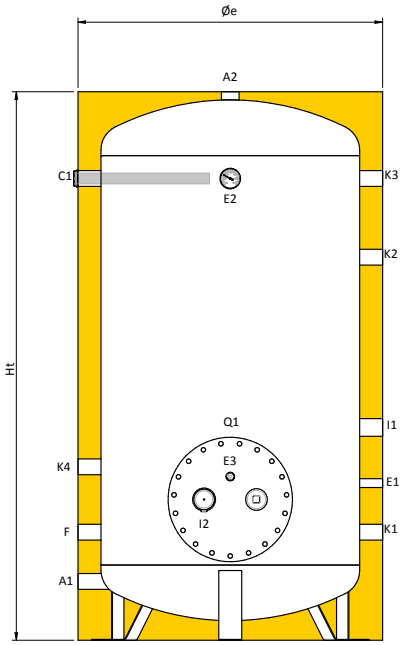


**Integration with AQUAFAST**

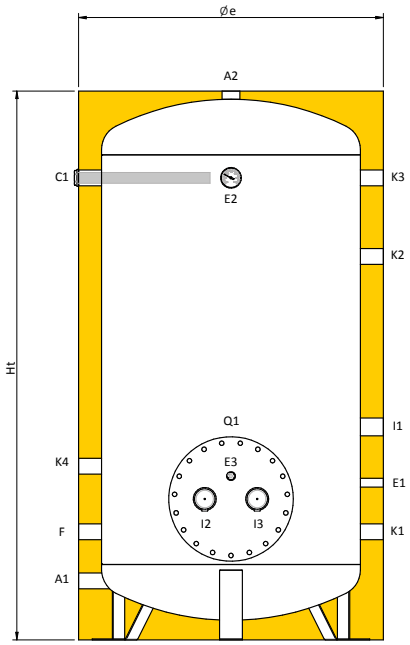
See page 212

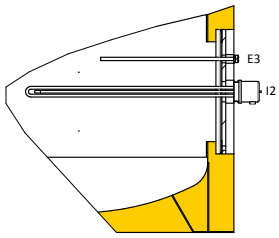
# Electric water heater
# FLEXY VOLT

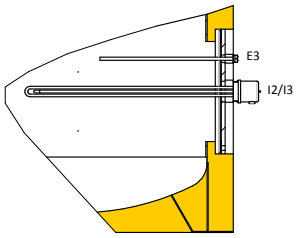
FLEXY VOLT 1




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

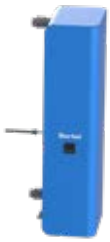
| Cap. l | Øe mm | Ht mm | R mm | A1 mm | C1 mm | E1 mm | E2 mm | F mm | I1 mm | K1 mm | K2 mm | K3 mm | K4 mm | Q1 mm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | 710 | 1105 | 1315 | 150 | 885 | 295 | 885 | 295 | 445 | 150 | 595 | 990 | 495 | 345 |
| 300 | 710 | 1355 | 1530 | 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 |


fiorini
fiorini
fiori

# 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

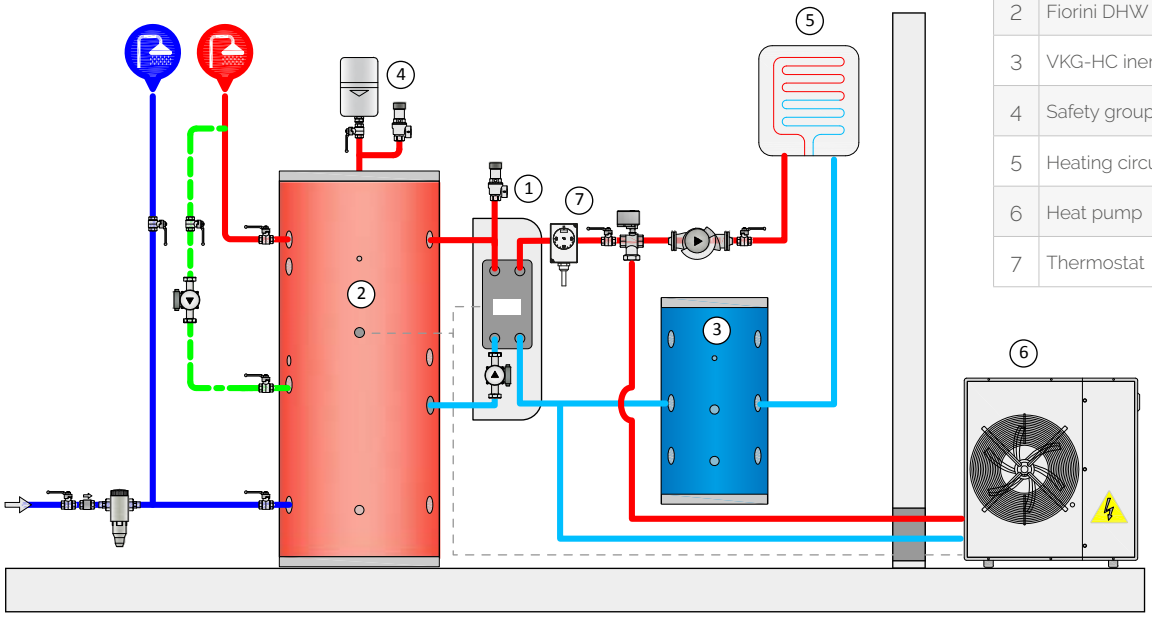
| Model | Code | Price | With packaging | |
|---|---|---|---|---|
| | | | Dimensions cm | Weight kg |
| AQUAFAST 12/35 | 841060070X | | 100X40X35 | 18 |
| AQUAFAST 18/70 | 841060071X | | 100X40X35 | 19 |
| AQUAFAST 25/100 | 841060072X | | 100X40X35 | 21 |
| AQUAFAST 30/120 | 841060073X | | 110x50x45 | 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 |

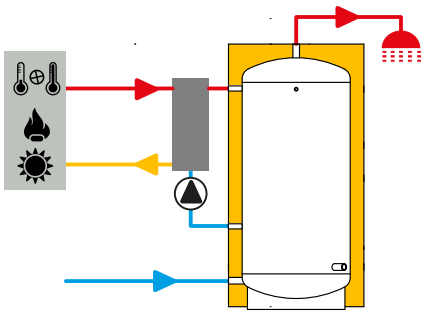


# Fast heater for DHW
# AQUAFAST

| | 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)

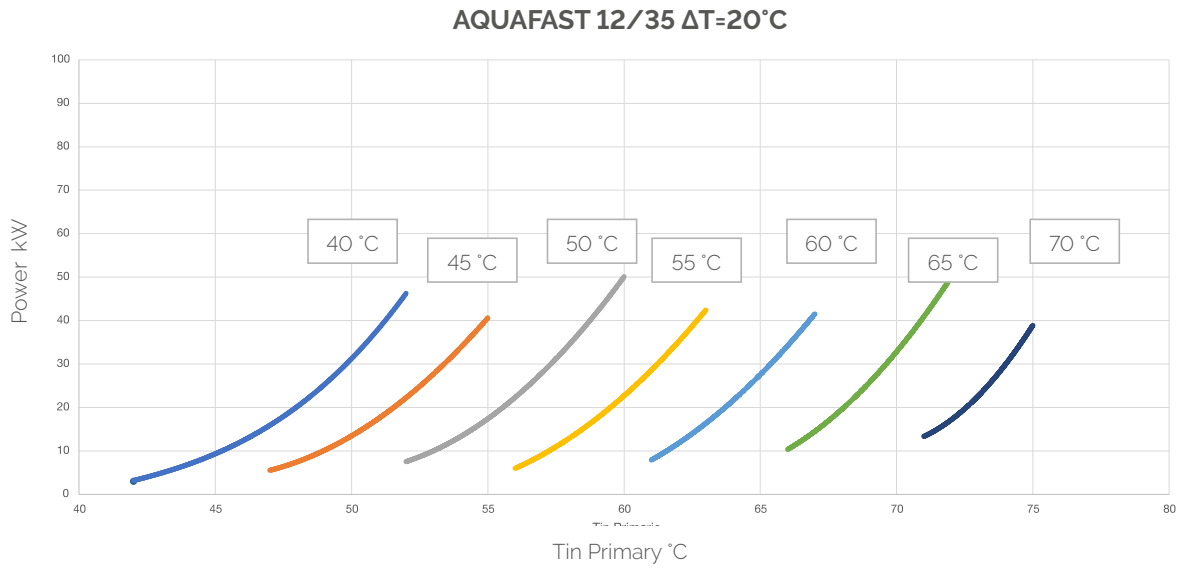
# AQUAFAST performances and matching to the tank

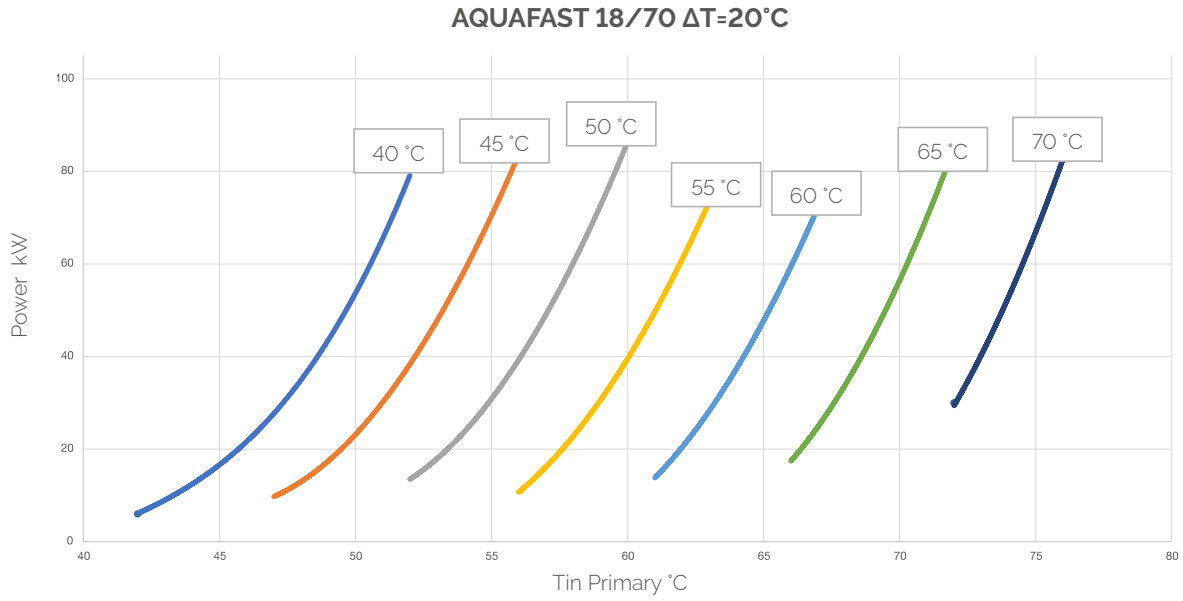


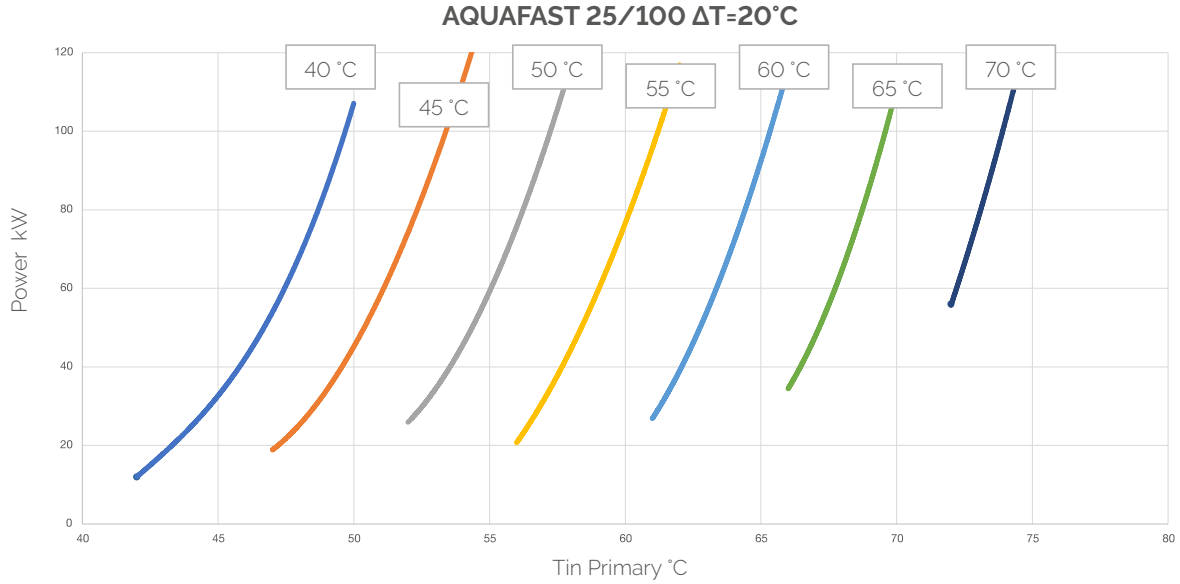
AQUAFAST can be paired with storage tanks of various capacities: this table serves as a guideline, but the pairing is flexible depending on requirements.

| | 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 |

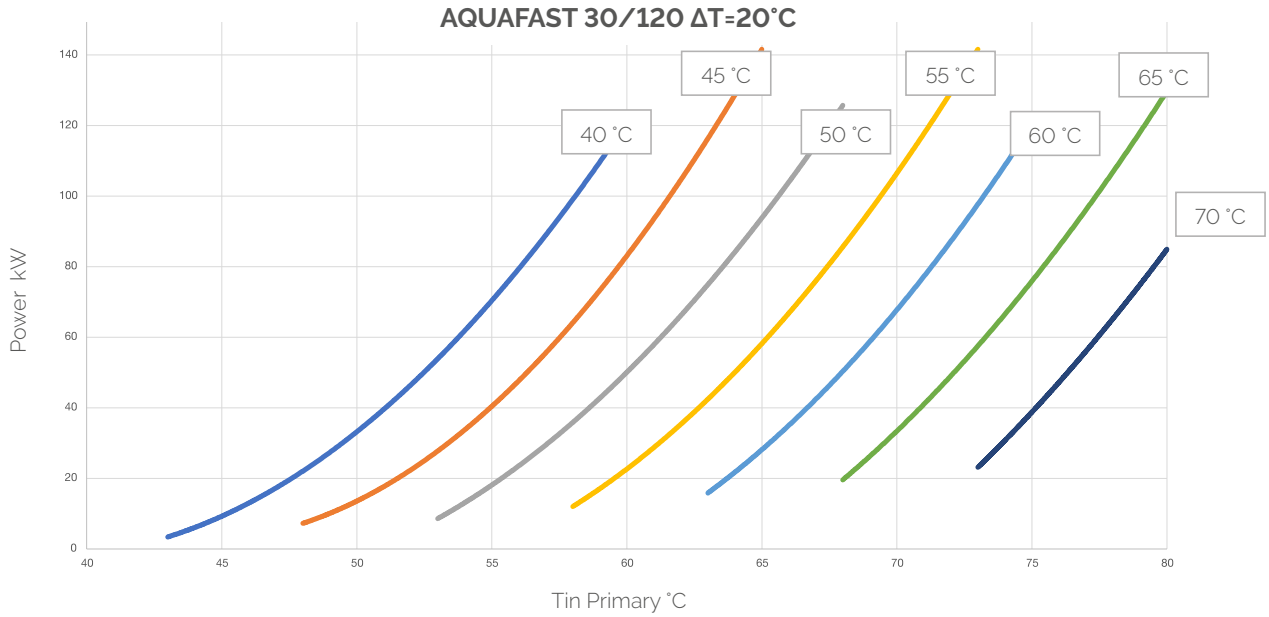
# AQUAFAST performances

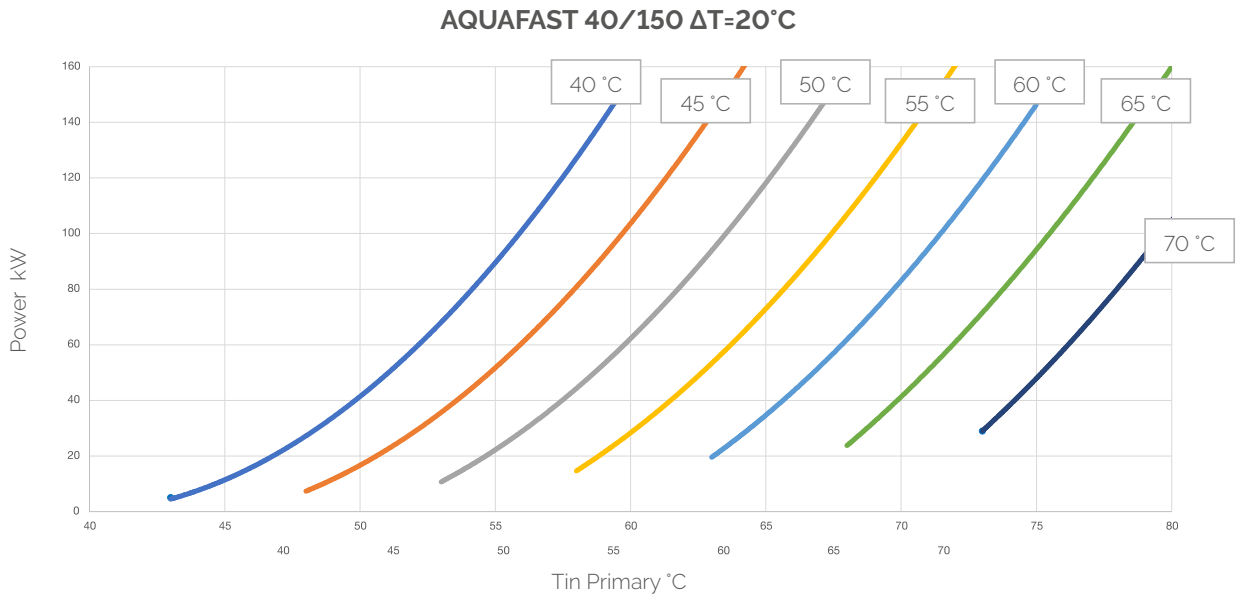


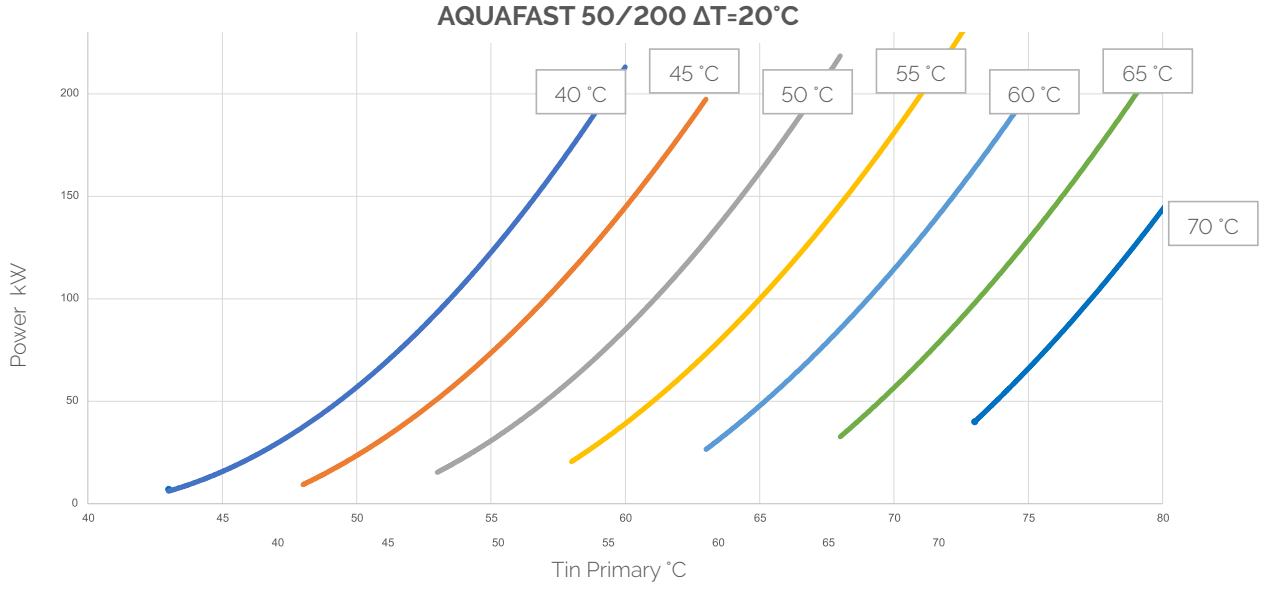



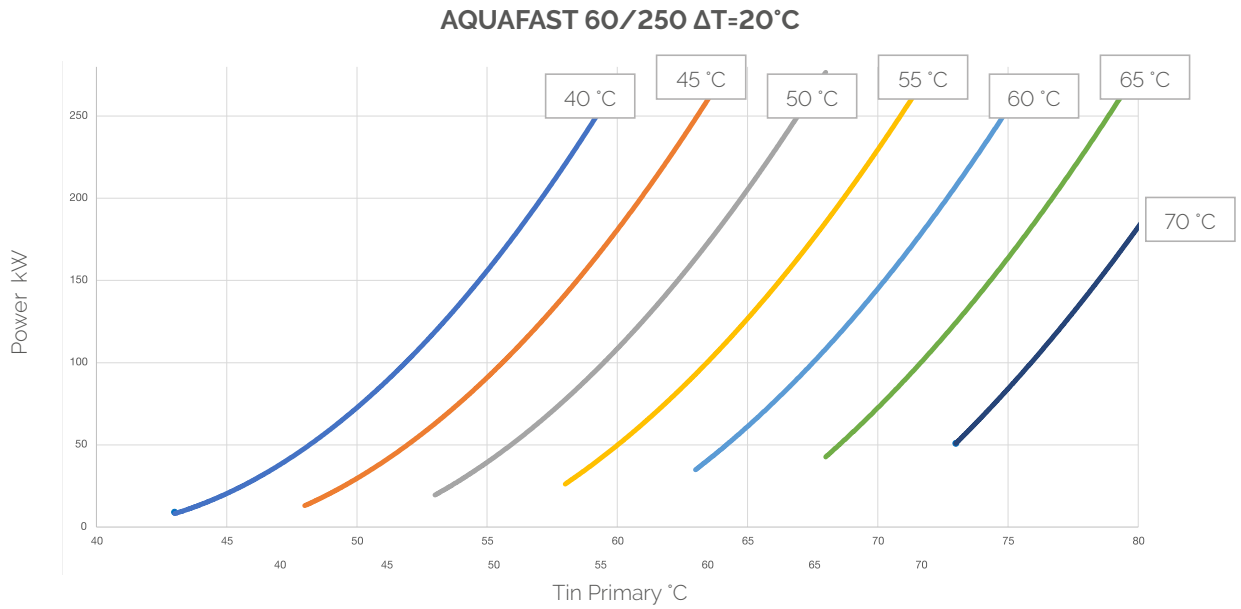
# AQUAFAST performances

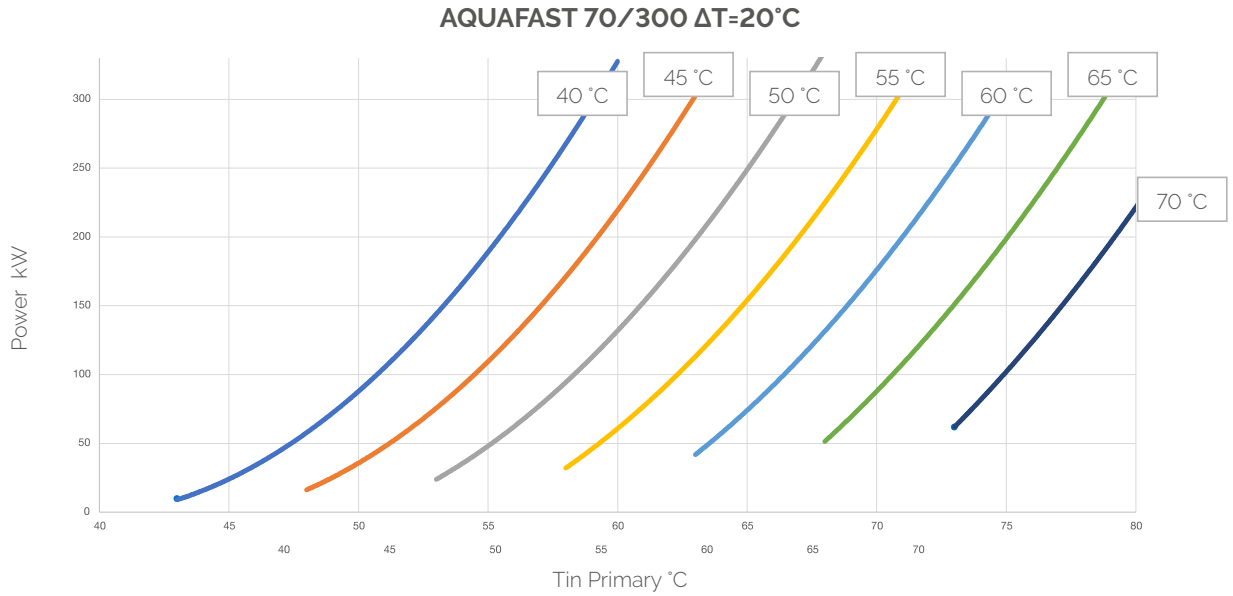


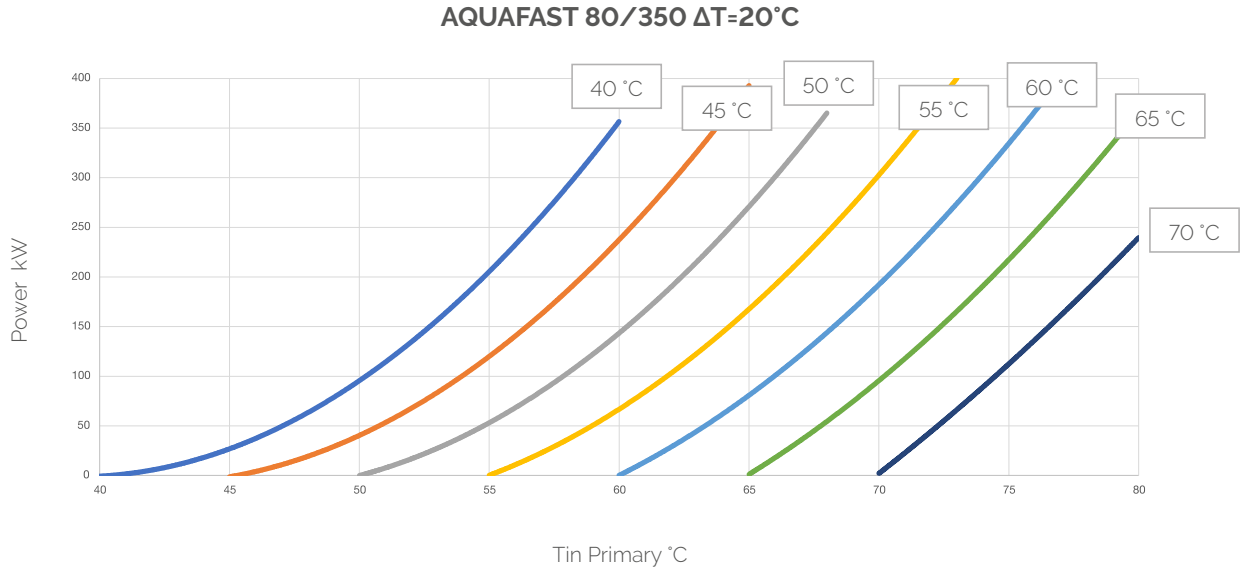



# AQUAFAST performances



# AQUAFAST working



**Startup**

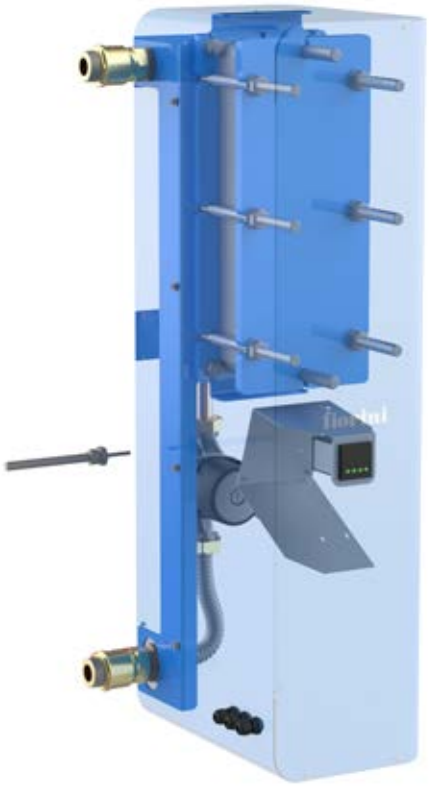
The product is Plug & Play! To start using Aquafast, simply:

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.**



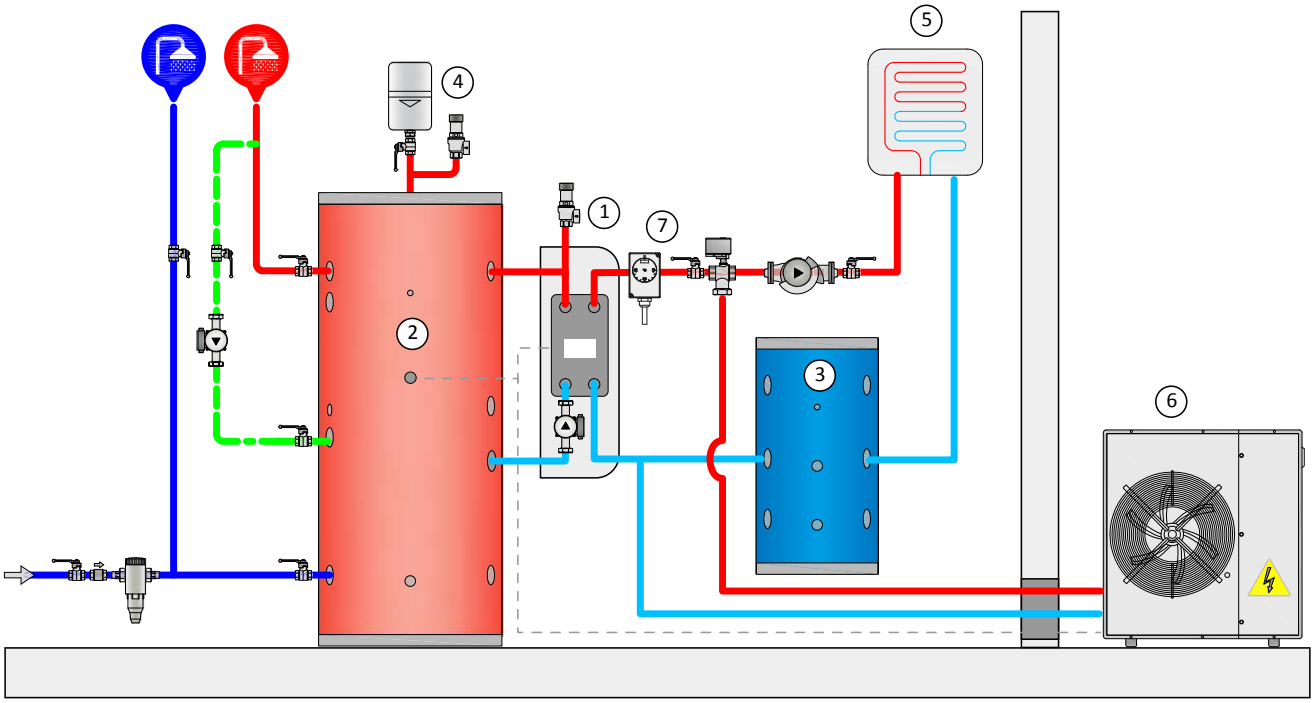
**Why choose Aquafast over a fixed coil boiler?**

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

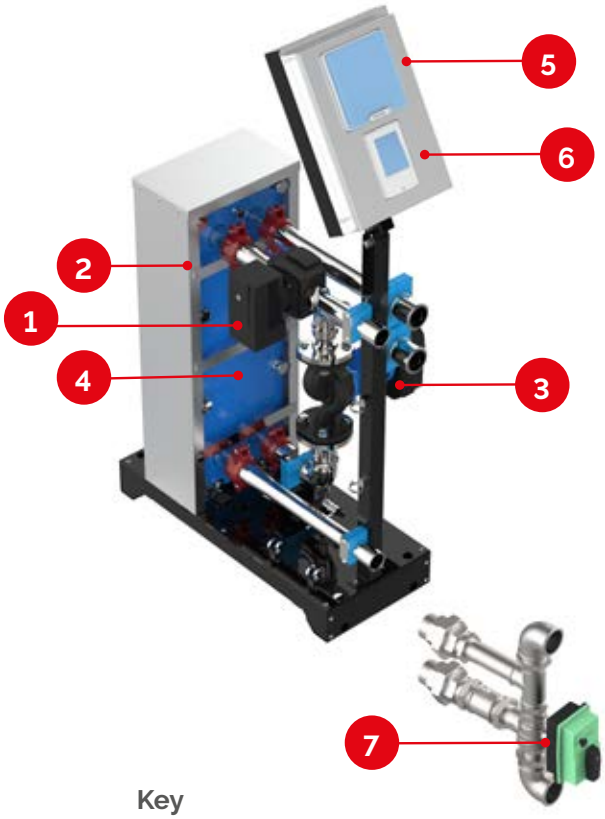
## Codes and Prices

| 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) |

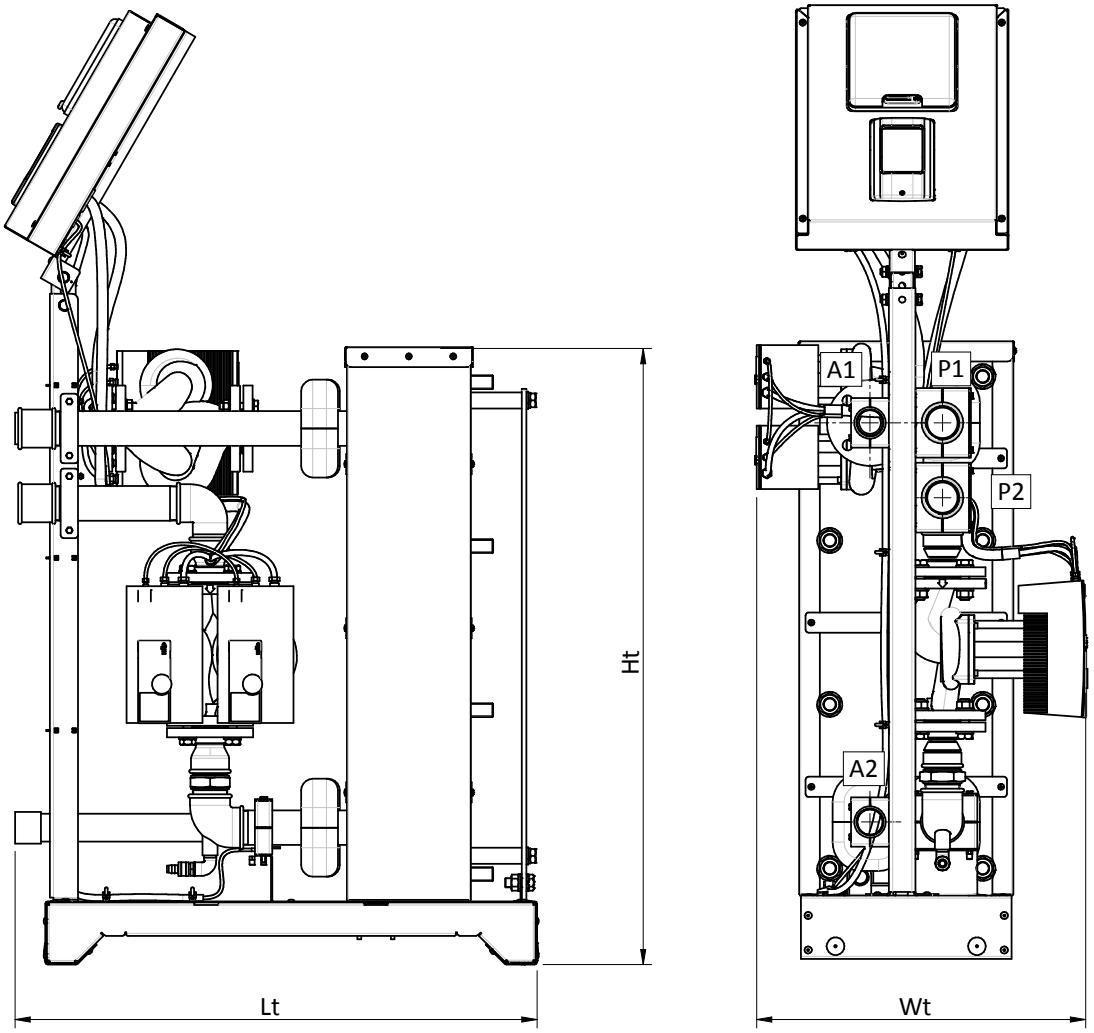
## Features of the control unit

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 |

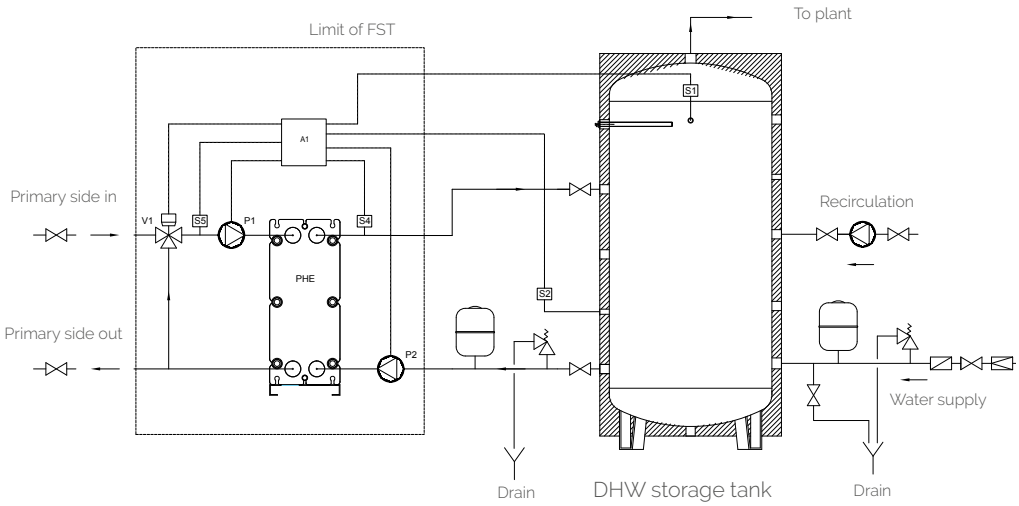
| | Nominal power in kW under different temperature conditions | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Temp. primary inlet | FST 600 | | | | FST 700 | | | |
| °C | 10-65 °C | 10-60 °C | 10-55 °C | 10-45 °C | 10-65 °C | 10-60 °C | 10-55 °C | 10-45 °C |
| 80 | 452 | 540 | 613 | 650 | 560 | 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

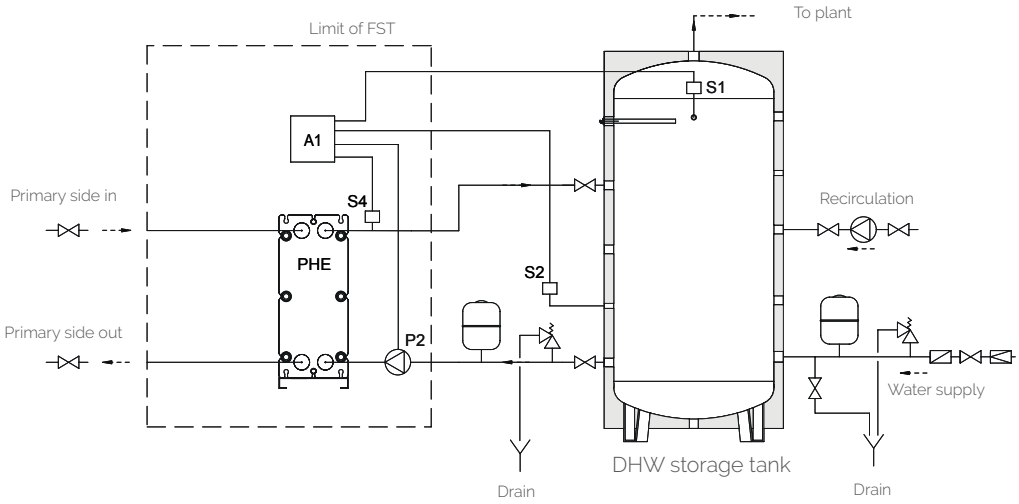
| | |
|---|---|
| PHE | Plate exchanger |
| P1 | Pump on primary side |
| P2 | Pump on secondary side |
| V1 | 3-way mixing valve (optional) |
| S1 | Temperature probe (supplied unassembled) |
| S2 | Temperature probe (optional) |
| S4 | Temperature probe |
| S5 | Temperature probe (optional with V1)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




## 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.

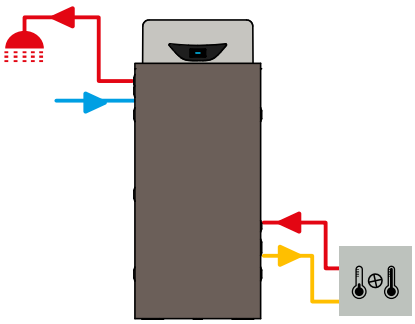
The production of domestic hot water occurs within a plate heat exchanger with stainless steel plates that guarantee:

- ✔ 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)

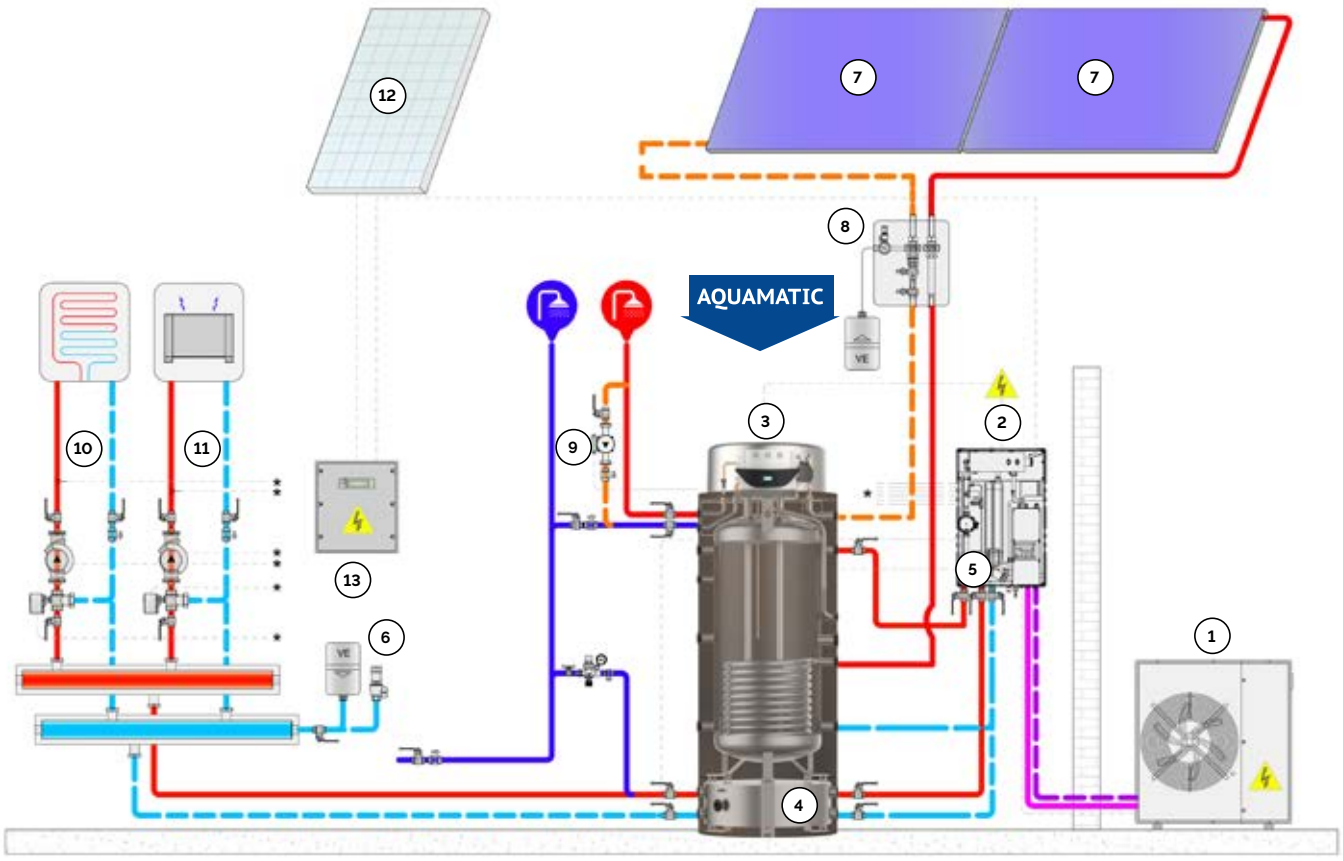


**Available accessories see pag. 238**

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

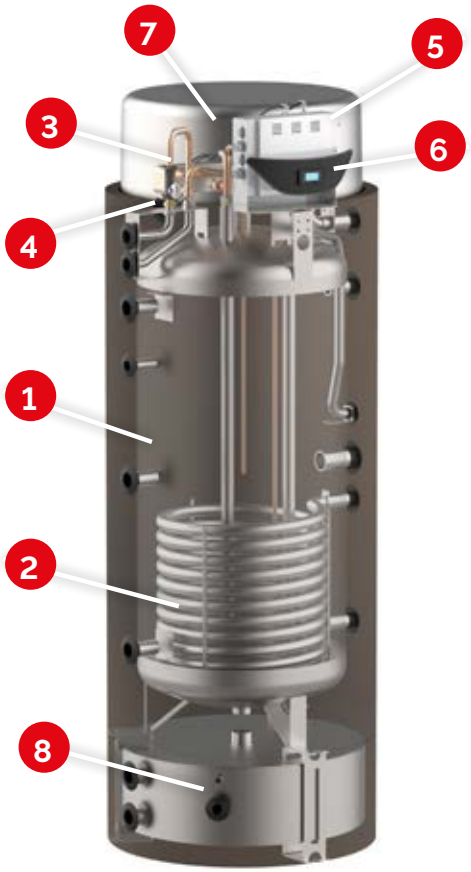
| | | | | With vertical packaging | |
|---|---|---|---|---|---|
| Model | Capacity l | Code | Price | Dimensions cm | Weight kg |
| AQUAMATIC | 200 | 842030104X | | 75x75x140 | 80 |
| | 300 | 842030105X | | 75x75x180 | 94 |
| | 500 | 842030106X | | 90x90x185 | 121 |
| AQUAMATIC PLUS | 300 | 842030107X | | 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.

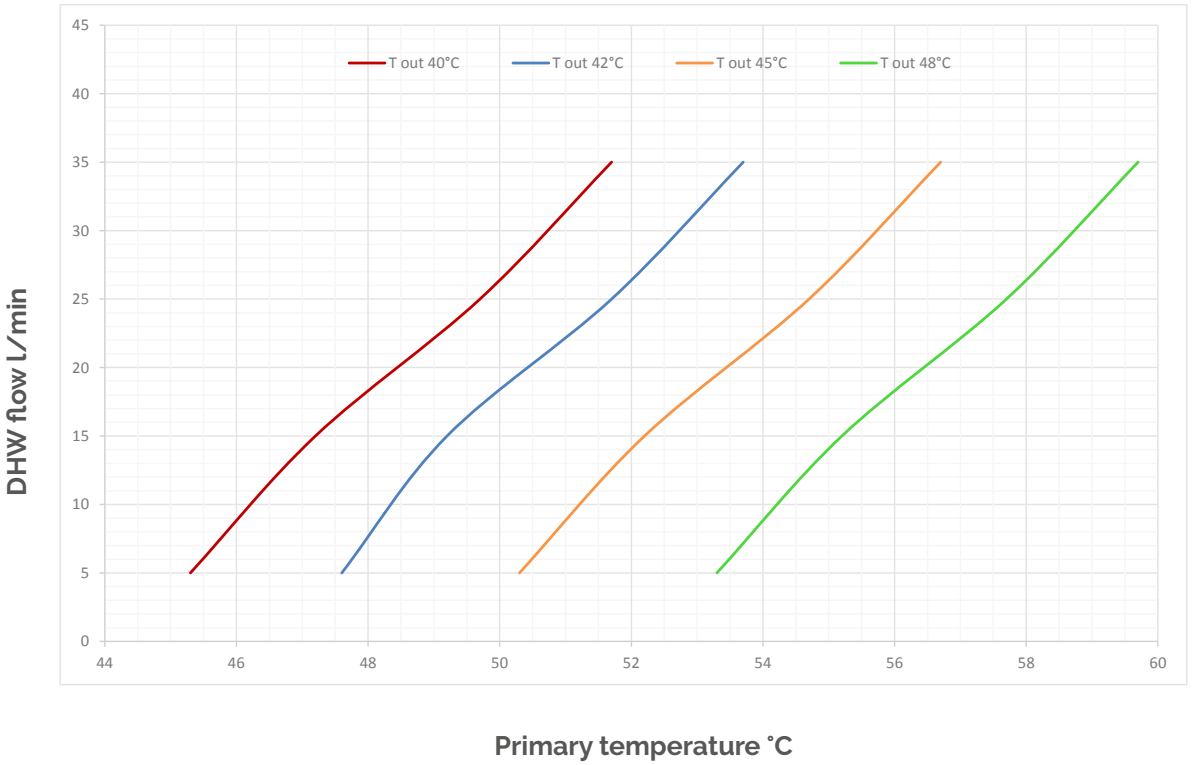
# Technical information

| | | 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

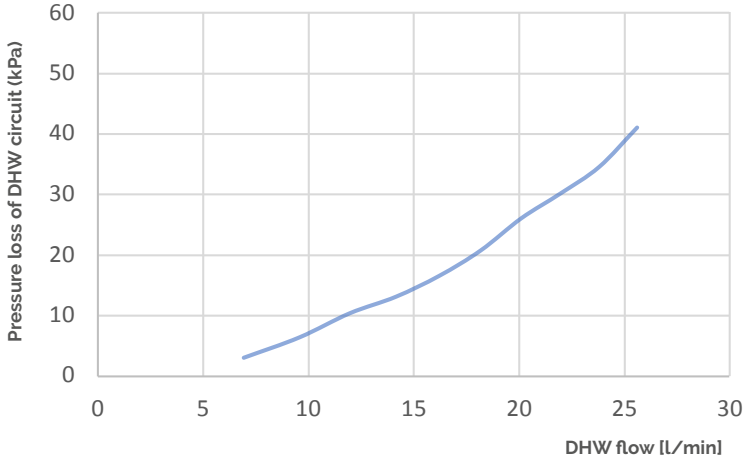
Quantity of domestic water produced in l/m with different storage temperatures and different outlet temperatures




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

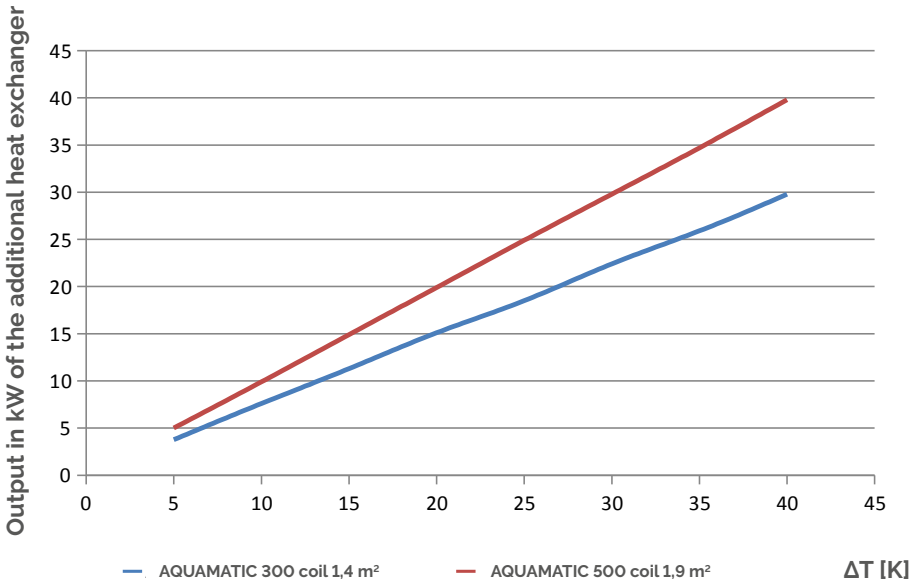
For example, if Taccumulo =52°C
And TDHW =45°C, the AQUAMATIC guarantees a flow of approximately 14 l/min
And TDHW = 42°C, the AQUAMATIC guarantees a flow of approximately 26 l/min

# Hydraulic performance



# Performance AQUAMATIC

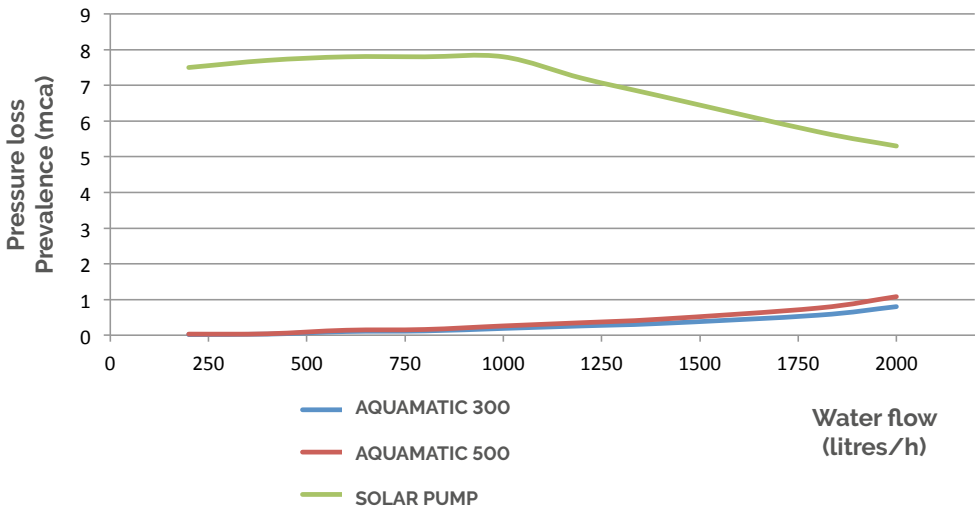
Output in kW of the additional heat exchanger in fucntion of the variation of the value ΔT between the temperature of the integrative source and the storage temperatore.
Only for AQUAMATIC PLUS and AQUAMATIC SOLAR.




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

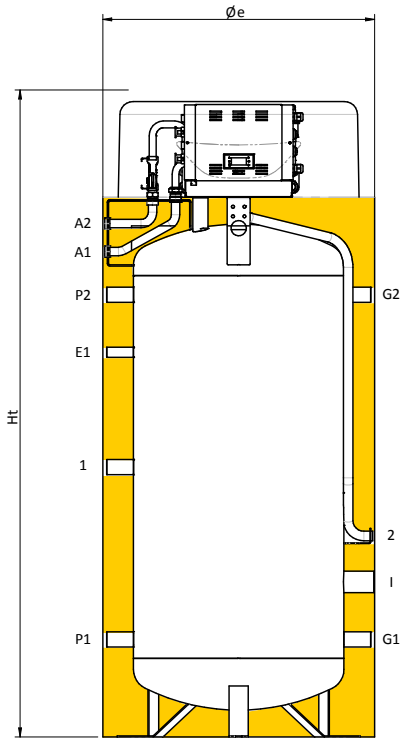
ΔT : temperature difference between the average temperatures in the primary circuit (coil) and secondary circuit (tank).

# Pressure loss in integrative coils and characteristic graphic of solar circulator

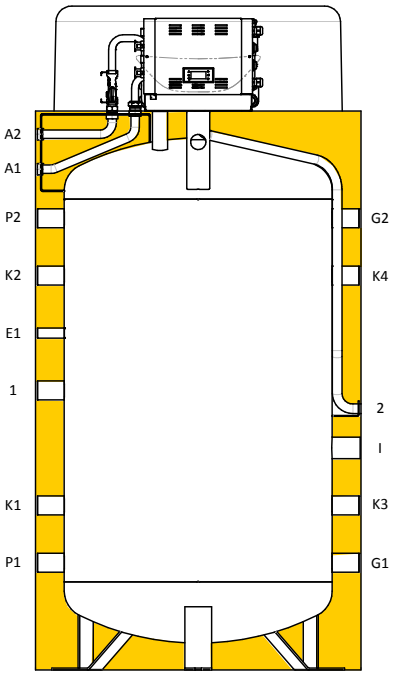


# Dimensions Aquamatic

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

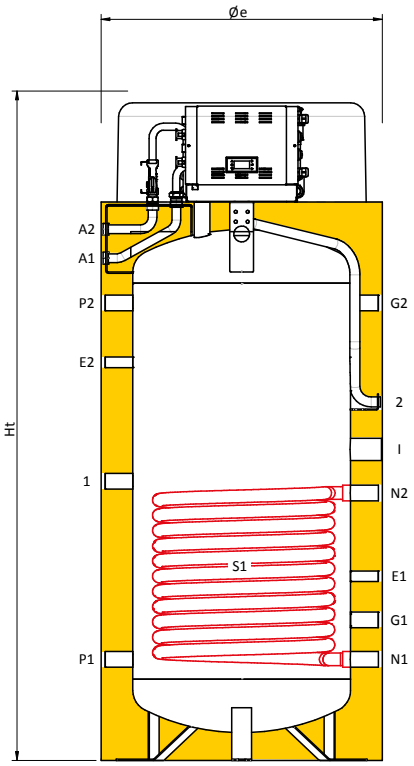
| Cap. l | A1 inch | A2 inch | E1 inch | G1 inch | G2 inch | I inch | K1 inch | K2 inch | K3 inch | K4 inch | P1 inch | P2 inch | 1 inch | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | 3/4" | 3/4" | 1/2" | 1" | 1" | 1"1/2 | - | - | - | - | 1" | 1" | 1" | Case Ø20 |
| 300 |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

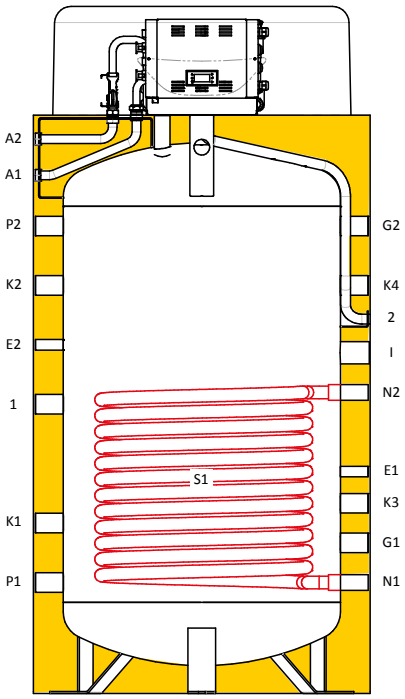
| Cap. l | Øe mm | Ht mm | A1 mm | A2 mm | E1 mm | G1 mm | G2 mm | I mm | K1 mm | K2 mm | K3 mm | K4 mm | P1 mm | P2 mm | 1 mm | 2 mm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | 710 | 1315 | 890 | 965 | 629 | 255 | 780 | 405 | - | - | - | - | 255 | 780 | 518 | 525 |
| 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

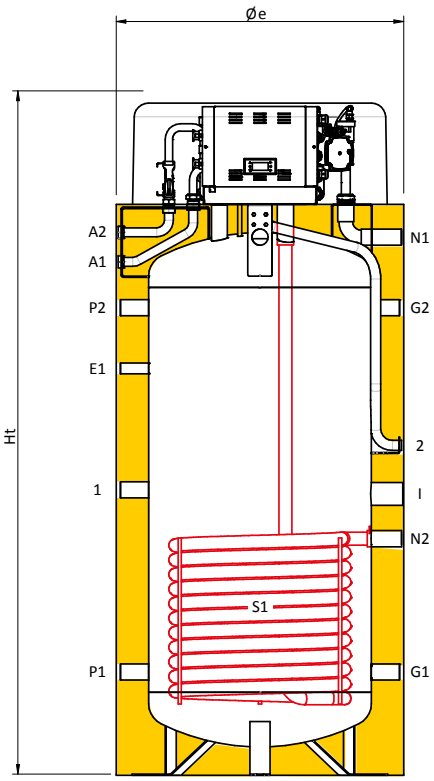
| Cap. l | A1 inch | A2 inch | E1 inch | E2 inch | G1 inch | G2 inch | I inch | K1 inch | K2 inch | K3 inch | K4 inch | N1 inch | N2 inch | P1 inch | P2 inch | 1 inch | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 3/4" | 3/4" | 1/2" | 1/2" | 1" | 1" | 1"1/2 |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

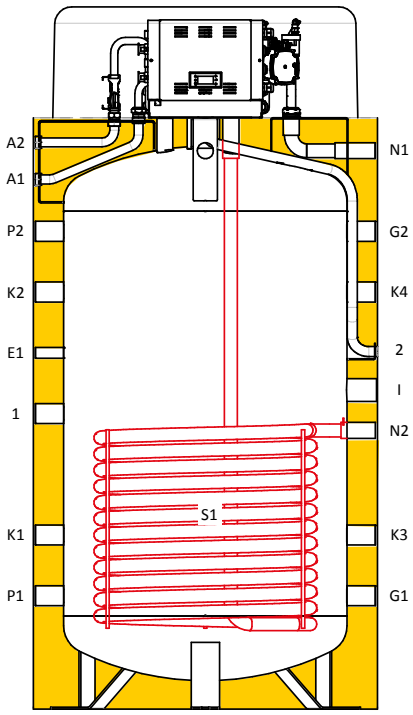
| Cap. l | Øe mm | Ht mm | A1 mm | A2 mm | E1 mm | E2 mm | G1 mm | G2 mm | I mm | K1 mm | K2 mm | K3 mm | K4 mm | N1 mm | N2 mm | P1 mm | P2 mm | 1 mm | 2 mm | S1 m² |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 710 | 1690 | 1290 | 1345 | 465 | 1005 | 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 |

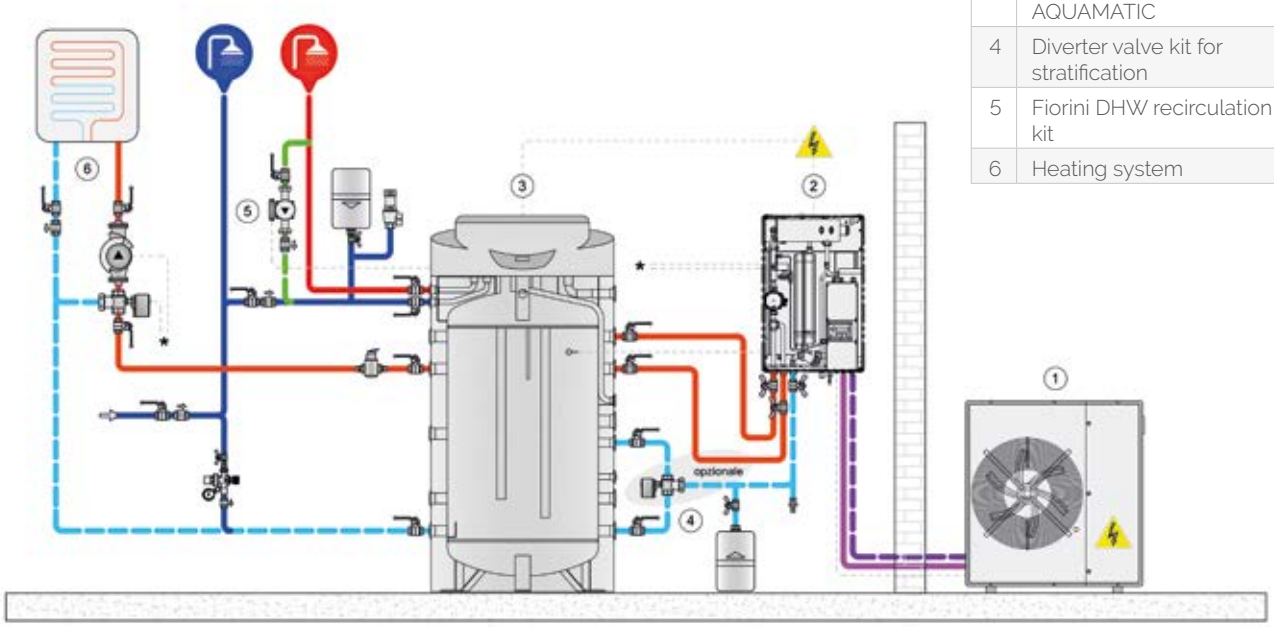
## Size chart

| 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 |

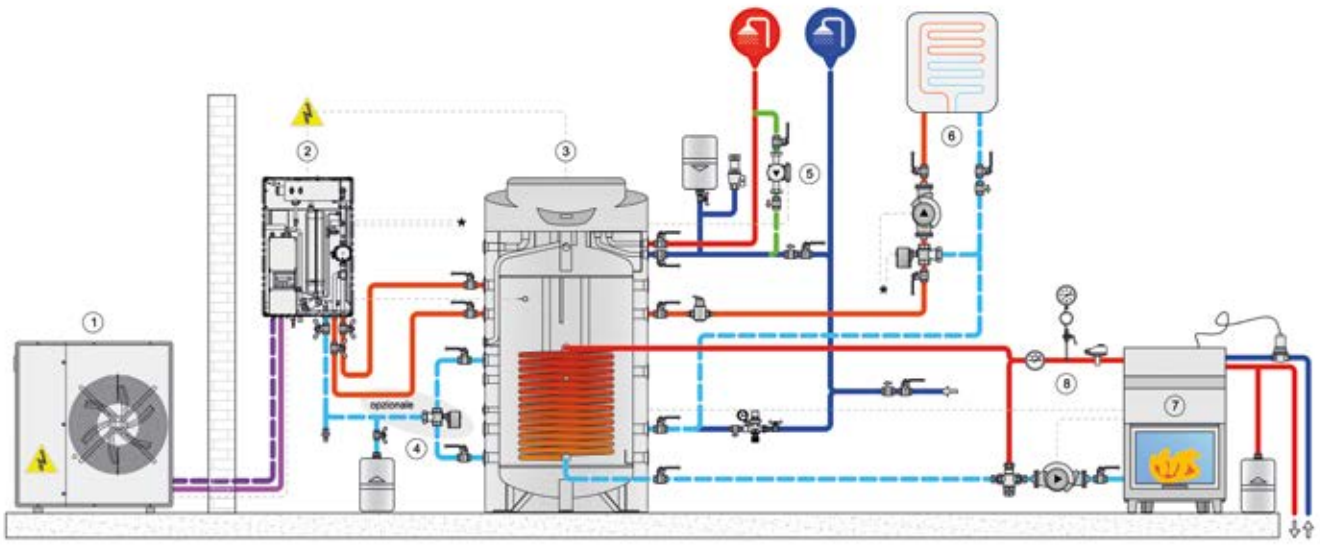



# Installation chart AQUAMATIC Plus Example 1 (Heating fireplace / stove)

**Legend**

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

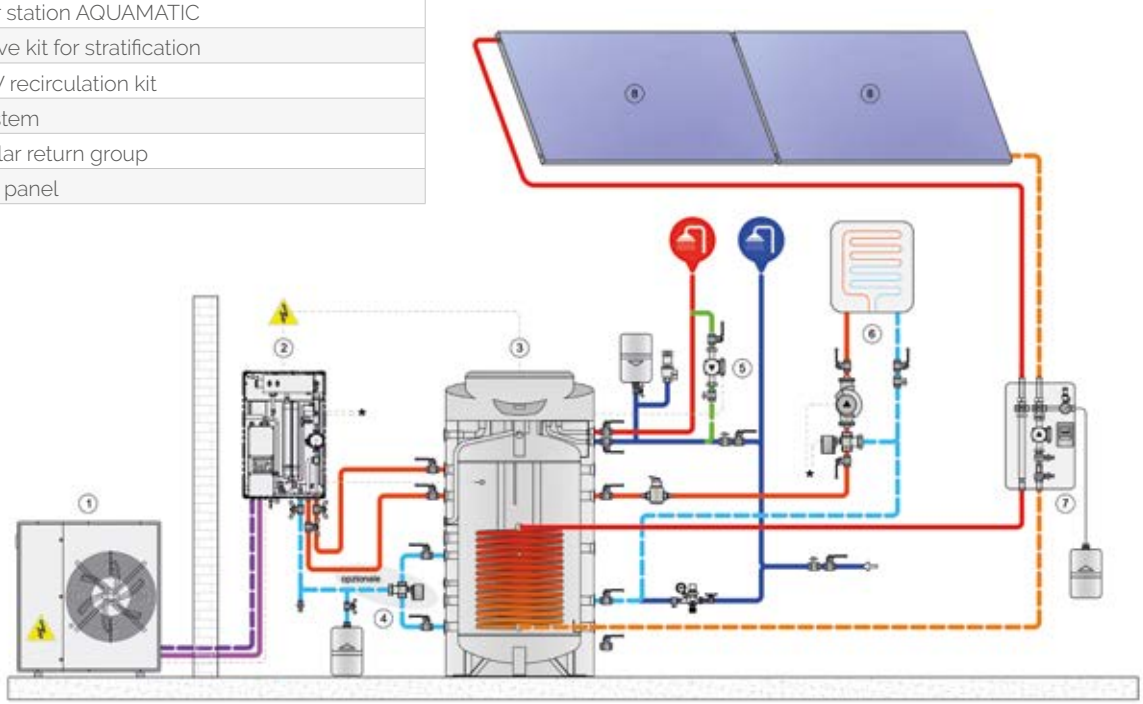
| | |
|---|---|
| 5 | Fiorini DHW recirculation kit |
| 6 | Heating system |
| 7 | Heating fireplace / stove |
| 8 | Plant components for biomass generators |



# Installation chart AQUAMATIC Plus Example 2 (Thermal solar)

**Legend**

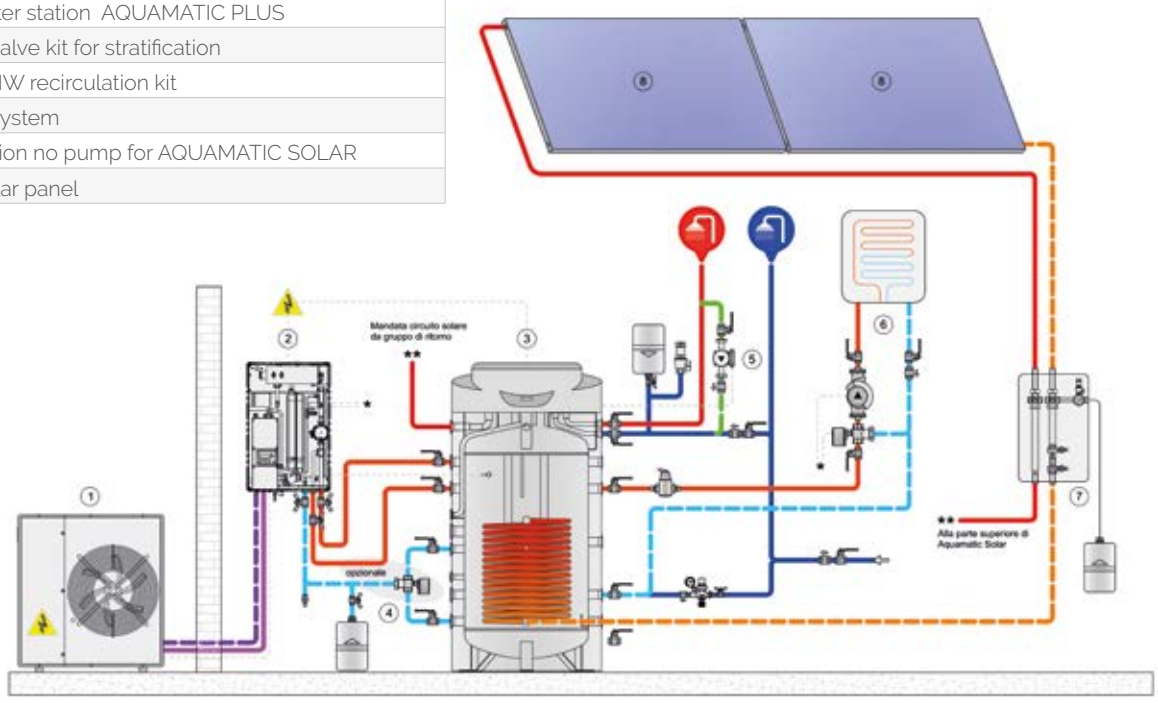
| | |
|---|---|
| 1 | Heat pump (outdoor unit) |
| 2 | Heat pump (indoor unit) |
| 3 | Fresh water station AQUAMATIC |
| 4 | Diverter valve kit for stratification |
| 5 | Fiorini DHW recirculation kit |
| 6 | Heating system |
| 7 | Thermal solar return group |
| 8 | Fiorini solar panel |



# 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

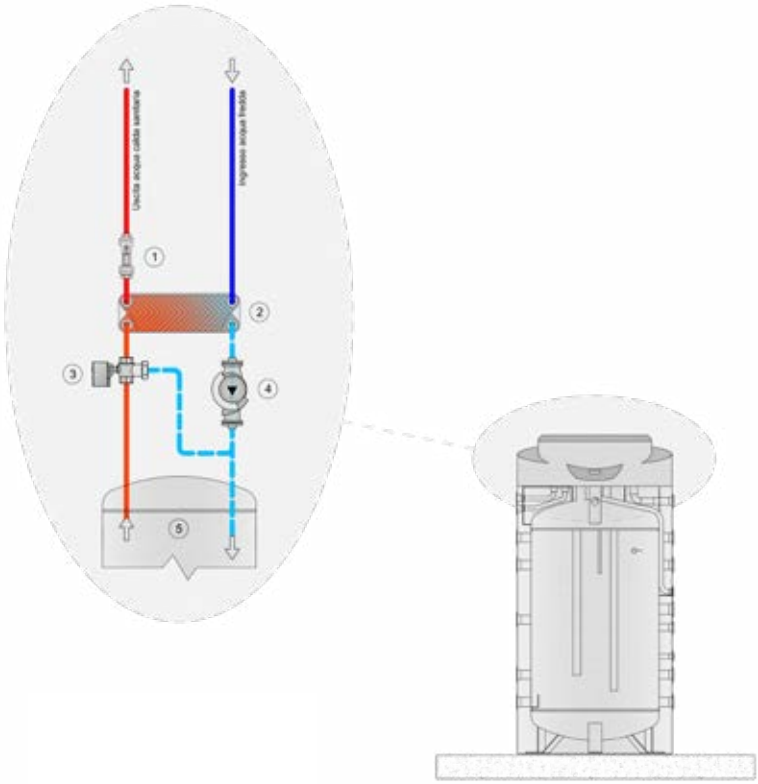
NB The AQUAMATIC has a small channel through the insulation of the tank in order to pass the cable for connecting the resistor to the electronic switchboard.

# 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**

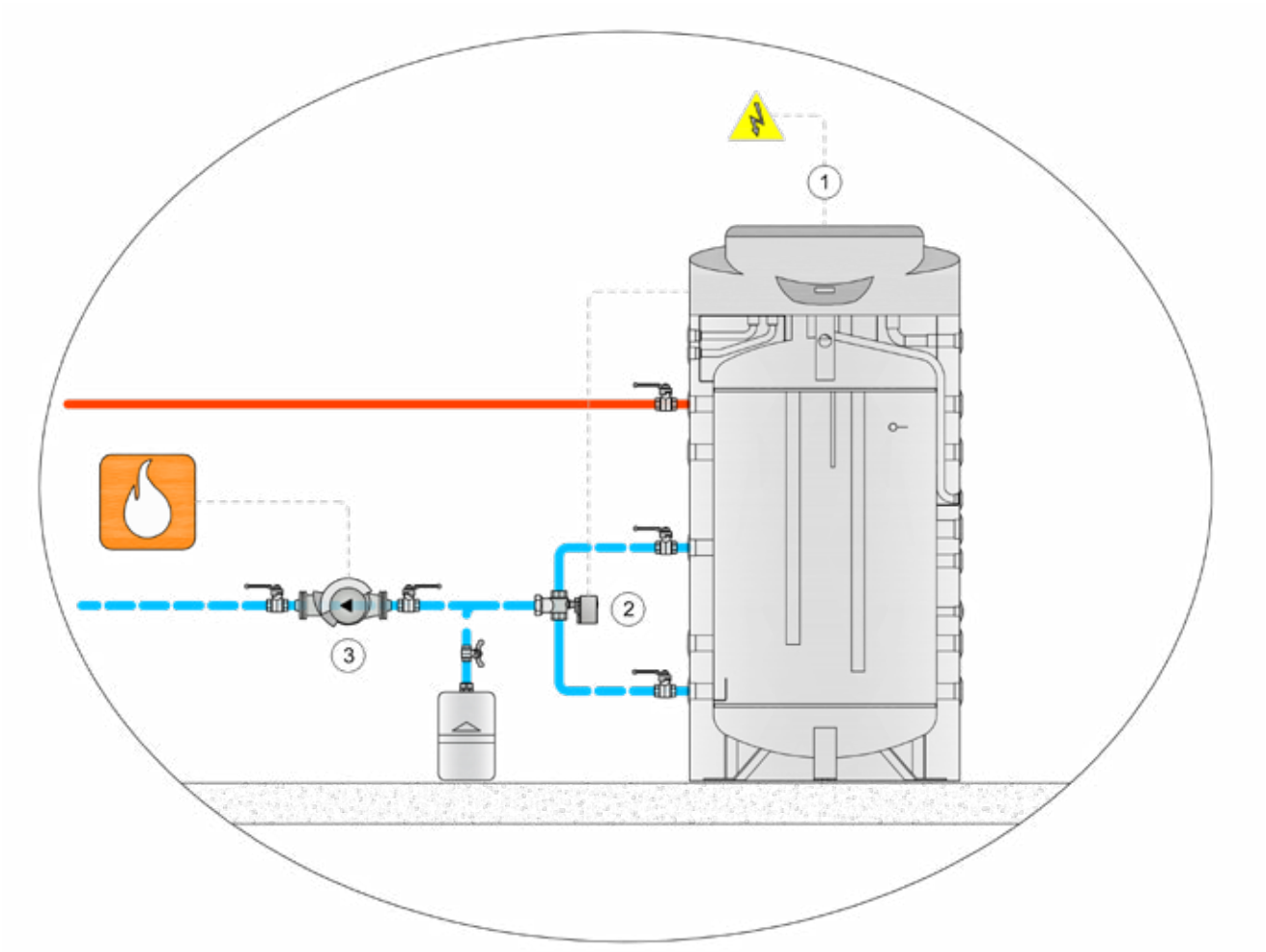
| | |
|---|---|
| 1 | Flowmeter |
| 2 | Domestic plate heat exchanger |
| 3 | Primary mixing valve |
| 4 | Pump |
| 5 | Tank |

# 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.



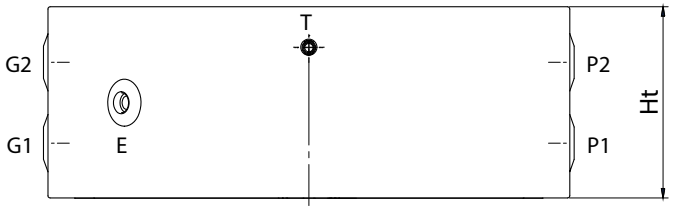

✔ Energetic efficiency
✔ Easy installation
✔ Does not take a lot of space
✔ Same design as the AQUAMATIC

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

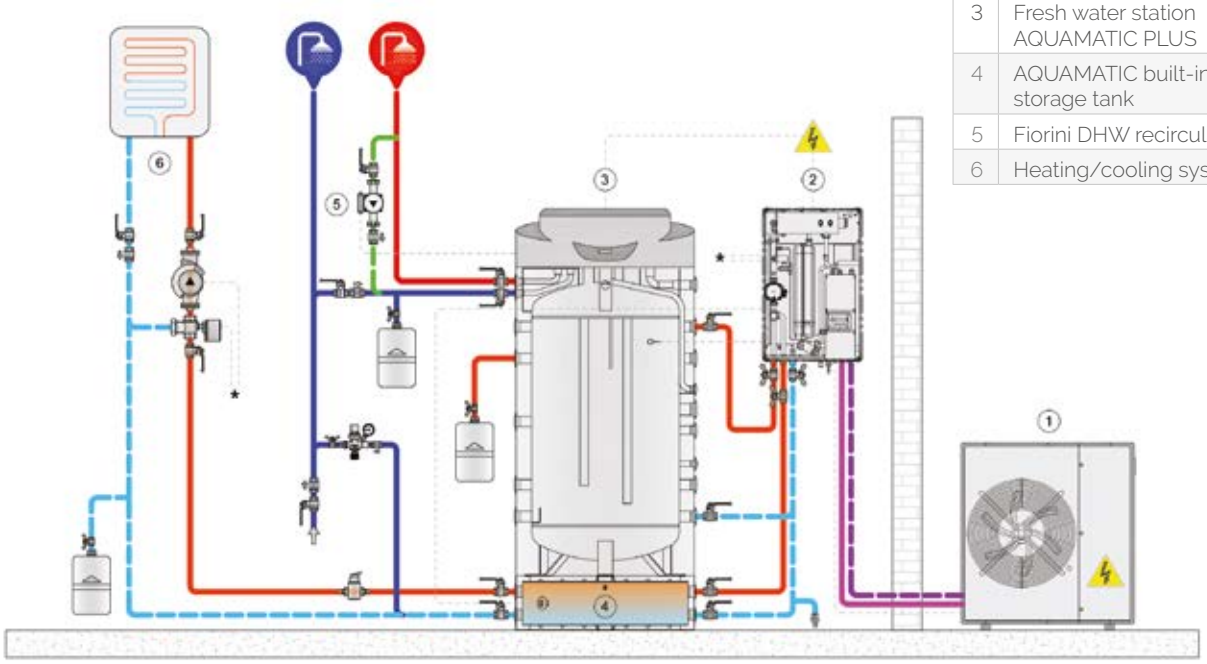
| Cod. | cap. l | pairing AQUAMATIC | Øe mm | Ht mm | P1 mm | P2 mm | G1 mm | G2 mm | E mm | T mm | P1 inch | P2 inch | E inch | G1 inch | G2 inch | T inch |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 817010158X | 66 | 200 l - 300 l | 710 | 260 | 75 | 185 | 75 | 185 | 130 | 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**

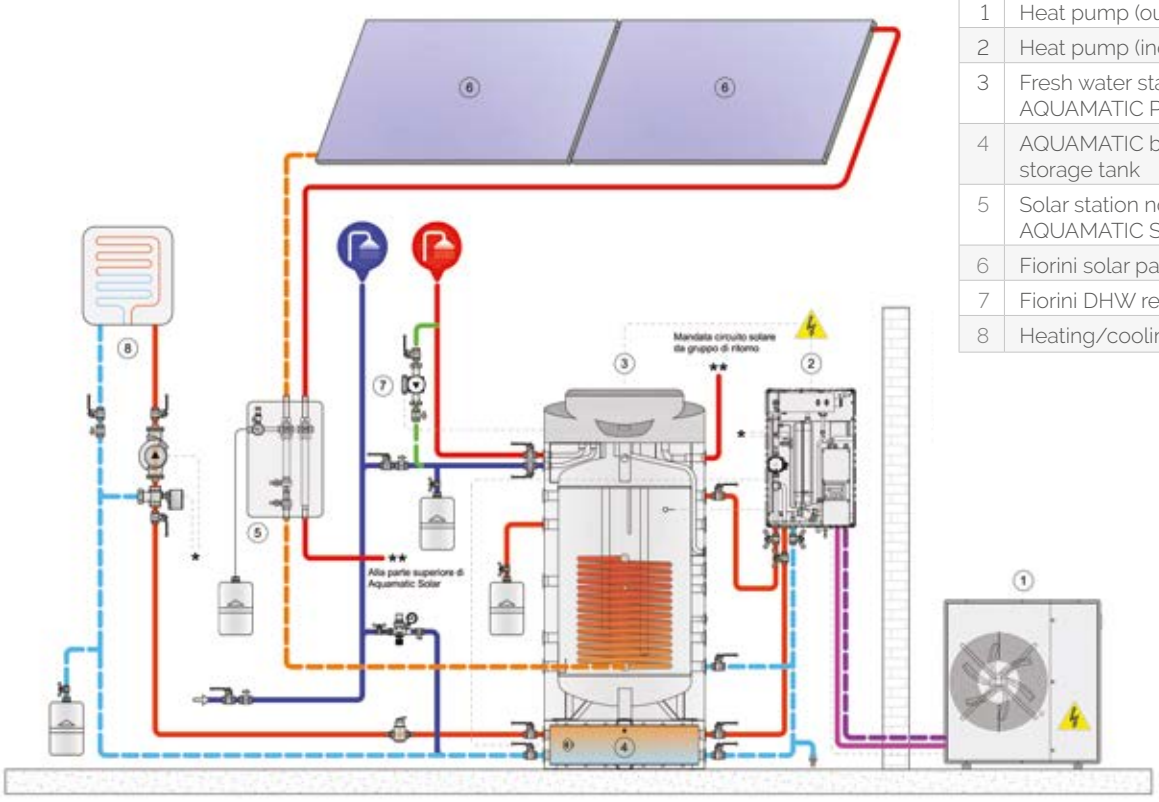
| | |
|---|---|
| 1 | Heat pump (outdoor unit) |
| 2 | Heat pump (indoor unit) |
| 3 | Fresh water station AQUAMATIC PLUS |
| 4 | AQUAMATIC built-in-storage tank |
| 5 | Fiorini DHW recirculation kit |
| 6 | Heating/cooling system |



## 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 |



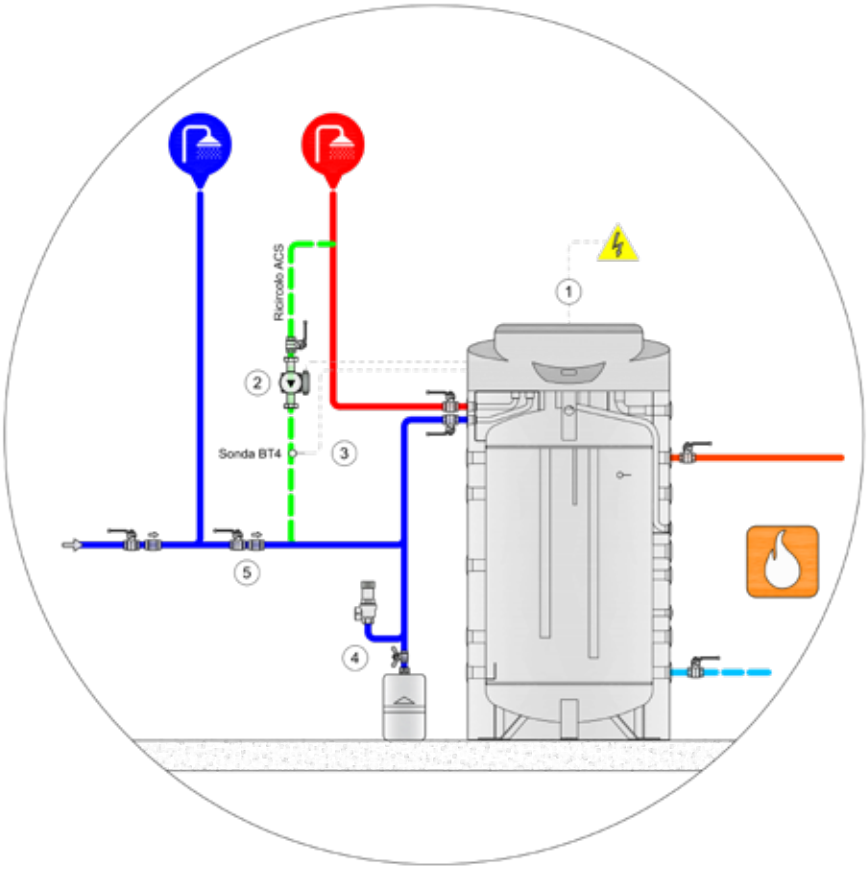
# Recirculation kit

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:



TESTED

**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.




TESTED



## 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

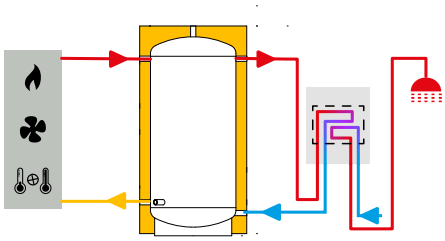
The main features are outlined below:

- ✔ 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

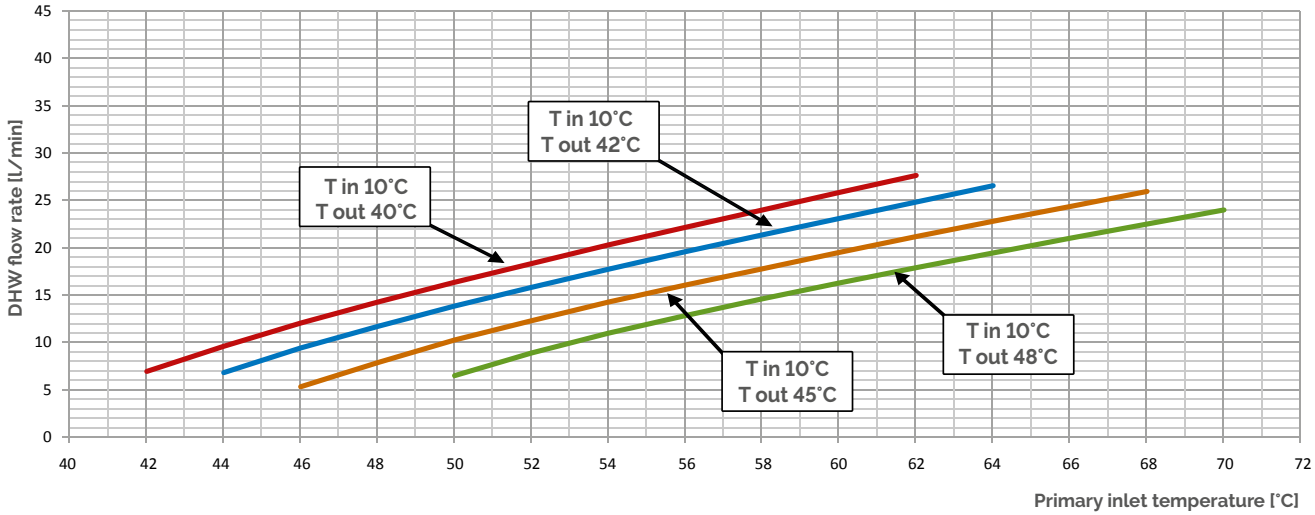
| | | | | With packaging | |
|---|---|---|---|---|---|
| **Model** | **DHW nominal flow** | **Code** | **Price** | **Dimensions cm** | **Weight kg** |
| T-SET 20 | (20 l/min. DHW) | 842030152X | | 63x40x21 | 19 |
| T-SET 30 | (30 l/min. DHW) | 842030153X | | 63x40x21 | 20 |



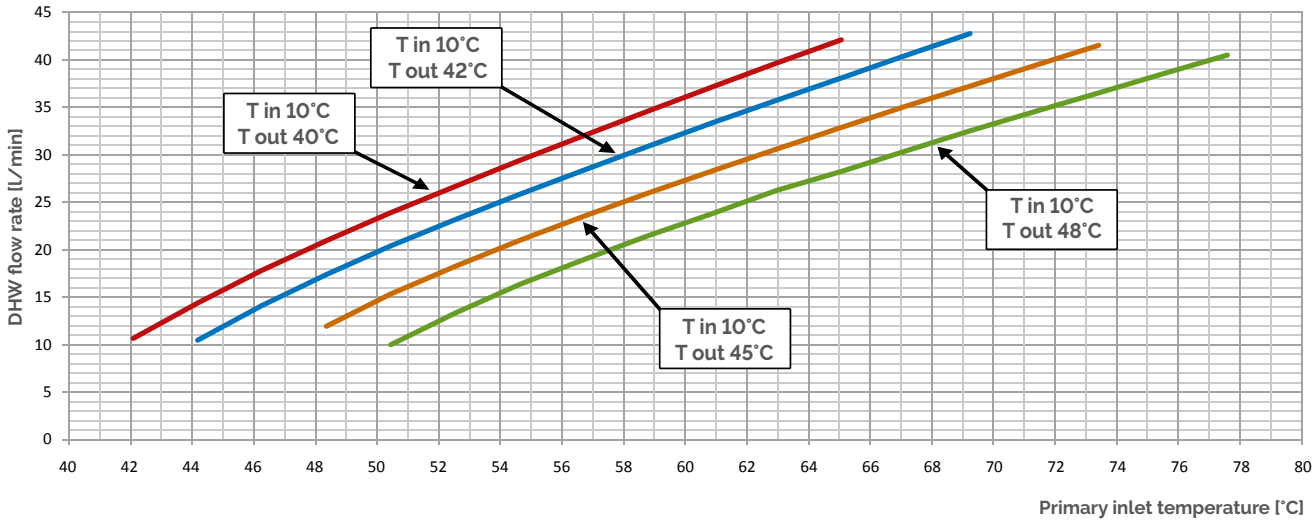
# T-SET

## Thermal performances

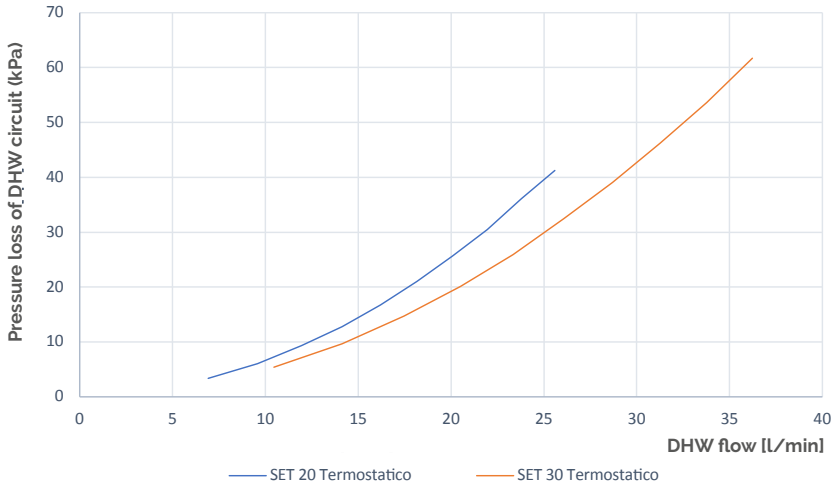
### Thermal performance T-SET 20



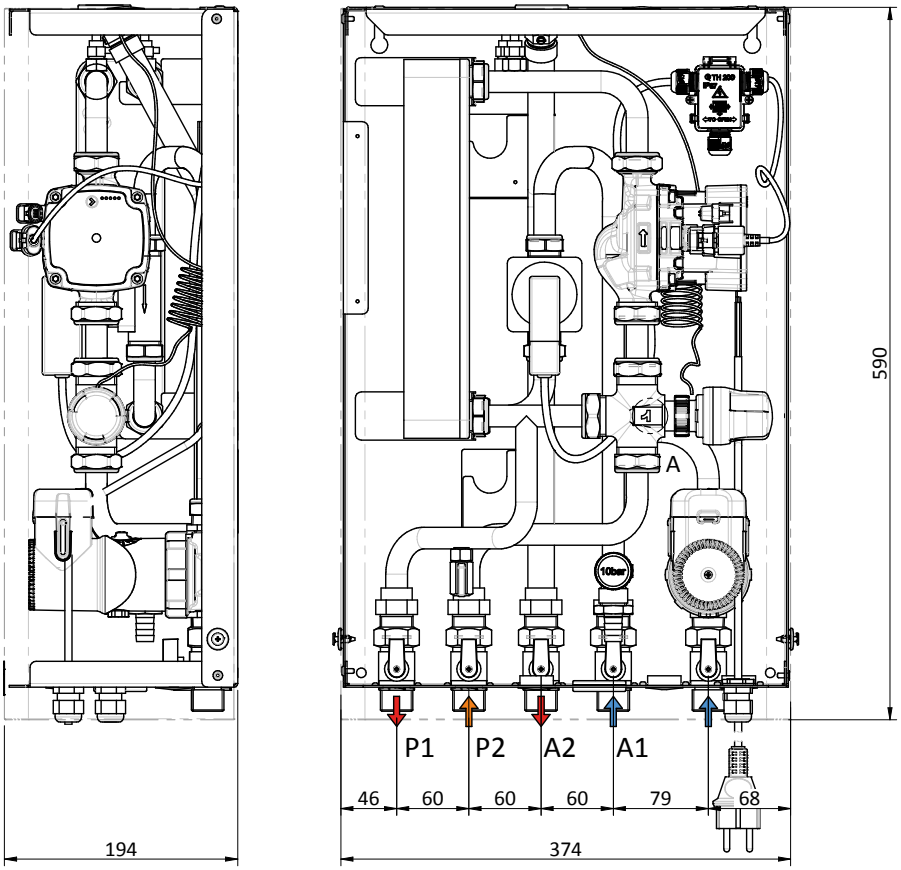

### Thermal performance T-SET 30




## Hydraulic performances



# T-SET
# Dimensions




**Key**

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

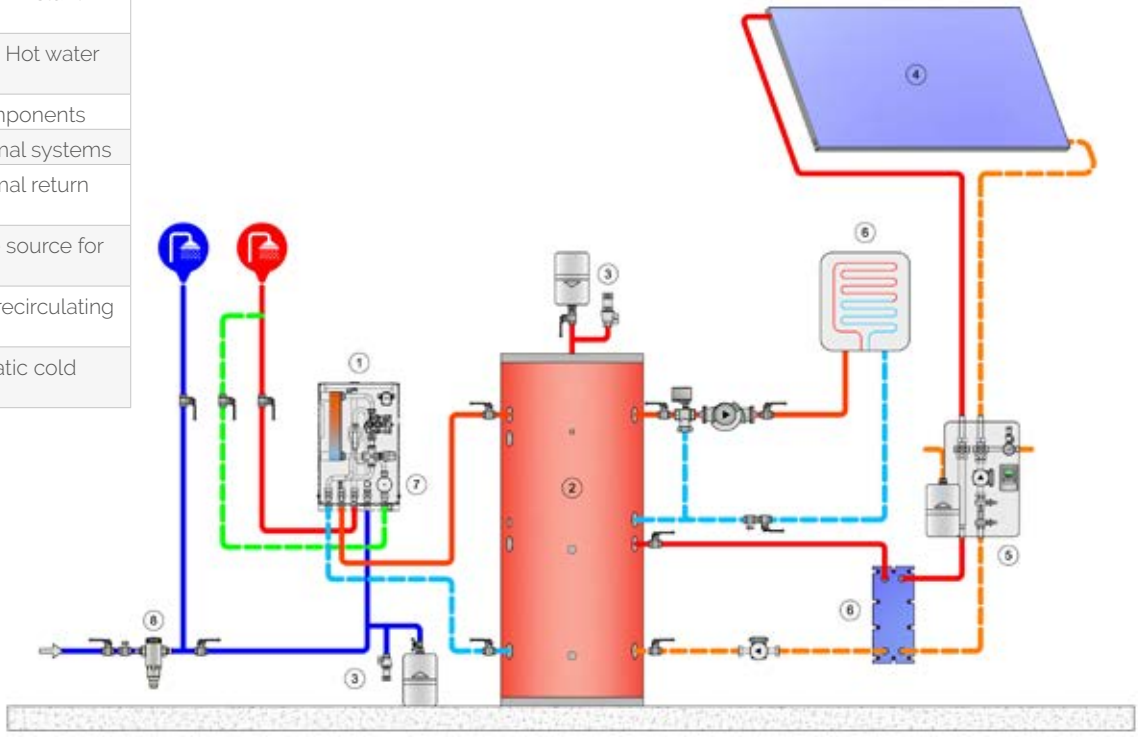
# Technical Data Table

| | | 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).



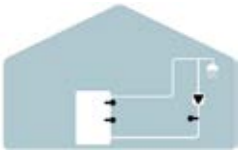
**(2) Control unit for recirculation kit**

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



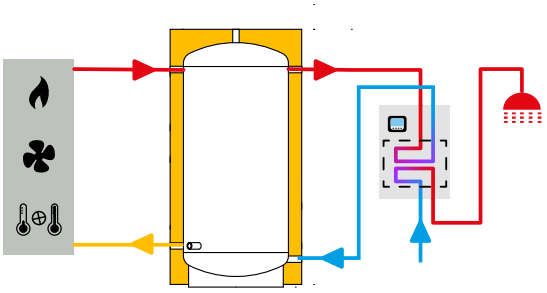
SET 80



## 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



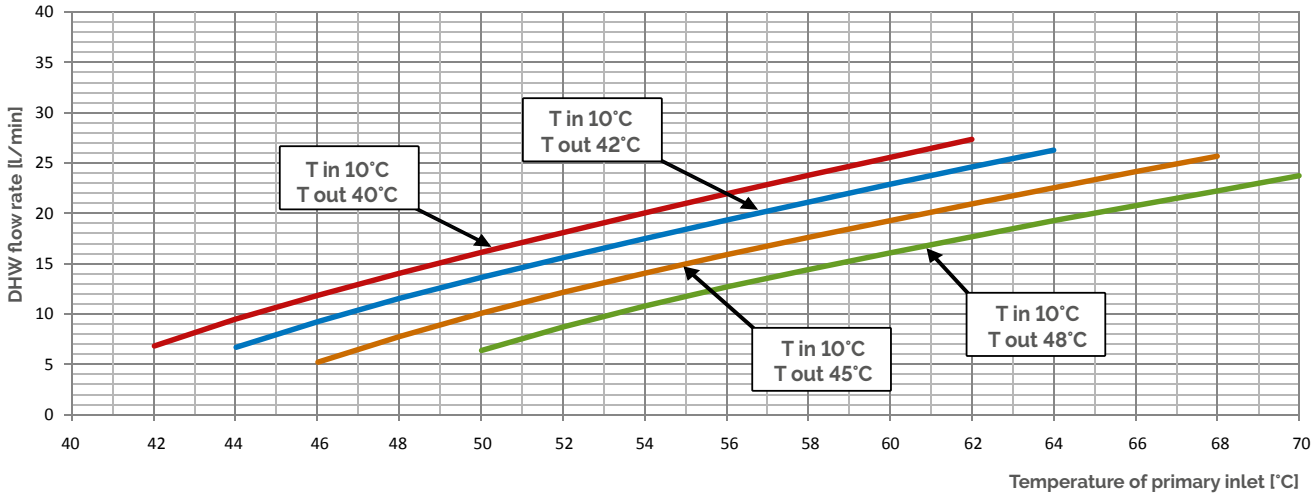
**Specific features of SET 80**

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.

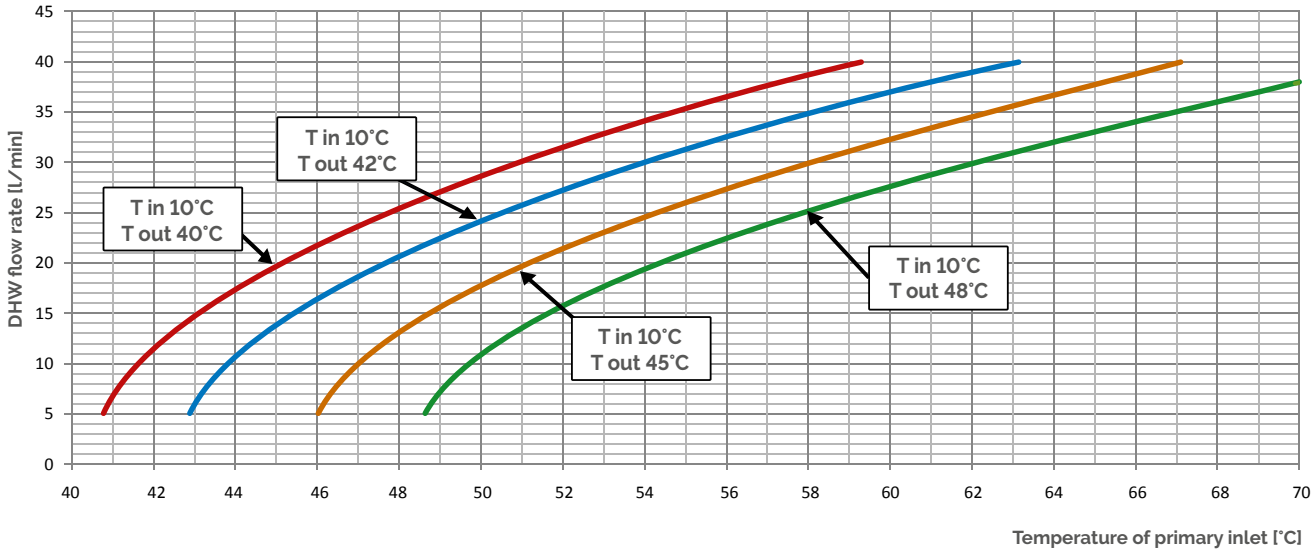


# SET
# Thermal performance

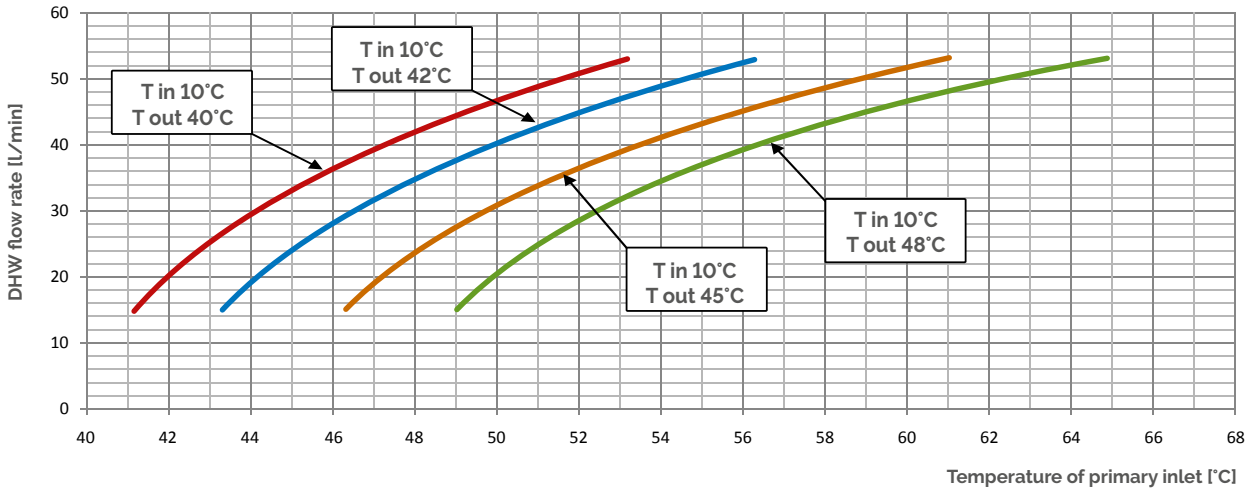
## Thermal performance SET 20




## Thermal performance SET 30

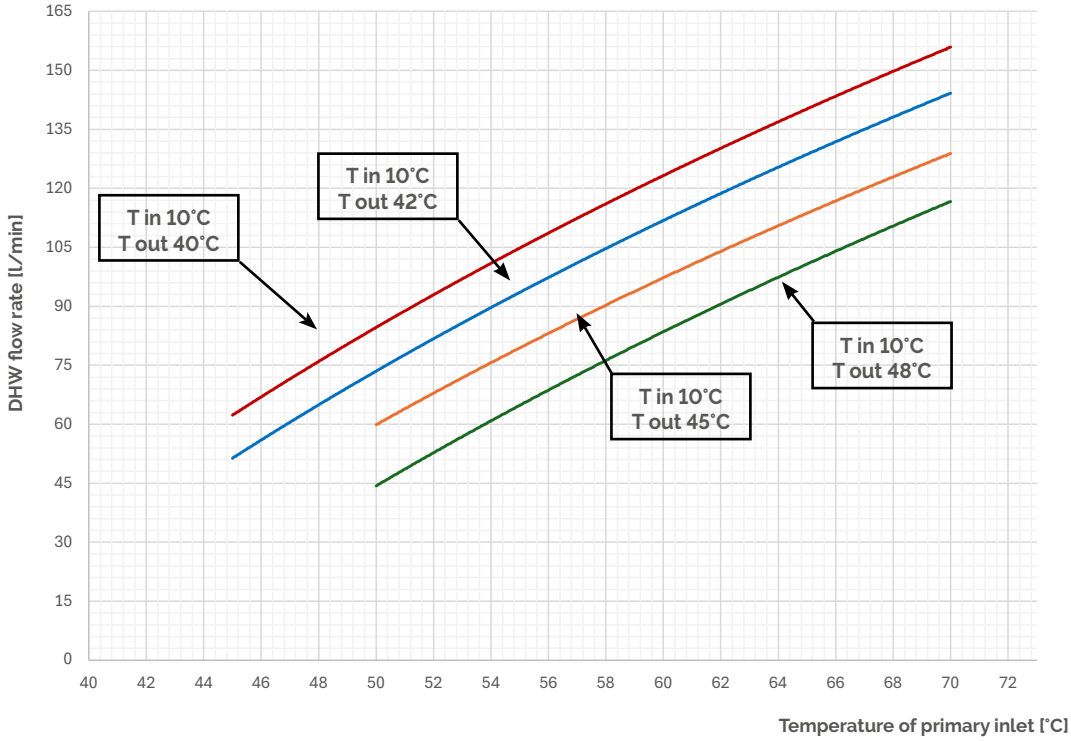



## Thermal performance SET 40

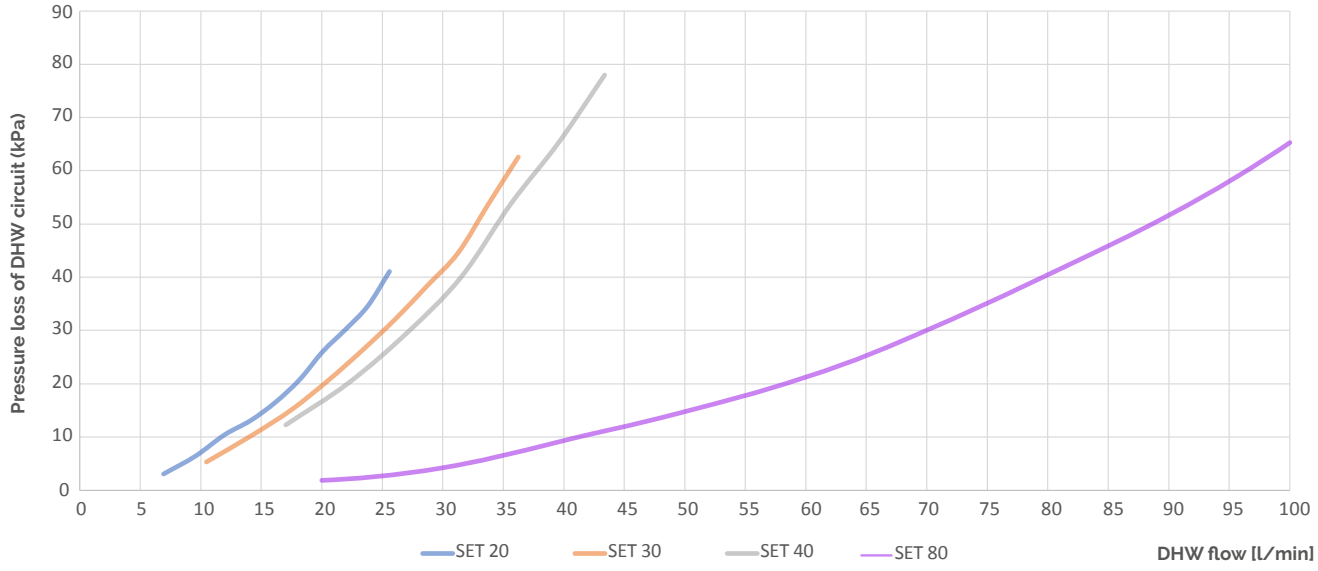


# SET
# Thermal performance

**Thermal performance SET 80**

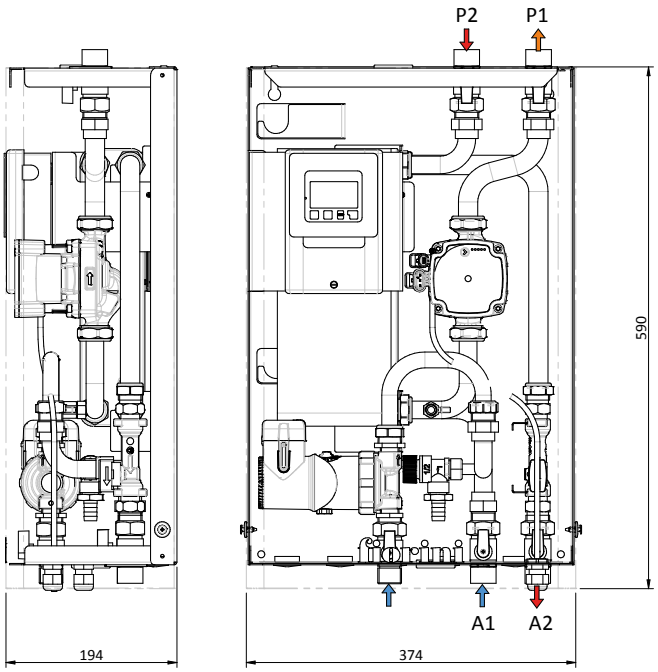



# SET
# Hydraulic performance



# 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

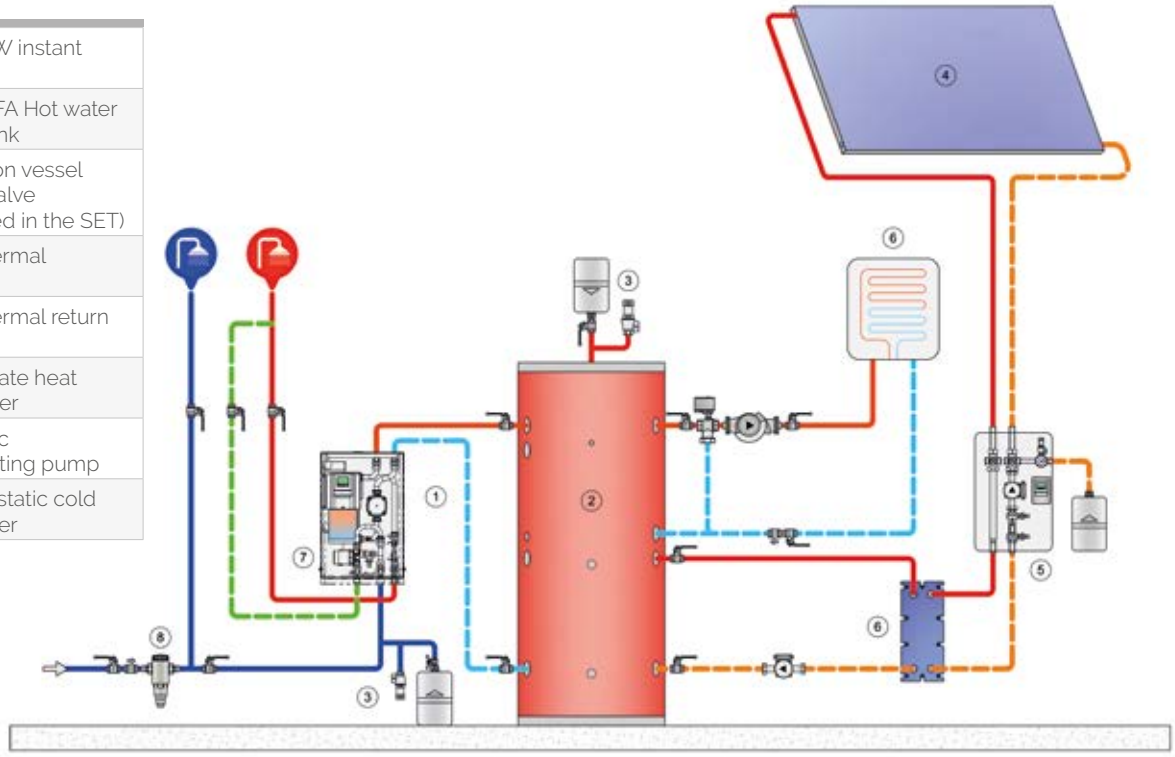
# Technical Data Table

| | | 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:**

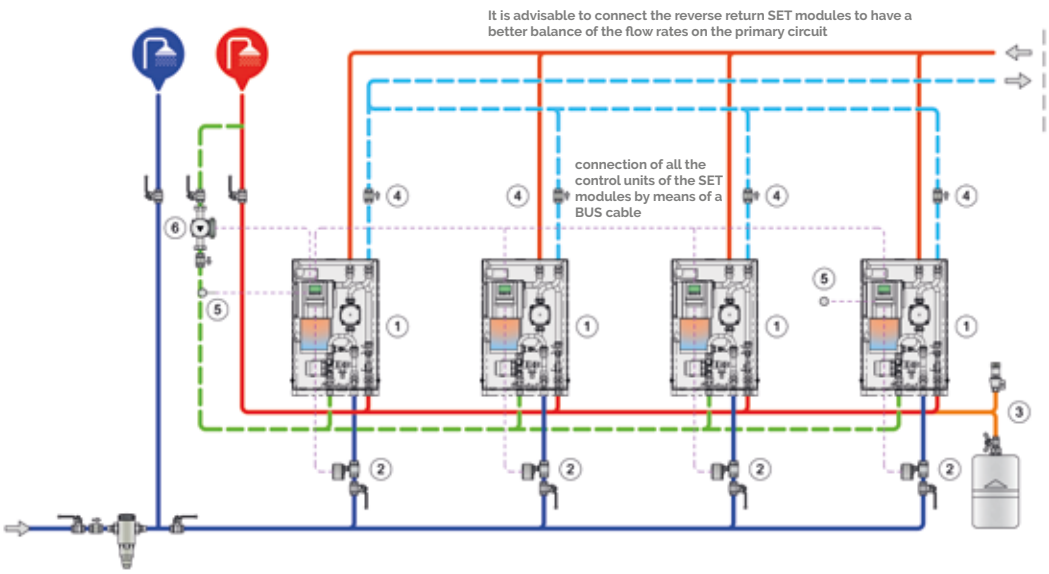
- ✔ Wide DHW production range: from 2 to 360 l/min
- ✔ Maximum reliability. Thanks to the self-diagnosis performed by the control unit, if a DHW heater malfunctions, it is automatically switched off and another one is started. Continuity in the production of DHW is thus guaranteed
- ✔ Even more precise 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

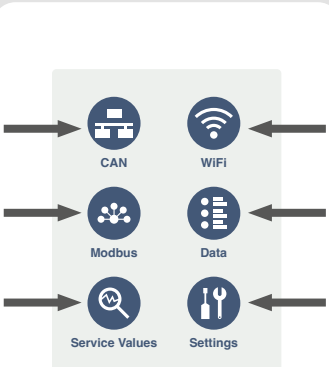



### Main menu

**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.

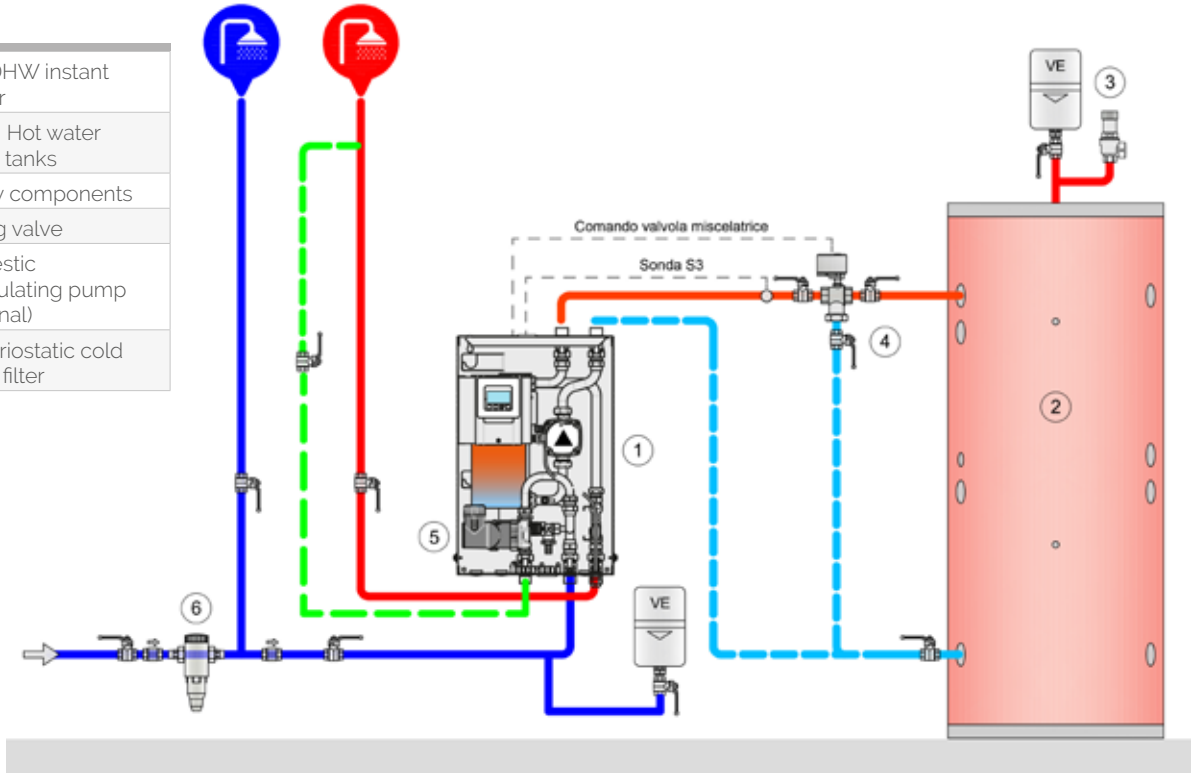
N.B.: If several SETs are installed in cascade to manage the inlet temperature of the primary, a mixing kit must be provided for each SET installed.

**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.

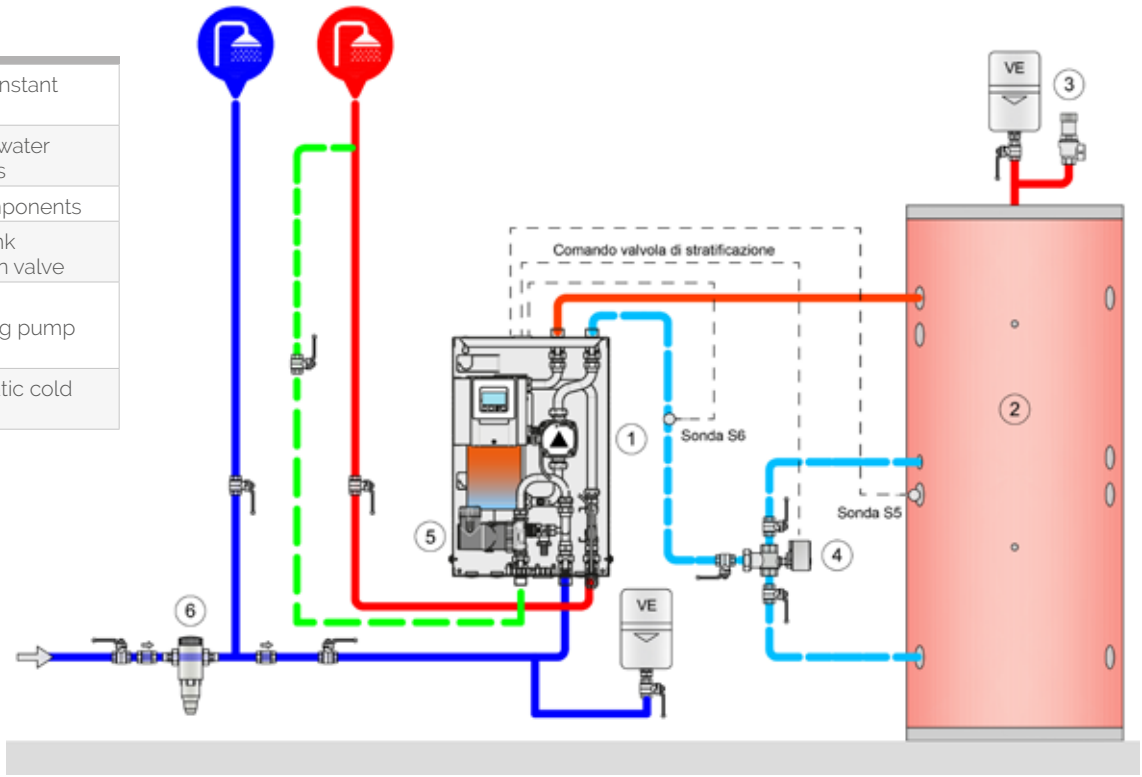
**Kit supplied**

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 |

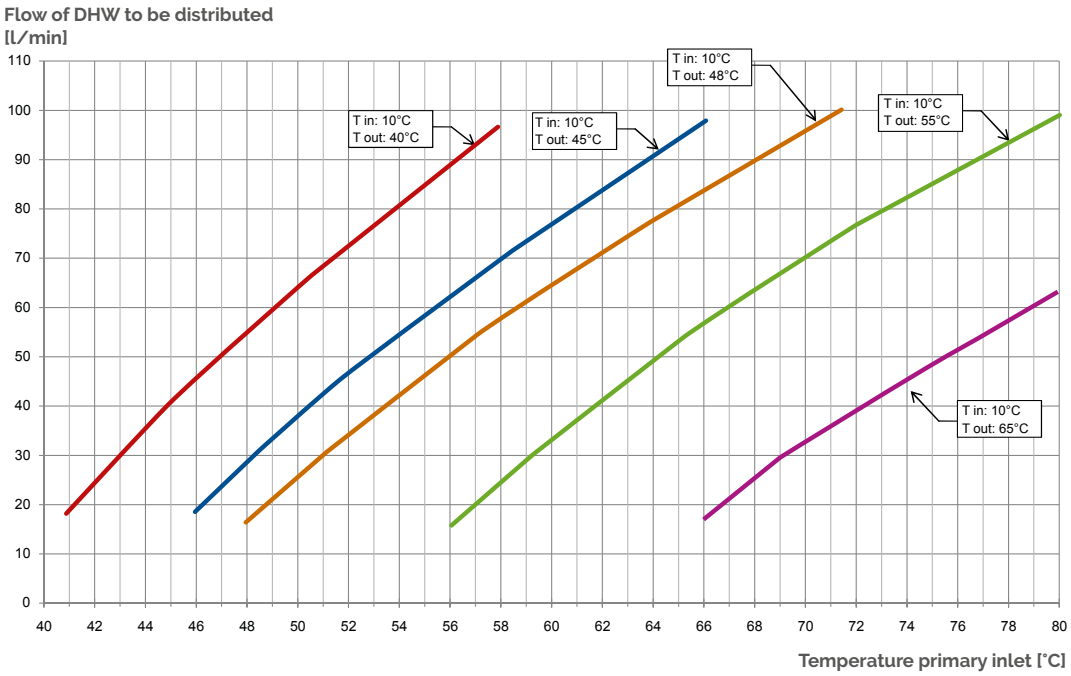
# Functions of the regulator

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

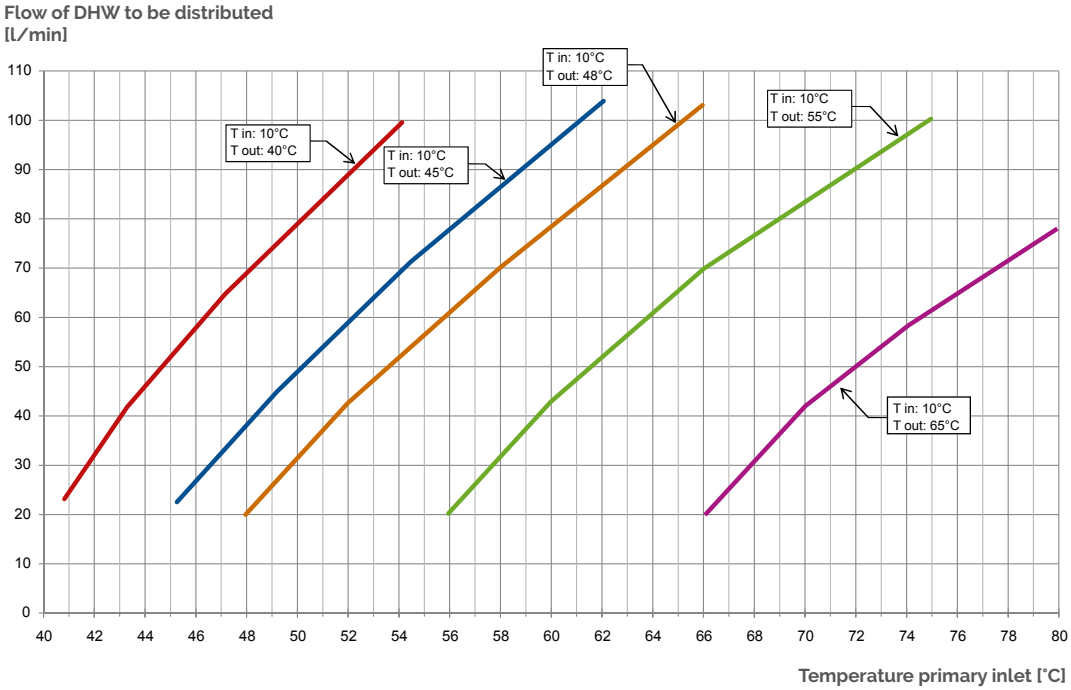
| |
|---|
| Efficient, electronic regulation of the velocity of the pump |
| Graphical display |
| Imposing the temperature of the DHW |
| Imposing the max temperature of the DHW. This is a safety option which stops the unit in case the max value is reached. |
| Management kit in series |
| Management 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

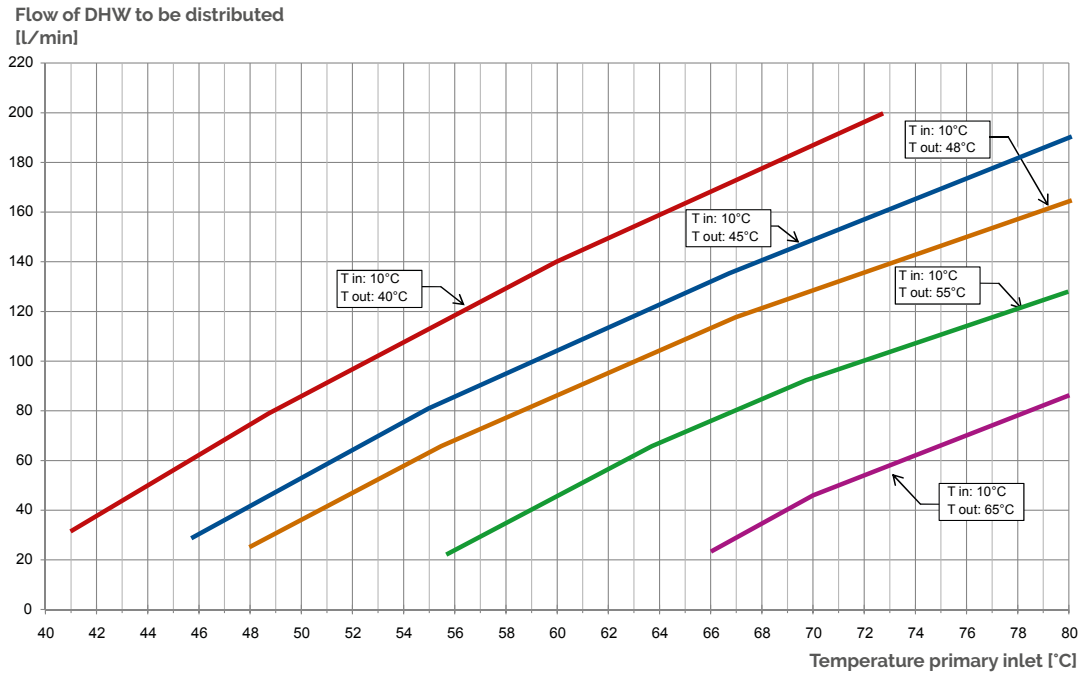



## SET 70 performance

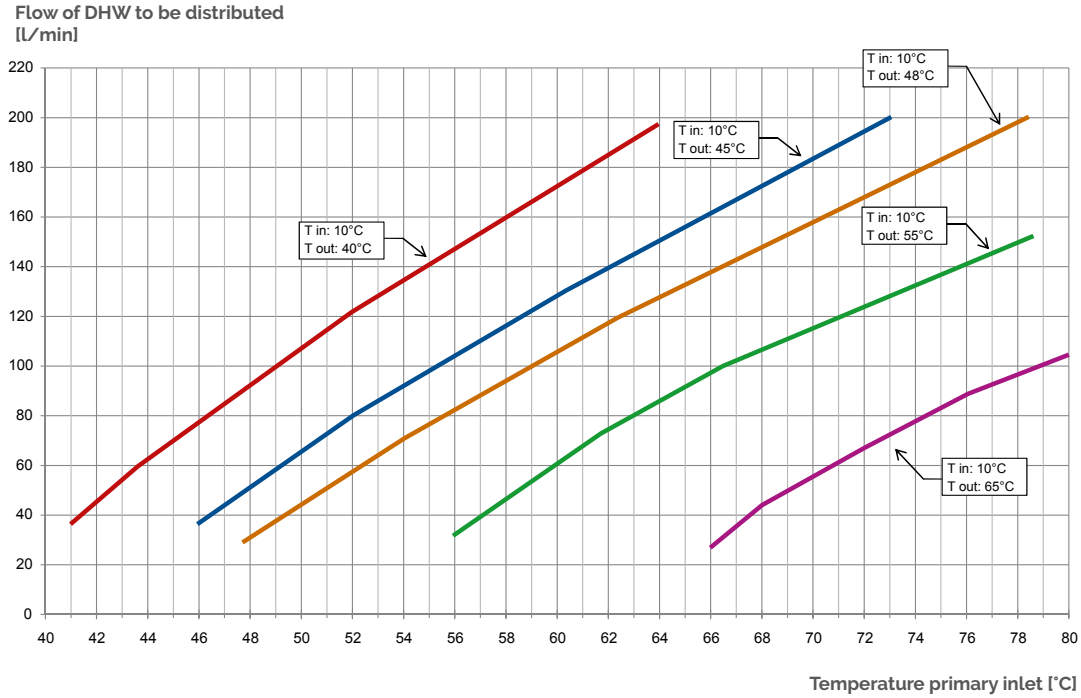


# Floor standing SET thermal performance

## SET 80 performance

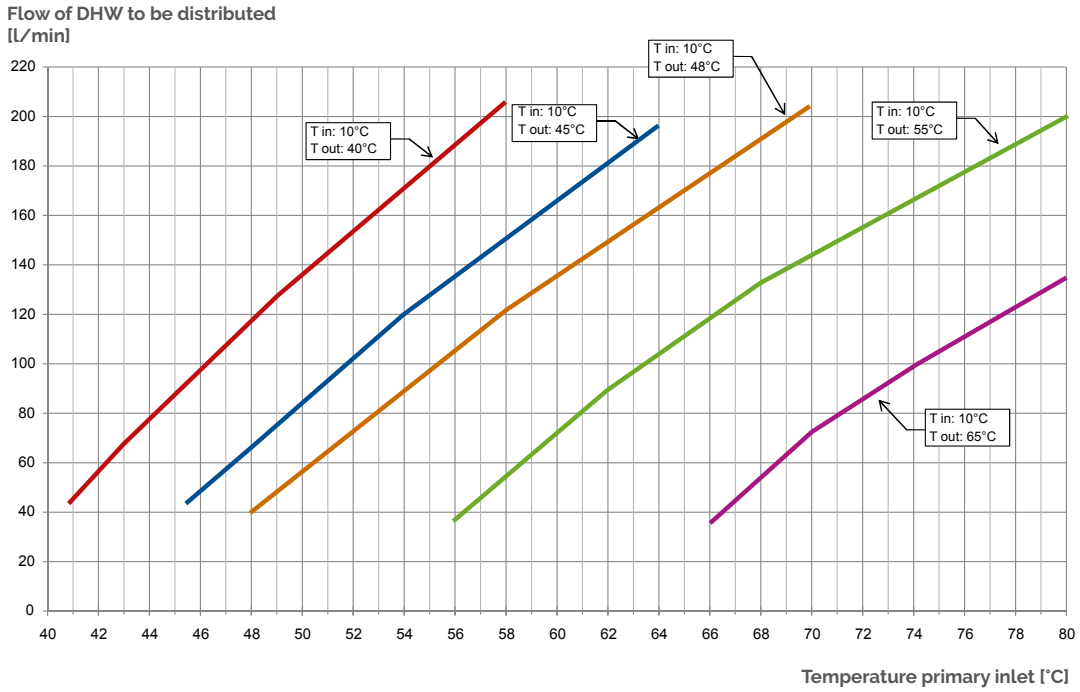



## SET 100 performance

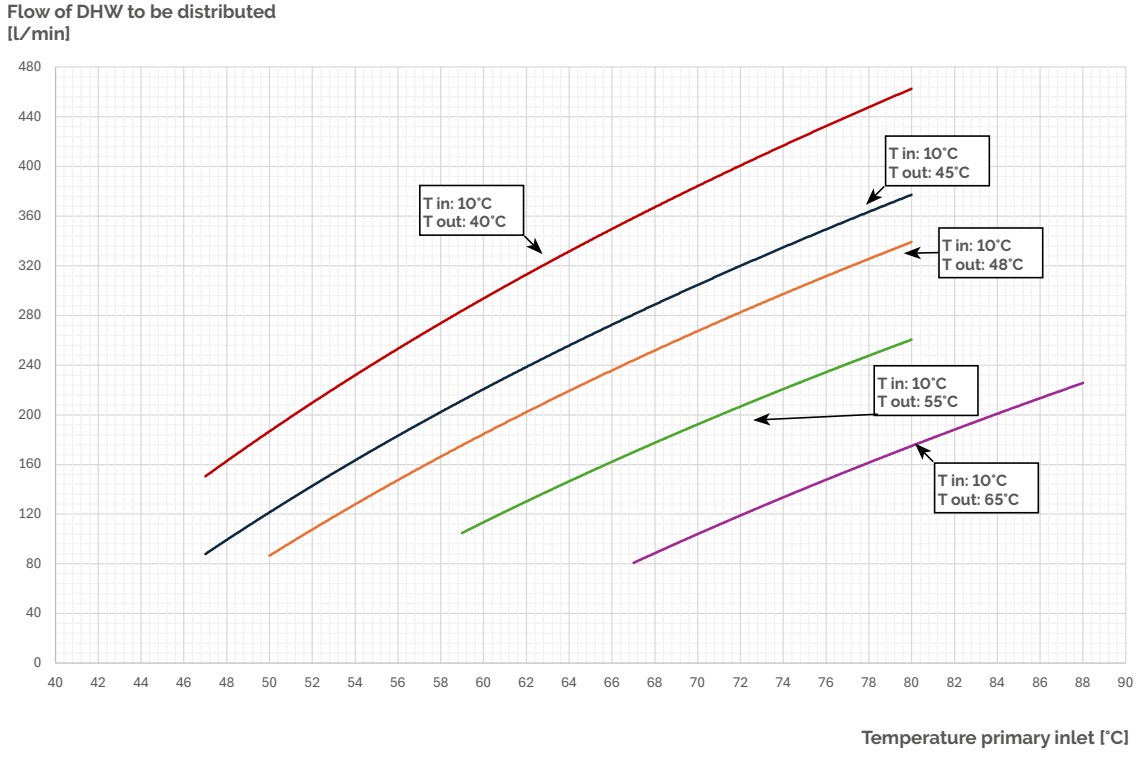


# Floor standing SET thermal performance

## SET 120 performance

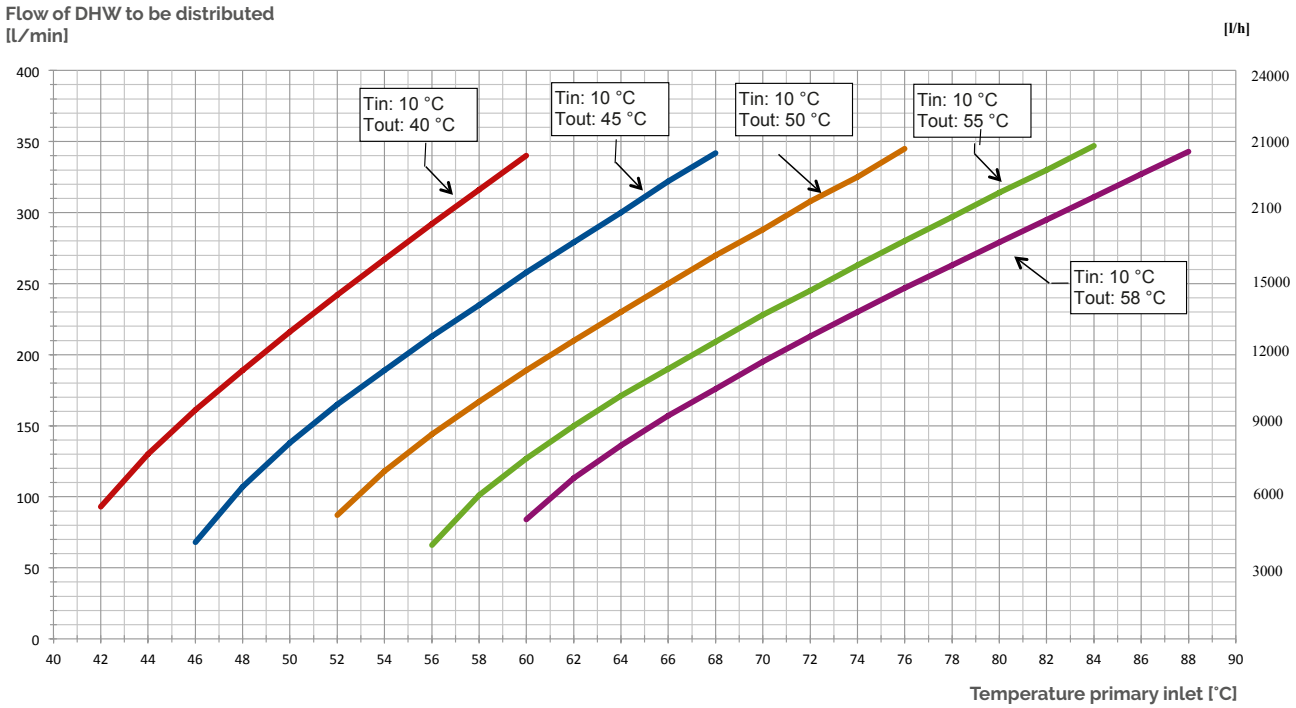



## SET 160 performance

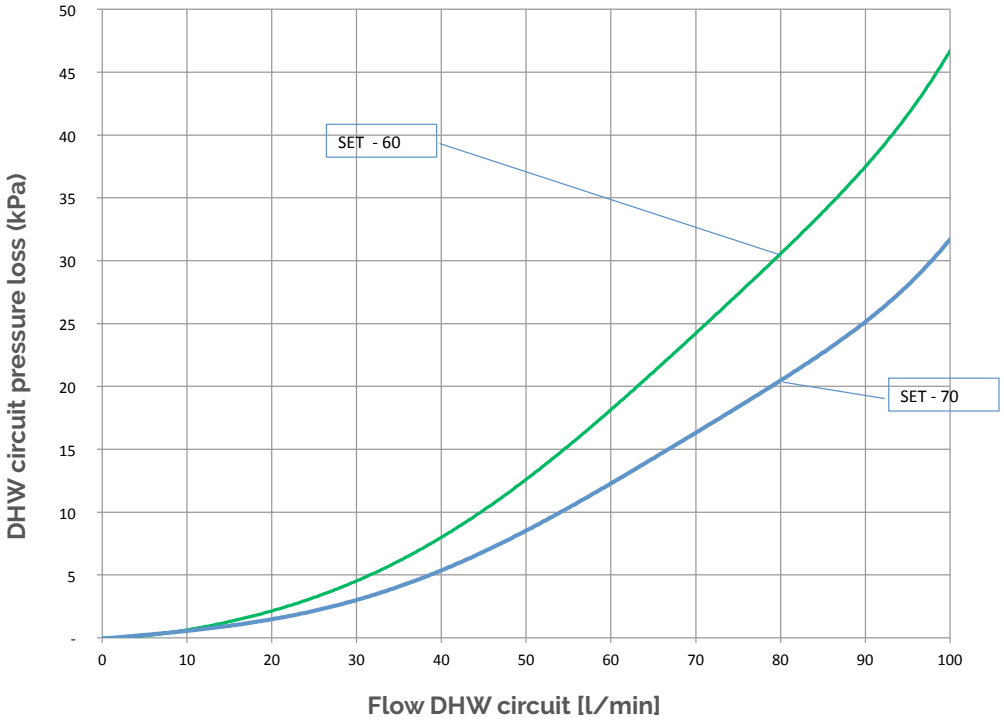


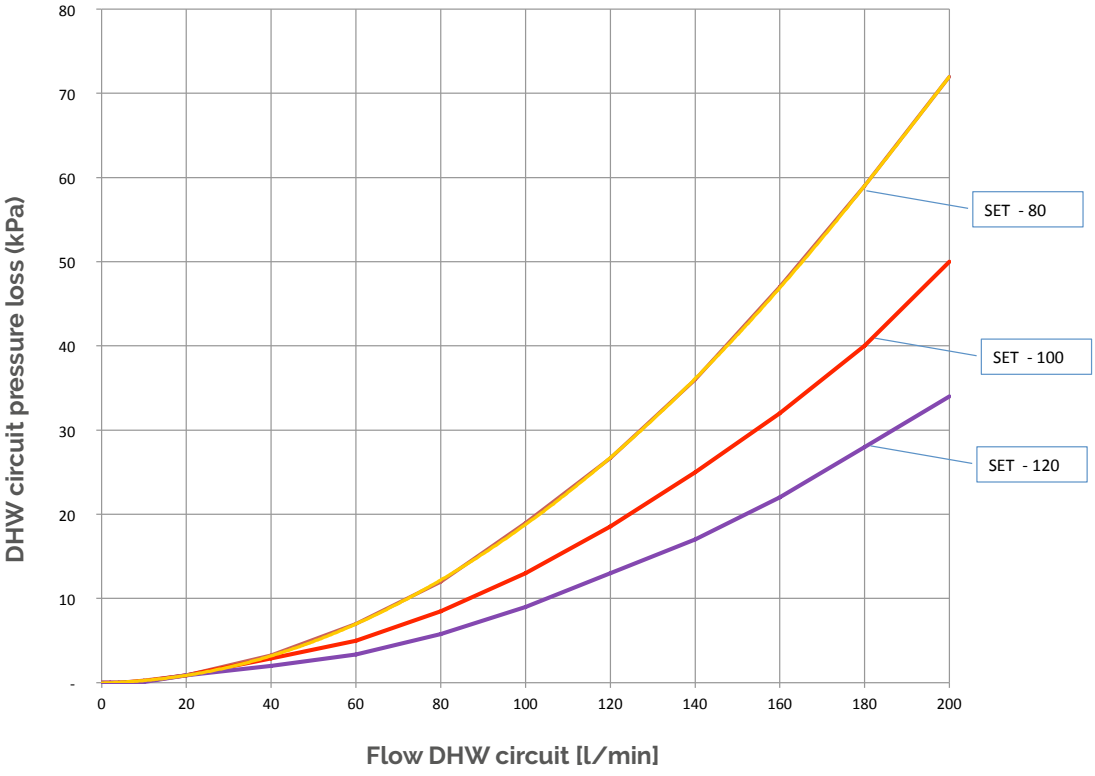
# Floor standing SET thermal performance

## SET 200 performance

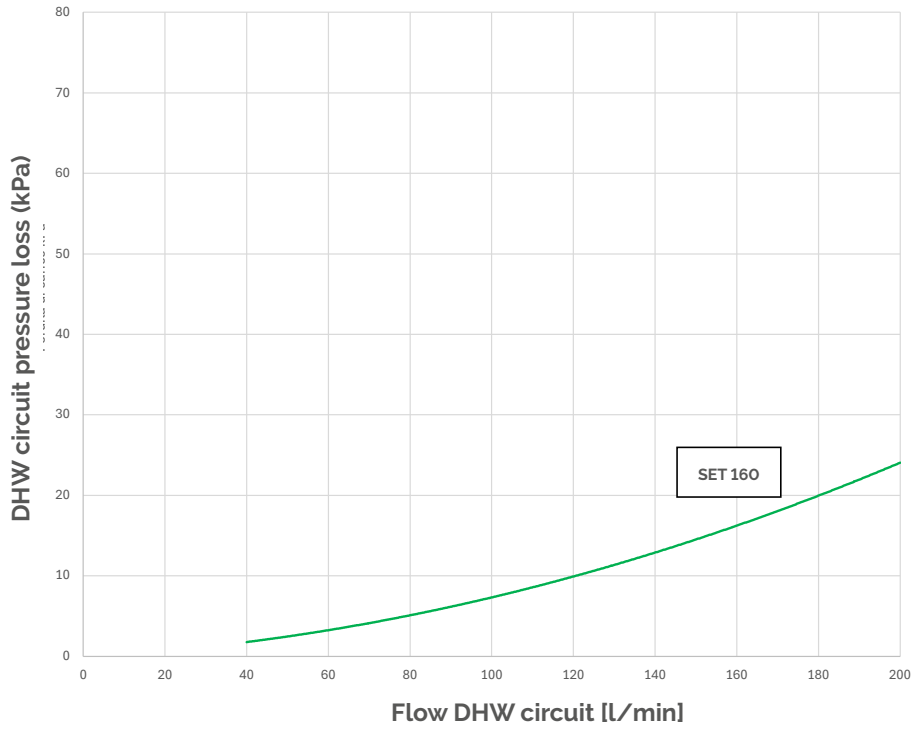


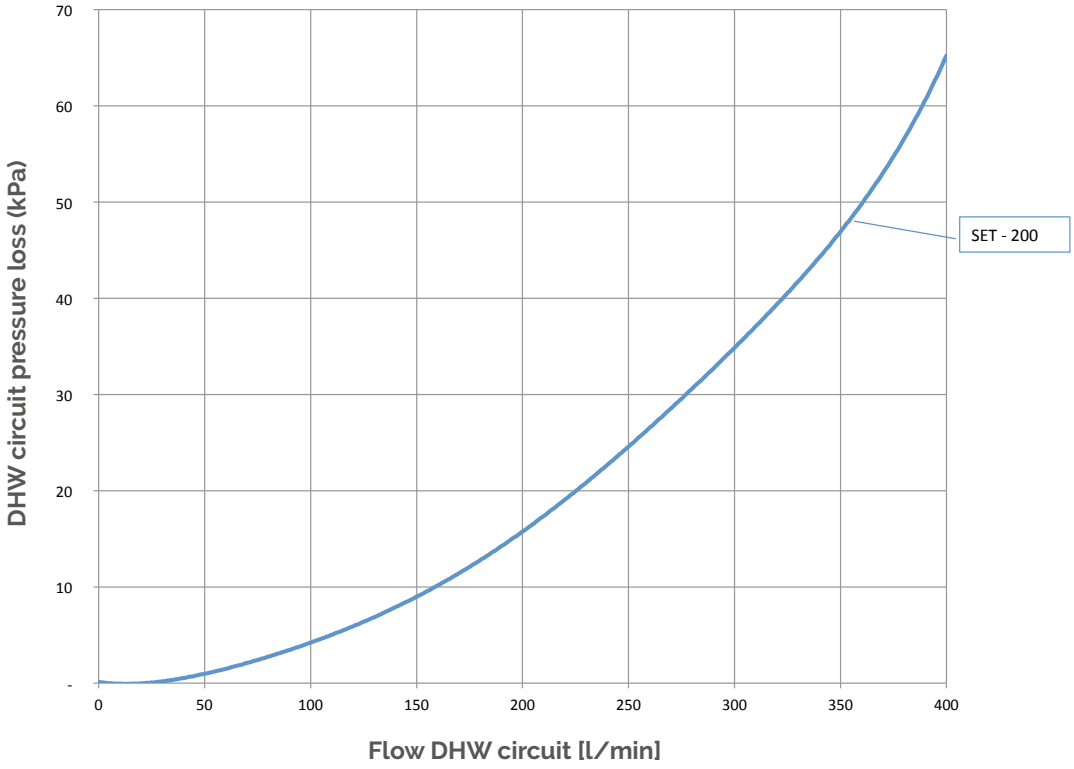
# Hydraulic performance SET



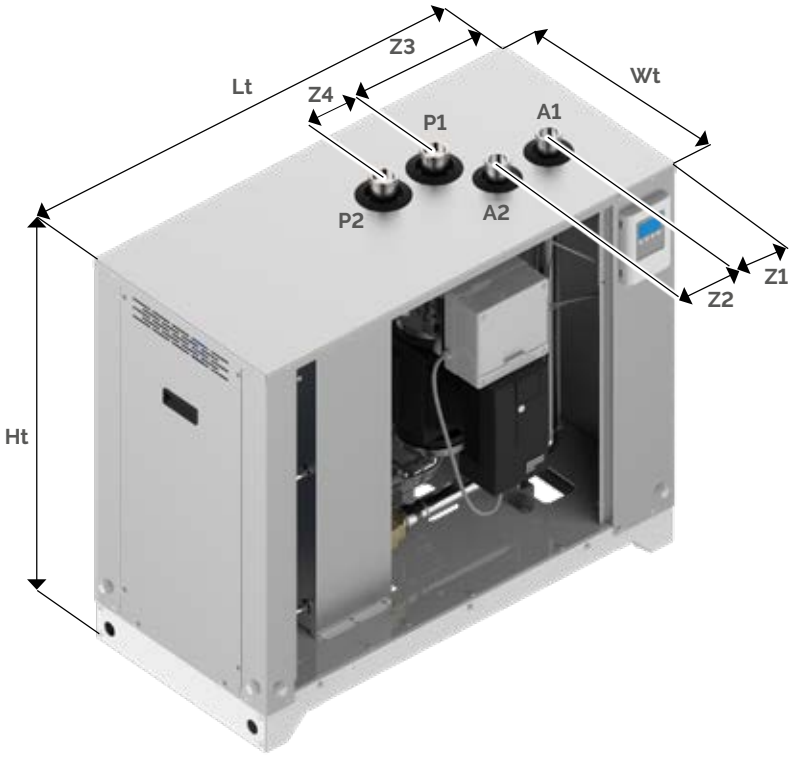



# Hydraulic performance SET



# Dimensions



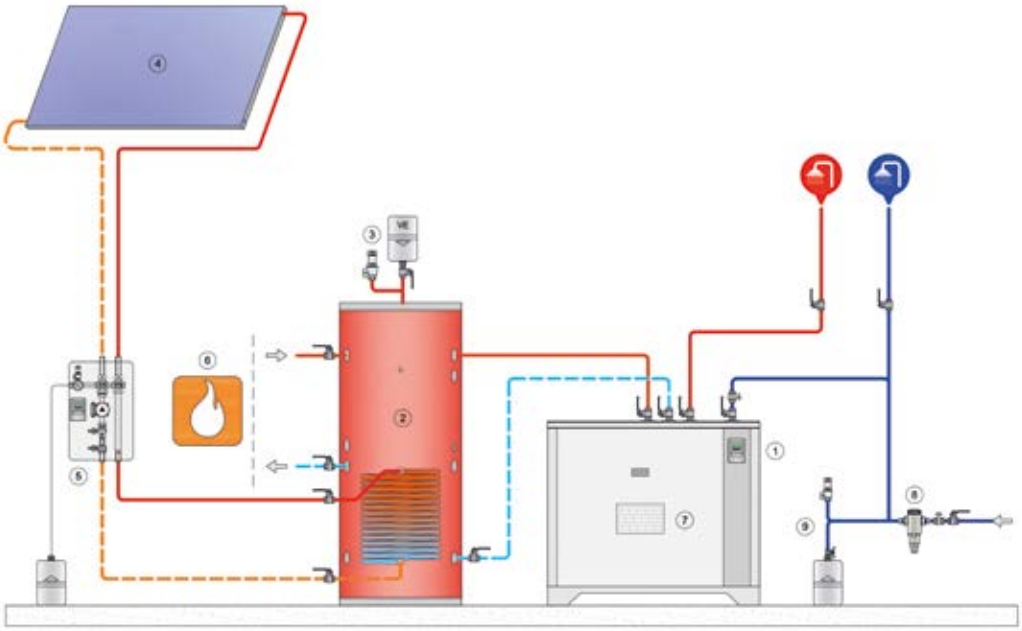

**Couplings legend**

| | |
|---|---|
| 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

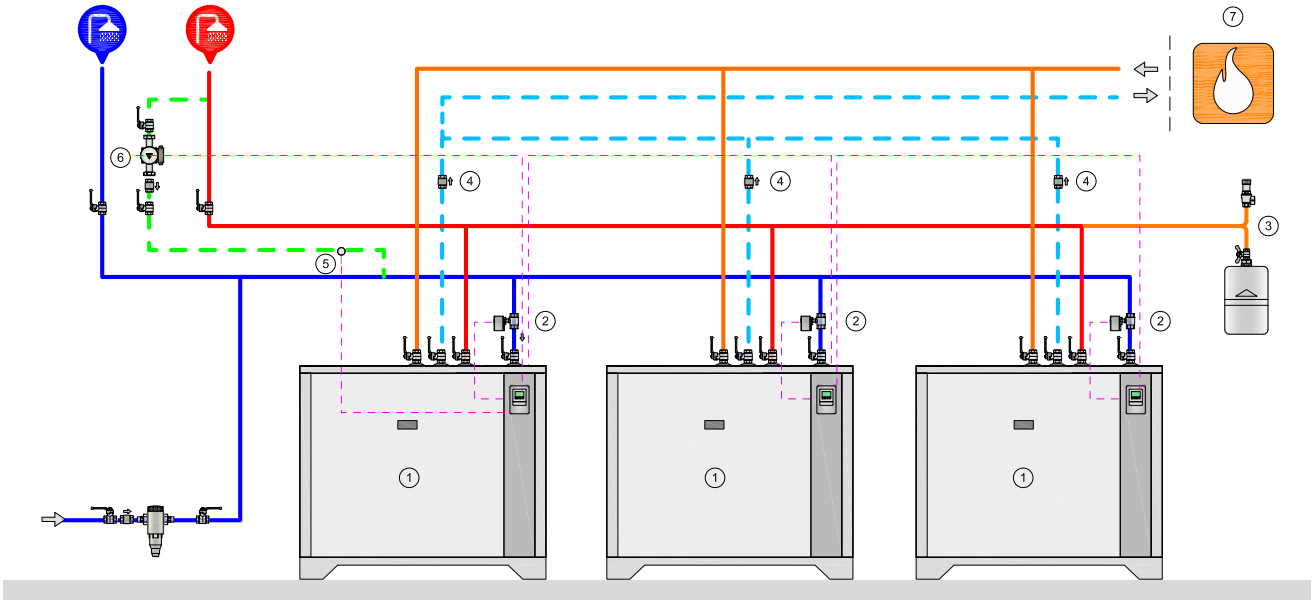
Install one kit for every fresh water station. The kit is supplied in parts, non-assembled and is composed of:

✔ 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

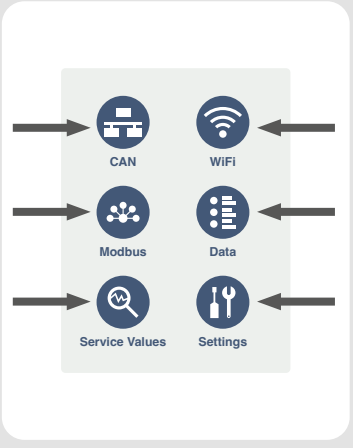
- ✔ Data Logger
- ✔ Fieldbus CAN
- ✔ Modbus RTU RS 485
- ✔ WiFi module
- ✔ Display touchscreen
- ✔ 12/24 V Power supply
- ✔ Android & iOS app
- ✔ Dimensions: 75 x 95 x 19 mm
- ✔ ABS body and glass front

### 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

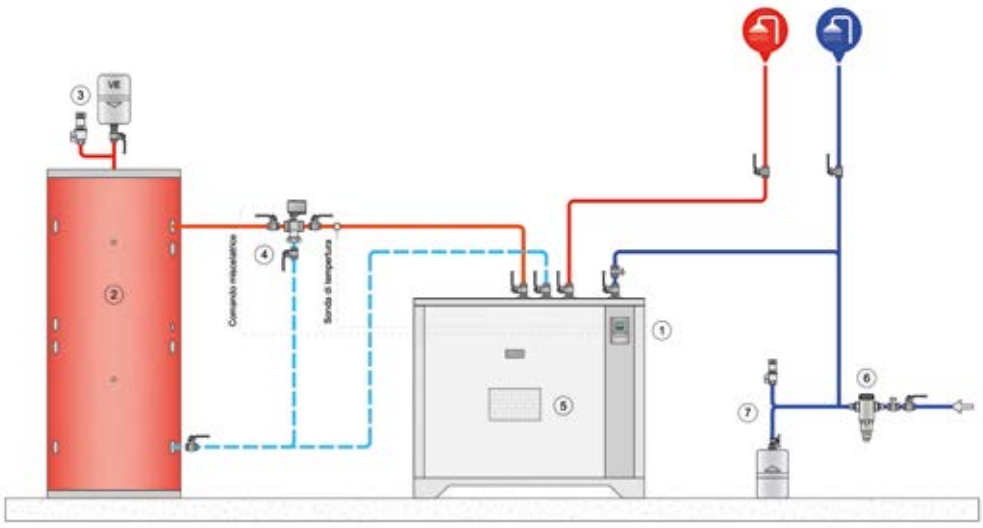
The recirculation kit makes it possible to opt for one of the multiple option offered by the electronic control station to control the pump of the sanitary recirculation circuit (circulator not supplied).

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 |

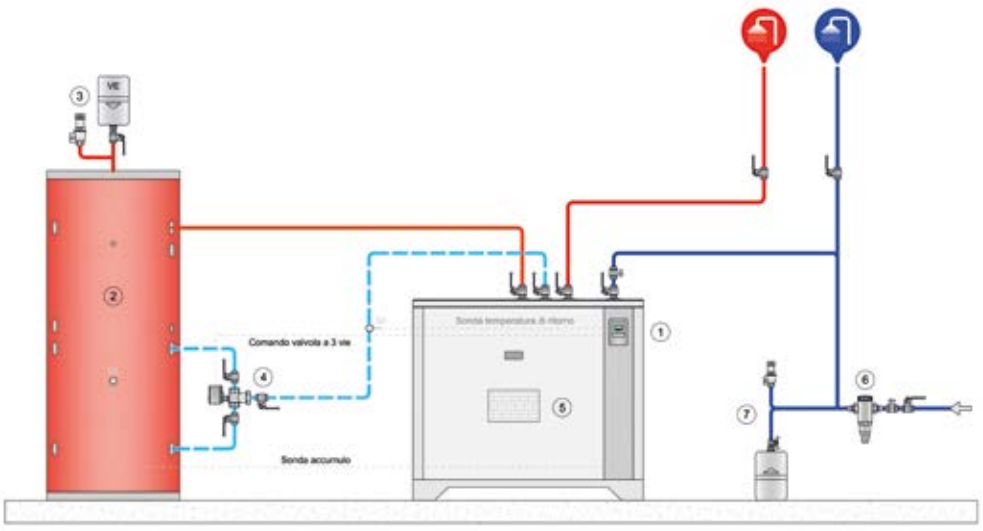
N.B.: Installation of an expansion vessel on the cold water line is mandatory

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 | |

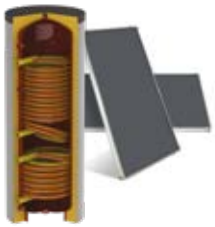
* The L control unit handles up to 3 digital outputs: check the availability of free outputs and the requirements of the various accessories.



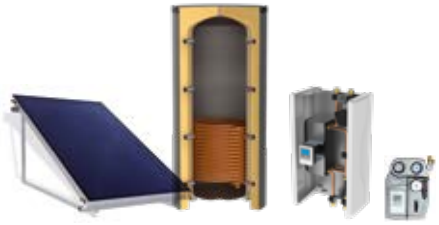
# Solar Thermal Systems

## 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

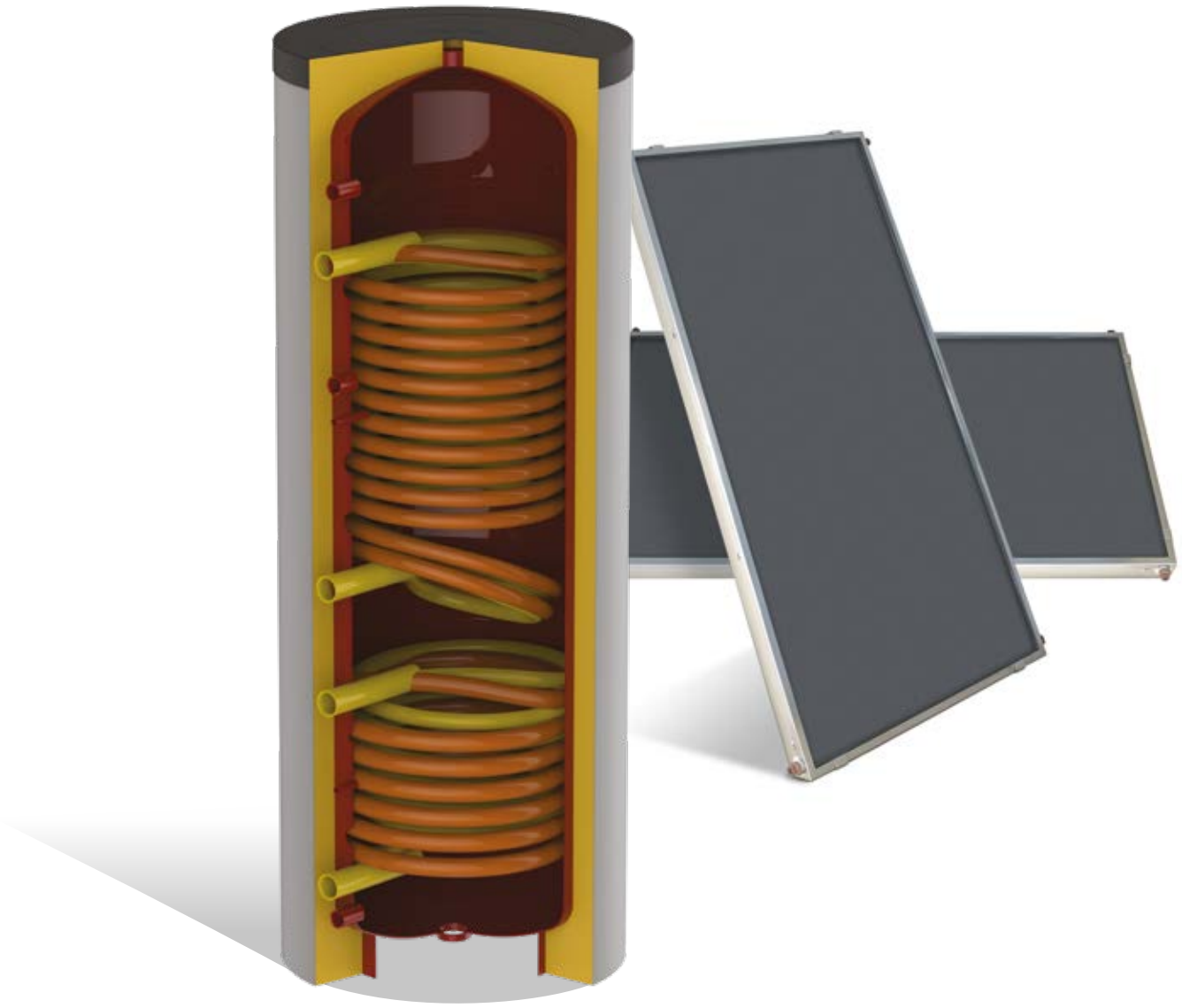
Solar energy is an inexhaustible source of energy that can be easily used both in hot water preparation and in the heating process. Solar energy helps protect the environment and ensures significant energy savings.

## 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.

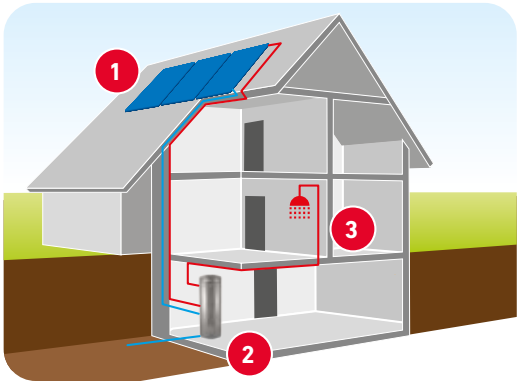
✪ Minimal maintenance. The equipment (collectors, regulators, pumps) and accessories require minimal maintenance.





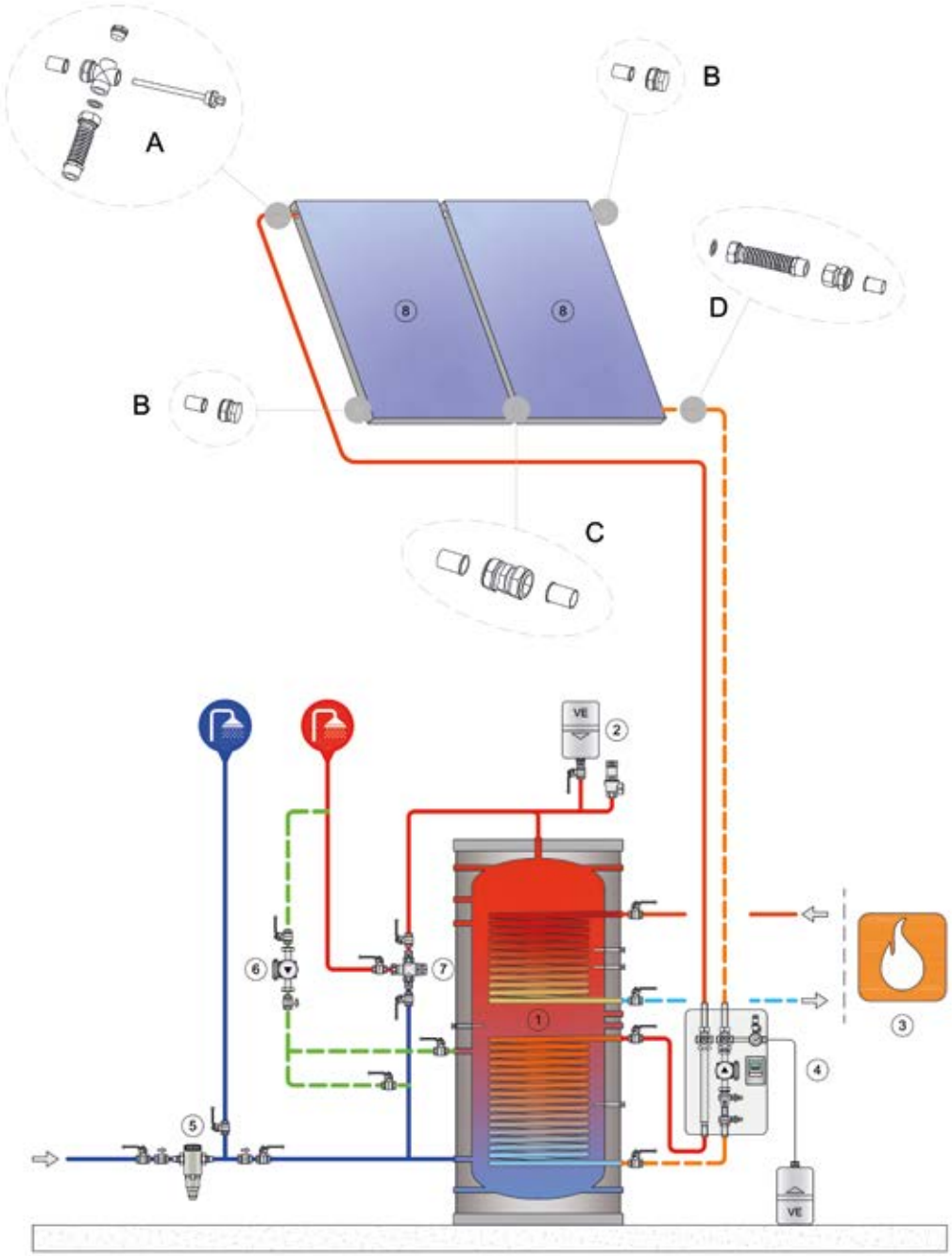
# AQUA SUN Thermal Solar kit for DHW production

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<br>Energy label<br>Composition<br>Number of persons* | Aqua Sun 1<br>C<br>1 H2000+SMART2 200<br>x 2 | | Aqua Sun 1.1<br>C<br>1 H2500+SMART2 200<br>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<br>Energy label<br>Composition<br>Number of persons* | Aqua Sun 2<br>C<br>2 H2000+SMART2 300<br>x 4 | | Aqua Sun 2.1<br>C<br>2 H2500+SMART2 300<br>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<br>Energy label<br>Composition<br>Number of persons* | Aqua Sun 3<br>C<br>3 H2000+SMART2 500<br>x 6 | | Aqua Sun 3.1<br>C<br>3 H2500+SMART2 500<br>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 |

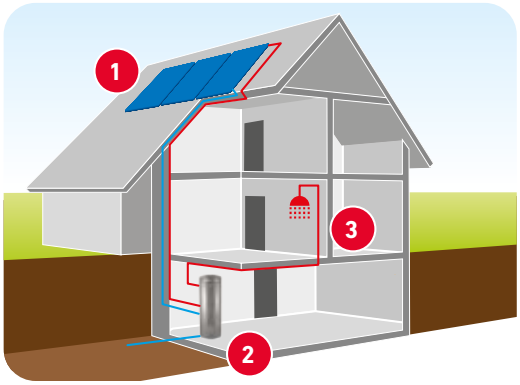
NOTE: Collector fixing kit not included (pag. 275)

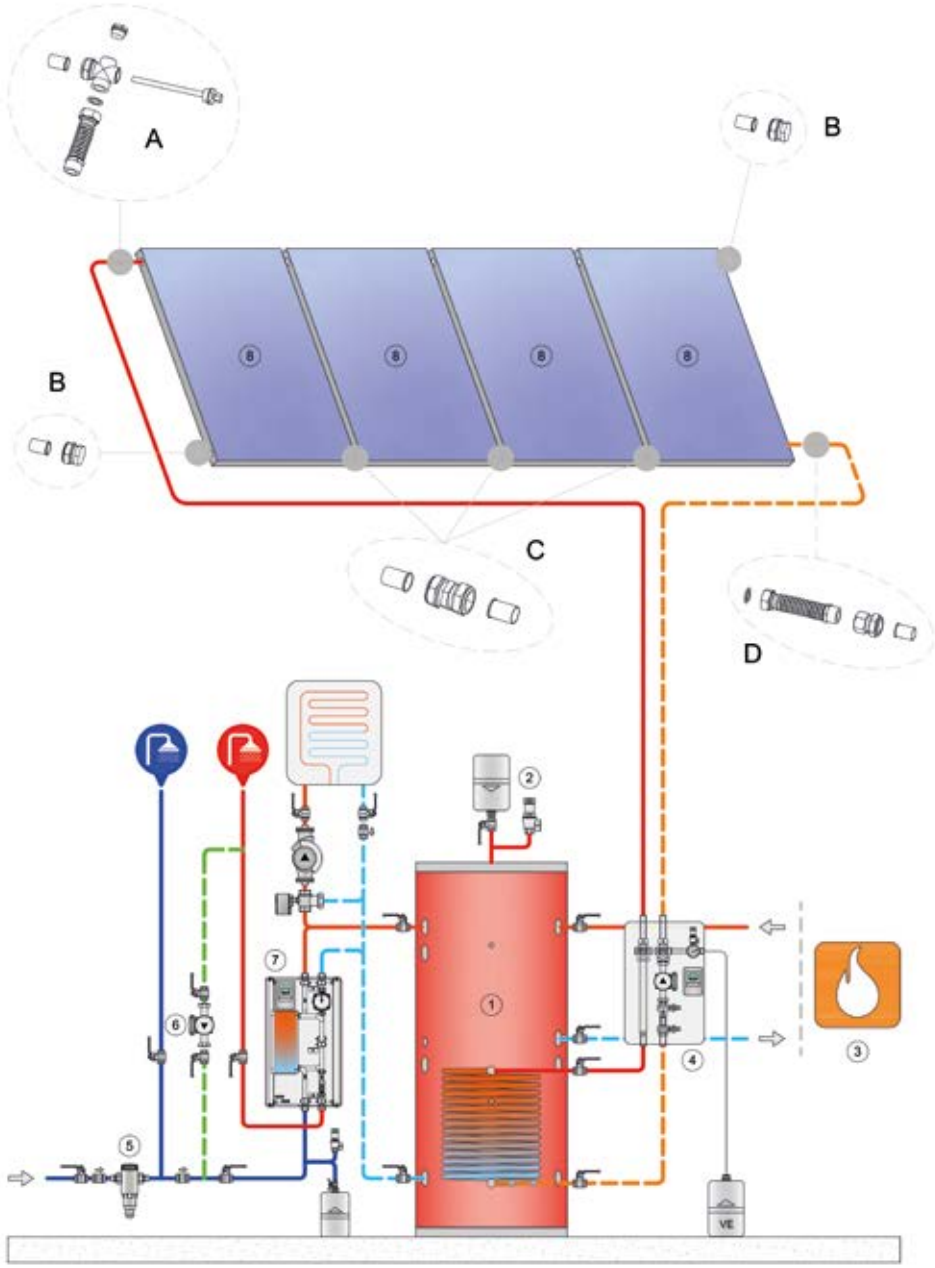
# Thermal Solar power kit for DHW production and heating – COMBI SUN

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<br>Energy label<br>Composition | Combi Sun 4<br>C<br>4 H2500+PFB800+SET30 | | Combi Sun 6<br>C<br>6 H2500+PFB1000+SET30 | | Combi Sun 8<br>C<br>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

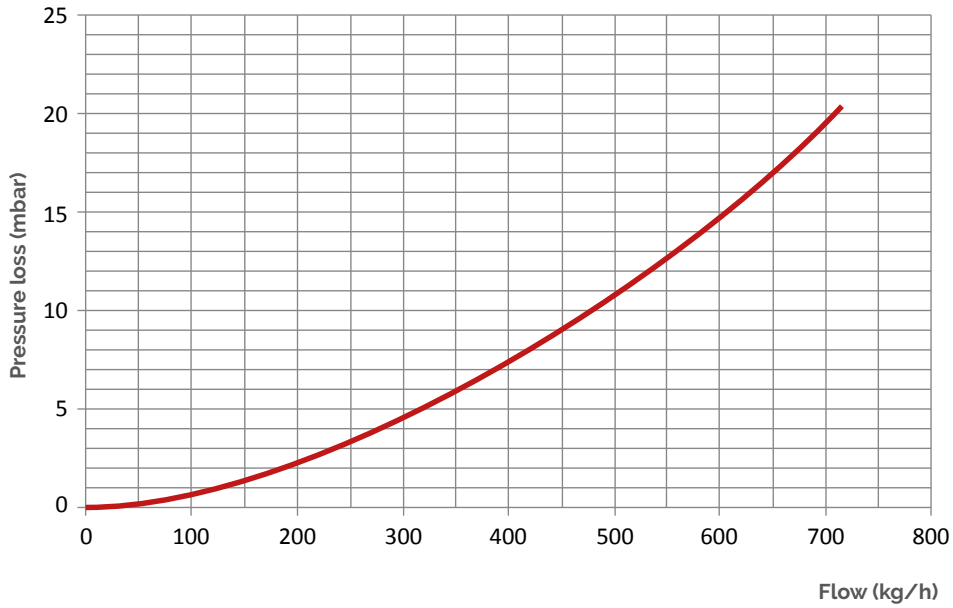


Based on pressure drop

# 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) |

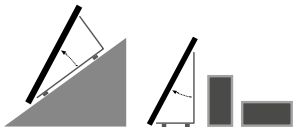
| Efficiency coefficient | Opening | Absorber |
|---|---|---|
| $\eta_0$ | 0,814 | 0,814 |
| $a_1$ | 4,061 | 4,061 |
| $a_2$ | 0,013 | 0,013 |




## 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

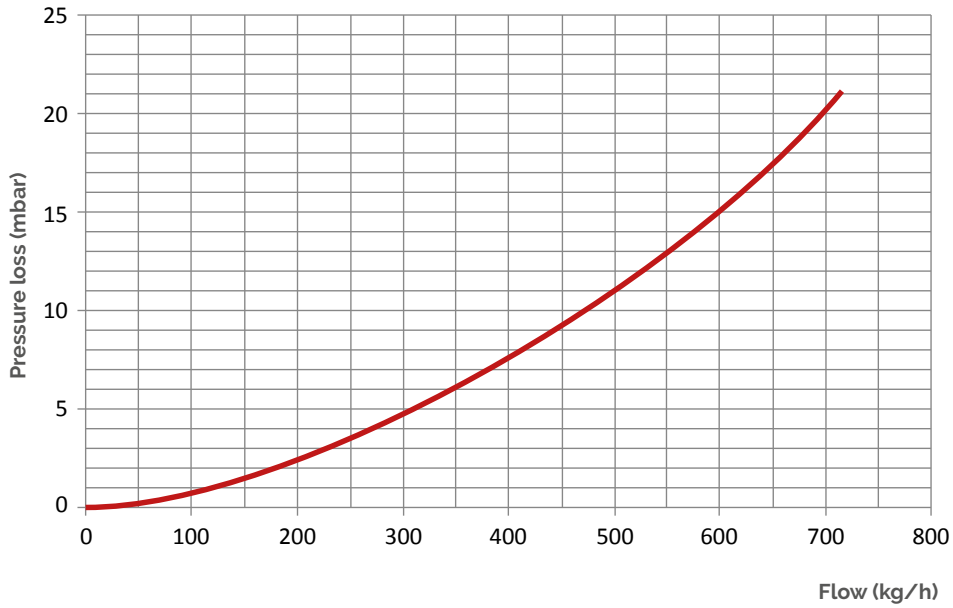


Based on pressure drop

# 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) |

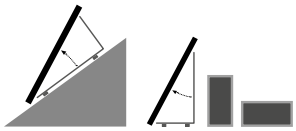
| Efficiency coefficient | Opening | Absorber |
|---|---|---|
| $\eta_0$ | 0,807 | 0,807 |
| $a_1$ | 4,04 | 4,04 |
| $a_2$ | 0,012 | 0,012 |




## Assembly



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



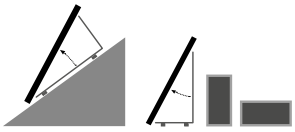
Supported
Frame for horizontal or vertical structure

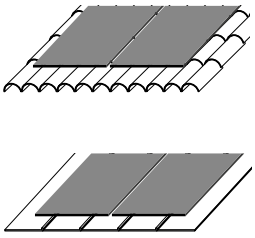
# Assembly and materials

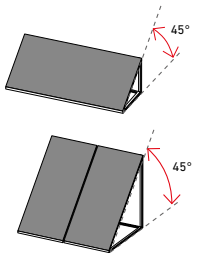
## Assembly and materials

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 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |

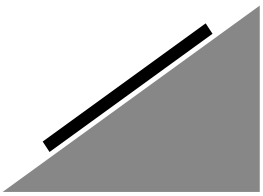
| Installation | |
|---|---|
| <br>On the roof<br>vertical/horizontal installation kit, frame and accessories | On tile<br>System for fixing the solar collector on a tiled pitched roof by means of sturdy hooks and frames.<br><br>On sheet<br>System for fixing the solar collector on a pitched sheet roof,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

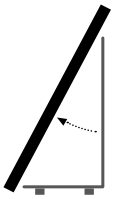




# Collector fixing systems

| 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 | |





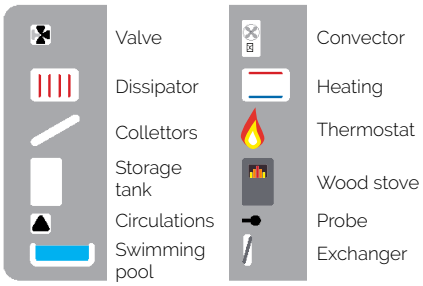
# MTDC Solar regulator

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 |

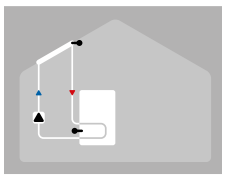
| Code | Price |
|---|---|
| C22130020 | |

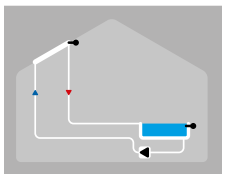


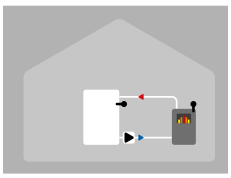



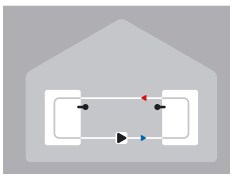

TESTED

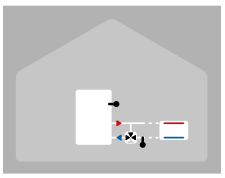
## Pre-set installations

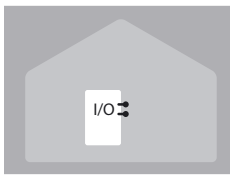

Solar + tank


Solar + pool


Wood-fired boiler with tank


Tank recharge

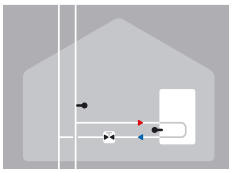

Solar with heating circuit

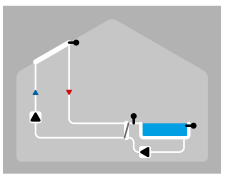


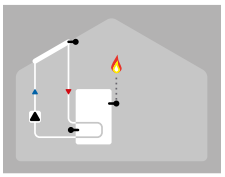
Thermostat

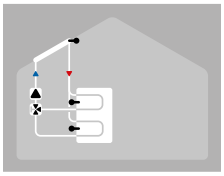


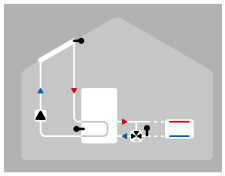
Universal temperature

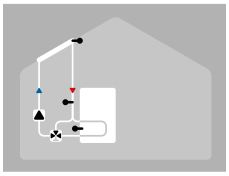

Cut-off valve

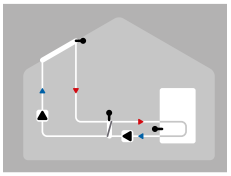

Solar with heat exchanger (sensor on secondary) and pool

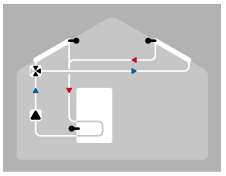

Solar with thermostat (auxiliary heating)

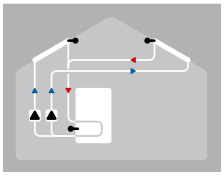

Solar with double zone tank

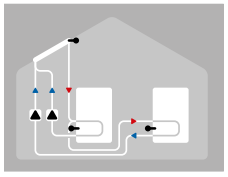

Solar with heating circuit

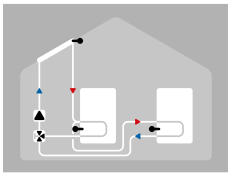

Solar with bypass

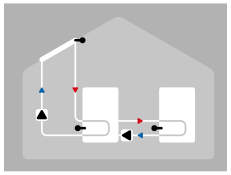

Solar with exchanger

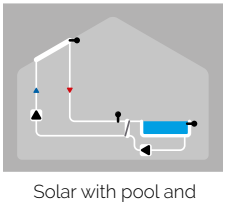

Solar with two collectors

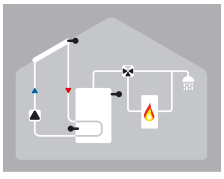

Solar with two collectors and two pumps

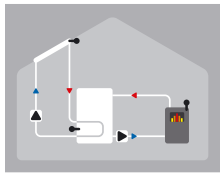

Solar with two tanks and two pumps

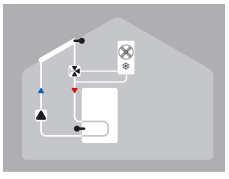

Solar with two tanks and valve

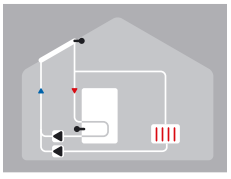

Solar with storage tank

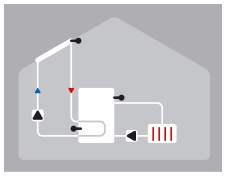

Solar with pool and exchanger


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



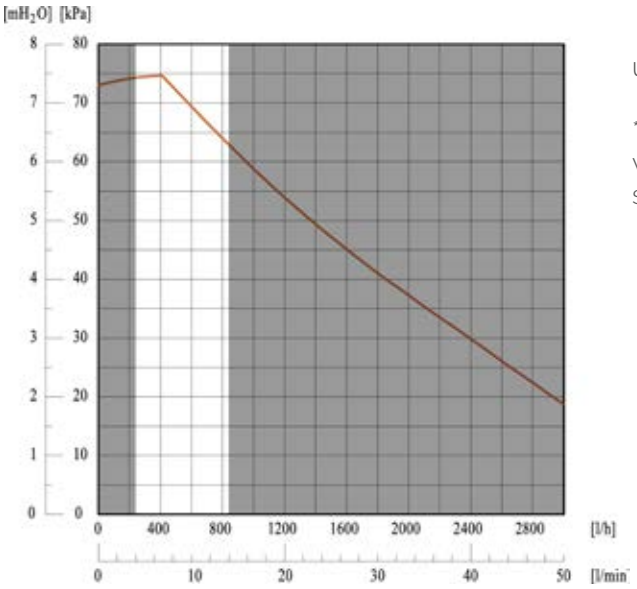

TESTED

**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

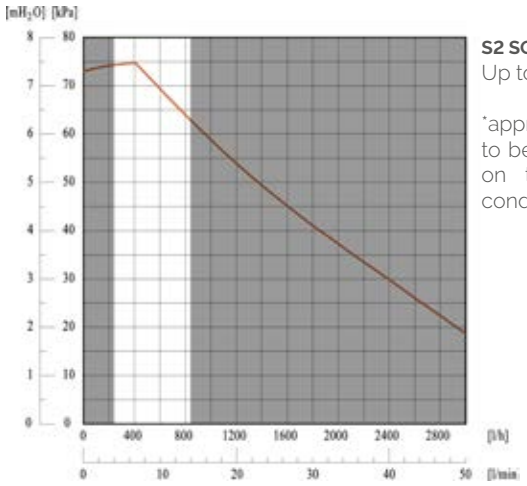



### The solar module is available in two versions depending on the flowmeter

| 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 (*) |

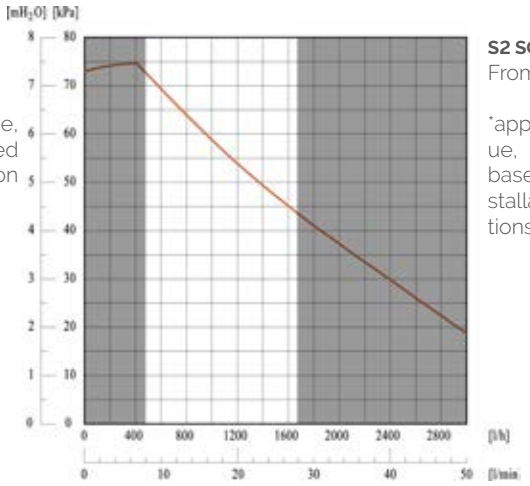
(*) For a brief period (20s) the max T is 160°C

### 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:

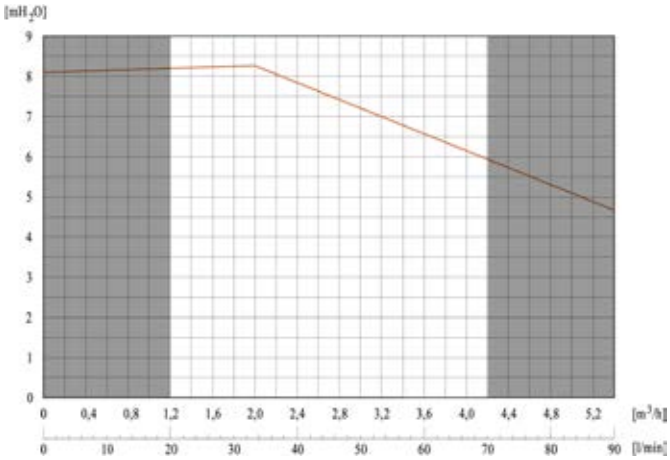
**Return:**
- Flow regulator gauge 20-70 l/min
- high efficiency synchronous solar circulator 0-10V command
- ball valve with non-return valve 18 bar (the non-return
- valve can be left out by turning the handle for 45 degrees) with a thermometer handle (thermometer with blue ring; 0°C-120°C).
- T coupling 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 | |

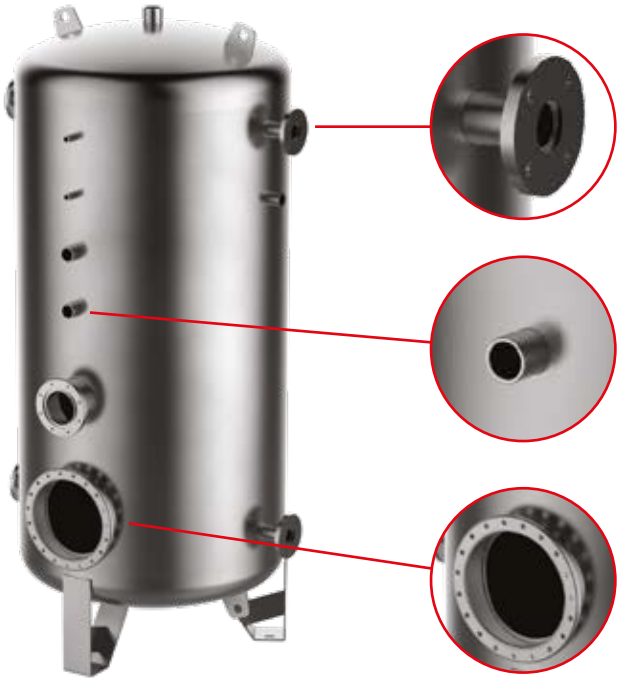
The copper coils have a gasket without cross-beam with the same diameter as the assembly plate.
The tube heat exchangers have two gaskets: one with and one without a cross-beam. Both have the same diameter as the closing head.
The blind closing heads have one gasket without cross-beam with the same diameter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

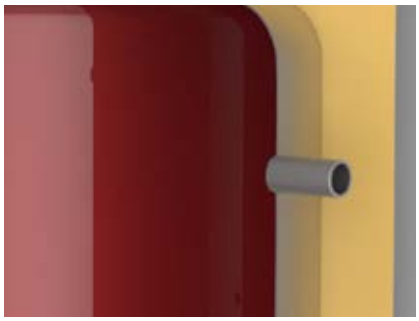
## Stainless steel

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 |

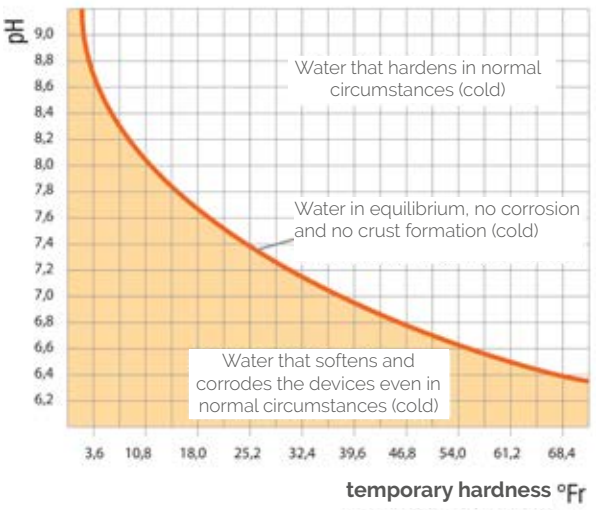
(*) The water is treated according to the Tillmann diagram to satisfy the hygienic requirements and to ensure an equilibrium (no crust formation, no hardness). The prescribed treatments (UNI 8065) cannot hinder the use of the water for food preparation and have to be carried out with the right devices. 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.

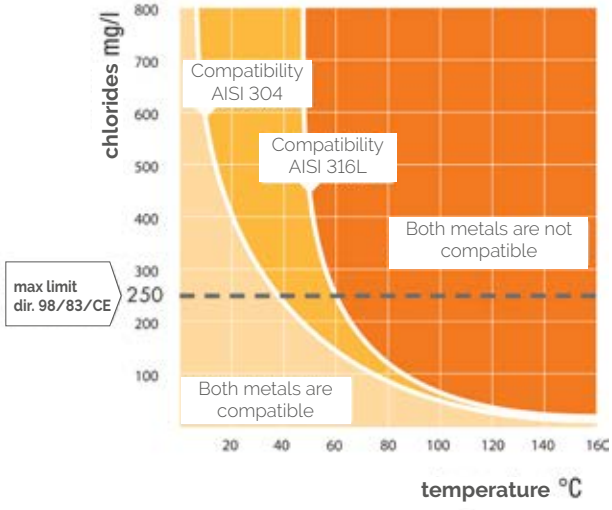
# Water and usage

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**

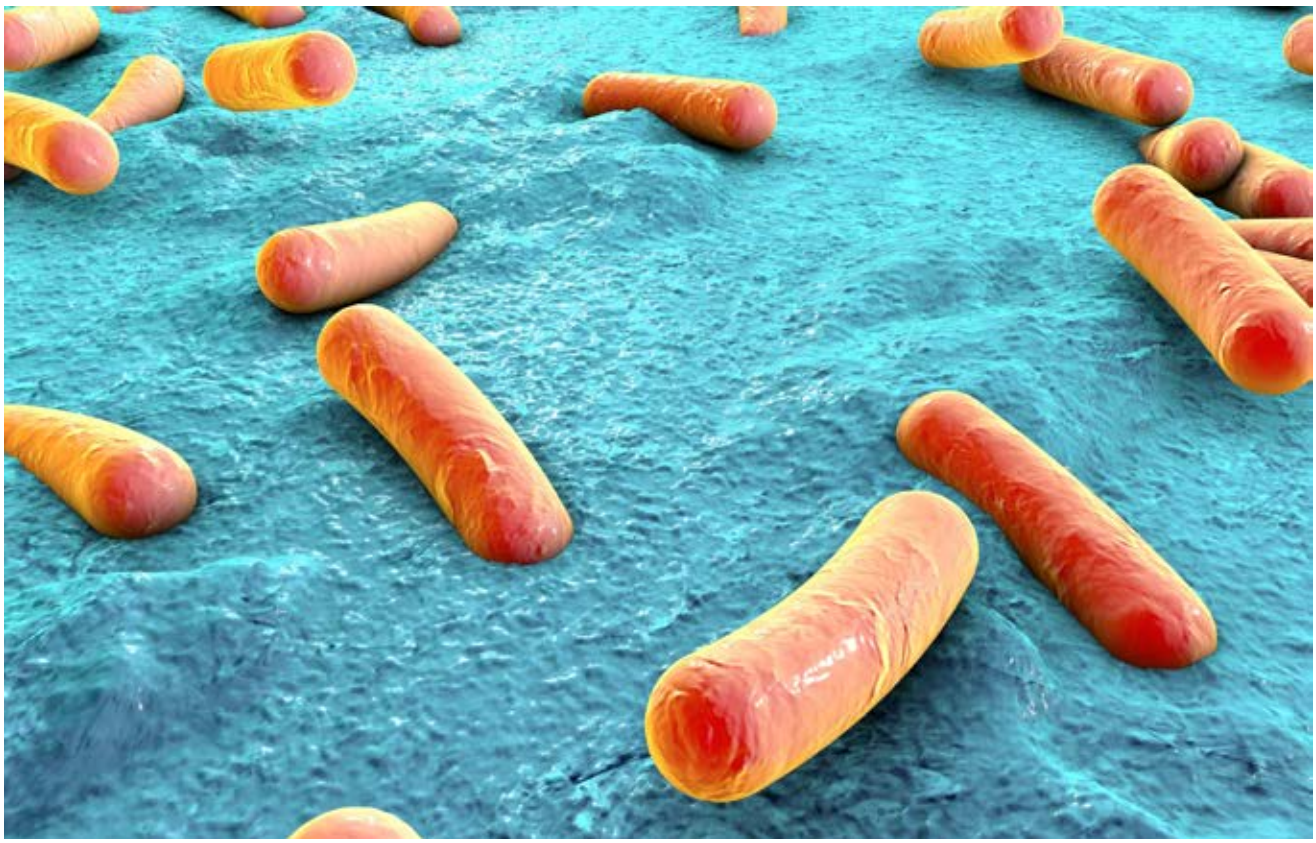
In case of central distribution, a recirculation system has to be provided. In this way the water is continuously in movement and the consequences of heat loss in case of stagnation are prevented.

**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.

# NOTES



# Pressure tanks

## Contents


■ The P.E.D Directive pag. 310

H1

P.E.D Directive
pag. 310

■ Classification chart for pressure vessels pag. 312

Classification chart
pag. 312

■ Tanks pag. 314




AC - Autoclaves
pag. 314




HP - Pressurized Autoclaves
pag. 316




AK - Compressed Air
pag. 317




AP - High Press. Compr. Air
pag. 318




VE - Expansion vessels
pag. 319




VO - Heat transfer oil
pag. 320




AV - Steam accumulator
pag. 321



# P.E.D. tested pressure tanks

## A broad range of pressurized tank, with CE mark, in accordance with the P.E.D. directive (Directive 2014/68/UE)

The products are manufactured as prescribed by the P.E.D. directive, which applies to storage tanks that have to contain dangerous fluids or fluids under high pressure and/or temperatures. The tanks are designed to meet the specific requirements for several applications: autoclaves, compressed air tanks, expansion vessels, steam accumulators and expansion vessels for heat transfer oil. They are made of carbon steel sheets, welded in an automatic process, accurately refinished and controlled and tested on the grounds of the operative circumstances of the project.

On demand, we also manufacture:

- products with customized dimensions;
- inspection holes;
- external protective treatments;
- specific insulation;
- internal protective treatments (hot dip galvanizing UNI EN1179) suited for contact with water for human consumption, external anti-rust coating, internal Teflon coating for alimentary use;
- external coatings, such as PVC finish, embossed aluminum, smooth aluminum or particular materials to be evaluated according to specifications.






# P.E.D. directive

The PED directive (Directive 2014/68/UE) regulates the design, manufacturing and conformity valuation of pressure vessels and products submitted to a maximum allowable pressure "PS" over 0.5 bar. The CE directive aims to harmonize the nationals laws in the member states that relate to the valuation of the project, the production, the testing and the conformity of the pressurized vessels and products.

The directive concerns pressure vessels, heat exchangers, steam generators, heaters, industrial piping and safety equipment, used in residential and industrial settings (oil & gas, chemical, pharmaceutics, plastic and rubber, alimentary, paper).

**Hazard category of the devices**

This is an indication of the danger level of the pressure vessels which can be divided in the following categories: Article 4 section 3, I, II, III, IV. The category is determined on the grounds of numerous factors: typology of the fluid, (dangerous and not dangerous), max allowable temperature, pressure and capacity.

According to the PED, fluids are divided in 2 categories:

**GROUP 1:**
**includes dangerous fluids**
- Explosives
- Extremely flammable fluids
- Easily flammable fluid
- Flammable fluids (where the allowed maximum temperature is above flashpoint)
- Highly toxic fluids
- Toxic fluids
- Reactive fluids

**GROUP 2: includes all fluids not listed in group 1 and therefore not considered dangerous.**
The following chart illustrates the typology of our products, in function of the used fluid and the temperature values. First you individuate the table which applies to the device in question, then you determine the hazard category of the device under the tested pressure.

**Note**
- The five tables should be consulted per line.
- The pressure vessels which are not subject to Article 4 section 3 and belong to the ≥ I category have to have the CE label in accordance with the PED directive
- **WATER, ETHYLENE GLYCOL AND PROPYLENE GLYCOL BELONG TO GROUP 2.**

# P.E.D. directive

| Category | PED | CE label | Intervention by notified body | Additional costs |
|---|---|---|---|---|
| PS ≤ 0,5 | Not applicable | No | No | No |
| Article 4 paragraph 3 | Applicable | No | No | No |
| I | Applicable | Yes | No | Yes |
| II | Applicable | Yes | Project delivery without approval | Inspection visit |
| III | Applicable | Yes | Inspection visit + project approval | Inspection visit + project approval |
| IV | Applicable | Yes | Inspection visit + project approval | Inspection visit + project approval |

**PS:** is the maximum allowed pressure, the maximum pressure for which the equipment is designed, specified by the manufacturer.

**V:** is the internal volume of a chamber, including the volume of nozzles to the first connection and excluding the volume of permanent internal parts.

**ARTICLE 4 PARAGRAPH 3:** the pressure equipment belongs to category <I and therefore should not bear the CE mark according to PED.

Note: please consult the technical department
- If a vessel is composed of several compartments, or if one compartment contains several fluids.
- If the fluid is different from those listed in NOTE 1.
- If the equipment belongs to a category ≥ I.
- If a vessel contains pressure equipment which belongs to a category ≥ I.
- In case of doubt or uncertainty.

# Tables for classification of pressure vessels

## According to the Pressure Equipment Directive 2014/68/UE

### Index

| Type of pressure equipment | Fluid | Temperature | Table to consult |
|---|---|---|---|
| Tanks and plate heat exchangers | Water | ≤110 | 4 |
| Tanks and plate heat exchangers | Steam or superheated water | >110 | 2 |
| Tube bundle exchangers | Water | ≤110 | 4 |
| Tube bundle exchangers | Steam or superheated water | >110 | 2 |
| Steam generators | Steam or superheated water | >110 | 5 |
| Tanks and plate heat exchangers | Water, ethylene and propylene glycol | ≤110 | 4 |
| Tanks and plate heat exchangers | Water, ethylene and propylene glycol | >110 | 2 |
| Tanks and plate heat exchangers | Freon and dangerous gases | | 1 |
| Autoclaves | Nitrogen or other non-dangerous gases | | 2 |
| Autoclaves | Dangerous gases | | 1 |

### Table 1 – Pressure vessels

| V<br>l | PS<br>bar | PS x V | Category |
|---|---|---|---|
| 0,1 < V ≤ 1 | 0,5 < PS < 200 | | Article 4 paragraph 3 |
| 0,1 < V < 1 | 200 < PS ≤ 1000 | | III |
| 0,1 < V < 1 | PS > 1000 | | IV |
| 1 < V ≤ 50 | PS > 0,5 | PS x V ≤ 25 | Article 4 paragraph 3 |
| 1 < V < 100 | PS > 0,5 | 25 < PS x V ≤ 50 | I |
| 1 < V < 400 | PS > 0,5 | 50 < PS x V ≤ 200 | II |
| 1 < V < 2000 | 0,5 < PS < 1000 | 200 < PS x V ≤ 1000 | III |
| V > 1 | PS > 0,5 | PS x V > 1000 | IV |

### Table 2 – Pressure vessels

| V<br>l | PS<br>bar | PS x V | Category |
|---|---|---|---|
| 0,1 < V ≤ 1 | 0,5 < PS < 1000 | | Article 4 paragraph 3 |
| 0,1 < V ≤ 1 | 1000 < PS < 3000 | | III |
| 0,1 < V ≤ 1 | PS > 3000 | | IV |
| 1 < V ≤ 100 | PS > 0,5 | PS x V ≤ 50 | Article 4 paragraph 3 |
| 1 < V ≤ 400 | PS > 0,5 | 50 < PS x V ≤ 200 | I |
| 1 < V < 750 | PS > 0,5 | 1000 < PS x V ≤ 3000 | III |
| 1 < V ≤ 750 | PS > 0,5 | PS x V > 3000 | IV |
| V > 750 | 0,5 < PS < 4 | | III |
| V > 750 | PS > 4 | | IV |
| 1 < V ≤ 2000 | PS > 0,5 | 200 ≤ PS x V ≤ 1000 | II |

# Tables for classification of pressure vessels

## According to the Pressure Equipment Directive 2014/68/UE

**Table 3 – Pressure vessels**

| V<br>l | PS<br>bar | PS x V | Category |
|---|---|---|---|
| 0,1 < V ≤ 1 | 0,5 < PS < 500 | | Article 4 paragraph 3 |
| 0,1 < V ≤ 1 | PS > 500 | | II |
| V > 1 | 200 < PS ≤ 500 | | II |
| V > 1 | PS > 500 | | III |
| V > 20 | 0,5 < PS ≤ 10 | PS x V > 200 | I |
| 1 < V ≤ 400 | PS > 0,5 | PS x V ≤ 200 | Article 4 paragraph 3 |
| V > 1 | 10 < PS ≤ 200 | PS x V > 200 | II |

**Table 4 – Pressure vessels**

| V<br>l | PS<br>bar | PS x V | Category |
|---|---|---|---|
| 0,1 < V ≤ 10 | 10 < PS < 1000 | | Article 4 paragraph 3 |
| 0,1 < V < 10 | PS > 1000 | | I |
| V > 0,1 | 0,5 < PS ≤ 10 | | Article 4 paragraph 3 |
| V ≥ 10 | PS > 1000 | | II |
| 10 < V < 20 | 500 < PS ≤ 1000 | PS x V > 10000 | II |
| 10 < V < 1000 | PS > 10 | PS x V ≤ 10000 | Article 4 paragraph 3 |
| V > 20 | 10 < PS ≤ 500 | PS x V > 10000 | I |

**Table 5 – Steam or superheated water at temperatures above 110°C**

| V<br>l | PS<br>bar | PS x V | Category |
|---|---|---|---|
| 0,1 < V ≤ 2 | PS > 0,5 | | Article 4 paragraph 3 |
| 2 < V < 100 | 0,5 < PS < 25 | PS x V ≤ 50 | I |
| V > 2 | 25 < PS < 32 | PS x V ≤ 200 | II |
| V > 2 | PS > 32 | | IV |
| | 0,5 < PS < 25 | 50 < PS x V ≤ 200 | II |
| | 3 ≤ PS ≤ 32 | PS x V > 3000 | IV |
| V < 1000 | 0,5 < PS < 32 | 200 < PS x V ≤ 3000 | III |
| V > 1000 | 0,5 < PS < 3 | | IV |

# P.E.D. tested autoclaves 6/8/12 bar AC series

Fiorini autoclaves are designed for lifting and distributing water under pressure. They are intended to form a lung of pressurized water which, if properly sized, serves to limit the number of start-ups of the pump. They are used to ensure perfect water distribution in the upper floors of buildings making up possible shortcomings of water aqueducts.

The models, with CE label, have capacities of 300 up to 20.000 litres in both the vertical and horizontal version with 6, 8 or 12 bar.

✔ **Materials:** carbon steel
✔ **Protective treatment:** hot dip galvanizing and external coating
✔ **Operative conditions:** the storage tanks have a max pressure of 6,8 or 12 bar and operating temperatures from -10°C to 50°C

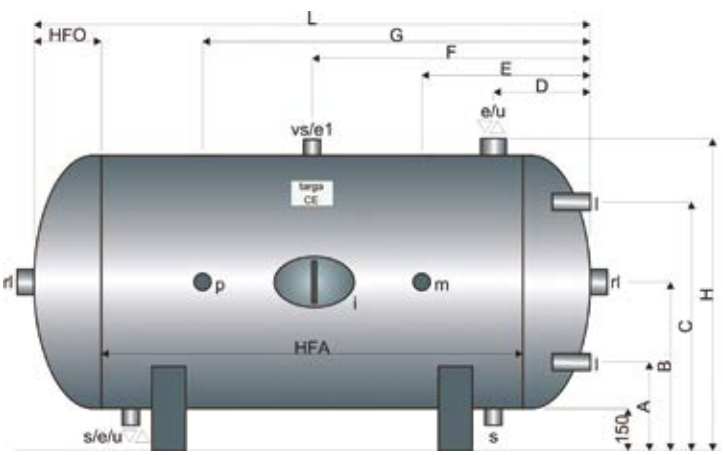
**Special versions:** the AC storage tanks can be modified on demand in order to meet your specific requirements

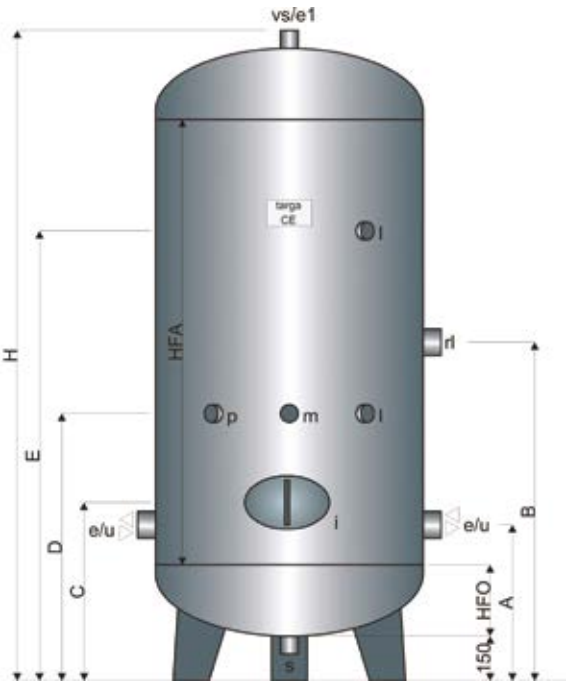



TESTED

## Connections

| | |
|---|---|
| s | Drain |
| vs | Safety valve |
| m | Pressure gauge |
| p | Pressure controller |
| i | Inspection hole |
| e | Water inlet |
| u | Water outlet |
| e1 | Air inlet |
| l | Level |
| rl | Level regulator |



# P.E.D. tested autoclaves 6/8/12 bar AC series

## Vertical

| Capacity l | Ø mm | HFO mm | HFA mm | A mm | B mm | C mm | D mm | E mm | H mm | peso kg | e/u (*) inch | l/m/p (*) inch | rl/vs/s/e1 (*) inch | i mm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 500 | 165 | 1250 | 415 | 940 | 465 | 715 | 1415 | 1760 | 75 | 1 | 1/2 | 1 1/4 | * |
| 500 | 650 | 200 | 1250 | 450 | 975 | 500 | 750 | 1450 | 1830 | 101 | 1 1/2 | 1/2 | 1 1/4 | * |
| 800 | 800 | 240 | 1250 | 490 | 1015 | 540 | 790 | 1490 | 1910 | 136 | 2 | 1/2 | 1 1/4 | * |
| 1000 | 800 | 240 | 1650 | 490 | 1215 | 540 | 990 | 1890 | 2310 | 162 | 2 | 1/2 | 1 1/4 | * |
| 1500 | 950 | 280 | 1750 | 530 | 1305 | 580 | 1030 | 2030 | 2490 | 232 | 2 | 1/2 | 1 1/4 | * |
| 2000 | 1100 | 310 | 1750 | 560 | 1335 | 610 | 1060 | 2060 | 2550 | 274 | 2 | 1/2 | 1 1/4 | */** |
| 3000 | 1250 | 350 | 2000 | 620 | 1500 | 650 | 1200 | 2200 | 2880 | 466 | 2 1/2 | 1/2 | 1 1/4 | */** |
| 4000 | 1400 | 390 | 2000 | 740 | 1540 | 690 | 1240 | 2240 | 2960 | 541 | 3 | 1/2 | 1 1/4 | */**/*** |
| 5000 | 1450 | 410 | 2500 | 760 | 1810 | 710 | 1360 | 2360 | 3500 | 646 | 3 | 1/2 | 1 1/4 | */**/*** |
| 6000 | 1450 | 410 | 3000 | 760 | 2060 | 710 | 1360 | 2860 | 4000 | 767 | 3 | 1/2 | 1 1/4 | */**/*** |
| 8000 | 1650 | 460 | 3000 | 830 | 2110 | 860 | 1410 | 2910 | 4100 | 1090 | 4 | 1/2 | 1 1/4 | */**/*** |
| 10000 | 1650 | 460 | 4000 | 830 | 2610 | 860 | 1610 | 3110 | 5100 | 1318 | 4 | 1/2 | 1 1/4 | */**/*** |
| 15000 | 2000 | 550 | 4000 | 920 | 2700 | 1000 | 1700 | 3200 | 5280 | 2016 | 4 | 1/2 | 1 1/4 | 300x400 |
| 20000 | 2000 | 550 | 5500 | 920 | 3450 | 1000 | 1700 | 3700 | 6780 | 2513 | 4 | 1/2 | 1 1/4 | 300x400 |

## Horizontal

| Cap. l | Ø mm | HFO mm | HFA mm | A mm | B mm | C mm | D mm | E mm | F mm | G mm | H mm | L mm | peso kg | e/u (*) inch | l/m/p (*) inch | rl/vs/s/e1 (*) inch | i mm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 500 | 165 | 1250 | 220 | 400 | 580 | 265 | 265 | 790 | 1315 | 680 | 1580 | 75 | 1 | 1/2 | 1 1/4 | * |
| 500 | 650 | 200 | 1250 | 250 | 475 | 700 | 300 | 300 | 825 | 1350 | 830 | 1650 | 101 | 1 1/2 | 1/2 | 1 1/4 | * |
| 800 | 800 | 240 | 1250 | 325 | 550 | 775 | 340 | 340 | 865 | 1390 | 980 | 1730 | 136 | 2 | 1/2 | 1 1/4 | * |
| 1000 | 800 | 240 | 1650 | 250 | 550 | 850 | 340 | 340 | 1065 | 1790 | 980 | 2130 | 162 | 2 | 1/2 | 1 1/4 | * |
| 1500 | 950 | 280 | 1750 | 295 | 625 | 955 | 380 | 380 | 1155 | 1930 | 1130 | 2310 | 232 | 2 | 1/2 | 1 1/4 | * |
| 2000 | 1100 | 310 | 1750 | 315 | 700 | 1085 | 410 | 410 | 1185 | 1960 | 1280 | 2370 | 274 | 2 | 1/2 | 1 1/4 | */** |
| 3000 | 1250 | 350 | 2000 | 338 | 775 | 1213 | 470 | 470 | 1350 | 2230 | 1430 | 2700 | 466 | 2 1/2 | 1/2 | 1 1/4 | */** |
| 4000 | 1400 | 390 | 2000 | 360 | 850 | 1340 | 590 | 590 | 1390 | 2190 | 1580 | 2780 | 541 | 3 | 1/2 | 1 1/4 | */**/*** |
| 5000 | 1450 | 410 | 2500 | 375 | 875 | 1375 | 610 | 610 | 1660 | 2710 | 1630 | 3320 | 646 | 3 | 1/2 | 1 1/4 | */**/*** |
| 6000 | 1450 | 410 | 3000 | 375 | 875 | 1375 | 610 | 610 | 1910 | 3210 | 1630 | 3820 | 767 | 3 | 1/2 | 1 1/4 | */**/*** |
| 8000 | 1650 | 460 | 3000 | 425 | 975 | 1525 | 680 | 680 | 1960 | 3240 | 1830 | 3920 | 1090 | 4 | 1/2 | 1 1/4 | */**/*** |
| 10000 | 1650 | 460 | 4000 | 425 | 975 | 1525 | 680 | 680 | 2460 | 4240 | 1830 | 4920 | 1318 | 4 | 1/2 | 1 1/4 | */**/*** |
| 15000 | 2000 | 550 | 4000 | 450 | 1150 | 1850 | 770 | 770 | 2550 | 4330 | 2180 | 5100 | 2016 | 4 | 1/2 | 1 1/4 | 300x400 |
| 20000 | 2000 | 550 | 5500 | 450 | 1150 | 1850 | 770 | 770 | 3300 | 5830 | 2180 | 6600 | 2513 | 4 | 1/2 | 1 1/4 | 300x400 |

Inspection hole on request * 100x150; ** 220x320; *** 300x400

# P.E.D. tested pressurized autoclaves 16–64 bar - HP series

The “HP” series consists of pressurized autoclaves, used in industrial installations to maintain constant pressure or to absorb water hammering.

The HP gamma is different from the AC series because of the max operating pressure which is higher in the HP series. The models, with CE label, are available in several capacities in function of the max operating pressure:
16 bar version: 100 up to 10.000 litres
18 bar version 100 up to 5.000 litres
20 bar version: 4.000 up to 10.000 litres
25 bar version: 100 up to 9.500 litres
30 bar version: 800 up to 6.000 litres
35 bar version: 100 up to 3.000 litres
64 bar version: 100 up to 1.000 litres




✔ **Material:** carbon steel
✔ **Protective treatment:** hot dip galvanizing and external coating
✔ **Operative conditions:** the storage tanks have a max pressure of 16, 18, 25, 30, 35, 64 bar and operating temperatures from -10°C to 50°C

**Special versions**: the HP storage tanks can be modified on demand in order to meet your specific requirements






# P.E.D. tested pressurized air tanks 8, 11, 12 bar – AK series




The AK pressurized air tanks are indispensable in systems that distribute compressed air. The tanks guarantee a constant flow, reduce the compressor start-ups and ensure a stable pressure in the entire distribution net to compensate consumption peaks (ex. Installations assembled in series). The models, with CE label, are available in capacities of 300 up to 20.000 litres in the vertical, the horizontal, the 8 bar, the 11 bar, the 12 bar, the galvanized and the varnished version.

✔ **Material:** carbon steel
✔ **Protective treatment:** hot dip galvanizing and external coating
✔ **Operative conditions:** the storage tanks have a max pressure of 8, 11 and 12 bar and operating temperatures from -10°C to +50°C

**Special versions:** the AK storage tanks can be modified on demand in order to meet your specific requirements








## Download additional content

go.fiorinigroup.it/eng/content

fiorini

Fiorini Industries S.r.l.
Ph. +39 0543 723197 – Fax +39 0543 720413
Via Zampeschi 119 – 47122 Forlì (FC) – Italy
**www.fiorini-industries.com**