inipi

CATALOGUE
PRICE LIST

25

Do you want to have the Fiorini price list always updated?

Scan the QR Code within the catalogue

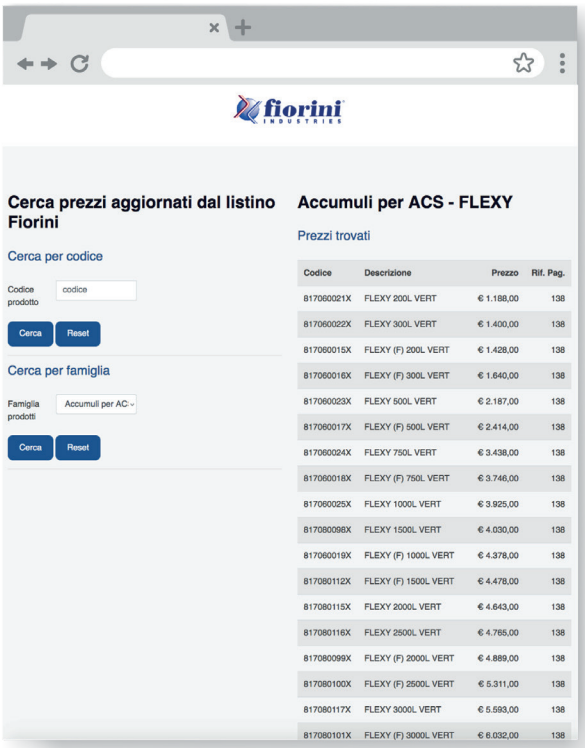


The Fiorini price list is accessible via mobile phone or tablet, without registration, by directly accessing the website link: **go.fiorinigroup.it/pr**
Search for the desired product by code or commercial name.

Otherwise, you can access directly from the catalog. Find the product page whose price you want to know:

- if you are looking at the printed catalog, frame etc
- if you are looking at the online catalog, click on the QR Code to be redirected to the online price list page.

Do you have any doubts about the procedure?
From the Fiorini reserved area of the website you can download the pdf with the procedure described step-by-step, or you can contact us for support.



fiorini INDUSTRIES

Via Zampeschi 119 – 47121 Forlì (FC) – Italy
Ph. +39 0543 723197 – Fax +39 0543 720413
www.fiorini-industries.com

fiorini INDUSTRIES

Catalogue – Price List 2025

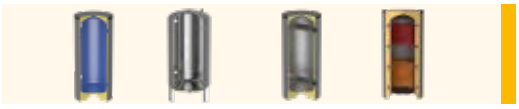

fiorini
fiorini

Contents


Company Profile pag. 5


Tailored Solutions pag. 13

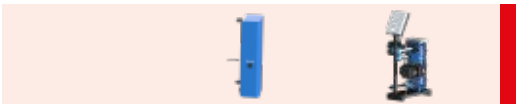

Plate Heat Exchangers pag. 25


Inertial Tanks pag. 63


Hydronic Kits pag. 109

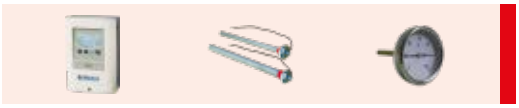

Domestic Hot Water Storages pag. 153


Indirect Water Heater pag. 169


DHW Fast Heaters pag. 211

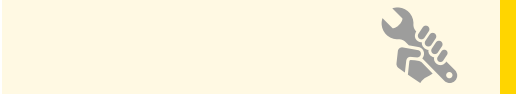

DHW Fresh Water Stations pag. 227


Thermal Solar Systems pag. 275


DHW Accessories pag. 293


Pressure Tanks pag. 307


Heat Pump Systems pag. 323


After-Sales Info pag. 361


fiorini
fiorini
fiorini
fiorini
fiorini
fiorini
INDUSTRIES



Paving the way towards the future

For over 40 years we have aimed to transfer our values to our clients by designing and realising high quality and trustworthy products for both the residential and the industrial sector.

Our hard work has yielded us a leadership role in Italy and abroad. Especially, in designing and producing thermo-technical systems such as heating and conditioning systems, domestic hot water systems and heat exchangers.

All our products are handcraft with attention to the client's requirements, quality and detail. Moreover, every product is tested in order to guarantee long-term reliability.

To ensure a steadfast improvement of our products we constantly invest in innovation. As a result, our products are high-performance, efficient, energy saving and practical.

The aim is to design and build hydronic products and systems for each specific need, investing in the research of technologically innovative and customized solutions and supporting our customers with a continuous consultancy activity, from the design phase to the management and maintenance phase.

Experience and competence are two core points of Fiorini and the other companies that are part of the Fiorini Industries group. As such, we design and realize solutions based on the use and integration of various energy sources. In this way, we are capable of answering the costumer's demand, which is becoming more diverse and complex.

fiorini INDUSTRIES

General Terms of Sale

go.fiorinigroup.it/eng/condizionivendita

Business Sectors

Fiorini produces a complete range of products covering all needs in the HVAC&R industry, using a synergistic and modular approach, from the supply of individual components through to the development of fully equipped systems. Its distribution strategy contemplates the extension of its international coverage by way of long-term agreements with qualified distributors and manufacturers in the HVAC&R industry.



Designer

- EPC
- Medium EPC
- Professional
- Associated Studio
- Other

Dealer

- Solutions Provider
- Wholesaler
- Spare Parts Dealer
- Service
- Other

Plant Engineer

- EPC
- Food&Pharma
- Installer
- Plant Engineering
- Other

OEM

- Food&Pharma
- Oil&Gas
- Hydraulics
- Refrigeration
- Heating
- Other

Industry

- Energy
- Food&Pharma
- MetalWorking
- Naval
- Petrochemicals
- Other

Other Segments

- Trade Agent
- Integrated Contractor
- Public Authority
- Heat Manager
- Tourism
- Other

Our certificates
An added value for our clients and partners

To the Fiorini group, certificates are a proof of responsibility towards the clients, the partners, the community and the territory. It springs from the awareness that our activity cannot come before the guidelines and the expectations of the stakeholders.

Whoever chooses for Fiorini products, chooses a company which:

✔ **ensures clarity and transparency** towards the client by explicitly communicating every production and sales detail. This facilitates the operational management of the products (ex. estimates and order confirmations are send with a detailed description of the product, the delivery date, the transport measure, technical drawings with indications of the different uses, dimension schemes and other possible details);



TESTED

✔ **testes every single product.** Every product is provided with a Certificate of Conformity and Testing and our qualitative management system guarantees the correct execution of every process in accordance with the defined standards;



✔ **constantly invests in research on innovative solutions and on the improvement** of the products' performance, focussing on both quality and cost reduction;

✔ **realises qualitative products** which also positively influence our clients' projects;

✔ **operates with a respect for people, the environment and the territory;**



✔ **invests in training** on subjects such as health, occupational safety and environmental sustainability. Our staff is kept up to date on the binding rules and on how to share best practices;

✔ **assures competence, reliability and personalized solutions.**

We have implemented international management systems and standards that have been recognised with numerous certificates.

Integrated management system

Member of CISQ Federation
CERTIFIED MANAGEMENT SYSTEM
ISO 9001 - ISO 14001
ISO 45001

Fiorini Industries S.r.l. believes that the quality, protection of the environment, the reliability and originality of its products, the ability to listen to the Customer (both internal and external) and the protection of the Health and Safety of workers and end users of its products are the foundation of corporate competitiveness. With this in mind, the Management has activated an integrated Quality, Environment and Safety management system internally, in accordance with the UNI EN ISO 9001, 14001 and UNI ISO 45001 and Directive 2014/68/EU (PED) standards, committing itself to maintaining and improving continuous performance.

Certificate for Quality management – ISO 9001

The system for quality management, which is certified in accordance with the ISO 9001 norm, has been in force in our company for years. It implicates a structured and complete analysis of every activity and the best planning and rationalizing of all operational processes. This implies:

✔ keeping the highest levels of efficiency and effectiveness;
✔ the timely control of the internal operational costs;
✔ constant attention to the requirements and the expectations of the client.

We want to satisfy all requirements and expectations of the clients, ensuring profitable working conditions and high standards. Moreover, we want to contribute to the reputation of the entire supply chain of the bids we are a part of, also on an international level.

We have implemented a management system focused on quality, which we apply to all of our daily business activities. Our purpose is to come up with solutions for specific problems, such as problems with deadlines, and to satisfy the expressed and unexpressed needs of both our internal and external clients.

Certificate for Environmental Management System – ISO 14001

In 2011, we have been awarded the Certificate for an Environmental Management System ISO 14001. This means that our company works within the parameters imposed through some rules. We operate with respect for the environment and limit air pollution. Moreover, with our general approach to efficient and sustainable products and production systems, **we are continuously trying to improve the environmental management in order to globally improve our performance.**

Certification for Health and Safety on the workfloor ISO 45001

In 2015, we have been awarded the ISO 45001 certificate. This is the result of Fiorini's effort to proactively protect the health and safety of its own workers and to guarantee conformity to all laws.

WRAS Approved Material

The company has obtained the WRAS Approved Material certificate, which confirms the compliance of the materials used in the vitrification and Teflon coating processes of tanks and hatch seals with the high safety standards for contact with drinking water.
Regarding the heat exchanger line, the gaskets are also compliant with the WRAS Approved Material standards. Combined with the 316L stainless steel plates, the product is entirely composed of materials suitable for sanitary use.
The adoption of WRAS-approved materials ensures compliance with European and international regulations, reaffirming the company's commitment to offering safe and high-performance solutions.

Certificate for designing and producing pressurized devices

In 2014 we have been awarded another certificate: **the certificate for designing and producing pressurized devices** conform to the 2014/68/UE directive (PED pressure equipment directive) which guarantees the ability of designing and producing:

✔ tanks
✔ heat exchangers
✔ collectors

which are produced to contain liquids and gas, also those which are classified as dangerous, up to those of the highest risk category described by the directive (risk category IV)

In particular, we have obtained the module H1 for surveillance, which **recognizes the quality** of the specific techniques and verifies the design process, the production processes and the testing procedures for all types of tanks, also those which are in the risk category. This gives the client the **guarantee they are acquiring a product which was designed and produced in accordance with criteria** for performance, but also for safety and durableness.



Insulations

During the last two years, following the new ERP directive, we have updated our products, equipping them with advanced insulation and dedicated to the specific capacity. Thanks to this, we are now able to offer tanks and systems with higher energy classes using different combinations of insulating materials. Below you will find the most used materials in the insulation of our products:

1. EPS+PS: GRAPHIC POLYSTYRENE + POLYESTER FIBER

Innovative insulation with graphite particles inserted into the polystyrene, to improve energy efficiency, perfect for the accumulations of DHW and Buffer tanks, as the polyester fiber stems the thermal bridges, due to the numerous connections.

✔ REMOVABLE

2. PE+PU-F: POLYETHYLENE EXPANDED WITH CLOSED CELLS + POLYURETHANE EXPANDED FLEXIBLE

Insulation consisting of the combination of two materials to achieve maximum energy efficiency.

✔ REMOVABLE for HOT solutions,

✔ NOT REMOVABLE (inner layer) for HOT/COLD solutions

3. PE+PS: POLYETHYLENE EXPANDED WITH CLOSED CELLS + POLYESTER FIBER

Insulation consisting of the combination of two materials to achieve maximum energy efficiency.

✔ REMOVABLE for HOT solutions,

✔ NOT REMOVABLE (inner layer) for HOT/COLD solutions

4. PU-F: FLEXIBLE EXPANDED POLYURETHANE

Excellent solution for efficiency in small sizes and for ease of assembly in large sizes.

✔ REMOVABLE

5. PU-R: HIGH DENSITY EXPANDED POLYURETHANE

The high density foaming of Fiorini is excellent for both hot and chilled water.

✔ NOT REMOVABLE

6. PE: CLOSED CELL POLYETHYLENE

Insulation for chilled water, avoids condensation.

✔ NOT REMOVABLE

7. PS:POLYESTER FIBER

The polyester fiber in addition to being a sound-absorbing material is also a thermal insulator with high performance characteristics.

✔ REMOVABLE



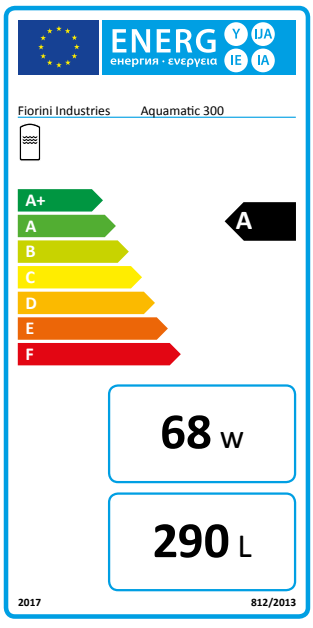
Energy label
Energy related Products (ErP)

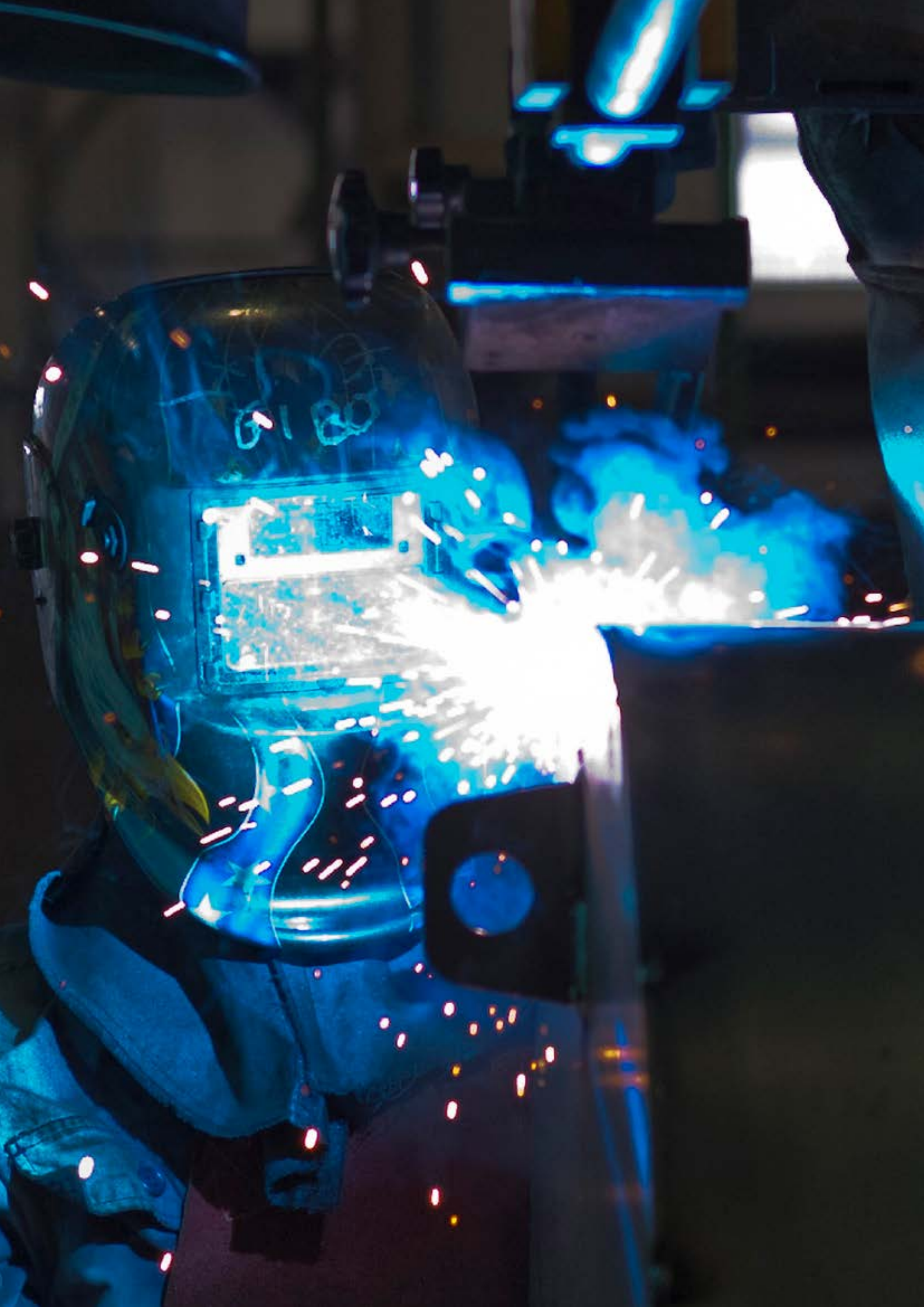
All of our products for heating and producing DHW meet the measures required for reducing energy consumption, as is established by Ecodesign Directive 2009/125/EC. This will help the European Union achieve the targets established in the 20-20-20 Plan: these aim to cut CO2 emissions by 20%, increase the use of renewable energy by 20%, and increase energy efficiency by 20%, all by 2020. Our products are provided with energy class labels and technical data sheets (where expected) that specify the energy performance and the class of efficiency in a simple and straightforward manner. Thanks to this identification, both consumers and expert users can select solutions that are the most efficient and are most suitable for their needs. Starting in September 2017, the new Energy Efficiency Standard requires that, for tanks up to 2,000 litres designed to contain hot water, the minimum required energy class is Class C. Thanks to important innovations in its insulation methods, Fiorini respects what is indicated in the specific Directive. The products for which an energy label is, at the moment, not mandatory are also designed and produced with the same criteria, in order to meet maximum efficiency and energy saving requirements.

Product and system label

The energy label for the product indicates product performance in terms of consumption, and the system label identifies the efficiency specifications of the heating and/or cooling system based on a scale expressed in Energy Classes from A+ to F. This label must be affixed to each single product and it is the responsibility of the retailer to make it clearly visible. The energy labels on our products/systems contain the following information:

I. company name and brand
II. model identification number
III. reference to heating functions for the premises and DHW
IV. efficiency class
V. nominal thermal power of the machine and/or dispersion (in relation to product type)
VI. sound level in dB (only on system label)
VII. possibility of system running on off-hours (only on system label)

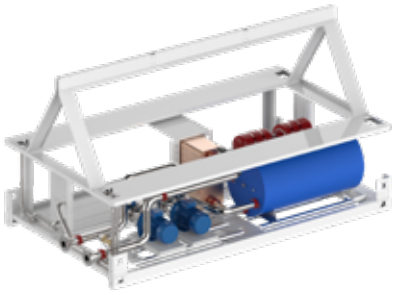




Tailored solutions

Contents

■ Tailored solutions



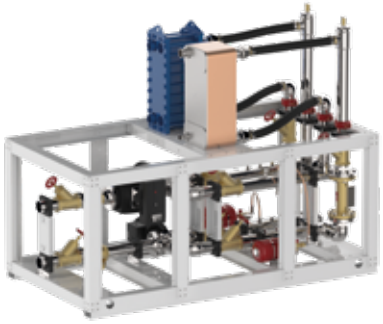
Chiller Integrated Hydronic Kits
pag. 16



Free Cooling Station
pag. 17



Heat Pumps Test Bench
pag. 18



Heat Recovery System
pag. 20



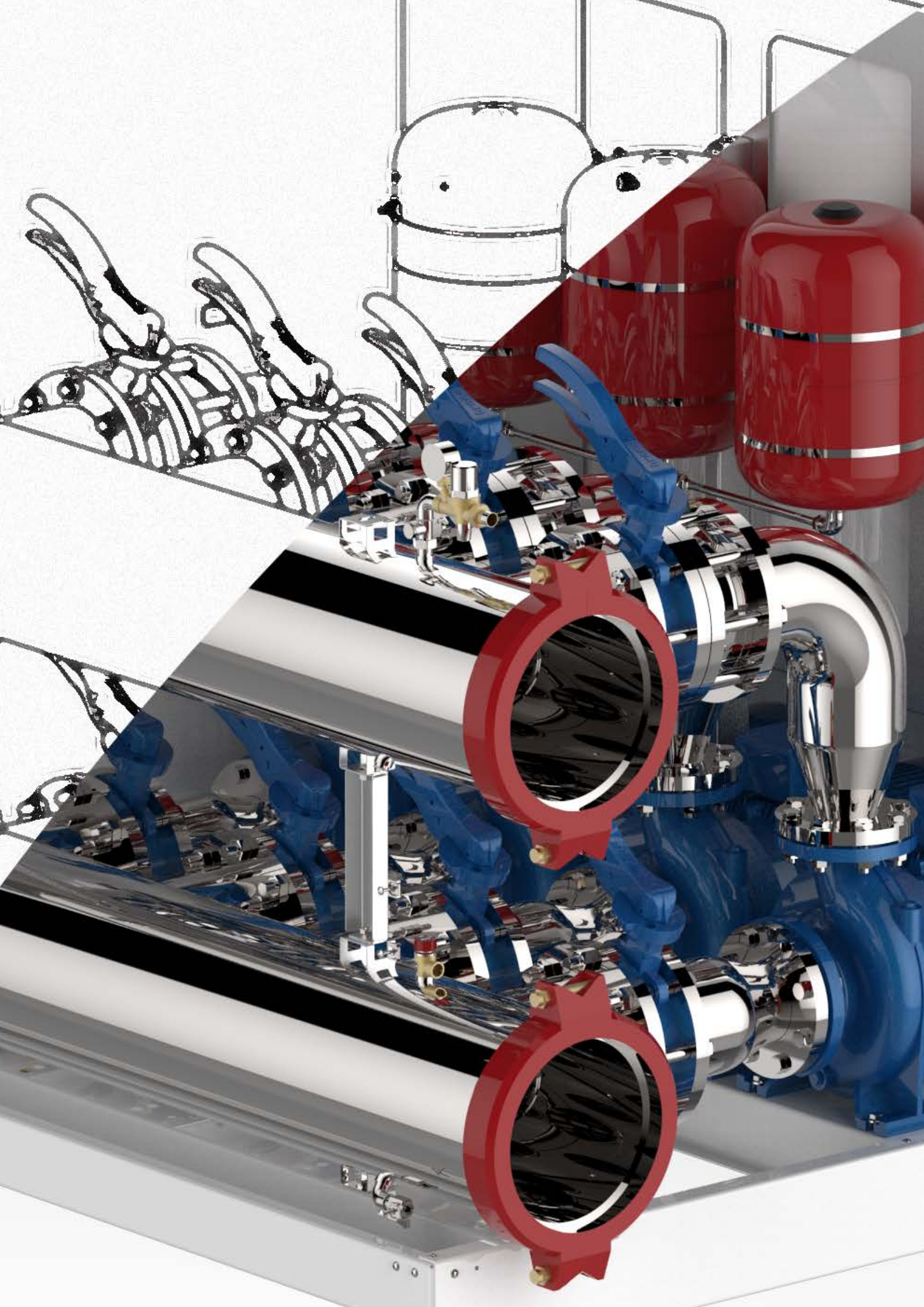
Skid
pag. 21



Powerful Hydronic Kits
pag. 22



Large-Sized Tanks
pag. 23



A wealth of innovative capabilities and customized solutions

Since 1979, Fiorini Industries has aimed its development strategy towards an integrated policy of innovation and cutting-edge solutions and technologies, also investing in personalized solutions and customized components and systems.

Today, the company is a reference point for the design and production of thermo-technical products, such as heat exchangers, tanks, heaters, water supply modules and heat transfer units, cooling units, heat pumps, and it is also Europe's top manufacturer of hydronic systems for heating and cooling.

Fiorini Industries is partnered with major industrial groups in the cooling and heating sector, which operate worldwide and for which a research team carries out studies and proposes "customized" solutions, both for products and also processes, while handling all the phases of design, industrialization, and testing.

Fiorini Industries is the select manufacturer of integrated heating, cooling, and hot water production systems in the field of heat exchange high technology, based on the use of renewable sources, such as solar heating, hybrid solar photovoltaic, low-enthalpy geothermal, and conventional sources, as well.

Customized projects for the manufacturers

Constant research and innovative solutions for multinational corporations, which operate in major industrial sectors, have given the company a leadership role in technology and in the market, also extending its presence on an international level.

Our client support ranges from the stages of design and leads to the production of components for complex systems and production processes that include hot and/or cooled water management cycles.

Fiorini Industries has created numerous special projects for public and private clients operating in various production sectors, including the series of pump skids installed in the world's largest aluminum production plant in Saudi Arabia and the hydronic kits created for one of the world's largest gas treatment plants in Abu Dhabi.

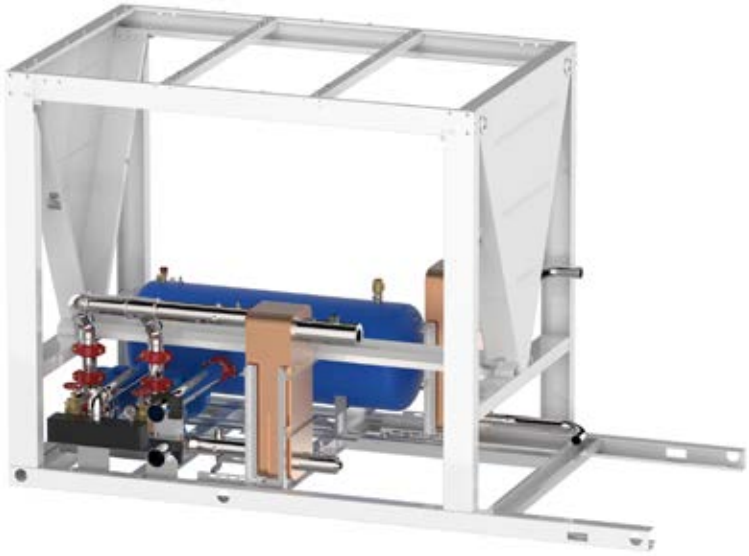
This is also supported by the production in series of many lines of products, such as:

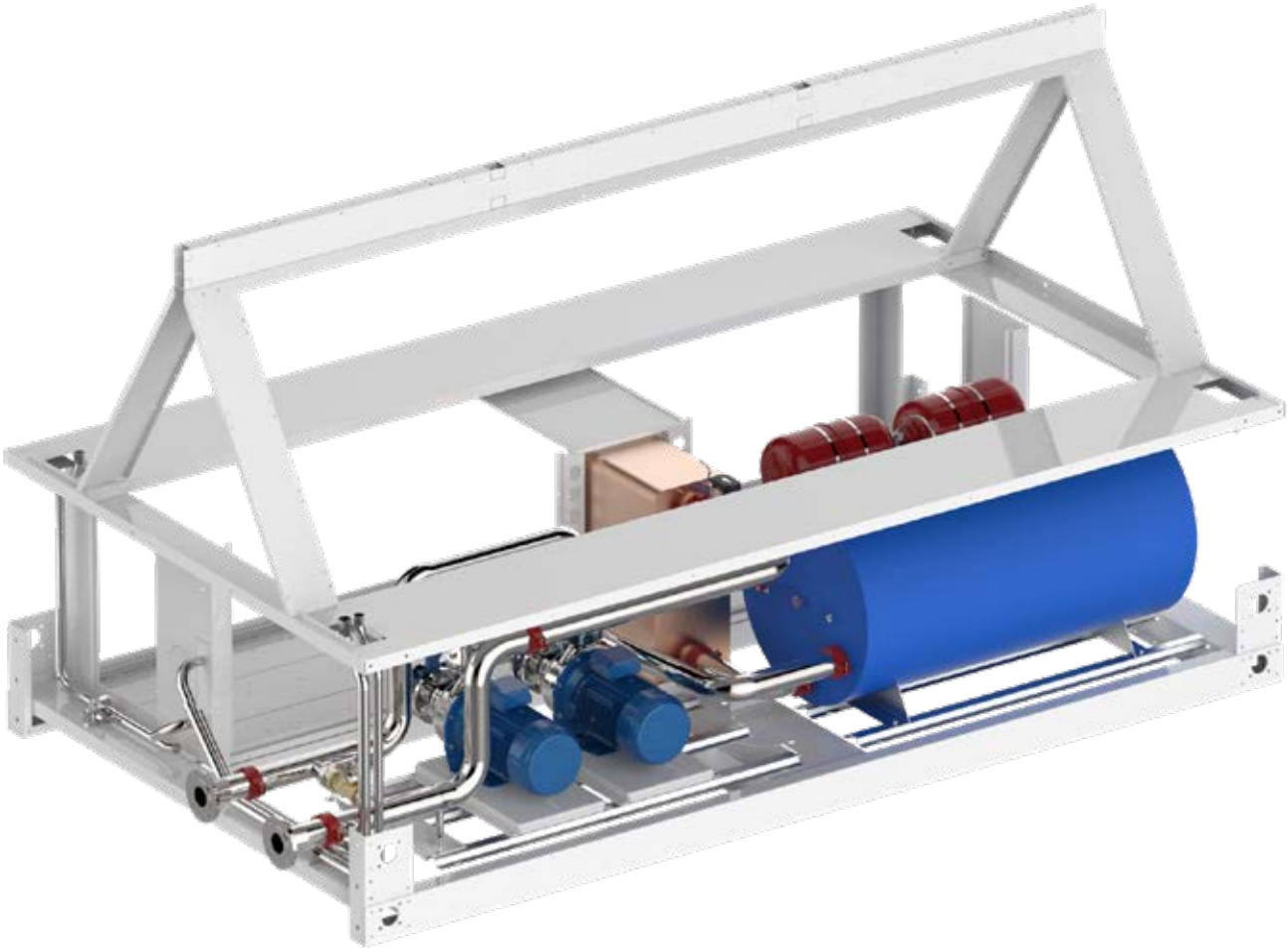
- gasketed and braze-welded plate heat exchangers
- district heating substations
- fast preparation units and instantaneous DHW units
- polyvalent heaters and water storage tanks, heat storage units
- tanks and autoclaves tested under pressure
- heat recovery systems
- hydronic kits for storing and distributing cooled water designed for refrigeration machines, chillers, and heat pumps
- cooled water tanks
- inertial storage tanks

Chiller Integrated Hydronic Kits

Hydronic kits for storing and distributing cooled water, designed to be installed inside refrigeration machines. The company designs and manufactures customized systems upon client specifications and industrialized solutions that are applied within numerous production processes. In addition to the complete solutions shown here, the company also manufactures: collectors, piping, tanks and accessory parts, etc.







Free cooling stations and no-glycol modules

Pre-assembled, factory-tested modules equipped with components selectable according to project requirements. The main variables include:

- Inspectable or brazed plate heat exchanger
- One or more pumps for the primary or secondary circuit, available as single or double pumps, with or without an inverter or electronic regulation.
- Equipped with an electrical control panel for powering and protecting electrical components, with the option for remote control.
- They are designed for plug-and-play integration with chillers, always including electrical and hydraulic connections.

The applications are numerous, ranging from industrial uses, such as chemical and food processing plants, to the cooling of data centers and operational rooms hosting servers and high-performance computing centers requiring refrigeration.

Non-glycol modules are specifically used to separate glycol circuits from water circuits, preventing glycol circulation within the system.



Free cooling stations are equipped with an electromechanical mixing valve for regulation, leveraging free cooling — using external air temperature as a cooling source — for increased efficiency.

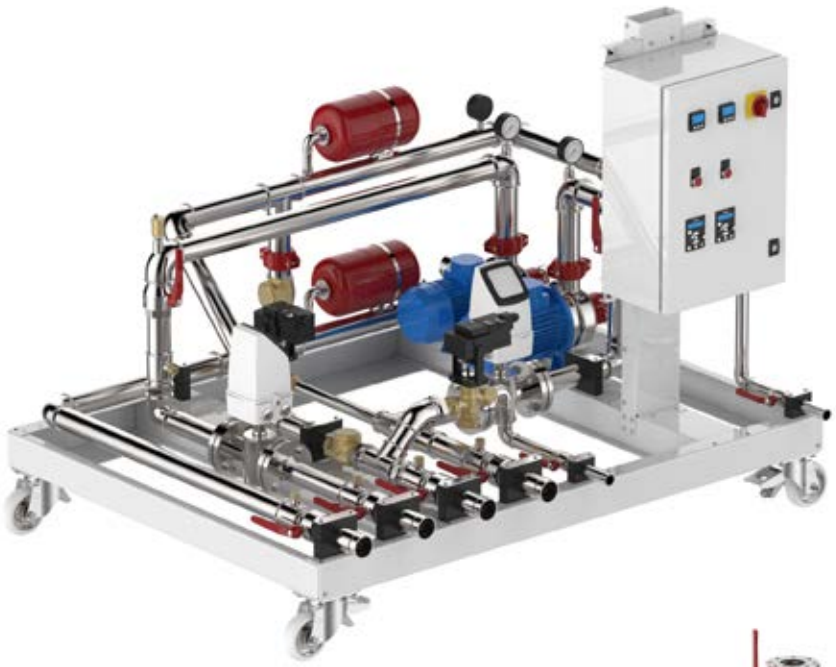




Heat Pumps Test Bench

One of the most qualifying aspects of the company's "custom" design is the large number of stations for hydraulic "chiller" testing for large conditioning systems; produced on manufacturing specifications for major commissioners worldwide. These solutions, designed for testing the end of the factory line, allow the quality assessment of hydraulic and functional water chiller of air and water cooled systems. Each station is produced according to specific functional and insertion requirements within production lines. The testing station in the pictures is designed for a new plant in Malaysia for the production of large air-conditioning systems in key hotels, industrial and commercial centres in the "Far East". Based on specific customer and plant technical requirements, it reproduces operating conditions in terms of water flow rate and operating temperature and is a plant with great testing potential.

Realized in compact monoblock, it contributes to the optimization of space and is functional to integration in this specific production line.



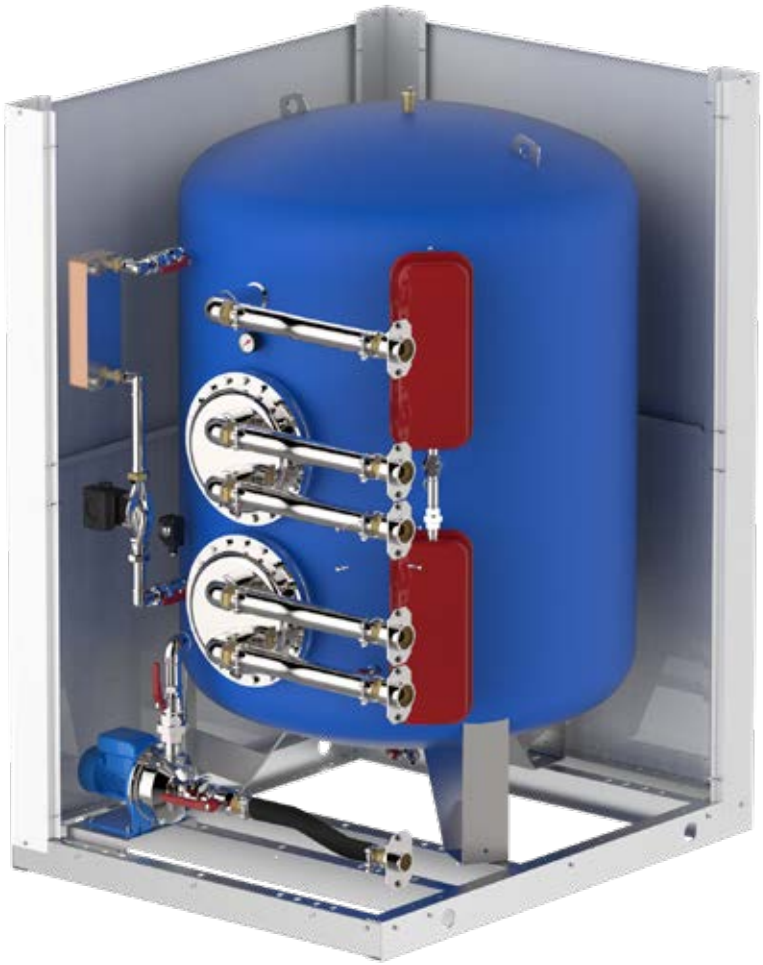


Heat Pumps Test Bench

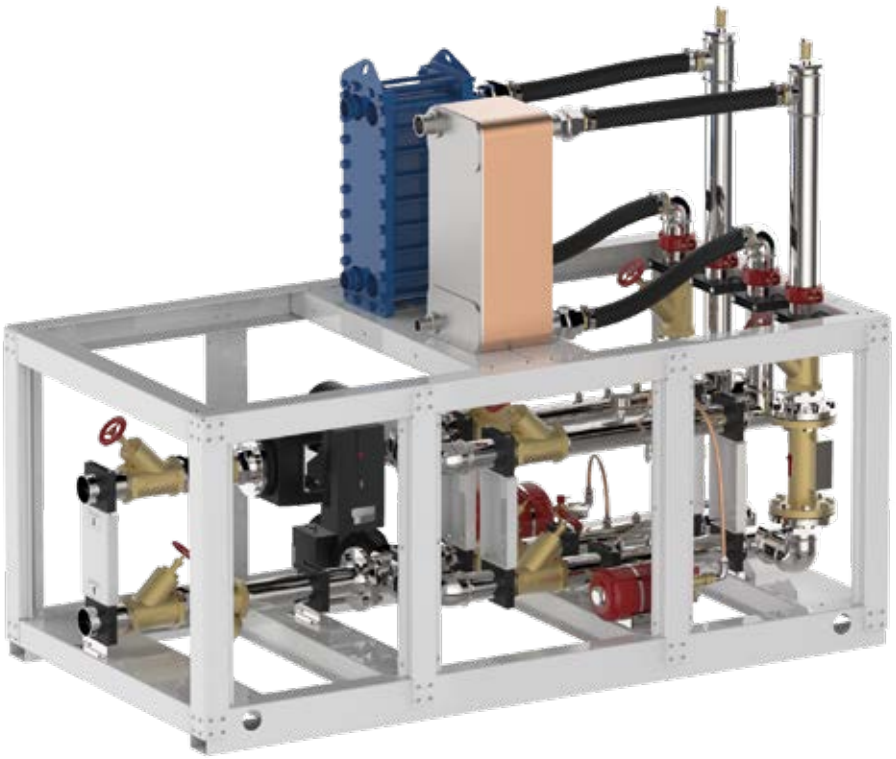




Heat Recovery System

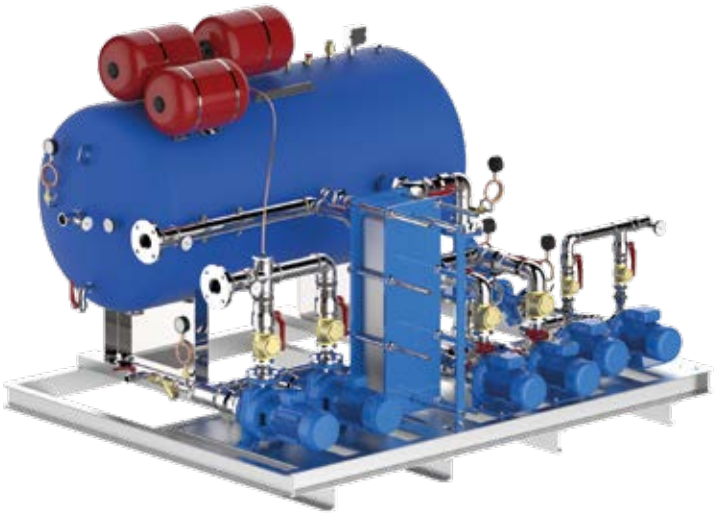


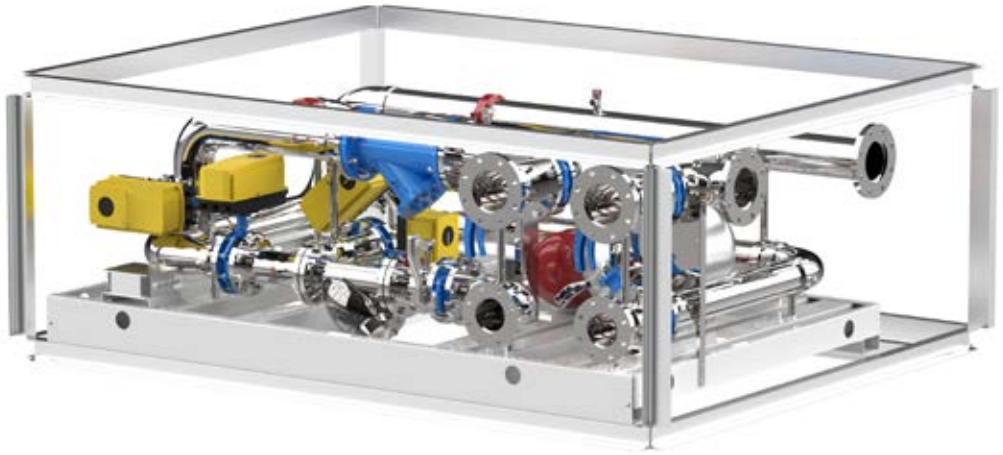
Integrated systems for recovering the heat,developed and not used, by heating plants and production processes. “Extra” heat energy is recovered to heat domestic or non-domestic water and “reused” when required. Designs are customized to meet all customer requests/needs.



Skid

A wide range of solutions for industrial plants and processes.
Small and medium-sized skid systems, equipped with electric panels and, where required, control units, all ready to be installed inside a single system through simple hydraulic and electrical connections.





Glycol Loading Group

The glycol loading groups are fully pre-assembled and factory-tested units designed for the automatic and controlled filling of hydronic systems with water-glycol mixtures. Equipped with an electric pump, expansion tank, pressure switch, and single-phase control panel, these groups ensure precise fluid dosing and quick system startup. The atmospheric pressure tank, complete with a filling valve, level indicator, and drainage system, ensures safe and reliable operation.



Powerful Hydronic Kits

Multiple pumps Hydronic kits for high power applications in heating and cooling plant, to optimize costs for first installation and subsequent maintenance. Pumps can work with on-off logic or driven by inverter.

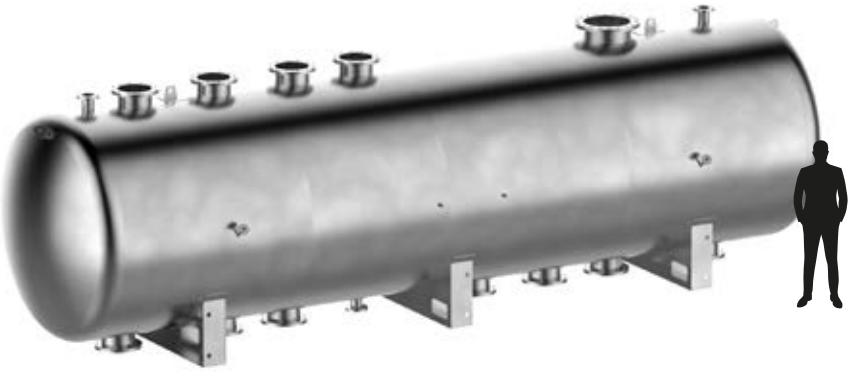




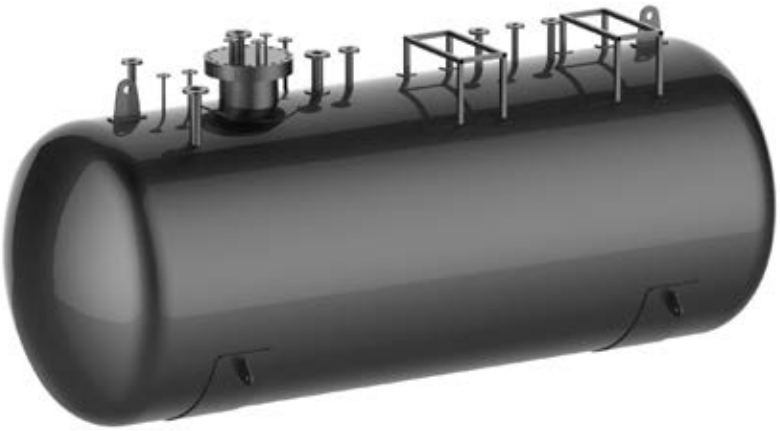


Large-Sized Tanks

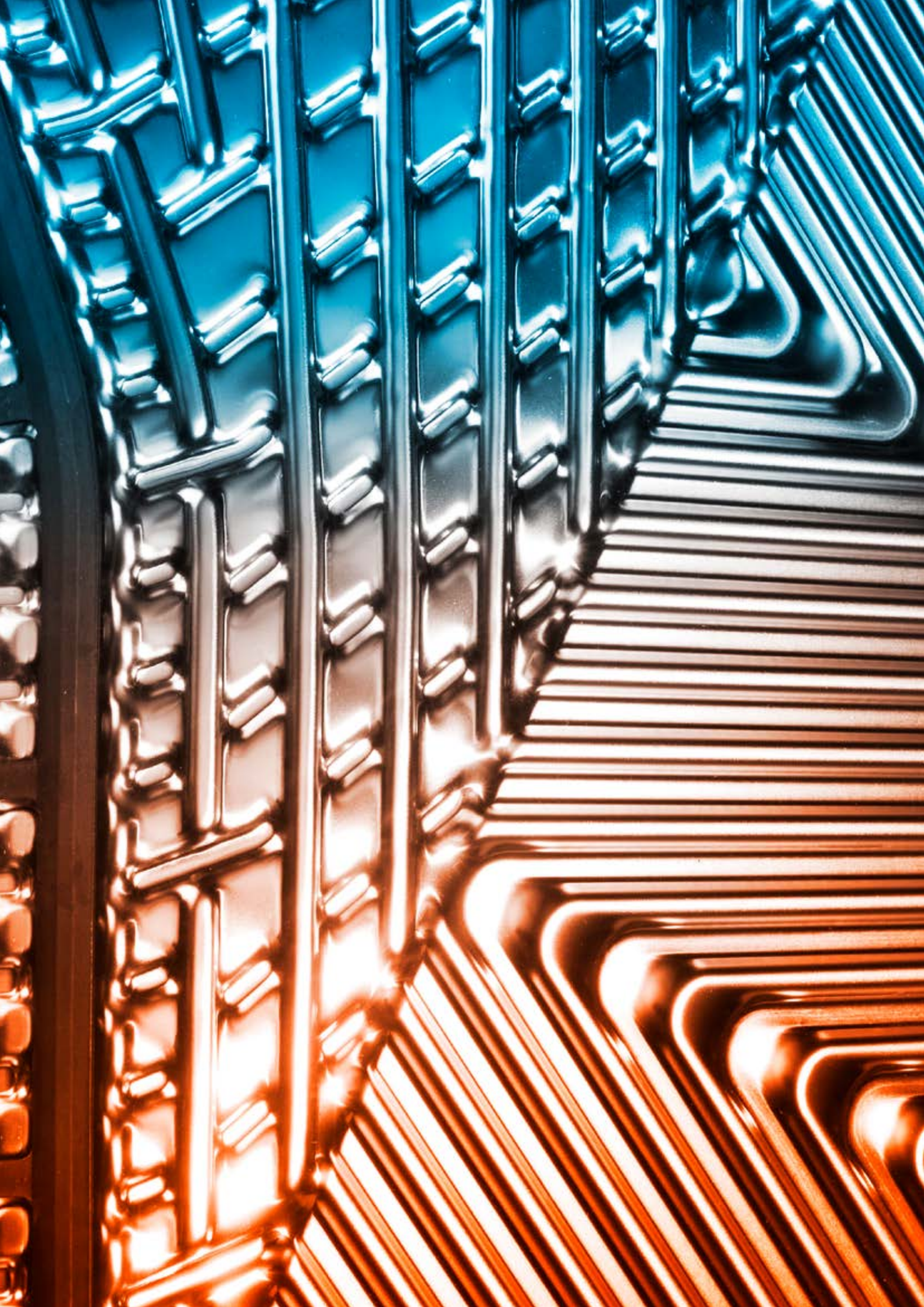
Production of large-sized tanks for external or "underground" installation. Available on vertical, horizontal execution and with fullest freedom regarding materials and connections. Can be EC marked, in compliance with Directive PED 2014/68/EU.











Gasketed and brazed plate heat exchangers

Contents

Gasketed plate heat exchangers pag. 28



Range
pag. 32



Fluid/material compatibility
pag. 35



Accessories
pag. 37



Tables for fast selection
pag. 38

Brazed plate heat exchangers pag. 47



Range
pag. 48



Accessories
pag. 49



Tables for fast selection
pag. 50

Installation solutions pag. 58



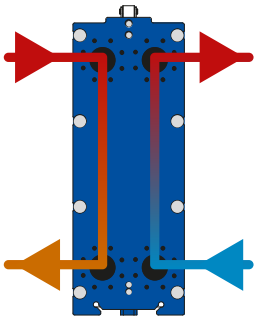
Installation solutions
pag. 58

Data collection for exchanger selection pag. 61



Form
pag. 61

PHE DESIGNER



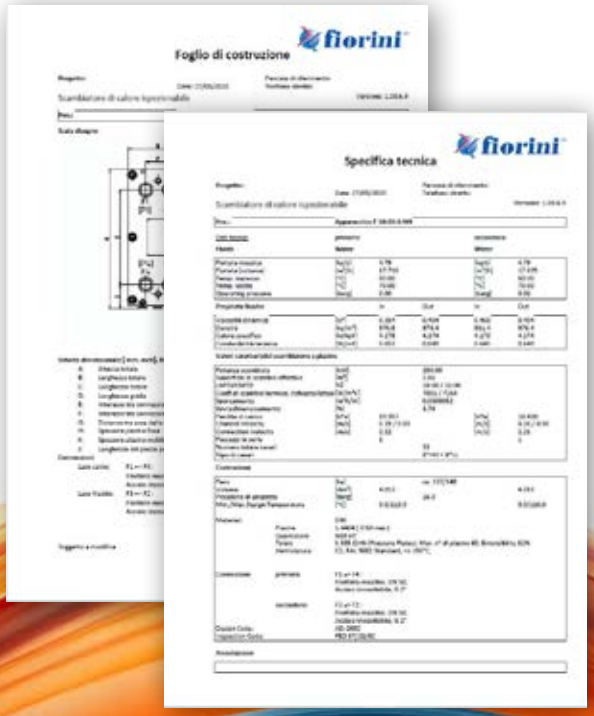
An advanced tool for sizing inspectable plate heat exchangers for your project.

Thanks to precise simulations of thermodynamic models, PHE Designer quickly analyzes all possible combinations of sizes and plate configurations, identifying the ideal solution for every application.



Key Advantages of PHE Designer

- ✔ **Speed:** Fast calculations to identify the optimal configuration.
- ✔ **Accuracy:** Considers thermodynamic parameters and design constraints to maximize efficiency.
- ✔ **Flexibility:** Supports a wide range of fluids and operating conditions.
- ✔ **Simplicity:** Intuitive interface for easy management of input and output data.
- ✔ **Cost-effectiveness:** Reduces costs by offering tailored solutions with appropriate materials.
- ✔ **Functionality:** Instantly generates the heat exchanger specification document, complete with dimensions.



Download PHE Designer now

from the reserved area of
Fiorini Industries.

go.fiorinigroup.it/eng/login

Gasketed and brazed plate heat exchangers

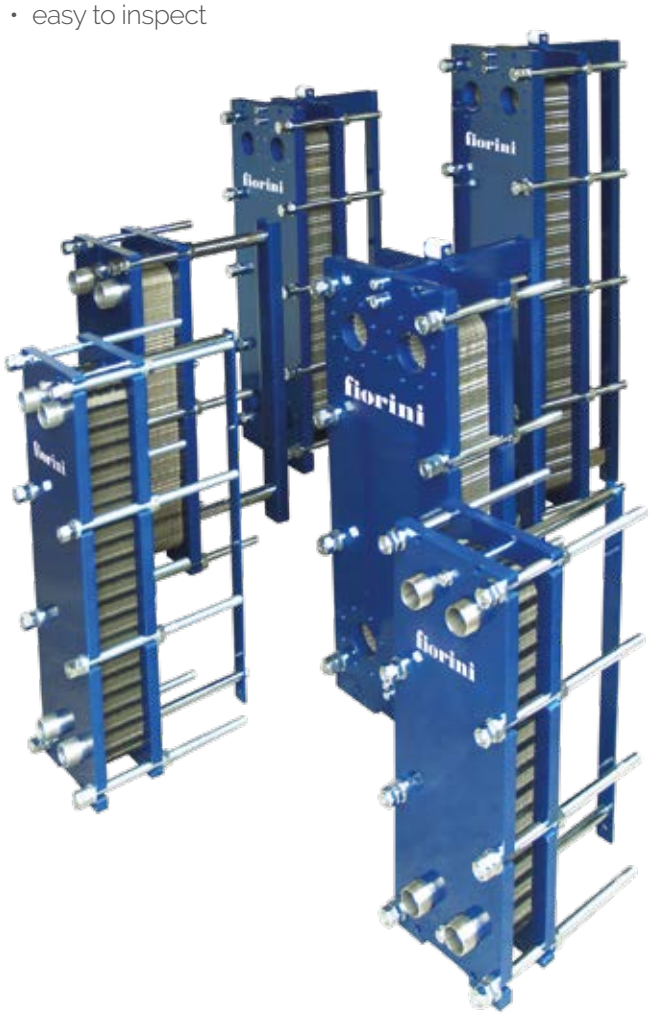
Customized and efficient options for all your requirements for heat exchanging

The gasketed plate heat exchangers (K and F series) and brazed plate heat exchangers (P series) are the option for someone who demands efficiency and trustworthiness. Our thirty years' experience in this sector makes it possible to meet every requirement, in a residential as well as an industrial setting. We guarantee support during the design phase, the installation phase and after sale.

Gasketed exchangers

Our gasketed plate heat exchangers have the following features:

- designed to improve the exchange performance and to reduce and simplify the maintenance operations;
- use of high quality materials which can be paired with a wider range of fluids and applications;
- custom made production
- design of modular and customized solutions;
- easy to inspect



Brazed exchangers

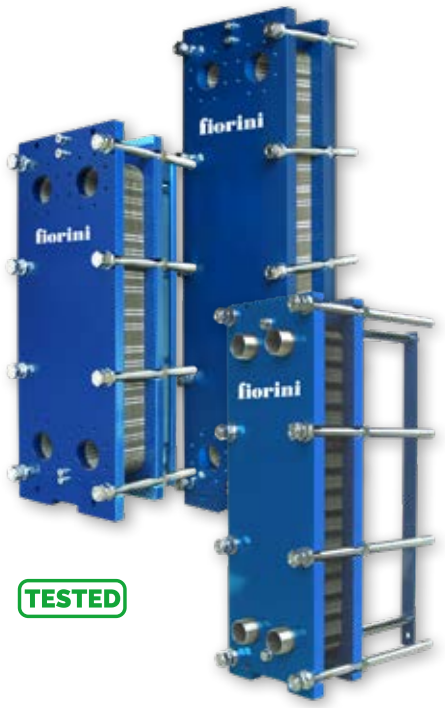
The quality of the parts, as well as the brazing process makes it possible to attach the plates without using gaskets. This is a huge advantage because it makes the exchanger compact and resistant to high temperatures and pressure.



Gasketed plate heat exchangers K and F series

The heat exchangers (K and F series) are designed and manufactured with materials and applications which guarantee high, durable efficiency standards in residential applications as well as industrial processes.

- The plates are made in high quality materials which makes it possible to reach an excellent overall heat exchange coefficient and guarantees resistance against corrosion;
- The plates can be manufactured with several corrugations which improve the exchange performance in function of the operative conditions (fluid type, viscosity). Their particular conformation makes the fluid in the device move turbulently and guarantees an elevated heat exchange coefficient.
- The lining is available in several materials, adapted to the different applications (gasoline, oil, alimentary fluids, aggressive fluids, high temperature fluids, etc.) and desired performance;
- The frame is made of varnished carbon steel, designed in such a way that it can be easily accessed, inspected and maintained;
- All exchangers are tested (leakage test) before dispatch in order to verify possible losses.



WRAS APPROVED MATERIAL





Gasketed plate heat exchangers K and F series

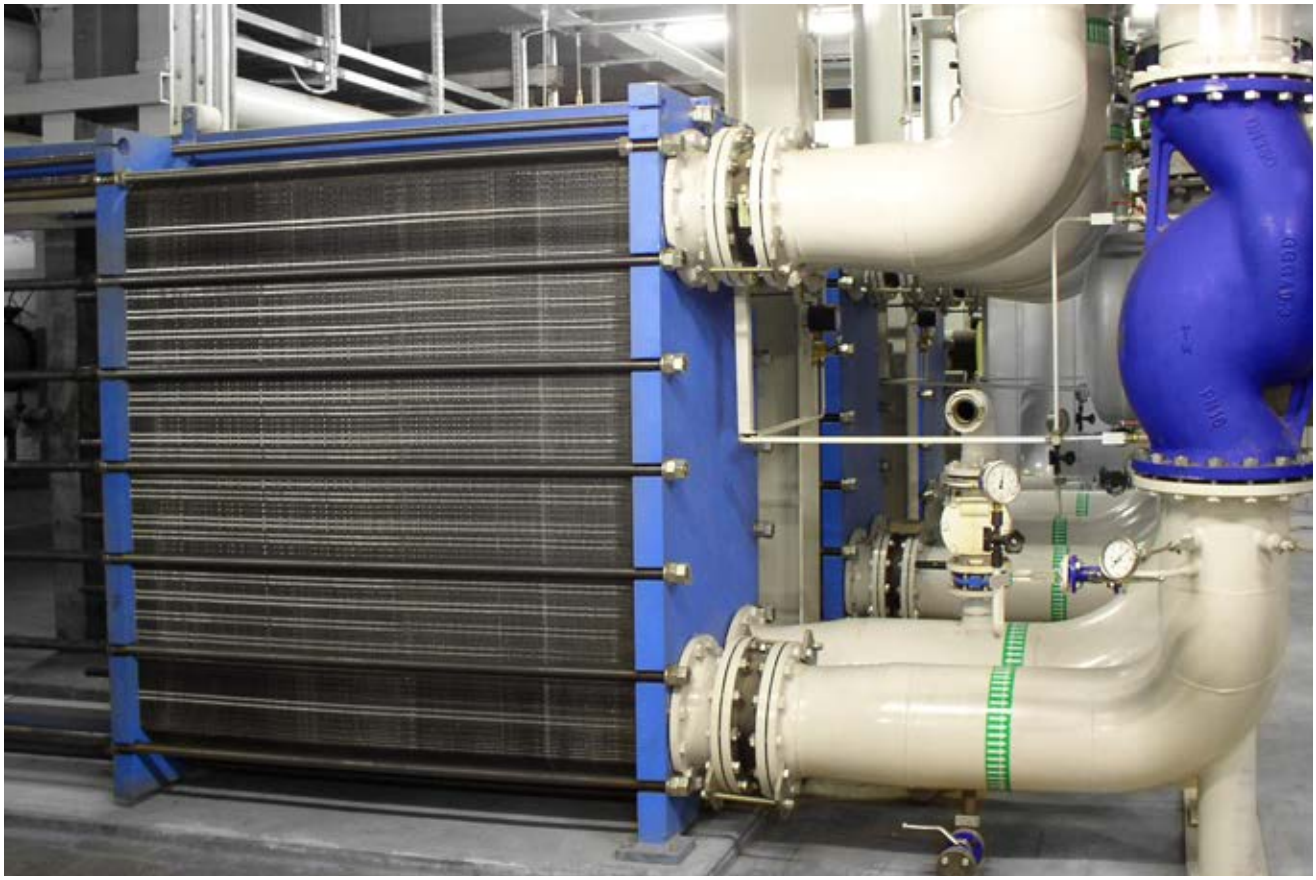
Environment and sectors of application

Wherever a heat exchange between two fluids takes place, the Fiorini plate heat exchangers guarantee a series of significant advantages:

- high efficiency
- long life span
- low cost
- compact dimensions
- possibility to expand
- easy maintenance
- trustworthiness

Fiorini heat exchangers are products of reference in the residential and industrial sectors (HVAC, food, chemical, renewable energy, cooling, oil and gas).
They offer the best options for numerous applications, such as:

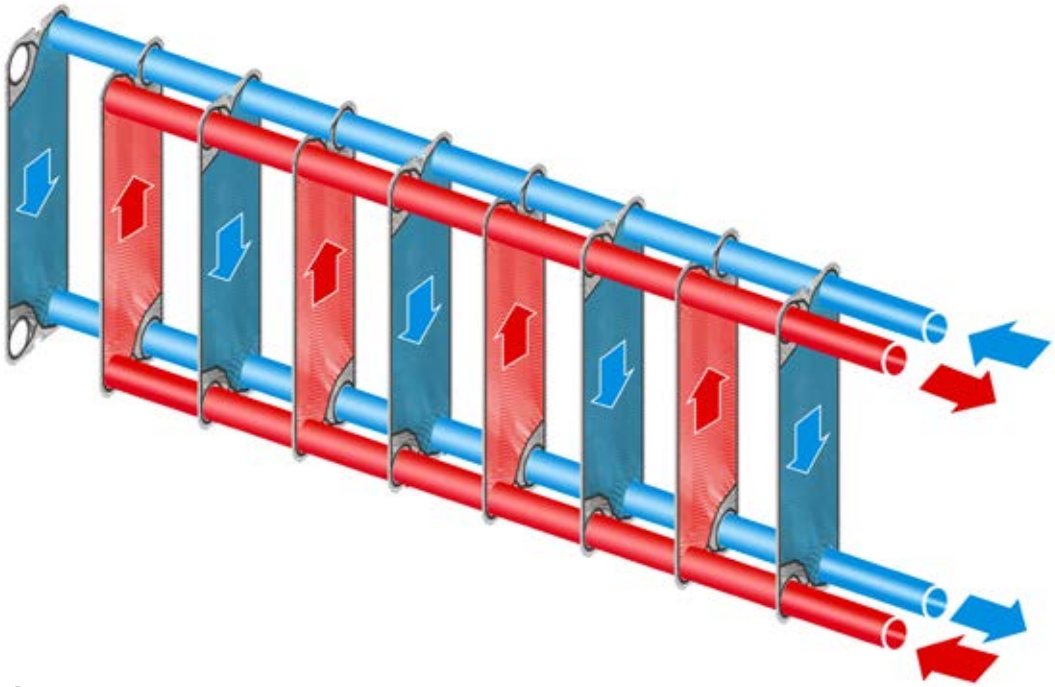
- DHW production
- heat exchanging in heating systems
- teleheating
- pool water heating
- solar power systems
- heating/cooling of alimentary fluids (milk, beer, wine…)
- cooling of machines
- recuperation of heat from industrial processes
- hydraulics



Principles

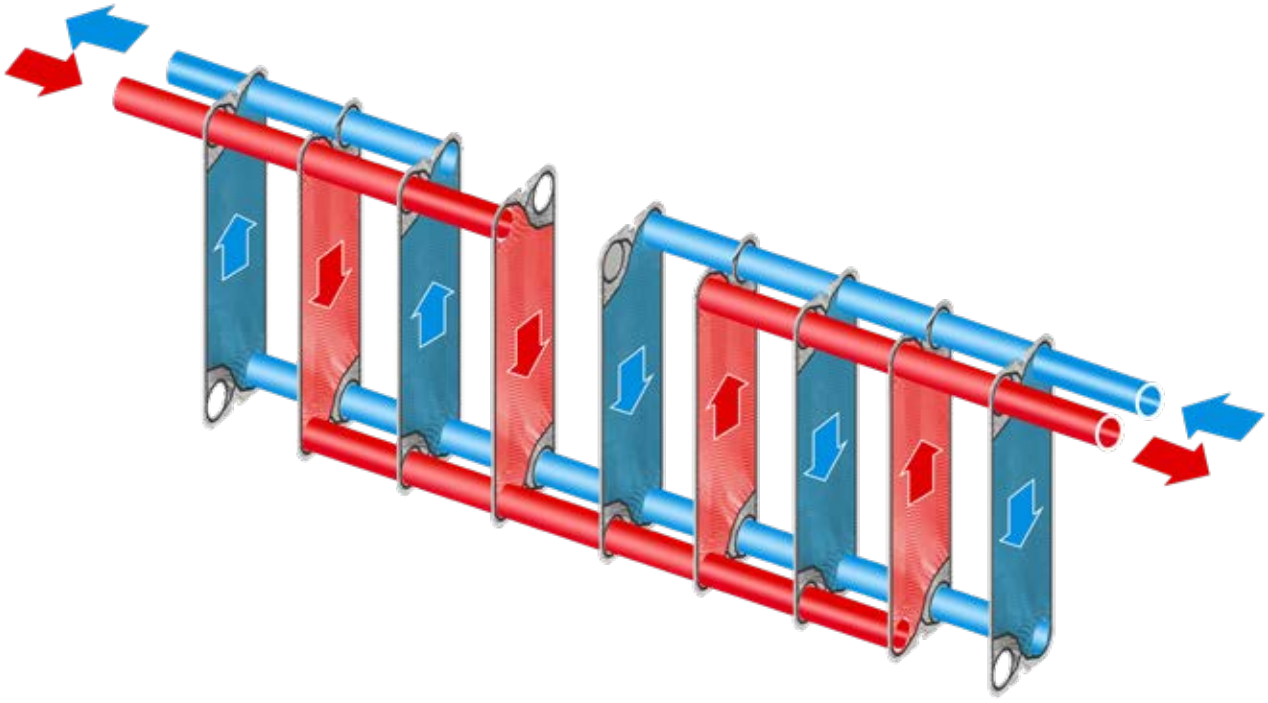
Single passage

In the version with a single passage the fluid which runs through the exchangers, goes through one canal (the space between two adjacent plates). This is the most commonly used layout.

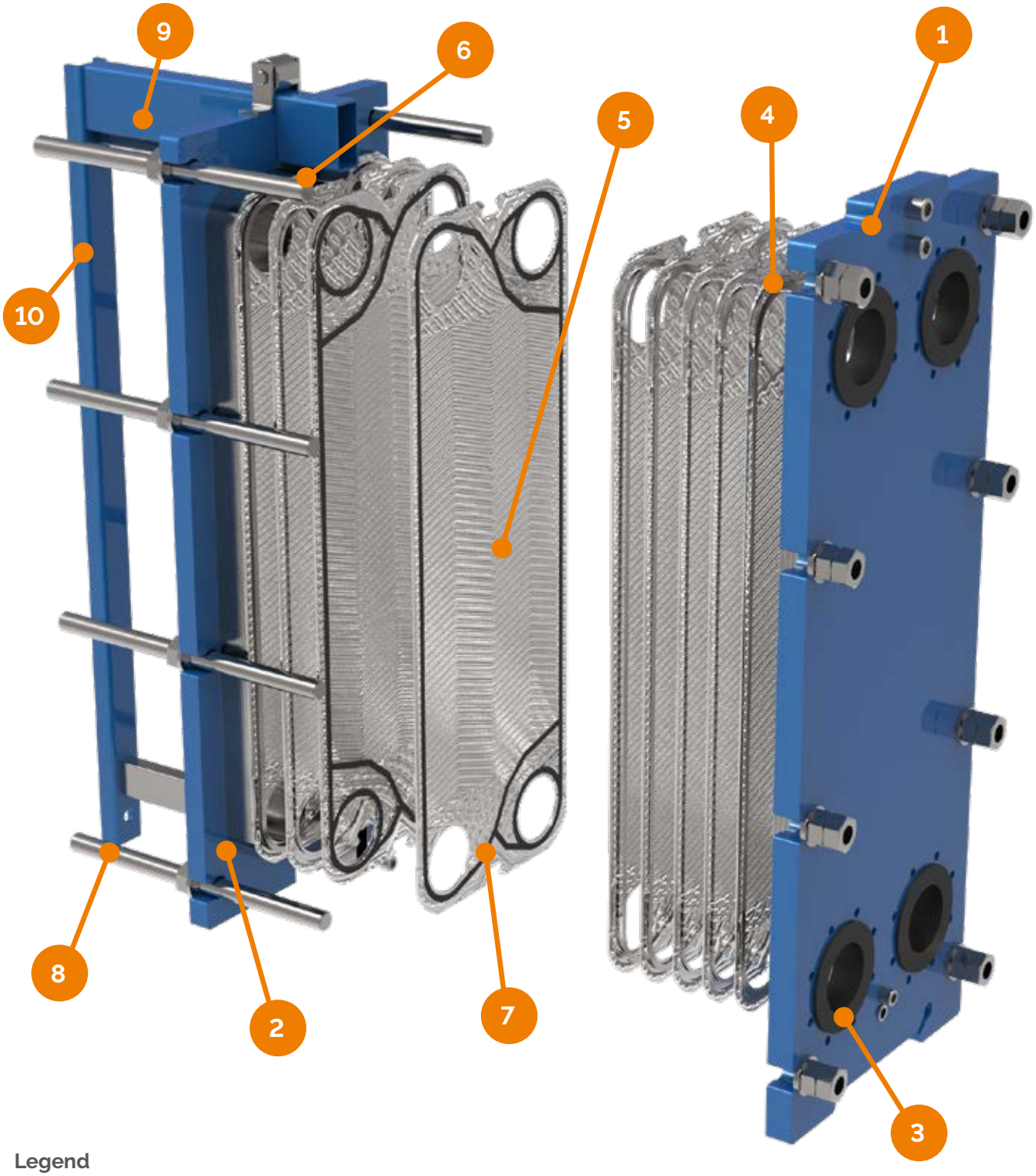


Multiple passage

In this version the thermal length of the exchanger increases with the number of passages (double length with 2 passages, triple length with 3 passages, etc.) This solution is advantageous when there are high Δt within the individual circuits, allowing to adopt a compact exchanger and making it function as a tall and slender exchanger.



Main components



Legend

1. Front frame
2. Rear frame
3. Connection
4. Start plate
5. Intermediate plate
6. End plate
7. Gasket
8. Tie rods
9. Guides
10. Column

Fiorini Plate heat exchangers are designed to ease access and maintenance. Furthermore, its modularity allows to increase number of the plates according to the heat exchange requirements.

Gasketed plate heat exchangers
Our range



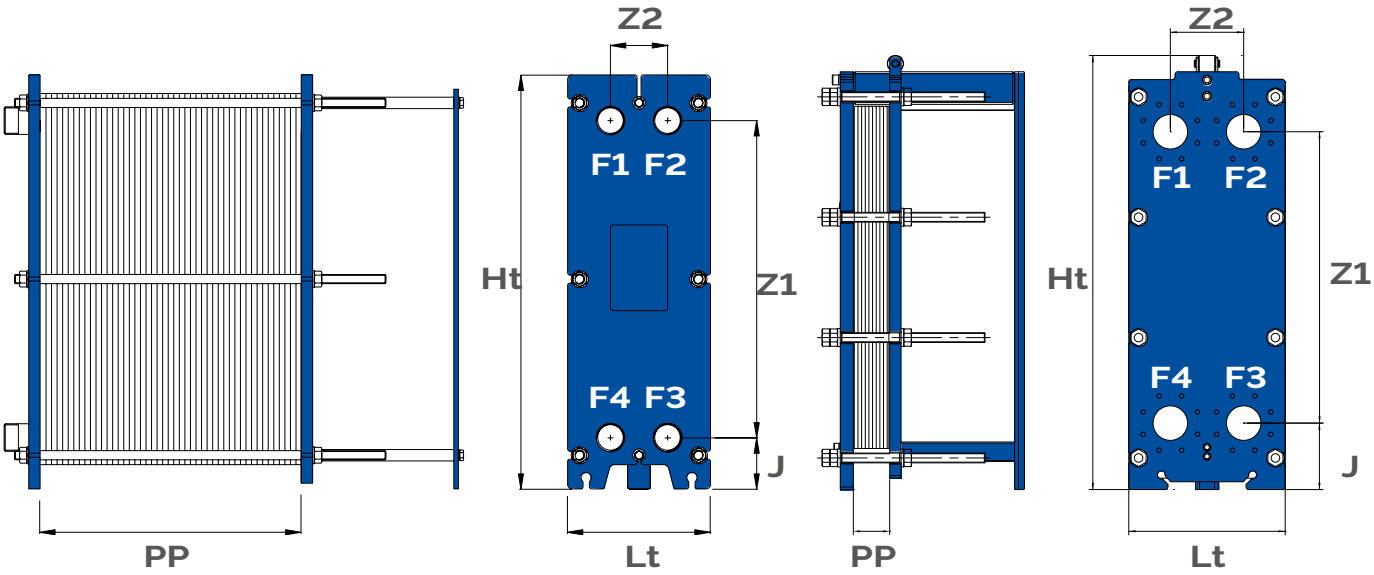
Model		Nominal pressure	Available corrugations	Standard coupling	PP mm	Plate thk mm	Ht mm	Lt mm	Z1 mm	Z2 mm	J mm
DN 32	K042/H1	PN10/PN16	H	1"1/4 GAS M	(NP-1)x3.1+2	0,6	470	200	380	68	45
	F09	PN10/PN16	H - L	1"1/4 GAS M	NPx2.7+3	0,5	827	200	676	70	76
DN40	K080/H2	PN10/PN16	H - V	1"1/2 GAS M	(NP-1)x3.05+2	0,6	725	250	555	100	90
DN 50	F2010	PN10/PN16/PN25	H - L	2" GAS M	NP.x 2.9+3	0,5	732	310	494	126	128
	F2016	PN10/PN16/PN25	H - L	2" GAS M	NP.x 2.9+3	0,5	932	310	694	126	128
	F2022	PN10/PN16/PN25	H - L	2" GAS M	NP.x 2.9+3	0,5	1132	310	894	126	128
DN 65	F3017	PN10/PN16	H - M	DN 65 UNI PN16	N.P. x 2.6 *	0,4	1071	400	620	188	180
	F3030	PN10/PN16	H - M	DN 65 UNI PN16	N.P. x 2.6 *	0,4	1421	400	1020	188	180
	F3043	PN10/PN16	H - M	DN 65 UNI PN16	N.P. x 2.6 *	0,4	1871	400	1420	188	180
DN 100	F4206	PN10/PN16/PN25	H - L	DN 100 UNI PN16	NP.x 3.1 *	0,5	1158	480	719	225	204
	F4031	PN10/PN16/PN25	H - L	DN 100 UNI PN16	NP.x 3.1 *	0,5	1332	480	894	225	204
	F4050	PN10/PN16/PN25	H - L	DN 100 UNI PN16	NP.x 3.1 *	0,5	1826	480	1388	225	204
	F4071	PN10/PN16/PN25	H - L	DN 100 UNI PN16	NP.x 3.1 *	0,5	2320	480	1882	225	204
DN 150	F42	PN10/PN16/PN25	H - L	DN 150 UNI PN16	NP.x 3.1 *	0,5	1470	610	941	290	225
	F62	PN10/PN16/PN25	H - L	DN 150 UNI PN16	NP.x 3.1 *	0,5	1834	610	1306	290	225
	F82	PN10/PN16/PN25	H - L	DN 150 UNI PN16	NP.x 3.1 *	0,5	2150	610	1671	290	225
	F112	PN10/PN16/PN25	H - L	DN 150 UNI PN16	NP.x 3.1 *	0,5	2687	620	2157	290	290
DN 200	F405	PN10/PN16/PN25	H - L	DN 200 UNI PN16	NP.x 3.1 *	0,5	1380	760	770	395	395
	F70	PN10/PN16/PN25	H - L	DN 200 UNI PN16	NP.x 3.1 *	0,5	1740	760	1130	395	395
	F100	PN10/PN16/PN25	H - L	DN 200 UNI PN16	NP.x 3.1 *	0,5	2100	760	1490	395	395
	F130	PN10/PN16/PN25	H - L	DN 200 UNI PN16	NP.x 3.1 *	0,5	2460	760	1850	395	395
DN 300	F81	PN10/PN16/PN25	H - L	DN 300 UNI PN16	NP.x 3.7 *	0,5	930	980	1100	480	480
	F120	PN10/PN16/PN25	H - L	DN 300 UNI PN16	NP.x 3.7 *	0,5	2320	980	1490	480	480
	F160	PN10/PN16/PN25	H - L	DN 300 UNI PN16	NP.x 3.7 *	0,5	2710	980	1879	480	480
	F190	PN10/PN16/PN25	H - L	DN 300 UNI PN16	NP.x 3.7 *	0,5	3100	980	2267	480	480
DN 500	F150	PN10/PN16/PN25	H - L	DN 500 UNI PN16	NP.x 3,9 *	0,5	2500	1370	1466	672	672
	F200	PN10/PN16/PN25	H - L	DN 500 UNI PN16	NP.x 3,9 *	0,5	2855	1370	1822	672	672
	F250	PN10/PN16/PN25	H - L	DN 500 UNI PN16	NP.x 3,9 *	0,5	3211	1370	2178	672	672

* With rubber liner add 1.5 mm

› Special executions are available on request

Gasketed plate heat exchangers
Our range

Couplings
Primary: Inlet F1 - Outlet F4
Secondary: Inlet F3 - Outlet F2



DN32 DN 40 DN 50

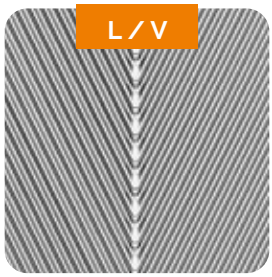
DN ≥ 65

Corrugations

The plates are available with various corrugations and can be combined in order to reach better performances.



H: this type of corrugation maximizes the thermal power which is exchanged



L and V: these versions minimize the pressure loss



M: this version is a great mix between performance and losses (F3017, F3030, F3043 only)

Available materials

	Plates			Gaskets			Covers		Tie rod	
Model	AISI 304	AISI 316L	TITANIO	NBR	EPDM	VITON	PAINTED STEEL	AISI 304/316	GALVANIZED STEEL	AISI 304/316
K serie	-	✔	✔	✔	✔	-	✔	❍	✔	❍
F serie (up to DN32)	-	✔	✔	✔	✔	❍	✔	❍	✔	❍
F serie (from DN50)	✔	✔	✔	✔	✔	❍	✔	❍	✔	❍

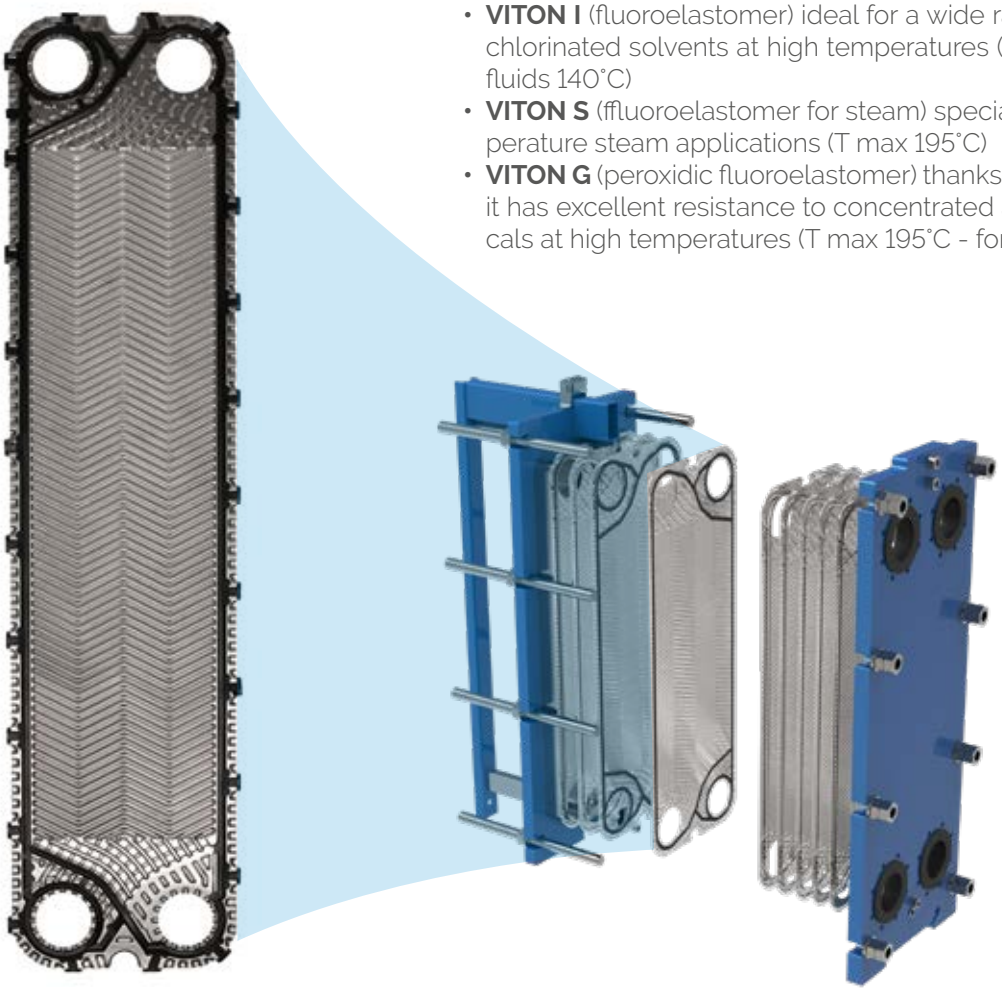
Legend: ✔ standard ❍ upon request - not available
F serie available upon request with plates in the following materials; 245 SMO, AISI 904L, ALLOY C276.



Gaskets

The gaskets are attached to the plates through a clip-on system, which ensures hygiene and easy maintenance and does not use glue and solvents. The particular conformation of the gaskets creates a double barrier and prevents accidental contamination of the two fluids, also in case of loss. The gaskets are available in various materials, to be used in function of the different user parameters:

- **NBR/NBRHT** (nitrile rubber): generally used with water, other liquids, oily mineral liquids (T max 130°C / 140°C)
- **EPDM/EPDM HT** (ethylene-propylene rubber) broad range of use, such as with non-mineral oils, water, steam, caustic soda, alcohol, low % acids, etc. (T max 150°C/160°C)
- **VITON I** (fluoroelastomer) ideal for a wide range of oils, gasolines and chlorinated solvents at high temperatures (T max 195°C - for aqueous fluids 140°C)
- **VITON S** (ffluoroelastomer for steam) specially designed for high temperature steam applications (T max 195°C)
- **VITON G** (peroxidic fluoroelastomer) thanks to the high level of fluorine it has excellent resistance to concentrated acids and aqueous chemicals at high temperatures (T max 195°C - for aqueous fluids 165°C)



Fluid/material compatibility

In the table, some guidelines for the correct combination of materials are outlined.

Fluid type	Fluid	Plates			Gaskets		Couplings	
		AISI 304*	AISI 316L	TITANIUM	NBR	EPDM	STAINLESS STEEL	NYLON (TMAX 50°C)
WATER	water (tmax < 110°c)	✔	✔	✔	✔	✔	✔	✔
	water (tmax > 110°c)	-	✔	✔	-	✔	✔	-
	water demineralized	-	✔	✔	✔	-	✔	✔
	sea water (NaCl)	-		✔	✔	-	-	✔
	chlorinated water for swimming pool	-	✔	✔	✔	-	✔	✔
	thermal water	-		✔	-	✔		✔
	mineral water	-	✔	-	-	✔	✔	-
	steam < 4 bar	-	✔	-	-	✔	✔	-
WATER & GLYCOL	ethylene glycol (glycol < 30%)	✔	✔	✔	✔	✔	✔	✔
	ethylene glycol (glycol > 30%)	✔	✔	✔	-	✔	✔	✔
	propylene glycol (glycol < 30%)	✔	✔	✔	✔	✔	✔	✔
	propylene glycol (glycol > 30%)	✔	✔	✔	-	✔	✔	✔
HYDROCARBONS	diesel fuel	-	✔	✔	✔	-	✔	-
	kerosene	-	✔	✔	✔	-	✔	-
	Petroleum	-	✔	✔	✔	-	✔	-
	pure gasoline	-	✔	✔	✔	-	✔	-
	naphtha	-	✔	✔	✔	-	✔	-
OILS	sae oil	-	✔	✔	✔	-	✔	-
	oil iso vg	-	✔	✔	✔	-	✔	-
	diathermic oil	-	✔	✔	✔	-	✔	-
	hardening oil	-	✔	✔	✔	-	✔	-
	mineral oil	-	✔	✔	✔	-	✔	-
	synthetic oil	-	✔	✔	-	✔	✔	-
	olive oil	-	✔	✔	✔	-	✔	-
	seeds oil	-	✔	✔	✔	-	✔	-
ACIDS	sulfuric acid 20% (aqueous), 50°c	-	**	-	-	✔	-	✔
	hydrochloric acid 1% (aqueous), 20°c	-	**	-	-	✔	-	✔
	acetic acid 70°c	-	✔	-	-	✔	-	✔
	chromic acid 20%, 20°c	-	✔	-	-	✔	-	✔
FOOD	milk	✔	✔	-	✔	✔	✔	-
	wine, juice	✔	✔	-	✔	✔	✔	-
	beer	✔	✔	-	✔	✔	✔	-
	whiskey	✔	✔	-	✔	✔	✔	-
	wine vinegar	-	✔	-	-	✔	✔	-
	liquor	✔	✔	-	-	✔	✔	-
OTHER FLUID	acetone	-	✔	✔	-	✔	✔	-
	ethyl alcohol	-	✔	✔	-	✔	✔	-
	ethanol	-	✔	✔	-	✔	✔	-
	ethylene	-	✔	✔	✔	-	✔	-
	methanol	-	✔	✔	-	✔	✔	-

Legend: ✔ compatible - in compatible
* Only for closed circuits and with a chloride concentration less than 25 ppm and Tmax 80C
**To evaluate the ideal combination of suitable materials, contact the sales office.

Couplings

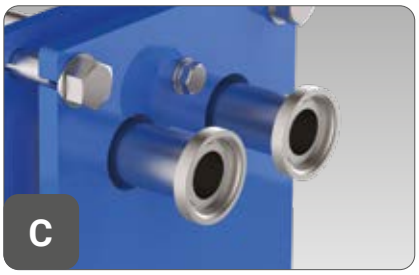
Our gasketed plate heat exchangers can be manufactured with numerous kinds of couplings, threaded, with a free flange, with a welded flange and with liner. Liner is the coating in the shaft connection edges, that can be made of steel or rubber.



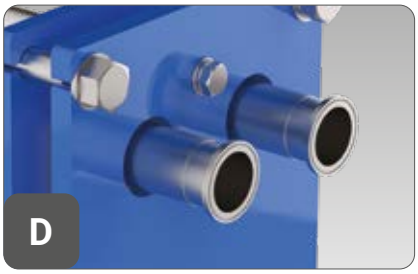
Threaded coupling (steel or nylon)



Grooved coupling



DIN 11851 coupling



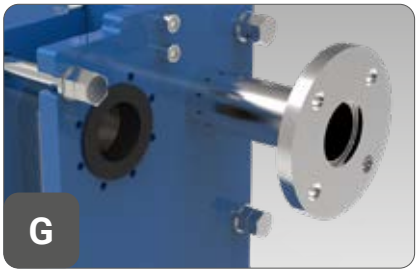
Triclamp coupling



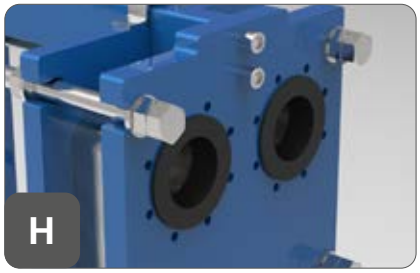
Free Flange coupling



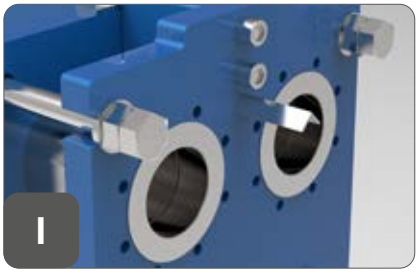
Welded Flange coupling



Liner + Flange coupling



Rubber Liner coupling



Metal Liner coupling

Coupling compatibility

Model	A	B	C	D	E	F	G	H	I
K042	✔	✔	✔	✔	✔	✔	-	-	-
F09	✔	✔	✔	✔	✔	✔	-	-	-
F2010 - F2016 - F2022	✔	✔	✔	✔	✔	✔	✔	-	-
F3017 - F3030 - F3043	✔	✔	✔	✔	✔	✔	✔	✔	✔
F4206 - F4031 - F4050 - F4071	-	-	✔	✔	✔	✔	✔	✔	✔
F42 - F62 - F82 - F112	-	-	-	-	-	✔	✔	✔	✔
F405 - F70 - F100 - F130	-	-	-	-	-	✔	✔	✔	✔
F81 - F120 - F160 - F190	-	-	-	-	-	✔	✔	✔	✔
F150 - F200 - F250	-	-	-	-	-	✔	✔	✔	✔

Accessories

Insulation box, Condensate collection tub, Feet set

For **models K042 e H1** it is available a **thermoformed** insulation box, removable by coupling with velcro strips (**feet set included**).

		Thermoformed Insulation Box	
Model	**Plates threshold**	**Code**	**Price**
K042	up to 64 plates	843090028X	
H1	up to 64 plates	843090028X	
F09	up to 101 plates	843090111X	





Legend

1. Galvanized steel Insulation Box: Available for the entire range, it is made of a galvanized steel structure covered with insulating material.
2. Condensate collection tank: **mandatory in applications in refrigeration and cooling plants**
3. Support feet set

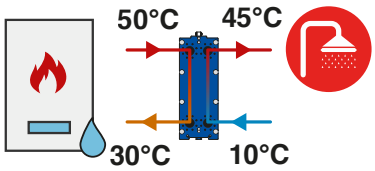
		Aluminium insulation box			Condensate collection tub (mandatory T<15°C)			Feet set	
Model	**Plates threshold**	**Code**	**Price**	**Ht x Lt x Wt mm**	**Code**	**Price**	**Ht x Lt x Wt mm**	**Code**	**Price**
K042	up to 38 plates	821080214X		491x246x215	829097145X		20x295x310	821070049X	
	up to 64 plates	821080215X		491x246x298	829097146X		20x295x410		
K080	up to 38 plates	821080216X		746x296x220	829097147X		50x345x370	821070051X	
	up to 64 plates	821080217X		746x296x299	829097148X		50x345x450		
H1	up to 38 plates	821080214X		491x246x215	829097145X		20x295x310	821070049X	
	up to 64 plates	821080215X		491x246x298	829097146X		20x295x410		
H2	up to 38 plates	821080216X		746x296x220	829097147X		50x345x370	821070051X	
	up to 64 plates	821080217X		746x296x299	829097148X		50x345x450		
F09	up to 44 plates	821080161X		848x247x212	829095331X		20x275x372	821070241X	
	up to 69 plates	821080162X		848x247x280	829095331X		20x275x372		
	up to 101 plates	821080163X		848x247x366	829095332X		20x275x472		
F2010	up to 30 plates	821080186X		754x354x230	829097141X		50x400x310	821070031X	
	up to 80 plates	821080187X		754x354x379	829097142X		50x400x555		
	up to 120 plates	821080188X		754x354x499	829097143X		50x400x805		
	up to 180 plates	821080189X		754x354x679	829097144X		50x400x1055		
F2016	up to 30 plates	821080190X		954x354x230	829097141X		50x400x310	821070031X	
	up to 80 plates	821080191X		954x354x379	829097142X		50x400x555		
	up to 120 plates	821080192X		954x354x499	829097143X		50x400x805		
	up to 180 plates	821080193X		954x354x679	829097144X		50x400x1055		
F2022	up to 30 plates	821080194X		1154x354x230	829097141X		50x400x310	821070031X	
	up to 80 plates	821080195X		1154x354x379	829097142X		50x400x555		
	up to 120 plates	821080196X		1154x354x499	829097143X		50x400x805		
	up to 180 plates	821080197X		1154x354x679	829097144X		50x400x1055		
F3017	up to 80 plates	821080146X		992x446x372	829096013X		50x450x500	821070247X	
	up to 120 plates	821080147X		992x446x464	829096014X		50x500x750		
	up to 180 plates	821080148X		992x446x569	829096015X		50x500x1000		
	up to 250 plates	821080149X		992x446x834	829096016X		50x500x1390		
F3030	up to 80 plates	821080142X		1392x446x370	829096013X		50x450x500	821070247X	
	up to 120 plates	821080150X		1392x446x464	829096014X		50x500x750		
	up to 180 plates	821080151X		1392x446x642	829096015X		50x500x1000		
	up to 250 plates	821080152X		1392x446x834	829096016X		50x500x1390		
F3043	up to 80 plates	821080153X		1792x446x372	829096013X		50x450x500	821070247X	
	up to 120 plates	821080154X		1792x446x464	829096014X		50x500x750		
	up to 180 plates	821080155X		1792x446x642	829096015X		50x500x1000		
	up to 250 plates	821080156X		1792x446x834	829096016X		50x500x1390		
F4206	up to 80 plates	821080205X		1108x524x429	829097137X		50x575x550	821070032X	
	up to 120 plates	821080204X		1108x524x557	829097138X		50x575x750		
	up to 180 plates	821080203X		1108x524x749	829097139X		50x575x1000		
	up to 250 plates	821080202X		1108x524x973	829097140X		50x575x1390		
F4031	up to 80 plates	821080201X		1284x524x429	829097137X		50x575x550	821070032X	
	up to 120 plates	821080200X		1284x524x557	829097138X		50x575x750		
	up to 180 plates	821080199X		1284x524x749	829097139X		50x575x1000		
	up to 250 plates	821080198X		1284x524x973	829097140X		50x575x1390		
F4050	up to 80 plates	821080209X		1778x524x429	829097137X		50x575x550	821070032X	
	up to 120 plates	821080208X		1778x524x557	829097138X		50x575x750		
	up to 180 plates	821080207X		1778x524x749	829097139X		50x575x1000		
	up to 250 plates	821080206X		1778x524x973	829097140X		50x575x1390		
F4071	up to 80 plates	821080213X		2272x524x429	829097137X		50x575x550	821070032X	
	up to 120 plates	821080212X		2272x524x557	829097138X		50x575x750		
	up to 180 plates	821080211X		2272x524x749	829097139X		50x575x1000		
	up to 250 plates	821080210X		2272x524x973	829097140X		50x575x1390		

Tables for fast selection - GASKETED

INSTANTANEOUS DHW with LOW temperature source

Project conditions

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	50°C	30°C	10 bar	H_2O
COLD side	Domestic Hot Water	10°C	45°C	10 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	871	4	494	1	K080	9	821K080AHNN009		77x27x42	78
25	1088	4	618	1	K080	11	821K080AHNN011		77x27x42	79
30	1306	4	741	1	K080	13	821K080AHNN013		77x27x42	80
35	1524	4	865	1	K080	15	821K080AHNN015		77x27x54	82
40	1714	5	988	2	K080	15	821K080AHNN015		77x27x54	82
50	2177	5	1235	2	K080	19	821K080AHNN019		77x27x54	84
60	2612	6	1482	2	K080	21	821K080AHNN021		77x27x54	85
75	3265	7	1853	2	K080	25	821K080AHNN025		77x27x54	88
85	3700	6	2100	2	K080	29	821K080AHNN029		77x27x54	90
100	4353	7	2471	2	K080	33	821K080AHNN033		77x27x54	93
120	5224	32	2965	10	F2016	15	821F2016AN015-1HH07XX00N		97x33x75	134
150	6530	30	3706	9	F2016	19	821F2016AN019-1HH09XX00N		97x33x75	137
180	7836	36	4447	11	F2016	21	821F2016AN021-1HH10XX00N		97x33x75	139
210	9142	34	5189	11	F2016	25	821F2016AN025-1HH12XX00N		97x33x75	142
240	10448	33	5930	10	F2016	29	821F2016AN029-1HH14XX00N		97x33x75	145
270	11754	32	6671	10	F2016	33	821F2016AN033-1HH16XX00N		97x33x75	152
300	13060	35	7412	11	F2016	35	821F2016AN035-1HH17XX00N		97x33x75	153

*Accessories see pag. 37 (See Model and plates number)

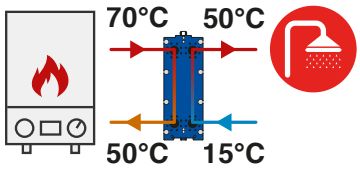
Alternative solution with brazed heat exchangers: see pag. 50

Tables for fast selection - GASKETED

INSTANTANEOUS DHW with HIGH temperature source

Project conditions

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	50°C	10 bar	H_2O
COLD side	Domestic Hot Water	15°C	50°C	10 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	879	10	495	3	K042	7	821K042AHNN007		50x25x35	31
25	1099	9	619	3	K042	9	821K042AHNN009		50x25x35	32
30	1319	13	743	4	K042	9	821K042AHNN009		50x25x35	32
35	1539	17	867	6	K042	9	821K042AHNN009		50x25x35	32
40	1759	14	991	5	K042	11	821K042AHNN011		50x25x35	33
50	2199	15	1236	5	K042	13	821K042AHNN013		50x25x35	33
60	2638	22	1486	8	K042	13	821K042AHNN013		50x25x35	33
75	3298	25	1858	9	K042	15	821K042AHNN015		50x25x45	34
85	3737	25	2106	9	K042	17	821K042AHNN017		50x25x45	34
100	4397	23	2477	8	K042	21	821K042AHNN021		50x25x45	36
120	5276	32	2973	11	K042	21	821K042AHNN021		50x25x45	36
150	6596	36	3716	13	K042	25	821K042AHNN025		50x25x45	37
180	7915	35	4459	12	K042	31	821K042AHNN031		50x25x45	39
210	9234	34	5202	12	K042	37	821K042AHNN037		50x25x45	41
240	10533	32	5945	11	F2010	17	821F2010AN017-1HH03HL05N		77x33x47	106
270	11872	35	6688	12	F2010	19	821F2010AN019-1HH04HL05N		77x33x47	107
300	13191	34	7431	12	F2010	21	821F2010AN021-1HH04HL06N		77x33x47	108

*Accessories see pag. 37 (See Model and plates number)

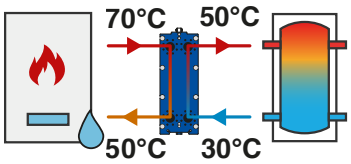
Alternative solution with brazed heat exchangers: see pag. 51

Tables for fast selection - GASKETED

DHW with STORAGE TANK and HIGH temperature source

Project conditions 1

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	50°C	10 bar	H_2O
COLD side	Domestic Hot Water	30°C	50°C	10 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	878	6	871	6	K042	9	821K042AHNN009		50x25x35	32
25	1098	9	1087	9	K042	9	821K042AHNN009		50x25x35	32
30	1318	13	1307	13	K042	9	821K042AHNN009		50x25x35	32
35	1537	17	1523	17	K042	9	821K042AHNN009		50x25x35	32
40	1760	22	1742	22	K042	9	821K042AHNN009		50x25x35	32
50	2200	22	2174	22	K042	11	821K042AHNN011		50x25x35	33
60	2640	22	2610	22	K042	13	821K042AHNN013		50x25x35	33
75	3298	25	3265	26	K042	15	821K042AHNN015		50x25x45	34
85	3737	25	3697	26	K042	17	821K042AHNN017		50x25x45	34
100	4396	28	4352	28	K042	19	821K042AHNN019		50x25x45	35
120	5278	27	5223	28	K042	23	821K042AHNN023		50x25x45	36
150	6595	27	6527	28	K042	29	821K042AHNN029		50x25x45	38
180	7916	28	7834	28	K042	35	821K042AHNN035		50x25x45	40
210	9234	28	9140	28	F2010	17	821F2010AN017-1HH04HL04N		77x33x47	106
240	10055	27	10044	27	F2010	21	821F2010AN021-1HH06HL04N		77x33x47	108
270	11930	27	11808	27	F2010	21	821F2010AN021-1HH06HL04N		77x33x47	108
300	13190	30	13053	29	F2010	25	821F2010AN025-1HH07HL05N		77x33x47	111

*Accessories see pag. 37 (See Model and plates number)

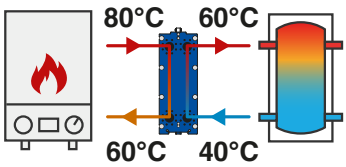
Alternative solution with brazed heat exchangers: see pag. 52

Tables for fast selection - GASKETED

DHW with STORAGE TANK and HIGH temperature source

Project conditions 2

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	80°C	60°C	10 bar	H_2O
COLD side	Domestic Hot Water	40°C	60°C	10 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	882	6	864	6	K042	9	821K042AHNN009		50x25x35	32
25	1105	9	1094	9	K042	9	821K042AHNN009		50x25x35	32
30	1324	12	1310	13	K042	9	821K042AHNN009		50x25x35	32
35	1548	17	1530	17	K042	9	821K042AHNN009		50x25x35	32
40	1767	22	1749	22	K042	9	821K042AHNN009		50x25x35	32
50	2210	22	2185	22	K042	11	821K042AHNN011		50x25x35	33
60	2649	22	26244	22	K042	13	821K042AHNN013		50x25x35	33
75	3312	25	3279	25	K042	15	821K042AHNN015		50x25x45	34
85	3754	25	3718	25	K042	17	821K042AHNN017		50x25x45	34
100	4597	27	4374	28	K042	19	821K042AHNN019		50x25x45	35
120	5302	27	5248	27	K042	23	821K042AHNN023		50x25x45	36
150	6627	28	6559	28	K042	29	821K042AHNN029		50x25x45	38
180	7952	28	7873	28	K042	35	821K042AHNN035		50x25x45	40
210	9277	19	9184	20	K080	23	821K080AVNN023		77x27x54	87
240	10605	27	10497	27	F2010	19	821F2010AN019-1HH04HL05N		77x33x47	107
270	11930	27	11808	27	F2010	21	821F2010AN021-1HH04HL06N		77x33x47	108
300	13255	30	13122	29	F2010	23	821F2010AN023-1HH05HL06N		77x33x47	109

*Accessories see pag. 37 (See Model and plates number)

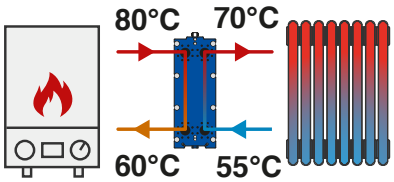
Alternative solution with brazed heat exchangers: see pag. 53

Tables for fast selection - GASKETED

HEATING with HIGH temperature endpoints

Project conditions 1

0,3	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	80°C	60°C	10 bar	H_2O
COLD side	Radiators	55°C	70°C	10 bar	H_2O

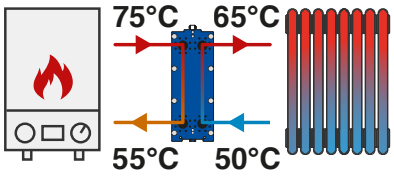


Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	663	1	880	1	K042	19	821K042AHNN019		50x25x45	35
25	1104	4	1467	7	K080	11	821K080AHNN011		77x27x42	79
35	1546	5	2054	9	K080	13	821K080AHNN013		77x27x42	80
50	2209	6	2934	11	K080	17	821K080AHNN017		77x27x54	83
75	3314	8	4401	8	K080	23	821K080AHNN023		77x27x54	87
100	4418	8	5868	15	K080	29	821K080AHNN029		77x27x54	90
115	5081	9	6748	15	K080	33	821K080AHNN033		77x27x54	93
130	5744	9	7628	16	K080	37	821K080AHNN037		77x27x54	95
150	6628	10	8802	17	K080	41	821K080AHNN041		77x27x64	98
180	7953	11	10562	20	F2016	27	821F2016AN027-1HH06HL07N		97x33x75	144
200	8837	11	11736	19	F2016	31	821F2016AN031-1HH07HL08N		97x33x75	150

*Accessories see pag. 37 (See Model and plates number)

Project conditions 2

0,3	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	75°C	55°C	10 bar	H_2O
COLD side	Radiators	50°C	65°C	10 bar	H_2O



Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	661	4	878	7	K80	7	821K080AHNN007		77x27x42	76
25	1102	4	1463	7	K80	11	821K080AHNN011		77x27x42	79
35	1542	5	2049	10	K80	13	821K080AHNN013		77x27x42	80
50	2203	6	2927	11	K80	17	821K080AHNN017		77x27x54	83
75	3305	8	4390	13	K80	23	821K080AHNN023		77x27x54	87
100	4407	9	5853	15	K80	29	821K080AHNN029		77x27x54	90
115	5068	9	6732	15	K80	33	821K080AHNN033		77x27x54	93
130	5730	9	7609	16	K80	37	821K080AHNN037		77x27x54	95
150	6612	9	8780	16	K80	43	821K080AHNN043		77x27x64	99
180	7934	12	10536	20	F2016	27	821F2016AN027-1HH10LL03N		97x33x75	144
200	8815	11	11706	19	F2016	31	821F2016AN031-1HH07HL08N		97x33x75	150

*Accessories see pag. 37 (See Model and plates number)

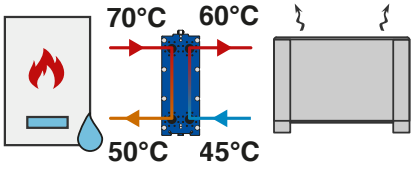
Alternative solution with brazed heat exchangers: see pag. 54

Tables for fast selection - GASKETED

HEATING with HIGH temperature endpoints

Project conditions 3

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	50°C	10 bar	H_2O
COLD side	Radiators / Fan Coil	45°C	60°C	10 bar	H_2O

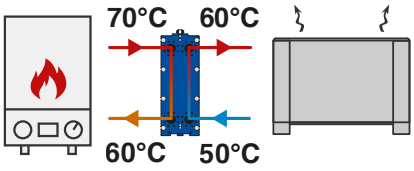


Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	660	1	876	1	K042	21	821K042AHNN021		50x25x45	36
25	1099	4	1460	7	K080	11	821K080AHNN011		77x27x42	79
35	1539	5	2044	10	K080	13	821K080AHNN013		77x27x42	80
50	2199	6	2920	11	K080	17	821K080AHNN017		77x27x54	83
75	3298	6	4379	11	K080	25	821K080AHNN025		77x27x54	88
100	4397	8	5839	13	K080	31	821K080AHNN031		77x27x54	92
115	5057	8	6715	14	K080	35	821K080AHNN035		77x27x54	94
130	5716	8	7591	15	K080	39	821K080AHNN039		77x27x64	97
150	6596	9	8759	15	K080	45	821K080AHNN045		77x27x64	101
180	7915	9	10510	16	K080	53	821K080AHNN053		77x27x64	106
200	8794	10	11678	17	K080	59	821K080AHNN059		77x27x64	109

*Accessories see pag. 37 (See Model and plates number)

Project conditions 4

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	60°C	10 bar	H_2O
COLD side	Radiators / Fan Coil	50°C	60°C	10 bar	H_2O



Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	1322	12	1315	13	K042	9	821K042AHNN009		50x25x35	32
25	2203	15	2192	16	K042	13	821K042AHNN013		50x25x35	33
35	3085	17	3069	17	K042	17	821K042AHNN017		50x25x45	34
50	4408	19	4385	19	K042	23	821K042AHNN023		50x25x45	36
75	6612	18	6577	18	K080	17	821K080AHNN017		77x27x54	83
100	8816	17	8769	18	K080	23	821K080AHNN023		77x27x54	87
115	10138	19	10085	20	K080	25	821K080AHNN025		77x27x54	88
130	11460	19	11400	19	K080	29	821K080AHNN029		77x27x54	90
150	13223	19	13154	19	F2010	27	821F2010AN027-1HH04HL09N		77x33x47	112
180	15868	20	15785	20	F2010	31	821F2010AN031-1HH03HL12N		77x33x71	118
200	17631	19	17539	19	F2010	35	821F2010AN035-1HH03HL14N		77x33x71	120

*Accessories see pag. 37 (See Model and plates number)

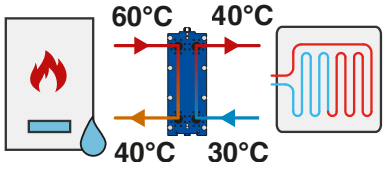
Alternative solution with brazed heat exchangers: see pag. 55

Tables for fast selection - GASKETED

HEATING with LOW temperature endpoints

Project conditions 1

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	60°C	40°C	10 bar	H_2O
COLD side	Radiating floor / Fan Coil	30°C	40°C	10 bar	H_2O

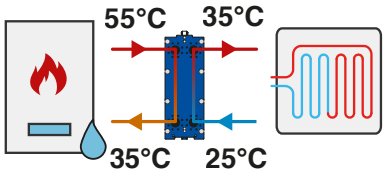


Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	656	3	1302	13	K042	9	821K042AHNN009		50x25x35	32
25	1093	4	2170	16	K042	13	821K042AHNN013		50x25x35	33
35	1531	5	3038	18	K042	17	821K042AHNN017		50x25x45	35
50	2187	5	4340	20	K042	23	821K042AHNN023		50x25x45	36
75	3281	6	6511	20	K080	17	821K080AHNN017		77x27x54	83
100	4375	5	8681	19	K080	23	821K080AHNN023		77x27x54	87
115	5032	5	9983	18	F2010	19	821F2010AN019-1HH05LL04N		77x33x47	107
130	5687	5	11285	18	F2010	21	821F2010AN021-1HH05LL05N		77x33x47	108
150	6563	6	13022	19	F2010	25	821F2010AN025-1HH07LL05N		77x33x47	111
180	7876	6	15626	19	F2010	29	821F2010AN029-1HH07LL07N		77x33x47	113
200	8751	6	17362	19	F2010	33	821F2010AN033-1HH08LL08N		77x33x71	119

*Accessories see pag. 37 (See Model and plates number)

Project conditions 2

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	55°C	35°C	10 bar	H_2O
COLD side	Radiating floor	25°C	35°C	10 bar	H_2O



Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	655	3	1299	13	K042	9	821K042AHNN009		50x25x35	32
25	1092	4	2165	16	K042	13	821K042AHNN013		50x25x35	33
35	1528	5	3031	18	K042	17	821K042AHNN017		50x25x45	35
50	2182	5	4329	20	K042	23	821K042AHNN023		50x25x45	36
75	3273	5	6494	17	K080	19	821K080AHNN019		77x27x54	84
100	4364	5	8659	20	K080	23	821K080AHNN023		77x27x54	87
115	5019	6	9958	18	F2010	19	821F2010AN019-1HH05LL04N		77x33x47	107
130	5674	5	11257	20	F2010	23	821F2010AN023-1HH03HL08N		77x33x47	109
150	6547	6	12988	20	F2010	25	821F2010AN025-1HH07LL05N		77x33x47	111
180	7856	6	15586	19	F2010	29	821F2010AN029-1HH07LL07N		77x33x47	113
200	8729	6	17318	19	F2010	33	821F2010AN033-1HH08LL08N		77x33x71	119

*Accessories see pag. 37 (See Model and plates number)

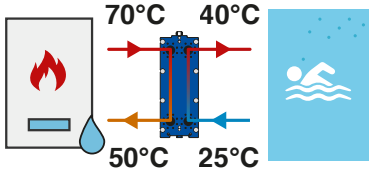
Alternative solution with brazed heat exchangers: see pag. 56

Tables for fast selection - GASKETED

HEATING for CHLORINATED pool

Project conditions

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	50°C	10 bar	H_2O
COLD side	Piscina Acqua Clorata	25°C	40°C	10 bar	H_2O+Cl



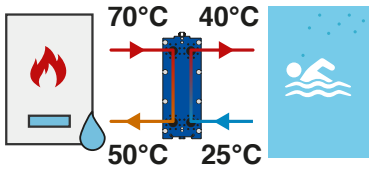
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	880	4	1156	7	K042	11	821K042AHNN011		50x25x35	33
25	1099	6	1445	10	K042	11	821K042AHNN011		50x25x35	33
35	1539	8	2023	14	K042	13	821K042AHNN013		50x25x35	33
50	2199	8	2890	13	K042	19	821K042AHNN019		50x25x45	35
75	3298	7	4335	12	K080	15	821K080AVNN015		77x27x54	82
100	4397	7	5780	14	K080	19	821K080AVNN019		77x27x54	84
115	5057	8	6647	14	F2010	11	821F2010AN011-1LL05XX00N		77x33x47	102
130	5716	9	7514	14	F2010	13	821F2010AN013-1HL03LL03N		77x33x47	103
150	6596	9	8670	14	F2010	15	821F2010AN015-1HL03LL04N		77x33x47	104
180	7915	8	10404	14	F2010	17	821F2010AN017-1LL08XX00N		77x33x47	106
200	8794	9	11560	15	F2010	19	821F2010AN019-1HL03LL06N		77x33x47	107

*Accessories see pag. 37 (See Model and plates number)

HEATING for SEA WATER pool (Titanium plates)

Project conditions

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	50°C	10 bar	H_2O
COLD side	Piscina Acqua Salata	25°C	40°C	10 bar	H_2O+NaCl



Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	879	6	1156	10	K042	9	821K042CHNP009		50x25x35	31
25	1099	6	1445	10	K042	11	821K042CHNP011		50x25x35	31
35	1539	8	2023	14	K080	7	821K080CVNP007		77x27x42	74
50	2198	6	2890	11	K080	11	821K080CVNP011		77x27x42	76
75	3297	7	4335	12	K080	15	821K080CVNP015		77x27x54	77
100	4396	6	5780	10	F2010	11	821F2010CN011-1LL05XX00N		77x33x47	100
115	5055	8	6647	13	F2010	11	821F2010CN011-1LL05XX00N		77x33x47	100
130	5714	9	7514	14	F2010	13	821F2010CN013-1HL03LL03N		77x33x47	100
150	6593	9	8670	14	F2010	15	821F2010CN015-1HL03LL04N		77x33x47	101
180	7912	8	10404	14	F2010	17	821F2010CN017-1LL08XX00N		77x33x47	102
200	8791	9	11560	15	F2010	19	821F2010CN019-1HL03LL06N		77x33x47	103

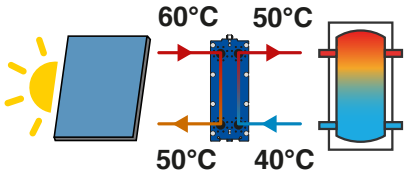
*Accessories see pag. 37 (See Model and plates number)

Tables for fast selection - GASKETED

HEATING with Thermal Solar

Project conditions

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Solar panel	60°C	50°C	10 bar	Glic. 30%
COLD side	Heating / Domestic Hot Water	40°C	50°C	10 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	1839	12	1745	10	K042	13	821K042AHEN013		50x25x35	33
35	3218	14	3054	12	K042	21	821K042AHEN021		50x25x45	36
50	4598	10	4363	8	K080	19	821K080AVEN019		77x27x54	84
75	6897	11	6544	9	K080	27	821K080AVEN027		77x27x54	89
100	9196	14	8726	11	F2010	25	821F2010AE025-1HH05HL07N		77x33x47	111

*Accessories see pag. 37 (See Model and plates number)

The solar thermal makes it roughly 0.8 kW/m^2.
Example 10 Fiorini collectors H2500 (pag. 284) is equal to 25m^2= 20kW

Alternative solution with brazed heat exchangers: see pag. 57

Brazed heat exchangers P series

The brazed plate heat exchangers (P series) are used in heating, cooling and heat recuperation systems. The quality of the parts and the brazing process, which is carried out with care, make a trustworthy product. The plate design makes it possible to reach higher heat exchange performances and lower pressure loss. Moreover, the product has an elevated resistance to high temperatures and pressure.

Our brazed plate heat exchangers can be used with many kinds of fluids in various combinations (ex: water/water, water/oil, water/steam, steam/oil, Freon/water, etc.)



Advantages

- compact design
- reasonable weight
- high heat exchange efficiency
- high temperature range (up to -160/+ 200 °C)
- high max operating pressure (up to 30 bar for standard / up to 45 for special high pressure versionr)

Main applications

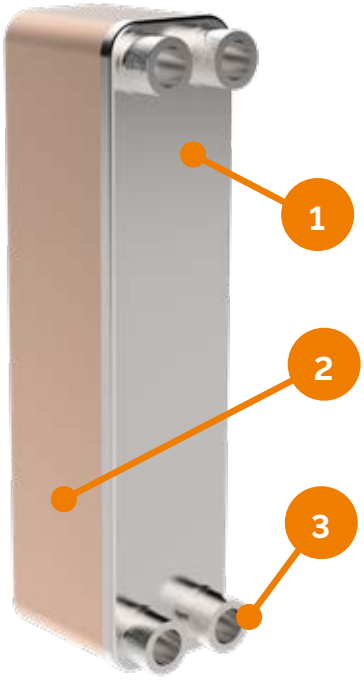
- heating/cooling of technical water or industrial fluids
- evaporation and condensation of refrigerant gas
- hydraulic separation of the circuit
- heat recuperation in domestic applications and industrial processes
- functioning with a wide range of compatible fluids
- mechanical and chemical resistance of the materials

Brazed heat exchanger Range



Model	P4	P7	P15	P30
Plate surface (m^2)	0,02375	0,07	0,15	0,30
Nominal pressure	PN25	PN25	PN25	PN25
Standard coupling	1"	1"1/4	2"	2"1/2
PP (mm)	9+2,4xN*	9+2,57xN*	10+2,48xN*	11+2,90xN*
Ht (mm)	310	526	530	782
Lt (mm)	111	120	256	350
Z1 (mm)	250	473	439	655
Z2 (mm)	50	66	177	220
PC (mm)	24	27	27	27

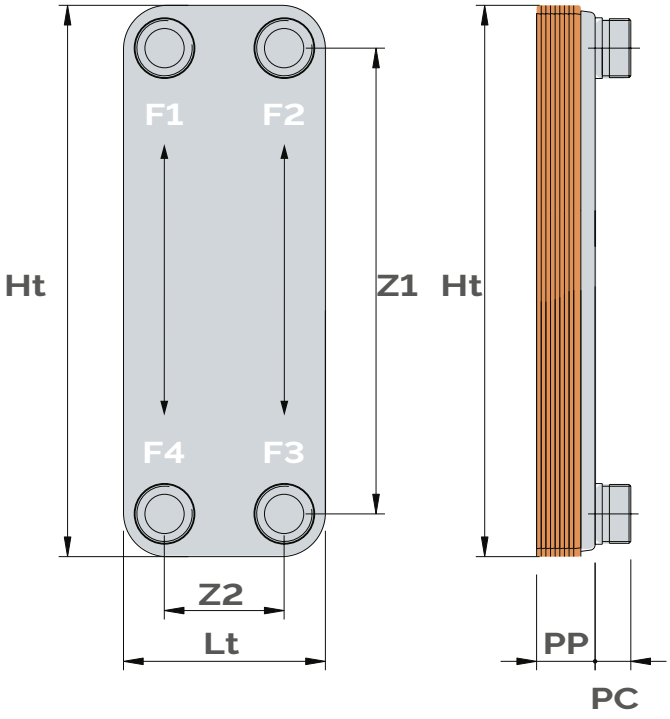
*Plate No.



Legend

1. Front plate
2. Brazing
3. Coupling

Couplings
Primary: Inlet F1
Primary: Outlet F4
Secondary: Inlet F3
Secondary: Outlet F2



Accessories
Insulation, Couplings

P4, P7 Serie: PE insulation thermoformed removable with velcro strips.

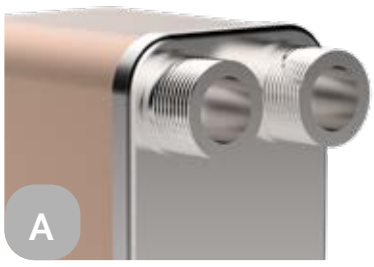
Model	Plates threshold	Code	Price
P4	up to 14 plates	843090016X	
	up to 20 plates	843090017X	
	up to 30 plates	843090018X	
	up to 40 plates	843090019X	
	up to 50 plates	843090020X	
	up to 60 plates	843090060X	
P7	up to 30 plates	843090050X	
	up to 50 plates	843090051X	
	up to 70 plates	843090052X	



Serie P15 / P30: insulation kit made of sheets of precut adhesive elastomer, finishing tape and assembly instructions.

Model	Plates threshold	Code	Price
P15	from 30 up to 80 plates	843090053X	
	from 81 up to 140 plates	843090054X	
	from 141 up to 200 plates	843090055X	
P30	from 30 up to 80 plates	843090056X	
	from 81 up to 140 plates	843090057X	





threaded standard



free flange upon request

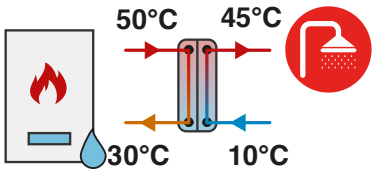
All brazed heat exchangers comes with threaded couplings Upon request, additional couplings and free flange couplings.

Tables for fast selection - BRAZED

INSTANTANEOUS DHW with LOW temperature source

Project conditions

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	50°C	30°C	30 bar	H_2O
COLD side	Domestic Hot Water	10°C	45°C	30 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	868	2	494	1	P4	30	821020837X		43x22x24	4
25	1085	3	617	1	P4	30	821020837X		43x22x24	4
30	1302	3	741	1	P4	40	821020840X		43x22x24	5
35	1519	3	864	1	P4	40	821020840X		43x22x24	5
40	1736	3	988	1	P4	50	821020842X		43x22x24	6
50	2170	11	1235	4	P7	30	821020852X		43x22x24	6
60	2604	15	1482	5	P7	30	821020852X		43x22x24	8
75	3255	13	1852	4	P7	40	821020854X		60x80x26	11
85	3690	17	2099	6	P7	40	821020854X		60x80x26	11
100	4341	15	2469	5	P7	50	821020856X		60x80x31	15
120	5209	15	2963	5	P7	60	821020857X		60x80x31	15
150	6511	14	3704	5	P7	80	821020859X		60x80x31	15
180	7813	27	4445	9	P15	30	821020864X		60x80x37	19
210	9115	21	5186	8	P15	40	821020865X		60x80x37	19
240	10417	27	5927	10	P15	40	821020865X		60x80x29	28
270	11720	22	6667	8	P15	50	821020866X		60x80x29	28
300	13022	27	7408	10	P15	50	821020866X		60x80x31	32

*Accessories see pag. 49 (See Model and plates number)

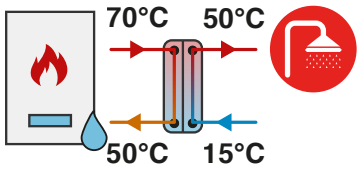
Alternative solution with gasketed heat exchangers: see pag. 38

Tables for fast selection - BRAZED

INSTANTANEOUS DHW with HIGH temperature source

Project conditions

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	50°C	30 bar	H_2O
COLD side	Domestic Hot Water	15°C	50°C	30 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	875	9	495	3	P4	14	821020831X		43x22x24	3
25	1094	13	618	4	P4	14	821020831X		43x22x24	4
30	1312	18	742	5	P4	14	821020831X		43x22x24	5
35	1531	12	866	4	P4	20	821020834X		43x22x24	5
40	1750	15	989	5	P4	20	821020834X		43x22x24	6
50	2187	11	1237	4	P4	30	821020837X		43x22x24	6
60	2625	15	1484	5	P4	30	821020837X		43x22x24	8
75	3281	13	1855	5	P4	40	821020840X		60x80x26	11
85	3718	17	2103	6	P4	40	821020840X		60x80x26	11
100	4375	15	2474	6	P4	50	821020842X		60x80x26	11
120	5250	30	2968	10	P7	40	821020854X		60x80x31	15
150	6562	30	3711	10	P7	50	821020856X		60x80x31	15
180	7874	23	4453	8	P7	70	821020858X		60x80x37	19
210	9187	25	5195	9	P7	80	821020859X		60x80x37	19
240	10499	25	5937	10	P15	40	821020865X		60x80x29	28
270	11812	21	6679	8	P15	50	821020866X		60x80x29	28
300	13124	25	7421	10	P15	50	821020866X		60x80x31	32

*Accessories see pag. 49 (See Model and plates number)

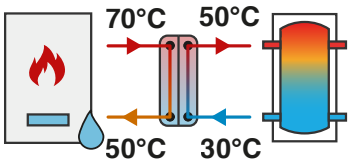
Alternative solution with gasketed heat exchangers: see pag. 39

Tables for fast selection - BRAZED

DHW with STORAGE TANK and HIGH temperature source

Project conditions 1

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	50°C	30 bar	H_2O
COLD side	Domestic Hot Water	30°C	50°C	30 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	875	8,7	868	7	P4	14	821020831X		43x22x24	3
25	1094	13	1085	11	P4	14	821020831X		43x22x24	3
30	1312	18	1302	15	P4	14	821020831X		43x22x24	3
35	1531	12	1519	10	P4	20	821020834X		43x22x24	4
40	1750	15	1736	13	P4	20	821020834X		43x22x24	4
50	2187	10	2170	10	P4	30	821020837X		43x22x24	4
60	2625	15	2604	14	P4	30	821020837X		43x22x24	4
75	3281	13	3255	13	P4	40	821020840X		43x22x24	5
85	3718	17	3690	16	P4	40	821020840X		43x22x24	5
100	4375	15	4341	15	P4	50	821020842X		43x22x24	6
120	5250	20	5209	19	P7	50	821020856X		43x22x24	6
150	6562	17	6511	16	P7	70	821020858X		60x80x31	15
180	7874	19	7813	18	P7	80	821020859X		60x80x37	19
210	9187	20	9115	20	P15	40	821020865X		60x80x37	19
240	10499	17	10417	17	P15	50	821020866X		60x80x29	28
270	11812	15	11720	16	P15	60	821020867X		60x80x29	28
300	16124	18	13022	19	P15	60	821020867X		60x80x31	32

*Accessories see pag. 49 (See Model and plates number)

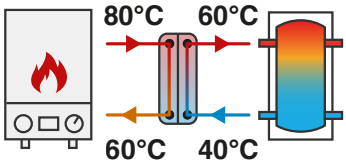
Alternative solution with gasketed heat exchangers: see pag. 40

Tables for fast selection - BRAZED

DHW with STORAGE TANK and HIGH temperature source

Project conditions 2

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	80°C	60°C	30 bar	H_2O
COLD side	Domestic Hot Water	40°C	60°C	30 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	879	9	871	7	P4	14	821020831X		43x22x24	3
25	1098	13	1089	10	P4	14	821020831X		43x22x24	3
30	1318	18	1307	14	P4	14	821020831X		43x22x24	3
35	1538	11	1525	10	P4	20	821020834X		43x22x24	3
40	1757	15	1743	13	P4	20	821020834X		43x22x24	4
50	2197	10	2178	9	P4	30	821020837X		43x22x24	4
60	2636	14	2614	13	P4	30	821020837X		43x22x24	4
75	3295	13	3268	12	P4	40	821020840X		43x22x24	5
85	3735	16	3703	16	P4	40	821020840X		43x22x24	5
100	4394	15	4357	15	P4	50	821020842X		43x22x24	5
120	5272	19	5228	18	P7	50	821020856X		43x22x24	6
150	6590	16	6535	16	P7	70	821020858X		43x22x24	8
180	7908	18	7843	18	P7	80	821020859X		60x80x37	19
210	9226	20	9150	20	P7	90	821020860X		60x80x37	19
240	10545	17	10457	17	P15	50	821020866X		60x80x29	28
270	11863	15	11764	15	P15	60	821020867X		60x80x29	28
300	13180	18	13071	19	P15	60	821020867X		60x80x31	32

*Accessories see pag. 49 (See Model and plates number)

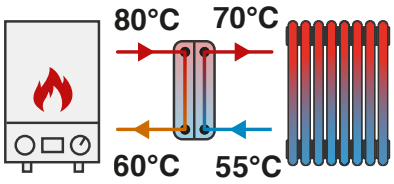
Alternative solution with gasketed heat exchangers: see pag. 41

Tables for fast selection - GASKETED

HEATING with HIGH temperature endpoints

Project conditions 1

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	80°C	60°C	30 bar	H_2O
COLD side	Radiators	55°C	70°C	30 bar	H_2O

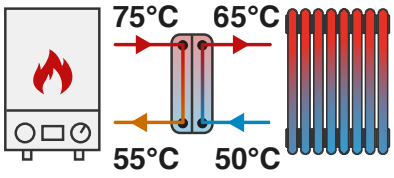


Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	659	2	876	4	P4	20	821020834X		43x22x24	3
25	1098	3	1460	4	P4	30	821020837X		43x22x24	3
35	1538	2	2044	4	P4	50	821020842X		43x22x24	4
50	2197	10	2920	15	P7	30	821020852X		43x22x24	5
75	3295	8	4379	13	P7	50	821020856X		43x22x24	6
100	4394	10	5839	16	P7	60	821020857X		43x22x24	8
115	5053	10	6415	16	P7	70	821020858X		60x80x37	19
130	5712	8	7591	14	P7	90	821020860X		60x80x37	19
150	6590	10	8759	17	P15	40	821020865X		60x80x29	28
180	7908	10	10510	16	P15	50	821020866X		60x80x29	28
200	8787	12	11678	20	P15	50	821020866X		60x80x31	32

*Accessories see pag. 49 (See Model and plates number)

Project conditions 2

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	75°C	55°C	30 bar	H_2O
COLD side	Radiators	50°C	65°C	30 bar	H_2O



Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	658	3	874	4	P4	20	821020834X		43x22x24	3
25	1096	2	1457	3	P4	40	821020840X		43x22x24	3
35	1534	2	2039	4	P4	50	821020842X		43x22x24	4
50	2192	10	2913	15	P7	30	821020852X		43x22x24	5
75	3288	8	4370	13	P7	50	821020856X		43x22x24	6
100	4384	10	5827	16	P7	60	821020857X		43x22x24	8
115	5042	10	6701	16	P7	70	821020858X		60x80x37	19
130	5699	8	7575	14	P7	90	821020860X		60x80x37	19
150	6576	11	8740	17	P15	40	821020865X		60x80x29	28
180	7891	10	10488	17	P15	50	821020866X		60x80x29	28
200	8768	12	11654	20	P15	50	821020866X		60x80x31	32

*Accessories see pag. 49 (See Model and plates number)

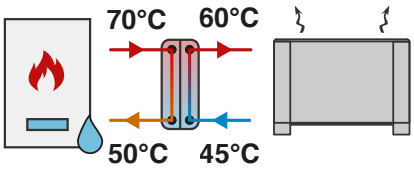
Alternative solution with gasketed heat exchangers: see pag. 42

Tables for fast selection - GASKETED

HEATING with HIGH temperature endpoints

Project conditions 3

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	50°C	30 bar	H_2O
COLD side	Radiators / Fan Coil	45°C	60°C	30 bar	H_2O

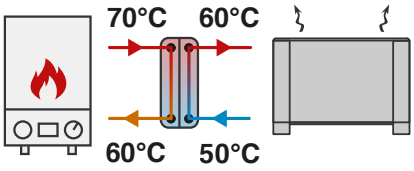


Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	656	11	872	12	P7	10	821020848X		43x22x24	3
25	1094	6	1454	9	P7	20	821020850X		43x22x24	3
35	1531	12	2035	16	P7	20	821020850X		43x22x24	4
50	2187	10	2908	15	P7	30	821020852X		43x22x24	5
75	3281	8	4361	13	P7	50	821020856X		43x22x24	6
100	4375	10	5815	16	P7	60	821020857X		60x80x31	15
115	5031	8	6687	13	P7	80	821020859X		60x80x37	19
130	5687	14	7560	23	P15	30	821020864X		60x80x37	19
150	6562	18	8723	29	P15	30	821020864X		60x80x29	28
180	7874	15	10467	25	P15	40	821020865X		60x80x31	32
200	8749	18	11630	30	P15	40	821020865X		60x80x31	32

*Accessories see pag. 49 (See Model and plates number)

Project conditions 4

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	70°C	60°C	30 bar	H_2O
COLD side	Radiators / Fan Coil	50°C	60°C	30 bar	H_2O



Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	1315	18	1310	14	P4	14	821020831X		43x22x24	3
25	2192	10	2183	9	P4	30	821020837X		43x22x24	4
35	3069	19	3056	17	P4	30	821020837X		43x22x24	5
50	4384	15	4366	15	P4	50	821020842X		43x22x24	6
75	6576	29	6548	27	P7	50	821020856X		60x80x37	19
100	8768	28	8731	26	P7	70	821020858X		60x80x29	28
115	10083	29	10041	28	P7	80	821020859X		60x80x29	28
130	11398	29	11351	28	P15	40	821020865X		60x80x31	32
150	13152	25	13097	25	P15	50	821020866X		60x80x34	36
180	15782	25	15716	26	P15	60	821020867X		60x80x36	40
200	17536	24	17463	24	P15	70	821020868X		60x80x36	40

*Accessories see pag. 49 (See Model and plates number)

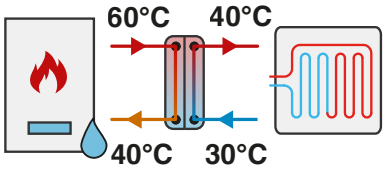
Alternative solution with gasketed heat exchangers: see pag. 43

Tables for fast selection - BRAZED

HEATING with LOW temperature endpoints

Project conditions 1

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	60°C	40°C	30 bar	H_2O
COLD side	Radiating floor / Fan Coil	30°C	40°C	30 bar	H_2O

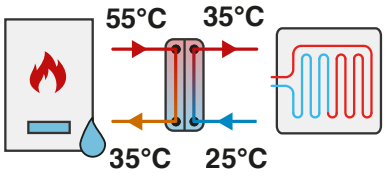


Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	654	5	1300	15	P4	14	821020831X		43x22x24	3
25	1089	7	2166	20	P4	20	821020834X		43x22x24	4
35	1525	6	3033	18	P4	30	821020837X		43x22x24	5
50	2178	4	4333	15	P4	50	821020842X		43x22x24	6
75	3268	6	6499	21	P7	60	821020857X		60x80x37	19
100	4357	8	8666	28	P7	70	821020858X		60x80x29	28
115	5011	8	9966	29	P7	80	821020859X		60x80x31	32
130	5664	8	11265	30	P15	40	821020865X		60x80x31	32
150	6535	7	12999	26	P15	50	821020866X		60x80x34	36
180	7843	7	15598	27	P15	60	821020867X		60x80x36	40
200	8714	7	17331	26	P15	70	821020868X		60x80x36	40

*Accessories see pag. 49 (See Model and plates number)

Project conditions 2

Circuit	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Water heater	55°C	35°C	30 bar	H_2O
COLD side	Radiating floor	25°C	35°C	30 bar	H_2O



Power	Hot side		Cold		Model*	Plates number*	Code	Price	Packaging	
									Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
15	652	5	1298	15	P4	14	821020831X		43x22x24	3
25	1087	7	2163	20	P4	20	821020834X		43x22x24	4
35	1522	6	3028	19	P4	30	821020837X		43x22x24	5
50	2174	4	4325	16	P4	50	821020842X		43x22x24	6
75	3261	9	6488	29	P7	50	821020856X		60x80x37	19
100	4349	8	8650	28	P7	70	821020858X		60x80x29	28
115	5001	9	9948	29	P7	80	821020859X		60x80x31	32
130	5653	6	11246	21	P15	50	821020866X		60x80x31	32
150	6523	7	12976	27	P15	50	821020866X		60x80x34	36
180	7828	8	15571	28	P15	60	821020867X		60x80x36	40
200	8697	7	17301	26	P15	70	821020868X		60x80x36	40

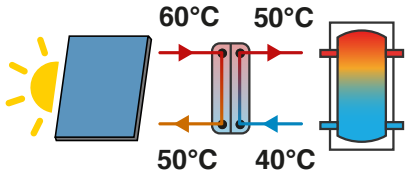
*Accessories see pag. 49 (See Model and plates number)

Alternative solution with gasketed heat exchangers: see pag. 44

Tables for fast selection - GASKETED

HEATING with Thermal Solar

0,3	Source - endpoint	T_{IN}	T_{OUT}	P_{MAX}	Fluid
HOT side	Solar panel	60°C	50°C	30 bar	Glic. 30%
COLD side	Heating / Domestic Hot Water	40°C	50°C	30 bar	H_2O



								Packaging	
Power	Hot side		Cold		Model*	Plates number*	Code	Price	Dimensions	Weight
kW	l/h	kPa	l/h	kPa					cm	kg
20	1746	15	1739	13	P4	20	821020834X		43x22x24	5
35	3056	19	3044	18	P4	30	821020837X		43x22x24	6
50	4366	16	4349	15	P4	50	821020842X		60x80x37	19
75	6548	17	6523	16	P7	70	821020858X		60x80x29	28
100	8731	18	8697	18	P15	40	821020865X		60x80x31	32

*Accessories see pag. 49 (See Model and plates number)

The solar thermal makes it roughly 0.8 kW/m^2.
Example 10 Fiorini collectors H2500 (pag. 284) is equal to 25m^2= 20kW

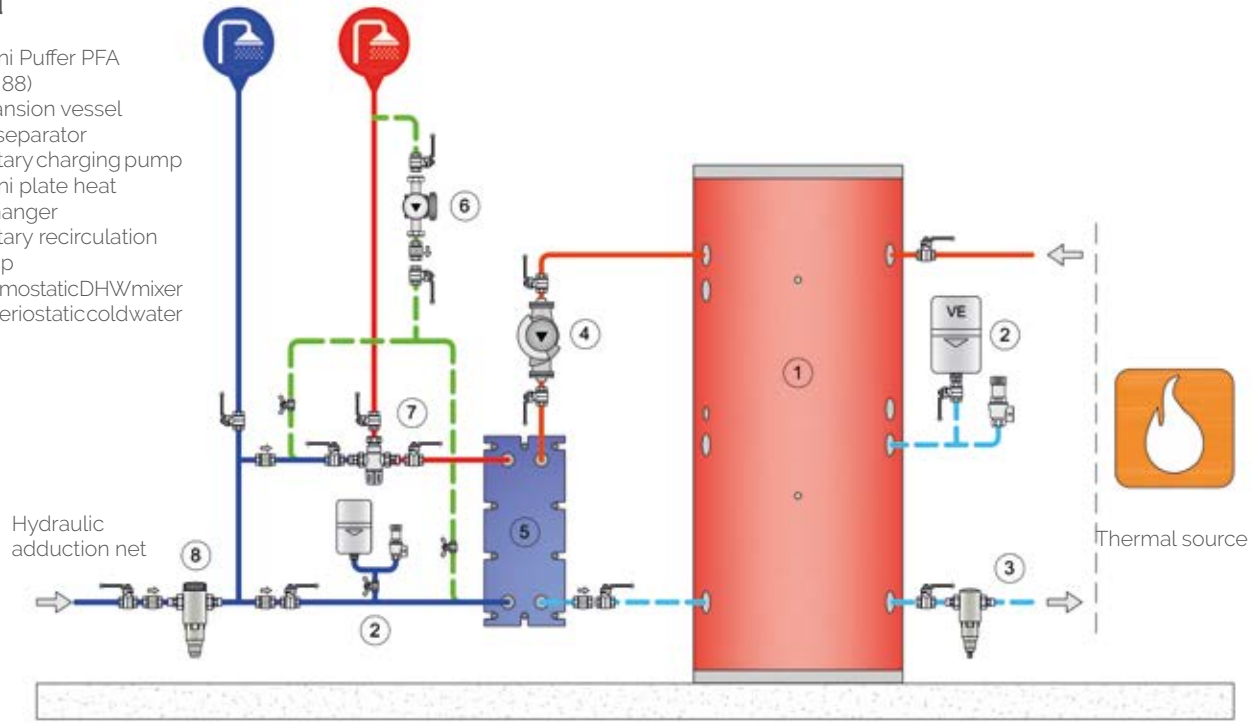
Alternative solution with gasketed heat exchangers: see pag. 46

Plant Solutions

Instantaneous DHW (see SET pag. 249)

Legend

1. Fiorini Puffer PFA (see 88)
2. Expansion vessel
3. Dirt separator
4. Sanitary charging pump
5. Fiorini plate heat exchanger
6. Sanitary recirculation pump
7. ThermostaticDHWmixer
8. Bacteriostaticcoldwater filter

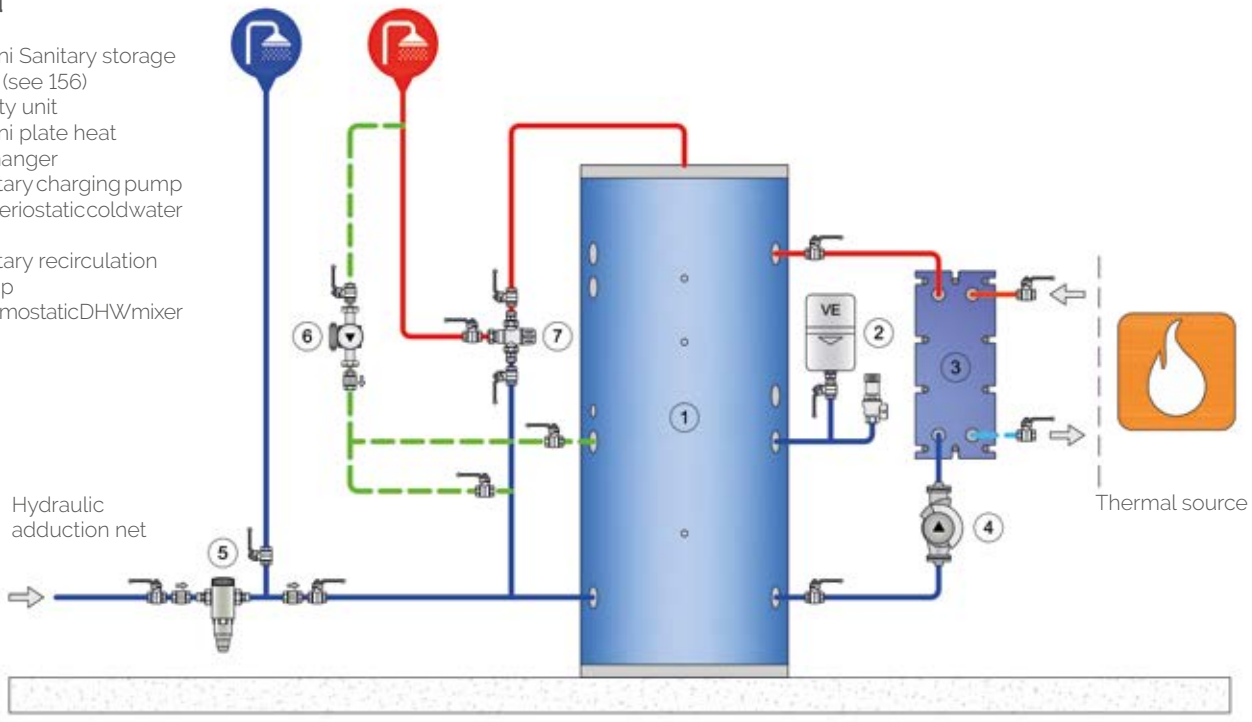


SET fresh water station see pag. 249

DHW with storage tank (see AQUAFAST pag. 212)

Legend

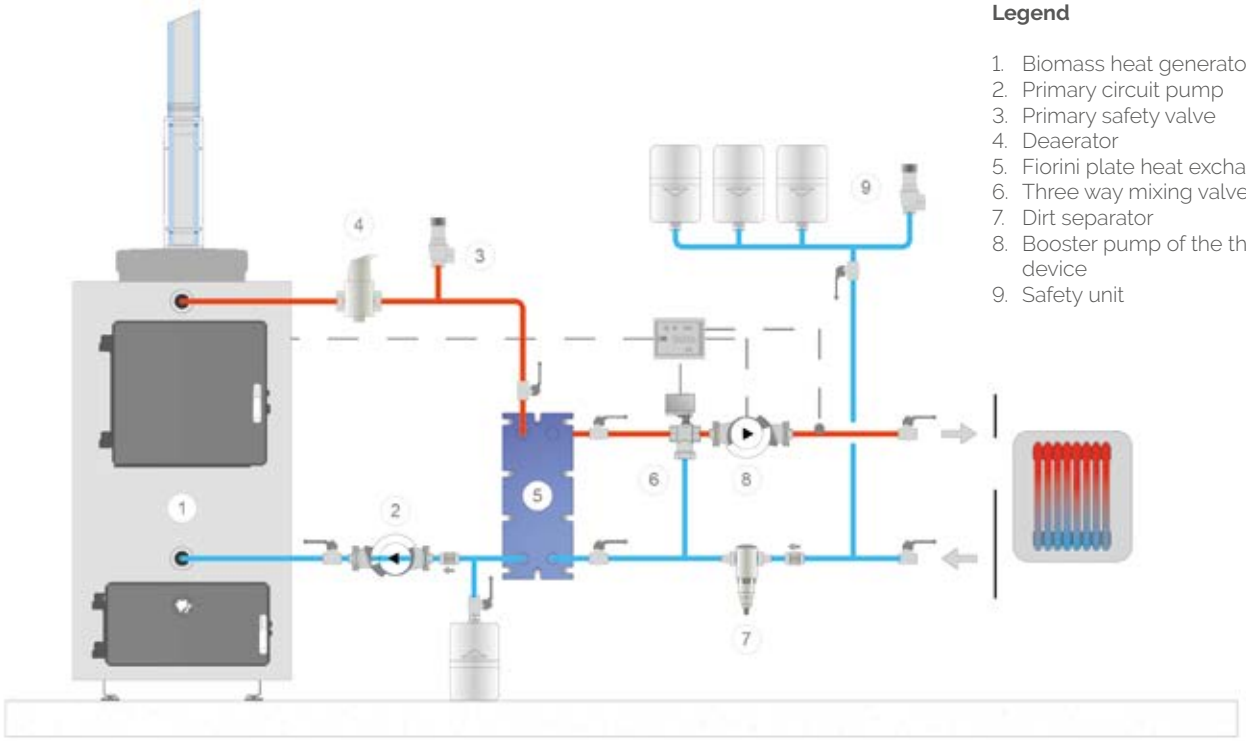
1. Fiorini Sanitary storage tank (see 156)
2. Safety unit
3. Fiorini plate heat exchanger
4. Sanitary charging pump
5. Bacteriostaticcoldwater filter
6. Sanitary recirculation pump
7. ThermostaticDHWmixer



AQUAFAST fast heater see pag. 212

Plant Solutions

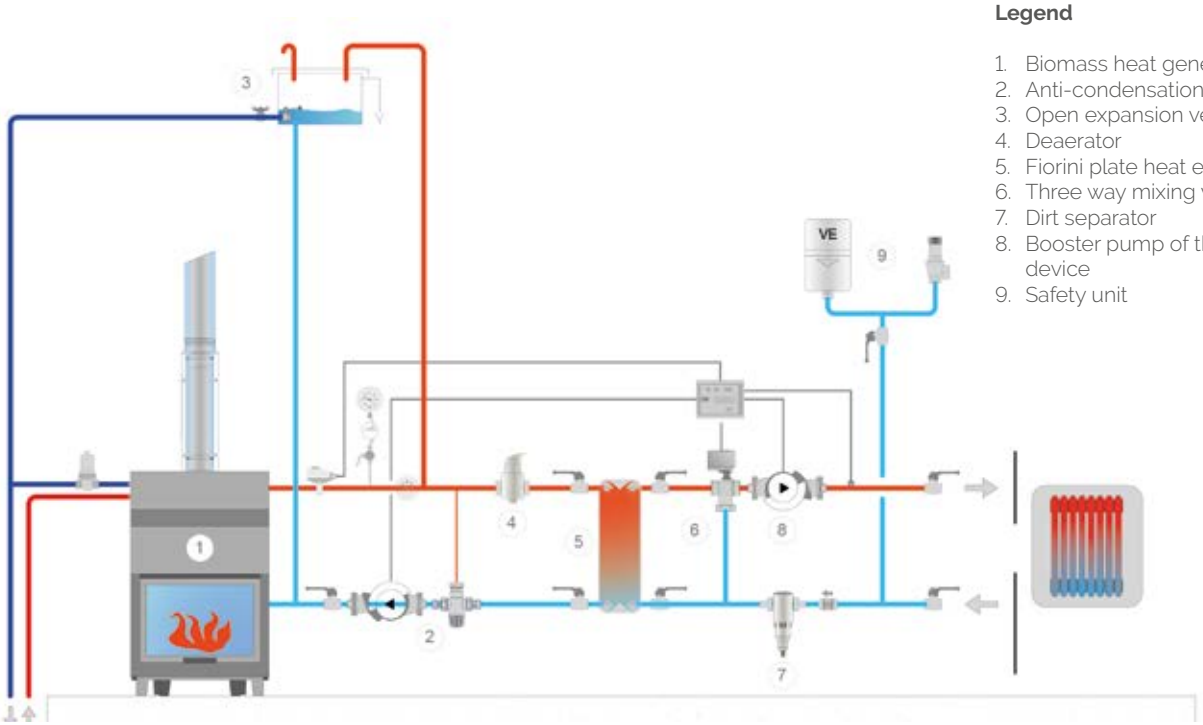
Separation between thermal source and device
(Closed expansion tank)



Legend

1. Biomass heat generator
2. Primary circuit pump
3. Primary safety valve
4. Deaerator
5. Fiorini plate heat exchanger
6. Three way mixing valve
7. Dirt separator
8. Booster pump of the thermal device
9. Safety unit

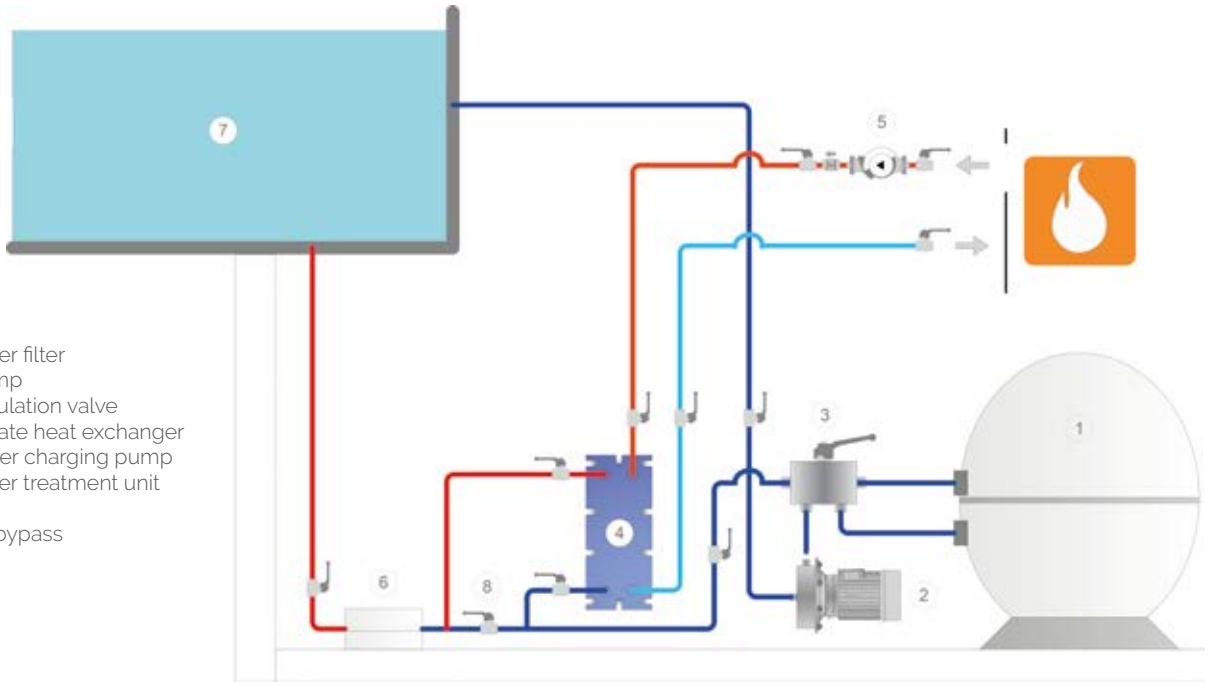
Separation between thermal source and device
(Open expansion tank)



Legend

1. Biomass heat generator
2. Anti-condensation return unit
3. Open expansion vessel
4. Deaerator
5. Fiorini plate heat exchanger
6. Three way mixing valve
7. Dirt separator
8. Booster pump of the thermal device
9. Safety unit

Plant Solutions
Systems for swimming pools



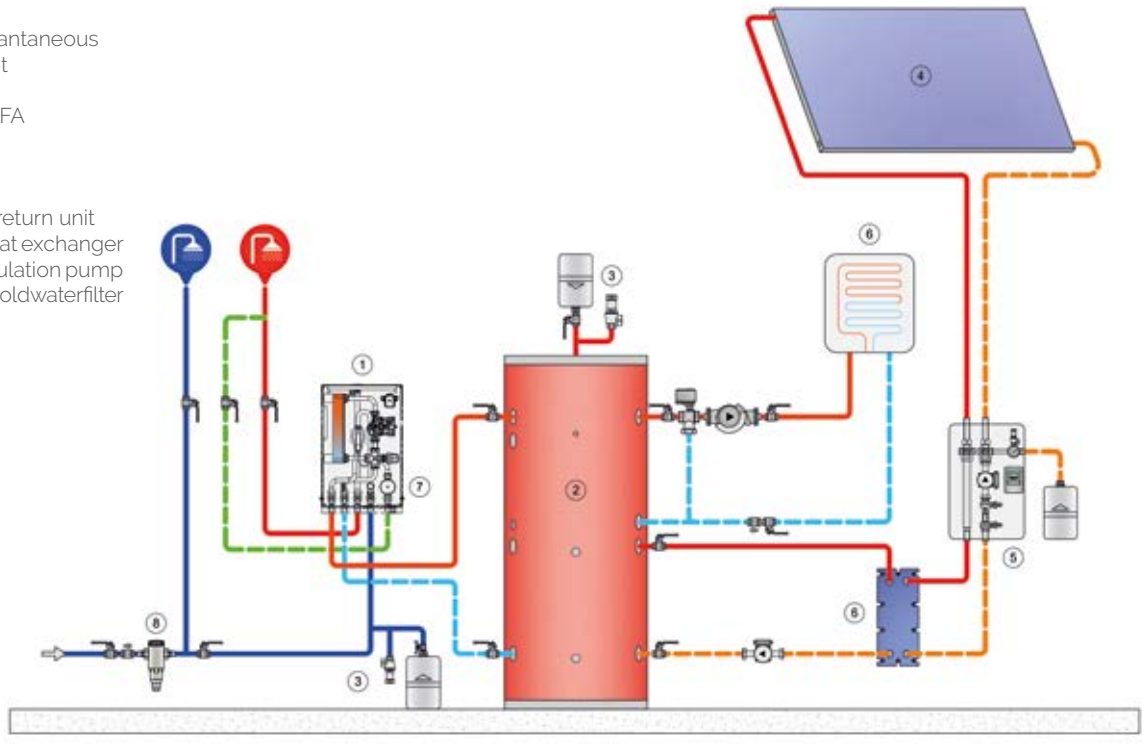
Legend

1. Pool water filter
2. Pool pump
3. Pool regulation valve
4. Fiorini plate heat exchanger
5. Exchanger charging pump
6. Pool water treatment unit
7. Pool
8. Copper bypass

Systems for solar thermal

Legend

1. SET DHW Instantaneous production unit (see 244)
2. Fiorini Puffer PFA (see 88)
3. Safety unit
4. Solar thermal
5. Solar thermal return unit
6. Fiorini plate heat exchanger
7. Sanitary recirculation pump
8. Bacteriostaticcoldwaterfilter



DATA COLLECTION FOR EXCHANGER SELECTION

For the correct dimensioning of an exchanger, at least 5 data on 7 * are mandatory and meet the following conditions:

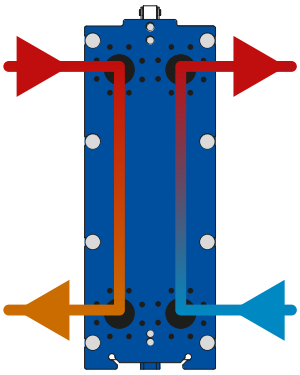
- T.IN HOT > T.OUT COLD
- T.IN COLD < T.OUT HOT
- Temperatures and flow rates consistent with thermal power

If you do not know all the required data, describe the type of application in the appropriate field below.

CONTACT			
Applicant		Data	
Company		Ph.	
Email		Ref.	

GENERAL DATA		
Exchanger type	❑ Gasketed	❑ Brazed
Power*		(specify u.m. kW or kcal/h)
Nominal pressure		(specify u.m. e.g. bar)

HOT SIDE		
Fluid		
T IN* (°C)		
T OUT* (°C)		
FLOW* (specify u.m.)		
MAX loss (kPa)		



COLD SIDE		
Fluid		
T IN* (°C)		
T OUT* (°C)		
FLOW* (specify u.m.)		
MAX loss (kPa)		

ADDITIONAL NOTES			
Type/ Diameter Couplings			
Plates material/ Couplings/Shaft			
Accessories	❑ anti-condensate tub (only for gasketed)	❑ insulation box	❑ feet set (only for gasketed)
Size Limits			
Type of application			

The QR-CODE allows you to access the online form for the dimensioning of exchangers. Following the wizard you can send the completed form directly to our technicians, who will answer you with the sizing required in a short time.

How to use the QR-CODE:

- Use a device like tablet, smartphone, 2 in 1 device.
- Install an application to read QR-CODE (if not already installed)
- Aim the device on QR-CODE
- Access the form online

The personal data included in this form will be processed according to current laws about privacy. Please see the privacy notice, full text is available at **go.fiorinigroup.it/eng/privacy**
Filling this form you agree to the privacy notice and allow data processing.

go.fiorinigroup.it/eng/dimensionamentophe



Refrigeration and Heat Pumps Integrated Solutions

Contents

Hot&Cold Water Storage Tanks pag. 66



MINI-HC (Hot & Cold)
pag. 68



VKX HC (Hot Cold) MINI
pag. 70



VKG-HC (Hot & Cold)
pag. 72

Cold Water Storage Tanks pag. 74



VKG (carbon steel)
pag. 74



VK (galvanized)
pag. 76



VKT (enamelled)
pag. 78



VKX (stainless steel)
pag. 80



VKS (internal baffles)
pag. 82



VKD (conveyors pipes)
pag. 84



VKR (diffusing pipes)
pag. 86

Hot Water Storage Tanks pag. 88



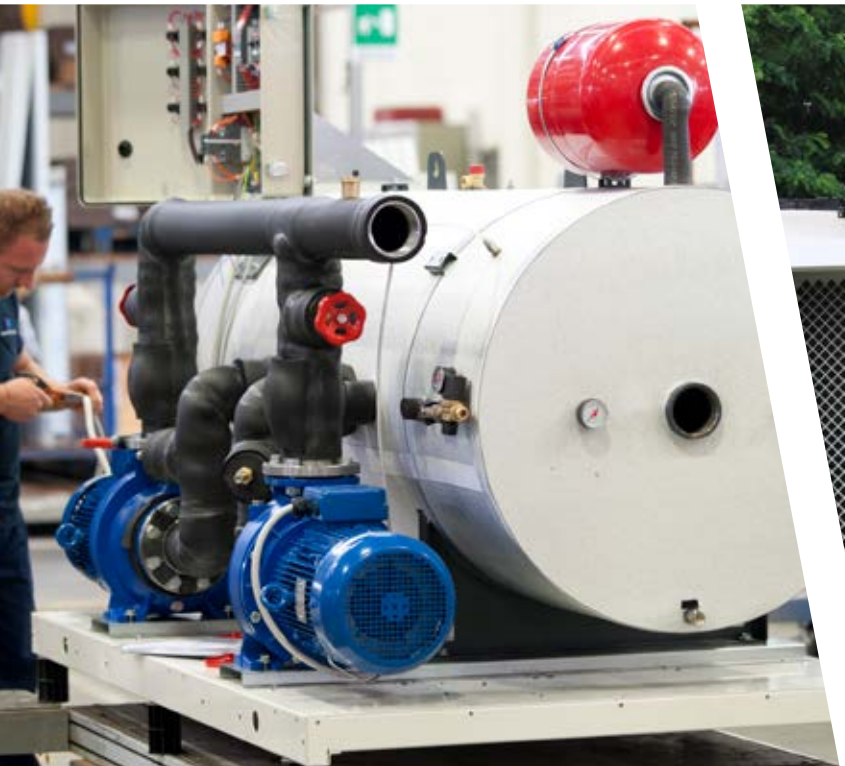
PUFFER
pag. 88



COMBI PLUS
pag. 94

Accessories pag. 102


fiorini
fiorini
fiorini



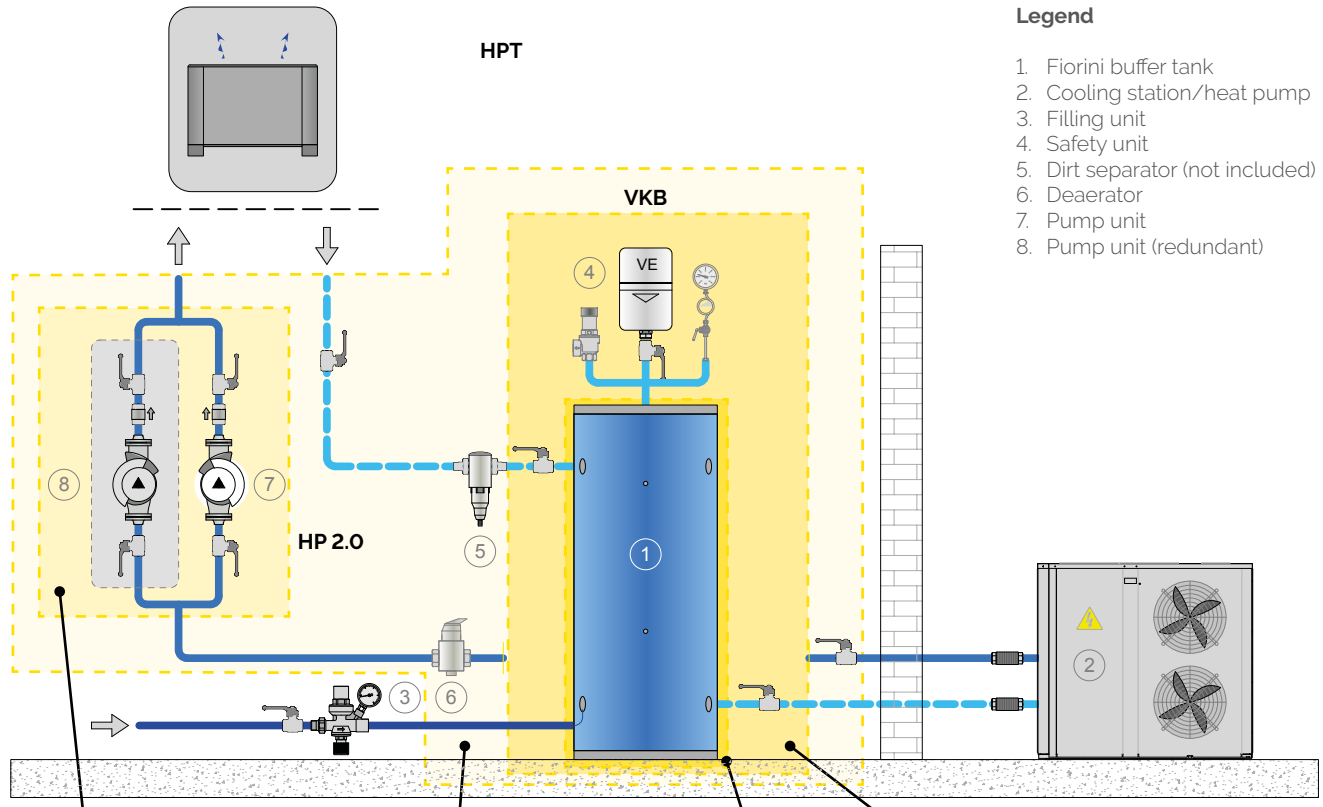

fiorini

Refrigeration and Heat Pumps Integrated Solutions

Efficiency and High-Performance: our goal

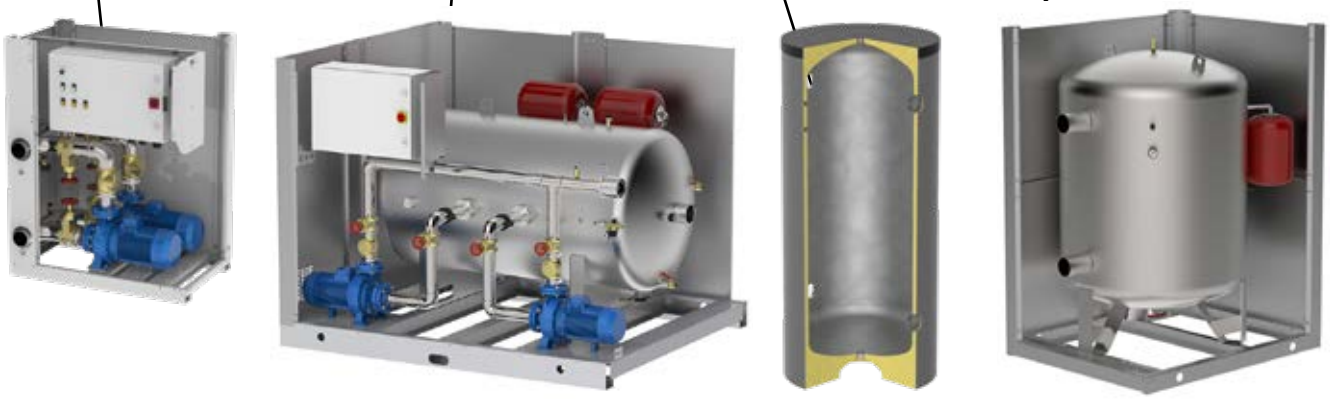
Our line of refrigeration systems contains buffer tanks and hydronic kits, which are designed to improve the functioning and performance of even the most evolutionary air-conditioning systems. We have a broad range of buffer tanks, both horizontal and vertical, and hydraulic stations which can be combined with many pumps and storage tanks. All our products are manufactured, on request, with special and customized details.

Below represented our solutions and a common installation plant. Fiorini can provide either the buffer tank or a complex hydronic kit, which contains a tank, pumps, electric board and accessories.



Legend

1. Fiorini buffer tank
2. Cooling station/heat pump
3. Filling unit
4. Safety unit
5. Dirt separator (not included)
6. Deaerator
7. Pump unit
8. Pump unit (redundant)



Inertial tanks for hot/cold



MINI18 - MINI45 - MINI85
Carbon steel
External anti-rust painting
Anti-condensate insulation
Can contain hot and chilled water as well in heating or cooling devices equipped with a heat pump.



VKX-HC MINI
Stainless steel
Painted galvanized sheet metal
Anti-condensation insulation
Designed to contain both hot and chilled water in heat pump powered heating and cooling systems.



VKG-HC (coloured PVC) - VKGE-HC
(embossed aluminium sheet)
Carbon steel
External anti-rust painting
Anti-condensate insulation
Can contain hot and chilled water as well in heating or cooling devices equipped with a heat pump. To be used in Layout 1 or Layout 2 (single and double loop) installations. Embossed aluminium sheet for outdoor installations.

Inertial tanks for hot water



PFA - PFB - PFC
Carbon steel
Anti-rust paint
Suitable for heating systems intended for the storage of hot technical water for systems powered by a discontinuous energy source.



COMBI PLUS
Carbon steel
Stainless steel DHW exchnager
Internal enamelling
Suitable for systems that use discontinuous energy sources such as, for example, solar, biomass and wood systems

Inertial tanks for cold water



VKG (coloured PVC) - VKGE (embossed aluminium sheet)
Carbon steel
External anti-rust painting
Anti-condensate insulation
For devices which do not need internal protection against corrosion. Single or double loop installations. To be used in Layout 1 or Layout 2 (single and double loop) installations. Embossed aluminium sheet for outdoor installations.



VK (coloured PVC) - VKE (embossed aluminium sheet)
Carbon steel
Hot-dip galvanizing
Anti-condensate insulation
For devices which need protection against corrosion. To be used in Layout 1 or Layout 2 (single and double loop) installations. Embossed aluminium sheet for external installations.



VKT
Carbon steel
Internal enamelling
Anti-condensate insulation
For devices which need anti-corrosive protection and which are also compatible with most antifreeze liquids. To be used in Layout 1 or Layout 2 (single and double loop) installations.



VKX
Stainless steel
Anti-condensate insulation
For devices which need stainless steel in case of contact with the fluid. To be used in Layout 1 or Layout 2 (single and double loop) installations.



VKS
Carbon steel
External anti-rust painting
Anti-condensate insulation
With internal baffles which prevent preferential flow. To be used with Layout 2 (double loop) installations, also with a high flow and multi-circuited.



VKR
Carbon steel
External anti-rust painting
Anti-condensate insulation
Suitable for installation in Layout 2 (double loop). Conveyor pipes favor the flow of chilled water from primary to secondary circuit, recommended for medium / high flow rates.



VKD
Carbon steel
External anti-rust painting
Anti-condensate insulation
Suitable for installation in Layout 2 (double loop). The diffuser tubes evens the temperature inside the tank.

Cold Water Storage Tanks
MINI-HC Serie (Hot & Cold wall-mounted)

The MINI-HC series includes heat sink tanks for "Hot & Cold" plants suitable for use with heat pumps, perform hydraulic circuit breaker functions (making the flows of the two circuits independent) and the thermal flywheel (to minimize the heat pump starts). The MINI-HC. 45/85 l versions, has two additional connections dedicated to a supplementary source. It is possible to order in multipacks, receiving the tanks on a pallet. The 18 l version can be installed horizontally.

Material: carbon steel
External covering: 45/85 l painted galvanized metal sheet
18 l polyethylene
Insulation
Operational limits

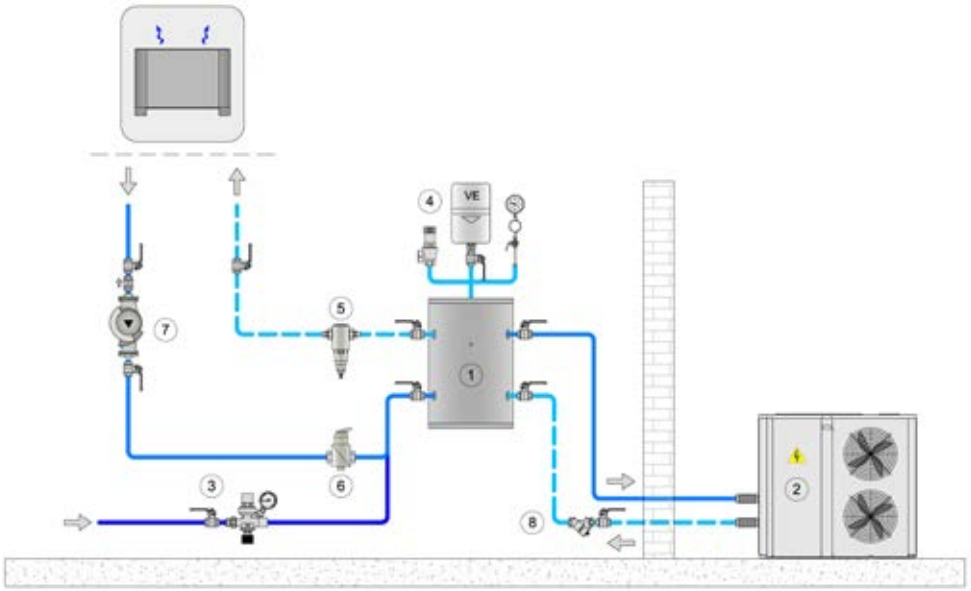
Capacity (l)	Type
18	Closed cell polyethylene foam
45, 85	High density rigid polyurethane foam

Min. temperature	Max. temperature	Max. pressure
-10 °C	90 °C	6 bar

	MINI wall-mounted			Single packaging		Multipacks* packaging		
Cap. l	Code	Price each	Energy label	Dim. cm	Weight kg	Pieces	Dim. cm	Weight kg
18	817010283X		C	55x29x31	10	24	120x100x134	250
45	817010323X		C	41x41x80	19	12	120x80x180	225
85	817010324X		C	49x49x87	25	8	105x105x184	210

***to purchase with multiple packaging, it is necessary to order quantities equal to or multiple of the standard packaging**

Standard Accessories: see pag. 102









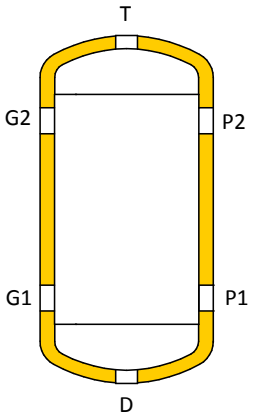
TESTED

Legend

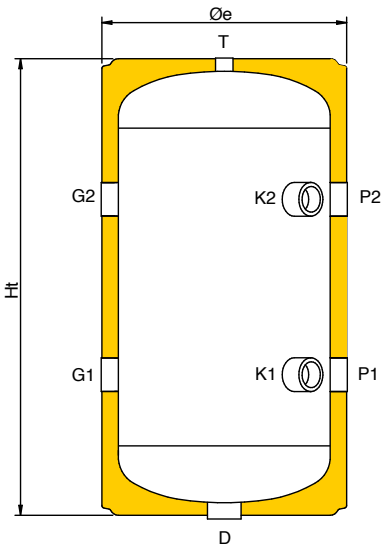
1. Fiorini buffer tank
2. Cooling station/heat pump
3. Filling unit
4. Safety unit
5. Dirt separator (not included)
6. Deaerator
7. Pump unit
8. "Y" filter to protect the PDC

Cold Water Storage Tanks: Dimensions MINI-HC series

cap. = 18



cap. = 45, 85



Couplings legend

D	Drain
G1	From plant
G2	To plant
K1	Auxiliary
K2	Auxiliary
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Capacity l	D inch	G1 inch	G2 inch	K1 inch	K2 inch	P1 inch	P2 inch	T inch
18	3/4"	1"	1"	-	-	1"	1"	3/4"
45	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1/2"
85	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1/2"

Size chart

Capacity l	Øe mm	Ht mm	R* mm	G1 mm	G2 mm	K1 mm	K2 mm	P1 mm	P2 mm
18	260	530	590	130	400	-	-	130	400
45	370	700	770	220	485	220	485	220	485
85	460	780	905	185	535	185	535	185	535

R*: Reversal quota

Cold Water Storage Tanks
VKX-HC MINI Serie
(Hot & Cold wall-mounted)

The VKX-HC MINI series consists of hanging tanks made of stainless steel for "hot-cold" systems. They are also suitable for use with heat pumps, they perform the functions of hydraulic separator (making the flow rates of the two circuits independent), and that of thermal flywheel (aimed at minimizing the start-ups of the heat pump). The VKX-HC MINI is available in the 45 and 75l versions and have two additional connections for a supplementary source. Plus: stainless steel, which preserves the cleanliness of the system and guarantees minimum heat loss. It is possible to order in multiple packages, receiving the tanks on a pallet.



TESTED

Material: AISI 304 stainless steel
External coating: painted galvanized metal sheet
Insulation

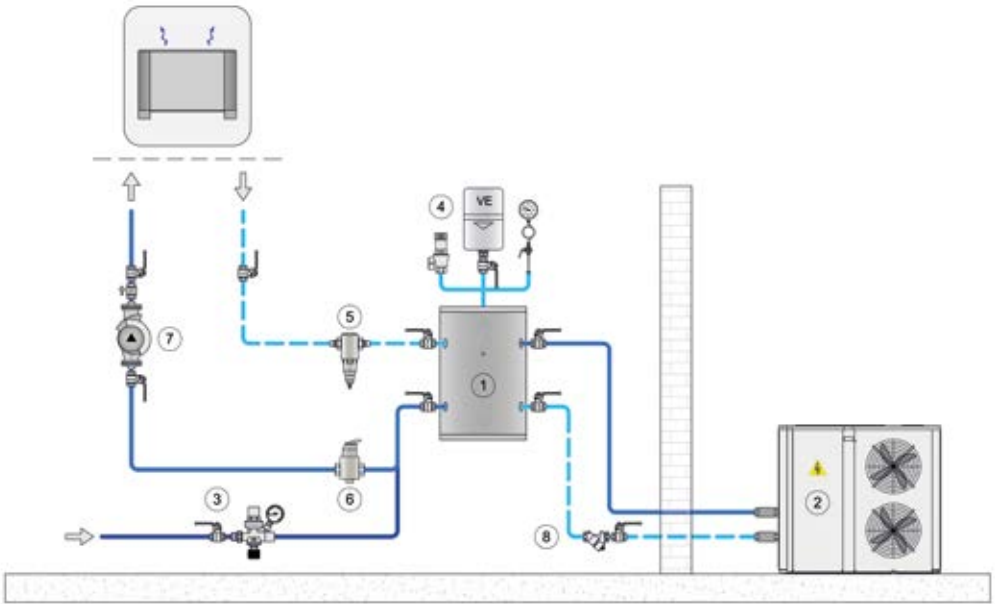
Capacity (l)	Type
45, 75	High density rigid polyurethane foam

Operational limits

Min. temperature	Max. temperature	Max. pressure
-10 °C	90 °C	8 bar

	VKX-HC MINI wall-mounted			Single packaging	Multipacks* packaging	
Cap. l	Code	Price each	Energy label	Dim. cm	Pieces	Dim. cm
45	817040219X		A	60x60x138	15	130x90x220
75	817040220X		A	60x90x155	10	110x105x220

***to purchase with multiple packaging, it is necessary to order quantities equal to or multiple of the standard packaging**

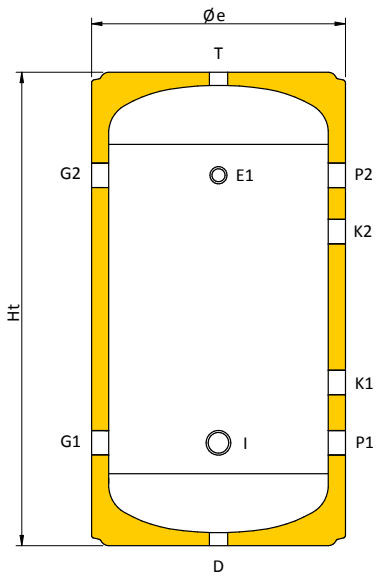


Legend

1. Fiorini VKX-HC MINI
2. Cooling station/heat pump
3. Filling unit
4. Safety unit
5. Dirt separator (not included)
6. Deaerator
7. Pump unit
8. "Y" filter to protect the PDC

Cold Water Storage Tanks: Dimensions
VKX-HC MINI Serie - (Hot & Cold wall-mounted)

cap. = 45, 75 l



Couplings legend

D	Drain
E1	Probe/Thermometer
G1	From plant
G2	To plant
I	Heating element
K1	Auxiliary
K2	Auxiliary
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Capacity l	D inch	E1 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	P1 inch	P2 inch	T inch
45	1"1/4	1/2"	1"1/4	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1/2"
75	1"1/4	1/2"	1"1/4	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1/2"

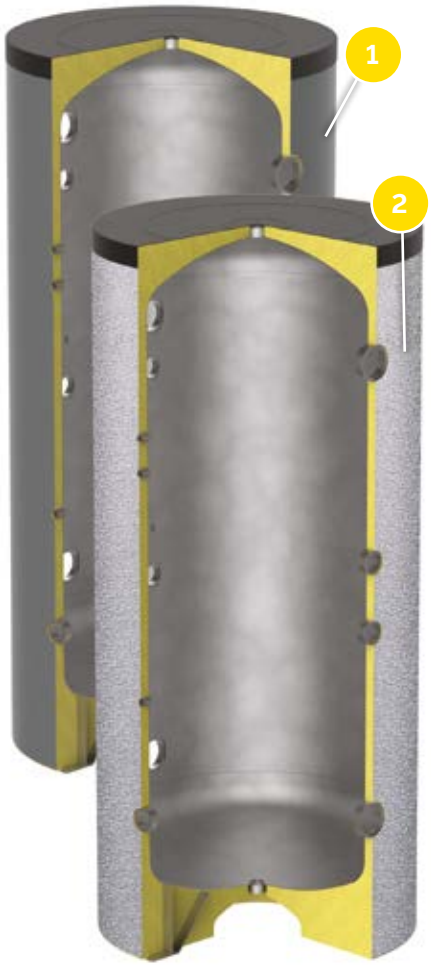
Size chart

Capacity l	Øe mm	Ht mm	R* mm	E1 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	P1 mm	P2 mm
45	380	700	910	550	150	550	150	250	450	150	550
75	470	780	800	595	185	595	185	295	485	185	595

R*: Reversal quota

Cold Water Storage Tanks
VKG-HC, VKGE-HC series (Hot & Cold)

The VKG-HC series contains insulated tanks for "HOT & COLD" applications, which are usually used to increase thermal inertia of the device. Suitable for heat pumps to avoid compressor/generator restarts. VKG-HC have two additional couplings dedicated for an optional additional source.



Material: carbon steel

External covering

Model	Type	Usage	
VKG-HC	coloured PVC	indoor	1
VKGE-HC	embossed aluminium sheet	outdoor	2

Insulation

Capacity (l)	Type
from 100 to 1000	High density rigid polyurethane foam
from 1.500	Closed cell polyethylene foam + Polyester Fiber

Operational limits

Min temperature	Max temperature	Max pressure
-10 °C	90 °C	6 bar

Standard Accessories: see pag. 102

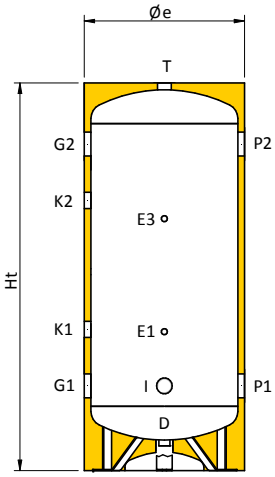
Special versions: see pag. 105

TESTED

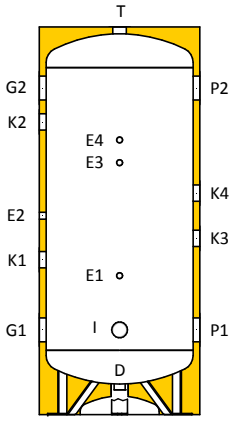
	VKG-HC vertical, coloured PVC		VKGE-HC vertical, embossed al. sheet			Vertical Packaging	
Capacity l	Code	Price	Code	Price	Energy label	Dimensions cm	Weight kg
100	817010285X		817010293H8X		B	49x49x107	35
200	817010286X		817010294H8X		C	54x54x146	40
300	817010287X		817010295H8X		B	64x64x180	60
500	817010288X		817010296H8X		C	74x74x184	95
750	817010289X		817010297H8X		C	95x95x178	120
1000	817010290X		817010298H8X		C	105x105x209	140
1500	817010291X				C	130X130X238	222
2000	817010292X				C	140X140X270	314
2500	817010336X					150X150X249	331
3000	817010337X					150X150X299	389
4000	817010338X					170X170X306	557
5000	817010339X					190X190X310	645

Cold Water Storage Tanks: Dimensions VKG-HC, VKGE-HC series

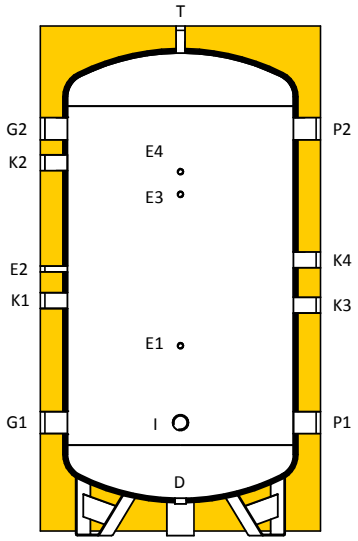
100 ≤ cap. ≤ 200



300 ≤ cap. ≤ 1000



1.500 ≤ cap. ≤ 5.000



Couplings legend

D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Cap. l	D inch	E1 inch	E2 inch	E3 inch	E4 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	P1 inch	P2 inch	T inch
100	1"1/4	1/2"	-	1/2"	-	1"1/2	1"1/2	2"	1"1/2	1"1/2	-	-	1"1/2	1"1/2	1"1/4
200	1"1/4	1/2"	-	1/2"	-	1"1/2	1"1/2	2"	1"1/2	1"1/2	-	-	1"1/2	1"1/2	1"1/4
300	1"1/4	1/2"	1/2"	1/2"	1/2"	2"	2"	2"	1"1/2	1"1/2	1"1/2	1"1/2	2"	2"	1"1/4
500	1"1/4	1/2"	1/2"	1/2"	1/2"	3"	3"	2"	2"	2"	2"	2"	3"	3"	1"1/4
750	1"1/2	1/2"	1/2"	1/2"	1/2"	3"	3"	2"	2"	2"	2"	2"	3"	3"	1"1/2
1000	1"1/2	1/2"	1/2"	1/2"	1/2"	3"	3"	2"	2"	2"	2"	2"	3"	3"	1"1/2
1500	2"	1/2"	1/2"	1/2"	1/2"	3"	3"	2"	2"	2"	2"	2"	3"	3"	2"
2000	2"	1/2"	1/2"	1/2"	1/2"	3"	3"	2"	2"	2"	2"	2"	3"	3"	2"
2500	2"	1/2"	1/2"	1/2"	1/2"	4"	4"	2"	2"	2"	2"	2"	4"	4"	2"
3000	2"	1/2"	1/2"	1/2"	1/2"	4"	4"	2"	2"	2"	2"	2"	4"	4"	2"
4000	2"	1/2"	1/2"	1/2"	1/2"	4"	4"	2"	2"	2"	2"	2"	4"	4"	2"
5000	2"	1/2"	1/2"	1/2"	1/2"	4"	4"	2"	2"	2"	2"	2"	4"	4"	2"

Size chart

Cap. l	Øe mm	Ht mm	R* mm	D mm	E1 mm	E2 mm	E3 mm	E4 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	P1 mm	P2 mm
100	460	950	1060	125	395	-	655	-	285	765	285	445	605	-	-	285	765
200	510	1335	1430	125	520	-	920	-	320	1120	320	580	850	-	-	320	1120
300	610	1680	1790	130	555	895	1055	1155	355	1405	355	645	1255	780	980	355	1405
500	760	1735	1895	140	620	885	1120	1220	380	1450	380	690	1300	785	985	380	1450
750	910	1765	1990	125	685	885	1145	1245	395	1445	395	685	1295	820	1020	395	1445
1000	1010	2075	2310	125	755	1095	1405	1505	415	1715	415	955	1565	955	1155	415	1715
1500	1220	2245	2560	165	840	1180	1510	1610	500	1800	500	1040	1650	1020	1220	500	1800
2000	1320	2565	2885	155	885	1450	1815	1915	505	2105	505	1345	1955	1180	1380	505	2105
2500	1470	2360	2785	180	1015	1255	1515	1665	565	1865	565	1005	1615	1115	1315	565	1865
3000	1470	2860	3220	180	1315	1755	1815	1965	565	2365	565	1505	2115	1365	1565	565	2365
4000	1620	2930	3350	160	1340	1780	1840	1990	590	2390	590	1530	2140	1390	1590	590	2390
5000	1820	2970	3485	140	1350	1790	1850	2000	600	2400	600	1540	2150	1400	1600	600	2400

R*: Reversal quota

Cold Water Storage Tanks
VKG, VKGE series (carbon steel)

The VKG series includes insulated tanks for chilled water, normally used to increase the thermal inertia of the conditioning system.



Material: carbon steel

External covering

Model	Type	Usage
VKG	coloured PVC	indoor
VKGE	embossed aluminium sheet	outdoor

Insulation

Capacity (l)	Type	Thick. (mm)
from 100 to 1000	High density rigid polyurethane foam	30
from 1500 + horizontal versions	Closed cell polyethylene foam	20

Operational limits

Min temperature	Max temperature	Max pressure
-10 °C	60 °C	6 bar

Standard Accessories: see pag. 102

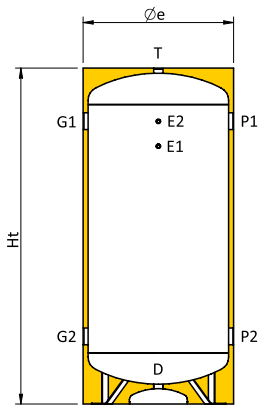
Special versions: see pag. 105

	VKG vertical, PVC coloured		VKGE vertical, embossed al. sheet		Vertical Packaging		VKG horizontal, PVC coloured	
Capacity l	Code	Price	Code	Price	Dimensions cm	Weight kg	Code	Price
100	816010130		816011275H8X		49x49x107	24	816010142	
200	816010131		816011276H8X		54x54x146	36	816010143	
300	816010132		816011277H8X		64x64x155	46	816010144	
500	816010133		816011278H8X		74x74x184	78	816010145	
800	816010134		816011279H8X		88x88x186	105	816010146	
1000	816010135		816011280H8X		94x94x215	129	816010147	
1500	816010136				107x107x228	182	816010148	
2000	816010137				117x117x260	250	816010149	
2500	816010138				132x132x240	267	816010150	
3000	816010139				132x132x290	314	816010151	
4000	816010140				147x147x297	470	816010152	
5000	816010141				167x167x301	557	816010153	
6000	816011186X				282x204x204	647		
8000	816011187X				352x204x204*	782		
10000	816011188X				427x204x204*	927		

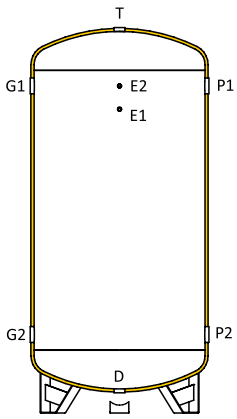
*Shipping by container requires open top containers

Cold Water Storage Tanks: Dimensions VKG VKGE

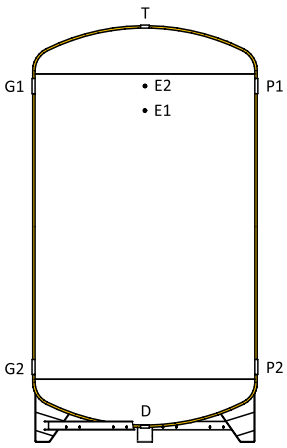
100 ≤ cap. ≤ 1000



1500 ≤ cap. ≤ 5.000



6000 ≤ cap. ≤ 10.000

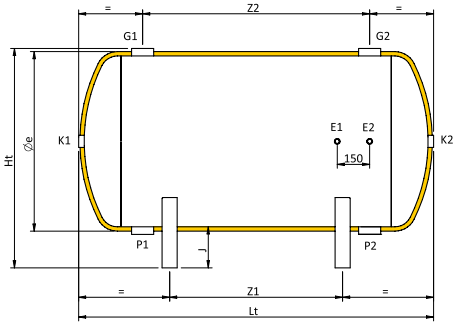


Couplings legend

D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
P1	To energy source
P2	From energy source
T	Vent

Size and couplings chart for vertical version

Cap. l	Øe mm	Ht mm	R* mm	D mm	E1 mm	E2 mm	G1 mm	G2 mm	P1 mm	P2 mm	D inch	E1 inch	E2 inch	G1 inch	G2 inch	P1 inch	P2 inch	T inch
100	460	950	1060	125	610	760	760	290	760	290	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
200	510	1335	1430	120	990	1140	1140	290	1140	290	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
300	610	1425	1550	130	1015	1165	1165	365	1165	365	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
500	710	1710	1855	135	1285	1435	1435	385	1435	385	1"1/4	1/2"	1/2"	3"	3"	3"	3"	1"1/4
800	850	1740	1940	125	1295	1445	1445	395	1445	395	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1000	910	2025	2220	120	1560	1710	1710	410	1710	410	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1500	1040	2160	2400	165	1650	1800	1800	500	1800	500	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2000	1140	2480	2730	155	1955	2105	2105	505	2105	505	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2500	1290	2275	2620	180	1715	1865	1865	565	1865	565	2"	1/2"	1/2"	4"	4"	4"	4"	2"
3000	1290	2775	3060	180	2215	2365	2365	565	2365	565	2"	1/2"	1/2"	4"	4"	4"	4"	2"
4000	1440	2845	3190	160	2240	2390	2390	590	2390	590	2"	1/2"	1/2"	4"	4"	4"	4"	2"
5000	1640	2885	3320	140	2250	2400	2400	600	2400	600	2"	1/2"	1/2"	4"	4"	4"	4"	2"
6000	1840	2715	3280	140	2015	2215	2215	615	2215	615	2"	1/2"	1/2"	4"	4"	4"	4"	2"
8000	1840	3415	3880	140	2715	2915	2915	615	2915	615	2"	1/2"	1/2"	4"	4"	4"	4"	2"
10000	1840	4165	4555	140	3465	3665	3665	615	3665	615	2"	1/2"	1/2"	4"	4"	4"	4"	2"



Couplings legend

E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
K1	Auxiliary
K2	Auxiliary
P1	To energy source
P2	From energy source

Size and couplings chart for horizontal version

Cap. l	Øe mm	Lt mm	Ht mm	J mm	Z1 mm	Z2 mm	E1 inch	E2 inch	G1 inch	G2 inch	K1 inch	K2 inch	P1 inch	P2 inch
100	440	850	545	120	310	470	1/2"	1/2"	1"1/2	1"1/2	1"1/4	1"1/4	1"1/2	1"1/2
200	490	1240	595	120	700	850	1/2"	1/2"	1"1/2	1"1/2	1"1/4	1"1/4	1"1/2	1"1/2
300	590	1320	715	140	600	800	1/2"	1/2"	2"	2"	1"1/4	1"1/4	2"	2"
500	690	1600	865	190	900	1050	1/2"	1/2"	3"	3"	1"1/4	1"1/4	3"	3"
800	830	1640	1005	190	900	1050	1/2"	1/2"	3"	3"	1"1/2	1"1/2	3"	3"
1000	890	1930	1065	190	1130	1300	1/2"	1/2"	3"	3"	1"1/2	1"1/2	3"	3"
1500	1040	2020	1215	190	950	1300	1/2"	1/2"	3"	3"	2"	2"	3"	3"
2000	1140	2350	1325	200	1320	1600	1/2"	1/2"	3"	3"	2"	2"	3"	3"
2500	1290	2120	1500	225	1020	1300	1/2"	1/2"	4"	4"	2"	2"	4"	4"
3000	1290	2620	1500	225	1390	1800	1/2"	1/2"	4"	4"	2"	2"	4"	4"
4000	1440	2710	1650	225	1380	1800	1/2"	1/2"	4"	4"	2"	2"	4"	4"
5000	1640	2770	1850	225	1380	1800	1/2"	1/2"	4"	4"	2"	2"	4"	4"

R*: Reversal quota

Cold Water Storage Tanks
VK, VKE series (galvanized)

The VK, VKE series has galvanized and insulated tanks for chilled water, which are usually used to increase the thermal inertia of the conditioning device. The galvanization offers protection against corrosion..



Material: carbon steel
Treatment: internal and external hot-dip galvanization

External covering

Model	Type	Usage	
VK	coloured PVC	indoor	1
VKE	embossed aluminium sheet	outdoor	2

Insulation

Capacity (l)	Type	Thick. (mm)
from 100 to 1000	High density rigid polyurethane foam	30
from 1500 + horizontal versions	Closed cell polyethylene foam	20

Operational limits

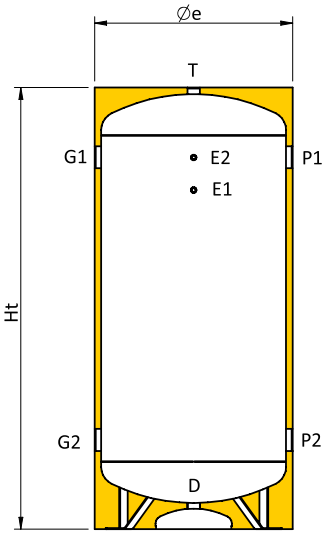
Min temperature	Max temperature	Max pressure
-10 °C	60 °C	6 bar

Standard Accessories: see pag. 102
Special versions: see pag. 105

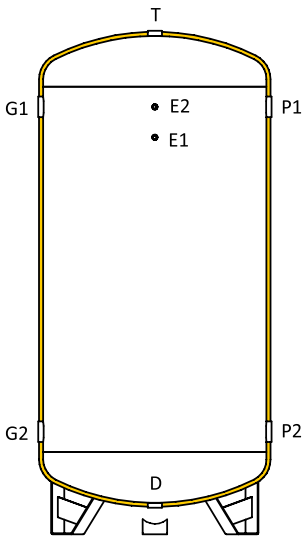
	VK vertical, PVC coloured		VKE vertical, embossed al. sheet		Vertical Packaging		VK horizontal, PVC coloured	
Capacity l	Code	Price	Code	Price	Dimensions cm	Weight kg	Code	Price
100	816020064		816020040H8X		49x49x107	25	816020076	
200	816020065		816020041H8X		54x54x146	37	816020077	
300	816020066		816020042H8X		64x64x155	48	816020078	
500	816020067		816020043H8X		74x74x184	81	816020079	
800	816020068		816020044H8X		88x88x186	110	816020080	
1000	816020069		816020045H8X		94x94x215	135	816020081	
1500	816020070				107x107x228	192	816020082	
2000	816020071				117x117x260	264	816020083	
2500	816020072				132x132x240	281	816020084	
3000	816020073				132x132x290	331	816020085	
4000	816020074				147x147x297	496	816020086	
5000	816020075				167x167x301	587	816020087	

Cold Water Storage Tanks: Dimensions VK VKE

100 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000

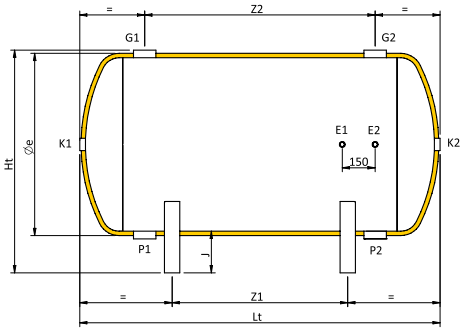


Couplings legend

D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
P1	To energy source
P2	From energy source
T	Vent

Size and couplings chart for vertical version

Cap. l	Øe mm	Ht mm	R* mm	D mm	E1 mm	E2 mm	G1 mm	G2 mm	P1 mm	P2 mm	D inch	E1 inch	E2 inch	G1 inch	G2 inch	P1 inch	P2 inch	T inch
100	460	950	1060	125	610	760	760	290	760	290	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
200	510	1335	1430	120	990	1140	1140	290	1140	290	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
300	610	1425	1555	130	1015	1165	1165	365	1165	365	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
500	710	1710	1855	135	1285	1435	1435	385	1435	385	1"1/4	1/2"	1/2"	3"	3"	3"	3"	1"1/4
800	850	1740	1940	125	1295	1445	1445	395	1445	395	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1000	910	2025	2225	120	1560	1710	1710	410	1710	410	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1500	1040	2160	2400	165	1650	1800	1800	500	1800	500	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2000	1140	2480	2730	155	1955	2105	2105	505	2105	505	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2500	1290	2275	2620	180	1715	1865	1865	565	1865	565	2"	1/2"	1/2"	4"	4"	4"	4"	2"
3000	1290	2775	3060	180	2215	2365	2365	565	2365	565	2"	1/2"	1/2"	4"	4"	4"	4"	2"
4000	1440	2845	3190	160	2240	2390	2390	590	2390	590	2"	1/2"	1/2"	4"	4"	4"	4"	2"
5000	1640	2885	3320	140	2250	2400	2400	600	2400	600	2"	1/2"	1/2"	4"	4"	4"	4"	2"



Couplings legend

E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
K1	Auxiliary
K2	Auxiliary
P1	To energy source
P2	From energy source

Size and couplings chart for horizontal version

Cap. l	Øe mm	Lt mm	Ht mm	J mm	Z1 mm	Z2 mm	E1 inch	E2 inch	G1 inch	G2 inch	K1 inch	K2 inch	P1 inch	P2 inch
100	440	850	545	120	310	470	1/2"	1/2"	1"1/2	1"1/2	1"1/4	1"1/4	1"1/2	1"1/2
200	490	1240	595	120	700	850	1/2"	1/2"	1"1/2	1"1/2	1"1/4	1"1/4	1"1/2	1"1/2
300	590	1320	715	140	600	800	1/2"	1/2"	2"	2"	1"1/4	1"1/4	2"	2"
500	690	1600	865	190	900	1050	1/2"	1/2"	3"	3"	1"1/4	1"1/4	3"	3"
800	830	1640	1005	190	900	1050	1/2"	1/2"	3"	3"	1"1/2	1"1/2	3"	3"
1000	890	1930	1065	190	1130	1300	1/2"	1/2"	3"	3"	1"1/2	1"1/2	3"	3"
1500	1040	2020	1215	190	950	1300	1/2"	1/2"	3"	3"	2"	2"	3"	3"
2000	1140	2350	1325	200	13320	1600	1/2"	1/2"	3"	3"	2"	2"	3"	3"
2500	1290	2120	1500	225	1020	1300	1/2"	1/2"	4"	4"	2"	2"	4"	4"
3000	1290	2620	1500	225	1390	1800	1/2"	1/2"	4"	4"	2"	2"	4"	4"
4000	1440	2710	1650	225	1380	1800	1/2"	1/2"	4"	4"	2"	2"	4"	4"
5000	1640	2770	1850	225	1380	1800	1/2"	1/2"	4"	4"	2"	2"	4"	4"

R*: Reversal quota

Cold Water Storage Tanks VKT series (enamelled)

The tanks in the VKT series, which are internally enamelled and insulated for use with chilled water, are usually used to increase thermal inertia in Layout 2 plants. The internal enamelling ensures protection against corrosion.



Material: carbon steel
Treatment: Bluetech internal enamelling with thermosetting resins

WRAS APPROVED MATERIAL

External covering

Model	Type	Usage
VKT	coloured PVC	indoor

Operational limits

Capacity (l)	Type	Thick. (mm)
from 100 to 1000	High density rigid polyurethane foam	30
from 1500	Closed cell polyethylene foam	20

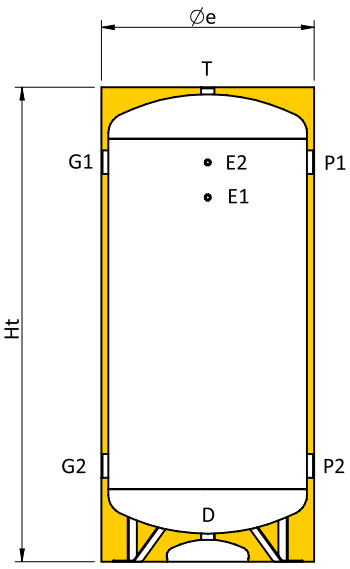
Min temperature	Max temperature	Max pressure
-10 °C	60 °C	6 bar

Standard Accessories: see pag. 102
Special versions: see pag. 105

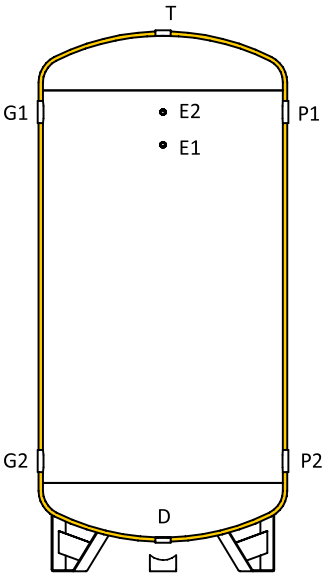
	VKT		Vertical Packaging	
Capacity l	Code	Price	Dimensions cm	Weight kg
100	816080001X		49x49x107	24
200	816080002X		54x54x146	36
300	816080003X		64x64x155	46
500	816080004X		74x74x184	78
800	816080005X		88x88x186	105
1000	816080006X		94x94x215	129
1500	816080007X		107x107x228	182
2000	816080008X		117x117x260	250
2500	816080009X		132x132x240	267
3000	816080010X		132x132x290	314
4000	816080011X		147x147x297	470
5000	816080012X		167x167x301	557

Cold Water Storage Tanks: Dimensions VKT series

100 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000



Couplings legend

D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Capacity l	D inch	E1 inch	E2 inch	G1 inch	G2 inch	P1 inch	P2 inch	T inch
100	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
200	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
300	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
500	1"1/4	1/2"	1/2"	3"	3"	3"	3"	1"1/4
800	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1000	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1500	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2000	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2500	2"	1/2"	1/2"	4"	4"	4"	4"	2"
3000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
4000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
5000	2"	1/2"	1/2"	4"	4"	4"	4"	2"

Size chart

Capacity l	Øe mm	Ht mm	R* mm	D mm	E1 mm	E2 mm	G1 mm	G2 mm	P1 mm	P2 mm
100	460	950	1060	125	610	760	760	290	760	290
200	510	1335	1430	120	990	1140	1140	290	1140	290
300	610	1425	1555	130	1015	1165	1165	365	1165	365
500	710	1710	1855	135	1285	1435	1435	385	1435	385
800	850	1740	1940	125	1295	1445	1445	395	1445	395
1000	910	2025	2225	120	1560	1710	1710	410	1710	410
1500	1040	2160	2400	165	1650	1800	1800	500	1800	500
2000	1140	2480	2730	155	1955	2105	2105	505	2105	505
2500	1290	2275	2620	180	1715	1865	1865	565	1865	565
3000	1290	2775	3060	180	2215	2365	2365	565	2365	565
4000	1440	2845	3190	160	2240	2390	2390	590	2390	590
5000	1640	2885	3320	140	2250	2400	2400	600	2400	600

R*: Reversal quota

Cold Water Storage Tanks VKX series (stainless steel)

The VKX series includes insulated AISI 304 stainless steel tanks for chilled water, which are usually used to increase thermal inertia in single or double loop plants. The stainless steel protects the device against corrosion and makes it possible to use the tank in aggressive environments and in industrial settings.



TESTED

Material: stainless steel AISI 304

External covering

Model	Type	Usage
VKX	coloured PVC	indoor

Insulation

Capacity (l)	Type	Thick. (mm)
from 100 to 5000	Closed cell polyethylene foam	20

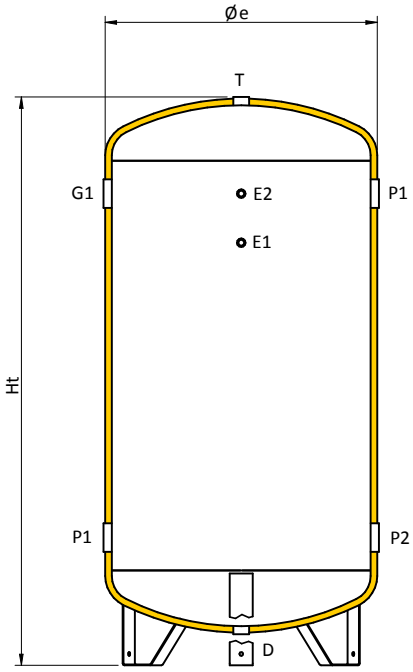
Operational limits

Min temperature	Max temperature	Max pressure
-10 °C	60 °C	6 bar

Standard Accessories: see pag. 102
Special versions: see pag. 105

	VKX AISI 304		With packaging
Capacity l	Code	Price	Dimensions cm
100	816040265X		47x47x105
200	816040266X		52x52x152
300	816040267X		62x62x155
500	816040268X		67x67x200
800	816040269X		86x86x197
1000	816040270X		87x87x224
1500	816040271X		107x107x225
2000	816040272X		127x127x233
2500	816040273X		127x127x258
3000	816040274X		132x132x285
4000	816040275X		147x147x293
5000	816040276X		167x167x296

Cold Water Storage Tanks: Dimensions VKX series



Couplings legend

D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Capacity l	D inch	E1 inch	E2 inch	G1 inch	G2 inch	P1 inch	P2 inch	T inch
100	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
200	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
300	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
500	1"1/4	1/2"	1/2"	2"1/2	2"1/2	2"1/2	2"1/2	1"1/4
800	1"1/4	1/2"	1/2"	2"1/2	2"1/2	2"1/2	2"1/2	1"1/4
1000	1"1/4	1/2"	1/2"	3"	3"	3"	3"	1"1/4
1500	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
2000	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
2500	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
3000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
4000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
5000	2"	1/2"	1/2"	4"	4"	4"	4"	2"

Size chart

Capacity l	Øe mm	Ht mm	R* mm	E1 mm	E2 mm	G1 mm	G2 mm	P1 mm	P2 mm
100	440	950	1050	615	765	765	280	765	280
200	490	1330	1420	970	1130	1130	290	1130	290
300	590	1415	1535	1020	1170	1170	320	1170	320
500	690	1695	1835	1270	1420	1420	370	1420	370
800	830	1735	1925	1290	1440	1440	390	1440	390
1000	890	2025	2215	1560	1710	1710	410	1710	410
1500	1040	2125	2365	1615	1765	1765	465	1765	465
2000	1240	2215	2540	1660	1810	1810	510	1810	510
2500	1240	2465	2760	1910	2060	2060	510	2060	510
3000	1290	2735	3025	2175	2325	2325	525	2325	525
4000	1440	2825	3170	2220	2370	2370	570	2370	570
5000	1640	2885	3320	2250	2400	2400	600	2400	600

R*: Reversal quota

Cold Water Storage Tanks VKS series (internal baffles)

The VKS series includes insulated tanks for chilled water, which are usually used to increase thermal inertia in Layout 2 cooling devices. They are equipped with internal baffles which prevent preferential flow in the tank by creating perfect conditions for temperature distribution. They are especially used with medium and high flows and with special versions in which the tank is to be connected with more than two circuits.



TESTED

Material: carbon steel

External covering

Model	Type	Usage
VKS	coloured PVC	indoor

Insulation

Capacity (l)	Type	Thick. (mm)
from 100 to 1000	High density rigid polyurethane foam	30
from 1500	Closed cell polyethylene foam	20

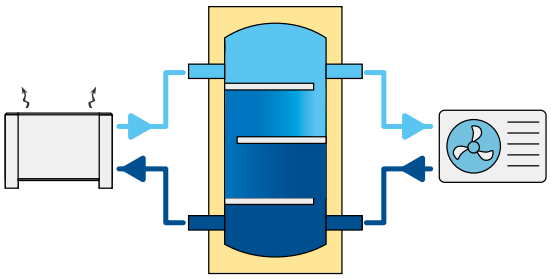
Operational limits

Min temperature	Max temperature	Max pressure
-10 °C	60 °C	6 bar

Standard Accessories: see pag. 102

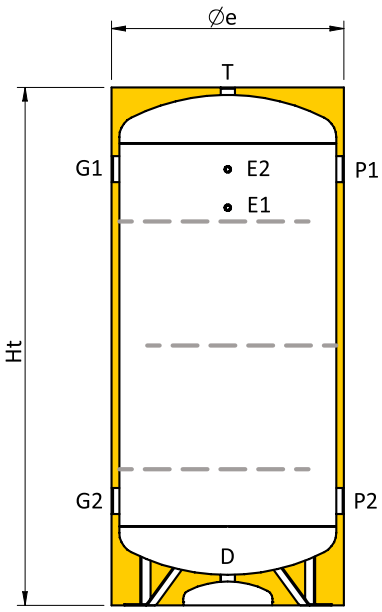
Special versions: see pag. 105

	VKS		Vertical Packaging	
Capacity l	Code	Price	Dimensions cm	Weight kg
100	816010166		49x49x107	26
200	816010167		54x54x146	37
300	816010168		64x64x155	50
500	816010169		74x74x184	85
800	816010170		88x88x186	113
1000	816010171		94x94x215	137
1500	816010172		107x107x228	193
2000	816010173		117x117x260	262
2500	816010174		132x132x240	283
3000	816010175		132x132x290	330
4000	816010176		147x147x297	487
5000	816010177		167x167x301	577

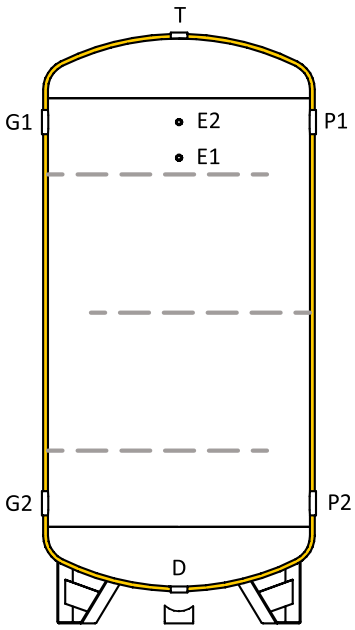


Cold Water Storage Tanks: Dimensions VKS series

100 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000



Couplings legend

D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Capacity l	D inch	E1 inch	E2 inch	G1 inch	G2 inch	P1 inch	P2 inch	T inch
100	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
200	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
300	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
500	1"1/4	1/2"	1/2"	3"	3"	3"	3"	1"1/4
800	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1000	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1500	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2000	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2500	2"	1/2"	1/2"	4"	4"	4"	4"	2"
3000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
4000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
5000	2"	1/2"	1/2"	4"	4"	4"	4"	2"

Size chart

Capacity l	Øe mm	Ht mm	R* mm	D mm	E1 mm	E2 mm	G1 mm	G2 mm	P1 mm	P2 mm
100	460	950	1060	125	610	760	760	290	760	290
200	510	1335	1430	120	990	1140	1140	290	1140	290
300	610	1425	1555	130	1015	1165	1165	365	1165	365
500	710	1710	1855	135	1285	1435	1435	385	1435	385
800	850	1740	1940	125	1295	1445	1445	395	1445	395
1000	910	2025	2225	120	1560	1710	1710	410	1710	410
1500	1040	2160	2400	165	1650	1800	1800	500	1800	500
2000	1140	2480	2730	155	1955	2105	2105	505	2105	505
2500	1290	2275	2620	180	1715	1865	1865	565	1865	565
3000	1290	2775	3060	180	2215	2365	2365	565	2365	565
4000	1440	2845	3190	160	2240	2390	2390	590	2390	590
5000	1640	2885	3320	140	2250	2400	2400	600	2400	600

R*: Reversal quota

Cold Water Storage Tanks VKR series (conveyor pipes)

The insulated VKR tanks for chilled water are usually used to increase the thermal inertia of the Layout 2 conditioning device with a medium or high flow. They are equipped with the double loop cooling device which create a preferential circuit inside the tank.



TESTED

Material: carbon steel

External covering

Model	Type	Usage
VKR	coloured PVC	indoor

Insulation

Capacity (l)	Type	Thick. (mm)
from 100 to 1000	High density rigid polyurethane foam	30
from 1500	Closed cell polyethylene foam	20

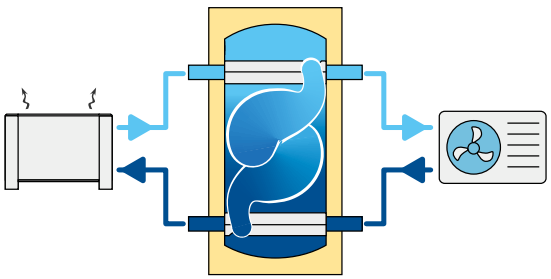
Operational limits

Min temperature	Max temperature	Max pressure
-10 °C	60 °C	6 bar

Standard Accessories: see pag. 102

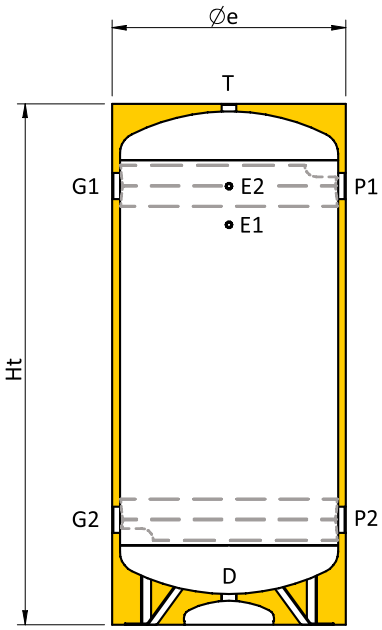
Special versions: see pag. 105

	VKR		Vertical Packaging	
Capacity l	Code	Price	Dimensions cm	Weight kg
100	816010154		49x49x107	26
200	816010155		54x54x146	37
300	816010156		64x64x155	50
500	816010157		74x74x184	85
800	816010158		88x88x186	113
1000	816010159		94x94x215	137
1500	816010160		107x107x228	193
2000	816010161		117x117x260	262
2500	816010162		132x132x240	283
3000	816010163		132x132x290	330
4000	816010164		147x147x297	487
5000	816010165		167x167x301	577

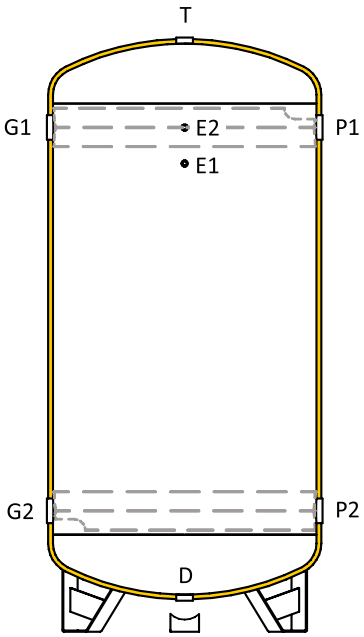


Cold Water Storage Tanks: Dimensions VKR series

100 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000



Couplings legend

D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Capacity l	D inch	E1 inch	E2 inch	G1 inch	G2 inch	P1 inch	P2 inch	T inch
100	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
200	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
300	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
500	1"1/4	1/2"	1/2"	3"	3"	3"	3"	1"1/4
800	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1000	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1500	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2000	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2500	2"	1/2"	1/2"	4"	4"	4"	4"	2"
3000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
4000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
5000	2"	1/2"	1/2"	4"	4"	4"	4"	2"

Size chart

Capacity l	Øe mm	Ht mm	R* mm	D mm	E1 mm	E2 mm	G1 mm	G2 mm	P1 mm	P2 mm
100	460	950	1060	125	610	760	760	290	760	290
200	510	1335	1430	120	990	1140	1140	290	1140	290
300	610	1425	1555	130	1015	1165	1165	365	1165	365
500	710	1710	1855	135	1285	1435	1435	385	1435	385
800	850	1740	1940	125	1295	1445	1445	395	1445	395
1000	910	2025	2225	120	1560	1710	1710	410	1710	410
1500	1040	2160	2400	165	1650	1800	1800	500	1800	500
2000	1140	2480	2730	155	1955	2105	2105	505	2105	505
2500	1290	2275	2620	180	1715	1865	1865	565	1865	565
3000	1290	2775	3060	180	2215	2365	2365	565	2365	565
4000	1440	2845	3190	160	2240	2390	2390	590	2390	590
5000	1640	2885	3320	140	2250	2400	2400	600	2400	600

R*: Reversal quota

Cold Water Storage Tanks VKD series (diffusing pipes)

The insulated VKD tanks for chilled water are usually used to increase thermal inertia of the Layout 2 conditioning device. They are equipped with diffuser pipes which connect the two circuits linked to the tank. Energy is supplied or subtracted through the diffuser's circumferential probes. In this way the mixing of fluids is significantly reduced.



Material: carbon steel

External covering

Model	Type	Usage
VKD	coloured PVC	indoor

Insulation

Capacity (l)	Type	Thick. (mm)
from 100 to 1000	High density rigid polyurethane foam	30
from 1500	Closed cell polyethylene foam	20

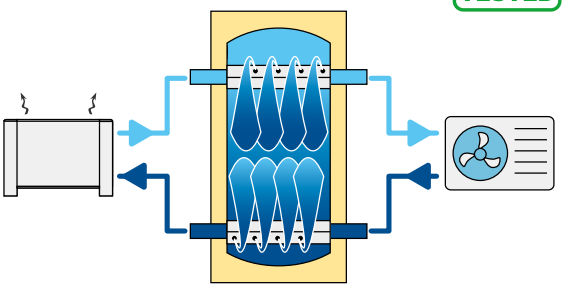
Operational limits

Min temperature	Max temperature	Max pressure
-10 °C	60 °C	6 bar

Standard Accessories: see pag. 102

Special versions: see pag. 105

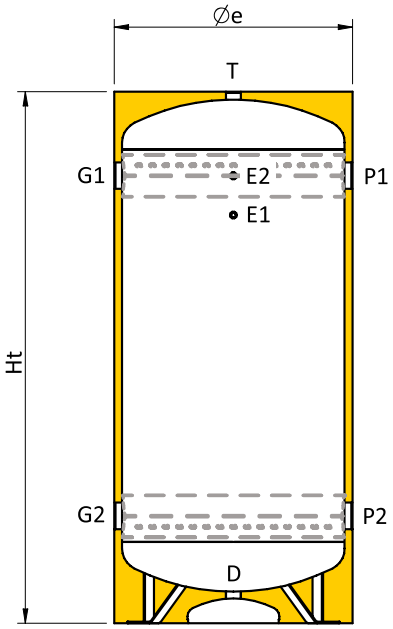
TESTED



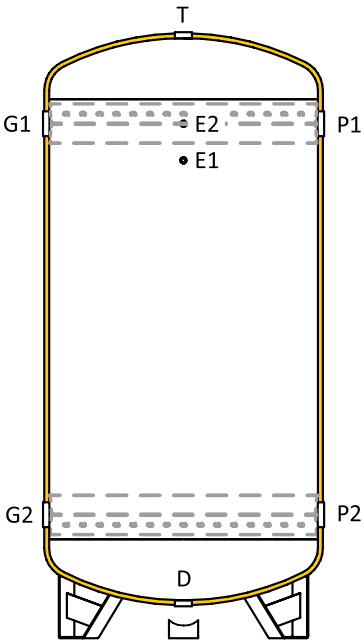
	VKD		Vertical Packaging	
Capacity l	Code	Price	Dimensions cm	Weight kg
100	816010417		49x49x107	26
200	816010418		54x54x146	37
300	816010419		64x64x155	50
500	816010420		74x74x184	85
800	816010421		88x88x186	113
1000	816010422		94x94x215	138
1500	816010423		107x107x228	193
2000	816010424		117x117x260	262
2500	816010425		132x132x240	283
3000	816010426		132x132x290	330
4000	816010427		147x147x297	487
5000	816010428		167x167x301	577

Cold Water Storage Tanks: Dimensions VKD series

100 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000



Couplings legend

D	Drain
E1	Probe / Thermometer
E2	Probe / Thermometer
G1	From plant
G2	To plant
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Capacity l	D inch	E1 inch	E2 inch	G1 inch	G2 inch	P1 inch	P2 inch	T inch
100	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
200	1"1/4	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/4
300	1"1/4	1/2"	1/2"	2"	2"	2"	2"	1"1/4
500	1"1/4	1/2"	1/2"	3"	3"	3"	3"	1"1/4
800	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1000	1"1/2	1/2"	1/2"	3"	3"	3"	3"	1"1/2
1500	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2000	2"	1/2"	1/2"	3"	3"	3"	3"	2"
2500	2"	1/2"	1/2"	4"	4"	4"	4"	2"
3000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
4000	2"	1/2"	1/2"	4"	4"	4"	4"	2"
5000	2"	1/2"	1/2"	4"	4"	4"	4"	2"

Size chart

Capacity l	Øe mm	Ht mm	R* mm	D mm	E1 mm	E2 mm	G1 mm	G2 mm	P1 mm	P2 mm
100	460	950	1060	125	610	760	760	290	760	290
200	510	1335	1430	120	990	1140	1140	290	1140	290
300	610	1425	1555	130	1015	1165	1165	365	1165	365
500	710	1710	1855	135	1285	1435	1435	385	1435	385
800	850	1740	1940	125	1295	1445	1445	395	1445	395
1000	910	2025	2225	120	1560	1710	1710	410	1710	410
1500	1040	2160	2400	165	1650	1800	1800	500	1800	500
2000	1140	2480	2730	155	1955	2105	2105	505	2105	505
2500	1290	2275	2620	180	1715	1865	1865	565	1865	565
3000	1290	2775	3060	180	2215	2365	2365	565	2365	565
4000	1440	2845	3190	160	2240	2390	2390	590	2390	590
5000	1640	2885	3320	140	2250	2400	2400	600	2400	600

R*: Reversal quota

PUFFER
Hot Water storage tanks

The Puffer tanks are inertial tanks for heating installations which store non-domestic hot water. They are used in all devices powered by discontinuous power sources (e.g. solar panels, wood burners, boiler stoves, etc.) or wherever the volume of water stored in the device must be increased (e.g. devices with heat pumps, combined heat and power units, biomass burners, etc.). Several versions are available, to be used with one or more energy sources:

PFA Regular storage tank
PFB Storage tank fitted with smooth tube heat exchanger to add an additional power source (e.g. solar).
PFC Storage tank fitted with two smooth tube heat exchangers to add two additional power sources (e.g. solar and boiler stove).



TESTED

Materials
All storage tanks are made of carbon steel sheets, externally varnished

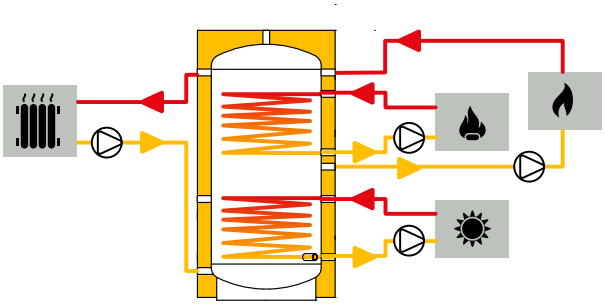
Insulation

Capacity (l)	Type
from 300 to 1000	Highly rigid polyurethane foam
from 1500 to 5000	Polyester Fiber
from 6000	Flexible polyurethane foam

Operational limits

Model	Storage tank		S1 Coil Circuit		S2 Coil Circuit	
	max. temperature	max. pressure	max. temperature	max. pressure	max. temperature	max. pressure
PFA	95°C	6 bar	-	-	-	-
PFB	95°C	6 bar	99°C	9 bar	-	-
PFC	95°C	6 bar	99°C	9 bar	99°C	9 bar

Standard Accessories: see pag 102
Special versions: see pag 105



PUFFER
Product code

PFA series

capacity l	code	price	energy label	packed dimensions cm	packed weight kg
300	817010119X		B	64x64x180	55
500	817010120X		C	77x77x184	77
750	817010216X		C	95x95x178	109
1000	817010002		C	129x129x216	125
1500	817010003		C	125x125x229	194
2000	817010004		C	136x136x261	263
2500	817010101X			147x147x234	296
3000	817010102X			147x147x284	346
4000	817010103X			163x163x293	492
5000	817010104X			183x183x299	582
6000	817010129X			282x203x217,5	684
8000	817010130X			352x203x217,5*	823
10000	817010131X			427x203x217,5*	973

*Shipping by container requires open top containers

PFB series

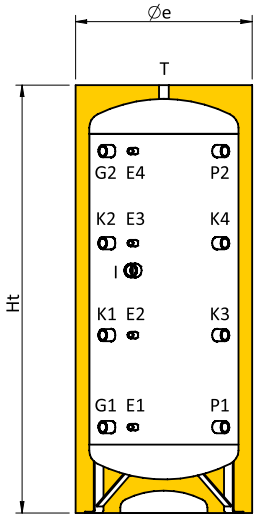
capacity l	code	price	energy label	packed dimensions cm	packed weight kg
300	819010129X		B	64x64x180	65
500	819010130X		C	77x77x184	98
750	819010202X		C	95x95x178	137
1000	819010003		C	129x129x216	153
1500	819010004		C	125x125x229	237
2000	819010005		C	136x136x261	315
2500	819010135X			147x147x234	352
3000	819010136X			147x147x284	413
4000	819010137X			163x163x293	571
5000	819010138X			183x183x299	672

PFC series

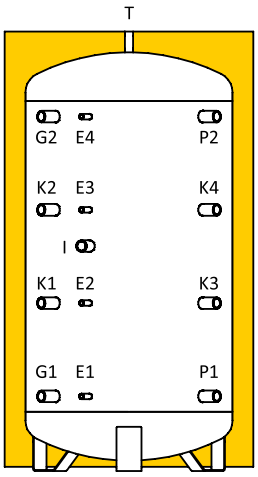
capacity l	code	price	energy label	packed dimensions cm	packed weight kg
300	819010149X		B	64x64x180	77
500	819010150X		C	77x77x184	111
750	819010203X		C	95x95x178	154
1000	819010006		C	129x129x216	181
1500	819010007		C	125x125x229	268
2000	819010008		C	136x136x261	346
2500	819010155X			147x147x234	383
3000	819010156X			147x147x284	460
4000	819010157X			163x163x293	628
5000	819010158X			183x183x299	730

PUFFER
Size PFA

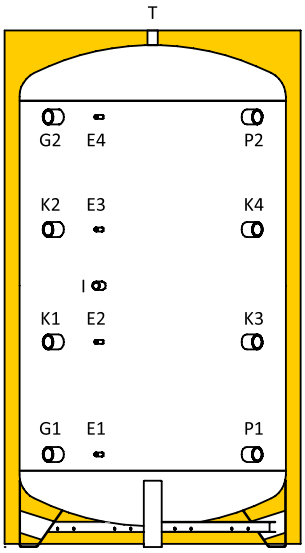
300 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000



6.00 ≤ cap. ≤ 10.000



Couplings legend

E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
P1	To energy source
P2	From energy source
T	Vent

Couplings chart

Cap. l	E1 inch	E2 inch	E3 inch	E4 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	P1 inch	P2 inch	T inch
300	1/2"	1/2"	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"1/4	1"1/4	1"1/4
500	1/2"	1/2"	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"1/4	1"1/4	1"1/4
750	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2
1000	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2
1500	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"
2000	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"
2500	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	2"	2"	1"
3000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	2"	2"	1"
4000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	2"	2"	1"
5000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	2"	2"	1"
6000	1/2"	1/2"	1/2"	1/2"	3"	3"	1"1/2	3"	3"	3"	3"	3"	3"	2"
8000	1/2"	1/2"	1/2"	1/2"	3"	3"	1"1/2	3"	3"	3"	3"	3"	3"	2"
10000	1/2"	1/2"	1/2"	1/2"	3"	3"	1"1/2	3"	3"	3"	3"	3"	3"	2"

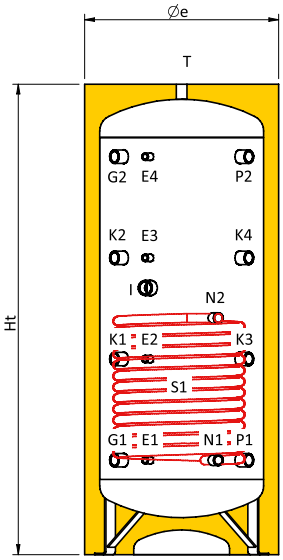
Size chart

Cap. l	Øe mm	Ht mm	R* mm	E1 mm	E2 mm	E3 mm	E4 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	P1 mm	P2 mm
300	610	1680	1790	325	695	1065	1435	325	1435	880	695	1065	695	1065	325	1435
500	760	1735	1895	355	725	1095	1465	355	1465	985	725	1095	725	1095	355	1465
750	910	1765	1990	395	745	1095	1445	395	1445	920	745	1095	745	1095	395	1445
1000	1010	2000	2245	330	770	1210	1650	330	1650	990	770	1210	770	1210	330	1650
1500	1250	2145	2475	360	810	1260	1710	360	1710	1085	810	1260	810	1260	360	1710
2000	1350	2475	2815	390	930	1470	2010	390	2010	1200	930	1470	930	1470	390	2010
2500	1450	2220	2655	425	865	1305	1745	425	1745	1145	865	1305	865	1305	425	1745
3000	1450	2720	3085	435	1035	1635	2235	435	2235	1435	1035	1635	1035	1635	435	2235
4000	1600	2810	3235	480	1080	1680	2280	480	2280	1430	1080	1680	1080	1680	480	2280
5000	1800	2870	3390	510	1110	1710	2310	510	2310	1510	1110	1710	1110	1710	510	2310
6000	2000	2790	3435	635	1155	1675	2195	635	2195	1415	1155	1675	1155	1675	635	2195
8000	2000	3490	4025	625	1385	2145	2905	625	2905	1615	1385	2145	1385	2145	625	2905
10000	2000	4240	4690	625	1635	2645	3655	625	3655	2365	1635	2645	1635	2645	625	3655

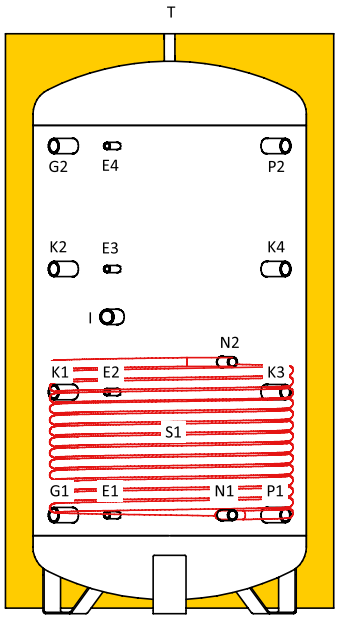
R*: reversal quota

PUFFER
Size PFB

300 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000



Couplings legend

E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
G1	Ingresso da impianto
G2	To plant
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
P1	To energy source
P2	Ingresso da fonte energetica
S1	From energy source
T	Vent

Couplings chart

Cap. l	E1 inch	E2 inch	E3 inch	E4 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	N1 inch	N2 inch	P1 inch	P2 inch	T inch
300	1/2"	1/2"	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
500	1/2"	1/2"	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
750	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2
1000	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2
1500	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"
2000	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"
2500	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	1"	1"	2"	2"	1"
3000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	1"	1"	2"	2"	1"
4000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	1"	1"	2"	2"	1"
5000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	1"	1"	2"	2"	1"

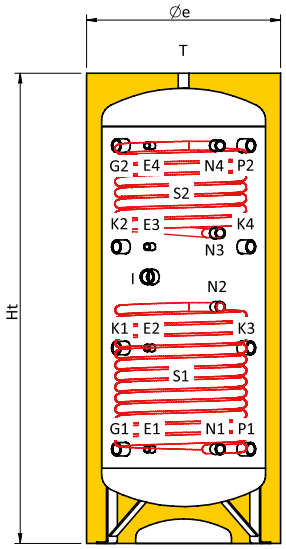
Size chart

Cap. l	Øe mm	Ht mm	R* mm	E1 mm	E2 mm	E3 mm	E4 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	N1 mm	N2 mm	P1 mm	P2 mm	S1 m²
300	610	1680	1790	325	695	1065	1435	325	1435	880	695	1065	695	1065	325	685	325	1435	1
500	760	1735	1895	355	725	1095	1465	355	1465	985	725	1095	725	1095	355	875	355	1465	1,9
750	910	1765	1990	395	745	1095	1445	395	1445	920	745	1095	745	1095	395	875	395	1445	2,5
1000	1010	2000	2245	330	770	1210	1650	330	1650	990	770	1210	770	1210	330	890	330	1650	3,1
1500	1250	2145	2475	360	810	1260	1710	360	1710	1085	810	1260	810	1260	360	920	360	1710	3,8
2000	1350	2475	2815	390	930	1470	2010	390	2010	1200	930	1470	930	1470	390	990	390	2010	4,6
2500	1450	2220	2655	425	865	1305	1745	425	1745	1145	865	1305	865	1305	425	985	425	1745	5
3000	1450	2720	3085	435	1035	1635	2235	435	2235	1435	1035	1635	1035	1635	435	1115	435	2235	6
4000	1600	2810	3235	480	1080	1680	2280	480	2280	1430	1080	1680	1080	1680	480	1160	480	2280	7
5000	1800	2870	3390	510	1110	1710	2310	510	2310	1510	1110	1710	1110	1710	510	1190	510	2310	8

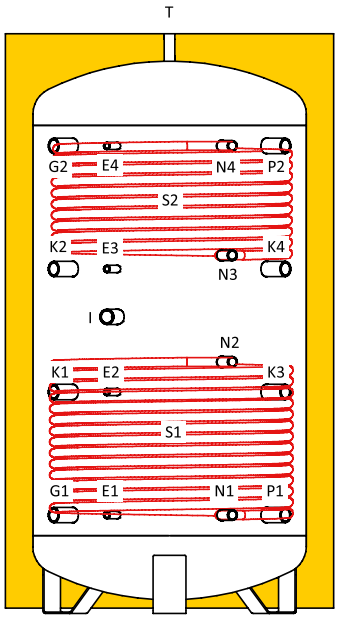
R*: reversal quota

PUFFER
Size PFC

300 ≤ cap. ≤ 1.000



1.500 ≤ cap. ≤ 5.000



Couplings legend

E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
N3	Upper exchanger outlet
N4	Upper exchanger inlet
P1	To energy source
P2	From energy source
S1	Lower exchanger
S2	Upper exchanger
T	Vent

Couplings chart

Cap. l	E1 inch	E2 inch	E3 inch	E4 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	N1 inch	N2 inch	N3 inch	N4 inch	P1 inch	P2 inch	T inch
300	1/2"	1/2"	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"	1"1/4	1"1/4	1"1/4
500	1/2"	1/2"	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"	1"1/4	1"1/4	1"1/4
750	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2
1000	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2
1500	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"
2000	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"
2500	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	1"	1"	1"	1"	2"	2"	1"
3000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	1"	1"	1"	1"	2"	2"	1"
4000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	1"	1"	1"	1"	2"	2"	1"
5000	1/2"	1/2"	1/2"	1/2"	2"	2"	1"1/2	2"	2"	2"	2"	1"	1"	1"	1"	2"	2"	1"

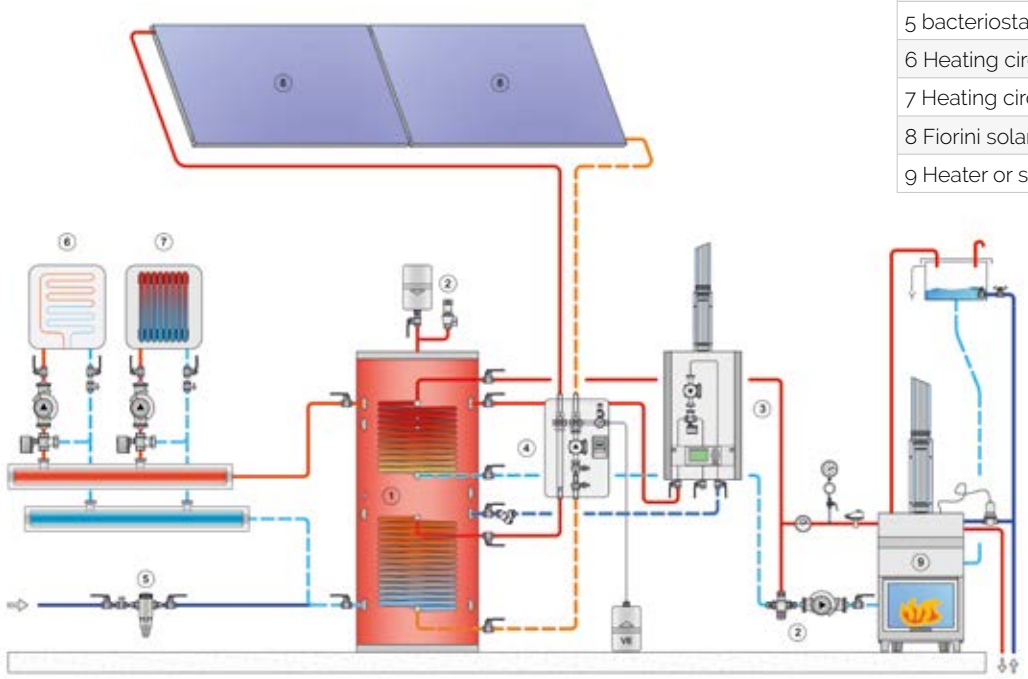
Size chart

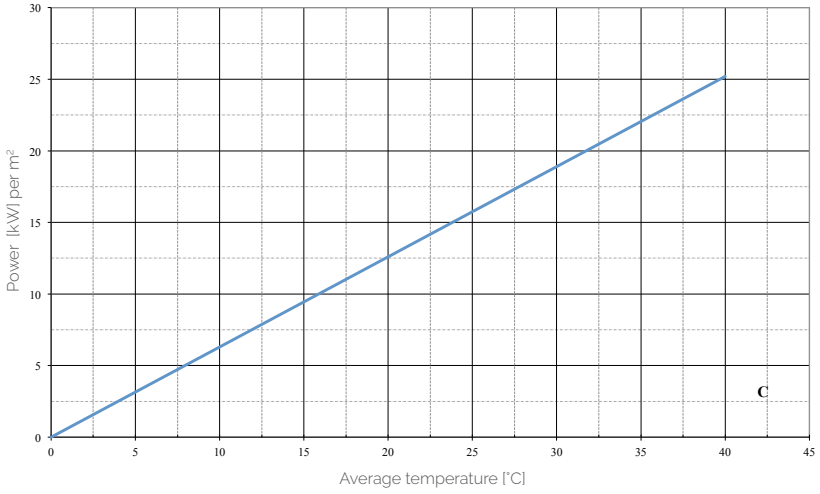
Cap. l	Øe mm	Ht mm	R* mm	E1 mm	E2 mm	E3 mm	E4 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	N1 mm	N2 mm	N3 mm	N4 mm	P1 mm	P2 mm	S1 m²	S2 m²
300	610	1680	1790	325	695	1065	1435	325	1435	880	695	1065	695	1065	325	685	685	1075	325	1435	1	1
500	760	1735	1895	355	725	1095	1465	355	1465	985	725	1095	725	1095	355	875	1145	1465	355	1465	1,9	1,2
750	910	1765	1990	395	745	1095	1445	395	1445	920	745	1095	745	1095	395	875	1165	1445	395	1445	2,5	1,5
1000	1010	2000	2245	330	770	1210	1650	330	1650	990	770	1210	770	1210	330	890	1210	1650	330	1650	3,1	2,5
1500	1240	2140	2475	360	810	1260	1710	360	1710	1085	810	1260	810	1260	360	920	920	1310	360	1710	3,8	2,8
2000	1340	2470	2815	390	930	1470	2010	390	2010	1200	930	1470	930	1470	390	990	990	1650	390	2010	4,6	2,8
2500	1450	2220	2655	425	865	1305	1745	425	1745	1145	865	1305	865	1305	425	985	985	1305	425	1745	5	4
3000	1450	2720	3085	435	1035	1635	2235	435	2235	1435	1035	1635	1035	1635	435	1115	1115	1755	435	2235	6	4,2
4000	1600	2810	3235	480	1080	1680	2280	480	2280	1430	1080	1680	1080	1680	480	1160	1160	1800	480	2280	7	5
5000	1800	2870	3390	510	1110	1710	2310	510	2310	1510	1110	1710	1110	1710	510	1190	1190	1910	510	2310	8	5

R*: reversal quota

PUFFER
Installation chart

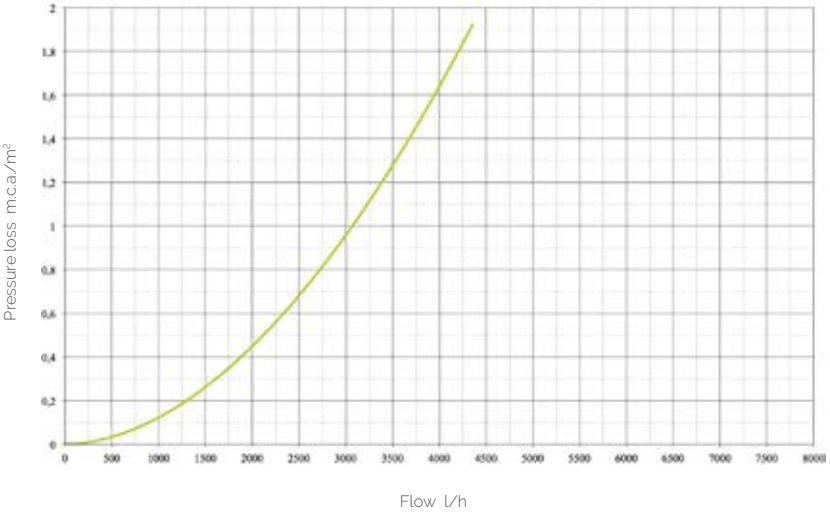
List of components
1 PFC Fiorini Puffer
2 Safety unit
3 Heating by alternative source
4 solar thermal return unit
5 bacteriostatic cold water filter
6 Heating circuit 1
7 Heating circuit 2
8 Fiorini solar collectors
9 Heater or stove with open vessel





Fixed coil power

The chart indicates maximum exchanged power by the fix internal coil depending on the temperature difference between water into the coil and water into the tank.



Pressure loss in the fixed coil

The pressure loss indicated in the chart refers to a surface area of 1 m2 of the coil. Multiply this value with the exchange surface in order to come to the total pressure loss.

COMBI PLUS
Combi storage tank

The COMBI PLUS range consists of inertial tanks for installations which use discontinuous energy sources, such as solar power systems, biomass systems and wood burning systems. Thanks to the internal exchanger with a stainless steel corrugated tube with a large surface, the instantaneous DHW production is guaranteed. There are three versions of which several capacities are available, from 500 to 2000 litres.



TESTED

COMBI PLUS A: equipped with n°1 internal fixed exchanger with a stainless steel corrugated tube for instantaneous DHW production

COMBI PLUS B: equipped with n°2 internal fixed heat exchangers, one with a stainless steel corrugated tube for instantaneous DHW production and another for coupling to an additional heat source.

COMBI PLUS C: equipped with n°3 internal fixed heat exchangers, one with a stainless steel corrugated tube for instantaneous DHW production and two in carbon steel for coupling to other additional heat sources

Materials

The inertial tanks are made of high quality material, in particular:
Coil for domestic use: AISI 316L stainless steel
Tank and integration coil: S 235 JR carbon steel

External protective treatment: enamelling with industrial varnish

Insulation

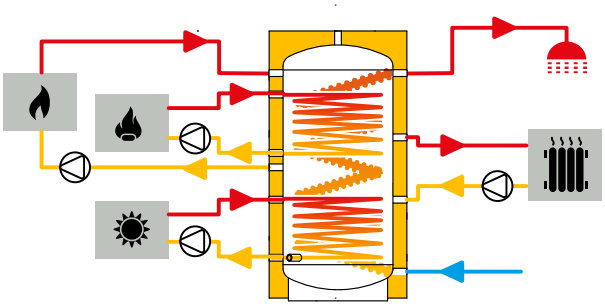
Capacity (l)	Type
500	Highly rigid polyurethane foam
from 600 to 2000	Polyester Fiber

Operational limits

Storage tank		S1-S2-S3 Coil Circuit	
max. temperature	max. pressure	max. temperature	max. pressure
95°C	3 bar	110°C	10 bar

Standard accessories: see pag 102

Special versions: see pag 105



COMBI PLUS
Combi storage tank

COMBI PLUS A

capacity l	code	price	energy label	packed dimensions cm	packed weight kg
500	842020184X		C	100X100X178	125
600	842020185X		C	100X100X185	135
750	842020186X		C	100X100X191	160
1000	842020187X		C	100X100X224	190
1250	842020188X		C	120X120X221	225
1500	842020189X		C	120X120X235	250
2000	842020190X		C	140X140X257	350

COMBI PLUS B

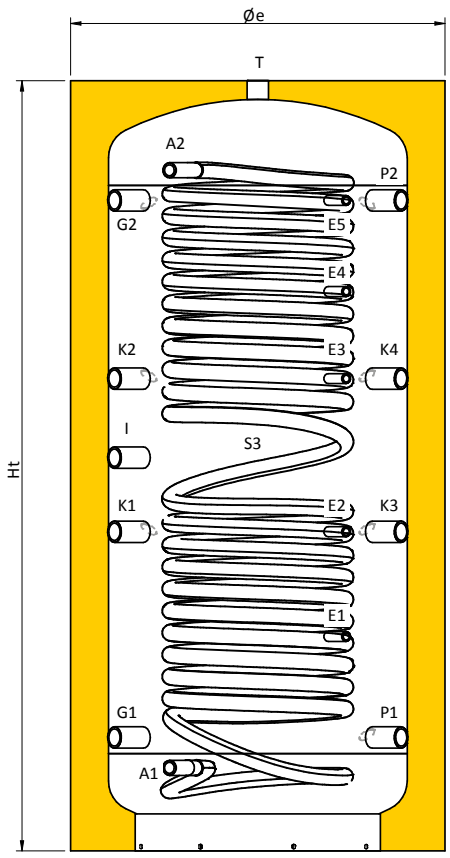
capacity l	code	price	energy label	packed dimensions cm	packed weight kg
500	842020191X		C	100X100X178	150
600	842020192X		C	100X100X185	165
750	842020193X		C	100X100X191	190
1000	842020194X		C	100X100X224	230
1250	842020195X		C	120X120X221	265
1500	842020196X		C	120X120X235	300
2000	842020197X		C	140X140X257	410

COMBI PLUS C

capacity l	code	price	energy label	packed dimensions cm	packed weight kg
500	842020198X		C	100X100X178	165
600	842020199X		C	100X100X185	180
750	842020200X		C	100X100X191	215
1000	842020201X		C	100X100X224	265
1250	842020202X		C	120X120X221	295
1500	842020203X		C	120X120X235	335
2000	842020204X		C	140X140X257	455

COMBI PLUS A
Dimensions

500 ≤ cap. ≤ 2.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
E5	Probe / Thermometer
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
P1	To energy source
P2	From energy source
S3	DHW exchanger
T	Vent

Couplings chart

Cap. l	A1 inch	A2 inch	E1 inch	E2 inch	E3 inch	E4 inch	E5 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	P1 inch	P2 inch	T inch
500	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2
600	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2
750	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2
1000	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2
1250	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2
1500	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2
2000	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2

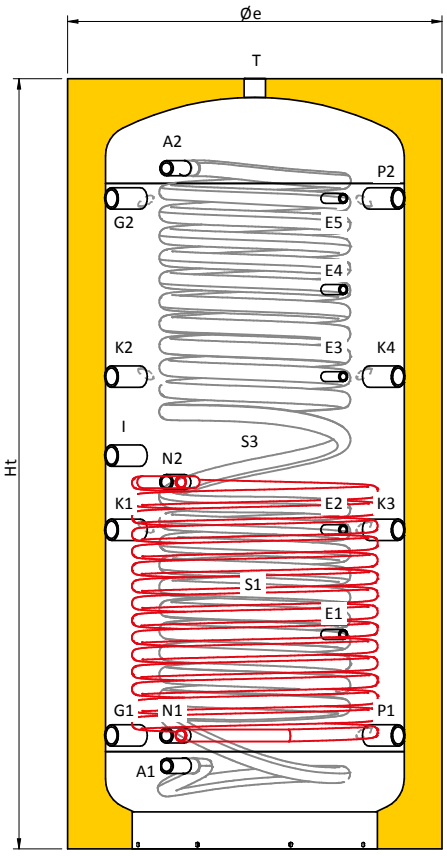
Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	A2 mm	E1 mm	E2 mm	E3 mm	E4 mm	E5 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	P1 mm	P2 mm	S3 m²
500	750	1630	1795	135	1455	420	650	970	1190	1380	210	1380	820	650	970	650	970	210	1380	4
600	900	1700	1925	150	1470	405	595	995	1215	1395	225	1395	805	595	995	595	995	225	1395	4
750	990	1760	2020	180	1500	440	625	1025	1225	1425	255	1425	865	625	1025	625	1025	255	1425	6
1000	990	2090	2315	220	1800	570	845	1250	1480	1720	300	1720	1040	845	1250	845	1250	300	1720	7,5
1250	1150	2060	2360	210	1790	550	785	1240	1470	1700	300	1700	1085	785	1240	785	1240	300	1700	7,5
1500	1200	2200	2510	260	1840	610	900	1285	1525	1750	350	1750	1130	900	1285	900	1285	350	1750	10
2000	1350	2420	2750	235	2115	645	960	1490	1780	2025	325	2025	1215	960	1490	960	1490	325	2025	10

R*: reversal quota

COMBI PLUS B
Dimensions

500 ≤ cap. ≤ 2.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
E5	Probe / Thermometer
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
P1	To energy source
P2	From energy source
S1	Lower exchanger
S3	DHW exchanger
T	Vent

Couplings chart

Cap. l	A1 inch	A2 inch	E1 inch	E2 inch	E3 inch	E4 inch	E5 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	N1 inch	N2 inch	P1 inch	P2 inch	T inch
500	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2
600	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2
750	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2
1000	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2
1250	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2
1500	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2
2000	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"1/2	1"1/2	1"1/2

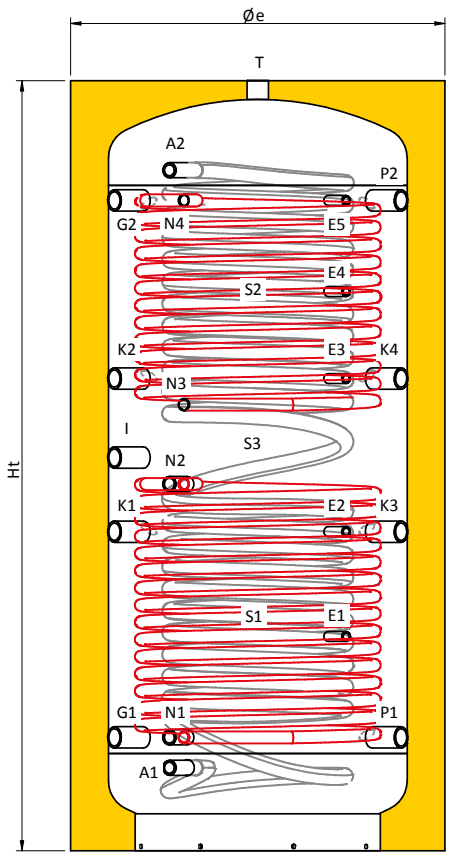
Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	A2 mm	E1 mm	E2 mm	E3 mm	E4 mm	E5 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	N1 mm	N2 mm	P1 mm	P2 mm	S1 m²	S3 m²
500	750	1630	1795	135	1455	420	650	970	1190	1380	210	1380	820	650	970	650	970	210	720	210	1380	1,8	4
600	900	1700	1925	150	1470	405	595	995	1215	1395	225	1395	805	595	995	595	995	225	725	225	1395	1,8	4
750	990	1760	2020	180	1500	440	625	1025	1225	1425	255	1425	865	625	1025	625	1025	255	800	255	1425	2,4	6
1000	990	2090	2315	220	1800	570	845	1250	1480	1720	300	1720	1040	845	1250	845	1250	300	970	300	1720	3	7,5
1250	1150	2060	2360	210	1790	550	785	1240	1470	1700	300	1700	1085	785	1240	785	1240	300	970	300	1700	3	7,5
1500	1200	2200	2510	260	1840	610	900	1285	1525	1750	350	1750	1130	900	1285	900	1285	350	1000	350	1750	3,6	10
2000	1350	2420	2750	235	2115	645	960	1490	1780	2025	325	2025	1215	960	1490	960	1490	325	1105	325	2025	4,2	10

R*: reversal quota

COMBI PLUS C
Dimensions

500 ≤ cap. ≤ 2.000



Couplings legend

A1	DHW inlet
A2	DHW outlet
E1	Probe / Thermometer
E2	Probe / Thermometer
E3	Probe / Thermometer
E4	Probe / Thermometer
E5	Probe / Thermometer
G1	From plant
G2	To plant
I	Electrical resistor
K1	Auxiliary
K2	Auxiliary
K3	Auxiliary
K4	Auxiliary
N1	Lower exchanger outlet
N2	Lower exchanger inlet
N3	Upper exchanger outlet
N4	Upper exchanger inlet
P1	To energy source
P2	From energy source
S1	Lower exchanger
S2	Upper exchanger
S3	DHW exchanger
T	Vent

Couplings chart

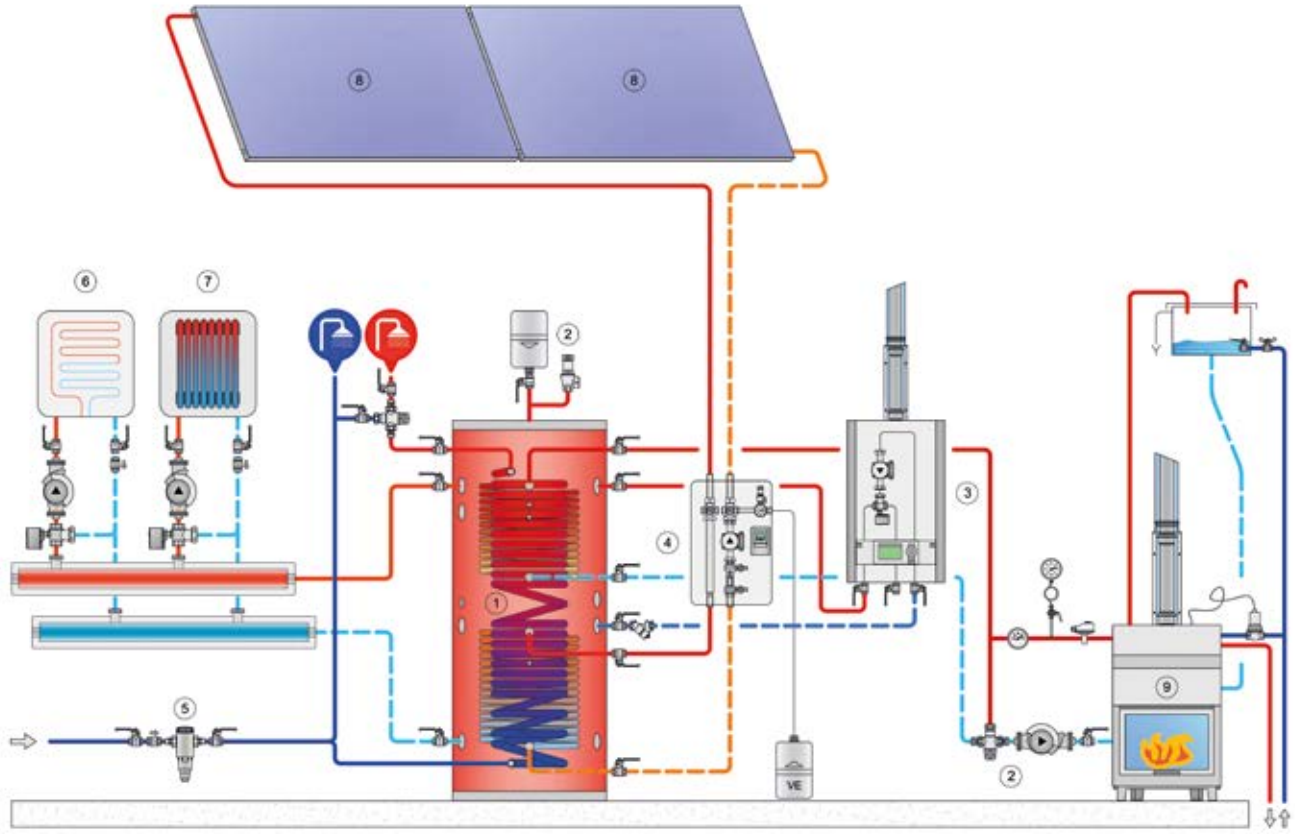
Cap. l	A1 inch	A2 inch	E1 inch	E2 inch	E3 inch	E4 inch	E5 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	N1 inch	N2 inch	N3 inch	N4 inch	P1 inch	P2 inch	T inch
500	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2
600	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2
750	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2
1000	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2
1250	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2
1500	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2
2000	1"M	1"M	1/2"	1/2"	1/2"	1/2"	1/2"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	1"	1"	1"	1"	1"1/2	1"1/2	1"1/2

Size chart

Cap. l	Øe mm	Ht mm	R* mm	A1 mm	A2 mm	E1 mm	E2 mm	E3 mm	E4 mm	E5 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	N1 mm	N2 mm	N3 mm	N4 mm	P1 mm	P2 mm	S1 m²	S2 m²	S3 m²
500	750	1630	1795	135	1455	420	650	970	1190	1380	210	1380	820	650	970	650	970	210	720	980	1380	210	1380	1,8	1,2	4
600	900	1700	1925	150	1470	405	595	995	1215	1395	225	1395	805	595	995	595	995	225	725	995	1345	225	1395	1,8	1,2	4
750	990	1760	2020	180	1500	440	625	1025	1225	1425	255	1425	865	625	1025	625	1025	255	800	1025	1385	255	1425	2,4	1,8	6
1000	990	2090	2315	220	1800	570	845	1250	1480	1720	300	1720	1040	845	1250	845	1250	300	970	1180	1720	300	1720	3	2,4	7,5
1250	1150	2060	2360	210	1790	550	785	1240	1470	1700	300	1700	1085	785	1240	785	1240	300	970	1160	1700	300	1700	3	2,4	7,5
1500	1200	2200	2510	260	1840	610	900	1285	1525	1750	350	1750	1130	900	1285	900	1285	350	1000	1240	1750	350	1750	3,6	2,4	10
2000	1350	2420	2750	235	2115	645	960	1490	1780	2025	325	2025	1215	960	1490	960	1490	325	1105	1475	2025	325	2025	4,2	3	10

R*: reversal quota

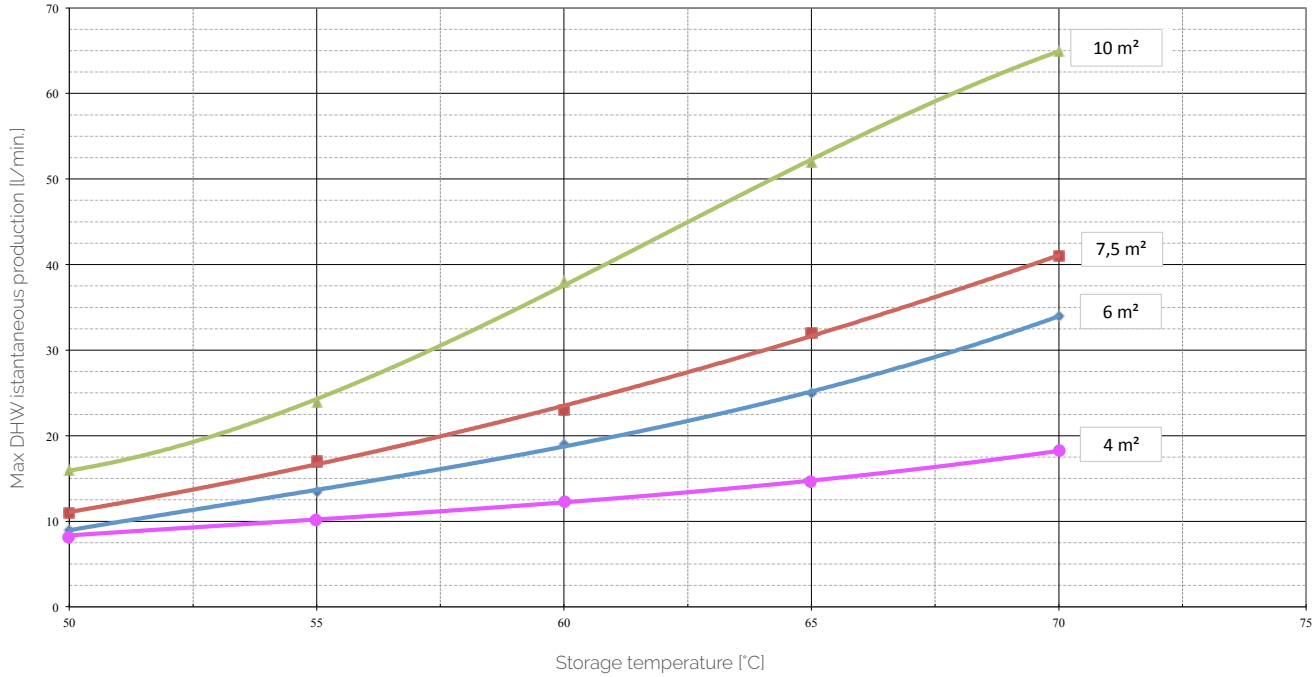
COMBI PLUS
Installation chart



List of components
1 PFC Fiorini Puffer
2 Safety unit
3 Heating by alternative source
4 solar thermal return unit
5 bacteriostatic cold water filter
6 Heating circuit 1
7 Heating circuit 2
8 Fiorini solar collectors
9 Heater or stove with open vessel

COMBI PLUS
Performace

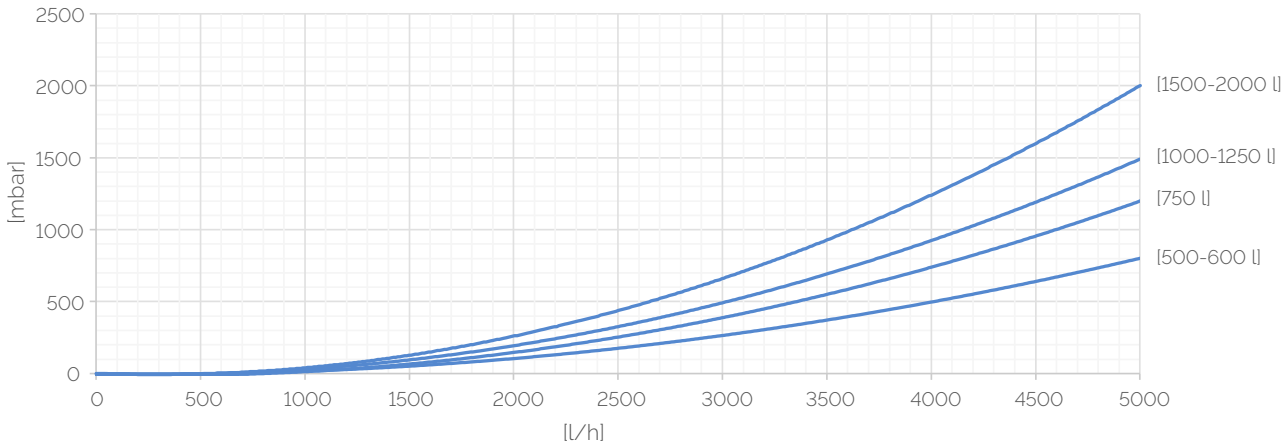
Performance of DHW exchanger



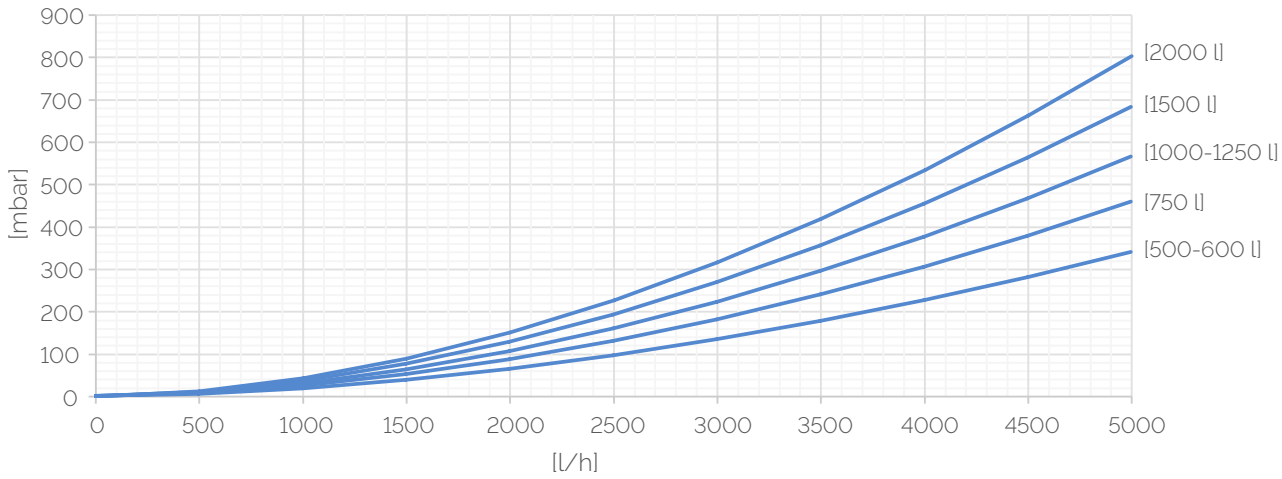
The graph shows the maximum instantaneous production of DHW (10-45 ° C) through the stainless steel coil as a function of the water storage temperature.

COMBI PLUS
Pressure loss

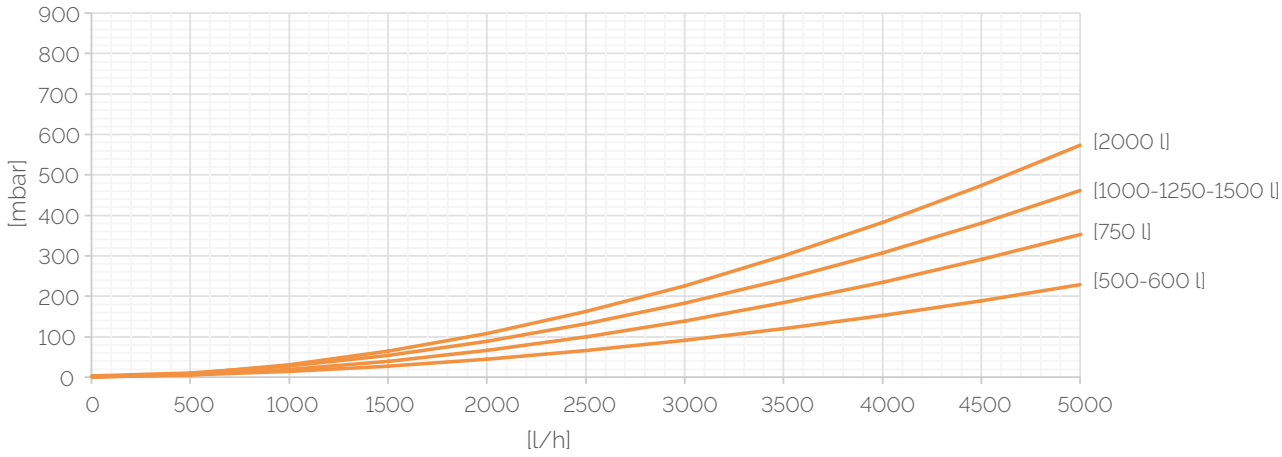
Pressure loss of DHW exchanger



Pressure loss of lower exchanger



Pressure loss of upper exchanger



Standard Accessories for Inertial Tanks

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 Inertial Tanks

Single-phase electrical heaters that can be integrated with the boilers, copper heating elements, safety thermostat (manual re-set), 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		840	IP54	30-65
C24100318		15000	900	1"1/2	95		900	IP54	30-65
C24100319		18000	1050	1"1/2	95		1050	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. 204-206





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.

Standard Accessories for Inertial Tanks

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 Connections Adapters from threaded to Grooved 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	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	

Electric single-phase resistors with built-in thermostat



No IP protection with visible contacts

Power W	Voltage V	Element number	Connection Diameter inch	Length mm	Code	Price
1200	230	1	1" 1/4	220	C24100003	
1500	230	1	1" 1/4	290	C24100004	
2000	230	1	1" 1/4	330	C24100005	

Electric single-phase resistors



IP 55 protection.

Power W	Voltage V	Element number	Connection Diameter inch	Length mm	Code	Price
200	230	1	1/2"	300	C24100001	

Electric resistors



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	
2000	230/380	3	1" 1/4	300	C24100053	
3000	230/380	3	2"	340	C24100010	
3000	230/380	3	1" 1/4	300	C24100011	
4000	230/380	3	2"	390	C24100012	
4000	230/380	3	1" 1/4	400	C24100072	
5000	230/380	3	2"	500	C24100013	
5000	230/380	3	1" 1/4	450	C24100073	
6000	230/380	3	2"	600	C24100014	
7000	230/380	3	2"	580	C24100015	
8000	230/380	3	2"	620	C24100016	
10000	230/380	3	2"	770	C24100017	

Thermometers



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

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	

Accessories Compatible with: MINI-HC, VKG-HC(E), VKG(E), VK(E), VKT, VKX, VKS, VKR, VKD (pag. 68)

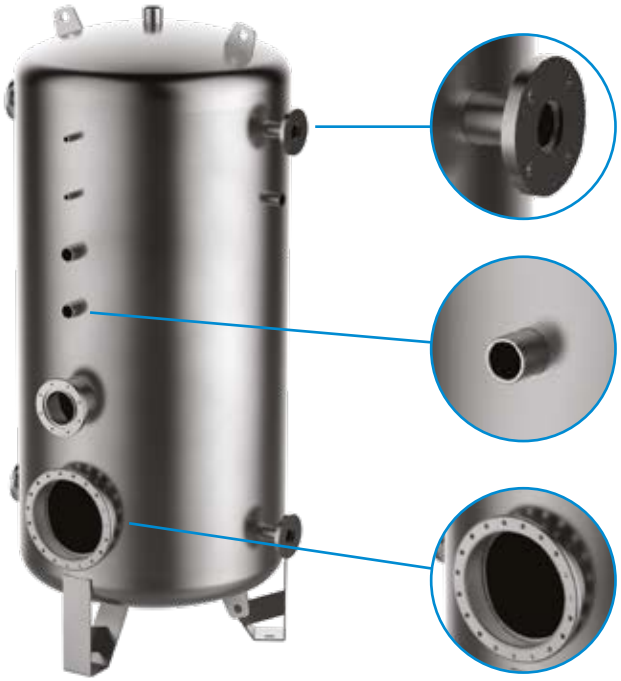
NOTE: Be sure to install the accessories according to the size and availability of the tank connections.

Special versions for Inertial Tanks

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 versions:

- Flanged (in different materials)
- Grooved (in different materials)
- Larger size
- Customised on request





ALUMINIUM cladding

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



Packed in wooden cage

Guarantees greater product protection during transport

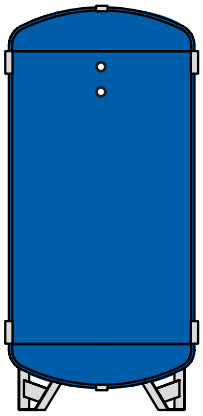


Accessories Compatible with: VKG-HC(E), VKG(E), VK(E), VKT, VKX, VKS, VKR, VKD (pag. 68)

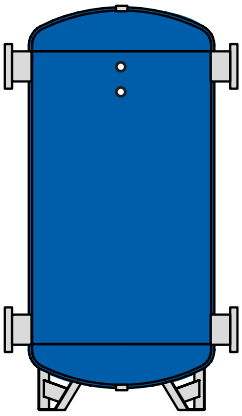
Tank Layout

This page guides you in choosing the couplings geometry/position of a chilled water tank. When requesting a quote, please specify the chosen layout and any changes.

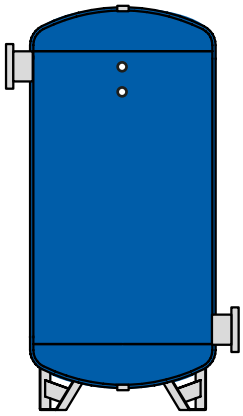
STANDARD



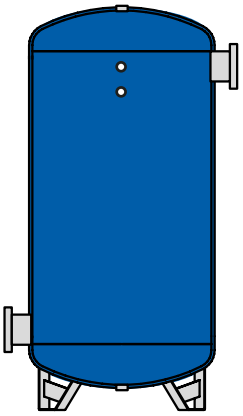
TL1
4 standard couplings



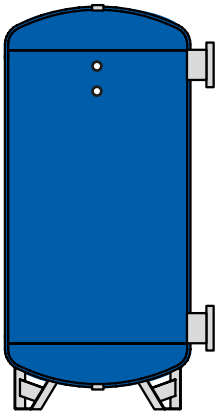
TL2
4 special couplings



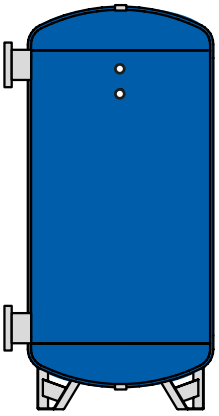
TL3
2 special couplings,top left and bottom right



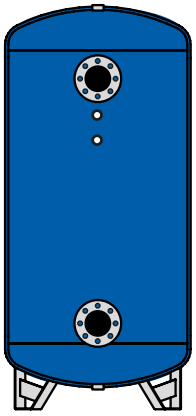
TL4
2 special couplings, top right and bottom left



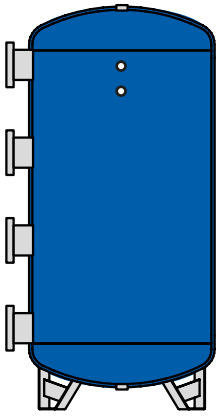
TL5
2 special couplings right



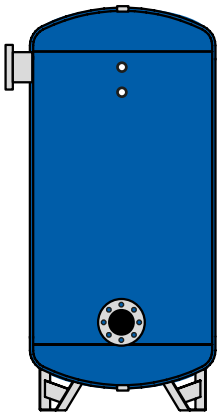
TL6
2 special couplings left



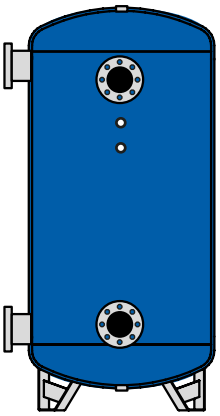
TL7
2 special couplings front



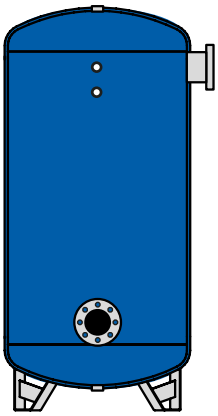
TL8
4 special couplings left



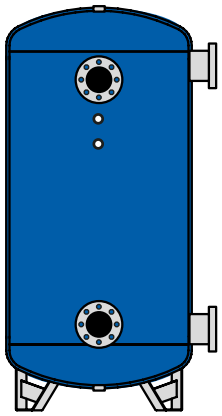
TL9
2 special couplings, top left and bottom front



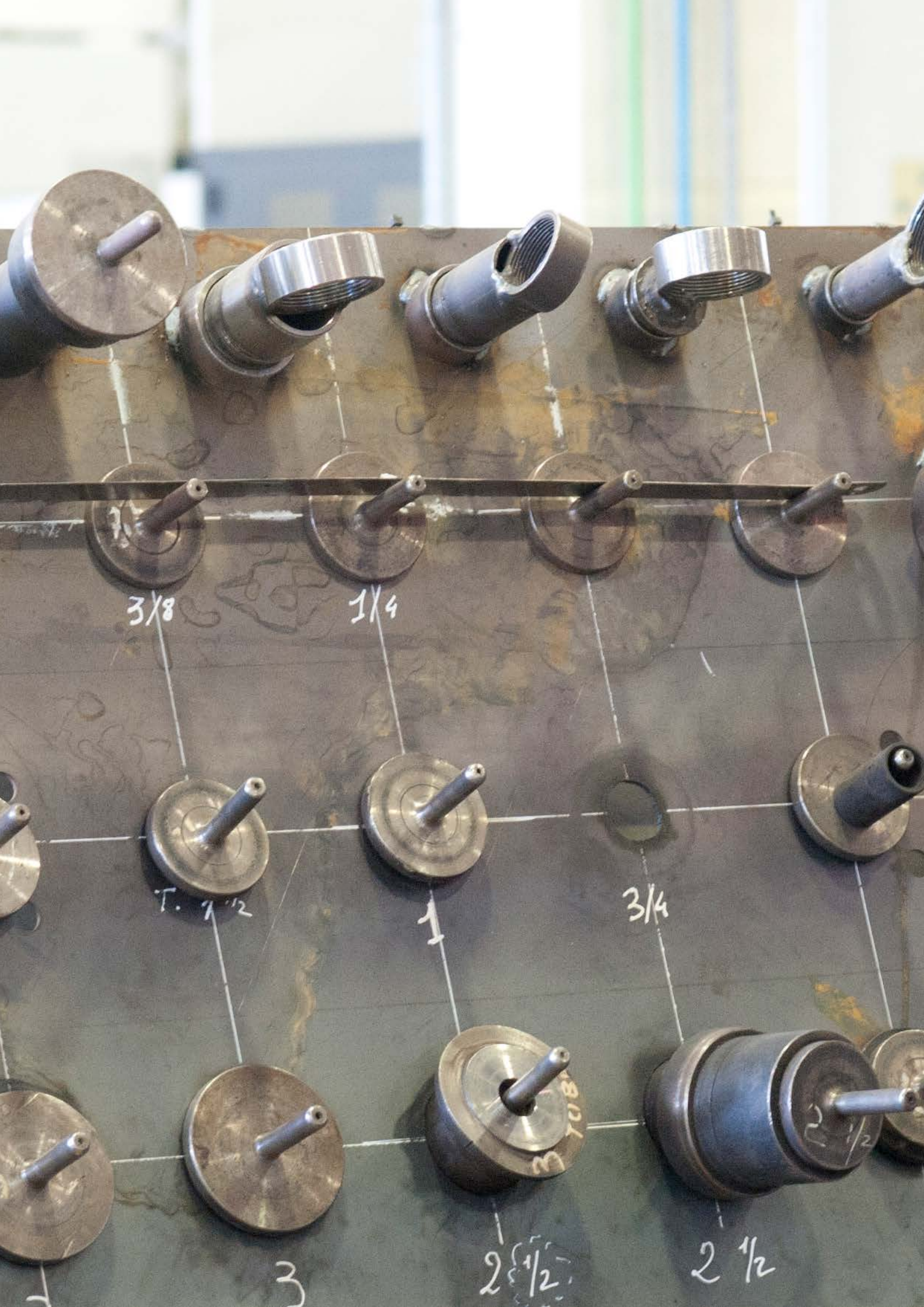
TL10
4 special couplings left and front



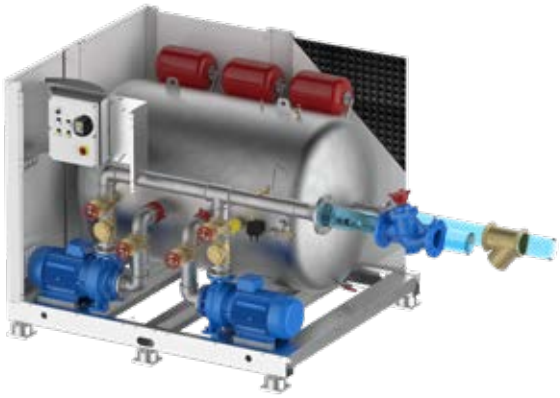
TL11
2 special couplings top right and bottom front



TL12
4 special couplings right and front


3/8
1/4
T. 1 1/2
1
3/4
3
2 1/2
2 1/2

HYDRONIC KITS CONFIGURATOR



An advanced tool for sizing and accessorizing Fiorini hydronic kits

The hydronic kit configurator is a web application that allows you to select and accessorize the standard Fiorini HP, HPT and VKB products starting from your project conditions.

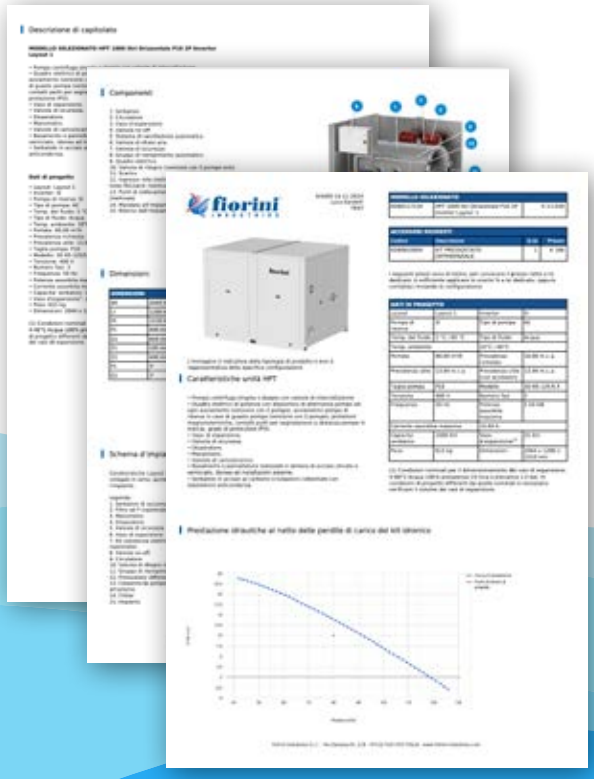


Advantages

- ✔ 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



Hydronic Kits

Contents

Hydronic Kits pag. 110



HPT
pag. 111



HP 2.0
pag. 130



VKB 2.0
pag. 144

Accessories pag. 148

Hydronic kit

The VKB 2.0, HPT and HP 2.0 units are meant to optimize the performance of heating and cooling installations and to reduce the installation time.

The units have an integrated system, which contains all the needed components for an efficient functioning of the hydraulic circuit (or for the distribution of chilled water).

They are designed, pre-assembled and every unit is tested in our factory. In this way we guarantee quality in our products and a fast and simple installation. The kits are available with a broad range of Pump/Tank combinations which can be used with any kind of cooling device or heat pump.

The units are made of materials and finished in a certain way which makes it possible to install outdoor. They can be customized according to the client's specific requirements.

Advantages

- ✔ Easy installation
- ✔ All units are tested
- ✔ Pre-assembled system
- ✔ Fast installation
- ✔ Excellent dimensions
- ✔ Low energy consumption



HPT
Unit with tank, pump and accessories



VKB 2.0
Unit with tank and accessories



HP 2.0
Unit with pump and accessories





The units are in accordance with the directives emitted by the European Union and labelled with the CE mark.



In accordance with the ErP directive
Efficient usage of energy



Pre-assembled accessories and tested for a fast and secure installation

Tank units for chilled water Hydronic systems: HPT

The HPT units are hydraulic units with buffer tanks designed to reduce the production time of conditioning and cooling systems. They can be equipped with all different kinds of water coolers.



Standard equipment

Capacity: from 100 to 2.500 l
Tank material: carbon steel
Fluid types:
- water
- Ethylene glycol up to 40%
- Propylene glycol up to 40%

Insulation: anti-condensate elastomer
Pumps: 1 or 2
Execution: Layout 1 or 2
Inverter: with or without

Standard equipment usage limit

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

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

The HPT units are made of:

- carbon steel tank and tubes insulated with anti-condensate elastomer
- Centrifugal single or double pump with a shut-off valve
- Expansion vessel
- Safety valve
- Deaerator
- Manometer
- Fill-up/drain valve
- Base and self-supporting panels made of galvanized and coated steel sheets, suitable for outdoor installations
- Switchboard (standard or with inverter)

Accessories: For the accessories list see pag. 128

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

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, pumps for low temperature operation, stainless steel connections and tank.

Standard switchboard

Switchboard with possibility to alternate pumps with every start-up (2 pumps verision), to start-up the backup pump in case of breakdown (2 pumps version), magnetothermic protection, free contacts to detect alarms and turned-on pumps, free contact to control remotely on/off pumps, protection category IP55.
Electric data: 400V/3/50Hz

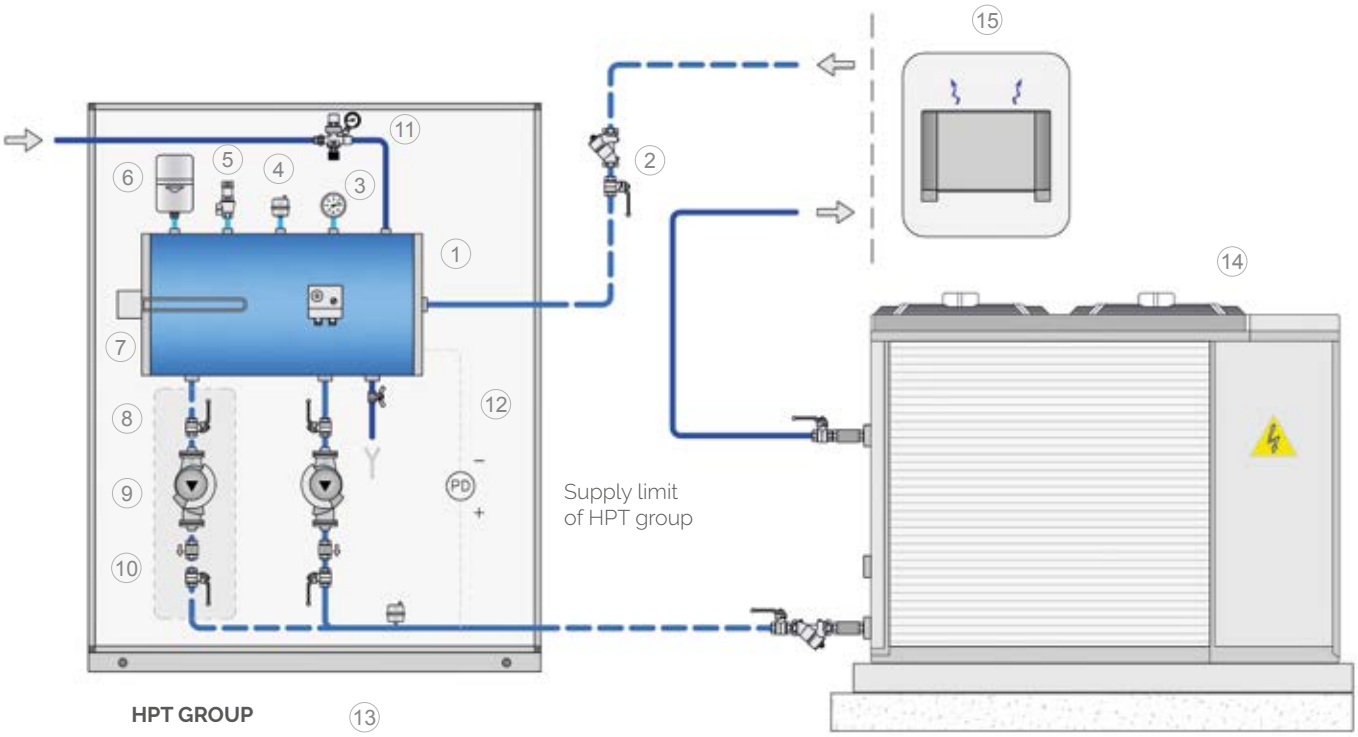
Switchboard with inverter

Each pump can be managed by an inverter. Units equipped with inverters have a pressure transducer which communicates with the inverter through a 4-20 mA signal. All adjustment parameters are pre-loaded during the test run at the company. The user must choose only the desired pressure value set point.
It is possible to remotely control pump 1 and 2. Free contacts available used to verify pumps status.

HPT hydronic systems
Layout 1 - STANDARD

Layout 1 Features: Hydronic kit, chiller and system connected in series, hence the water flow is constant throughout the plant.

NOTE: All HPT Fiorini standard kit kits are Layout 1
NOTE: Layout 1 is available as standard with and without inverter



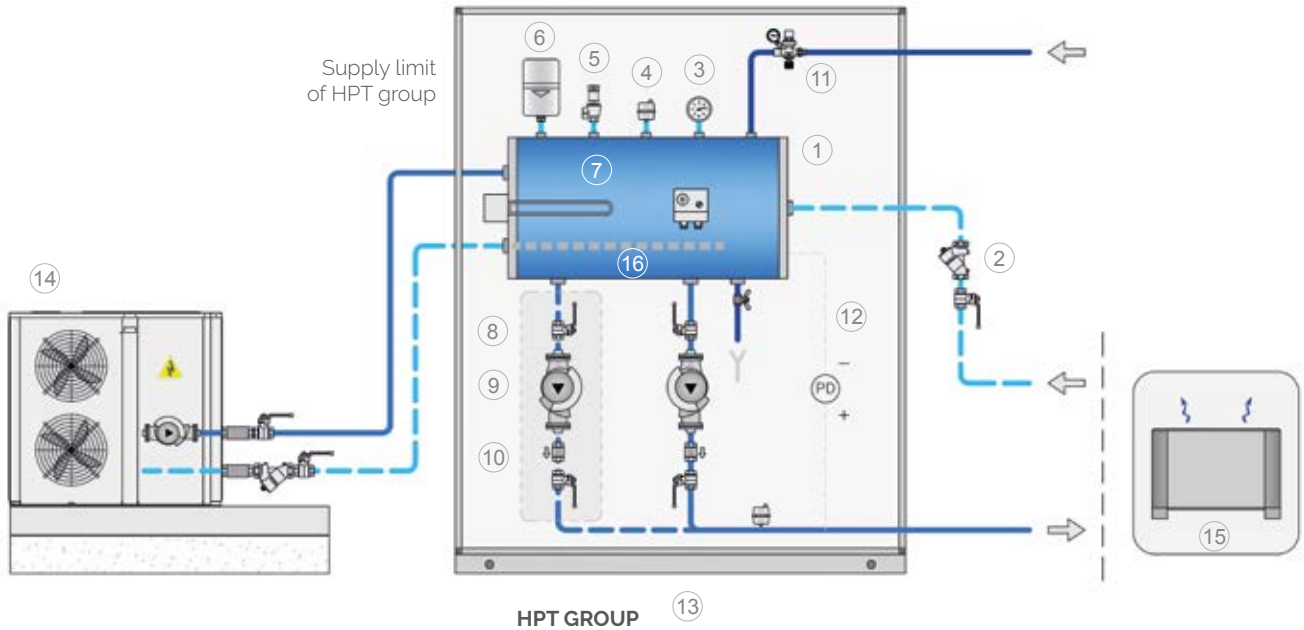
Legend

1. Storage tank
2. Y filter. Optional, supplied non-assembled
3. Manometer
4. Deaerator
5. Safety valve
6. Expansion vessel
7. Kit with electric anti-freeze resistance and anti-freeze thermostat (optional)
8. On-off valve
9. Circulator
10. Check valve (only version with 2 pumps)
11. Automatic filling unit
12. Differential pressure switch (optional)
13. Self-supporting sturdy structure for outside placement
14. Chiller
15. Device

HPT hydronic system
Layout 2 - SPECIAL VERSION

Layout 2 Features: Hydronic Kit and Chiller create the primary circuit, Hydronic Kit and Plant create the secondary circuit. Hence, the two circuits have independent flow rates.

NOTE: Pump unit supplied only on one of the two circuits.
NOTE: Layout 2 is available as standard with and without inverter



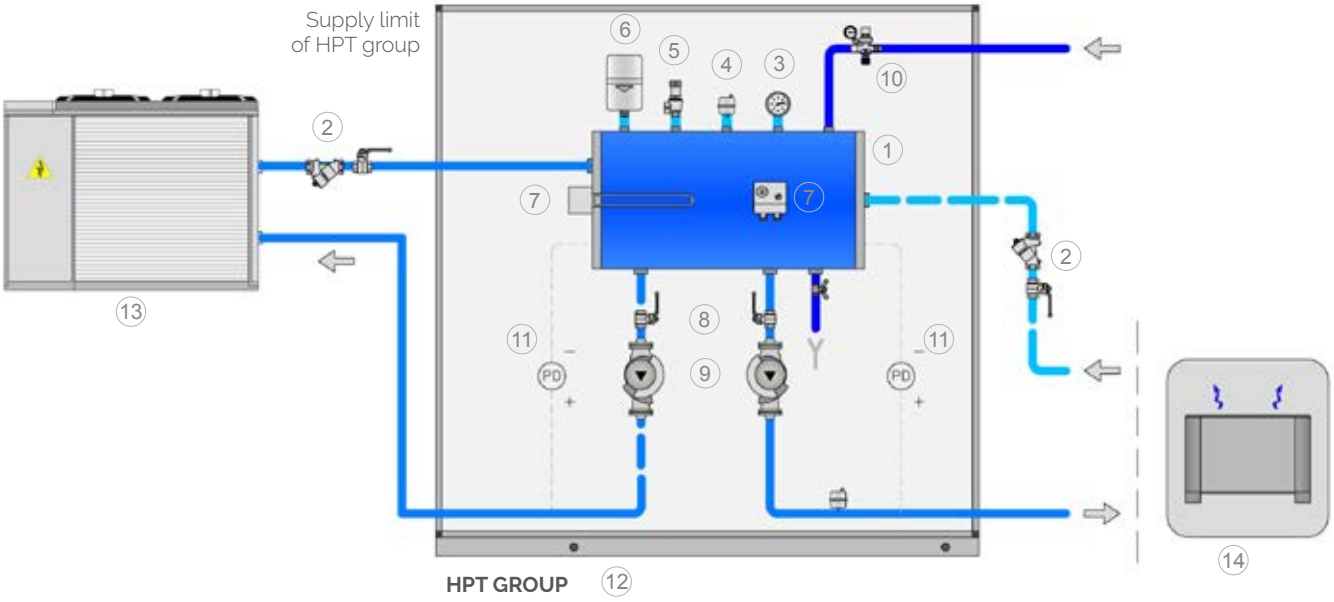
Legend

1. Storage tank
2. Y filter. Optional, supplied non-assembled
3. Manometer
4. Deaerator
5. Safety valve
6. Expansion vessel
7. Kit with electric anti-freeze resistance and anti-freeze thermostat (optional)
8. On-off valve
9. Circulator
10. Check valve (only version with 2 pumps)
11. Automatic filling unit
12. Differential pressure switch (optional)
13. Self-supporting sturdy structure for outdoor placement
14. Chiller
15. Device

HPT hydronic system
Layout 3 - SPECIAL VERSION

Layout 3 features: Hydronic Kit and Chiller create the primary circuit, Hydronic Kit and the system create the independent secondary circuit. Then the two circuits have independent flow rates.

NOTE: Pump assembly supplied on both circuits.

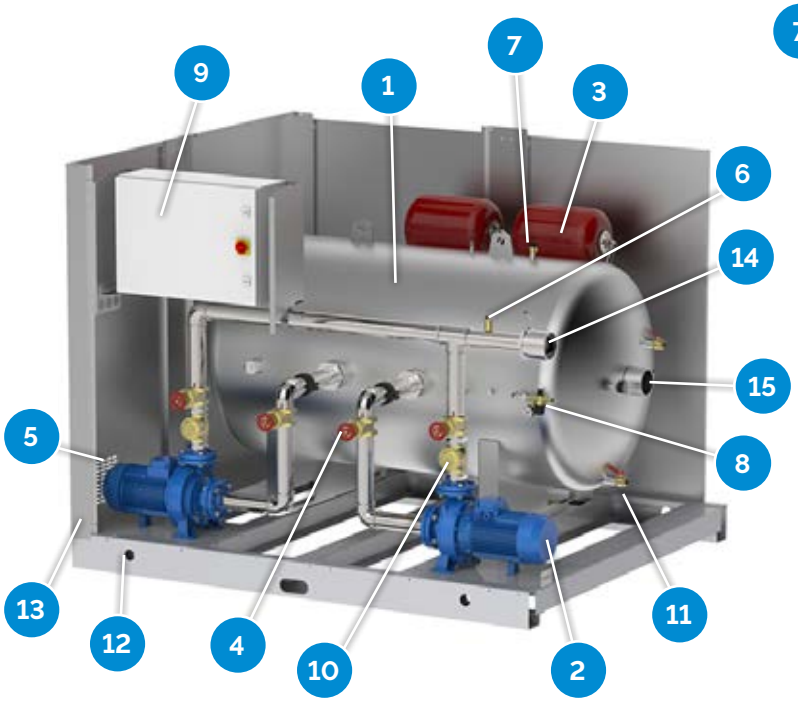


Legend

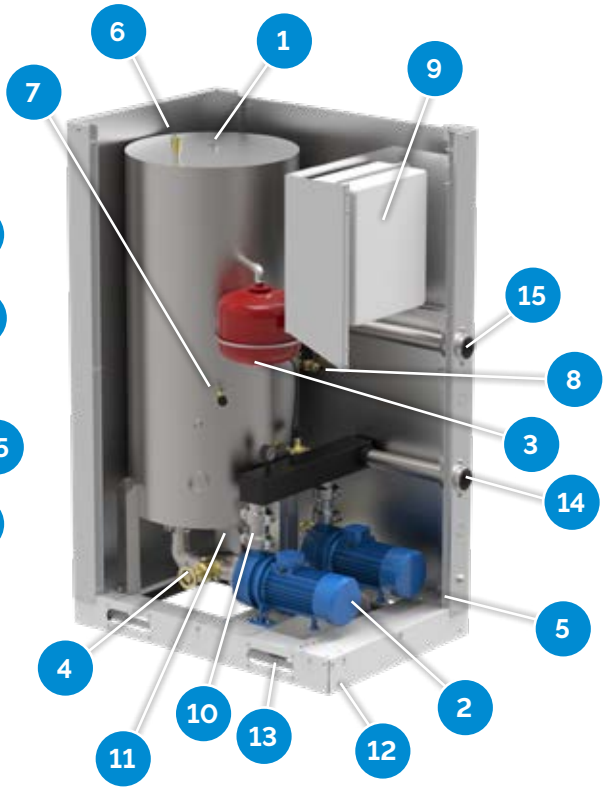
1. Storage tank
2. Y filter. Optional, supplied non-assembled
3. Manometer
4. Deaerator
5. Safety valve
6. Expansion vessel
7. Kit with electric anti-freeze resistance and anti-freeze thermostat (optional)
8. On-off valve
9. Circulator
10. Automatic filling unit
11. Differential pressure switch (optional)
12. Self-supporting sturdy structure for outside placement
13. Chiller
14. Device

Hydronic systems
HPT: components

Horizontal HPT



Vertical HPT

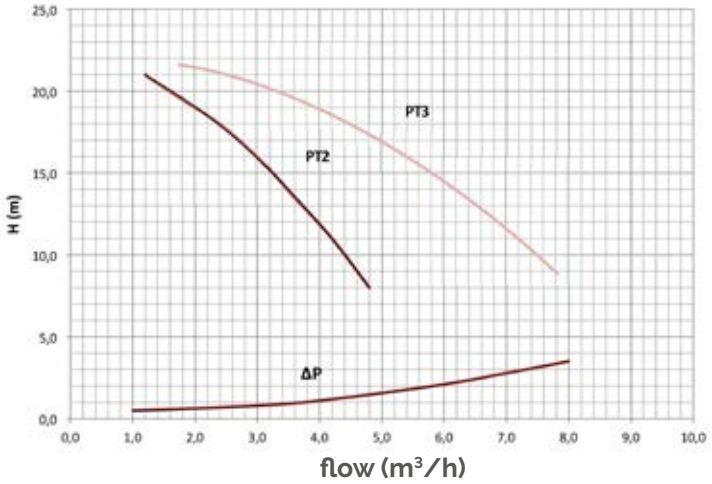


	Components
1	Tank
2	Circulator
3	Expansion vessel
4	On-off valve
5	Automatic ventilation system
6	Pressure relief valve
7	Safety valve
8	Automatic filling unit
9	Switchboard
10	Control valve (version with 2 pumps)
11	Drain
12	Anchoring point (4-6 holes m12/ ø14)
13	Inlet power grid
14	Water outlet
15	Water inlet

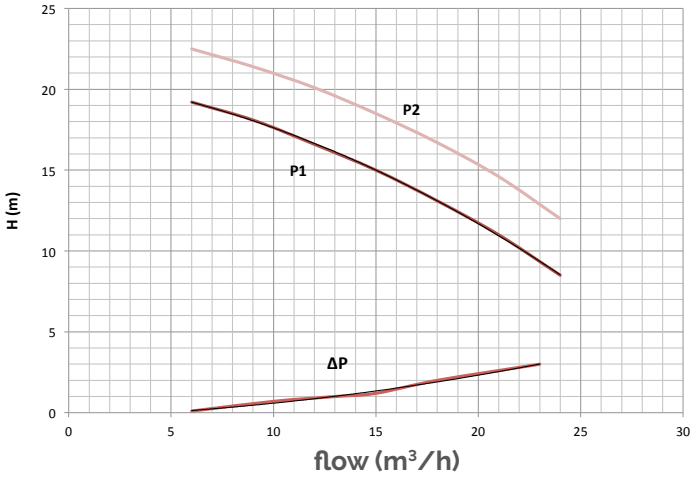
	Components
1	Tank
2	Circulator
3	Expansion vessel
4	On-off valve
5	Automatic ventilation system
6	Pressure relief valve
7	Safety valve
8	Automatic filling unit
9	Switchboard
10	Control valve (version with 2 pumps)
11	Drain
12	Inlet power grid
13	Jacking points
14	Water outlet
15	Water inlet

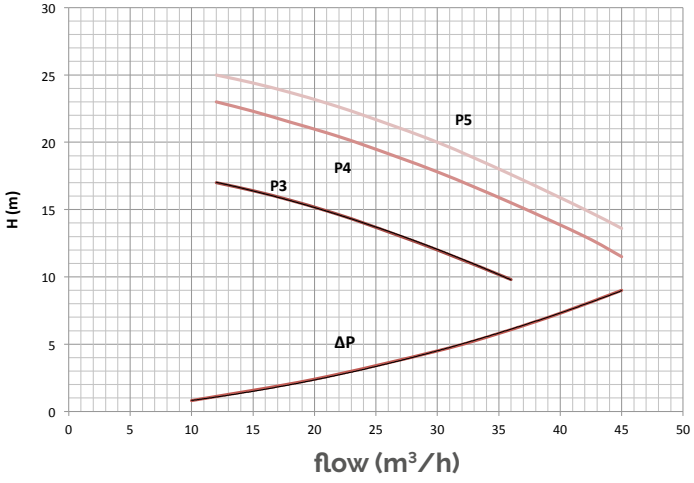
HPT hydronic systems
Prevalence and pressure loss curve

HPT-V 100-200



HPT 300-500

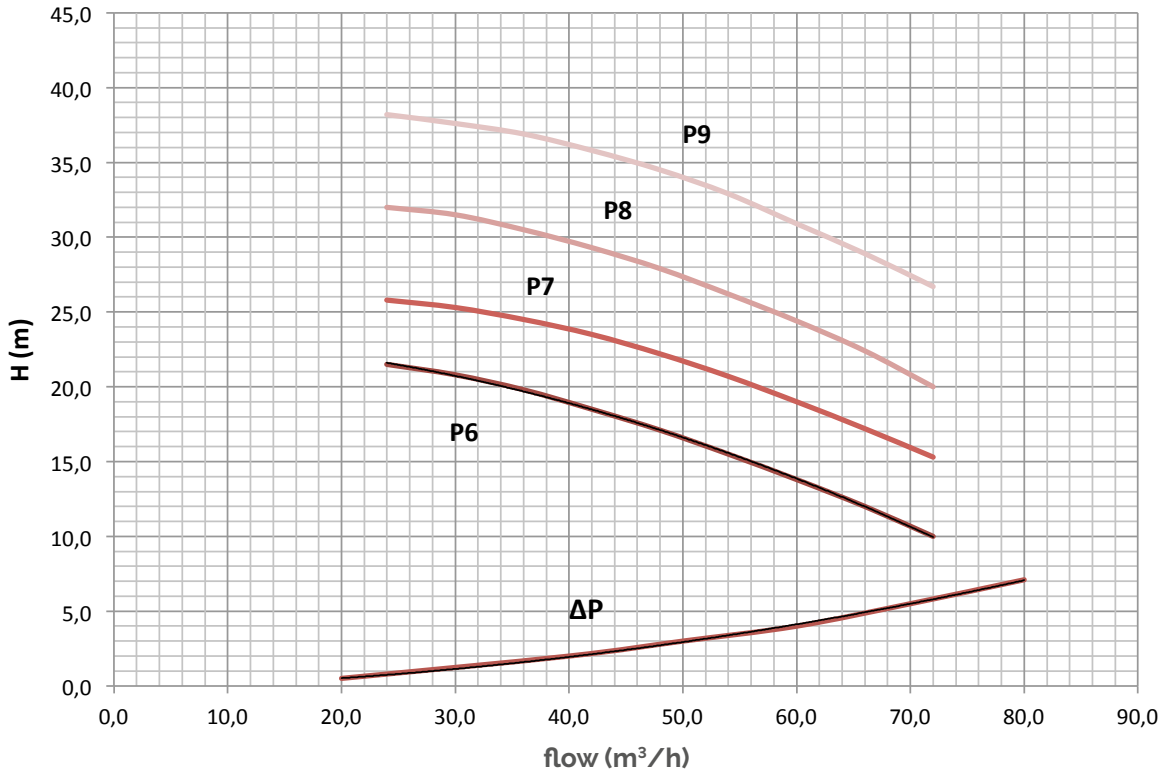


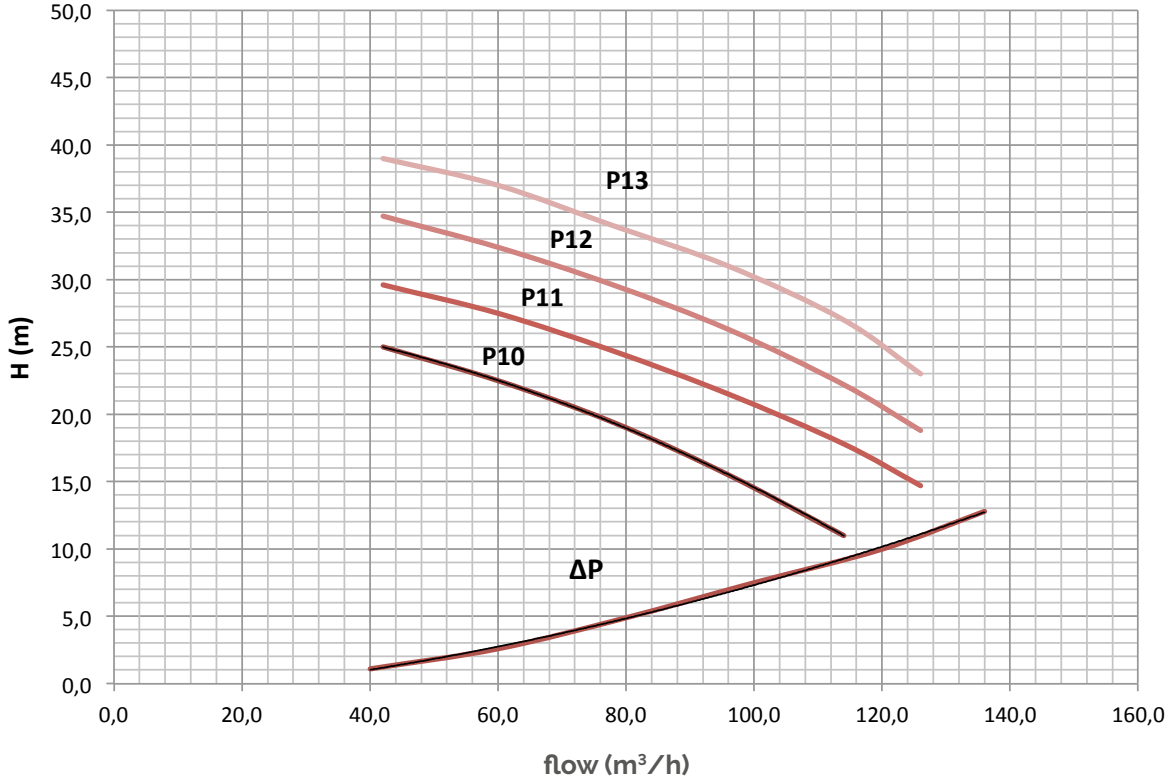


ΔP: pressure loss of the HPT unit

HPT hydronic systems
Prevalence and pressure loss curve

HPT 750-1000

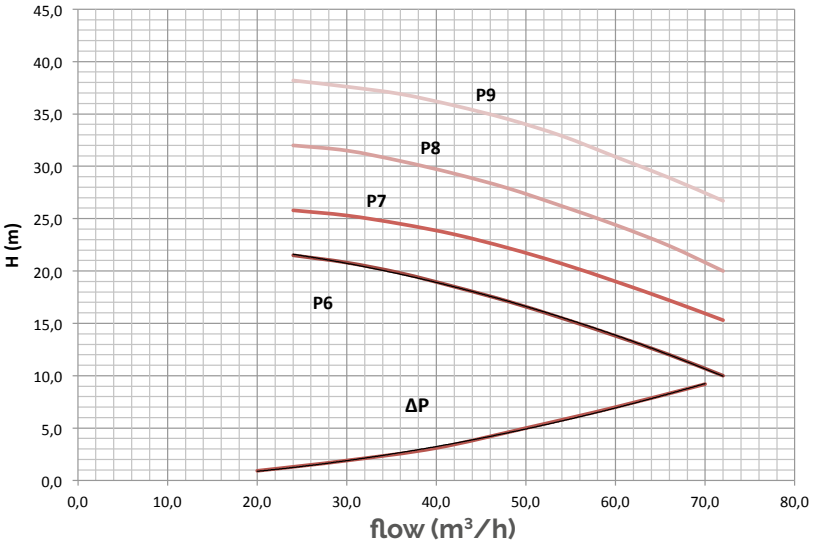


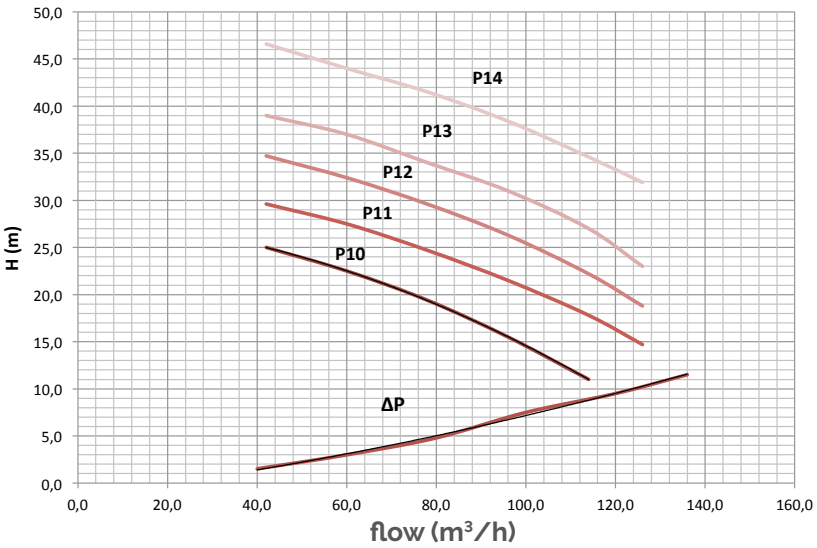


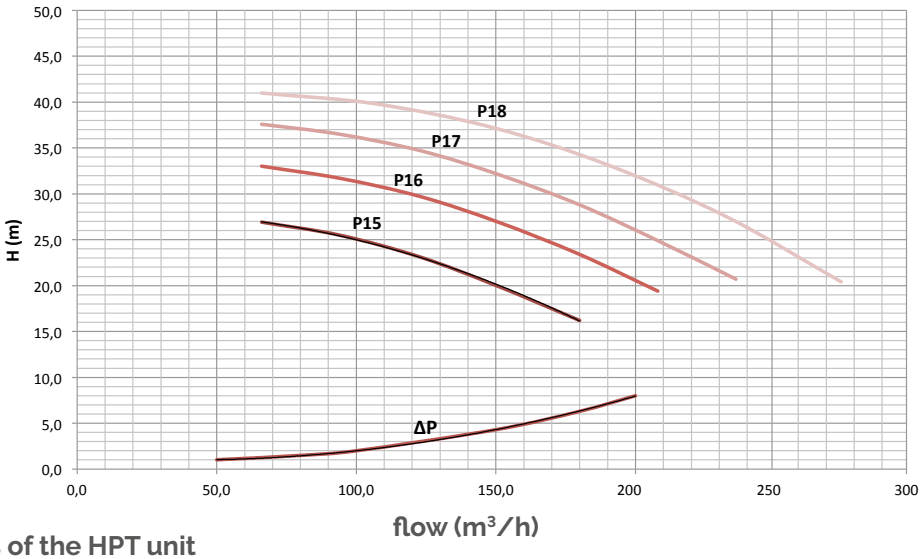
ΔP: pressure loss of the HPT unit

HPT hydronic systems
Prevalence and pressure loss curve

HPT 1500-2500



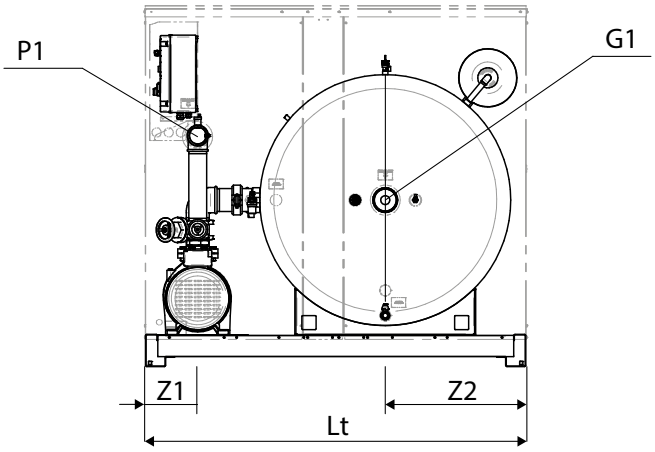


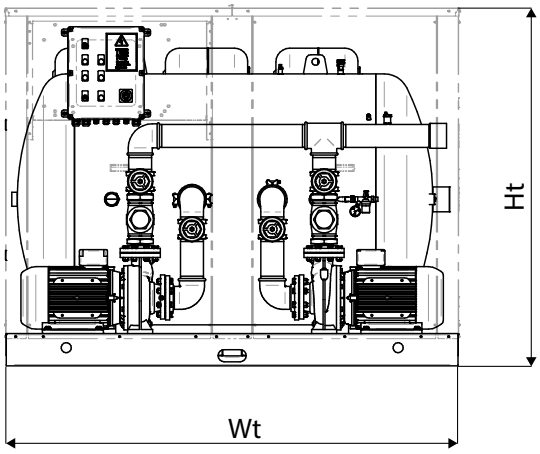


ΔP: pressure loss of the HPT unit

Hydronic systems
HPT: dimensions and connections

Horizontal version





Horizontal HPT dimensions

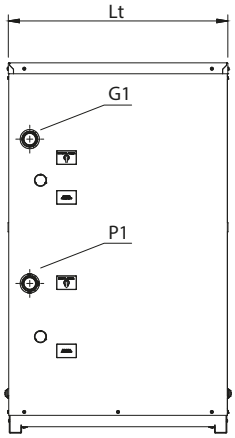
Capacity l	Wt mm	Lt mm	Ht mm	P1 mm	G1 mm	Z1 mm	Z2 mm	G1 inch	P1 inch
300	1504	1120	1265	738	490	212	388	2"1/2	2"1/2
500	1504	1120	1265	738	490	212	388	2"1/2	2"1/2
750	2044	1200	1510	940	604	185	440	3"	3"
1000	2044	1200	1510	940	604	185	440	3"	3"
1500	2260	1900	1782	1145	829	262	703	4"	4"
2500	2260	1900	1782	1145	829	262	703	4"	4"

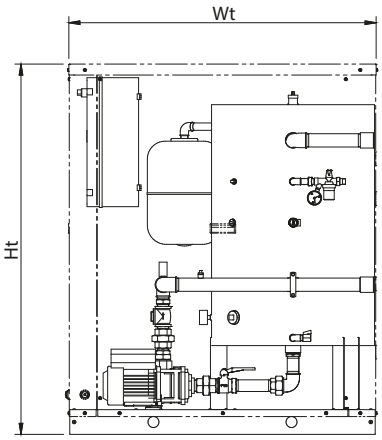
Couplings legend

G1	From plant threaded connection
P1	To energy source threaded connection

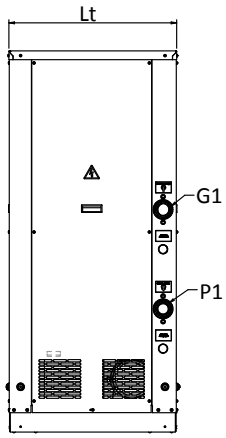
Vertical version

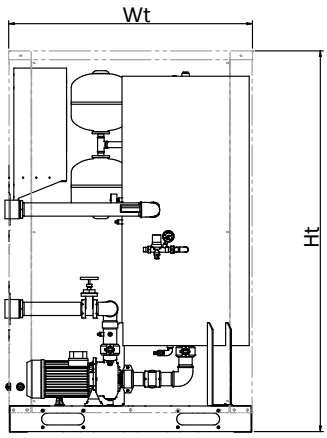
HPT 100-200





HPT 300





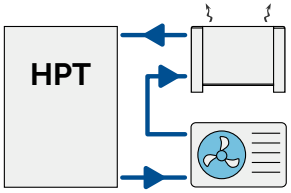
Vertical HPT dimensions

Capacity l	Wt mm	Lt mm	Ht mm	P1 mm	G1 mm	P1 inch	G1 inch
100	1120	800	1350	546	1002	1" 1/2	1" 1/2
200	1120	800	1350	546	1072	1" 1/2	1" 1/2
300	1100	760	1726	558	1008	2" 1/2	2" 1/2

Couplings legend

G1	From plant threaded connection
P1	To energy source threaded connection

HPT Layout 1 without Inverter



HPT	1 pump				2 pumps (1 redundant)						
Capacity	Model	Code	Price	Weight kg	Model	Code	Price	Weight kg	F.L.I kW	F.L.A. (400/3/50) A	Ve l
100 vertical	PT2*	838011493X		171	PT2*	838011494X		176	0,45	1,3	18
	PT3*	838011495X		172	PT3*	838011496X		176	0,45	1,3	18
200 vertical	PT2*	838011497X		193	PT2*	838011498X		198	0,45	1,3	18
	PT3*	838011499X		194	PT3*	838011500X		198	0,45	1,3	18
300 vertical	P1	838010891X		231	P1	838010896X		251	1,1	3,3	25
	P2	838010892X		233	P2	838010897X		254	1,5	3,8	25
	P3	838010893X		233	P3	838010898X		255	1,5	3,8	25
	P4	838010894X		237	P4	838010899X		262	2,2	4,7	25
	P5	838010895X		239	P5	838010900X		266	3	6,4	25
300 horizontal	P1	838010349		260	P1	838010354		305	1,1	3,3	25
	P2	838010350		262	P2	838010355		308	1,5	3,8	25
	P3	838010351		262	P3	838010356		309	1,5	3,4	25
	P4	838010352		266	P4	838010357		316	2,2	4,7	25
	P5	838010353		297	P5	838010358		320	3	6,4	25
500 horizontal	P1	838010359		283	P1	838010364		318	1,1	3,3	25
	P2	838010360		285	P2	838010365		321	1,5	3,8	25
	P3	838010361		285	P3	838010366		322	1,5	3,8	25
	P4	838010362		289	P4	838010367		330	2,2	4,7	25
	P5	838010363		320	P5	838010368		334	3	6,4	25
	P6	838010879X		313	P6	838011056X		369	3	6,1	25
750 horizontal	P6	838010374		425	P6	838010379		476	3	6,1	25
	P7	838011384X		428	P7	838011385X		481	4	8,7	25
	P8	838010375		442	P8	838010380		542	5,5	10,4	25
	P9	838011392X		446	P9	838011393X		550	7,5	13,6	25
	P10	838010376		460	P10	838010381		559	5,5	10,4	25
	P11	838010377		464	P11	838010382		568	7,5	13,6	25
	P12	838011400X		477	P12	838011401X		605	9,2	17,2	25
	P13	838010378		477	P13	838010383		605	11	21,3	25
1000 horizontal	P6	838010384		445	P6	838010389		531	3	6,1	25
	P7	838011386X		447	P7	838011387X		536	4	8,7	25
	P8	838010385		461	P8	838010390		598	5,5	10,4	25
	P9	838011394X		465	P9	838011395X		606	7,5	13,6	25
	P10	838010386		479	P10	838010391		615	5,5	10,4	25
	P11	838010387		484	P11	838010392		624	7,5	13,6	25
	P12	838011402X		496	P12	838011403X		661	9,2	17,2	25
	P13	838010388		496	P13	838010393		661	11	21,3	25

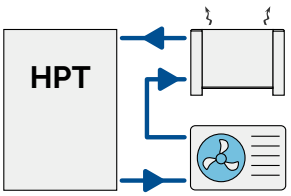
Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase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

NOTE - Layout 1 is the standard execution unless otherwise stated in the order. Layout 2 and Layout 3 on request.

Legend

F.L.I. Maximum absorbed power
F.L.A. Maximum current absorbed
Ve Expansion vessel capacity
Pve Expansion vessel pre-charge
Ps Maximum operating pressure
T min Minimum liquid temperature

HPT Layout 1 without Inverter



HPT	1 pump				2 pumps (1 redundant)						
Capacity	Model	Code	Price	Weight kg	Model	Code	Price	Weight kg	F.L.I kW	F.L.A. (400/3/50) A	Ve l
1500 horizontal	P6	838010705		653	P6	838010458		716	3	6,1	2x25
	P7	838011388X		656	P7	838011389X		721	4	8,7	2x25
	P8	838010704		670	P8	838010630		783	5,5	10,4	2x25
	P9	838011396X		674	P9	838011397X		791	7,5	13,6	2x25
	P10	838010703		688	P10	838010696		803	5,5	10,4	2x25
	P11	838010702		692	P11	838010695		812	7,5	13,6	2x25
	P12	838011404X		705	P12	838011405X		846	9,2	17,2	2x25
	P13	838010701		705	P13	838010694		849	11	21,3	2x25
	P14	838010700		749	P14	838010693		939	15	27,7	2x25
	P15	838011380X		739	P15	838011381X		921	11	20,2	2x25
	P16	838010699		776	P16	838010692		995	15	27,5	2x25
	P17	838010698		786	P17	838010691		1015	18,5	33	2x25
	P18	838010697		795	P18	838010690		1033	22	40,9	2x25
2500 horizontal	P6	838010689		706	P6	838010682		763	3	6,1	3x25
	P7	838011390X		708	P7	838011391X		768	4	8,7	3x25
	P8	838010688		722	P8	838010681		830	5,5	10,4	3x25
	P9	838011398X		726	P9	838011399X		838	7,5	13,6	3x25
	P10	838010687		740	P10	838010680		843	5,5	10,4	3x25
	P11	838010686		745	P11	838010679		852	7,5	13,6	3x25
	P12	838011406X		757	P12	838011407X		889	9,2	17,2	3x25
	P13	838010685		757	P13	838010678		889	11	21,3	3x25
	P14	838010684		801	P14	838010677		980	15	27,7	3x25
	P15	838011382X		791	P15	838011383X		967	11	20,2	3x25
	P16	838010707		828	P16	838010459		1041	15	27,5	3x25
	P17	838010683		838	P17	838010676		1061	18,5	33	3x25
	P18	838010706		847	P18	838010633		1079	22	40,9	3x25

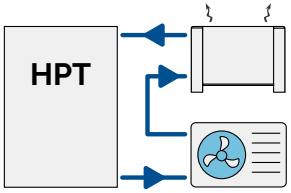
Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase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

NOTE - Layout 1 is the standard execution unless otherwise stated in the order. Layout 2 and Layout 3 on request.

Legend

F.L.I. Maximum absorbed power
F.L.A. Maximum current absorbed
Ve Expansion vessel capacity
Pve Expansion vessel pre-charge
Ps Maximum operating pressure
T min Minimum liquid temperature

HPT Layout 1 with Inverter



HPT	1 pump				2 pumps (1 redundant)				F.L.I kW	F.L.A. (400/3/50) A	Ve l
Capacity	Model	Code	Price	Weight kg	Model	Code	Price	Weight kg			
100 vertical	PT2*	838011747X		171	PT2*	838011740X		176	0,45	1,3	18
	PT3*	838011748X		172	PT3*	838011741X		176	0,45	1,3	18
200 vertical	PT2*	838011749X		193	PT2*	838011742X		198	0,45	1,3	18
	PT3*	838011750X		194	PT3*	838011636X		198	0,45	1,3	18
300 vertical	P1	838011751X		231	P1	838011743X		251	1,1	2,5	25
	P2	838011752X		233	P2	838011744X		254	1,5	3,2	25
	P3	838011753X		233	P3	838011745X		255	1,5	3,4	25
	P4	838011754X		237	P4	838011746X		262	2,2	4,8	25
	P5	838011755X		239	P5	838011578X		266	3	5,6	25
300 horizontal	P1	838011666X		260	P1	83801A677X		305	1,1	2,5	25
	P2	838011667X		262	P2	838011709X		308	1,5	3,2	25
	P3	838011668X		262	P3	838011710X		309	1,5	3,4	25
	P4	838011669X		266	P4	838011711X		316	2,2	4,8	25
	P5	838011670X		297	P5	83801A573X		320	3	5,6	25
500 horizontal	P1	838011671X		283	P1	838011712X		318	1,1	2,5	25
	P2	838011672X		285	P2	838011713X		321	1,5	3,2	25
	P3	838011491X		285	P3	838011366X		322	1,5	3,4	25
	P4	838011673X		289	P4	838011714X		330	2,2	4,8	25
	P5	838011674X		320	P5	838011715X		334	3	5,6	25
	P6	838011996X		357	P6	838011469X		408	3	6,4	25
750 horizontal	P6	838011675X		425	P6	83801A603X		476	3	6,4	25
	P7	838011676X		428	P7	838011716X		481	4	8,7	25
	P8	838011677X		442	P8	838011717X		542	5,5	10,6	25
	P9	838011678X		446	P9	838011718X		550	7,5	13,6	25
	P10	838011679X		460	P10	838011719X		559	5,5	10,6	25
	P11	838011680X		464	P11	838011720X		568	7,5	13,6	25
	P12	838011681X		477	P12	838011721X		605	9,2	17,2	25
	P13	838011682X		477	P13	838011612X		605	11	21,3	25
1000 horizontal	P6	838011683X		445	P6	838011577X		531	3	6,4	25
	P7	838011573X		447	P7	838011722X		536	4	8,7	25
	P8	838011684X		461	P8	838011336X		598	5,5	10,6	25
	P9	838011685X		465	P9	838011656X		606	7,5	13,6	25
	P10	838011686X		479	P10	838011723X		615	5,5	10,6	25
	P11	838011687X		484	P11	838011724X		624	7,5	13,6	25
	P12	838011688X		496	P12	83801A809X		661	9,2	17,2	25
	P13	838011689X		496	P13	838011988X		661	11	21,3	25

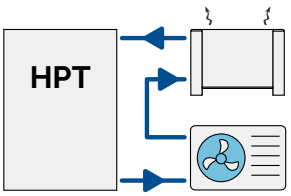
Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase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

NOTE - Layout 1 is the standard execution unless otherwise stated in the order. Layout 2 and Layout 3 on request.

Legend

F.L.I. Maximum absorbed power
F.L.A. Maximum current absorbed
Ve Expansion vessel capacity
Pve Expansion vessel pre-charge
Ps Maximum operating pressure
T min Minimum liquid temperature

HPT Layout 1 with Inverter



HPT	1 pump				2 pumps (1 redundant)						
Capacity	Model	Code	Price	Weight kg	Model	Code	Price	Weight kg	F.L.I kW	F.L.A. (400/3/50) A	Ve l
1500 horizontal	P6	838011690X		653	P6	838011725X		716	3	6,4	2x25
	P7	838011691X		656	P7	838011628X		721	4	8,7	2x25
	P8	838011413X		670	P8	838011367X		783	5,5	10,6	2x25
	P9	838011457X		674	P9	838011726X		791	7,5	13,6	2x25
	P10	838011417X		688	P10	838011727X		803	5,5	10,6	2x25
	P11	838011586X		692	P11	838011562X		812	7,5	13,6	2x25
	P12	838011692X		705	P12	83801A802X		846	9,2	17,2	2x25
	P13	838011453X		705	P13	838011616X		849	11	21,3	2x25
	P14	838011693X		749	P14	838011728X		939	15	27,7	2x25
	P15	838011694X		739	P15	838011729X		921	11	20,2	2x25
	P16	838011695X		776	P16	838011730X		995	15	26,6	2x25
	P17	838011696X		786	P17	838011731X		1015	18,5	33	2x25
	P18	838011697X		795	P18	83801A801X		1033	22	40,4	2x25
2500 horizontal	P6	838011698X		706	P6	838011526X		763	3	6,4	3x25
	P7	838011699X		708	P7	838011732X		768	4	8,7	3x25
	P8	838011583X		722	P8	838011733X		830	5,5	10,6	3x25
	P9	838011700X		726	P9	838011734X		838	7,5	13,6	3x25
	P10	838011701X		740	P10	838011735X		843	5,5	10,6	3x25
	P11	83801A308X		745	P11	83801A550X		852	7,5	13,6	3x25
	P12	838011702X		757	P12	838011736X		889	9,2	17,2	3x25
	P13	838011703X		757	P13	838011737X		889	11	21,3	3x25
	P14	838011704X		801	P14	838011632X		980	15	27,7	3x25
	P15	838011705X		791	P15	838011738X		967	11	20,2	3x25
	P16	838011706X		828	P16	83801A657X		1041	15	26,6	3x25
	P17	838011707X		838	P17	83801B008X		1061	18,5	33	3x25
	P18	838011708X		847	P18	838011739X		1079	22	40,4	3x25

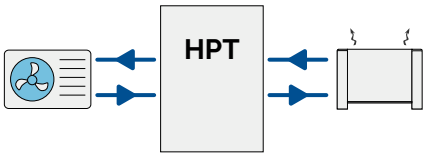
Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase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

NOTE - Layout 1 is the standard execution unless otherwise stated in the order. Layout 2 and Layout 3 on request.

Legend

F.L.I. Maximum absorbed power
F.L.A. Maximum current absorbed
Ve Expansion vessel capacity
Pve Expansion vessel pre-charge
Ps Maximum operating pressure
T min Minimum liquid temperature

HPT Layout 2 without Inverter



HPT	1 pump				2 pumps (1 redundant)						
Capacity	Model	Code	Price	Weight kg	Model	Code	Price	Weight kg	F.L.I kW	F.L.A. (400/3/50) A	Ve l
100 vertical	PT2*	838011800X		171	PT2*	838011846X		176	0,45	1,3	18
	PT3*	838011801X		172	PT3*	83801A908X		176	0,45	1,3	18
200 vertical	PT2*	838011802X		193	PT2*	838011847X		198	0,45	1,3	18
	PT3*	838011803X		194	PT3*	838011848X		198	0,45	1,3	18
300 vertical	P1	838011646X		231	P1	838011849X		251	1,1	2,5	25
	P2	838011538X		233	P2	838011850X		254	1,5	3,2	25
	P3	838011537X		233	P3	838011851X		255	1,5	3,4	25
	P4	838011804X		237	P4	838011852X		262	2,2	4,8	25
	P5	838011805X		239	P5	838011853X		266	3	5,6	25
300 horizontal	P1	83801A580X		260	P1	838011806X		305	1,1	2,5	25
	P2	83801A211X		262	P2	838011807X		308	1,5	3,2	25
	P3	83801A810X		262	P3	83801A561X		309	1,5	3,4	25
	P4	838011756X		266	P4	838011808X		316	2,2	4,8	25
	P5	838011757X		297	P5	83801A699X		320	3	5,6	25
500 horizontal	P1	83801A777X		283	P1	83801A271X		318	1,1	2,5	25
	P2	83801A445X		285	P2	83801A244X		321	1,5	3,2	25
	P3	838011758X		285	P3	83801A671X		322	1,5	3,4	25
	P4	83801A512X		289	P4	838011809X		330	2,2	4,8	25
	P5	838011759X		320	P5	838011810X		334	3	5,6	25
	P6	838011994X		357	P6	838011995X		408	3	6,4	25
750 horizontal	P6	838011760X		425	P6	838011811X		476	3	6,4	25
	P7	838011761X		428	P7	838011812X		481	4	8,7	25
	P8	838011762X		442	P8	838011813X		542	5,5	10,6	25
	P9	838011763X		446	P9	838011814X		550	7,5	13,6	25
	P10	838011764X		460	P10	838011815X		559	5,5	10,6	25
	P11	838011765X		464	P11	838011816X		568	7,5	13,6	25
	P12	838011766X		477	P12	838011817X		605	9,2	17,2	25
	P13	838011767X		477	P13	838011818X		605	11	21,3	25
1000 horizontal	P6	838011768X		445	P6	838011819X		531	3	6,4	25
	P7	838011769X		447	P7	83801A304X		536	4	8,7	25
	P8	838011770X		461	P8	838011820X		598	5,5	10,6	25
	P9	838011771X		465	P9	838011821X		606	7,5	13,6	25
	P10	838011772X		479	P10	838011822X		615	5,5	10,6	25
	P11	838011773X		484	P11	838011550X		624	7,5	13,6	25
	P12	838011774X		496	P12	838011823X		661	9,2	17,2	25
	P13	838011775X		496	P13	83801A192		661	11	21,3	25

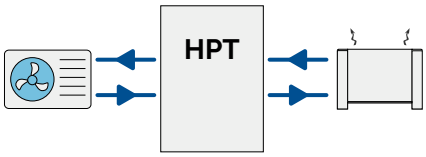
Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase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

NOTE - Layout 1 is the standard execution unless otherwise stated in the order. Layout 2 and Layout 3 on request.

Legend

F.L.I. Maximum absorbed power
F.L.A. Maximum current absorbed
Ve Expansion vessel capacity
Pve Expansion vessel pre-charge
Ps Maximum operating pressure
T min Minimum liquid temperature

HPT Layout 2 without Inverter



HPT	1 pump				2 pumps (1 redundant)						
Capacity	Model	Code	Price	Weight kg	Model	Code	Price	Weight kg	F.L.I kW	F.L.A. (400/3/50) A	Ve l
1500 horizontal	P6	838011248X		653	P6	83801A305X		716	3	6,4	2x25
	P7	838011776X		656	P7	838011824X		721	4	8,7	2x25
	P8	838011415X		670	P8	838011825X		783	5,5	10,6	2x25
	P9	838011777X		674	P9	838011595X		791	7,5	13,6	2x25
	P10	838011778X		688	P10	838011826X		803	5,5	10,6	2x25
	P11	838011779X		692	P11	838011827X		812	7,5	13,6	2x25
	P12	838011780X		705	P12	838011828X		846	9,2	17,2	2x25
	P13	838011781X		705	P13	838011829X		849	11	21,3	2x25
	P14	838011782X		749	P14	838011830X		939	15	27,7	2x25
	P15	838011783X		739	P15	838011831X		921	11	20,2	2x25
	P16	838011784X		776	P16	838011832X		995	15	26,6	2x25
	P17	838011785X		786	P17	838011833X		1015	18,5	33	2x25
	P18	838011786X		795	P18	838011834X		1033	22	40,4	2x25
2500 horizontal	P6	838011787X		706	P6	838011835X		763	3	6,4	3x25
	P7	838011788X		708	P7	838011836X		768	4	8,7	3x25
	P8	838011789X		722	P8	838011837X		830	5,5	10,6	3x25
	P9	838011790X		726	P9	838011838X		838	7,5	13,6	3x25
	P10	838011791X		740	P10	838011839X		843	5,5	10,6	3x25
	P11	838011792X		745	P11	83801A303X		852	7,5	13,6	3x25
	P12	838011793X		757	P12	838011840X		889	9,2	17,2	3x25
	P13	838011794X		757	P13	838011841X		889	11	21,3	3x25
	P14	838011795X		801	P14	838011842X		980	15	27,7	3x25
	P15	838011796X		791	P15	838011553X		967	11	20,2	3x25
	P16	838011797X		828	P16	838011843X		1041	15	26,6	3x25
	P17	838011798X		838	P17	838011844X		1061	18,5	33	3x25
	P18	838011799X		847	P18	838011845X		1079	22	40,4	3x25

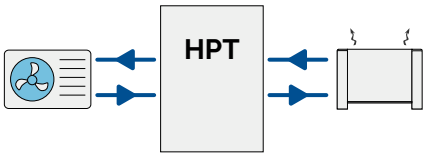
Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase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

NOTE - Layout 1 is the standard execution unless otherwise stated in the order. Layout 2 and Layout 3 on request.

Legend

F.L.I. Maximum absorbed power
F.L.A. Maximum current absorbed
Ve Expansion vessel capacity
Pve Expansion vessel pre-charge
Ps Maximum operating pressure
T min Minimum liquid temperature

HPT Layout 2 with Inverter



HPT	1 pump				2 pumps (1 redundant)				F.L.I	F.L.A. (400/3/50)	Ve
Capacity	Model	Code	Price	Weight kg	Model	Code	Price	Weight kg	kW	A	l
100 vertical	PT2*	838011903X		171	PT2*	838011949X		176	0,45	1,3	18
	PT3*	838011904X		172	PT3*	838011950X		176	0,45	1,3	18
200 vertical	PT2*	838011905X		193	PT2*	838011951X		198	0,45	1,3	18
	PT3*	838011906X		194	PT3*	838011952X		198	0,45	1,3	18
300 vertical	P1	838011907X		231	P1	838011953X		251	1,1	2,5	25
	P2	838011908X		233	P2	838011954X		254	1,5	3,2	25
	P3	838011909X		233	P3	838011955X		255	1,5	3,4	25
	P4	838011910X		237	P4	838011956X		262	2,2	4,8	25
	P5	838011911X		239	P5	838011957X		266	3	5,6	25
300 horizontal	P1	838011854X		260	P1	838011912X		305	1,1	2,5	25
	P2	838011855X		262	P2	838011913X		308	1,5	3,2	25
	P3	838011856X		262	P3	838011914X		309	1,5	3,4	25
	P4	838011857X		266	P4	838011915X		316	2,2	4,8	25
	P5	838011858X		297	P5	838011916X		320	3	5,6	25
500 horizontal	P1	838011664X		283	P1	838011917X		318	1,1	2,5	25
	P2	838011859X		285	P2	838011643X		321	1,5	3,2	25
	P3	83801A307X		285	P3	838011918X		322	1,5	3,4	25
	P4	838011860X		289	P4	838011919X		330	2,2	4,8	25
	P5	838011861X		320	P5	838011920X		334	3	5,6	25
	P6	838011992X		357	P6	838011993X		408	3	6,4	25
750 horizontal	P6	838011862X		425	P6	83801A612X		476	3	6,4	25
	P7	838011863X		428	P7	838011605X		481	4	8,7	25
	P8	838011864X		442	P8	838011921X		542	5,5	10,6	25
	P9	838011865X		446	P9	838011922X		550	7,5	13,6	25
	P10	838011866X		460	P10	838011923X		559	5,5	10,6	25
	P11	838011867X		464	P11	838011924X		568	7,5	13,6	25
	P12	838011868X		477	P12	838011925X		605	9,2	17,2	25
	P13	838011869X		477	P13	838011926X		605	11	21,3	25
1000 horizontal	P6	838011870X		445	P6	83801A715X		531	3	6,4	25
	P7	838011871X		447	P7	838011551X		536	4	8,7	25
	P8	838011872X		461	P8	838011927X		598	5,5	10,6	25
	P9	838011525X		465	P9	838011928X		606	7,5	13,6	25
	P10	838011873X		479	P10	838011929X		615	5,5	10,6	25
	P11	838011874X		484	P11	838011930X		624	7,5	13,6	25
	P12	838011875X		496	P12	83801A788X		661	9,2	17,2	25
	P13	838011876X		496	P13	838011558X		661	11	21,3	25

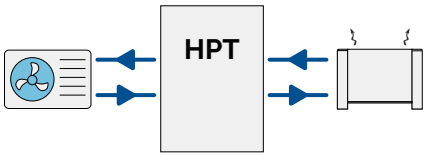
Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase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

NOTE - Layout 1 is the standard execution unless otherwise stated in the order. Layout 2 and Layout 3 on request.

Legend

F.L.I. Maximum absorbed power
F.L.A. Maximum current absorbed
Ve Expansion vessel capacity
Pve Expansion vessel pre-charge
Ps Maximum operating pressure
T min Minimum liquid temperature

HPT Layout 2 with Inverter



HPT	1 pump				2 pumps (1 redundant)						
Capacity	Model	Code	Price	Weight kg	Model	Code	Price	Weight kg	F.L.I kW	F.L.A. (400/3/50) A	Ve l
1500 horizontal	P6	838011877X		653	P6	838011931X		716	3	6,4	2x25
	P7	838011878X		656	P7	838011590X		721	4	8,7	2x25
	P8	838011879X		670	P8	838011661X		783	5,5	10,6	2x25
	P9	838011880X		674	P9	838011932X		791	7,5	13,6	2x25
	P10	838011881X		688	P10	838011933X		803	5,5	10,6	2x25
	P11	838011882X		692	P11	838011934X		812	7,5	13,6	2x25
	P12	838011883X		705	P12	838011935X		846	9,2	17,2	2x25
	P13	838011884X		705	P13	838011936X		849	11	21,3	2x25
	P14	838011885X		749	P14	838011937X		939	15	27,7	2x25
	P15	838011886X		739	P15	838011938X		921	11	20,2	2x25
	P16	838011887X		776	P16	838011939X		995	15	26,6	2x25
	P17	838011888X		786	P17	838011940X		1015	18,5	33	2x25
	P18	838011889X		795	P18	838011941X		1033	22	40,4	2x25
2500 horizontal	P6	838011890X		706	P6	838011527X		763	3	6,4	3x25
	P7	838011891X		708	P7	838011531X		768	4	8,7	3x25
	P8	838011892X		722	P8	838011530X		830	5,5	10,6	3x25
	P9	838011893X		726	P9	838011942X		838	7,5	13,6	3x25
	P10	838011894X		740	P10	838011943X		843	5,5	10,6	3x25
	P11	838011895X		745	P11	838011532X		852	7,5	13,6	3x25
	P12	838011896X		757	P12	838011512X		889	9,2	17,2	3x25
	P13	838011897X		757	P13	838011944X		889	11	21,3	3x25
	P14	838011898X		801	P14	838011945X		980	15	27,7	3x25
	P15	838011899X		791	P15	838011946X		967	11	20,2	3x25
	P16	838011900X		828	P16	838011533X		1041	15	26,6	3x25
	P17	838011901X		838	P17	838011947X		1061	18,5	33	3x25
	P18	838011902X		847	P18	838011948X		1079	22	40,4	3x25

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**

NOTE - Layout 1 is the standard execution unless otherwise stated in the order. Layout 2 and Layout 3 on request.

Legend

F.L.I. Maximum absorbed power
F.L.A. Maximum current absorbed
Ve Expansion vessel capacity
Pve Expansion vessel pre-charge
Ps Maximum operating pressure
T min Minimum liquid temperature

Hydronic systems
HPT 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
838080917X	ANTIVIBRATION FOR HPT 300/500	
838080936X	ANTIVIBRATION FOR HPT 750/1000	
838080938X	ANTIVIBRATION FOR HPT 1500/2500L	

4 **Antifreeze electric resistance kit (special version)**
This specification is aimed at ensuring the operation of the machine under severe temperature conditions (from +4°C to -20°C), preventing the formation of ice, especially during start-up and shutdown phases. **see page: 150**

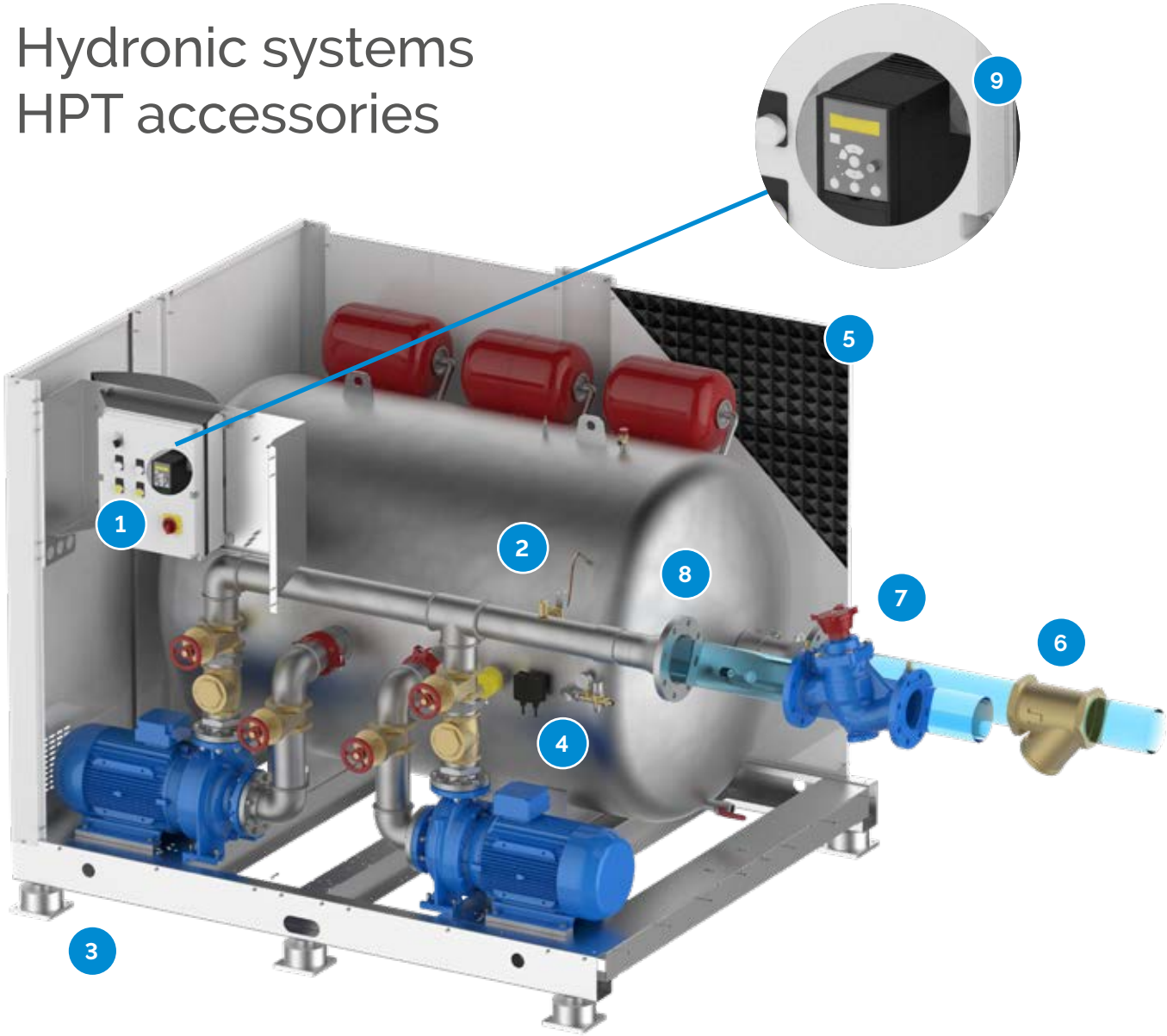
5 **Soundproof coating (special version)**
Soundproofing cladding for the framework is available, which significantly reduces the noise emission level of the machine.
see page: 150

6 **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

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

8 **Tailored connections**
From Threaded to Flanged/Grooved Standard **see page: 148**
Special version for larger size, flanged grooved in various materials **see page: 150**

Hydronic systems
HPT accessories



9

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.

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

Wooden box packing (special version)
Extra protective packing suitable for risky and long-distance transport.
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

HP 2.0
Hydronic system

The HP 2.0 units are hydraulic stations meant to reduce the set-up time of the conditioning and cooling devices. They can be linked to any kind of water cooler.

Standard equipment

Fluid types:
- water
- Ethylene glycol up to 40%
- Propylene glycol up to 40%

Insulation: anti-condensate elastomer
Pumps: 1 or 2
Execution: Layout 1
Inverter: with or without

Standard equipment usage limit

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

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

The HP unit has:

- piping insulated with anti-condensate elastomere
- Single or double centrifugal pump with shut-off valve
- Safety valve
- Deaerator
- Fill-up/drain valve
- Base and self-supporting panels made of galvanized and coated steel sheets, suitable for outdoor installations
- Panels that can be quickly and easily removed
- Easy and quick access to the switchboard
- Switchboard (standard or with inverter)

The broad range of combinations offers a solution for every single type of installation.
Expansion vessel available on request.

Accessories: See pag. 140 for the list of available accessories

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



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, pumps for low temperature operation, stainless steel connections.

Standard switchboard

Switchboard with possibility to alternate pumps with every start-up (2 pumps version), to start-up the backup pump in case of breakdown (2 pumps version), magnetothermic protection, free contacts to detect alarms and turned-on pumps, free contact to control remotely on/off pumps, protection category IP55.
Electric data: 400V/3/50Hz

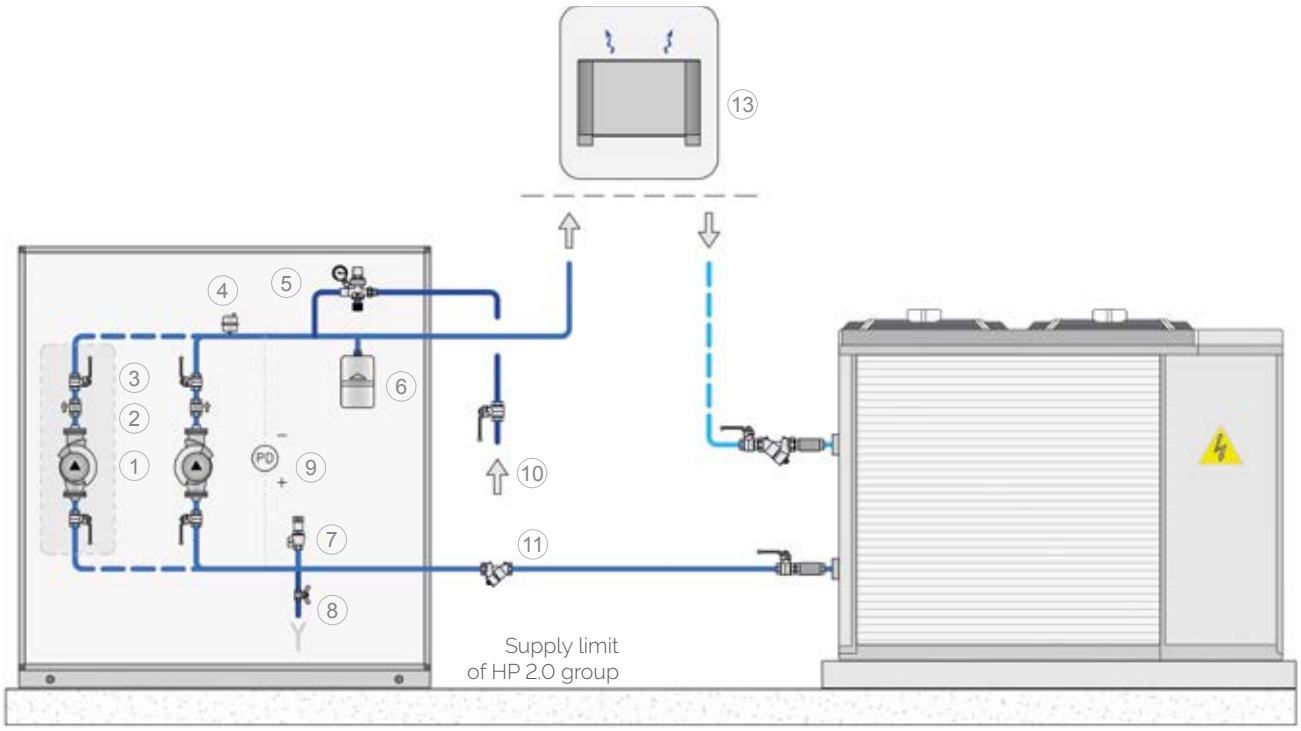
Standard switchboard with inverter

Each pump can be managed by an inverter. Units equipped with inverters have a pressure transducer which communicates with the inverter through a 4-20 mA signal. All adjustment parameters are pre-loaded during the test run at the company. The user must choose only the desired pressure value set point.
It is possible to remotely control pump 1 and 2. Free contacts available used to verify pumps status.

HP 2.0 hydronic systems: hydraulic chart

Features: Hydronic kit, chiller and plant connected in series, hence the water flow is constant throughout the plant.

NOTE: All HPT Fiorini standard kit kits are designed according to the following chart.

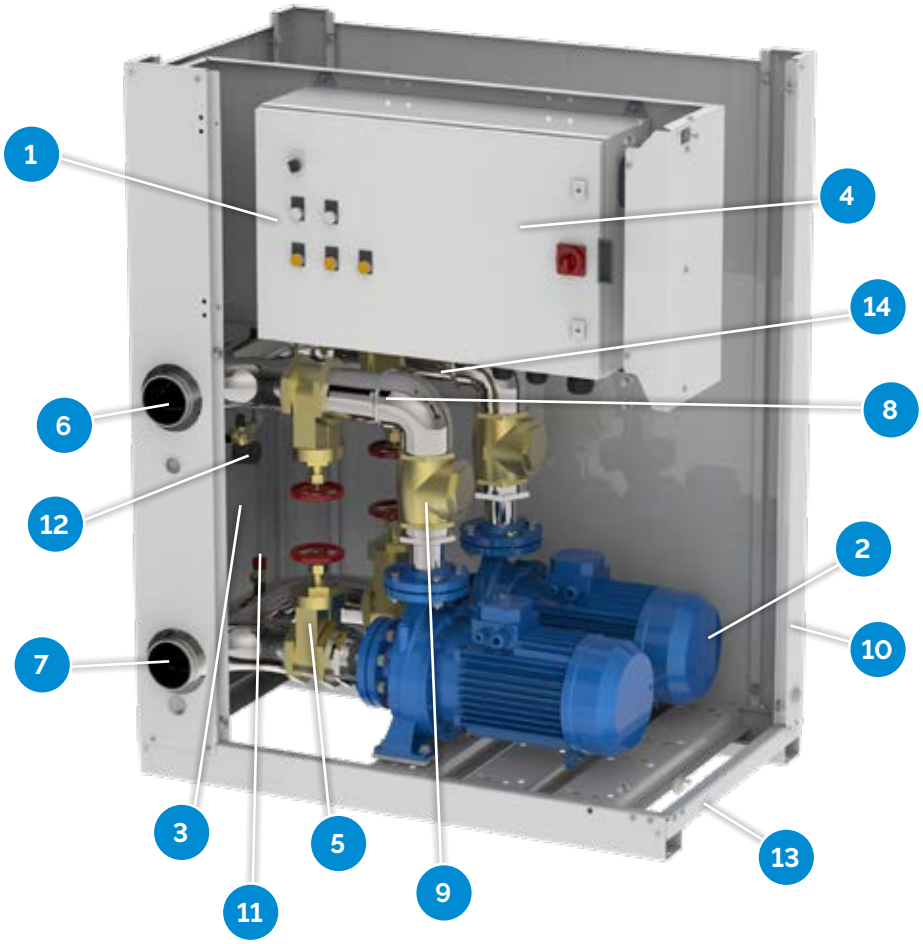


HP 2.0 Group

Legend

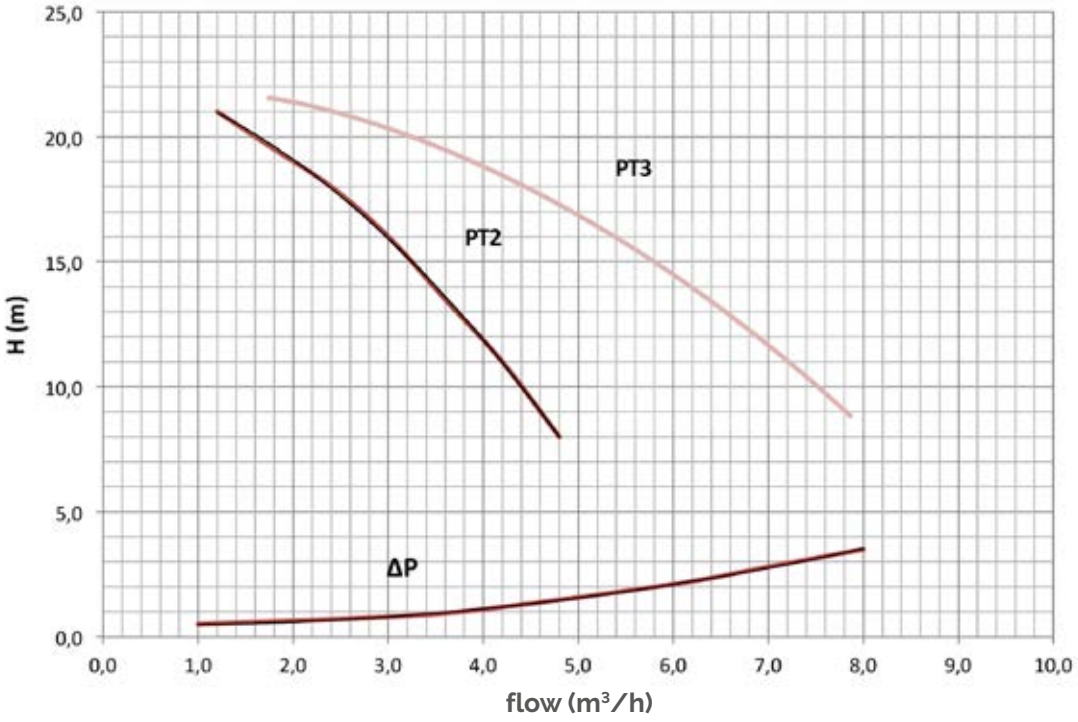
1. Circulator
2. Shut-off valve (only version with 2 pumps)
3. On-off valve
4. Deaerator
5. Automatic filling unit
6. Expansion vessel (optional)
7. Safety valve
8. Drain
9. Differential pressure switch (optional)
10. Inlet returning fluid
11. Y filter. Optional, supplied non-assembled
12. Chiller
13. Device

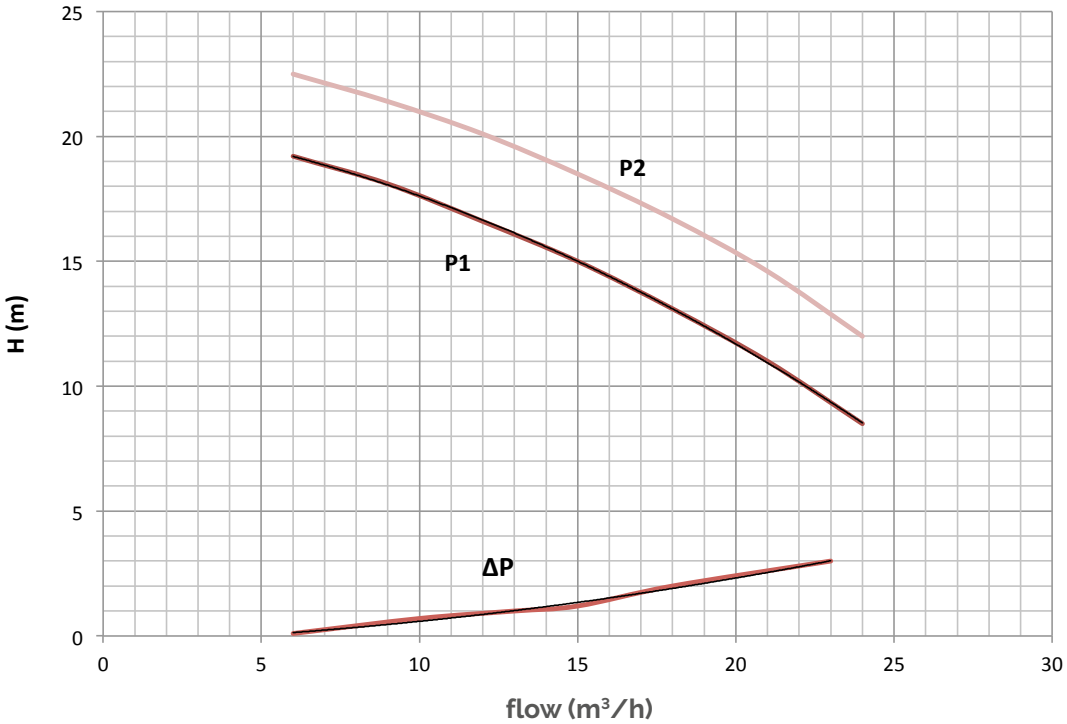
HP 2.0 hydronic system: components



Components	
1	Switchboard
2	Circulation pump (version with double pump, optional)
3	Removable bolted panel
4	Hinged panel
5	Shut-off valve
6	Water outlet
7	Water inlet
8	Pressure transmitter (only version with inverter)
9	Check valve (only version with double pump)
10	Ventilation grid
11	Safety valve
12	Automatic filling unit
13	Base
14	Deaerator

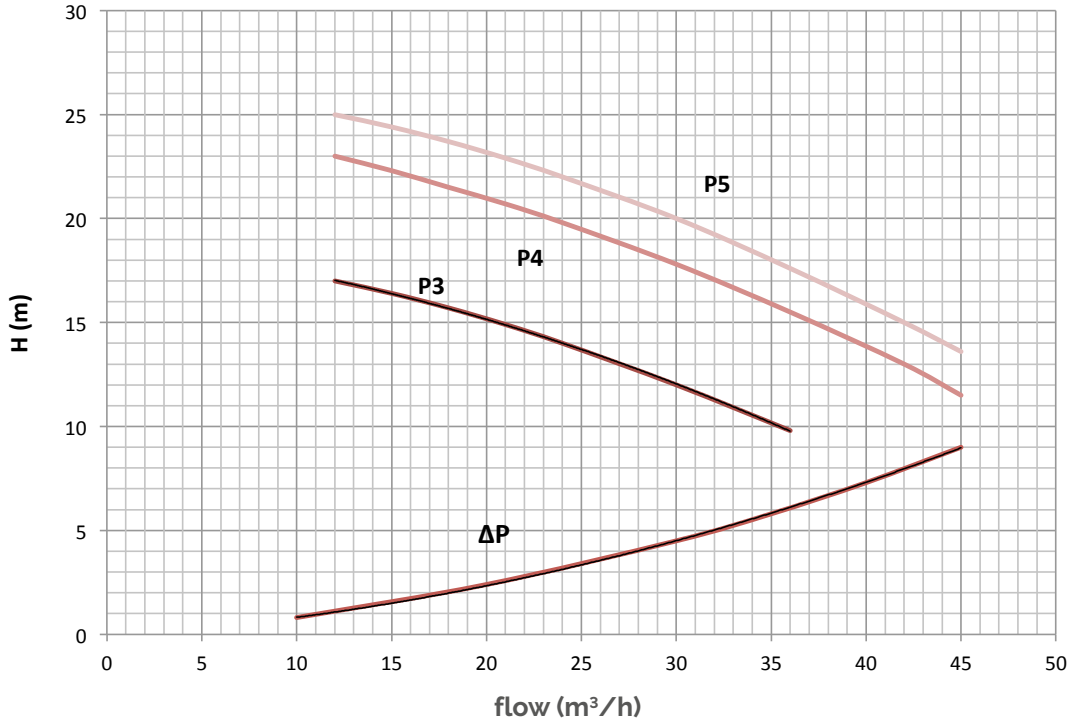
HP 2.0 Hydronic systems
Prevalence and pressure loss curve

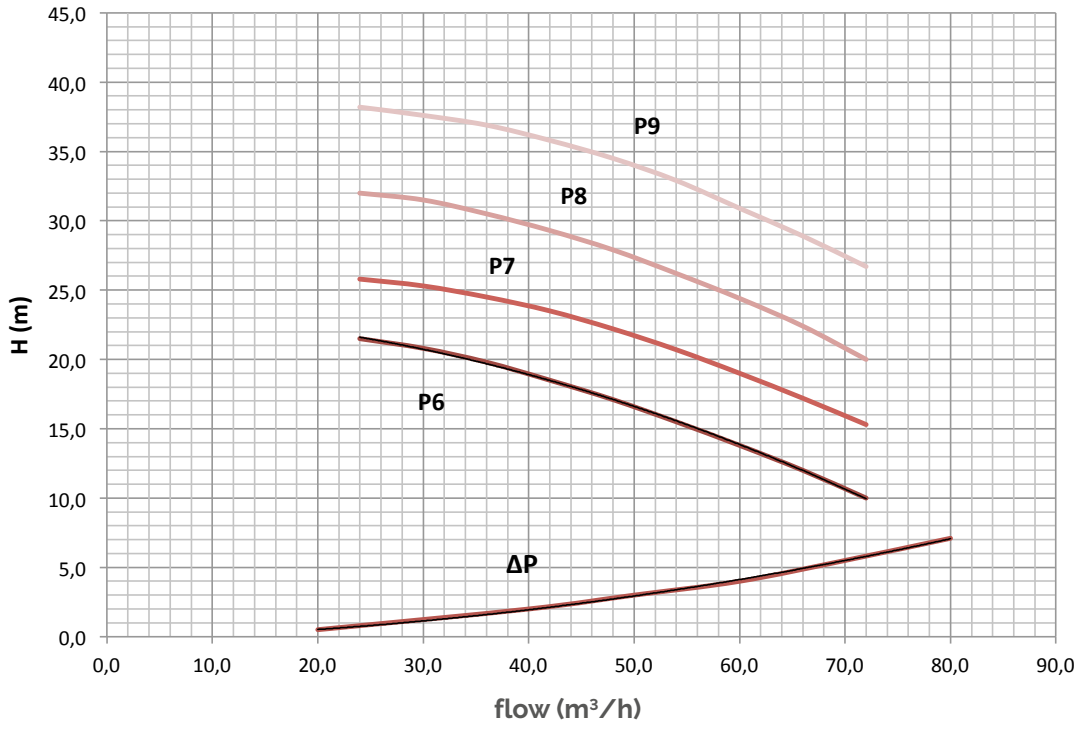




ΔP: Pressure drop HP unit

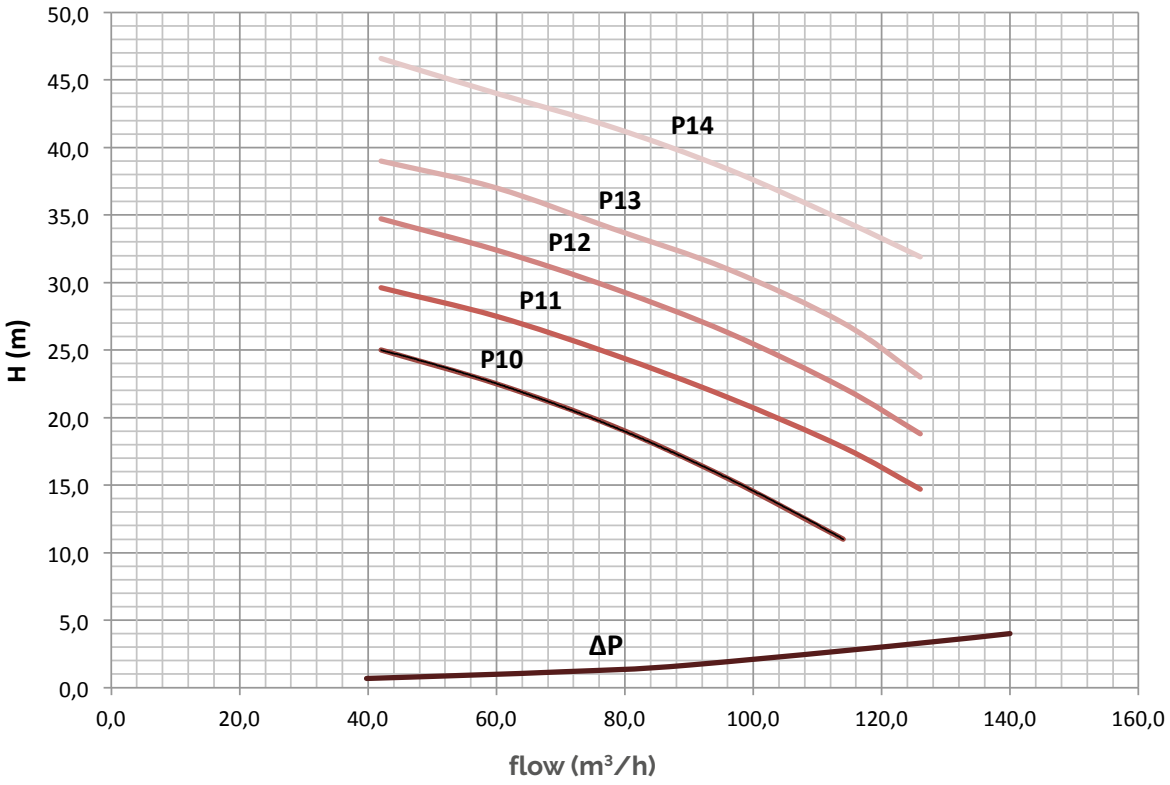
HP 2.0 Hydronic systems
Prevalence and pressure loss curve

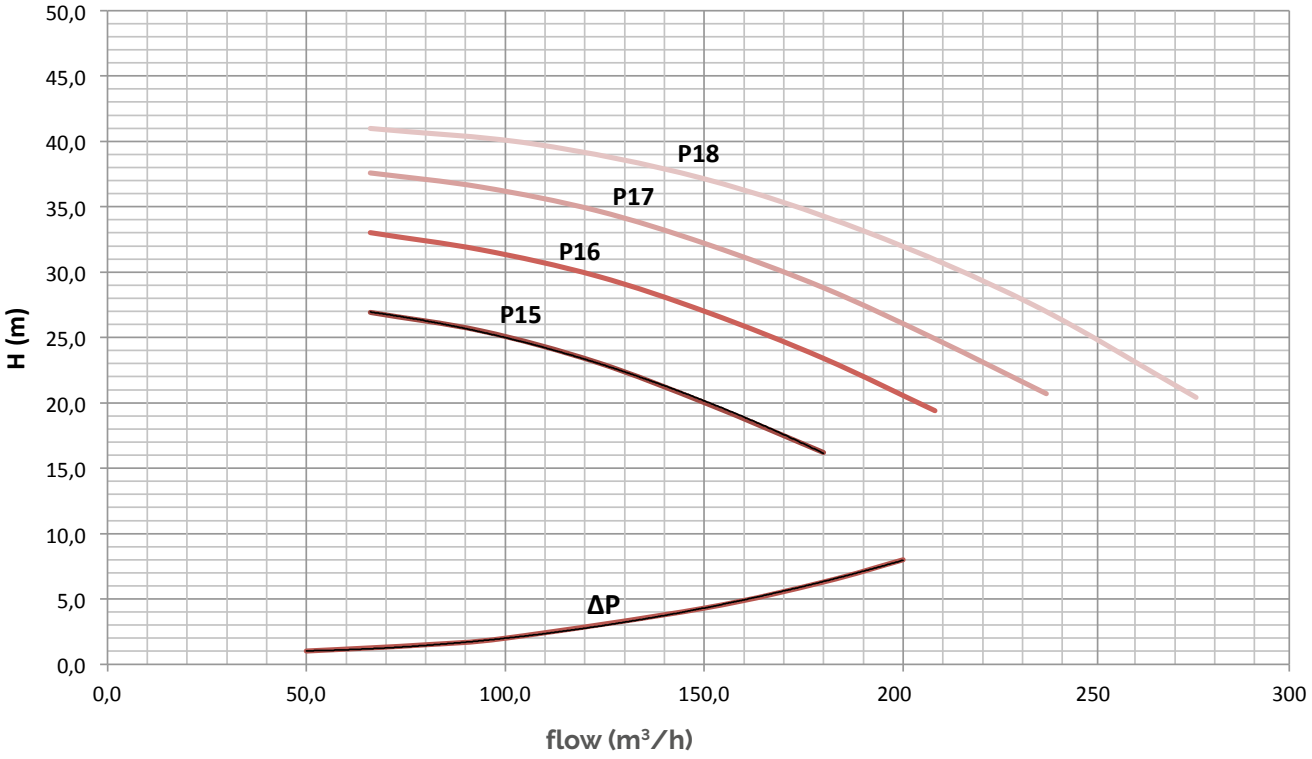




ΔP: Pressure drop HP unit

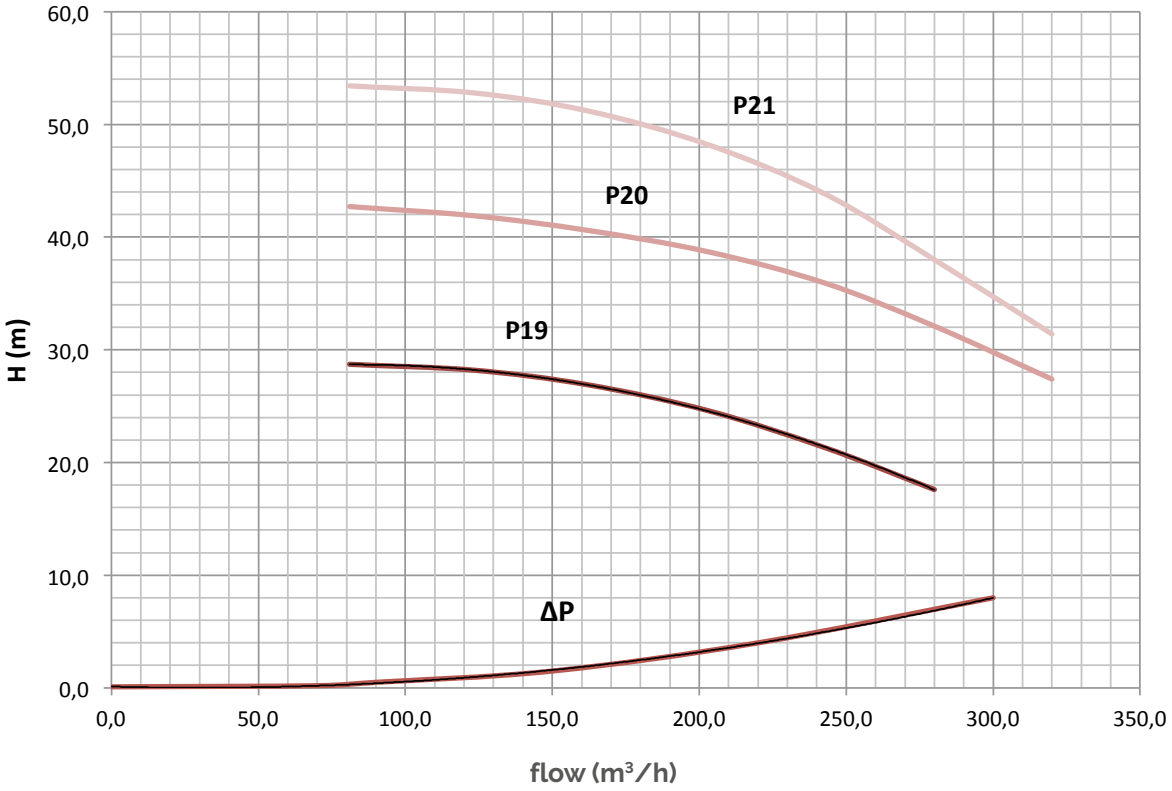
HP 2.0 Hydronic systems
Prevalence and pressure loss curve





ΔP: Pressure drop HP unit

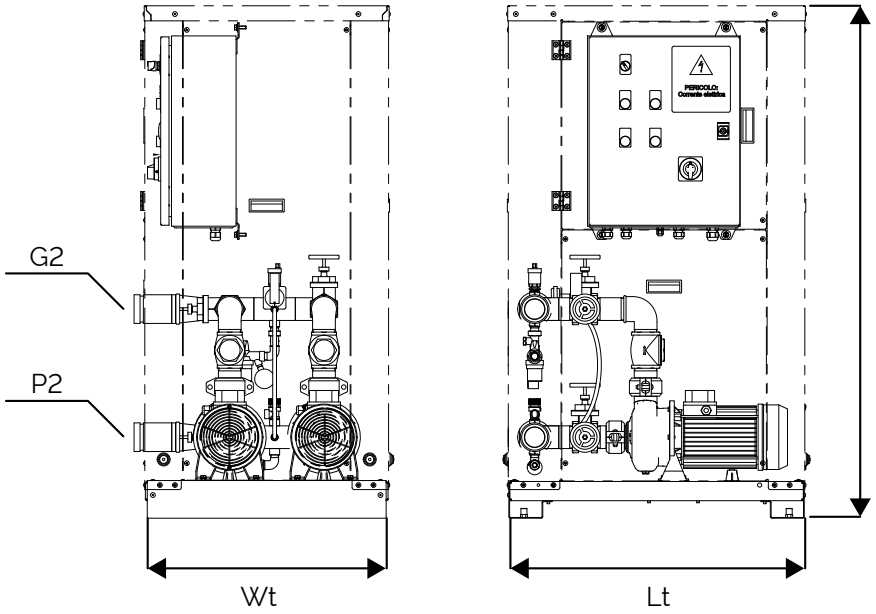
HP 2.0 Hydronic systems
Prevalence and pressure loss curve



ΔP: Pressure drop HP unit

HP 2.0 hydronic system: dimensions

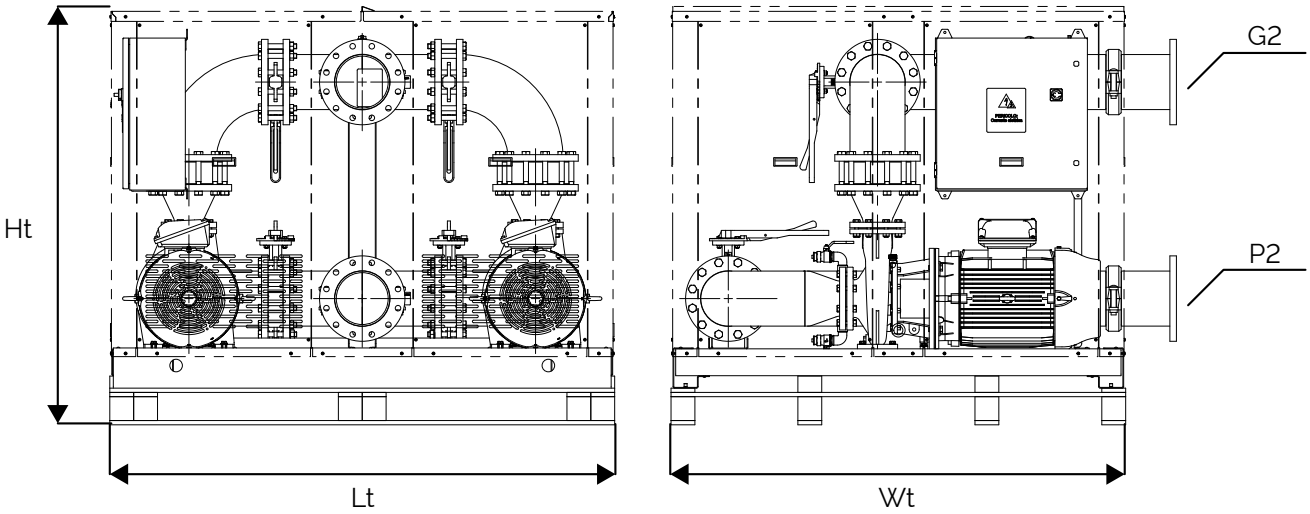
Layout of pump models PT2, PT3, from P1 to P18



Couplings legend

G2	To plant Grooved connection
P2	From energy source Grooved connection

Layout of pump models from P19 to P21



Pump model	1 pump Dimensions			2 pumps (1 redundant) Dimensions				
	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

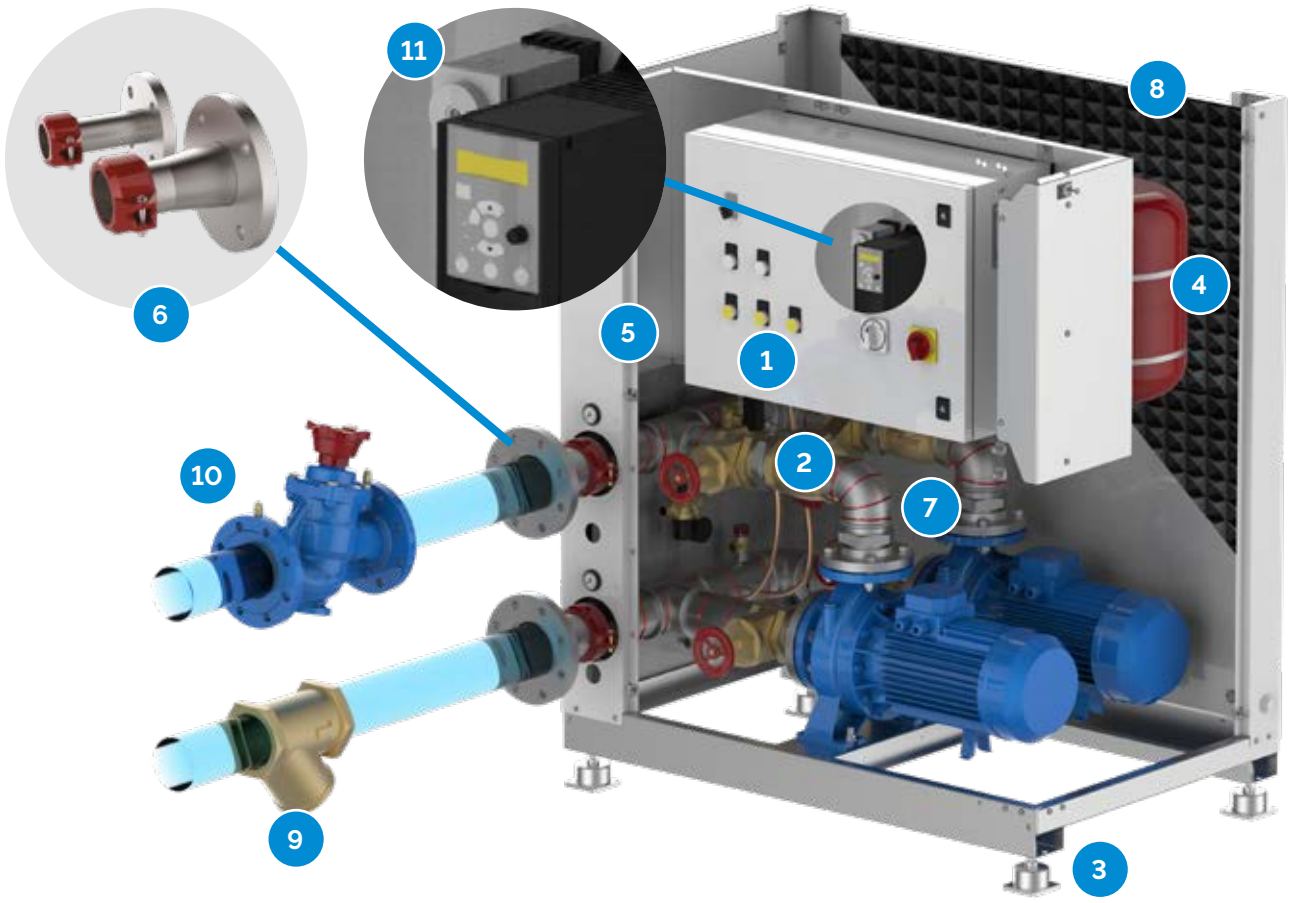
Code	Description	Price
838081583X	MANOMETER KIT	

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

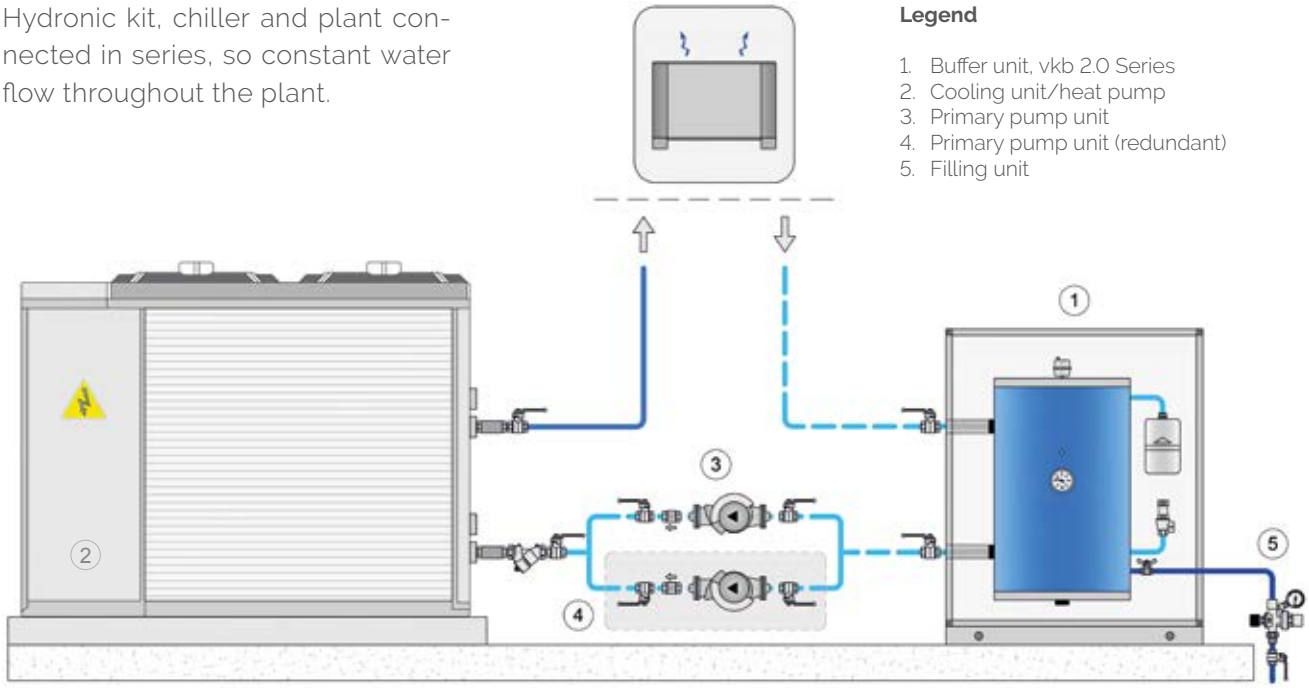
Upon request, it is possible to produce versions with special equipment to operate at temperatures and pressures outside the standard usage limits. These equipments include, for example, increased insulation, antifreeze kits, stainless steel connections and tank.

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

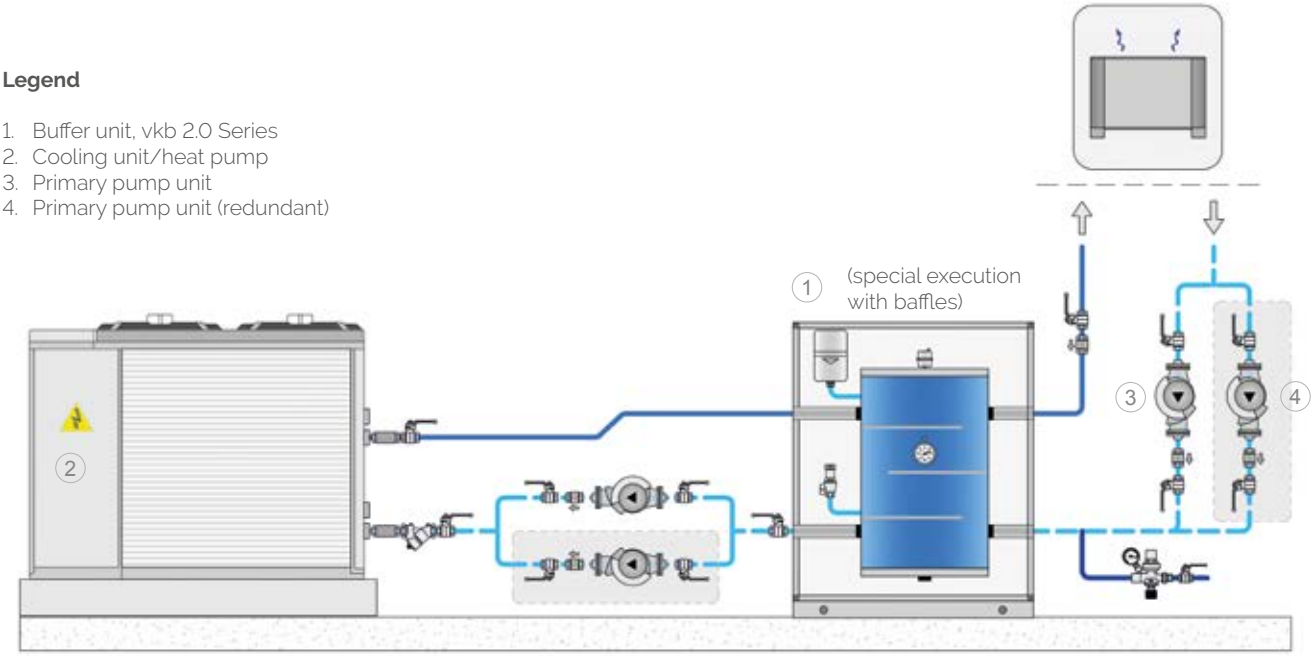


Hydronic systems
VKB 2.0 Layout 2 SPECIAL VERSION

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)

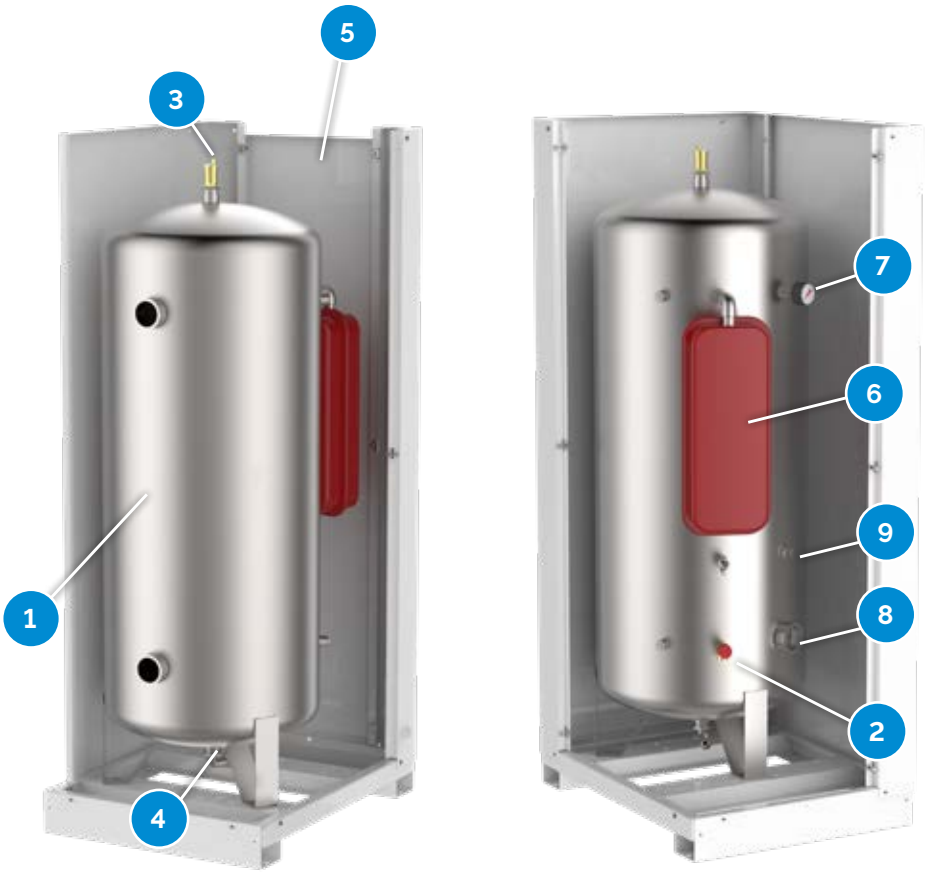


Hydronic systems
VKB 2.0

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.

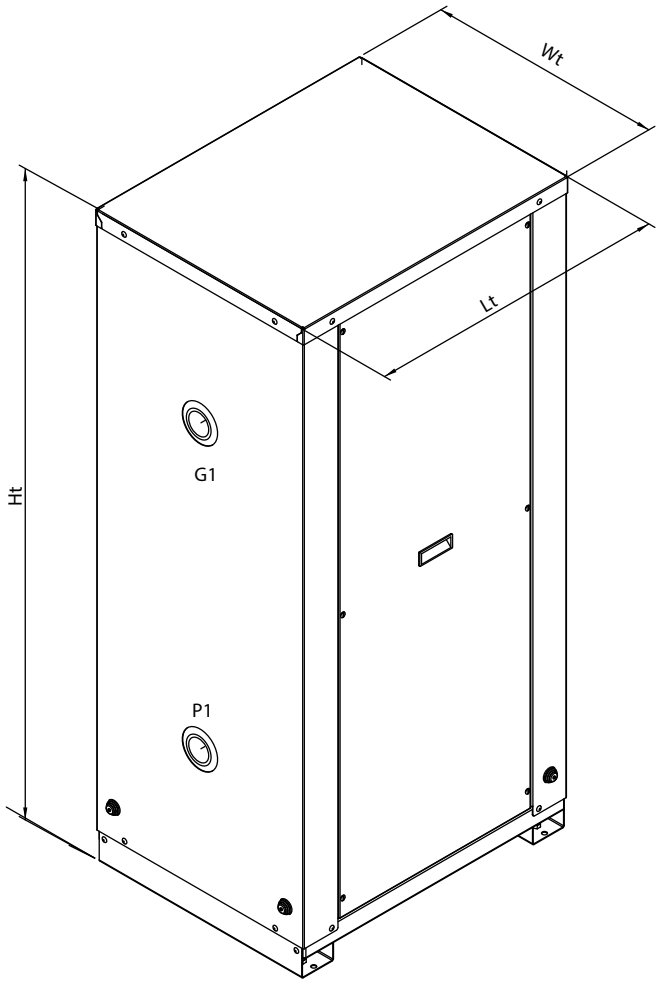
Components	
1	Storage tank
2	Safety valve
3	Automatic safety valve
4	Drain
5	Supporting structure
6	Expansion vessel
7	Manometer
8	Predisposition for electrical resistance
9	Predisposition for thermostat



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 Threaded connection
P1	To energy source 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



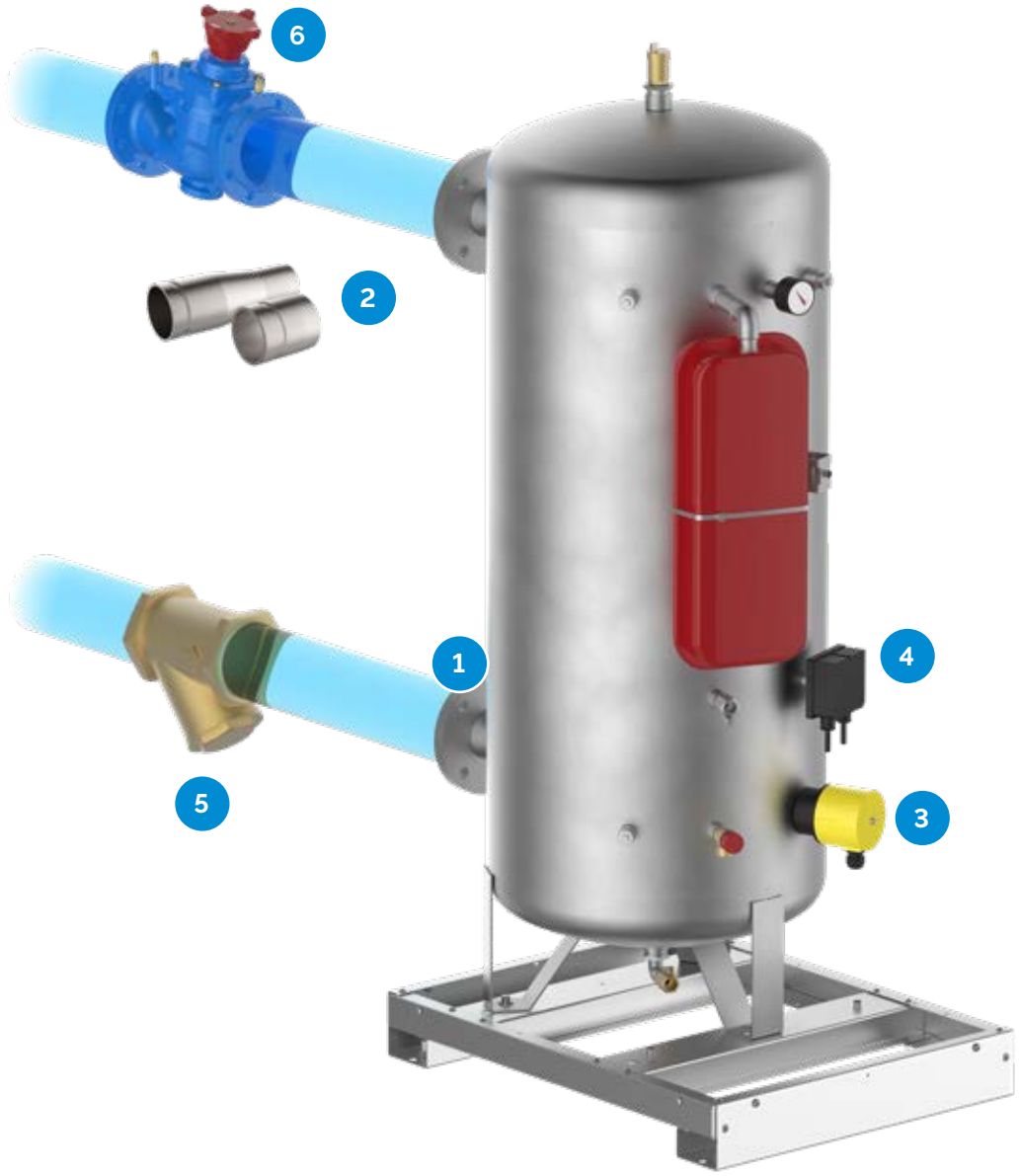
Power W	Voltage V	Element number	Connection diameter inch	Length mm	Code	Price
1300	230/380	3	2"	220	C24100008	
2000	230/380	3	2"	290	C24100009	
3000	230/380	3	2"	340	C24100010	
4000	230/380	3	2"	390	C24100012	

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

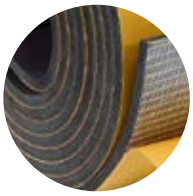
Special versions change the conformation of the products and hence the sales code will be different depending on the customisation required. Fiorini is able to provide any tailored solution quickly, providing the customer with the support they need to guide them to the solution that best suits their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



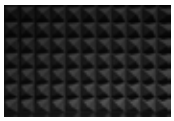
Stainless steel execution
In projects where the fluid temperature is between -11°C and -20°C, the hydronic kits are produced in a special configuration by replacing the standard hydraulic components with components suitable for working at low temperatures by exploiting the characteristics of the stainless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



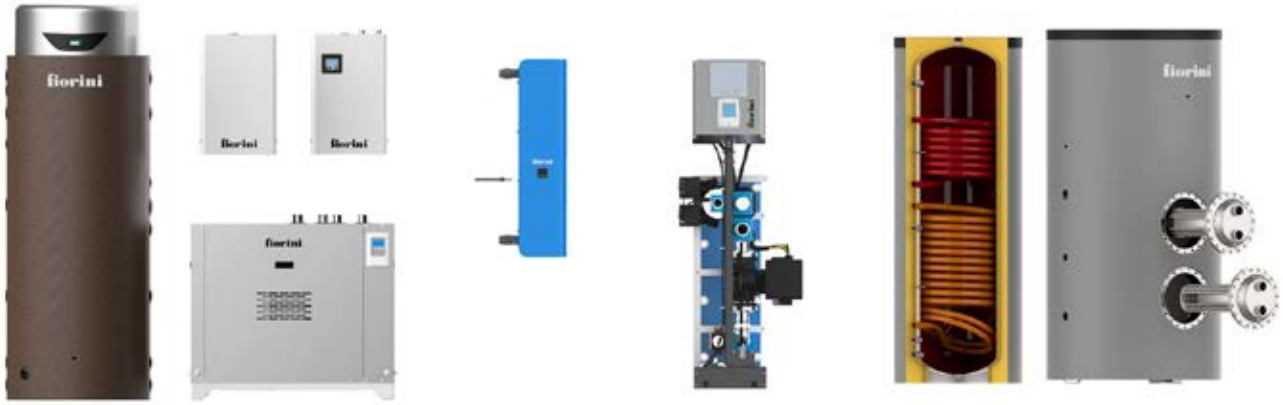
Balancing valves
Valve can be connected externally to balance the flow within the circuit.



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.



TESTED

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.

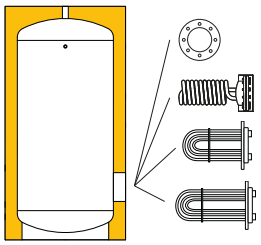
Standard accessories: see pag 294

Special versions: see pag 296



Integration with AQUAFAST
See page 212

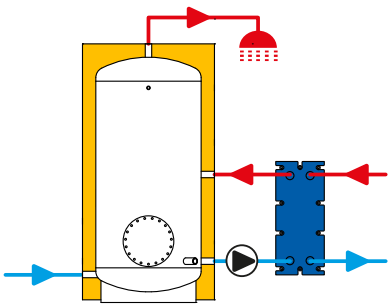
MATCH YOUR EXCHANGER
(see page 204)



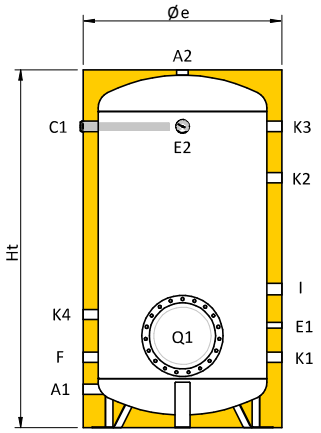
Capacity l	FLEXY with inspection hole			Vertical Packaging		FLEXY without inspection hole			Vertical Packaging	
	Code*	Price	Energy label	Dimensions cm	Weight kg	Code	Price	Energy label	Dimensions cm	Weight kg
200	817060032X		A	75x75x125	74	817060027X		A	75x75x125	64
300	817060033X		A	75x75x150	84	817060028X		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

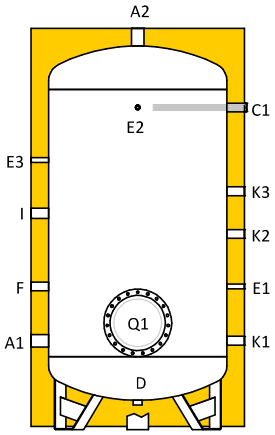
Inertial tanks for DHW FLEXY



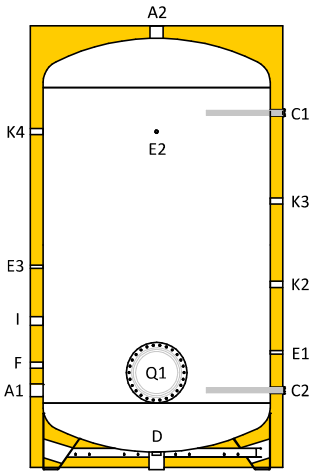
200 ≤ cap. ≤ 1000



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

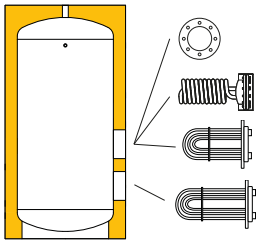
Supplied accessories: magnesium sacrificial anode for all sizes.

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)

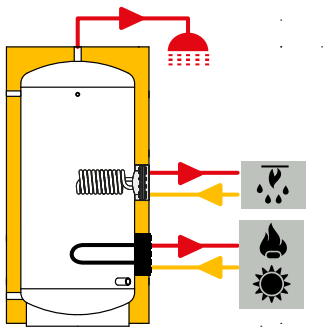


Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm	Vertical Packaging Weight kg
200	817080134X		B	68x68x156	55
300	817080135X		B	78x78x164	80
500	817080136X		C	88x88x193	105
750	817080191X		C	99x99x199	160
1000	817080138X		C	99x99x230	180
1500	817080139X		C	123x123x238	230
2000	817080140X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

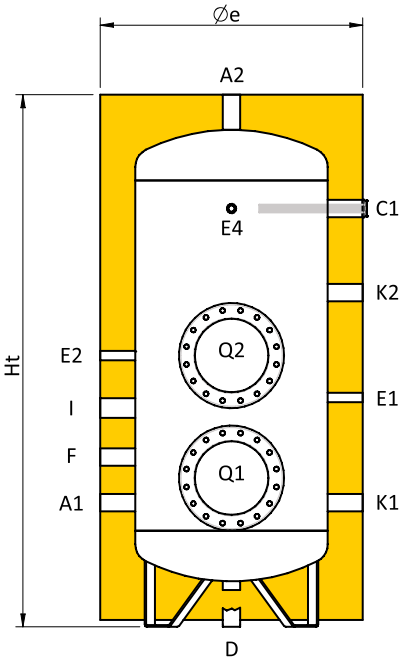


Integration with AQUAFAST
See page 212

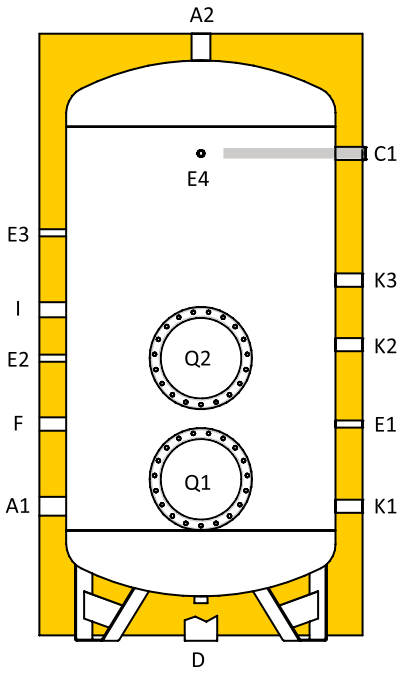
Inertial tanks for DHW FLEXY 2F



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.



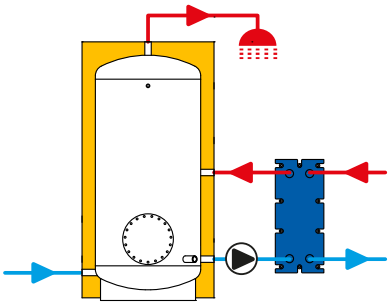
Material: S 235 JR carbon steel
Treatment for internal protection: Bluetech enamelling using thermosetting resins, suitable for domestic hot water
Insulation

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

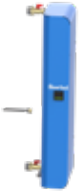
				Vertical Packaging	
Capacity l	Code	Price	Energy label	Dimensions cm	Weight kg
1500	817080196X		C	135x135x205	200
2050	817080197X			145x145x212	250
2500	817080198X			160x160x199	325
3000	817080199X			180x180x199	395
4000	817080200X			200x200x202	510
5000	817080201X			210x210x219	600

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

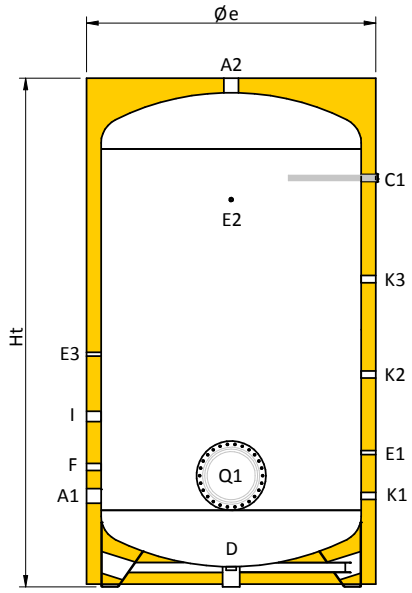
				Vertical Packaging	
Capacity l	Code	Price	Energy label	Dimensions cm	Weight kg
1500	817080202X		C	135x135x205	223
2050	817080203X			145x145x212	303
2500	817080204X			160x160x220	388
3000	817080205X			180x180x199	453
4000	817080206X			200x200x202	585
5000	817080207X			210x210x219	673



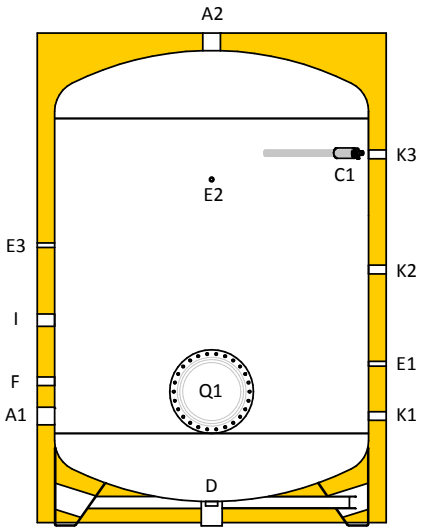
Integration with AQUAFAST
See page 212

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

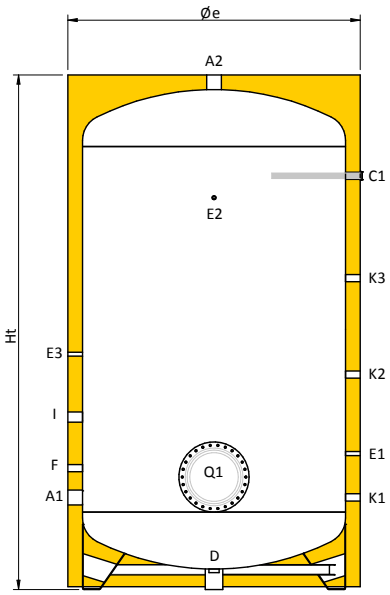
Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	Q1** mm
1500	1350	2050	2455	505	1575	155	805	1575	1505	805	1165	505	1105	1345	605
2050	1450	2120	2568	575	1635	180	800	1635	1475	850	1175	575	1050	1415	690
2500	1600	2195	2716	605	1665	165	905	1665	1405	875	1205	605	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

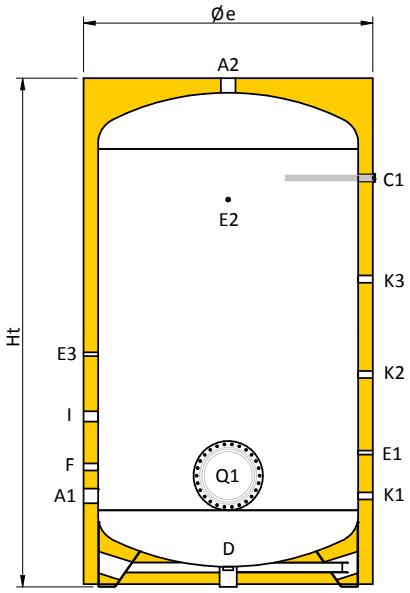
Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	D mm	E1 mm	E2 mm	E3 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	Q1** mm
1500	1350	2050	2455	505	1575	155	805	1575	1505	805	1165	505	1105	1345	605
2050	1400	2230	2535	540	1740	150	840	1740	1375	825	1075	540	1140	1380	655
2500	1600	2195	2716	605	1665	165	905	1665	1405	875	1205	605	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

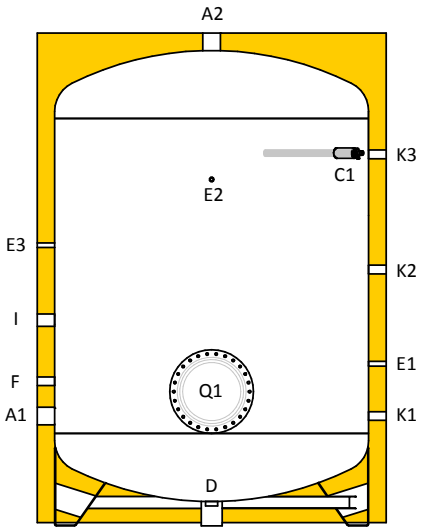
Q1**: Height from inspection hole center to the ground

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

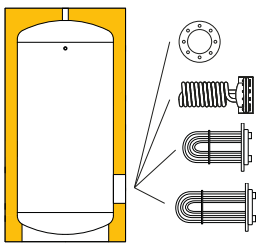
Special versions: see pag 296



Integration with AQUAFAST
See page 212

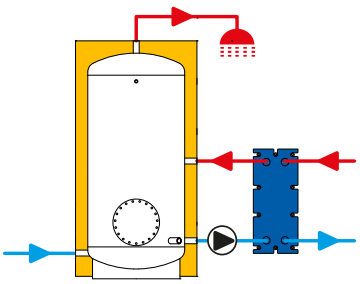
TESTED

MATCH YOUR EXCHANGER
(see page 204)

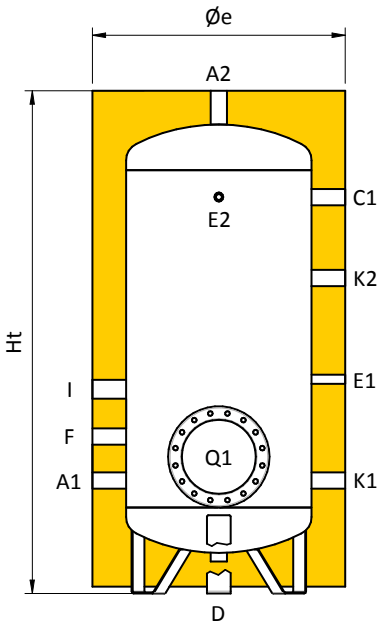


Cap. l	With inspection hole			Vertical Packaging	Without inspection hole			Vertical Packaging
	Code*	Price	Energy label	Dimensions cm	Code	Price	Energy label	Dimensions cm
200	817040188X		B	70x70x143	817040177X		B	70x70x143
300	817040189X		B	80x80x160	817040178X		B	80x80x160
500	817040190X		C	90x90x195	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

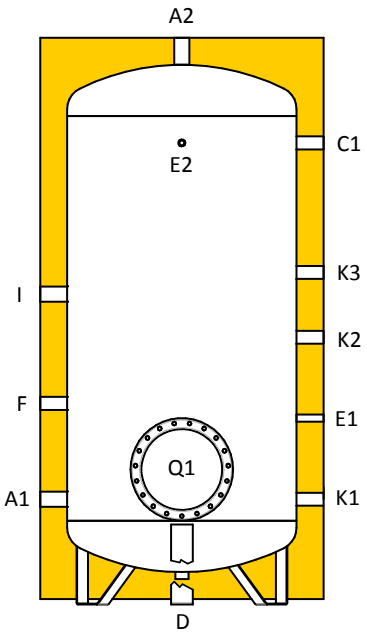
Inertial tanks for DHW
FLEXY INOX



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

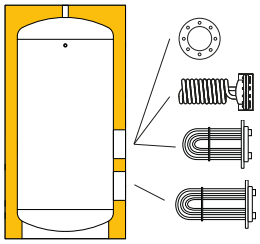
Supplied accessories: Magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

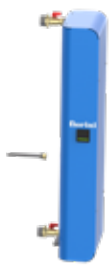
Special versions: see pag 296

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)

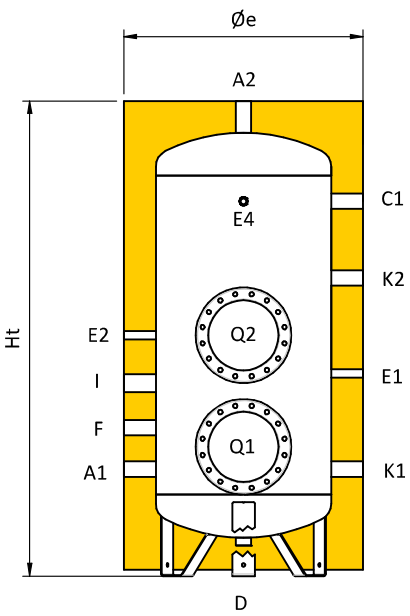


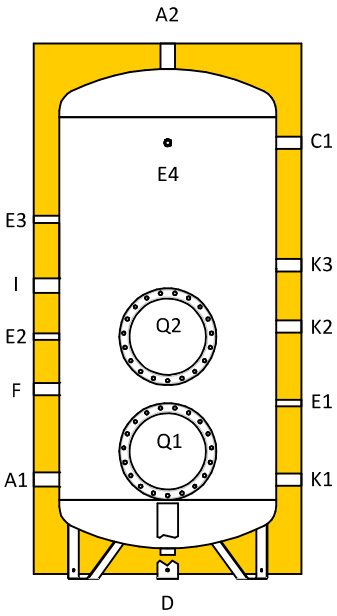
Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm
200	817040199X		B	70x70x155
300	817040200X		B	80x80x165
500	817040201X		C	90x90x195
750	817040202X		C	105x105x195
1000	817040203X		C	105x105x225
1500	817040204X		C	130x130x240
2000	817040205X		C	150x150x250
2500	817040206X			145x145x280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

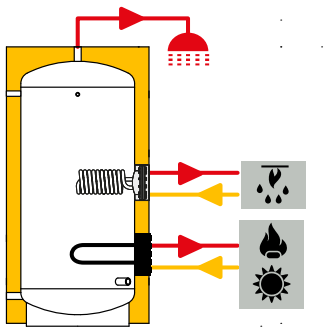


Integration with AQUAFAST
See page 212

Inertial tanks for DHW
FLEXY INOX 2F







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

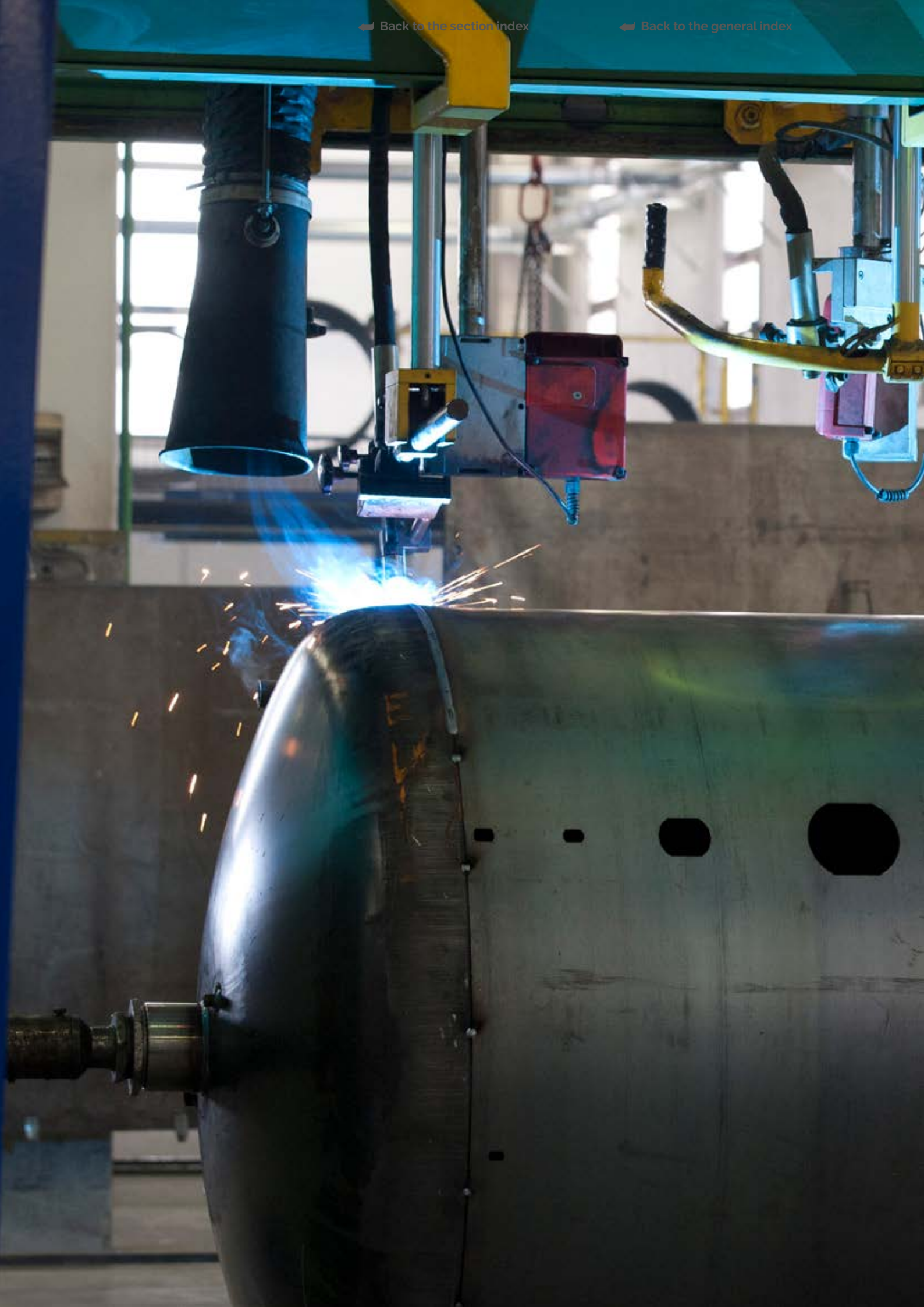
Couplings chart

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

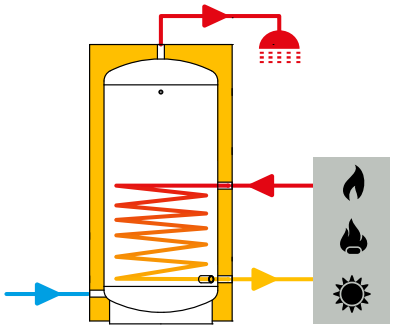
Operational limits

	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	Code	Price	Energy label	Vertical Packaging Dimensions cm	Vertical Packaging 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

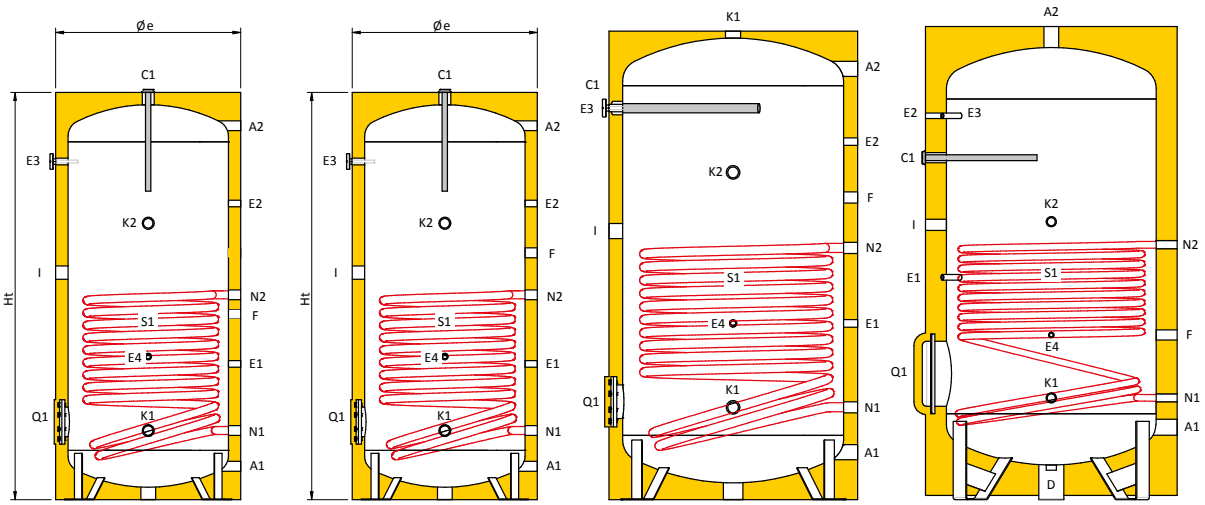


Integration with AQUAFAST

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

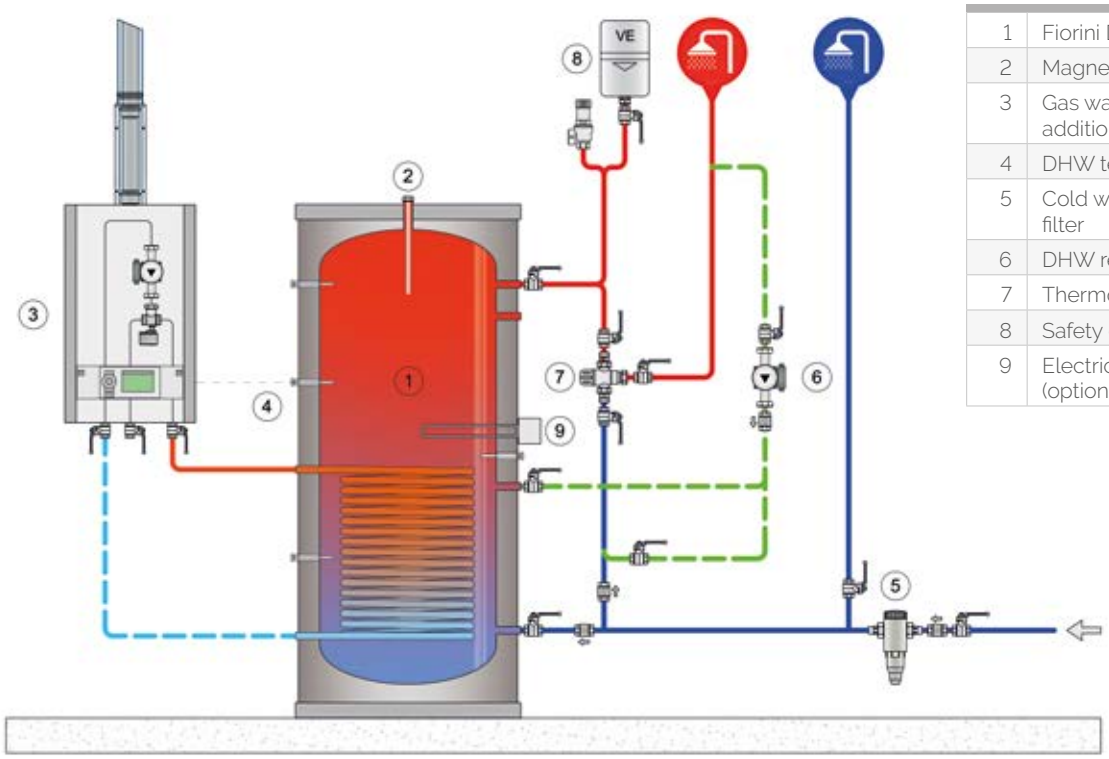
Q1**: Height from inspection hole center to the ground

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

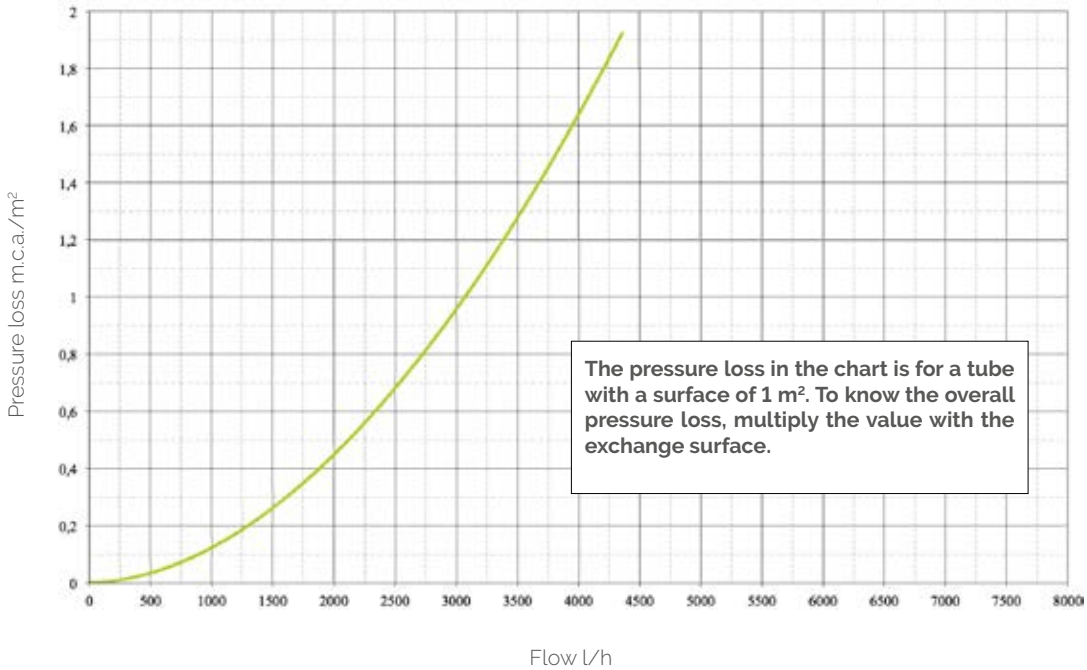
Technical information for SMART 1 series



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

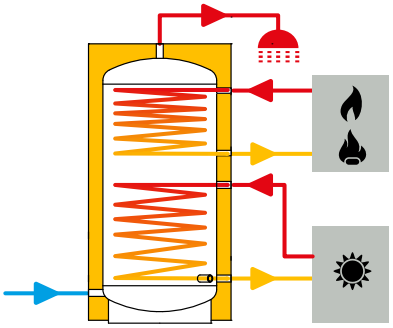
TESTED

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

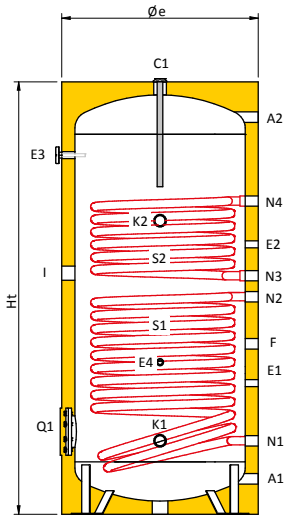


Integration with AQUAFAST

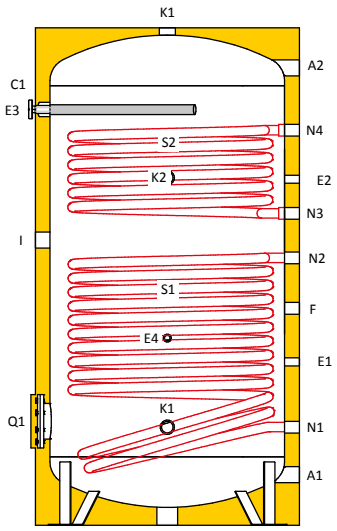
See page 212

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

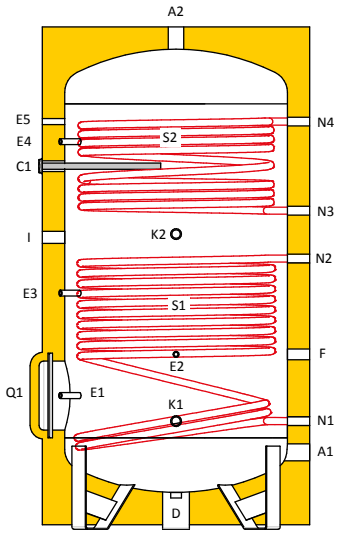
200 ≤ cap. ≤ 500



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

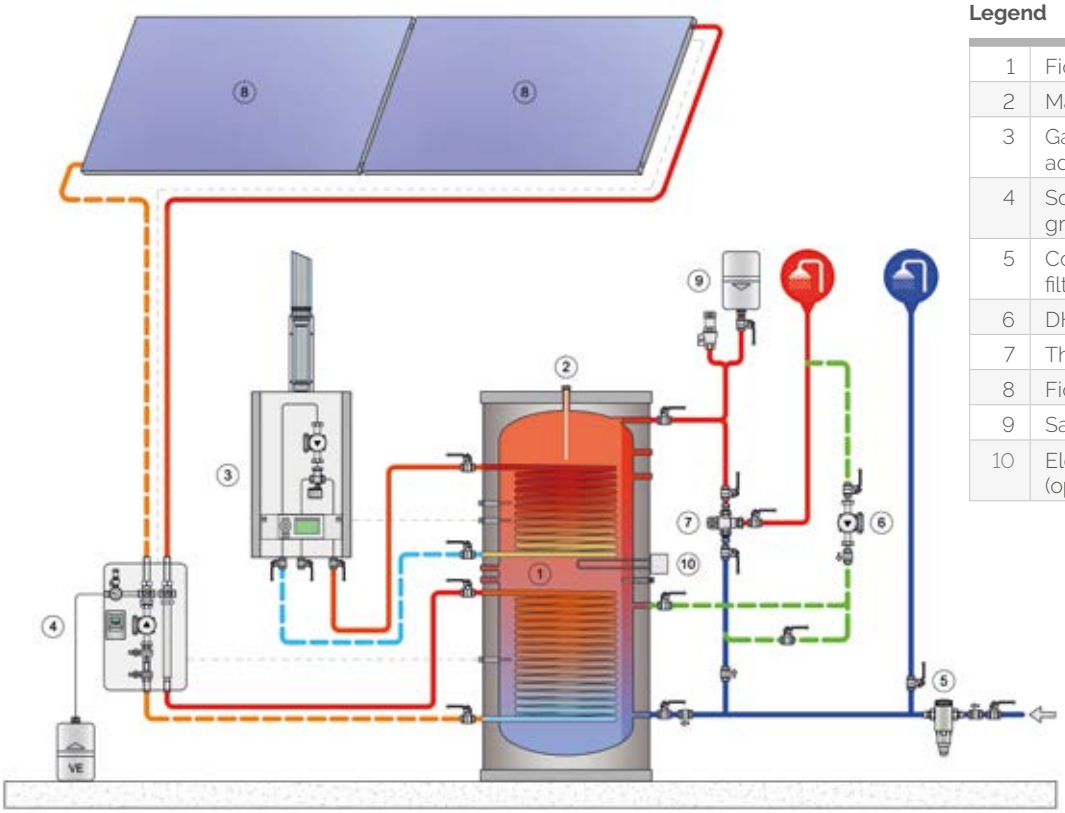
Q1**: Height from inspection hole center to the ground

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

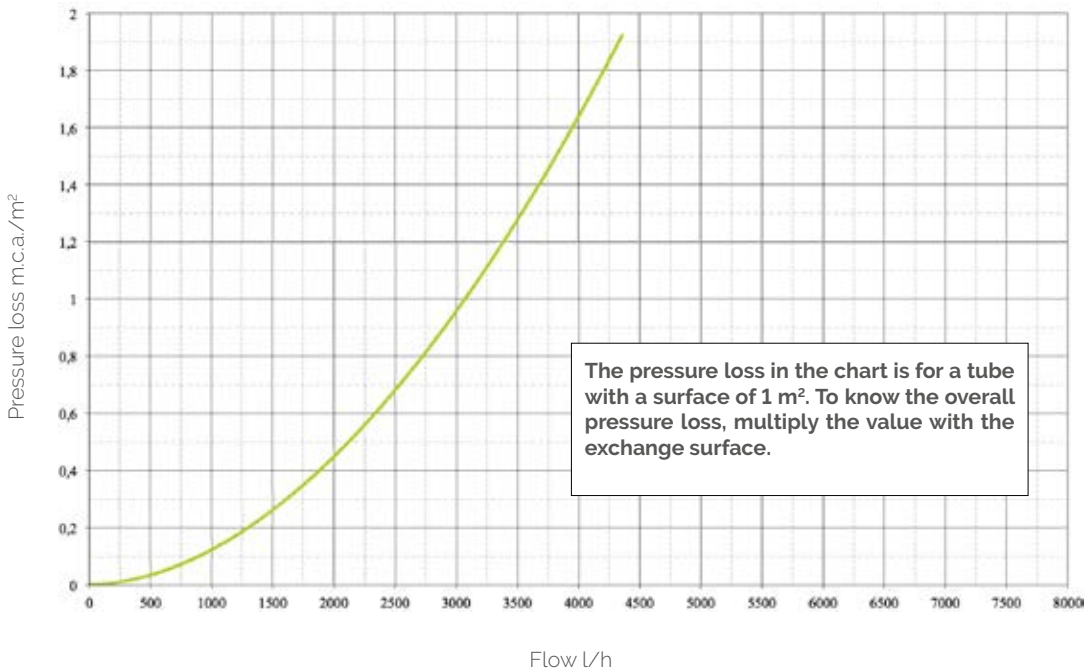
Technical information for SMART 2 series



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



The pressure loss in the chart is for a tube with a surface of 1 m². To know the overall pressure loss, multiply the value with the exchange surface.

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

Insulation

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

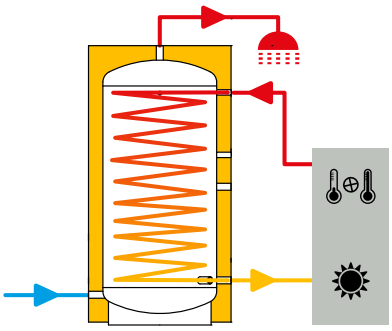
Operational limits

	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

TESTED



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

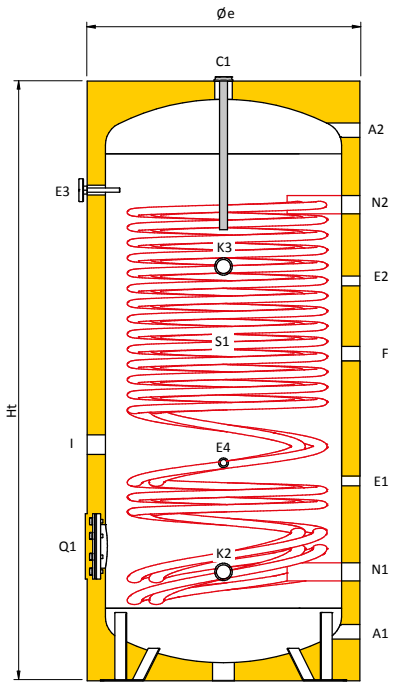


Integration with AQUAFAST

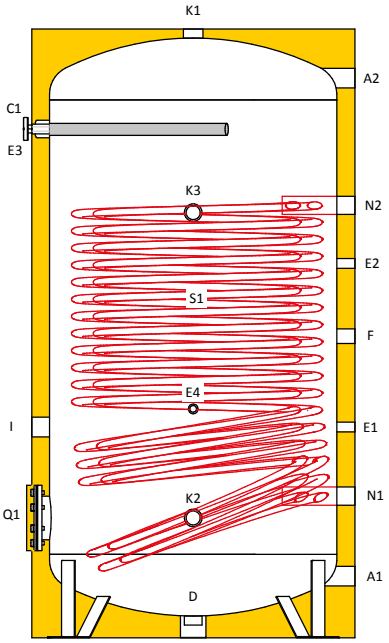
See page 212

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

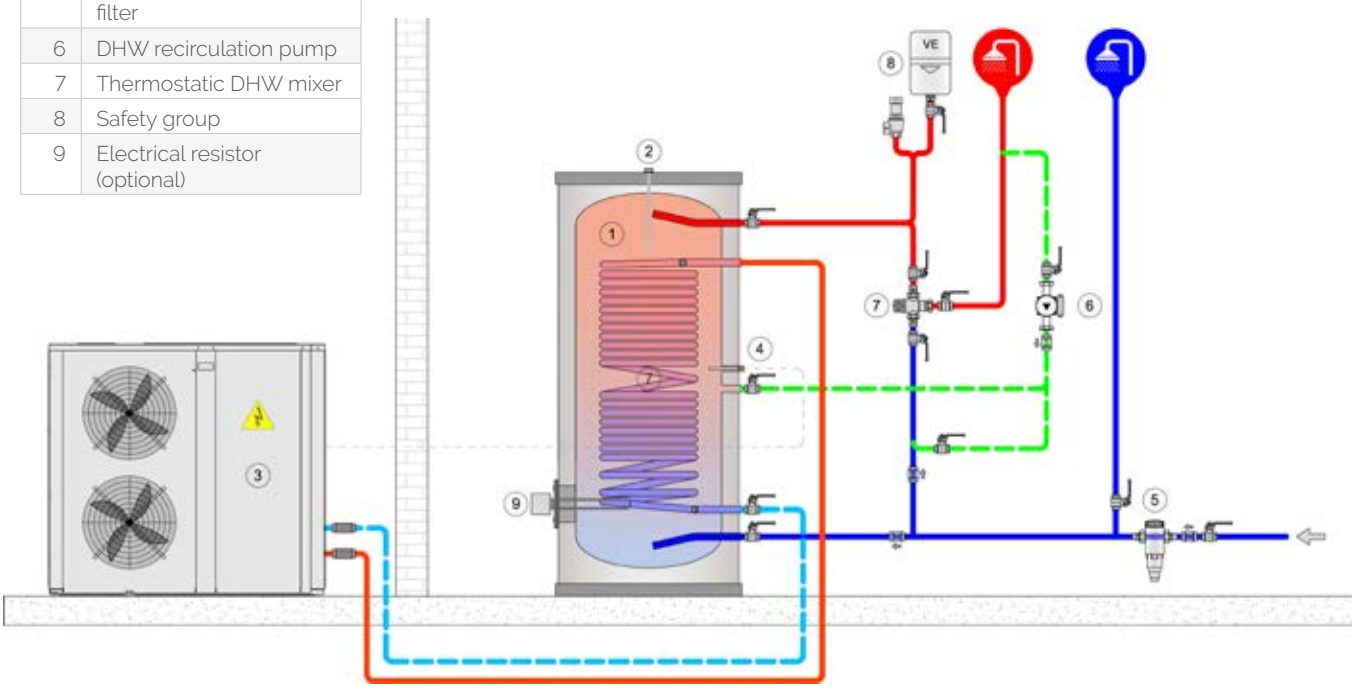
Technical information for SMART HP series

		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

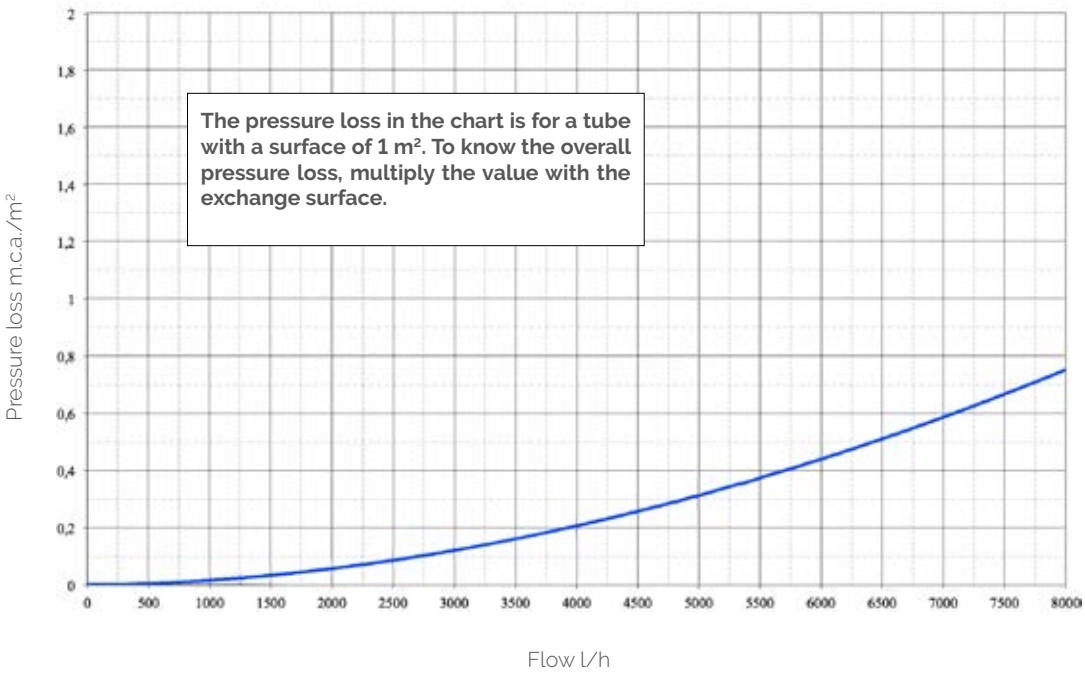
Legend

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



TESTED

Insulation

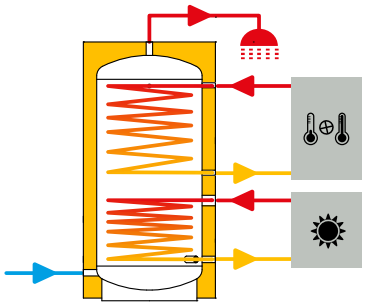
Capacity (l)	Type
from 300 to 1000	Highly rigid polyurethane foam

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



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

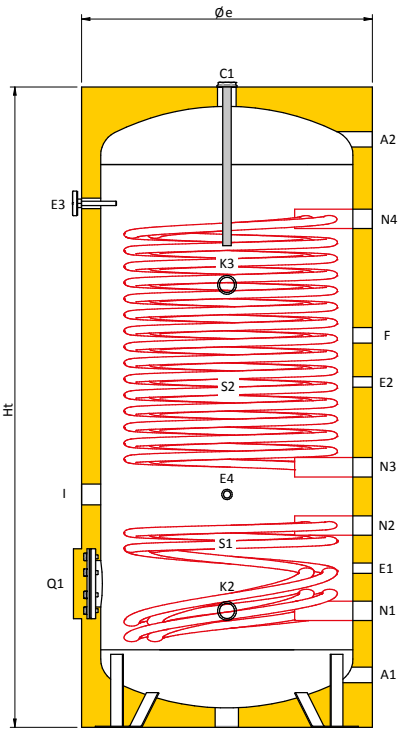


Integration with AQUAFAST

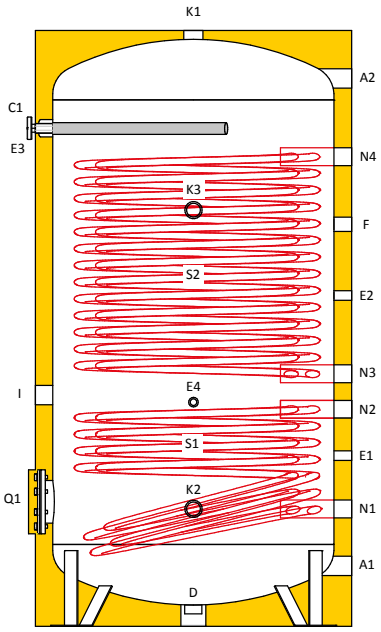
See page 212

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

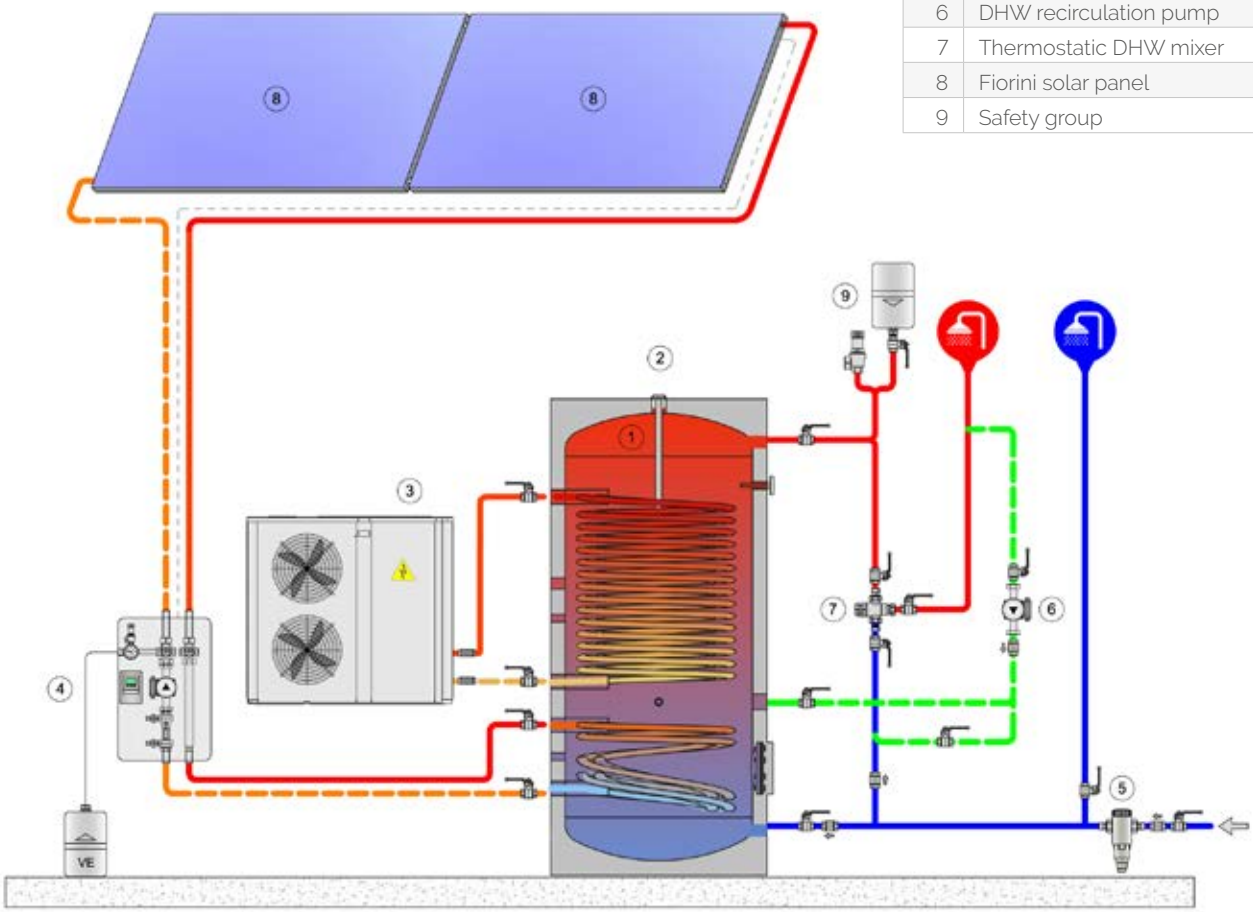
Technical information for SMART HP 2 series

		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

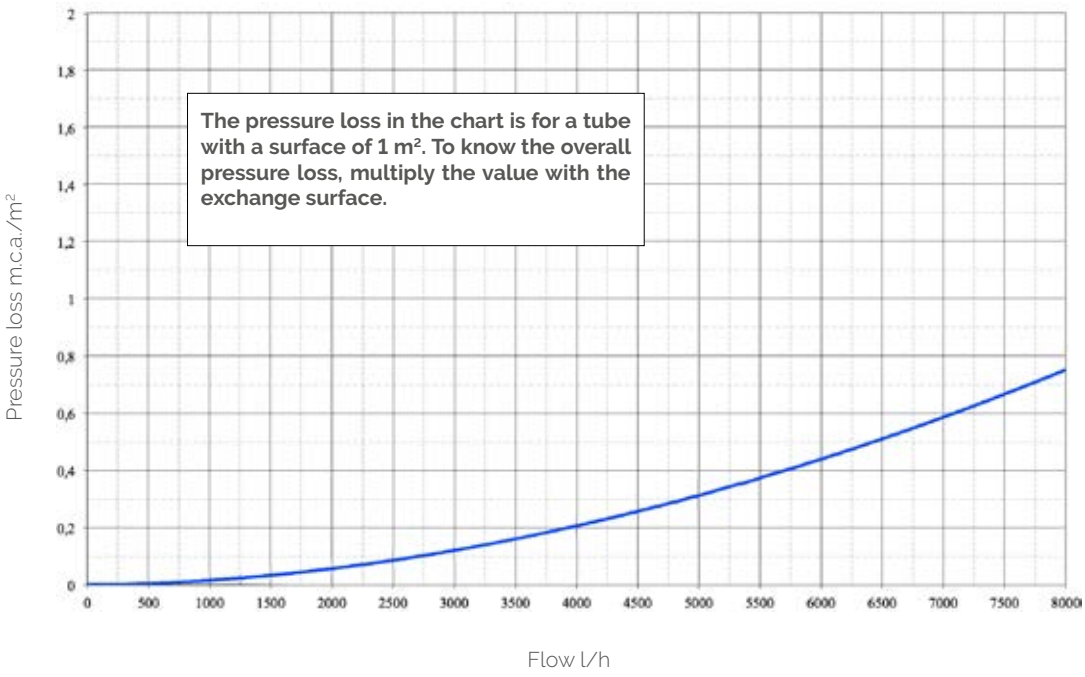
Key

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

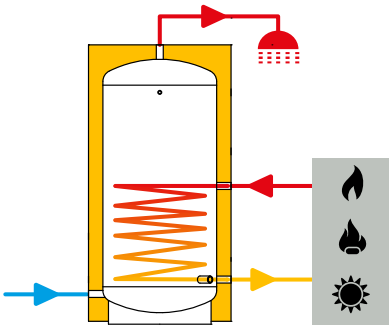
Supplied accessories: Magnesium sacrificial anode for all sizes.

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



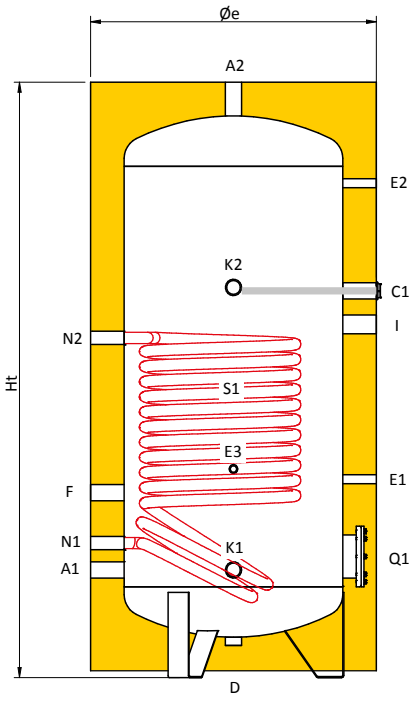


Integration with AQUAFAST

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

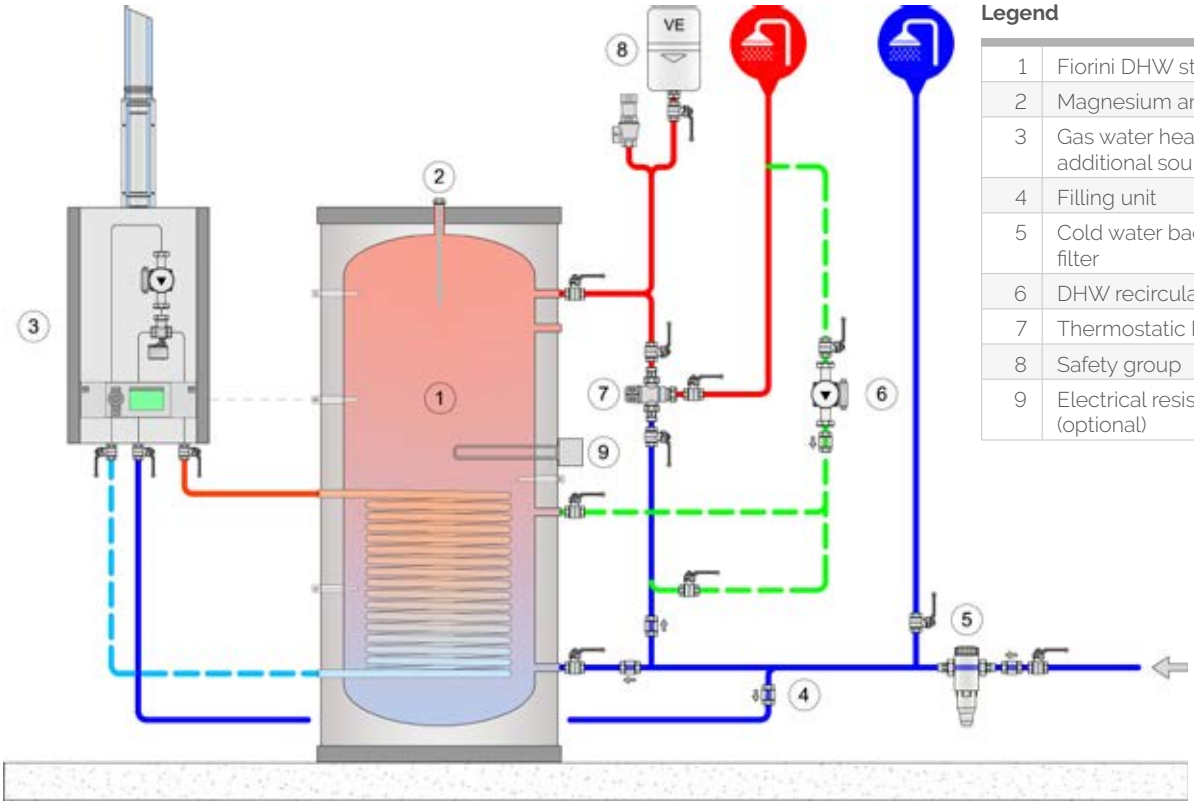
R*: reversal quota Q**: Height from inspection hole center to the ground

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

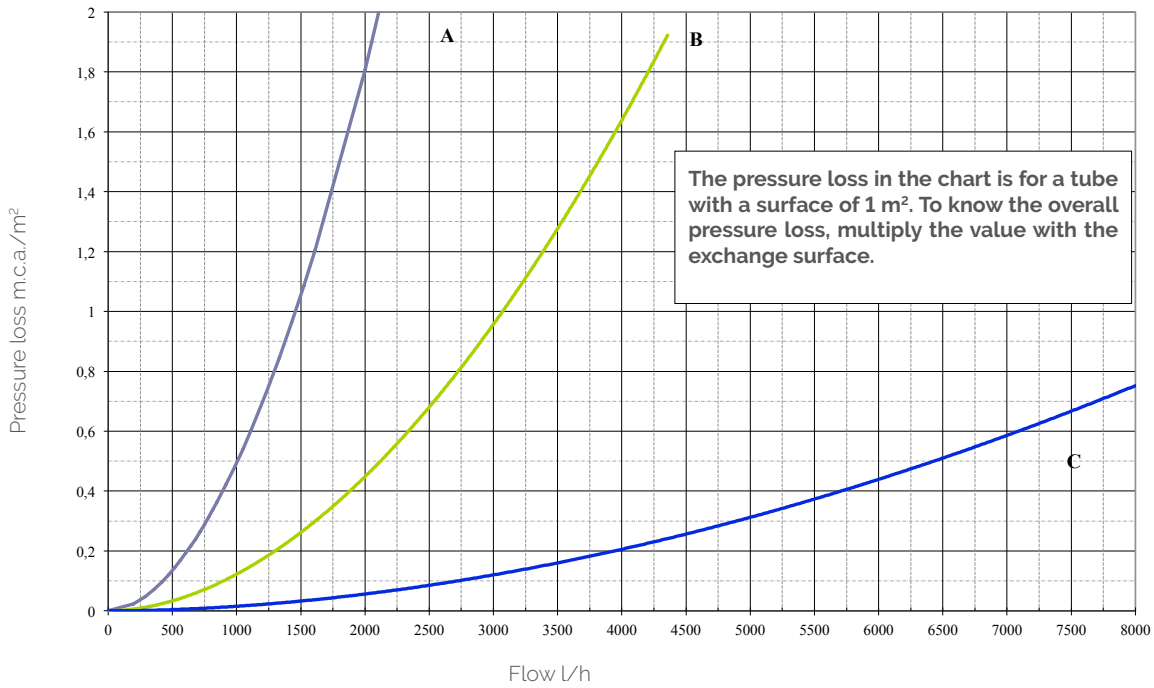
Technical information for SMART INOX 1 series



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

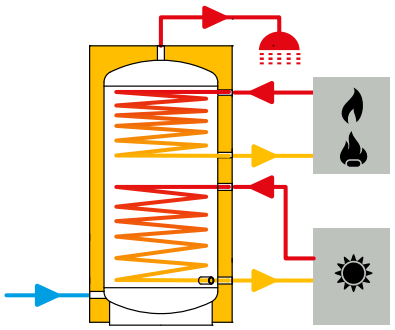
Storage		Primary circuit	
max. temperature	max. pressure	max. temperature	max. pressure
95°C	6 bar	110°C	12 bar

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



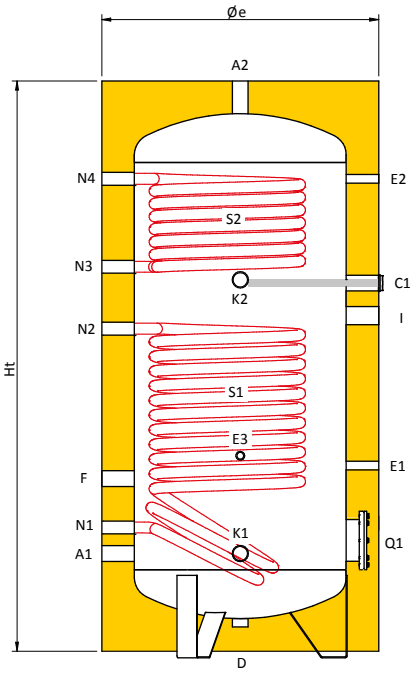


Integration with AQUAFAST

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

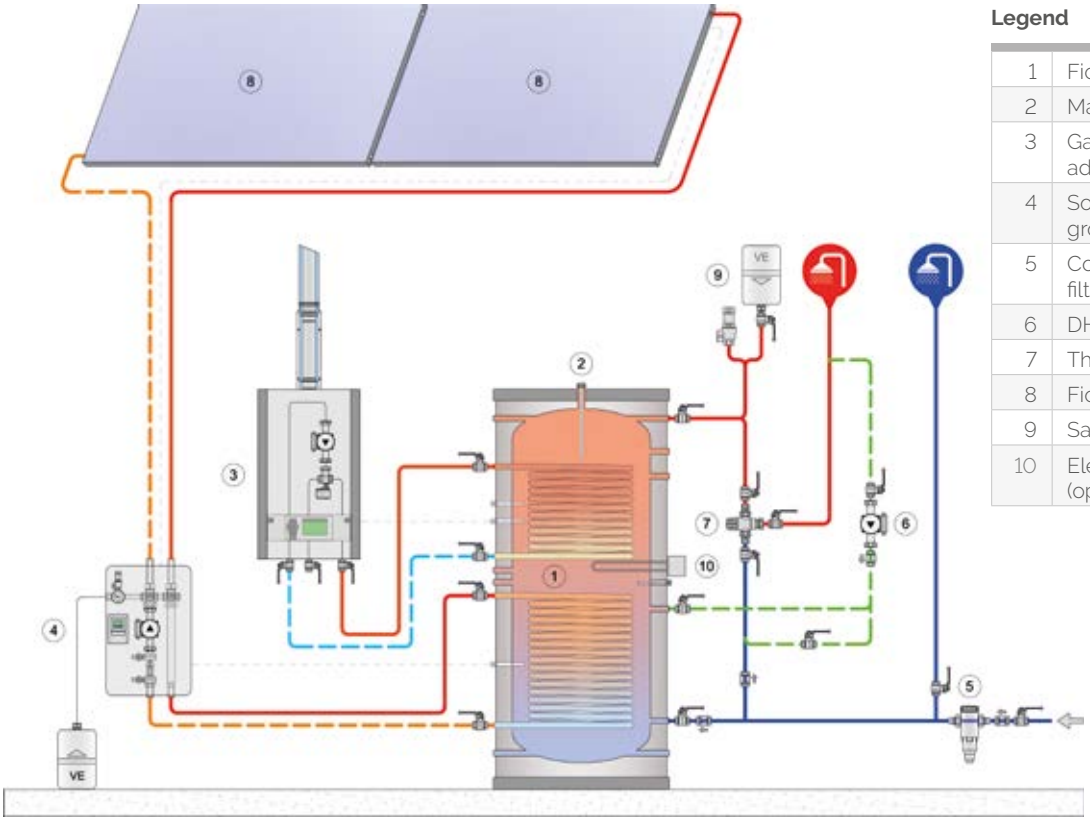
R*: reversal quota Q1**: Height from inspection hole center to the ground

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

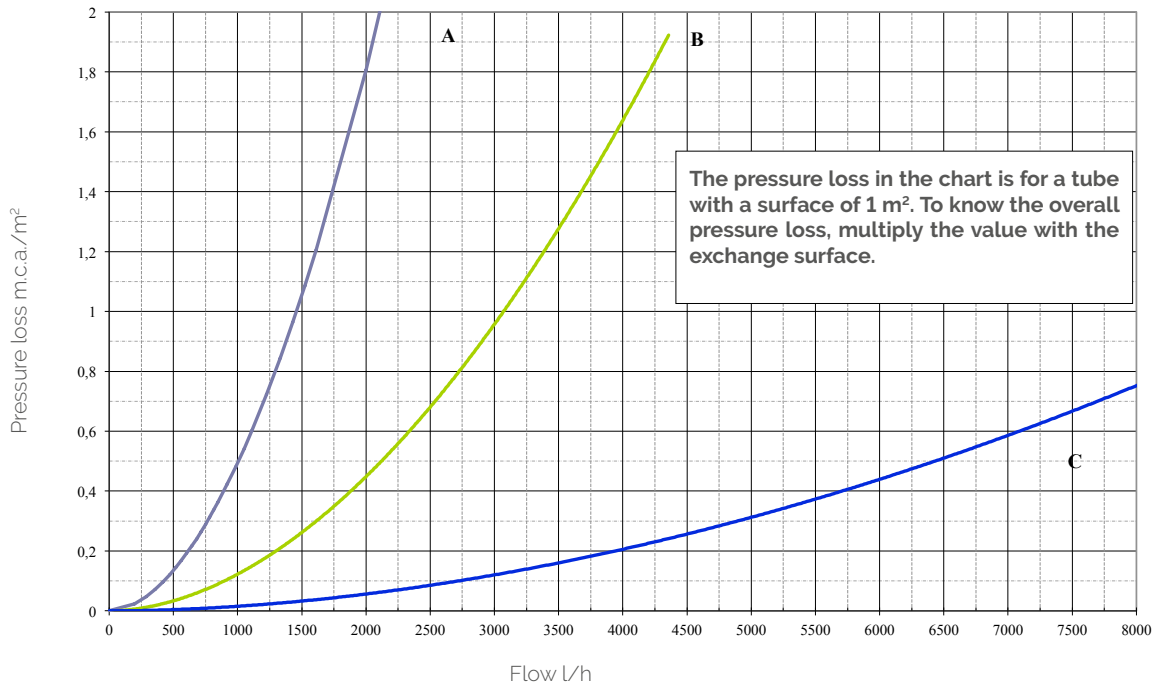
Technical information for SMART INOX 2 series



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



The pressure loss in the chart is for a tube with a surface of 1 m². To know the overall pressure loss, multiply the value with the exchange surface.

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

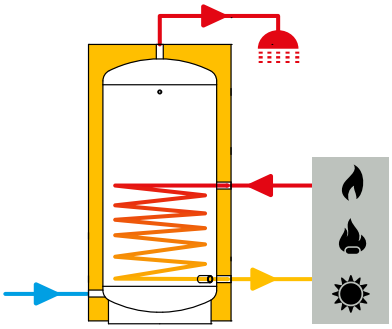
Insulation

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

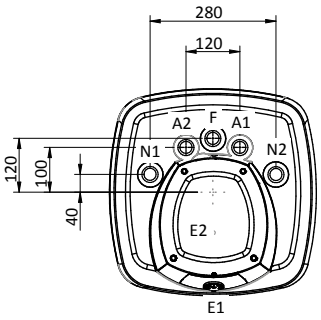
Supplied accessories: Sacrificial Magnesium Anode and Thermometer.
Standard accessories: see page 294
Special executions: see page 296

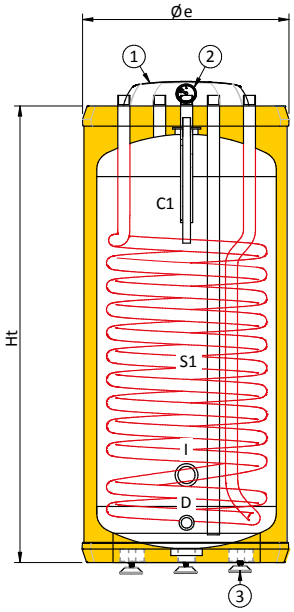


Capacity l	Code	Price	Energy label	Net weight kg
100	819060192X		C	57
120	819060193X		C	62
140	819060190X		C	67
200	819060191X		C	85

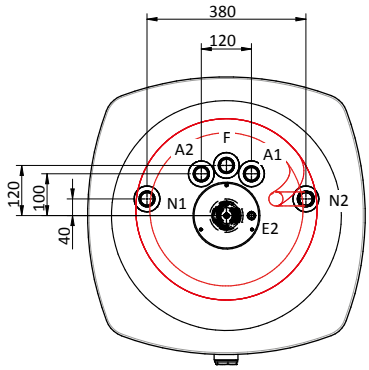
Water heater with fixed heat exchanger
SMART UP

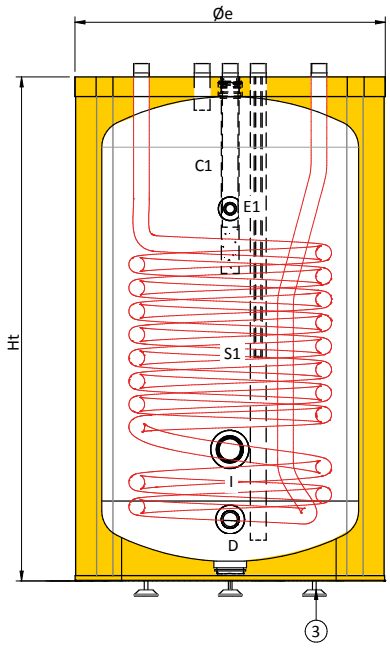
100 ≤ cap. ≤ 140





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

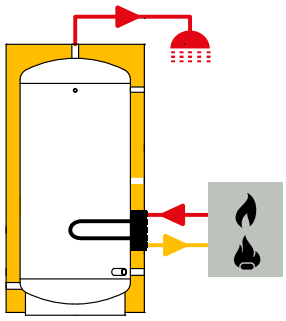
Operational limits

	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

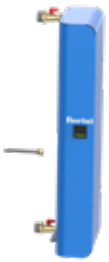
Supplied accessories: Safety valve and thermometer for sizes up to 1000 l, magnesium sacrificial anode for all sizes.

Standard accessories: see pag 294

Special versions: see pag 296



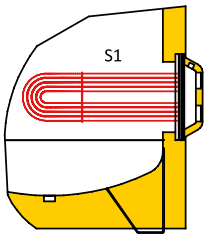
Capacity l	Code	Price	Energy label	Vertical Packaging Dimensions cm	Vertical Packaging Weight kg
200	818060081X		A	75X75X125	84
300	818060082X		A	75x75x150	96
500	818060083X		B	85x85x180	136
750	818060084X		C	100x100x180	221
1000	818060085X		C	105x105x210	269
1500	818080375X		C	130x130x245	289
2000	818080361X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



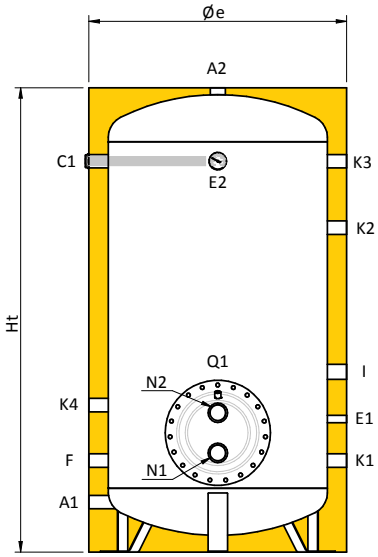
Integration with AQUAFAST

See page 212

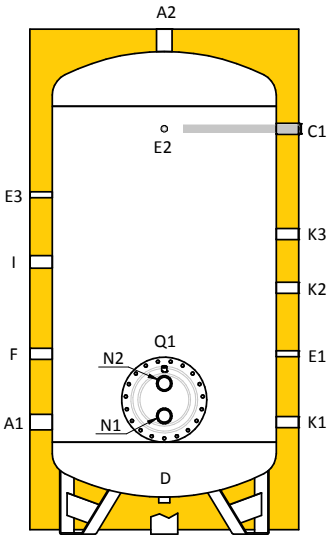
Water heater with tube heat exchanger – BOIL

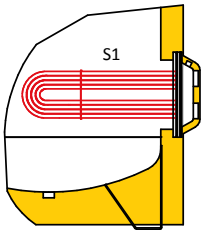


200 ≤ cap. ≤ 1.000



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

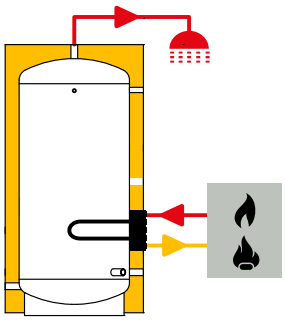
Operational limits

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

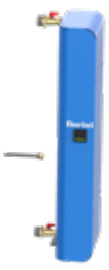
Supplied accessories: Magnesium sacrificial anode for all sizes.

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

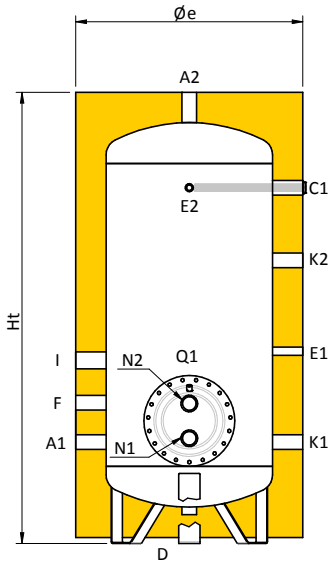


Integration with AQUAFAST

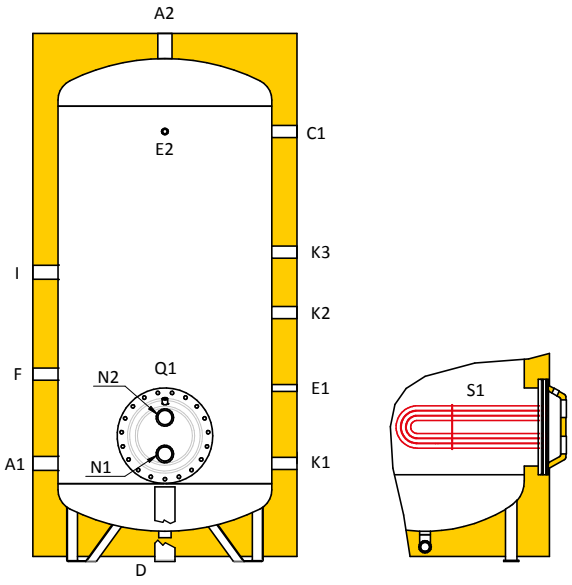
See page 212

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

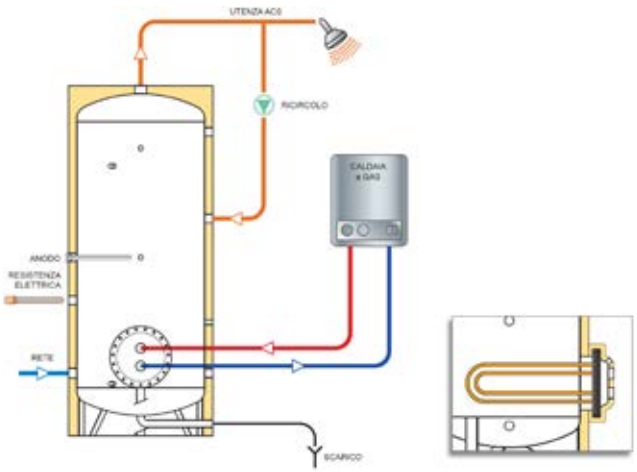
Cap. l	Øe mm	Ht mm	R* mm	A1 mm	C1 mm	E1 mm	E2 mm	F mm	I mm	K1 mm	K2 mm	K3 mm	N1 mm	N2 mm	Q1** mm
200	650	1410	1535	295	1135	595	1135	425	540	295	915	-	305	425	365
300	750	1490	1650	335	1175	635	1175	465	605	335	935	-	345	465	405
500	850	1770	1945	350	1420	650	1420	650	935	350	950	1190	360	480	420
750	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

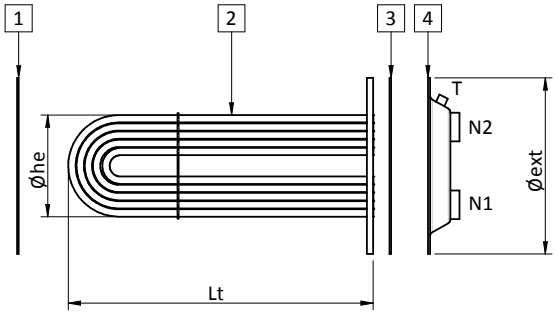
		DHW production TiDHW = 10°C						Exchanger		
Capacity	Ti	TuDHW= 45°C		TuDHW = 60°C		Ta = 50°C TuDHW = 45°C	Ta = 60°C TuDHW = 45°C	Surface area	Capacity	Nominal flow
l	°C	l/h (a)	kW (b)	l/h (c)	kW (d)	l/10 min. (e)	l/10 min. (f)	m²	l	mc/h
200	70	241	9,8	119	4,9	258	315	0,5	2	0,5
	80	300	12,2	169	6,9	266	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



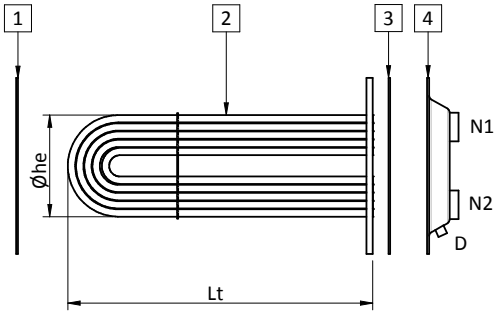
- a continuous DHW flow with TuDHW= 45°C
- b exchanger power with TuDHW=45°C
  c continuous DHW flow with TuDHW= 60°C
- d exchanger power with TuDHW=60°C
- e amount of DHW at 45°C in the first 10 min. with a storage temperature of 50°C
- f amount of DHW at 45°C in the first 10 min. with a storage temperature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

Technical information for BOIL and BOIL INOX series

Water only



Steam only



Couplings legend

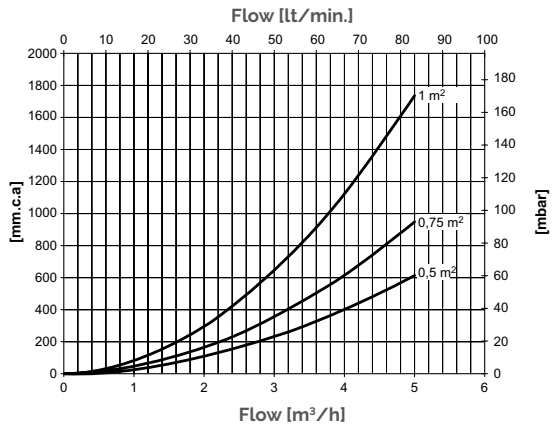
D	Drain
N1	Exchanger inlet/outlet
N2	Exchanger inlet/outlet
T	Vent
1	Gasket without cross-beam
2	Bundle tube heat exchangers
3	Gasket with cross-beam
4	Head

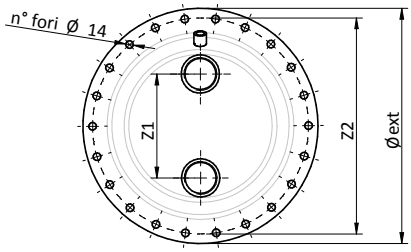
Technical information tube heat exchanger

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

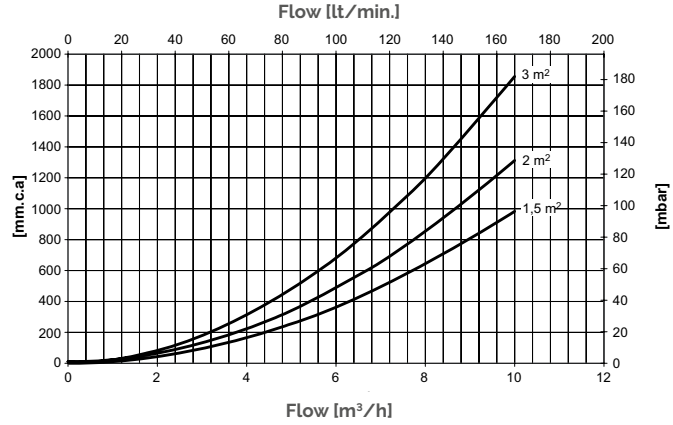
Pressure loss tube heat exchanger

Exchanger surface 0,5 - 1 m²

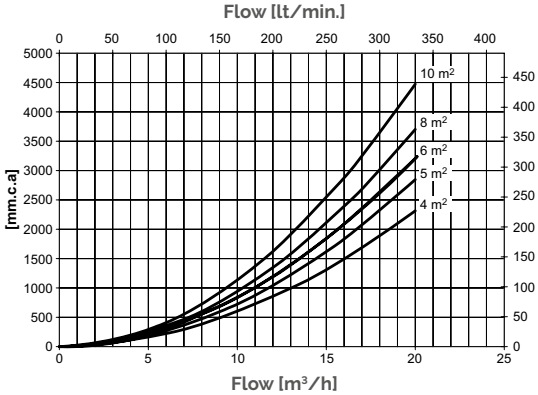




Exchanger surface 1,5 - 3 m²



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

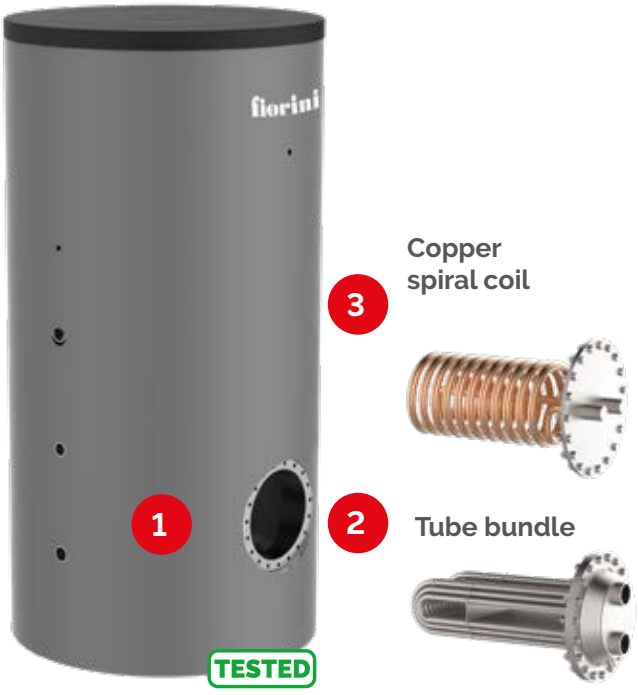
This solution makes it possible to couple each of the two hatches of the sanitary water storage. with a tube bundle or copper spiral heat exchanger. It is also possible to install just one exchanger, allocating the remaining hatch to the inspection function: in this case it is necessary to provide a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





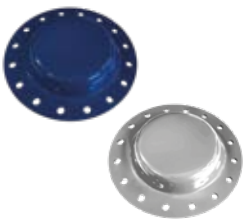
Custom water heaters with 1 or 2 inspection holes and tube heat exchanger



Cap. l	ENAMELLED FLEXY 1 INSPECTION HOLE (PAG 156) Code	Price	Energy label	Inspection hole Øext mm	ST. STEEL FLEXY 1 INSPECTION HOLE (PAG 164) 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



Cap. l	ENAMELLED FLEXY 2 INSPECTION HOLES (PAG 164) Code	Price	Energy label	Inspection hole Øext mm	ST. STEEL FLEXY 2 INSPECTION HOLES (PAG 166) 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

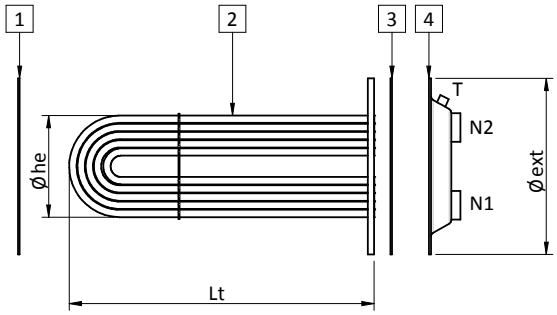


Diametre mm	Tank capacity	Enamelled heads Code	Price	Stainless steel heads Code	Price
Ø300	from 200 to 500 l	843030018X		843040019X	
Ø380	from 750 to 1500 l	843030019X		843040020X	
Ø430	from 2000 to5000 l	843030020X		843040021X	

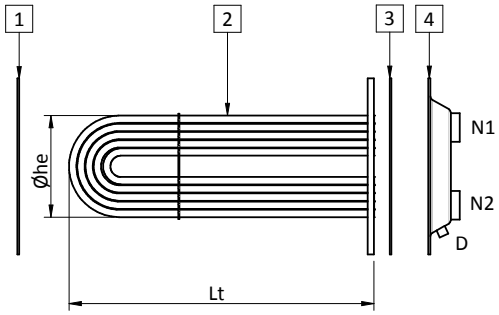
The heads are supplied complete with bolts and gasket.

Bundle tube heat exchanger

Water only

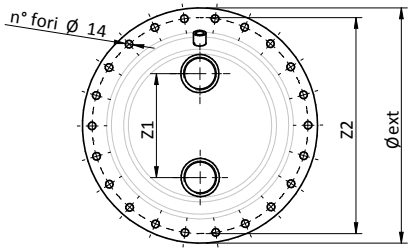


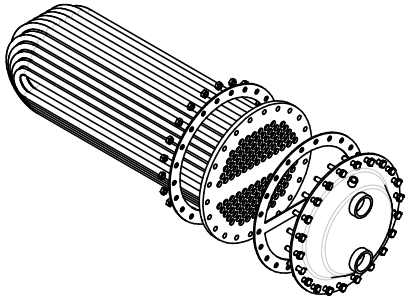
Steam only



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							✔	✔	✔	✔	✔

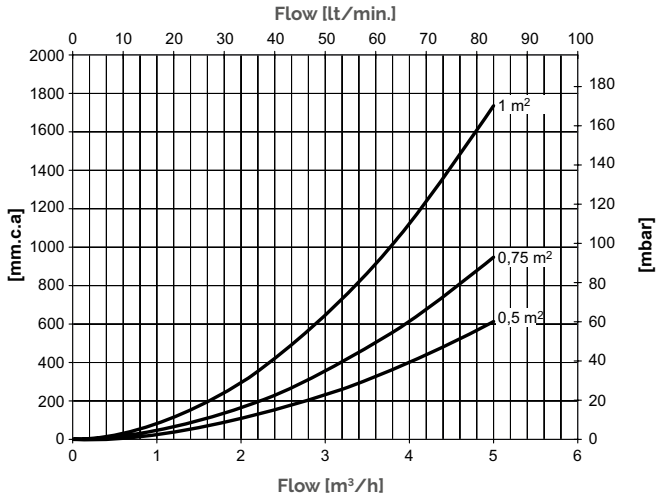
✔ Combination is possible

	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

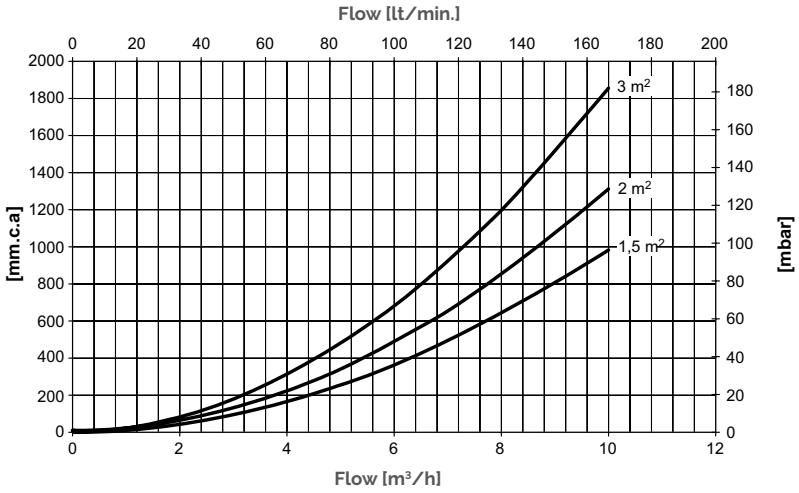
Version 1: AISI 304 stainless steel tube heat exchanger, assembled on a varnished plate with galvanised head
Version 2 and version with steam: AISI 306 stainless steel tube heat exchanger on a AISI 316 steel plate and AISI 304 steel head

Bundle tube heat exchanger
Curve: pressure loss

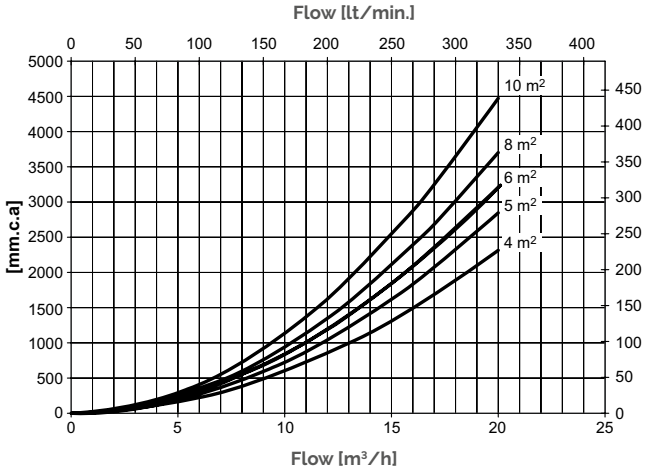
Exchanger surface 0,5 - 1 m²



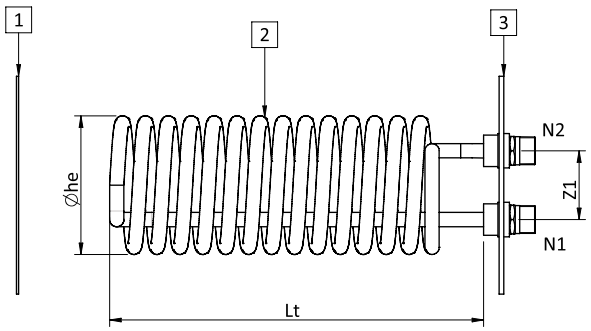
Exchanger surface 1,5 - 3 m²

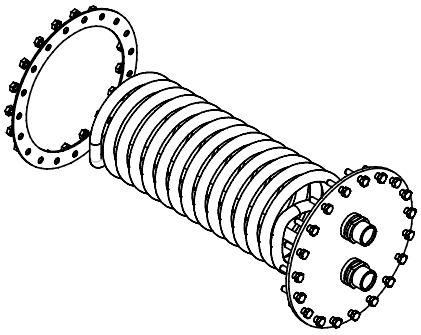


Exchanger surface 4 - 10 m²



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

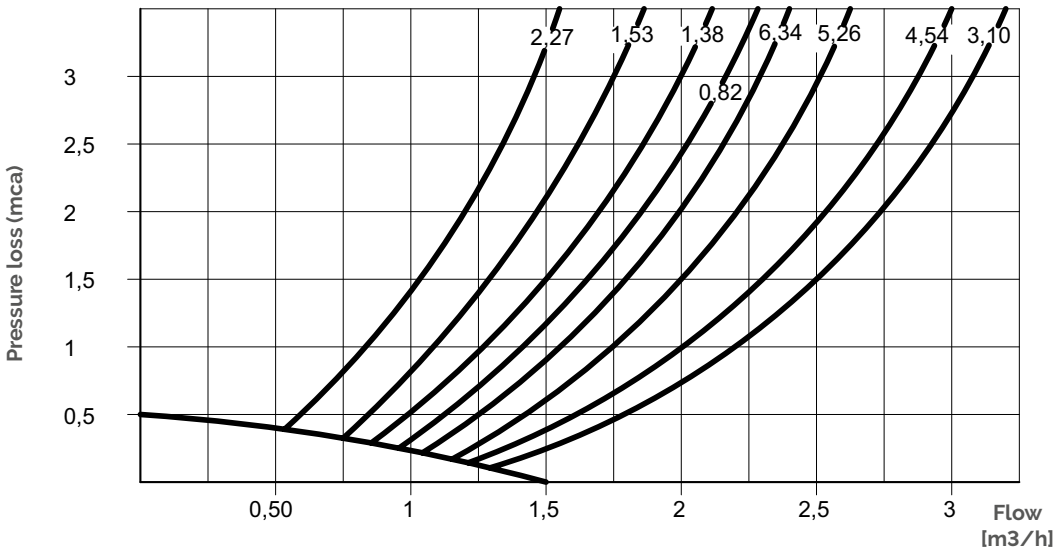
Surf. m²	Lt mm	Øhe mm	Z1 mm	N1 inch	N2 inch	Type of coil	Internal volume l	Dp kPa	Thermal eff. (*) kW	T max °C	P max bar
0,82	380	160	75	3/4"	3/4"	Single coil	0,7	25	15	99	9
1,38	420	170	75	3/4"	3/4"	Single coil	1,2	30	21,6	99	9
1,53	450	170	75	3/4"	3/4"	Single coil	1,4	35	24	99	9
2,27	570	170	75	3/4"	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 Code	Price	Power kW	Heating time Δt=35°C	Heating time Δt=25°C	FLEXY VOLT 2 Code	Price	Power kW	Heating time Δt=35°C	Heating time Δt=25°C	Packaging Dimensions cm	Packaging 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.).

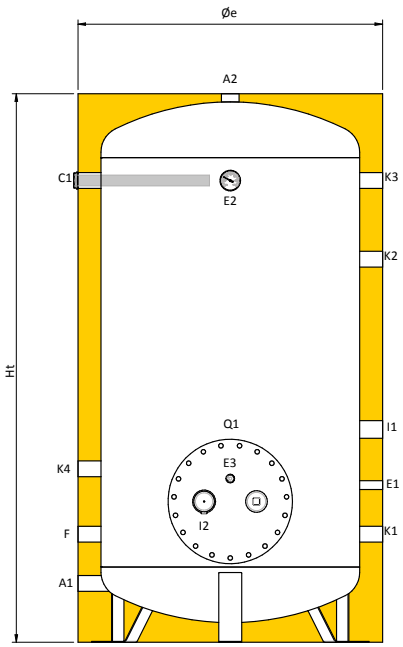


Integration with AQUAFAST

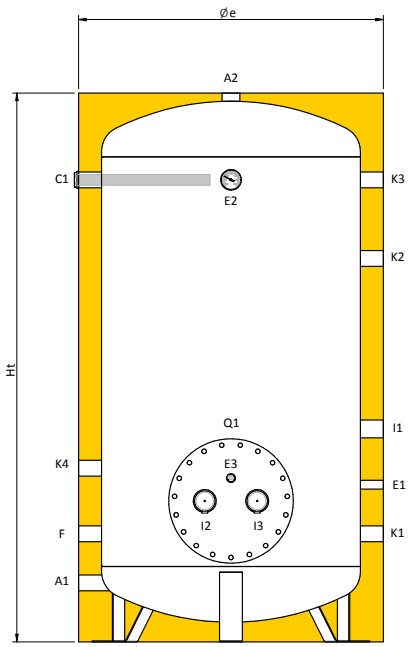
See page 212

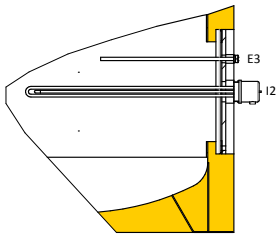
Electric water heater
FLEXY VOLT

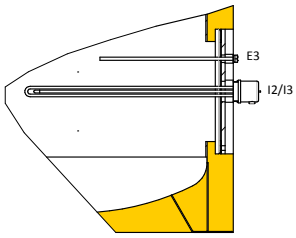
FLEXY VOLT 1



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

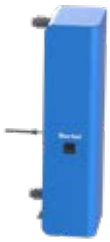
Cap. l	Øe mm	Ht mm	R mm	A1 mm	C1 mm	E1 mm	E2 mm	F mm	I1 mm	K1 mm	K2 mm	K3 mm	K4 mm	Q1 mm
200	710	1105	1315	150	885	295	885	295	445	150	595	990	495	345
300	710	1355	1530	150	1135	445	1135	295	595	295	795	1135	495	355
500	810	1635	1825	145	1390	460	1390	310	610	310	1150	1390	510	370
750	950	1675	1925	180	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

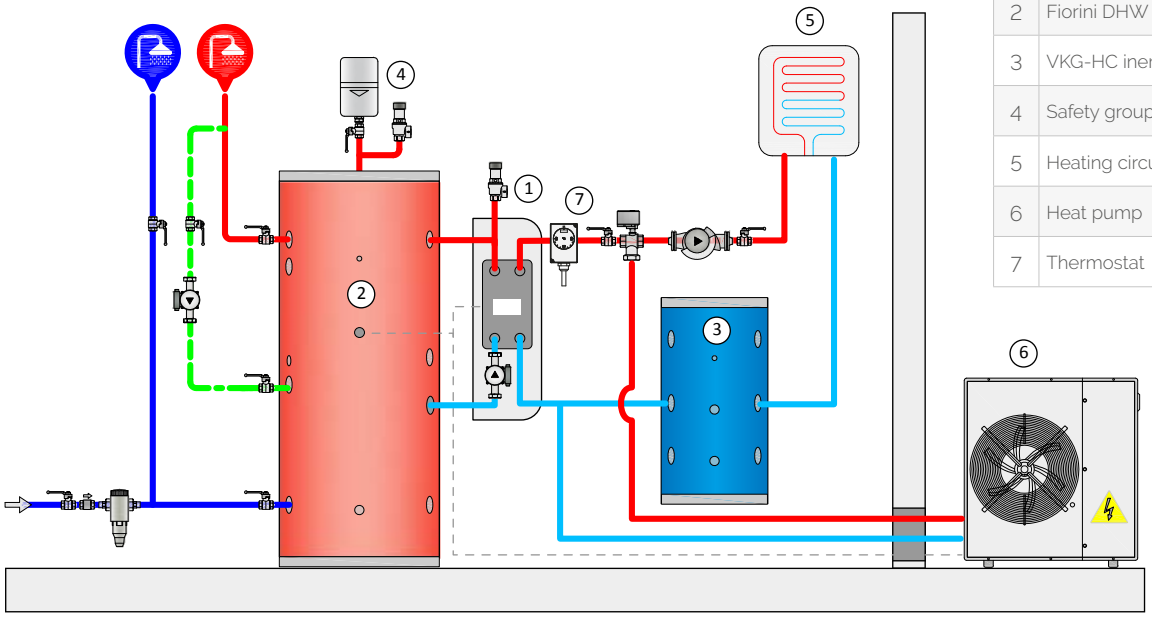
Model	Code	Price	With packaging	
			Dimensions cm	Weight kg
AQUAFAST 12/35	841060070X		100X40X35	18
AQUAFAST 18/70	841060071X		100X40X35	19
AQUAFAST 25/100	841060072X		100X40X35	21
AQUAFAST 30/120	841060073X		110x50x45	47
AQUAFAST 40/150	841060074X		110x50x45	48
AQUAFAST 50/200	841060075X		110x50x45	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



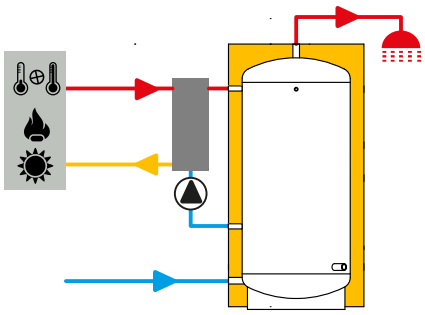
Fast heater for DHW AQUAFAST

Model	Heat pump water temp. 55-50°C			Boiler water temp 80-60°C			Couplings inch	Pump power max W	Voltage V/Ph/Hz	Current max A
	Power kW	Primary flow l/h	dP primary kPa	Power kW	Primary flow l/h	dP primary kPa				
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)

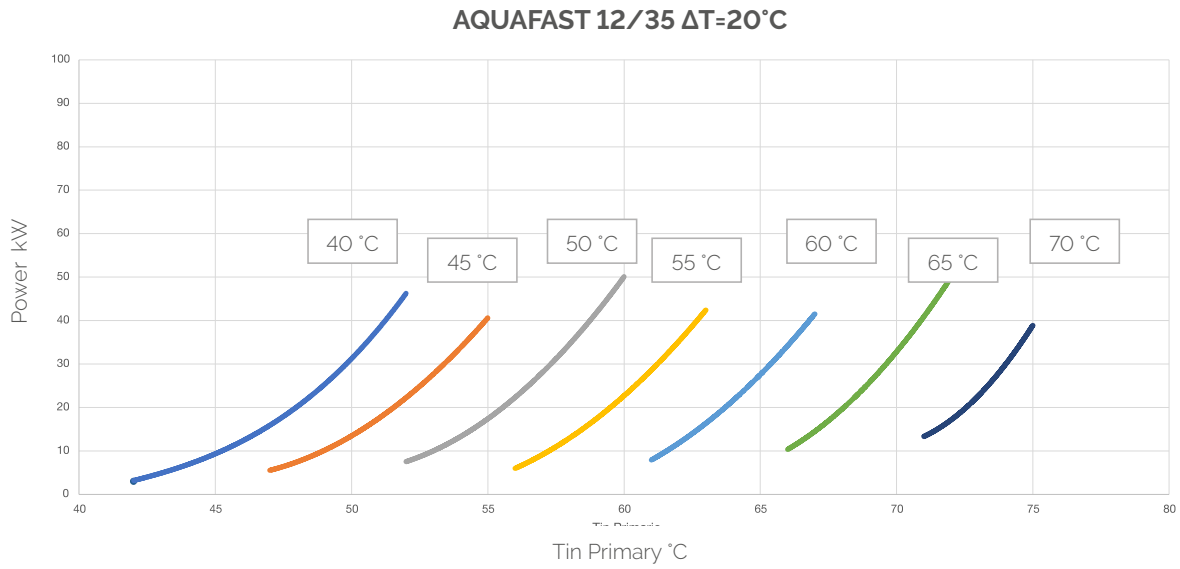
AQUAFAST performances and matching to the tank

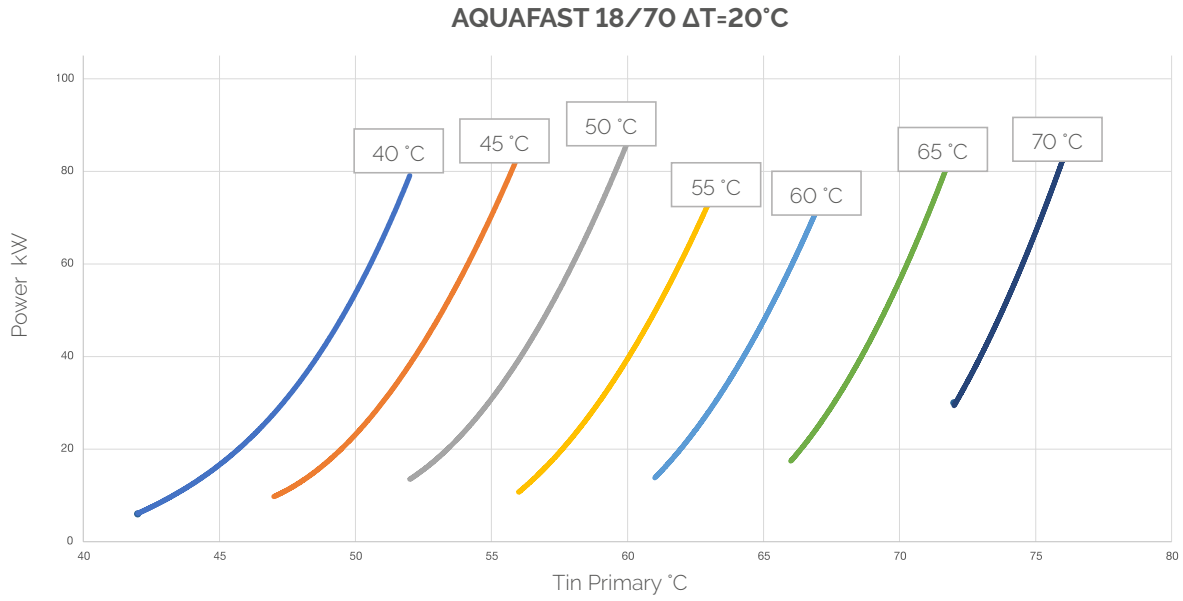


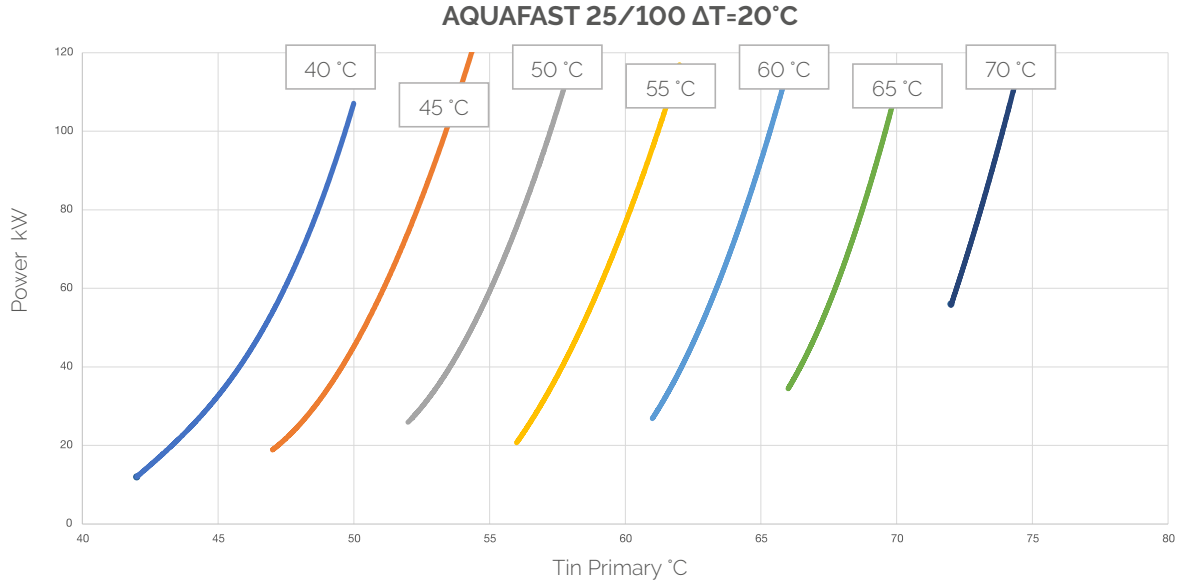
AQUAFAST can be paired with storage tanks of various capacities: this table serves as a guideline, but the pairing is flexible depending on requirements.

	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

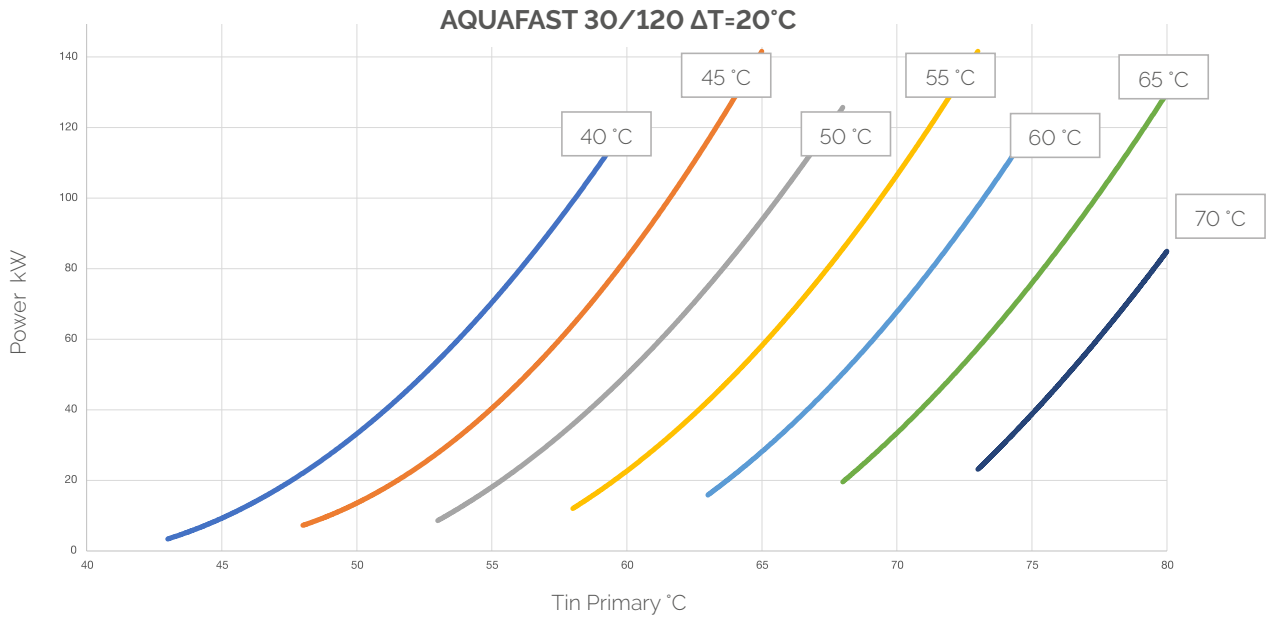
AQUAFAST performances

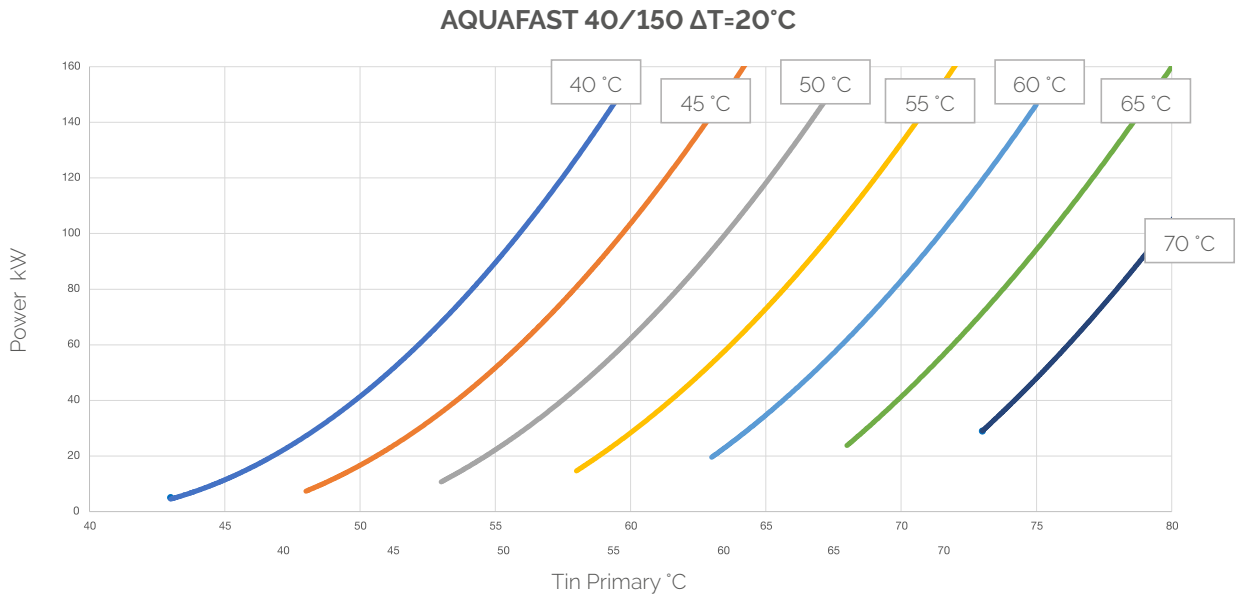


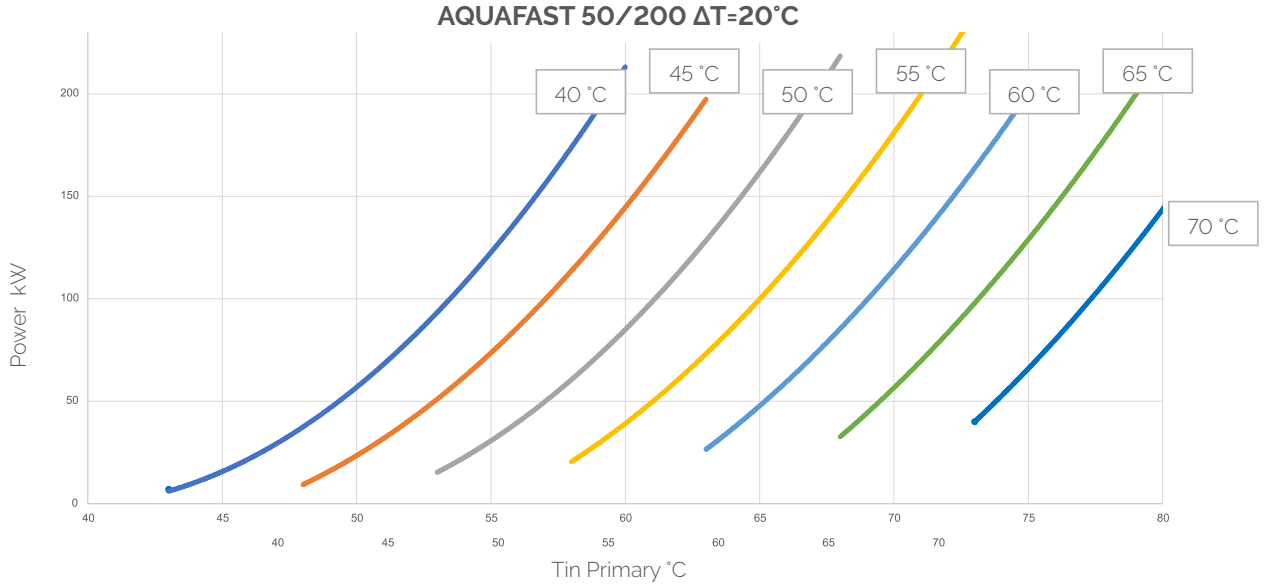




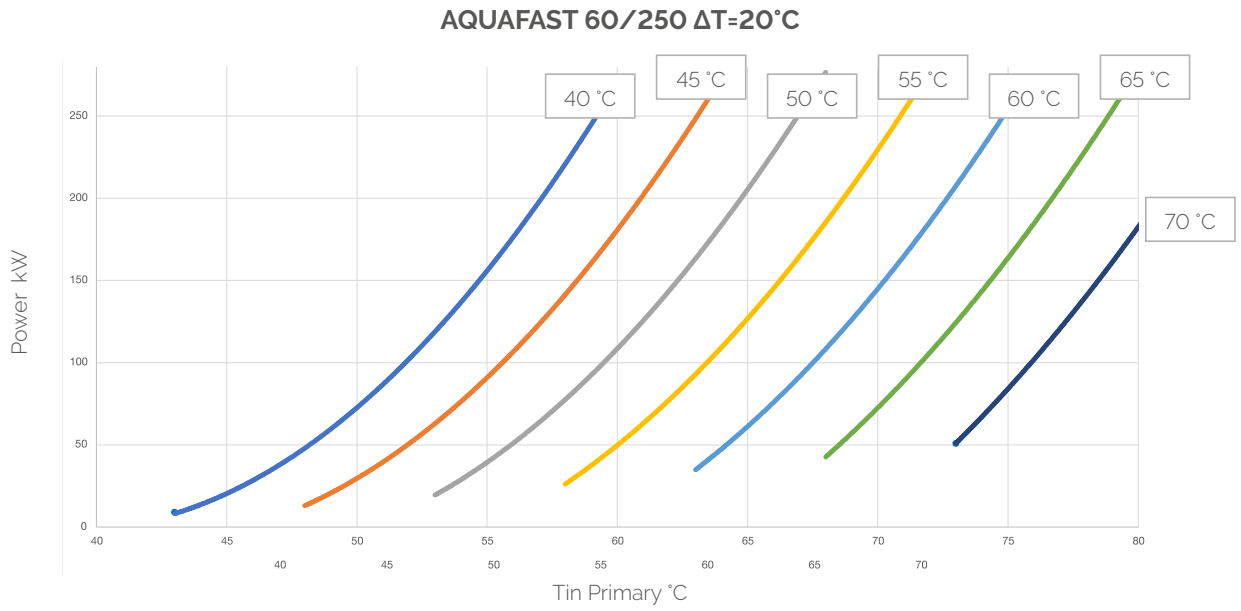
AQUAFAST performances

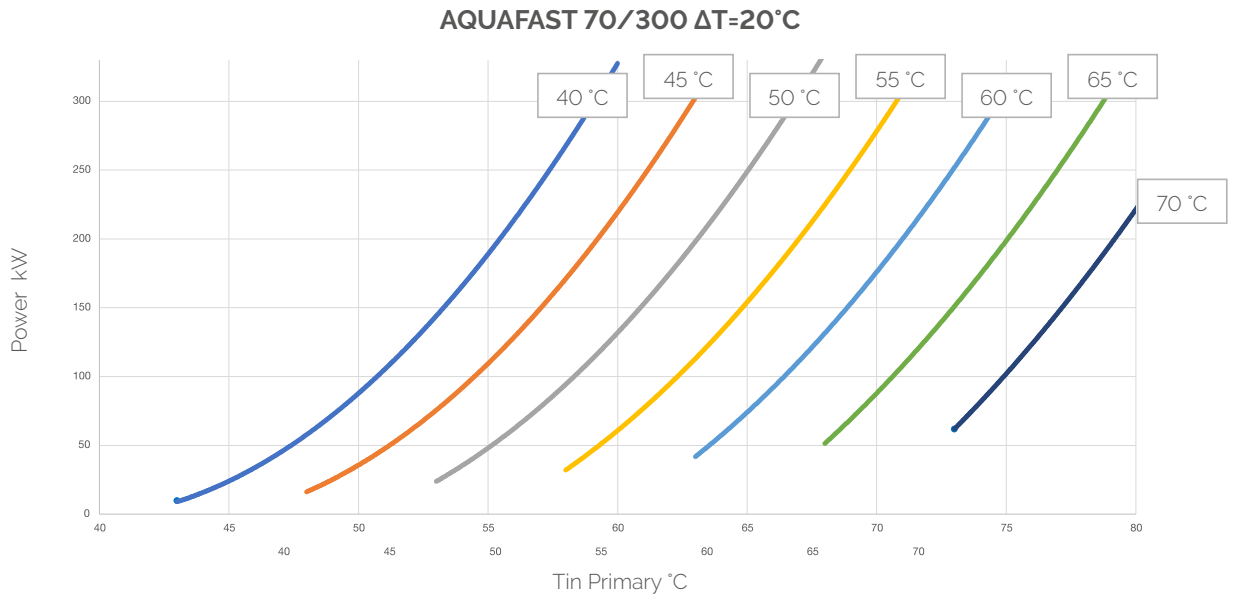


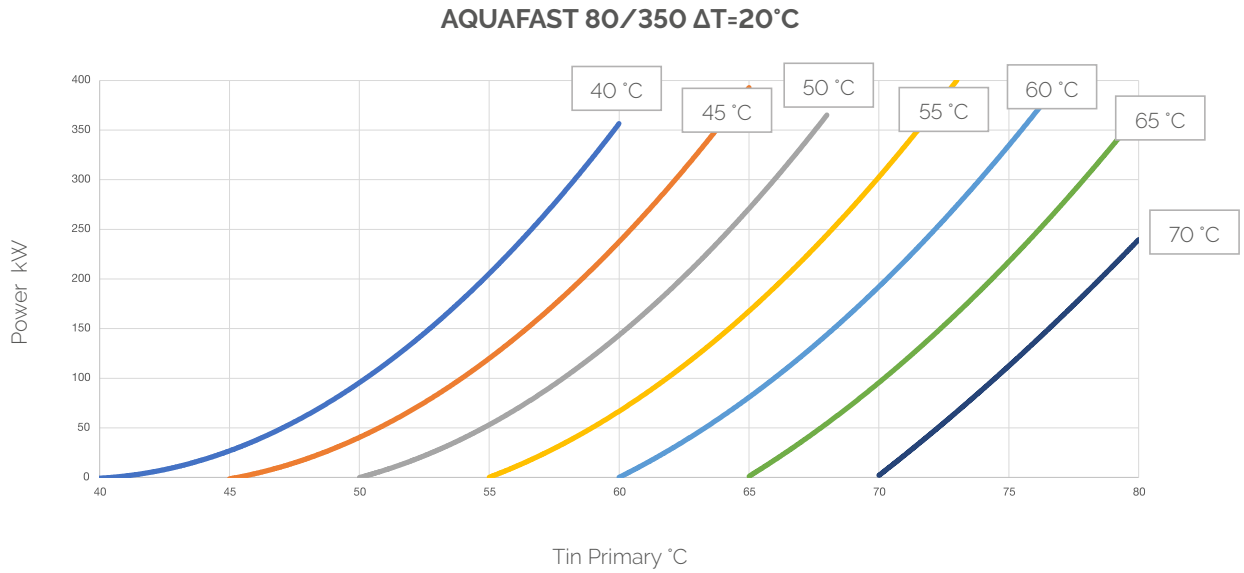




AQUAFAST performances







AQUAFAST working



Startup

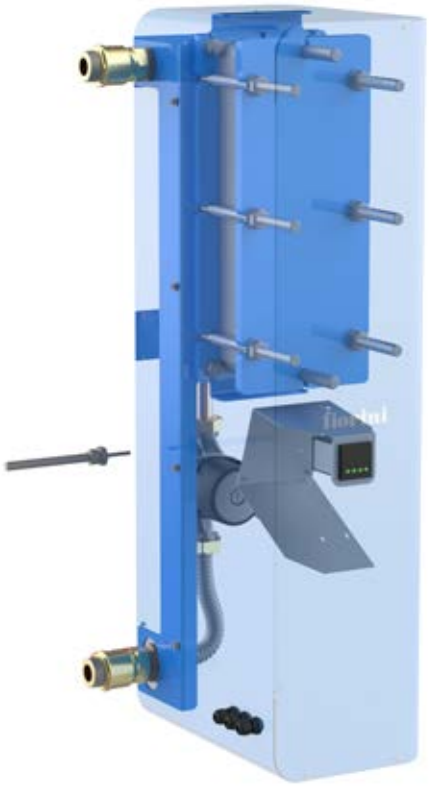
The product is Plug & Play! To start using Aquafast, simply:

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.



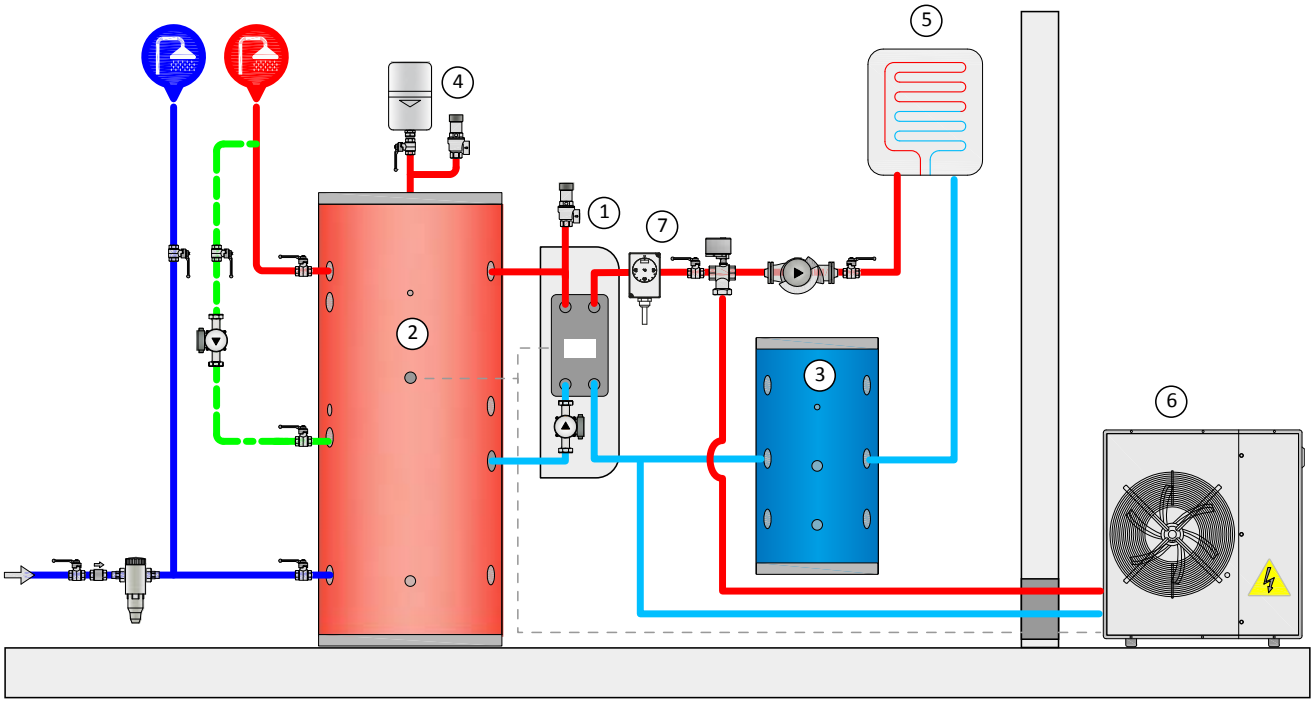
Why choose Aquafast over a fixed coil boiler?

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

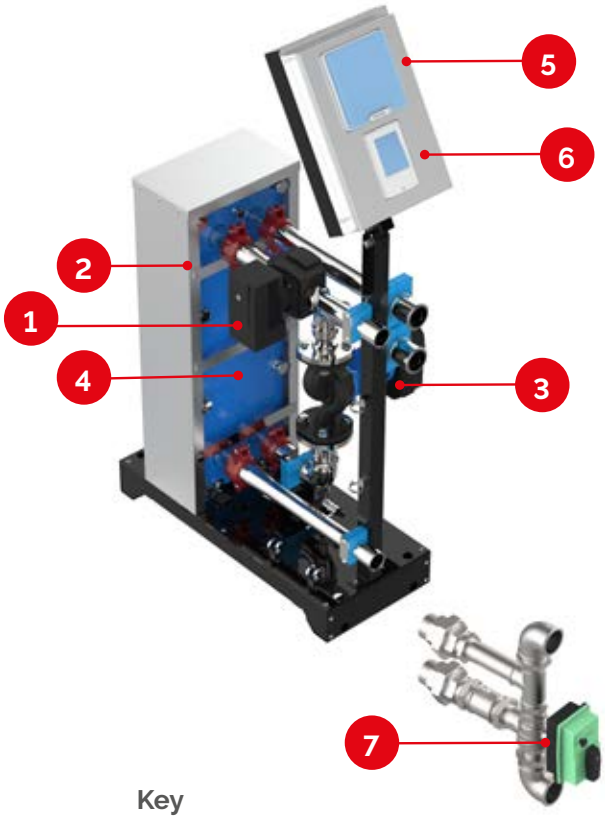
Codes and Prices

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)

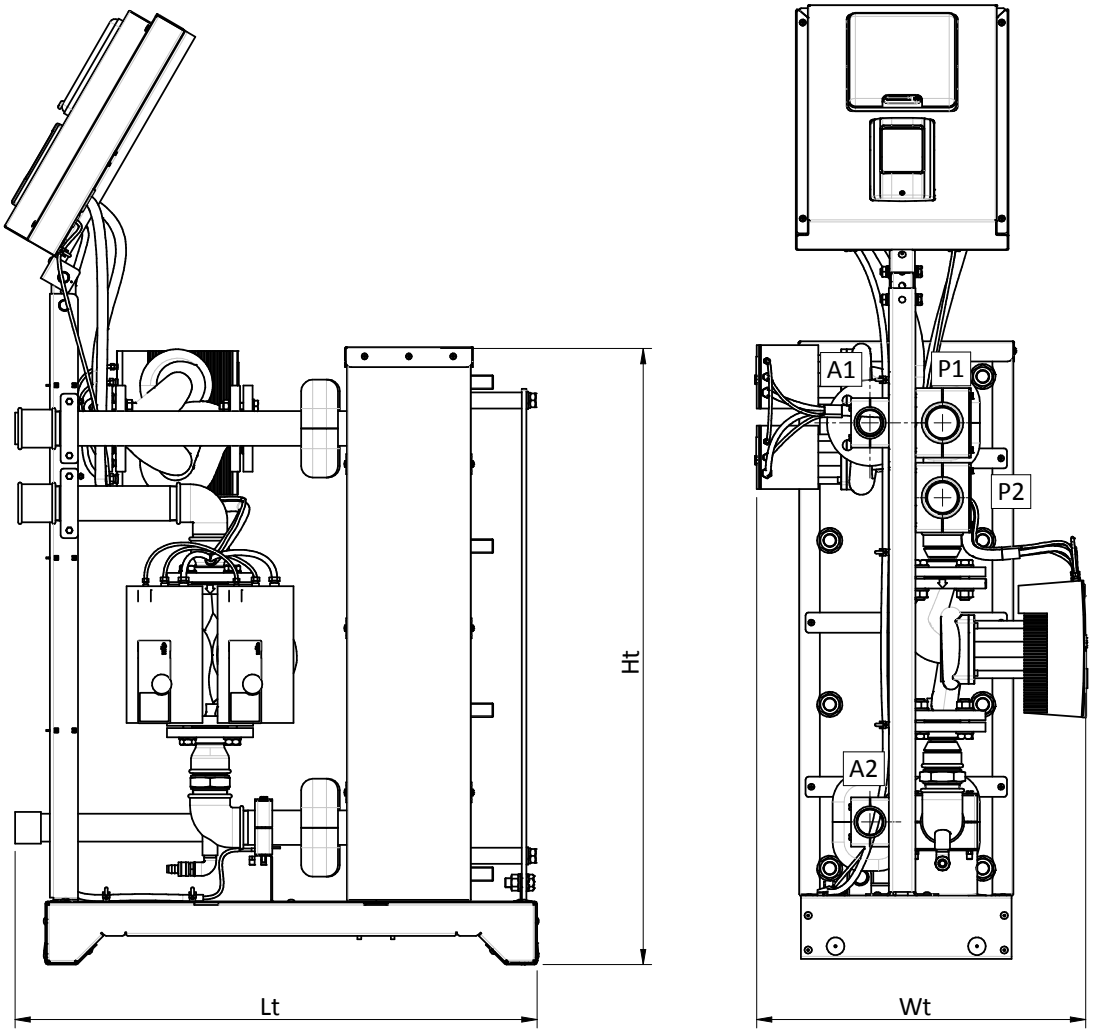
Features of the control unit

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

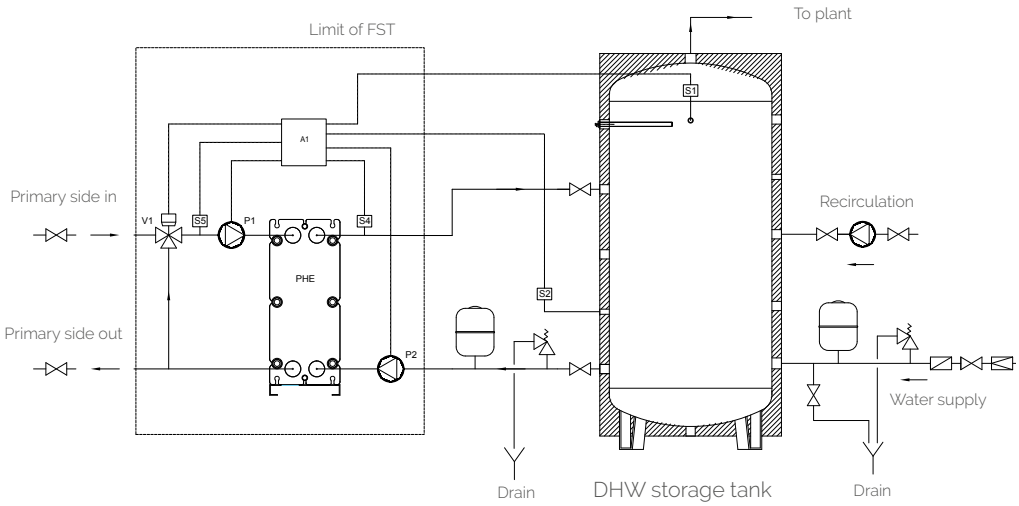
	Nominal power in kW under different temperature conditions							
Temp. primary inlet	FST 600				FST 700			
°C	10-65 °C	10-60 °C	10-55 °C	10-45 °C	10-65 °C	10-60 °C	10-55 °C	10-45 °C
80	452	540	613	650	560	665	740	740
70	225	330	412	560	330	410	505	620
60	-	-	185	371	-	-	280	430
50	-	-	-	176	-	-	-	255

Installation diagrams

1P+1P version

Key

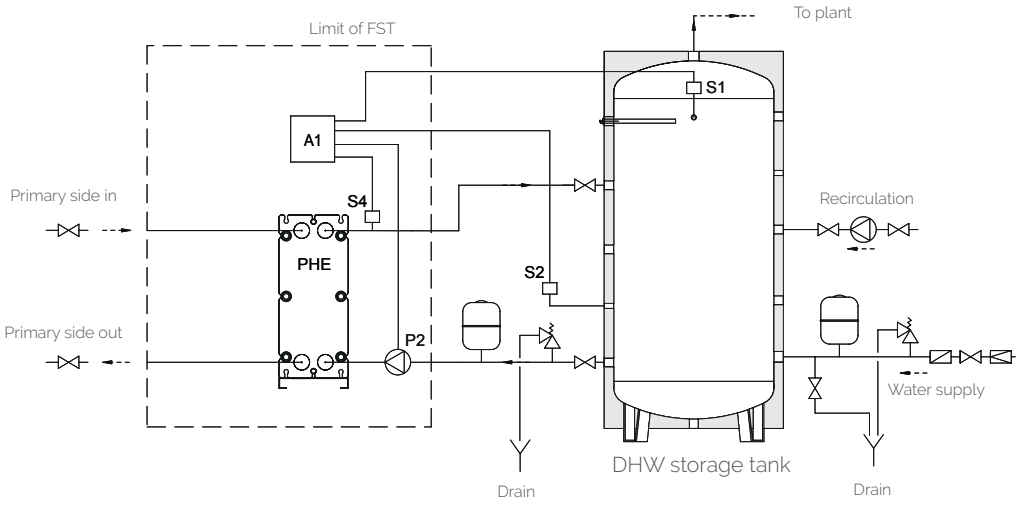
PHE	Plate exchanger
P1	Pump on primary side
P2	Pump on secondary side
V1	3-way mixing valve (optional)
S1	Temperature probe (supplied unassembled)
S2	Temperature probe (optional)
S4	Temperature probe
S5	Temperature probe (optional with V1)



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.

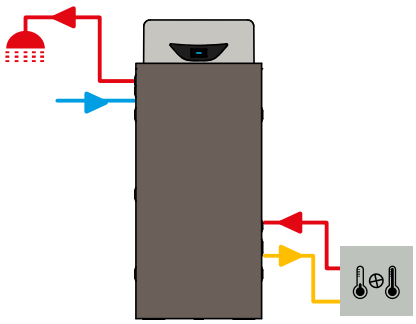
The production of domestic hot water occurs within a plate heat exchanger with stainless steel plates that guarantee:
- ✔ maximum hygiene
- ✔ high production of domestic hot water without the need for a high level of installed power

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)

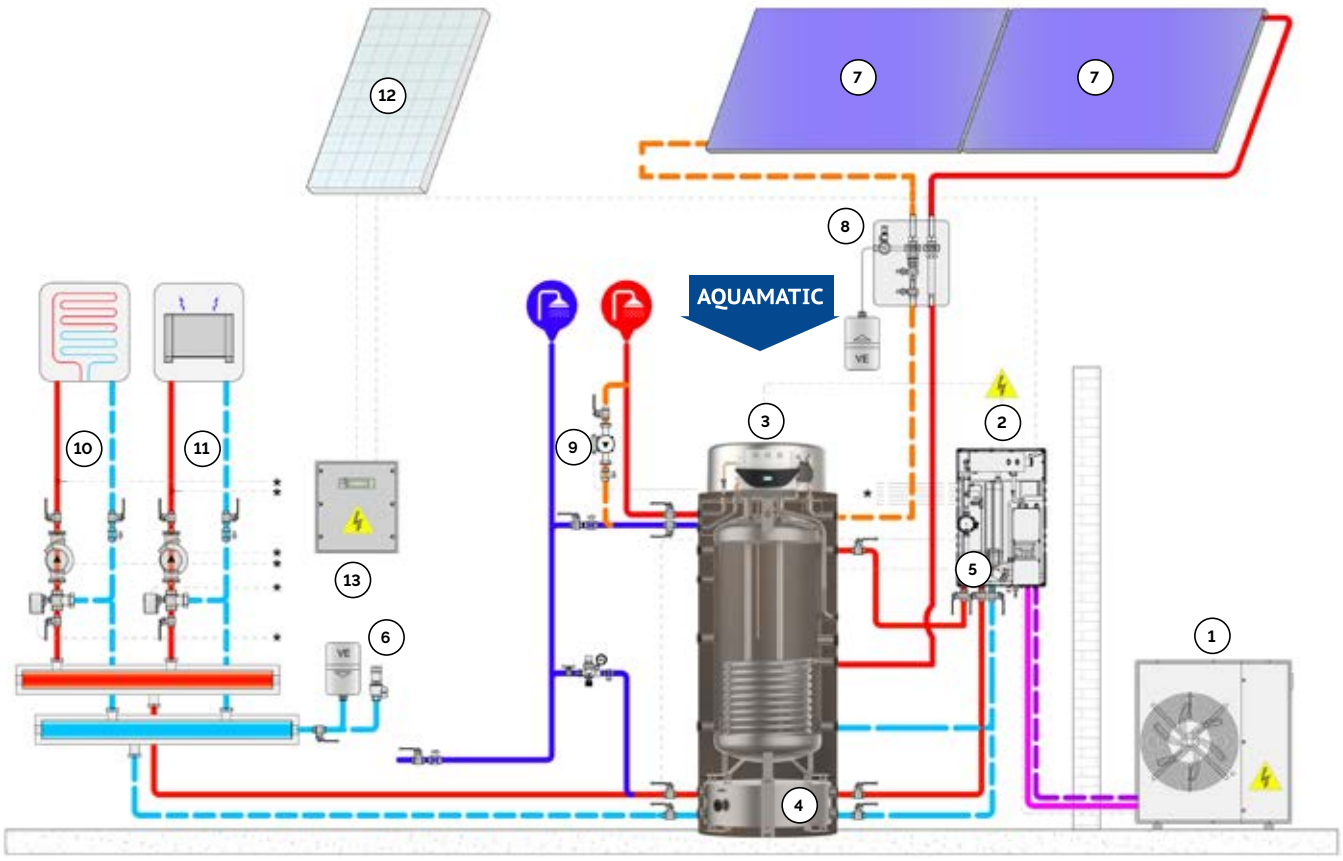


Available accessories see pag. 238

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

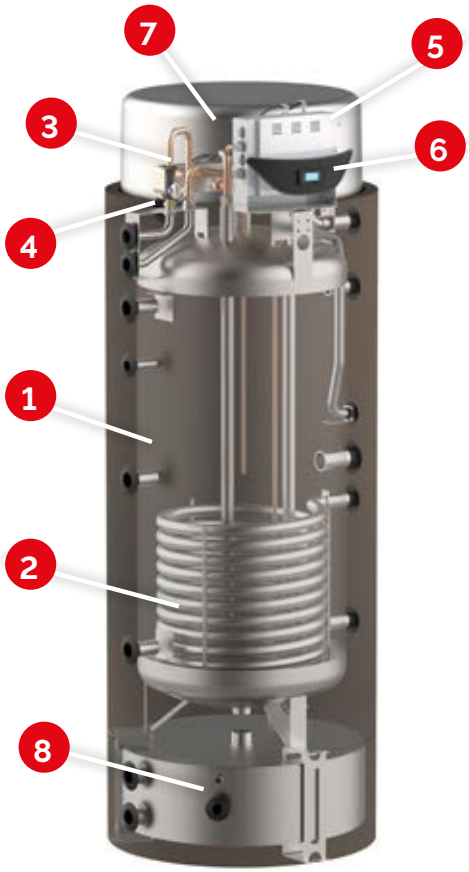
				With vertical packaging	
Model	Capacity l	Code	Price	Dimensions cm	Weight kg
AQUAMATIC	200	842030104X		75x75x140	80
	300	842030105X		75x75x180	94
	500	842030106X		90x90x185	121
AQUAMATIC PLUS	300	842030107X		75x75x180	101
	500	842030108X		90x90x185	136
AQUAMATIC SOLAR	300	842030109X		75x75x180	106
	500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

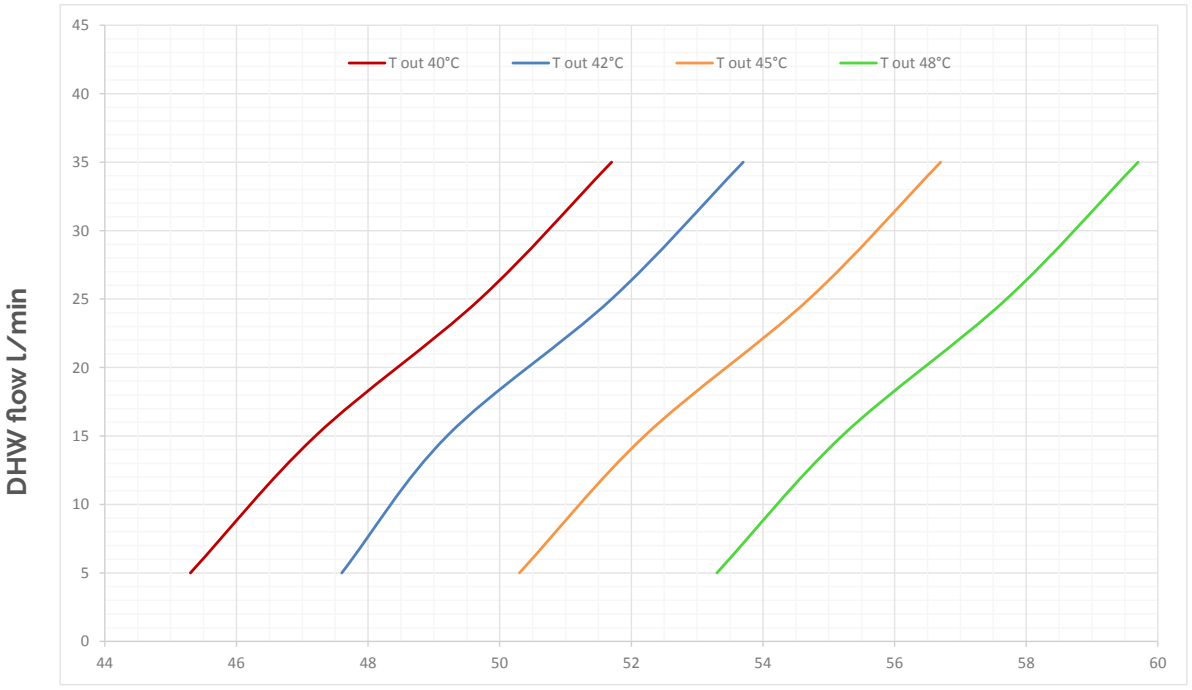
Technical information

		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.	m²	-	-	-	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

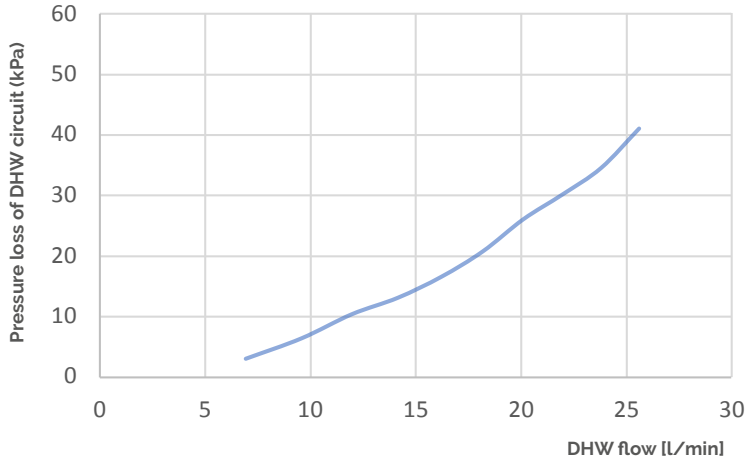
Quantity of domestic water produced in l/m with different storage temperatures and different outlet temperatures



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

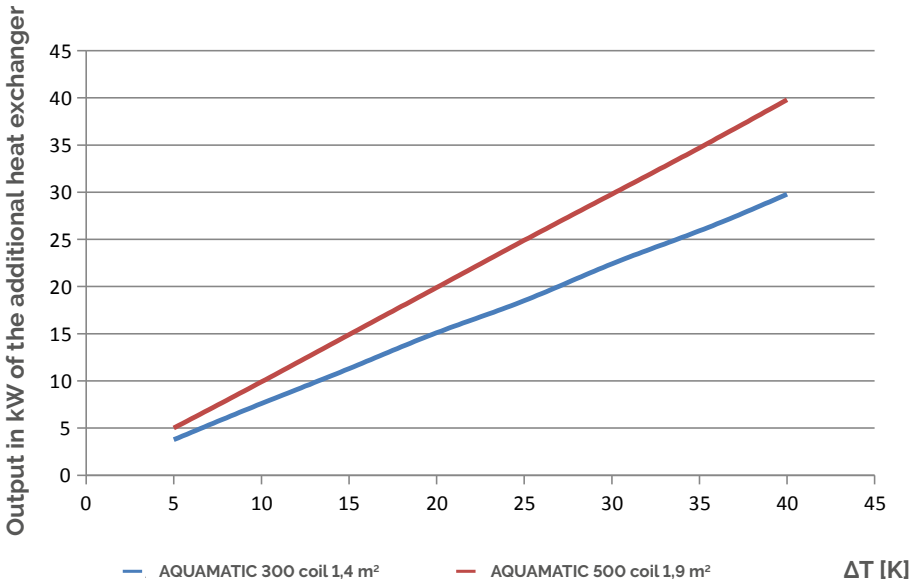
For example, if Taccumulo =52°C
And TDHW =45°C, the AQUAMATIC guarantees a flow of approximately 14 l/min
And TDHW = 42°C, the AQUAMATIC guarantees a flow of approximately 26 l/min

Hydraulic performance



Performance AQUAMATIC

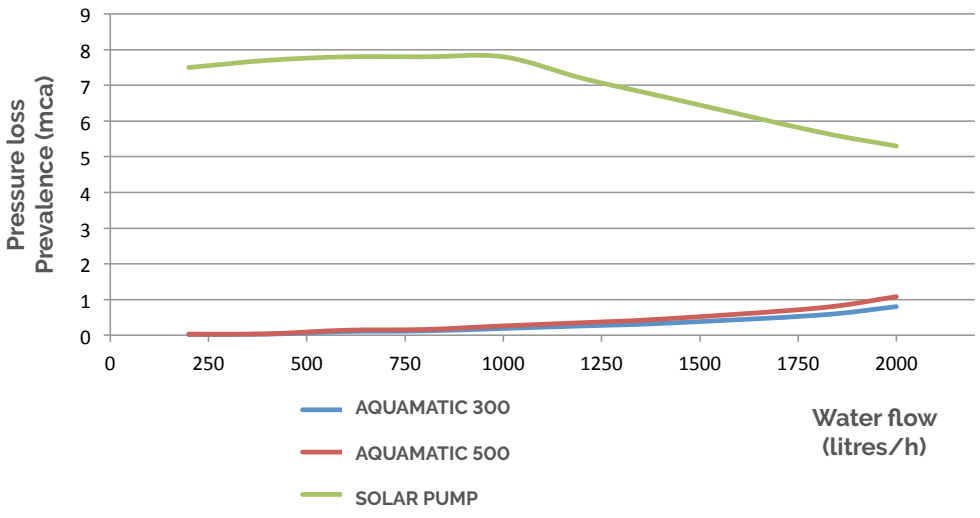
Output in kW of the additional heat exchanger in fucntion of the variation of the value ΔT between the temperature of the integrative source and the storage temperatore.
Only for AQUAMATIC PLUS and AQUAMATIC SOLAR.



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

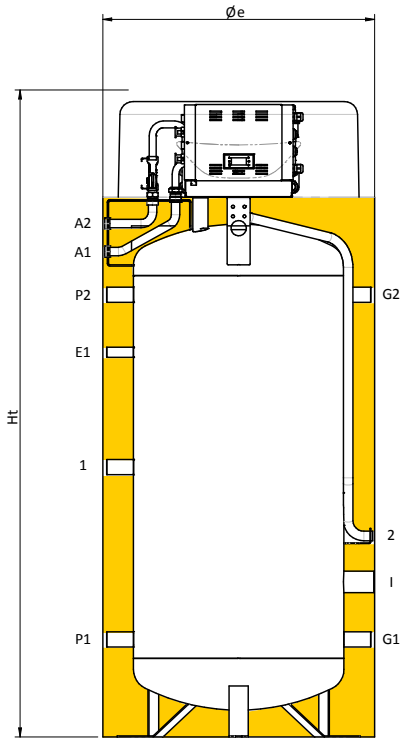
ΔT : temperature difference between the average temperatures in the primary circuit (coil) and secondary circuit (tank).

Pressure loss in integrative coils and characteristic graphic of solar circulator

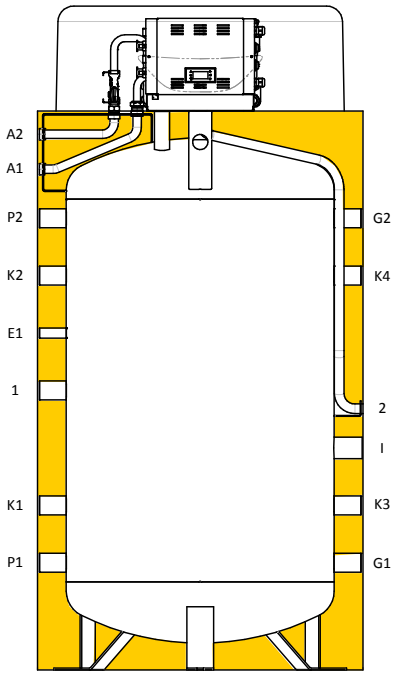


Dimensions Aquamatic

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

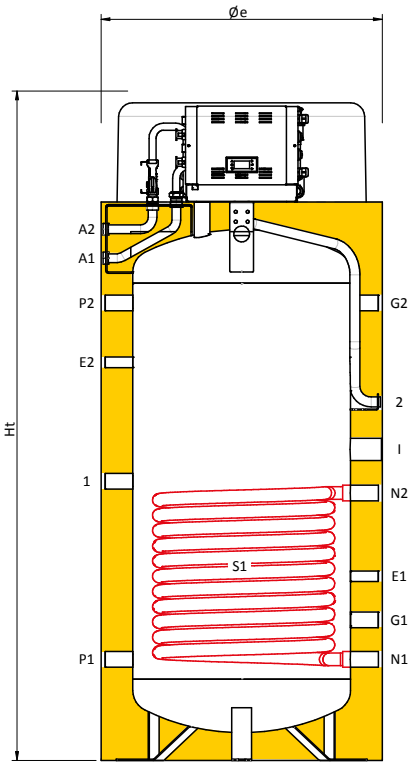
Cap. l	A1 inch	A2 inch	E1 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	P1 inch	P2 inch	1 inch	2
200	3/4"	3/4"	1/2"	1"	1"	1"1/2	-	-	-	-	1"	1"	1"	Case Ø20
300	3/4"	3/4"	1/2"	1"	1"	1"1/2	-	-	-	-	1"	1"	1"	Case Ø20
500	3/4"	3/4"	1/2"	1"1/4	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4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

Size chart

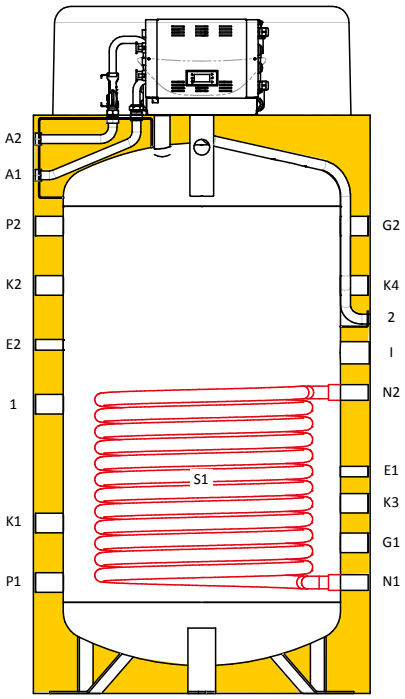
Cap. l	Øe mm	Ht mm	A1 mm	A2 mm	E1 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	P1 mm	P2 mm	1 mm	2 mm
200	710	1315	890	965	629	255	780	405	-	-	-	-	255	780	518	525
300	710	1690	1270	1340	1005	255	1155	405	-	-	-	-	255	1155	705	525
500	850	1740	1310	1400	880	280	1180	580	430	1030	430	1030	280	1180	730	683

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

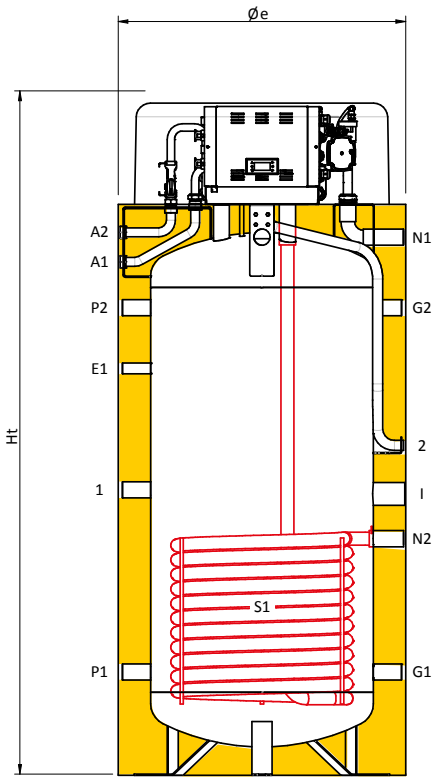
Cap. l	A1 inch	A2 inch	E1 inch	E2 inch	G1 inch	G2 inch	I inch	K1 inch	K2 inch	K3 inch	K4 inch	N1 inch	N2 inch	P1 inch	P2 inch	1 inch	2
300	3/4"	3/4"	1/2"	1/2"	1"	1"	1"1/2	-	-	-	-	1"	1"	1"	1"	1"	Case Ø20
500	3/4"	3/4"	1/2"	1/2"	1"1/4	1"1/4	1"1/2	1"1/4	1"1/4	1"1/4	1"1/4	1"	1"	1"1/4	1"1/4	1"1/4	Case Ø20

Size chart

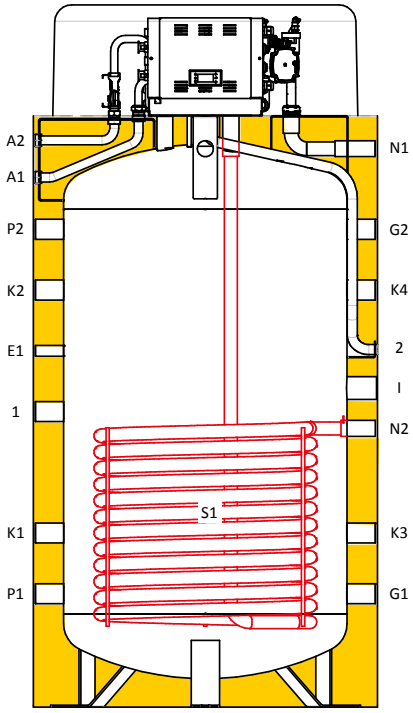
Cap. l	Øe mm	Ht mm	A1 mm	A2 mm	E1 mm	E2 mm	G1 mm	G2 mm	I mm	K1 mm	K2 mm	K3 mm	K4 mm	N1 mm	N2 mm	P1 mm	P2 mm	1 mm	2 mm	S1 m²
300	710	1690	1290	1345	465	1005	355	1155	785	-	-	-	-	255	675	255	1155	705	905	1,4
500	850	1740	1340	1395	560	880	380	1180	860	430	1030	480	1030	280	760	280	1180	730	945	1,9

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

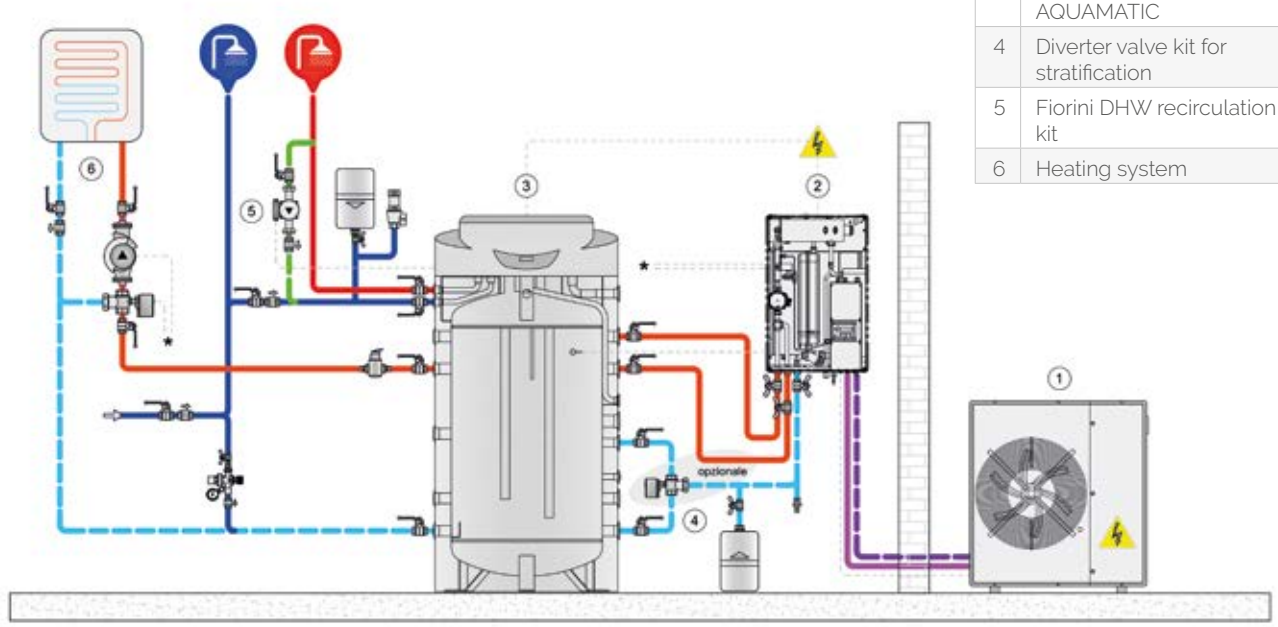
Size chart

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

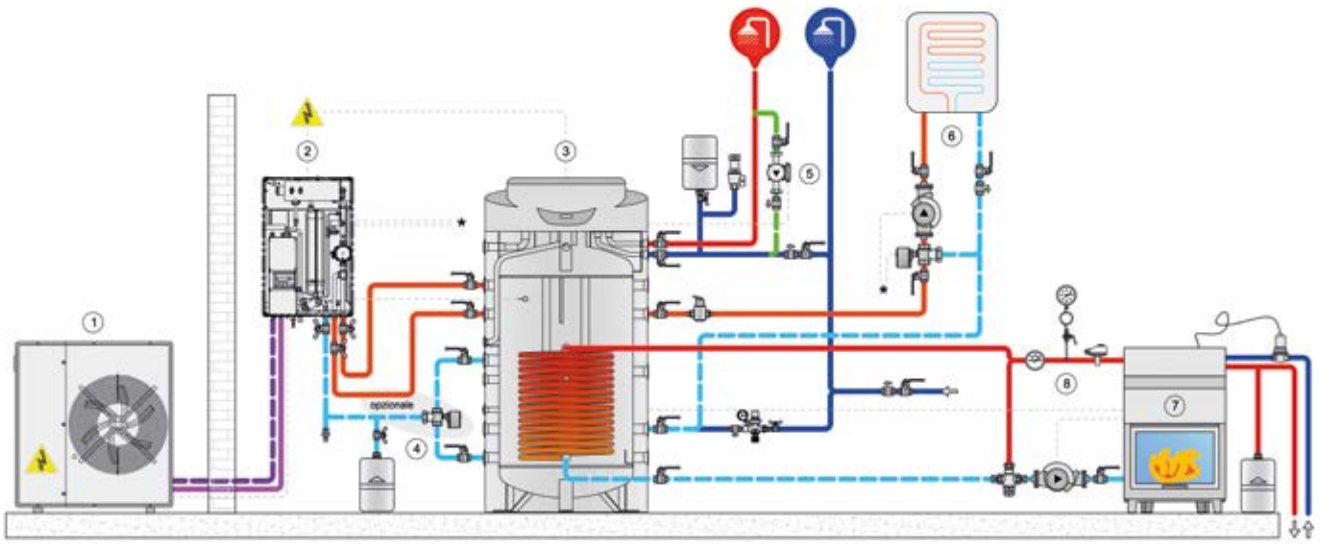


Installation chart AQUAMATIC Plus Example 1 (Heating fireplace / stove)

Legend

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

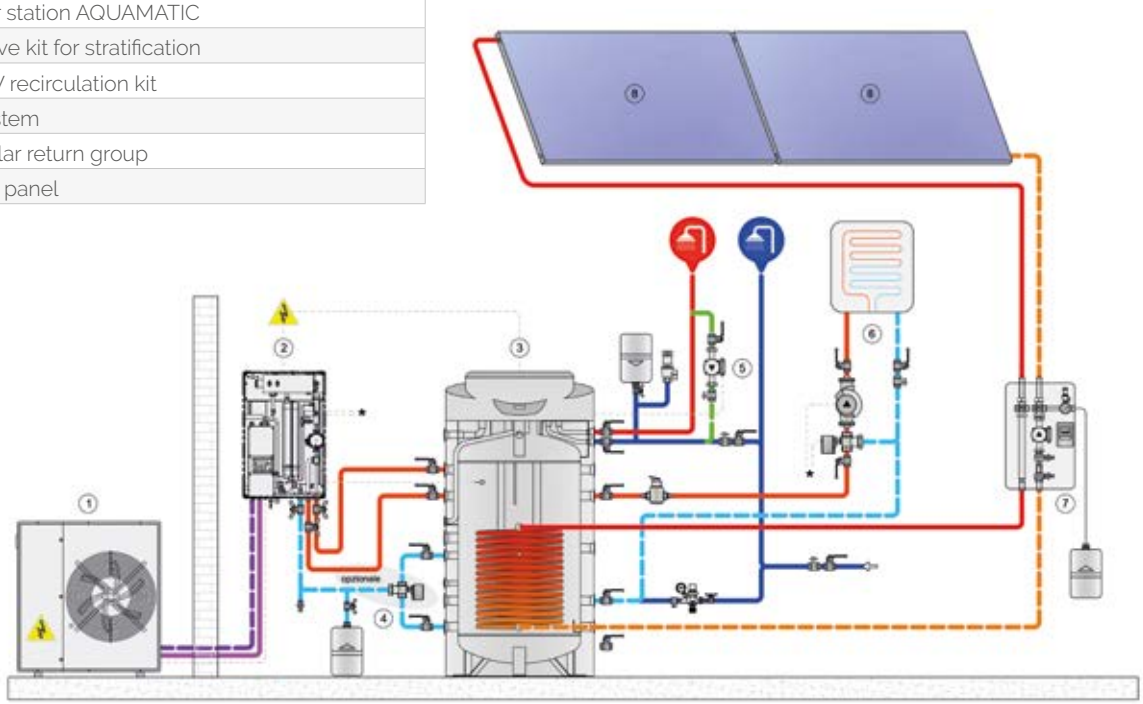
5	Fiorini DHW recirculation kit
6	Heating system
7	Heating fireplace / stove
8	Plant components for biomass generators



Installation chart AQUAMATIC Plus Example 2 (Thermal solar)

Legend

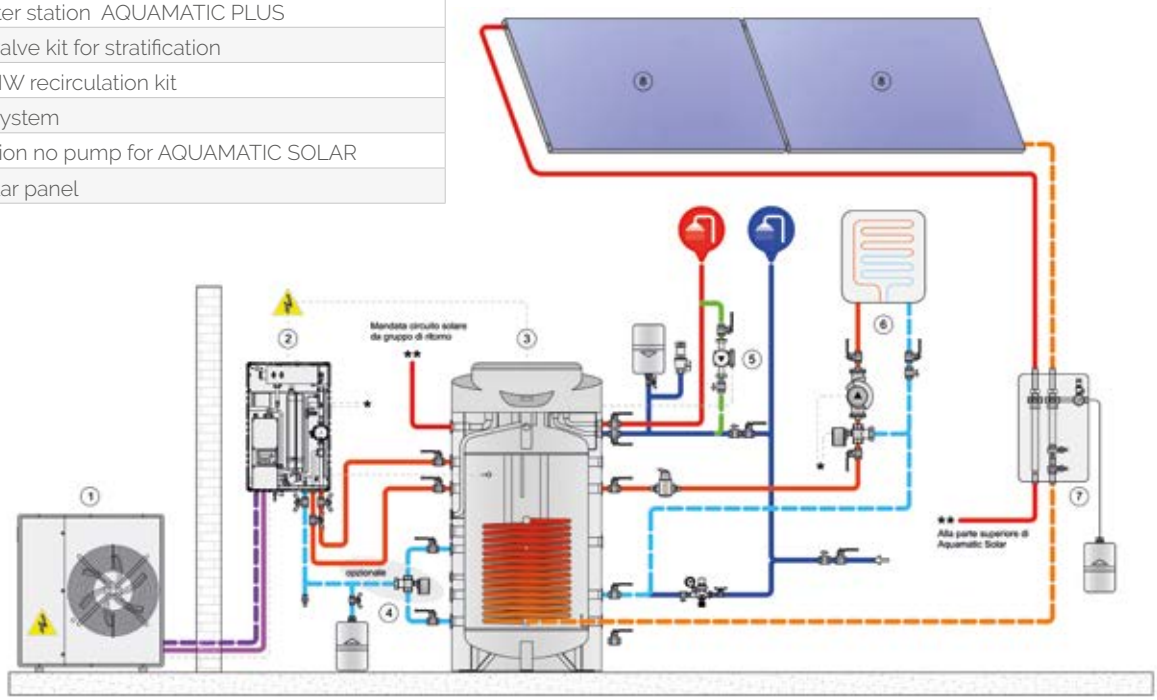
1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC
4	Diverter valve kit for stratification
5	Fiorini DHW recirculation kit
6	Heating system
7	Thermal solar return group
8	Fiorini solar panel



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

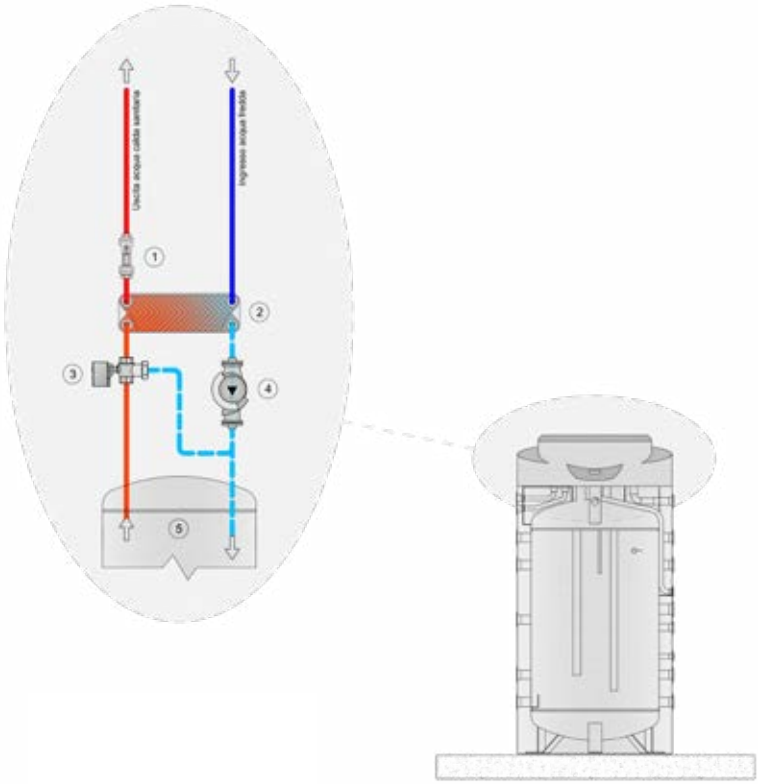
NB The AQUAMATIC has a small channel through the insulation of the tank in order to pass the cable for connecting the resistor to the electronic switchboard.

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

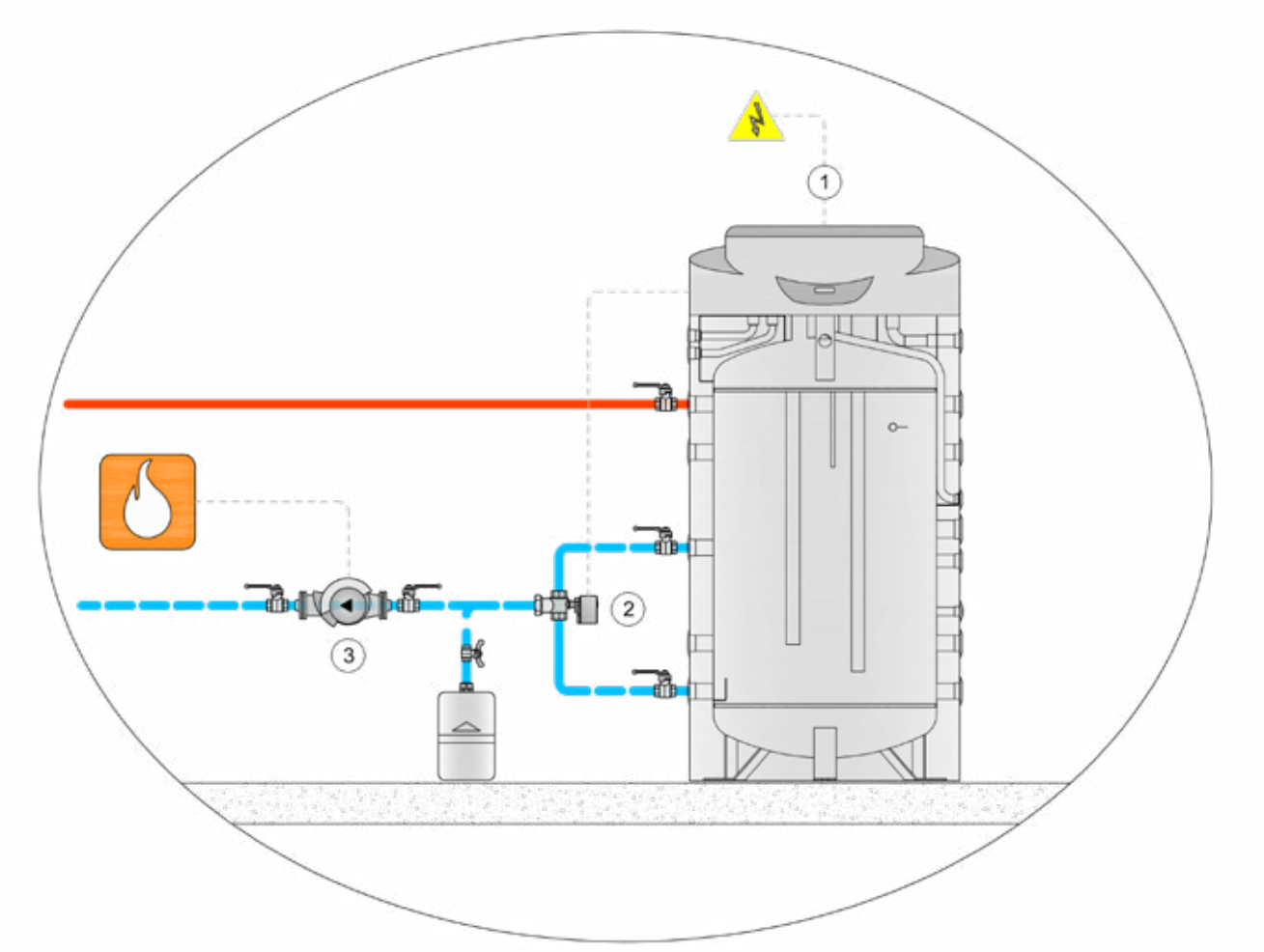
1	Flowmeter
2	Domestic plate heat exchanger
3	Primary mixing valve
4	Pump
5	Tank

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.



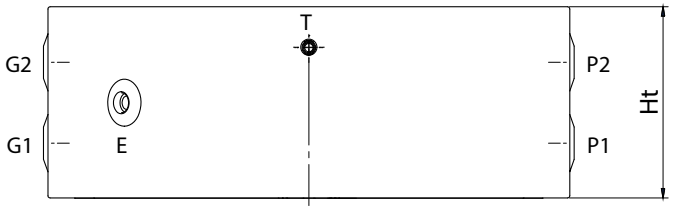
TESTED

✔ 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



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

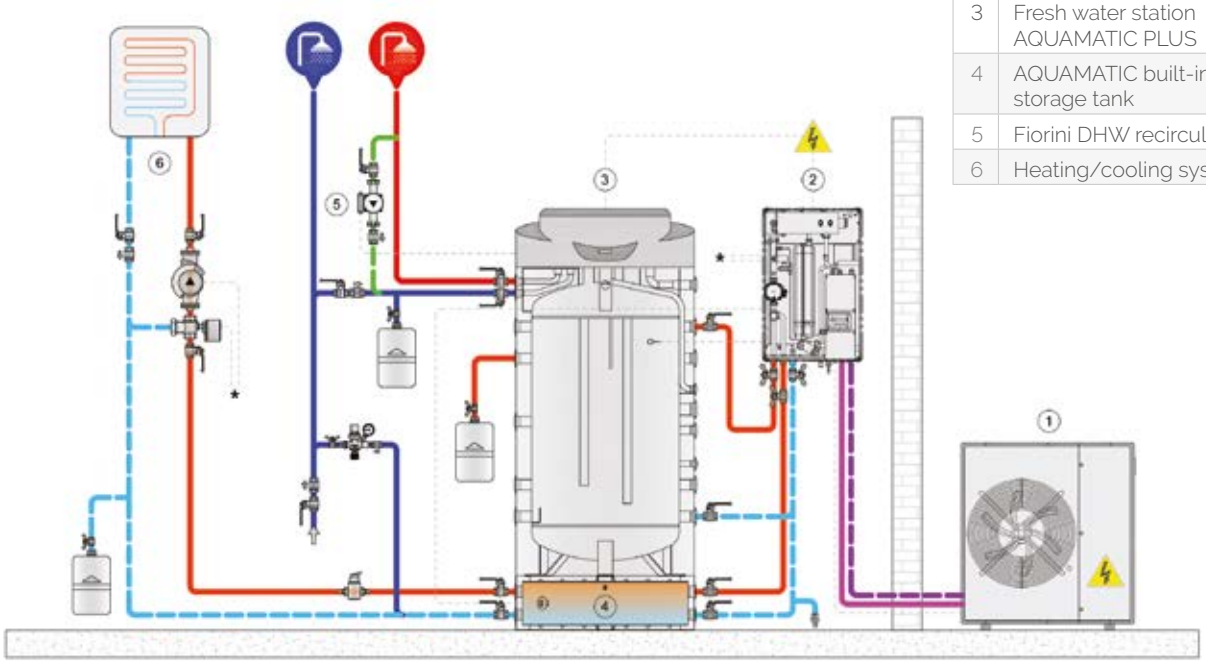
Cod.	cap. l	pairing AQUAMATIC	Øe mm	Ht mm	P1 mm	P2 mm	G1 mm	G2 mm	E mm	T mm	P1 inch	P2 inch	E inch	G1 inch	G2 inch	T inch
817010158X	66	200 l - 300 l	710	260	75	185	75	185	130	205	1"	1"	1/2"	1"	1"	1/4"
817010159X	93	500 l	850	260	75	185	75	185	130	205	1"1/4	1"1/4	1/2"	1"1/4	1"1/4	1"1/4

Installation chart accessory

Accessory Storage with AQUAMATIC (1 source)

Legend

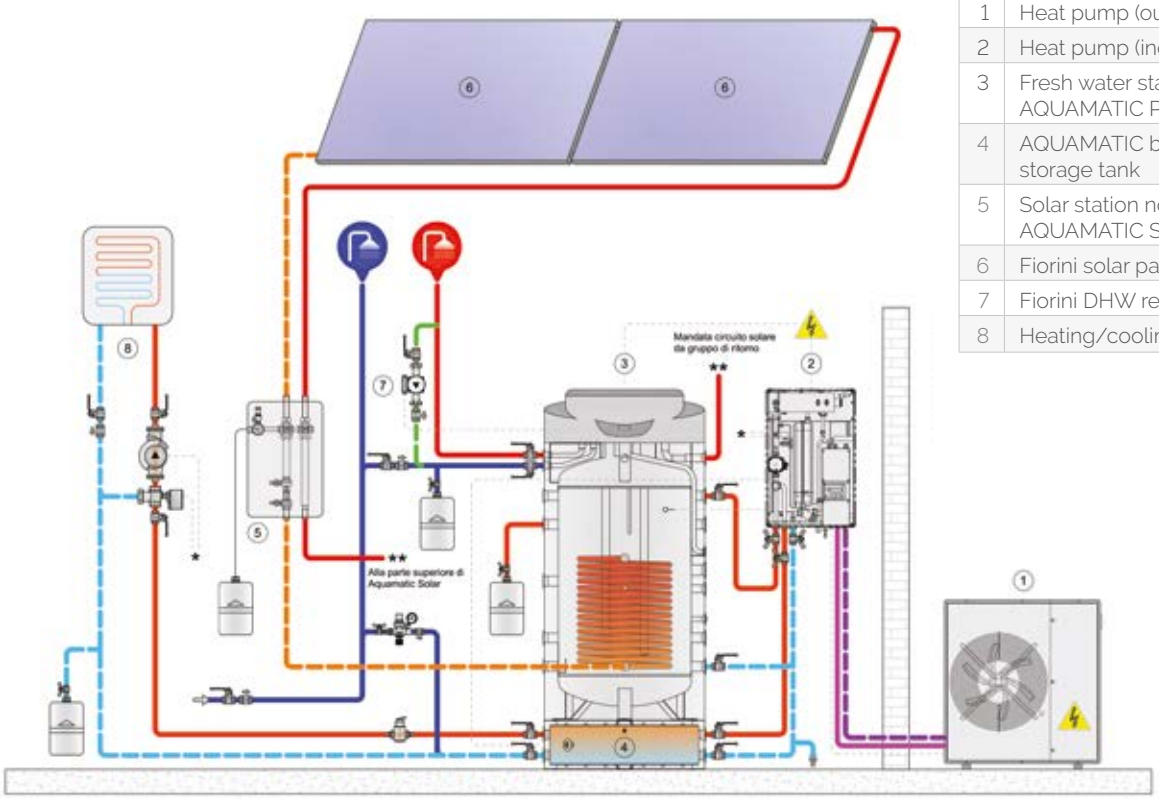
1	Heat pump (outdoor unit)
2	Heat pump (indoor unit)
3	Fresh water station AQUAMATIC PLUS
4	AQUAMATIC built-in-storage tank
5	Fiorini DHW recirculation kit
6	Heating/cooling system



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



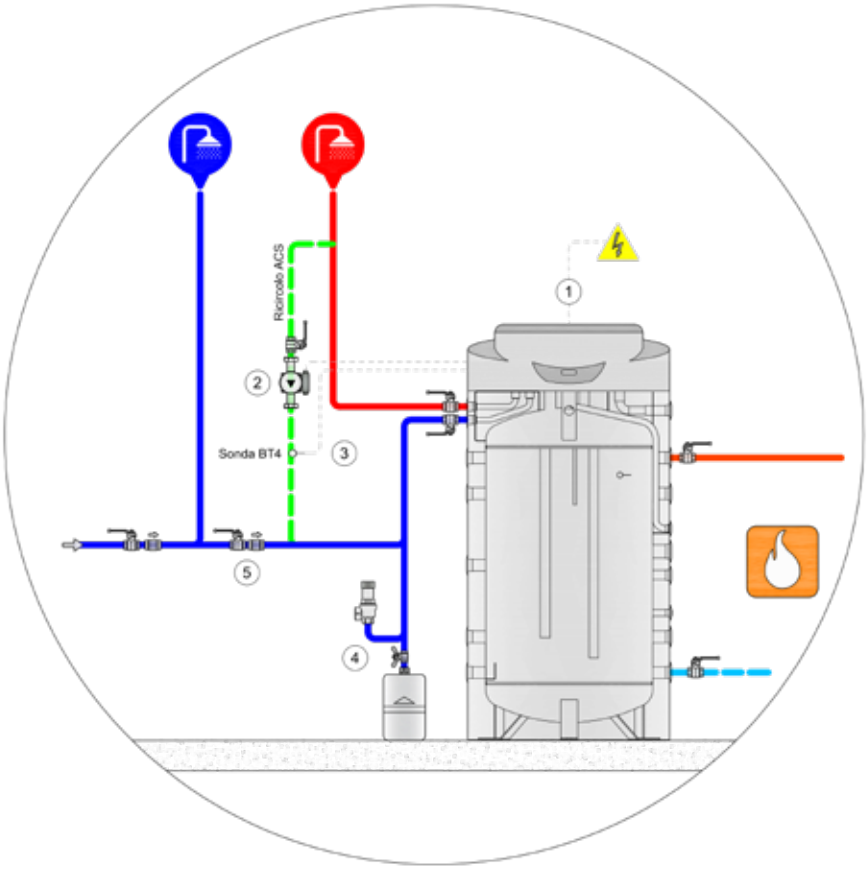
Recirculation kit

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

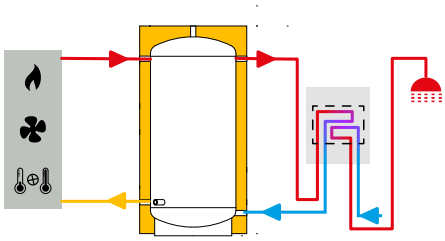
The main features are outlined below:

- ✔ 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

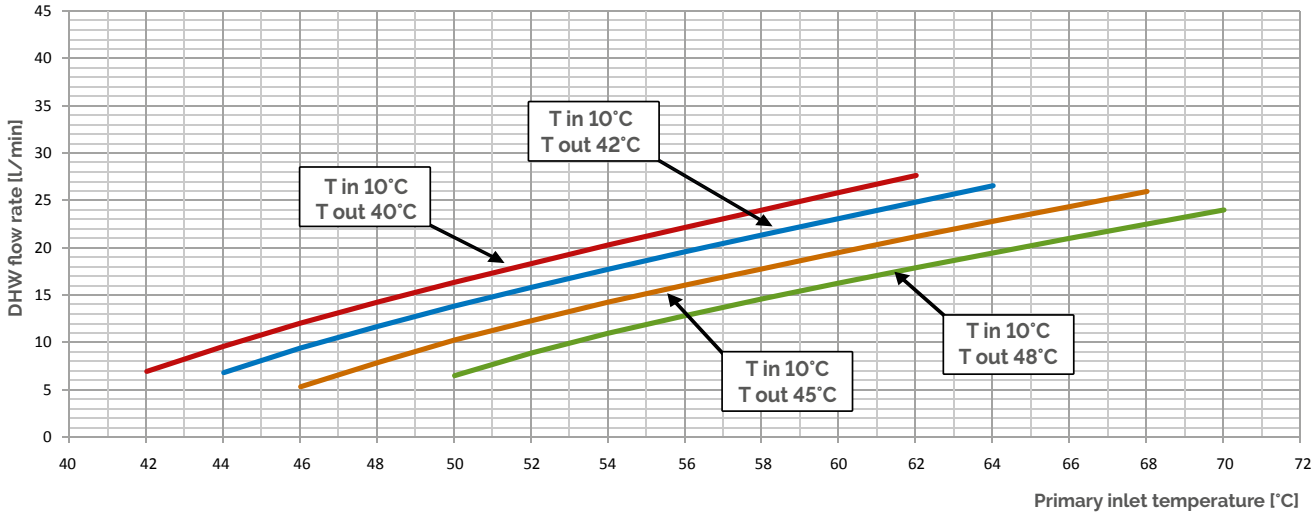
				With packaging	
Model	DHW nominal flow	Code	Price	Dimensions cm	Weight kg
T-SET 20	(20 l/min. DHW)	842030152X		63x40x21	19
T-SET 30	(30 l/min. DHW)	842030153X		63x40x21	20



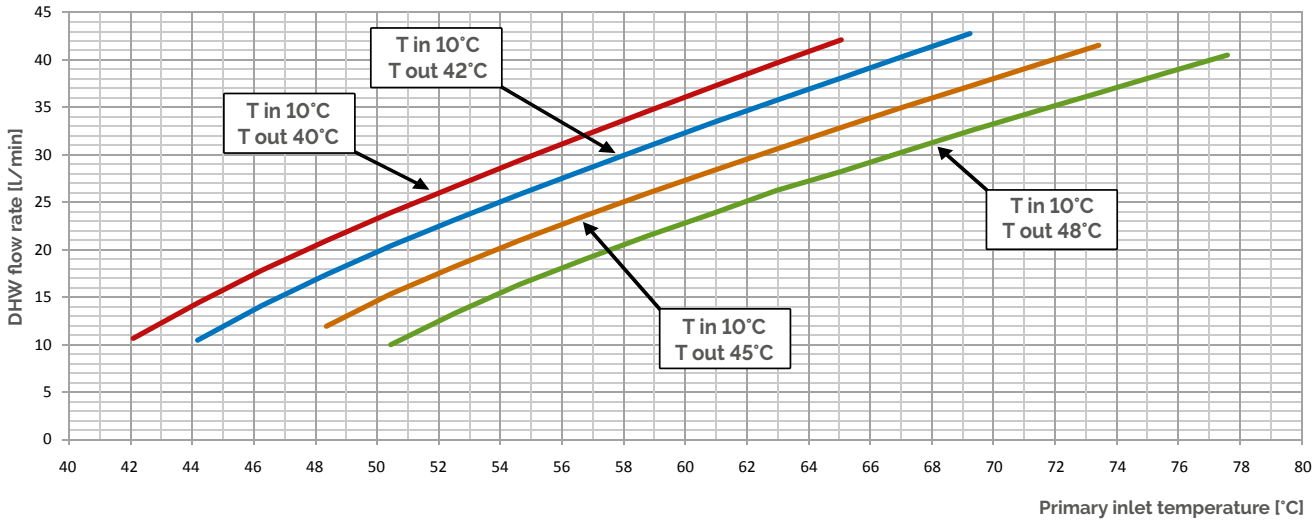
T-SET

Thermal performances

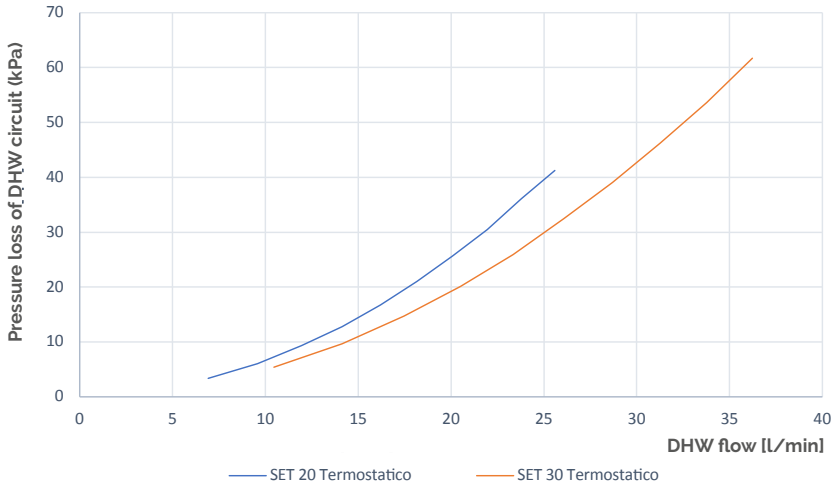
Thermal performance T-SET 20



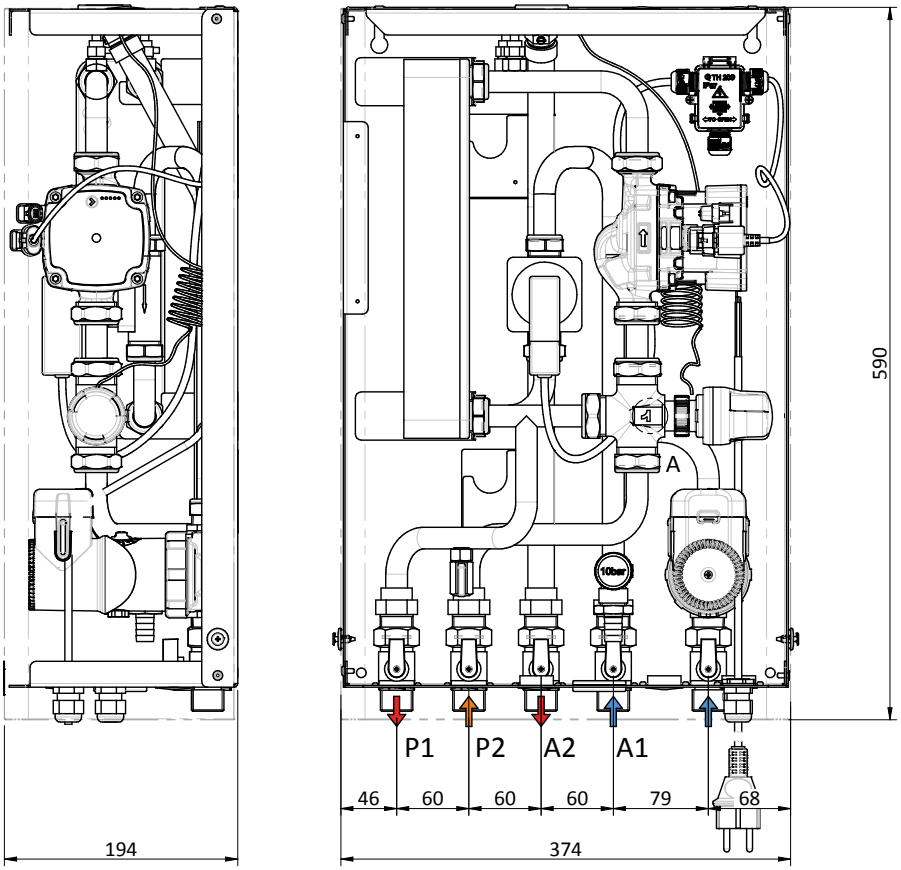
Thermal performance T-SET 30



Hydraulic performances



T-SET
Dimensions



Key

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

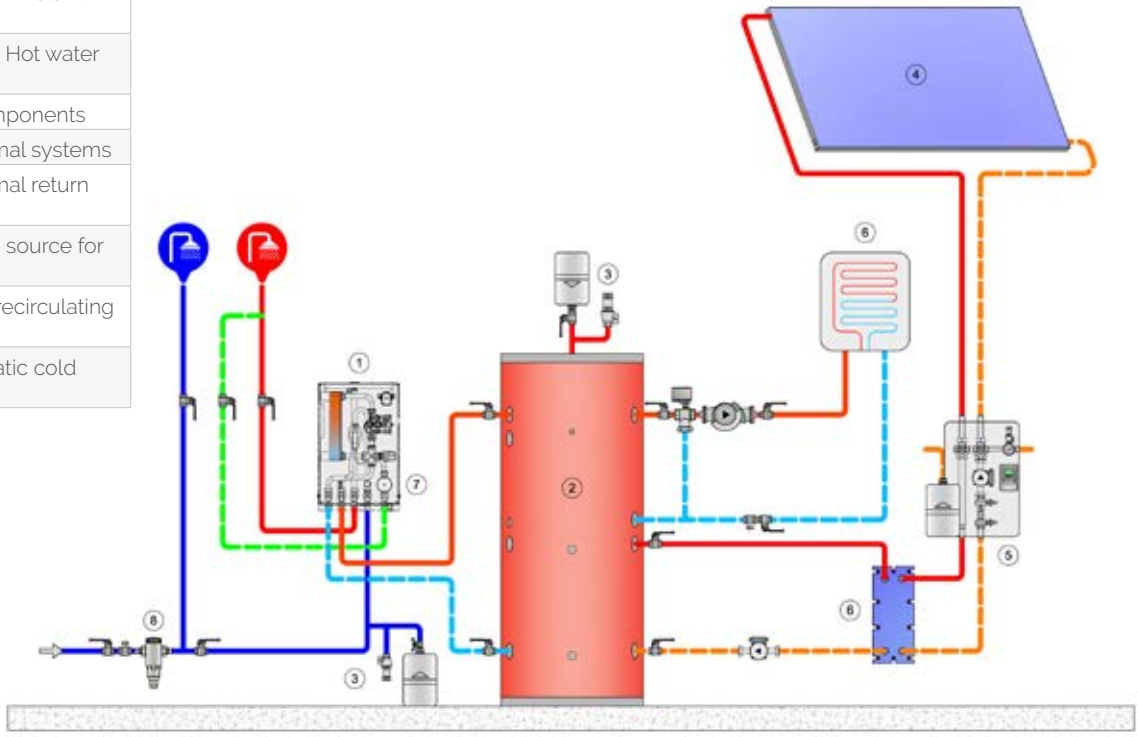
Technical Data Table

		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).



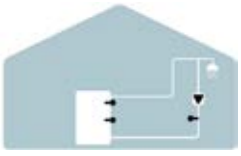
(2) Control unit for recirculation kit

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

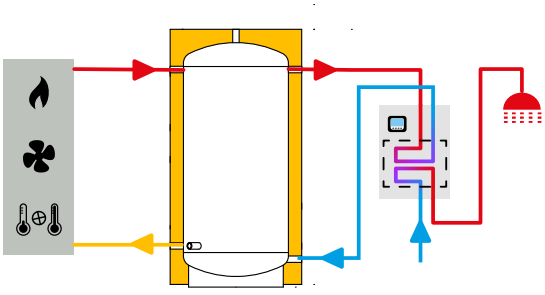
SET 20, 30, 40



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



SET 80



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



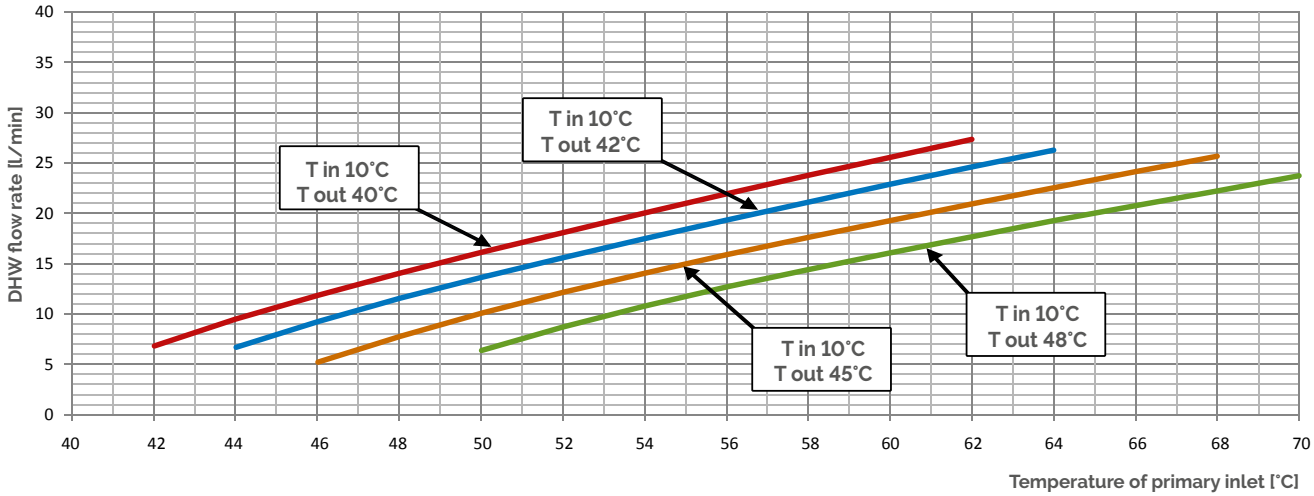
Specific features of SET 80

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.

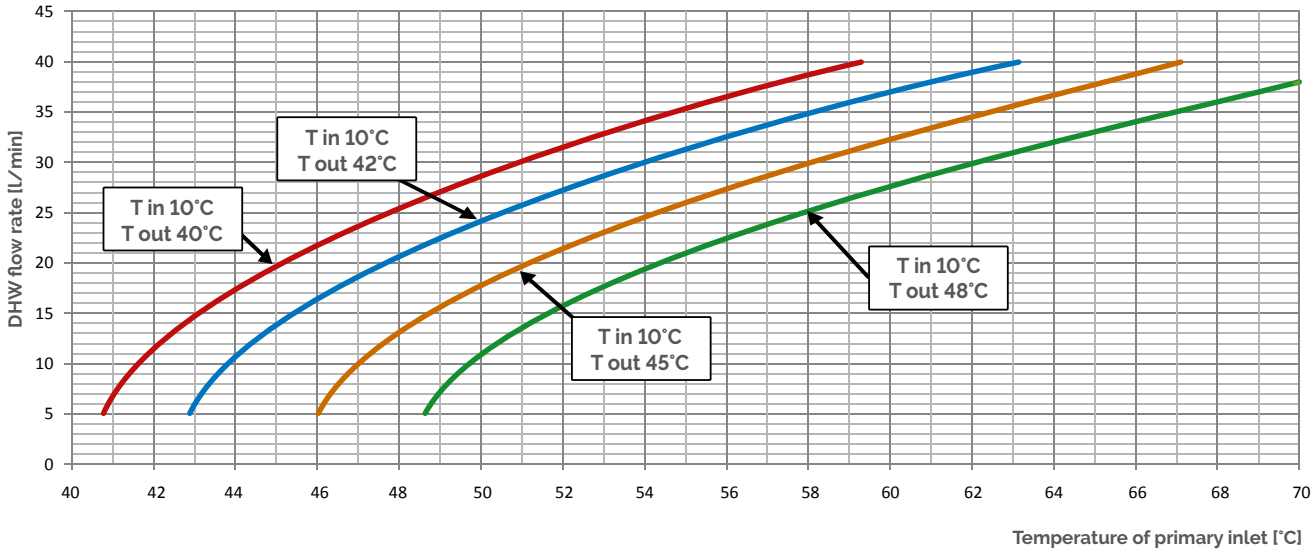


SET
Thermal performance

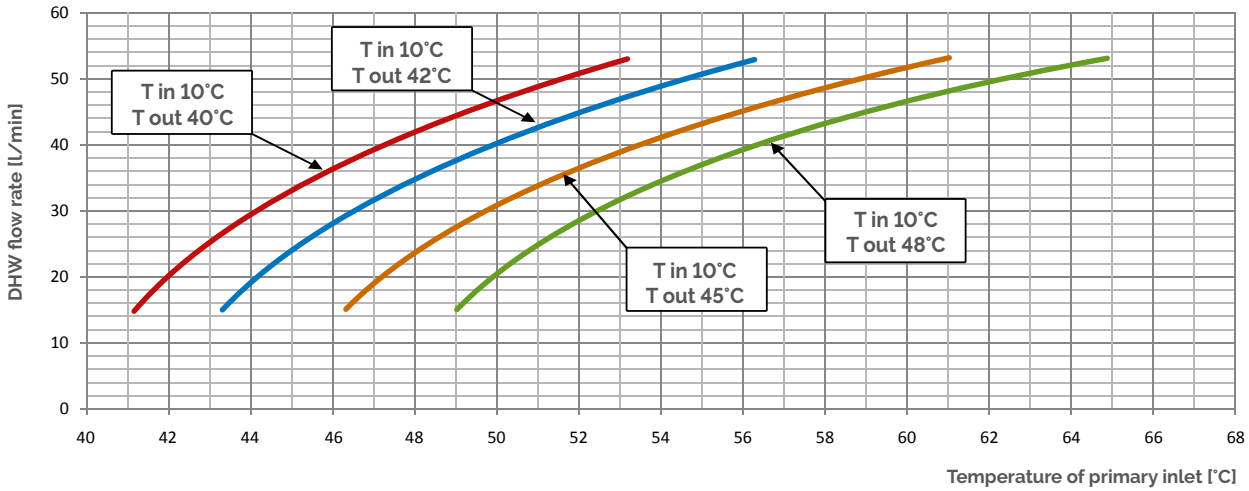
Thermal performance SET 20



Thermal performance SET 30

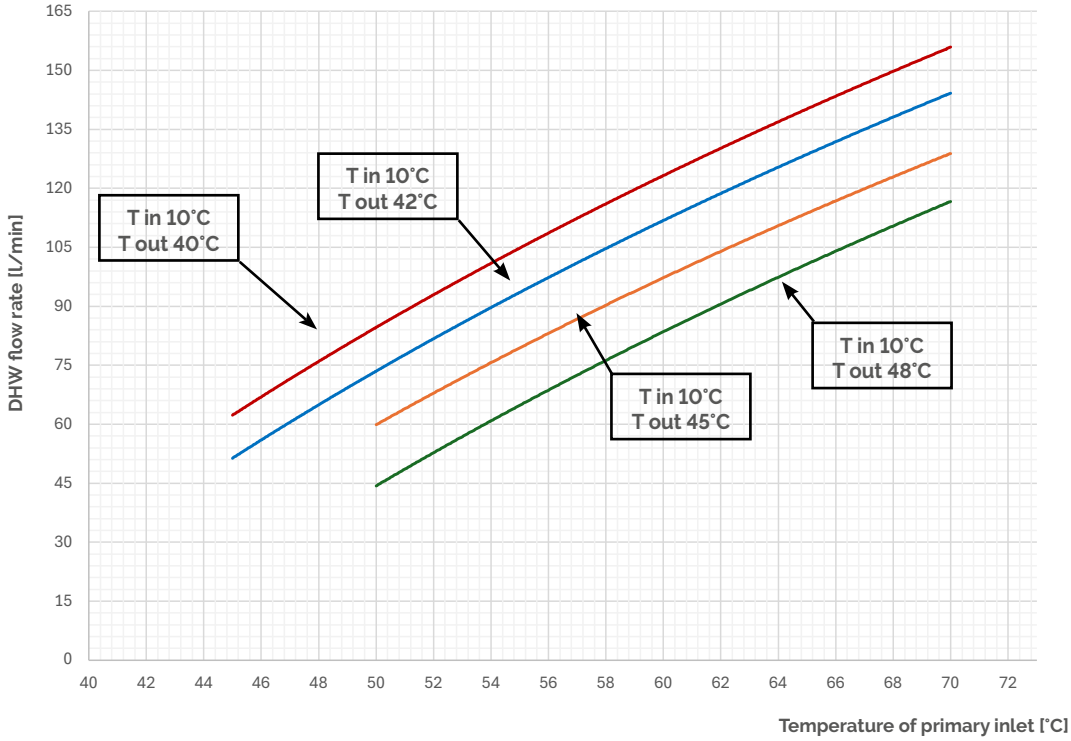


Thermal performance SET 40

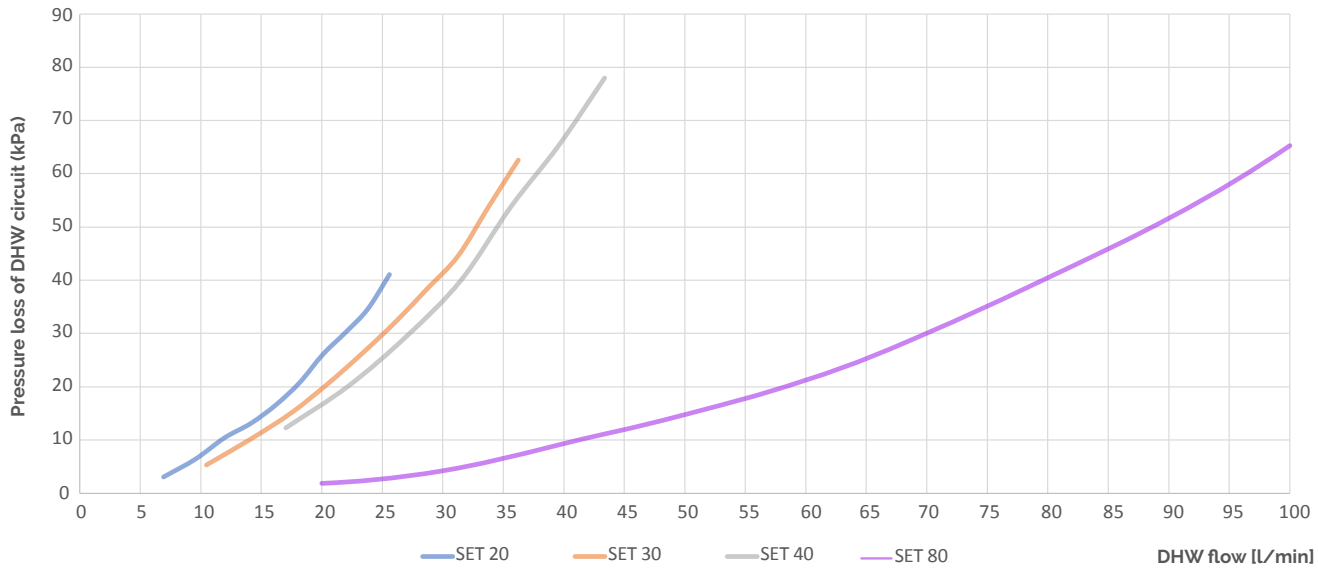


SET
Thermal performance

Thermal performance SET 80

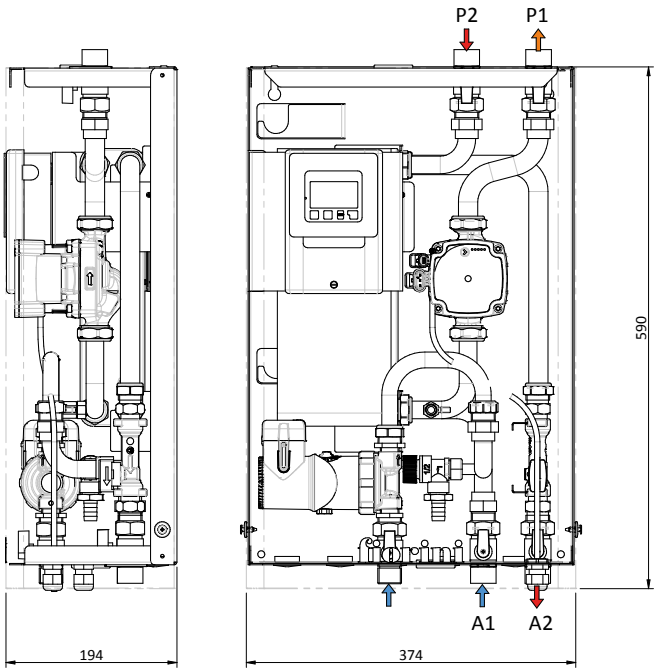


SET
Hydraulic performance



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

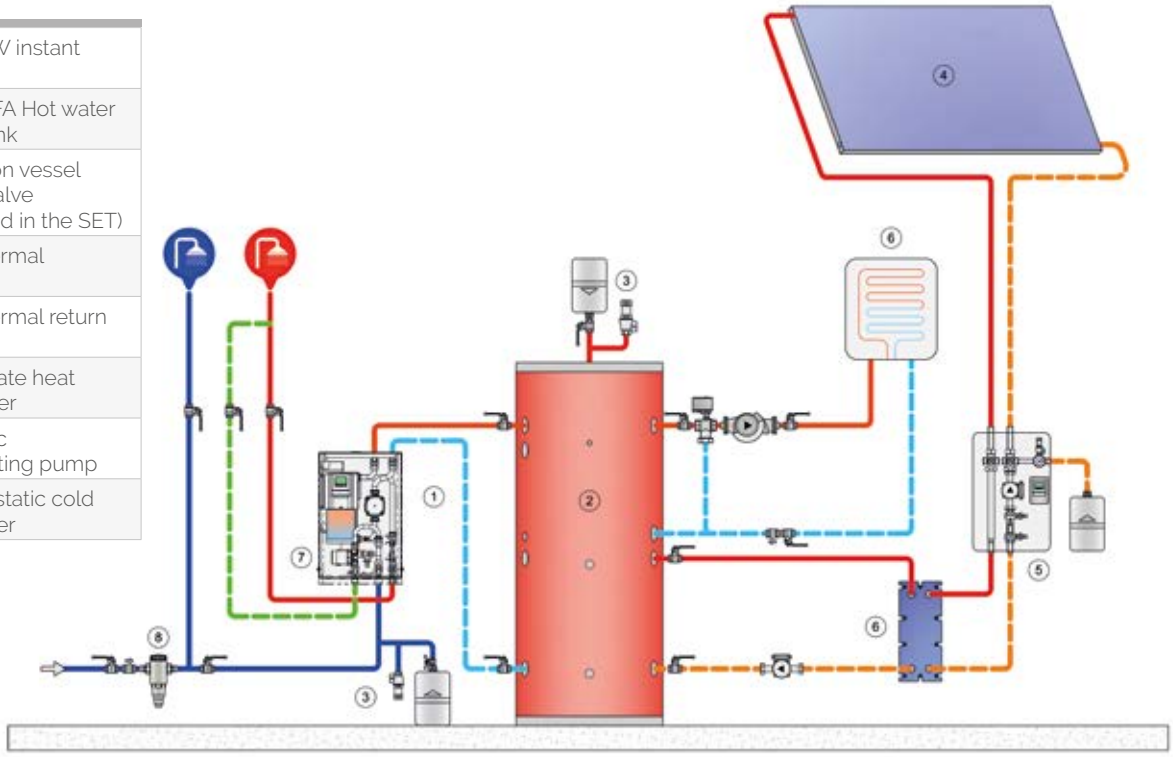
Technical Data Table

		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:

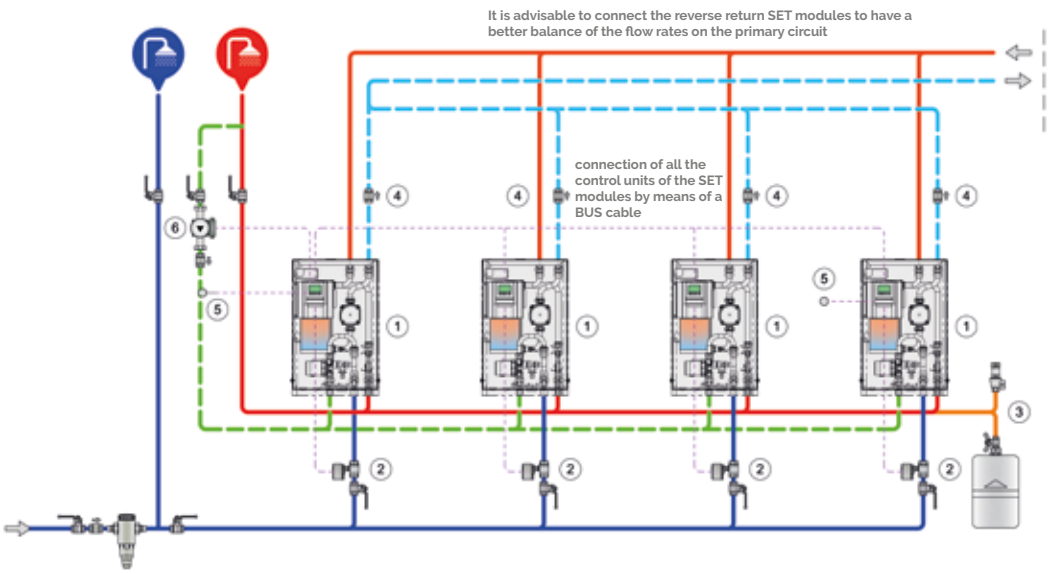
- ✔ Wide DHW production range: from 2 to 360 l/min
- ✔ Maximum reliability. Thanks to the self-diagnosis performed by the control unit, if a DHW heater malfunctions, it is automatically switched off and another one is started. Continuity in the production of DHW is thus guaranteed
- ✔ Even more precise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

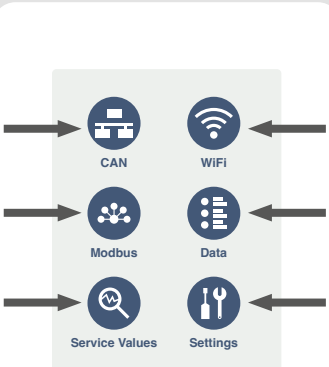


Main menu

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.

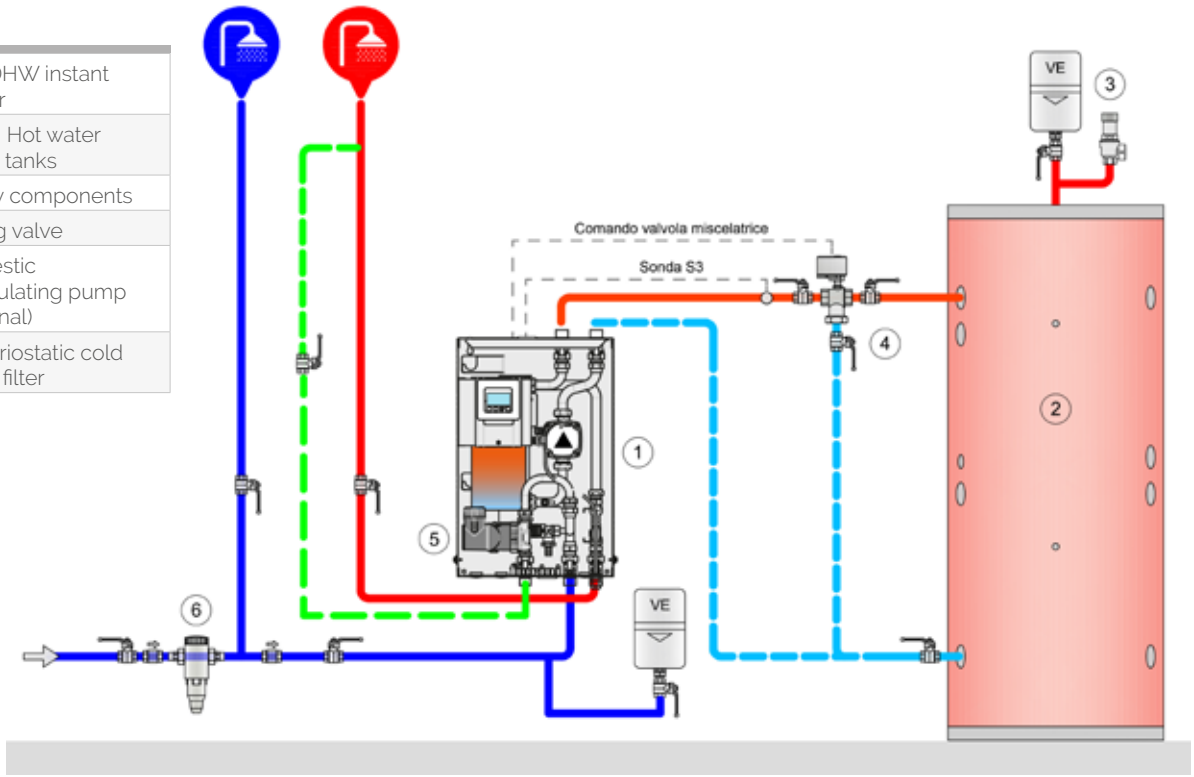
N.B.: If several SETs are installed in cascade to manage the inlet temperature of the primary, a mixing kit must be provided for each SET installed.

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.

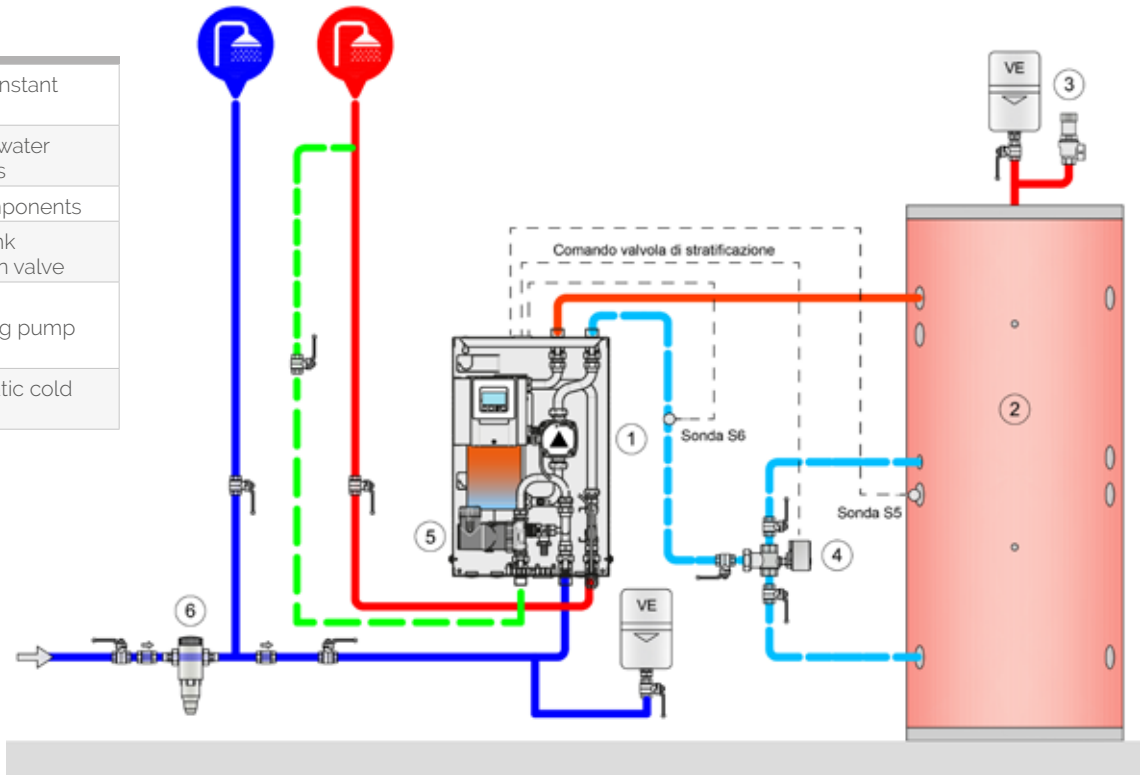
Kit supplied

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.

WRAS APPROVED MATERIAL

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



TESTED

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

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

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

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

Plus

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

Available accessories see pag. 270

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

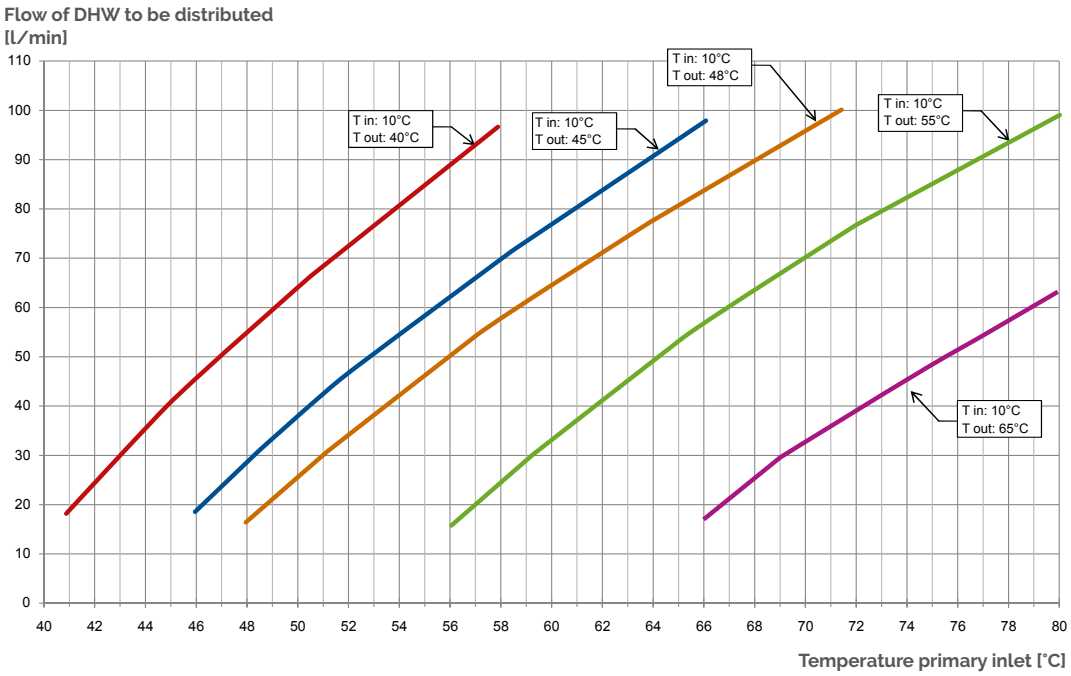
Functions of the regulator

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

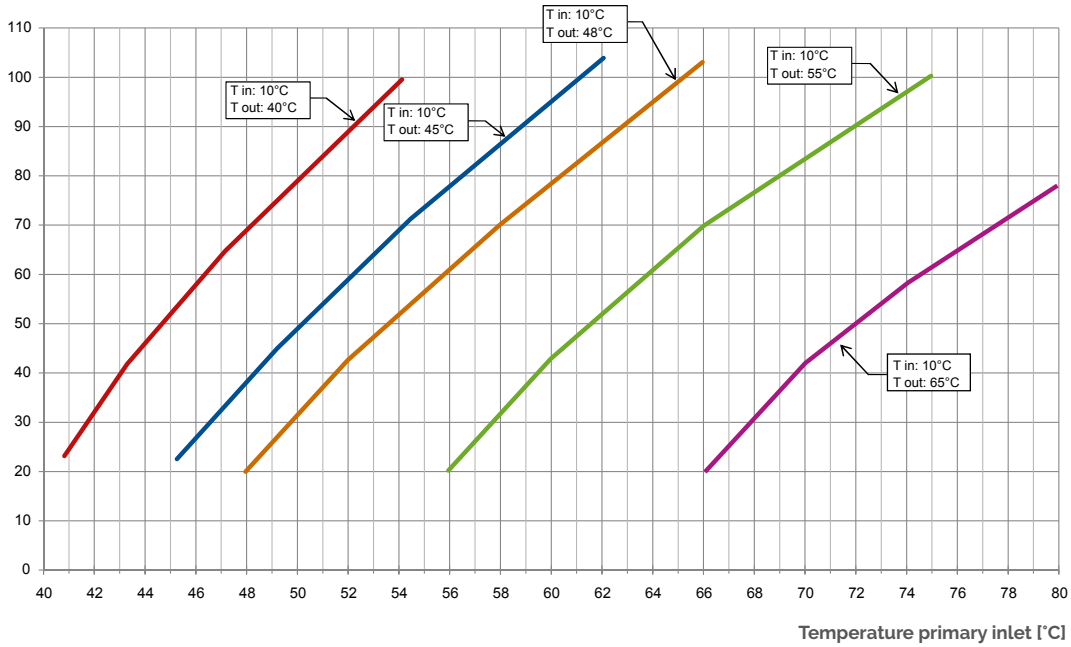
Efficient, electronic regulation of the velocity of the pump
Graphical display
Imposing the temperature of the DHW
Imposing the max temperature of the DHW. This is a safety option which stops the unit in case the max value is reached.
Management kit in series
Management kit Mixing valve on the primary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

Floor standing SET thermal performance

SET 60 performance

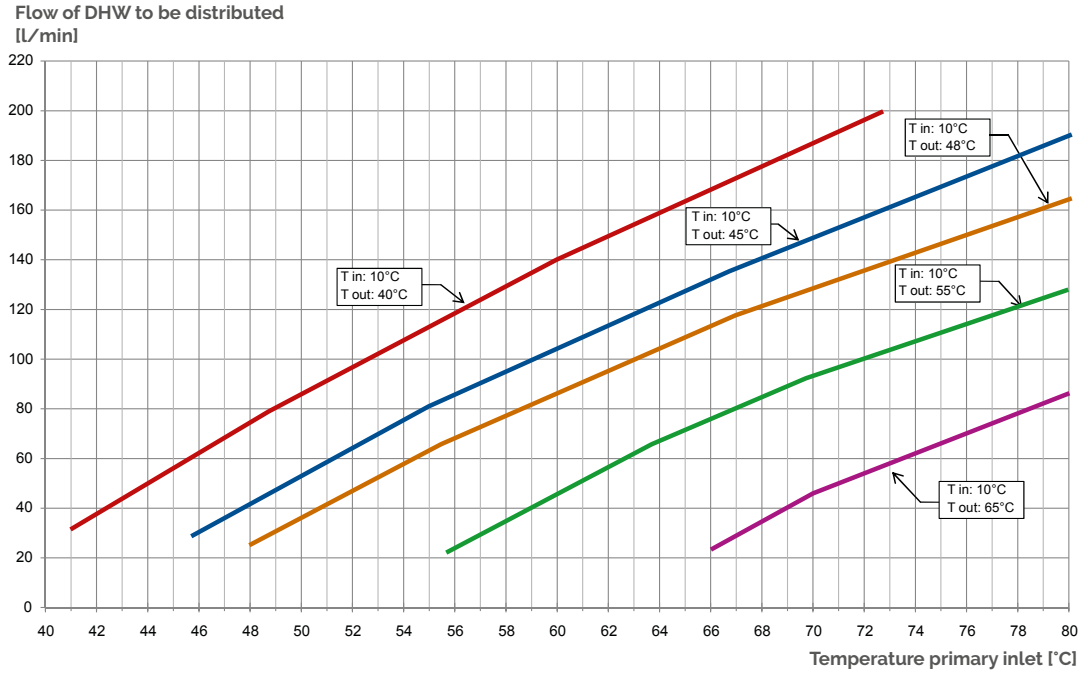


SET 70 performance

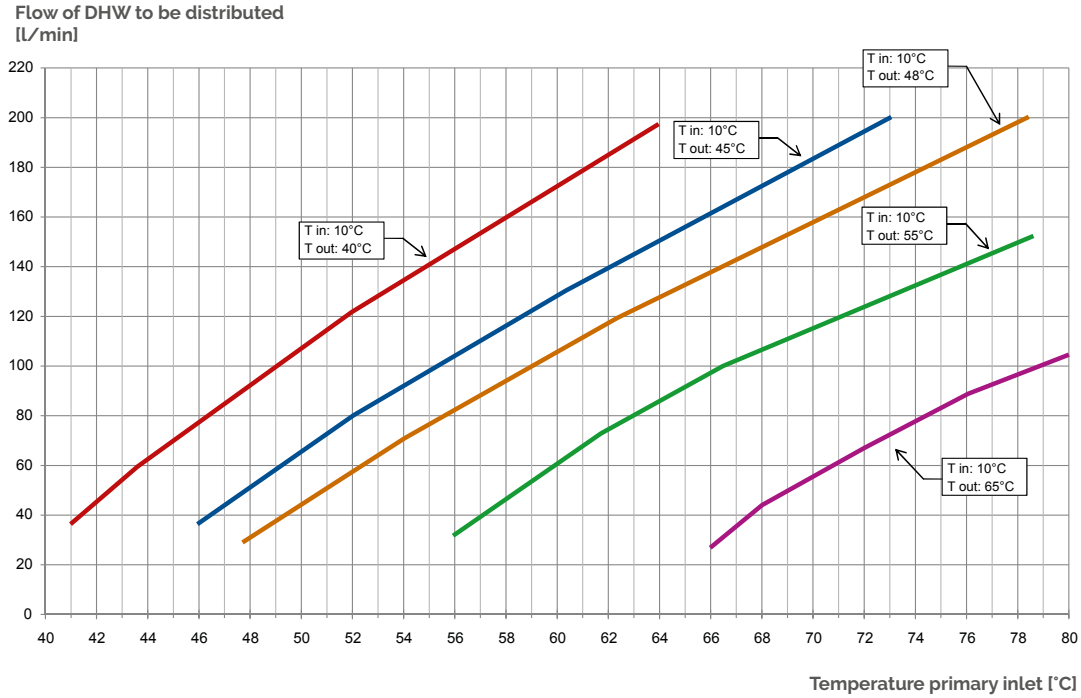


Floor standing SET thermal performance

SET 80 performance

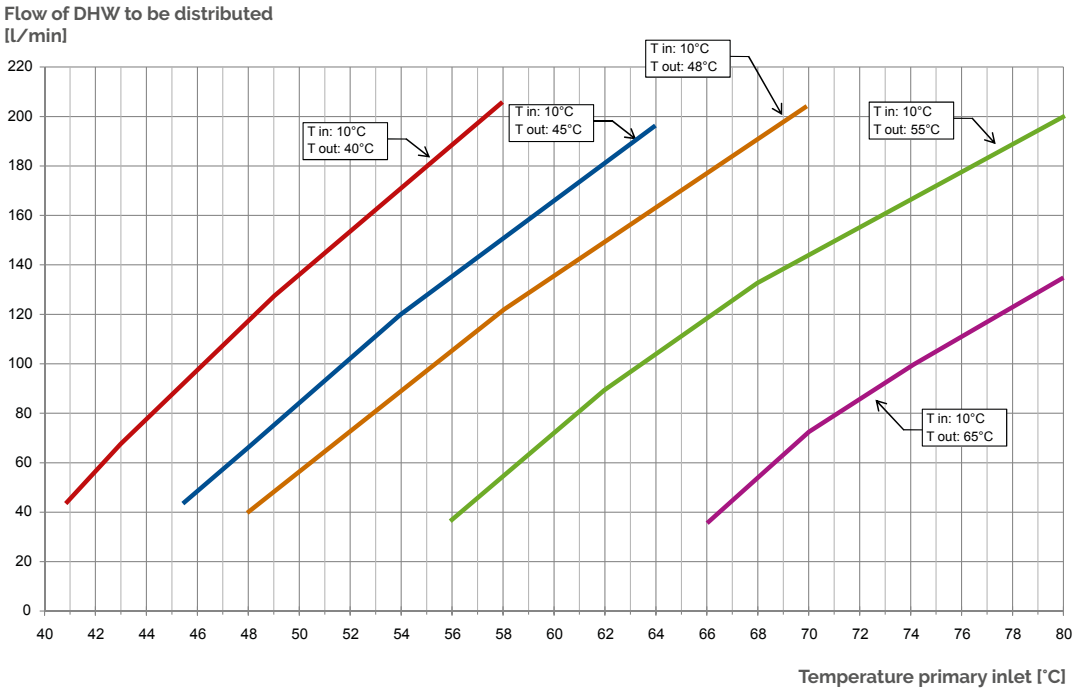


SET 100 performance

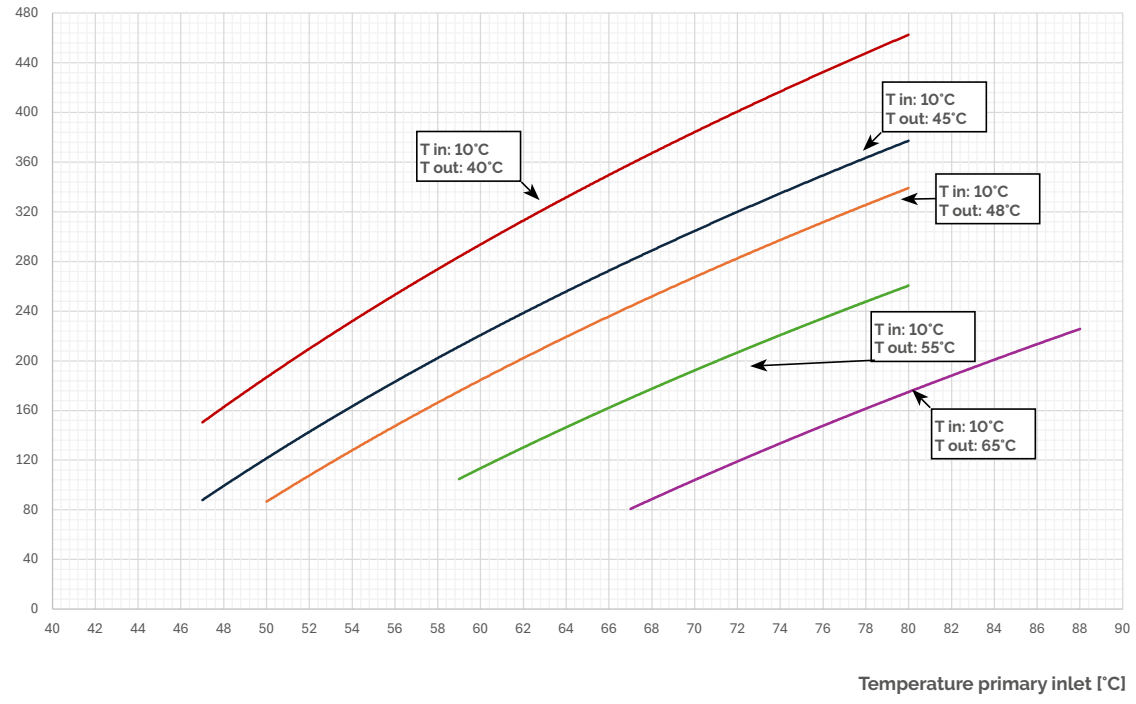


Floor standing SET thermal performance

SET 120 performance

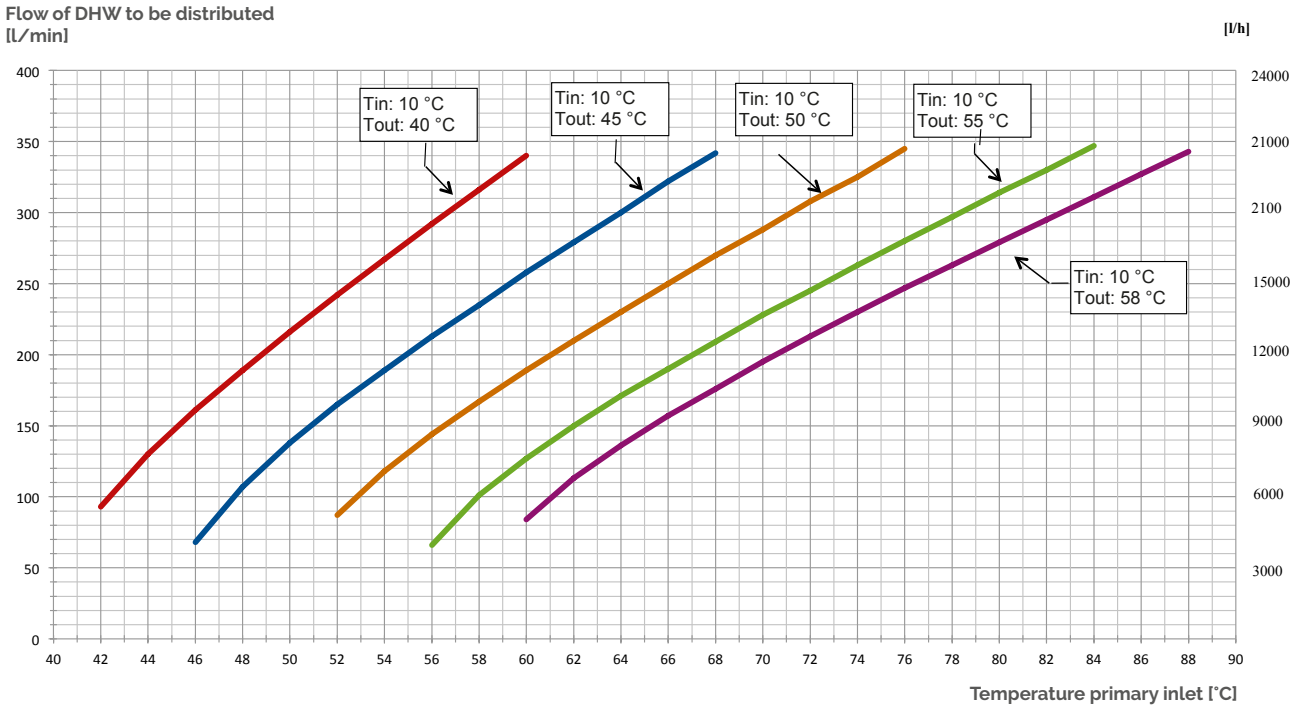


SET 160 performance

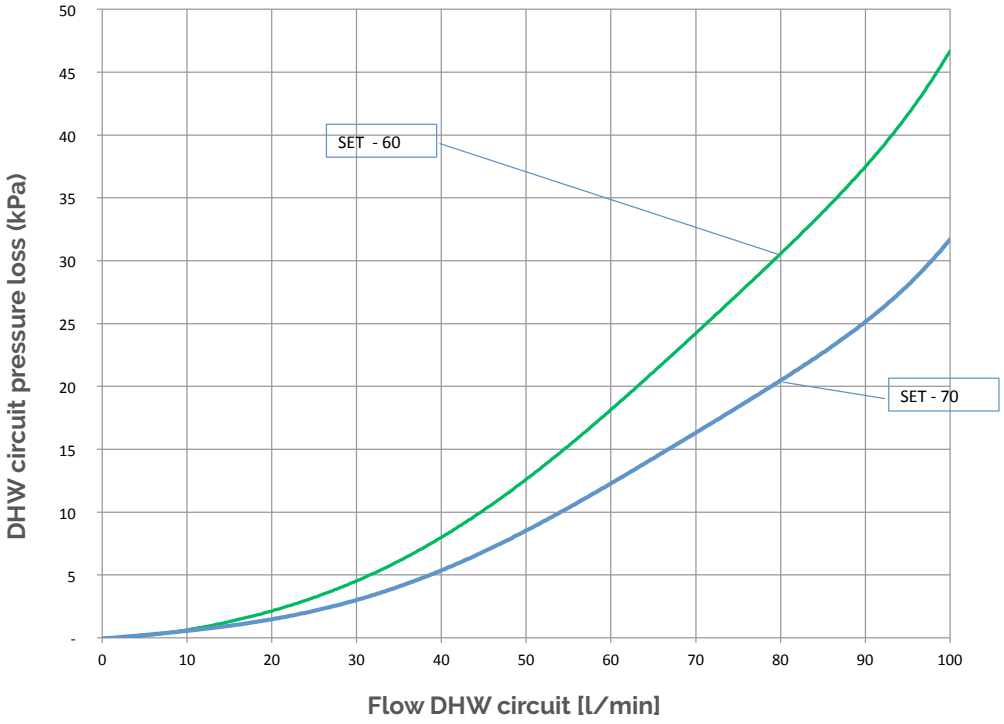


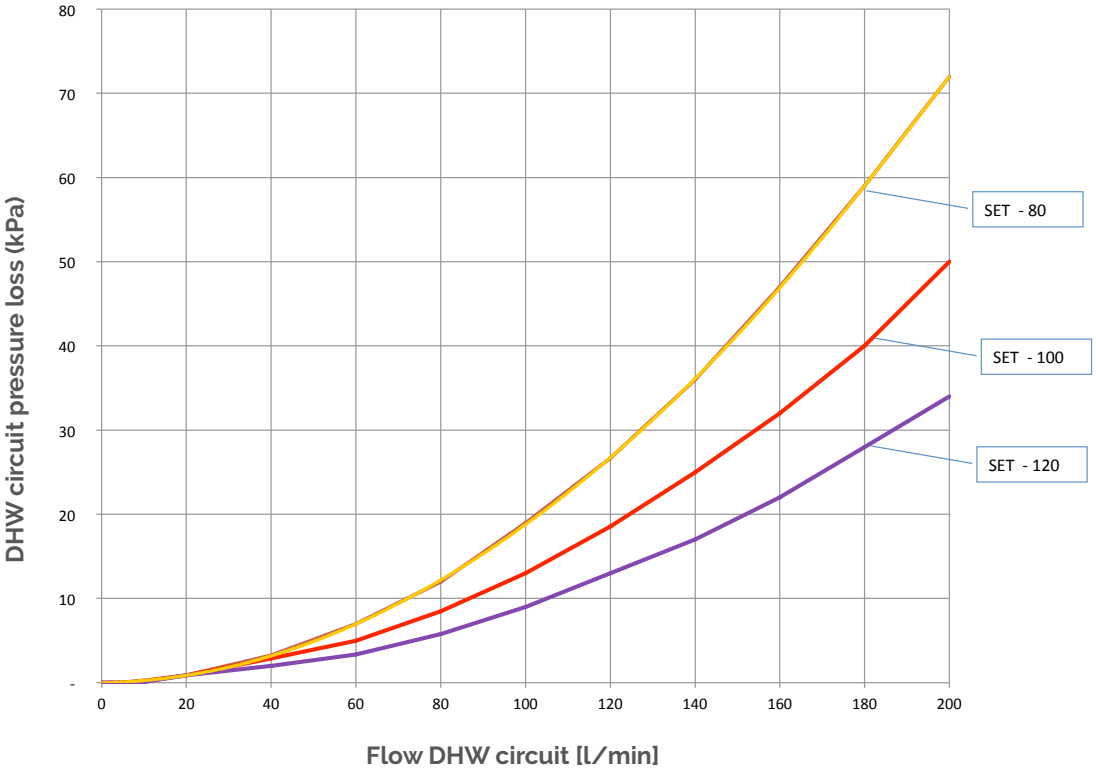
Floor standing SET thermal performance

SET 200 performance

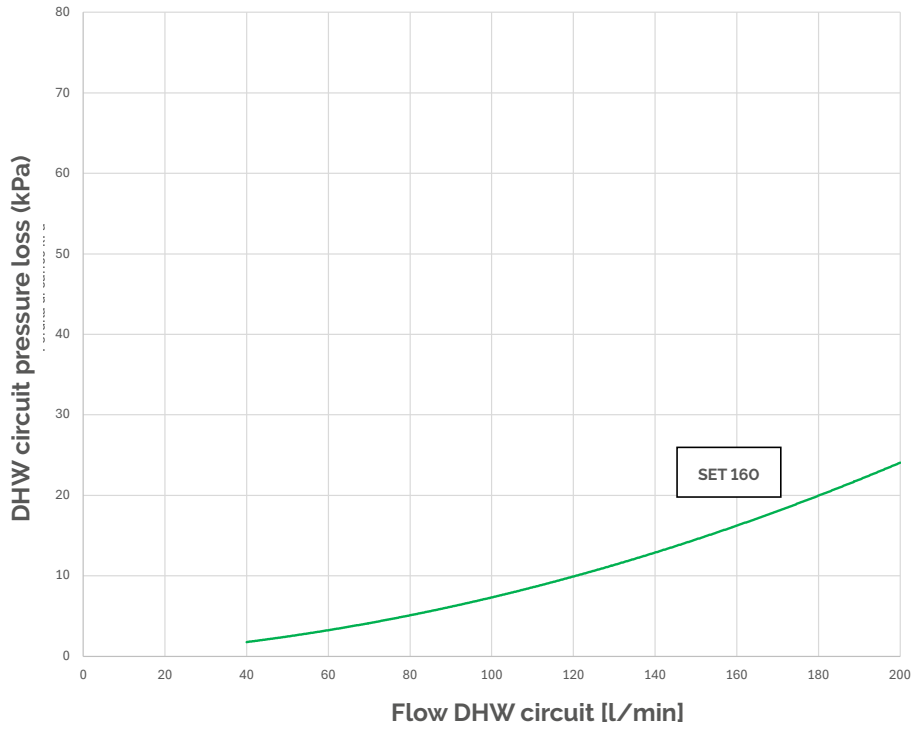


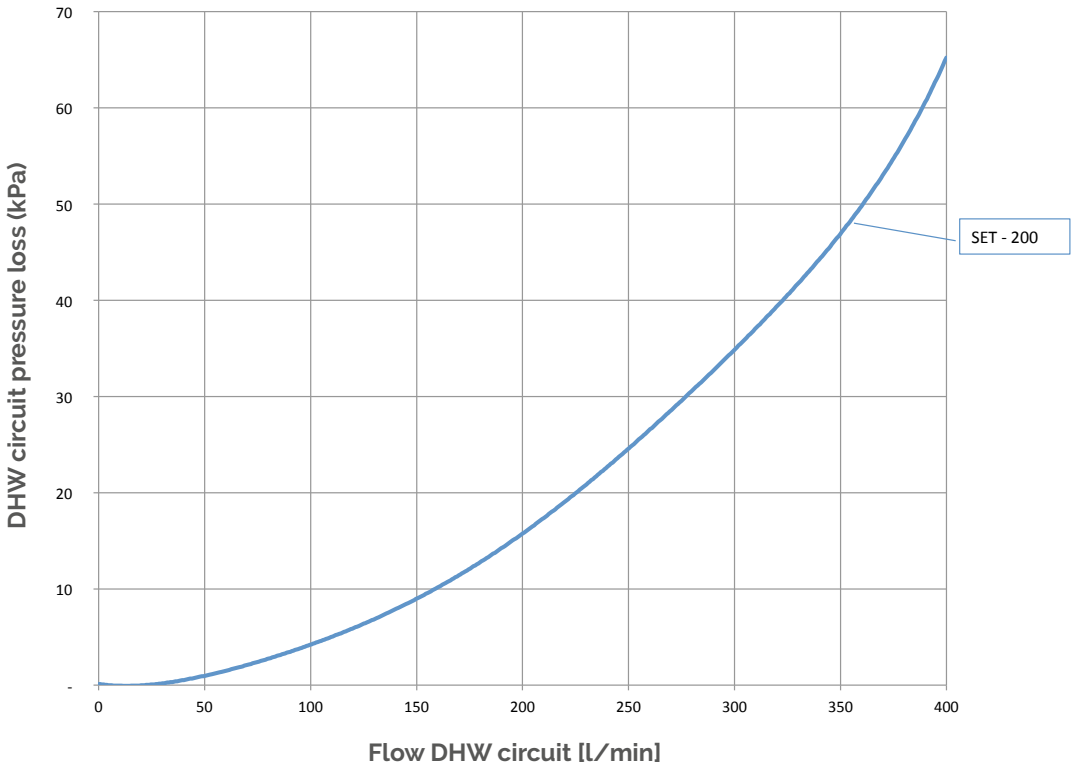
Hydraulic performance SET



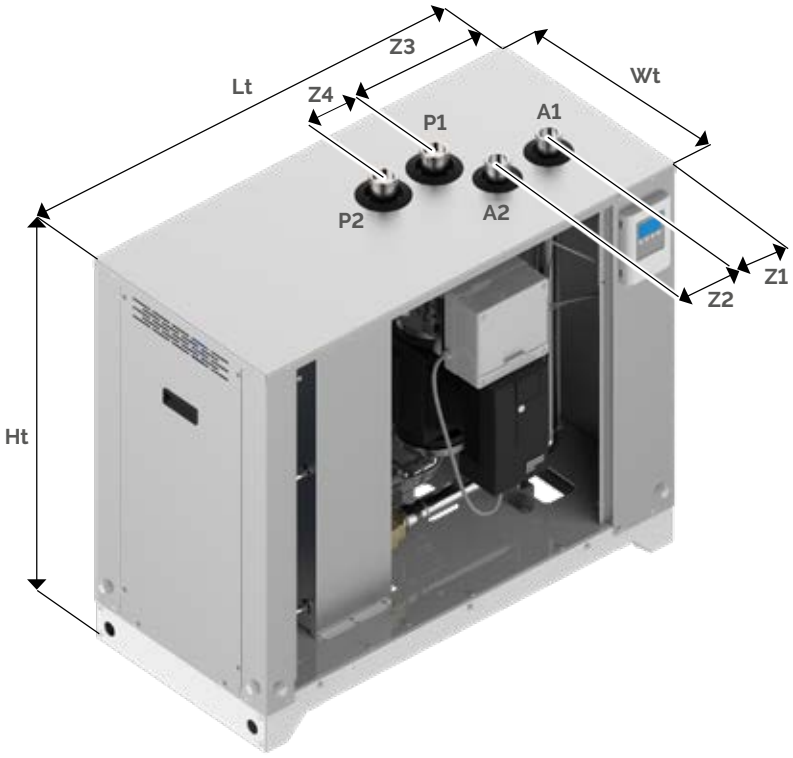


Hydraulic performance SET





Dimensions



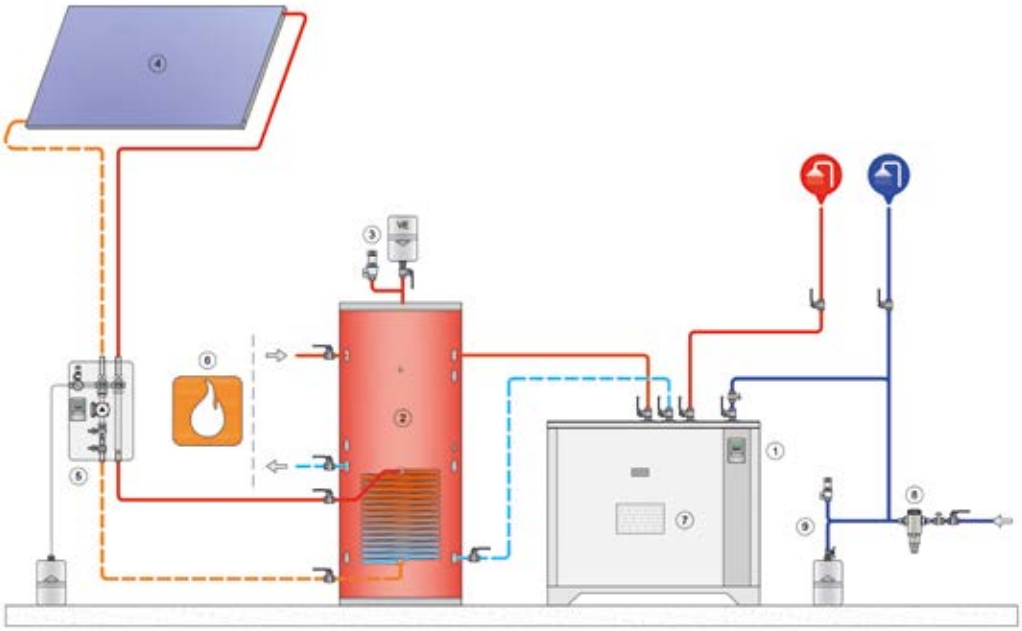
Couplings legend

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

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

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

Installation chart
In combination with the water storage tank



Legend

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

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

Equipment

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

Accessories on request

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

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

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

Kit to connect the SET in series

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

Advantages and benefits

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

Installation of the Kit

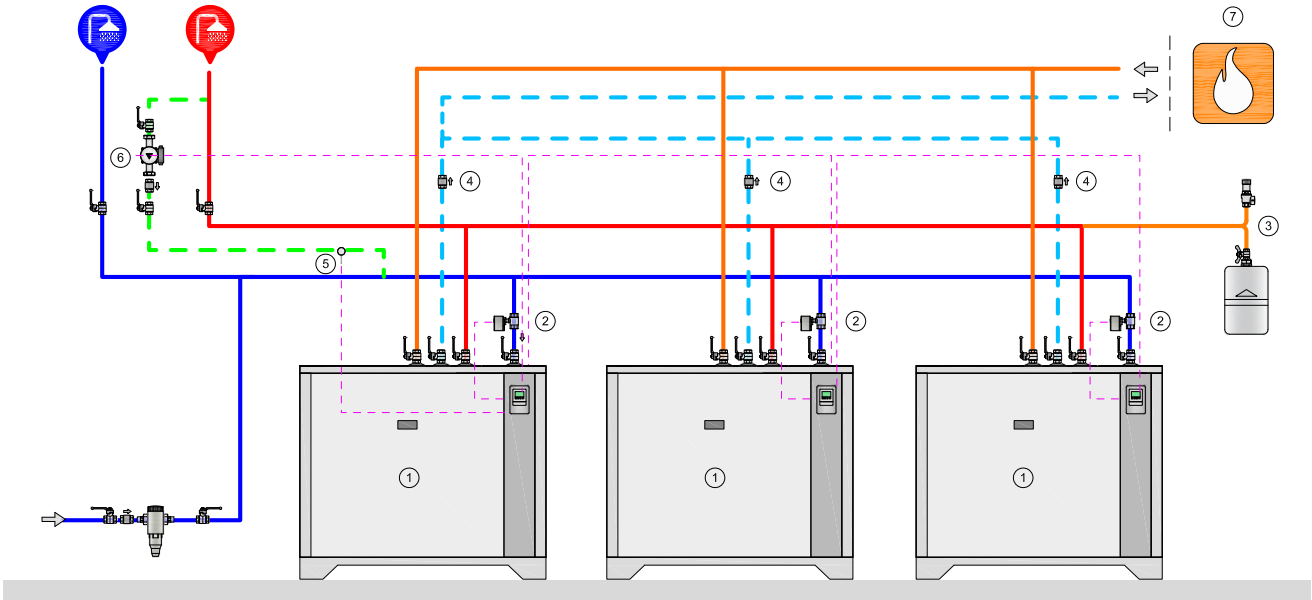
Install one kit for every fresh water station. The kit is supplied in parts, non-assembled and is composed of:

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

Key

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

Installation chart



MULTIGATEWAY -Remote management for SET fresh water stations

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



Operating conditions

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

Main features

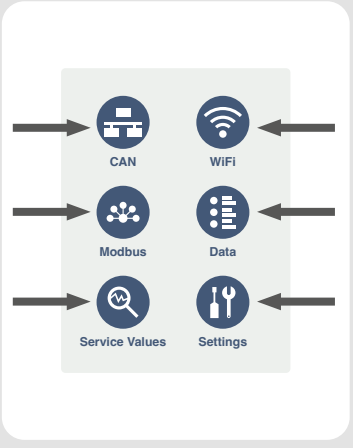
- ✔ Data Logger
- ✔ Fieldbus CAN
- ✔ Modbus RTU RS 485
- ✔ WiFi module
- ✔ Display touchscreen
- ✔ 12/24 V Power supply
- ✔ Android & iOS app
- ✔ Dimensions: 75 x 95 x 19 mm
- ✔ ABS body and glass front

Main menu

CAN
Add devices to the network

Modbus
Protocol specific settings

Service values
System messages and data



WiFi
WiFi settings

Data
Data storage settings

Settings
Device parameters such as language, brightness, etc.

Recirculation kit

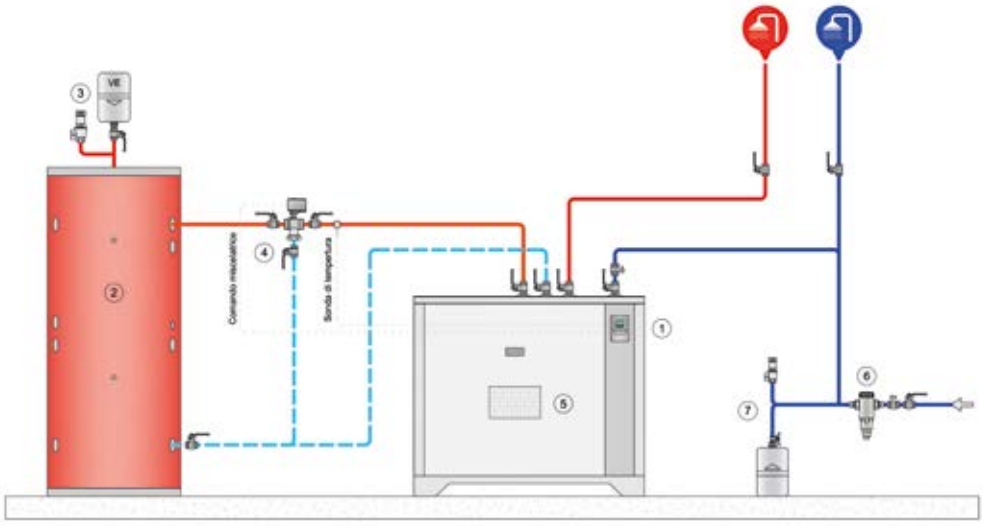
The recirculation kit makes it possible to opt for one of the multiple option offered by the electronic control station to control the pump of the sanitary recirculation circuit (circulator not supplied).

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

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

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

Kit with mixing valve on the primary circuit



Legend

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

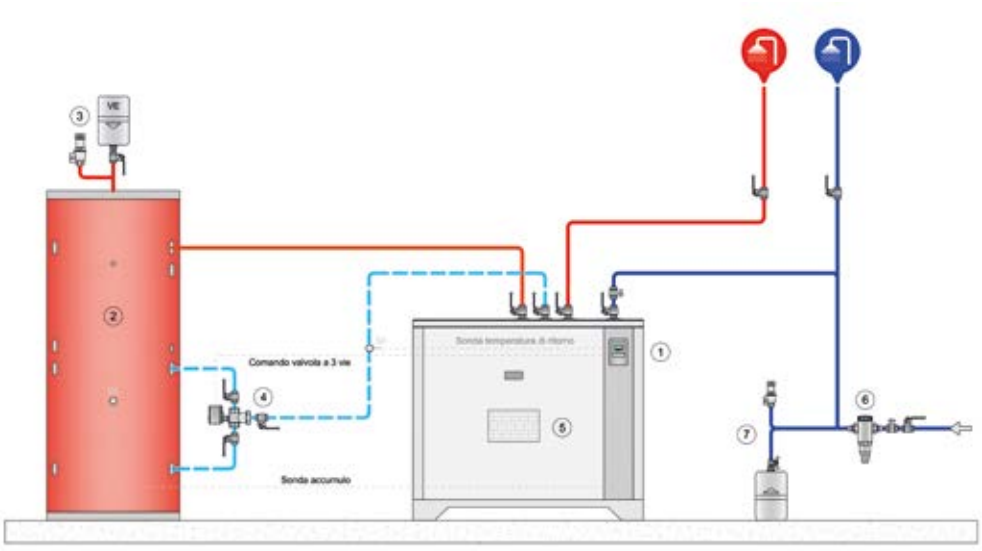
N.B.: Installation of an expansion vessel on the cold water line is mandatory

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

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

Kit with stratification valve for the storage tank

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



Legend

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

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

Composition of the kit
The kit is supplied in parts, non-assembled and is composed of:
✔ S6 temperature probe to be placed in the middle of the storage tank
✔ S6 temperature probe on the return of the primary circuit
✔ instructions
✔ Stratification valve

Codes and prices for the accessories of SET wall-mounted

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

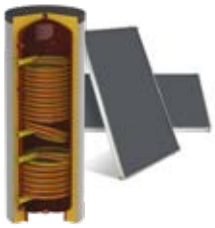
* The L control unit handles up to 3 digital outputs: check the availability of free outputs and the requirements of the various accessories.



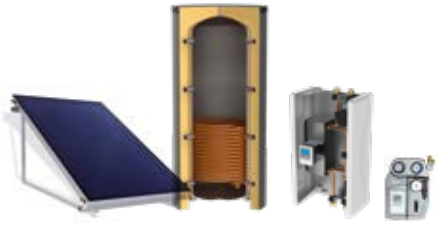
Solar Thermal Systems

Contents

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



AQUA SUN - Kit for DHW production
pag. 278



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



H2000 - solar panel
pag. 282



H2500 - solar panel
pag. 284



MTDC - control unit
pag. 288



S1 SOLAR 1
pag. 289



S2 SOLAR 30
pag. 290



S2 SOLAR 2
pag. 291

Thermal Solar Kit for DHW production

HOT WATER AND SOLAR HEATING SYSTEM

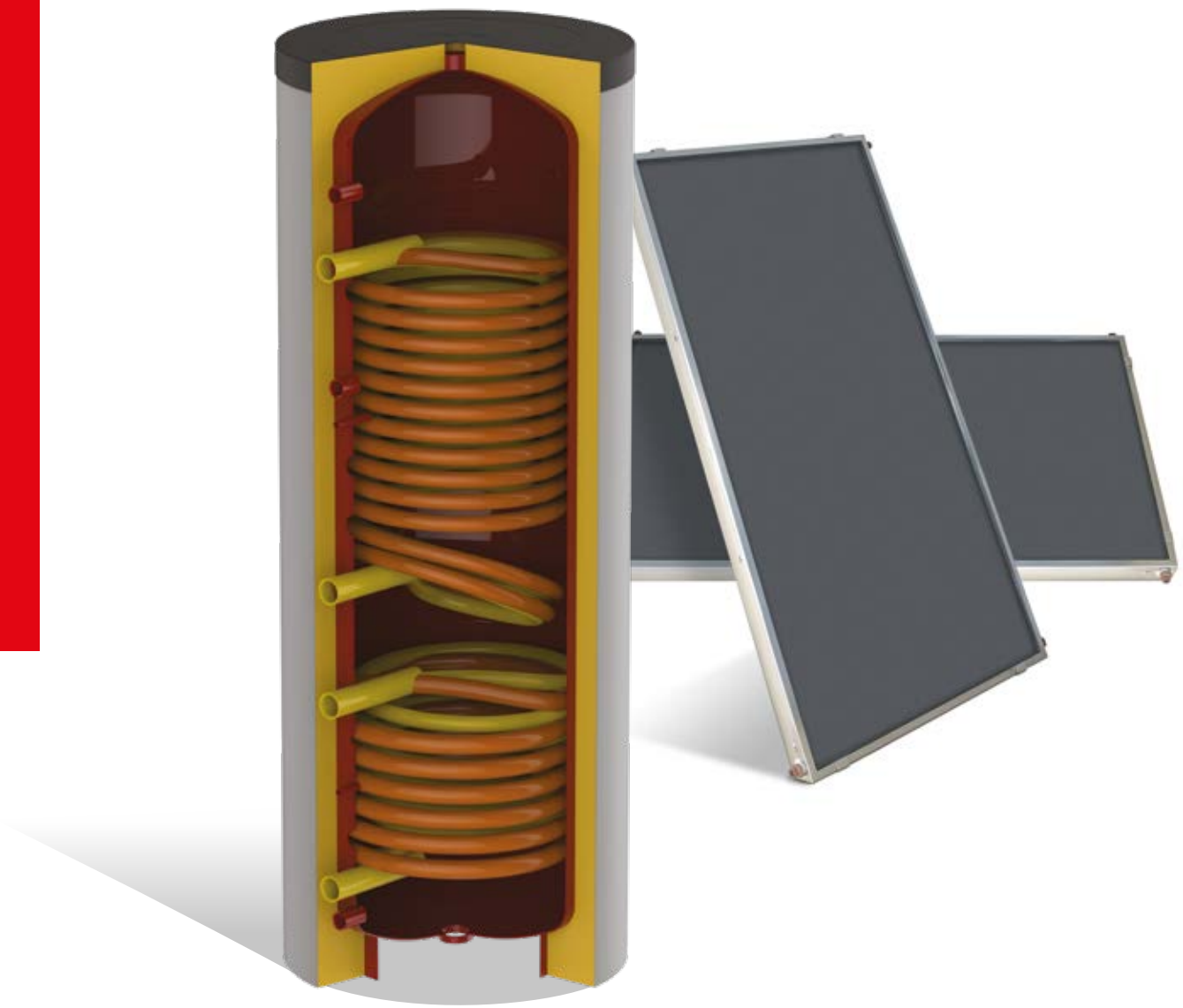
Solar energy is an inexhaustible source of energy that can be easily used both in hot water preparation and in the heating process. Solar energy helps protect the environment and ensures significant energy savings.

OUR SOLUTIONS

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

WHY THE SOLAR THERMAL KIT

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



Thermal Solar Kit for DHW production

ADVANTAGES

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

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

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

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

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

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



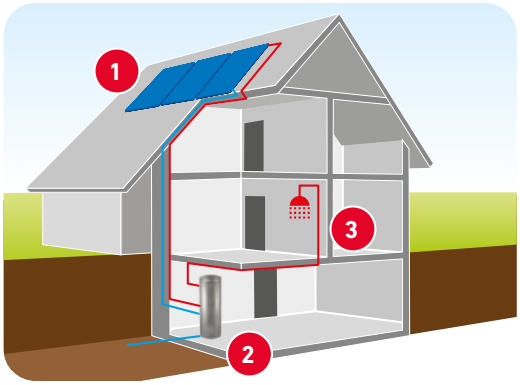


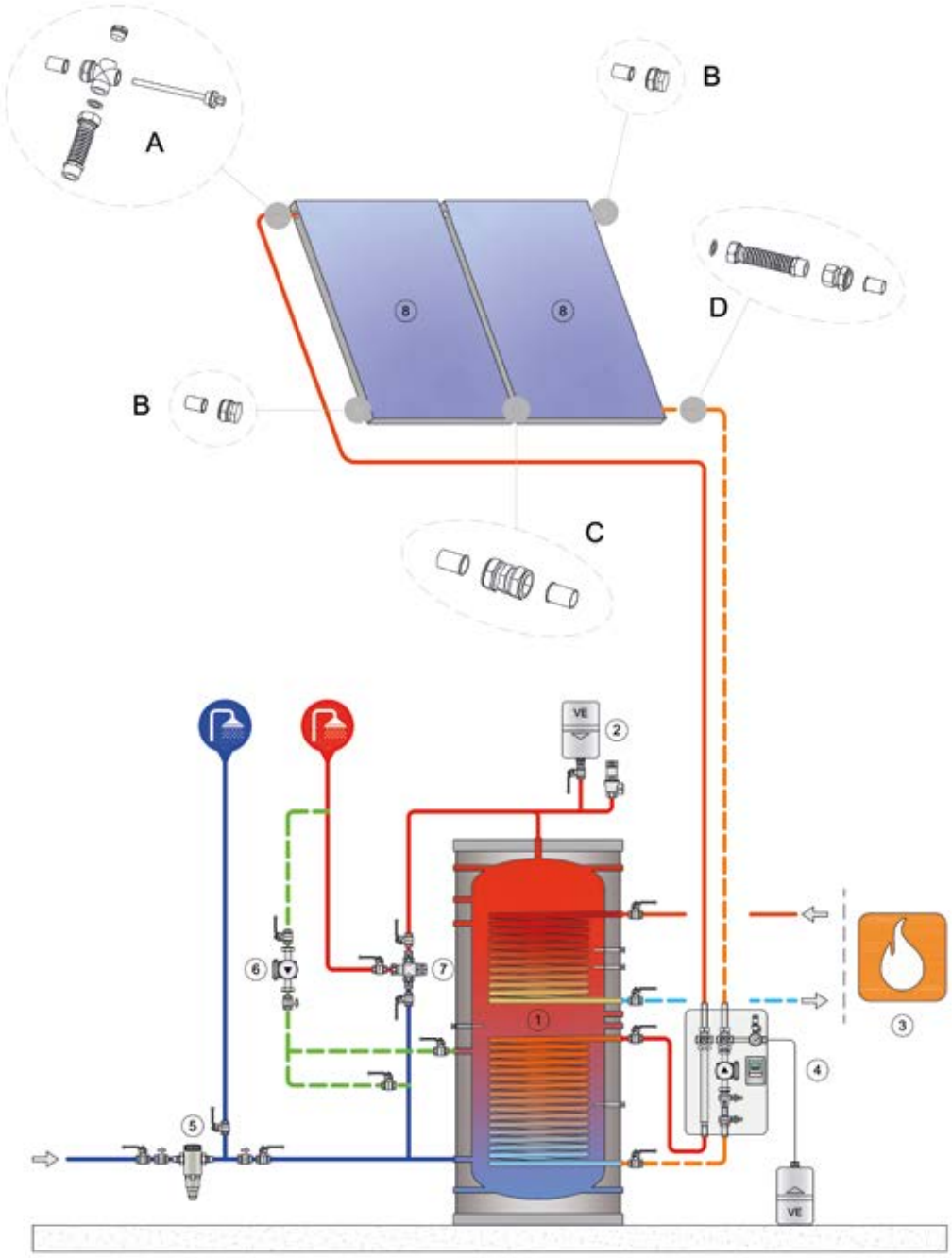
AQUA SUN Thermal Solar kit for DHW production

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

Principles

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





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

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

AQUA SUN Thermal Solar kit for DHW production

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

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

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

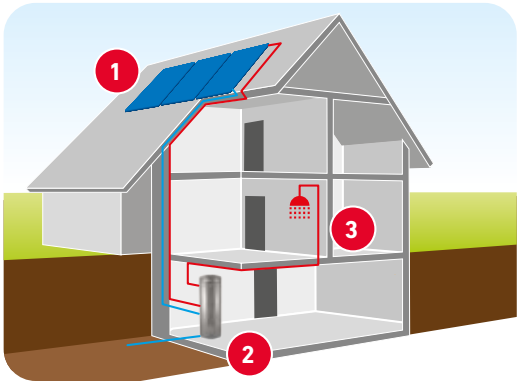
NOTE: Collector fixing kit not included (pag. 275)

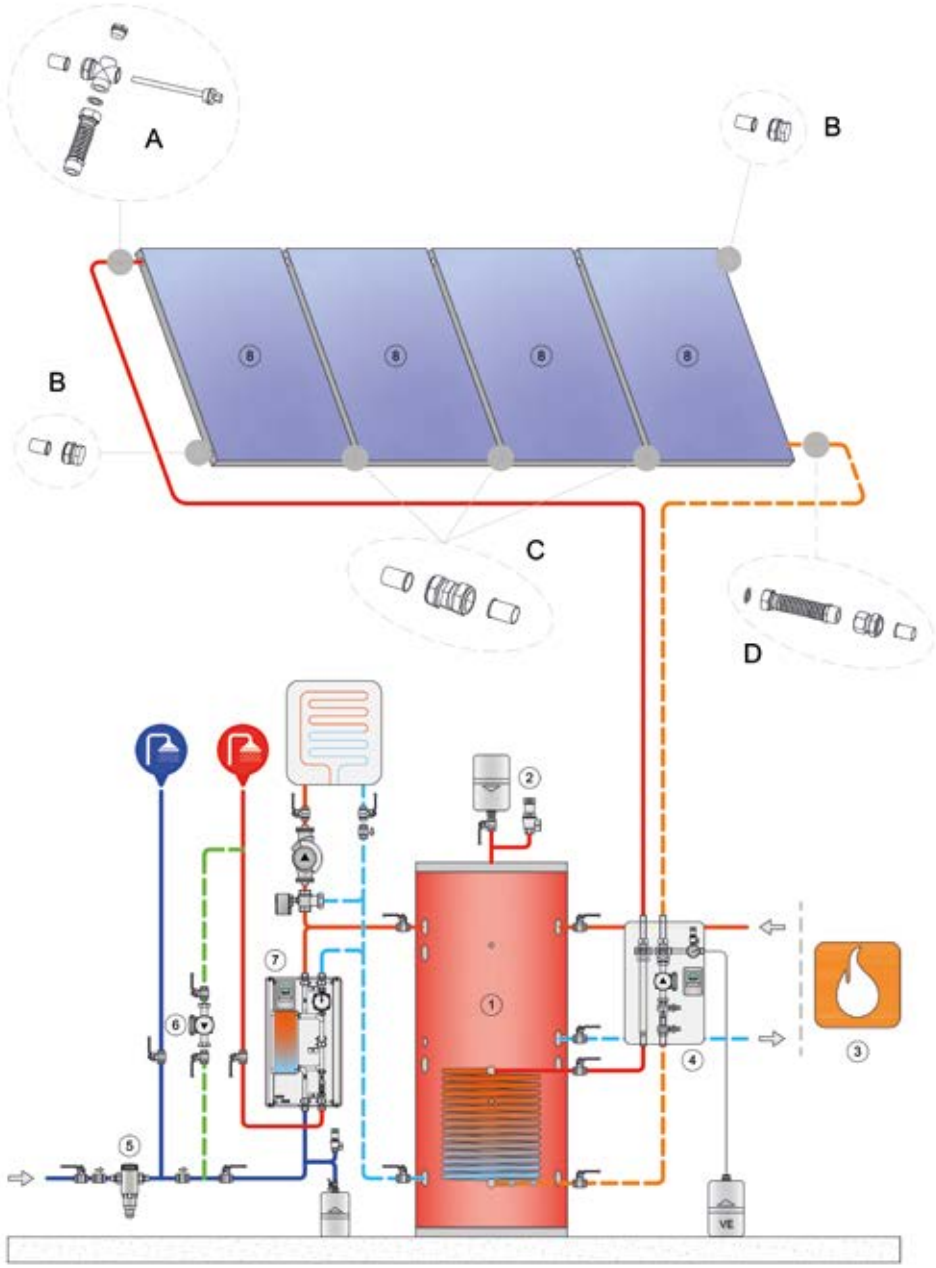
Thermal Solar power kit for DHW production and heating – COMBI SUN

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

Principles

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





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

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

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

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

N.A. Not Available













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

H2000 - High efficiency flat plate solar panels with aluminium tank

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

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



Features

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

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

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

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

Connection options

Parallel connection



Max 6 collectors

Series connection



Based on pressure drop

Combined connection

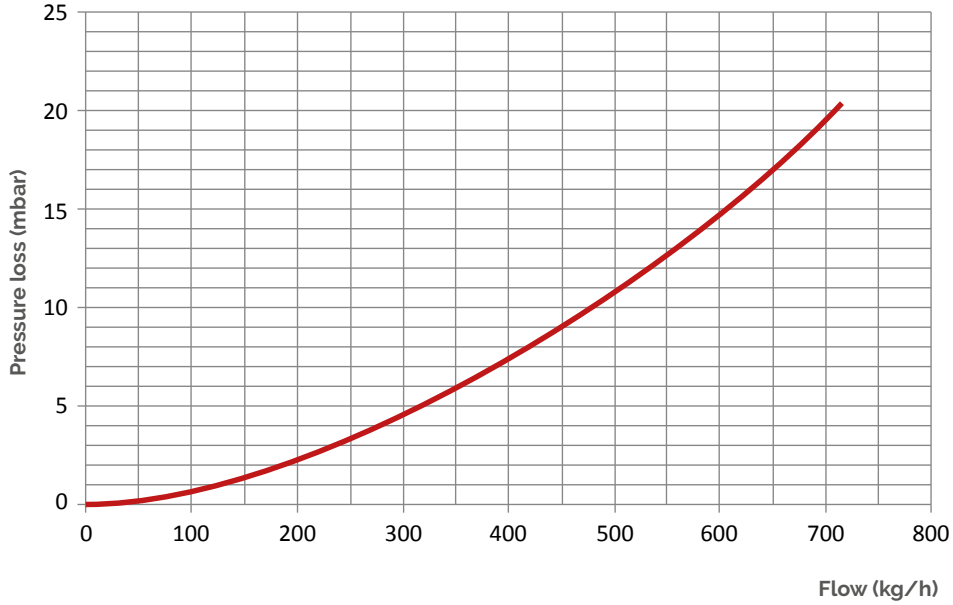


Based on pressure drop

H2000 - High efficiency flat plate solar panels with aluminium tank

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

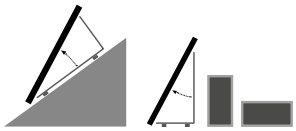
Efficiency coefficient	Opening	Absorber
η_0	0,814	0,814
a_1	4,061	4,061
a_2	0,013	0,013



Assembly



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



Supported
Frame for horizontal or vertical structure

H2500 - High efficiency flat plate solar panels with aluminium tank

H2500 high performance solar collector – 2,5 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...

	H2500 Vertical	
Gross surface	code	price
2.51 m2	821120067X	

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

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

Connection options

Parallel connection



Max 6 collectors

Series connection



Based on pressure drop

Combined connection

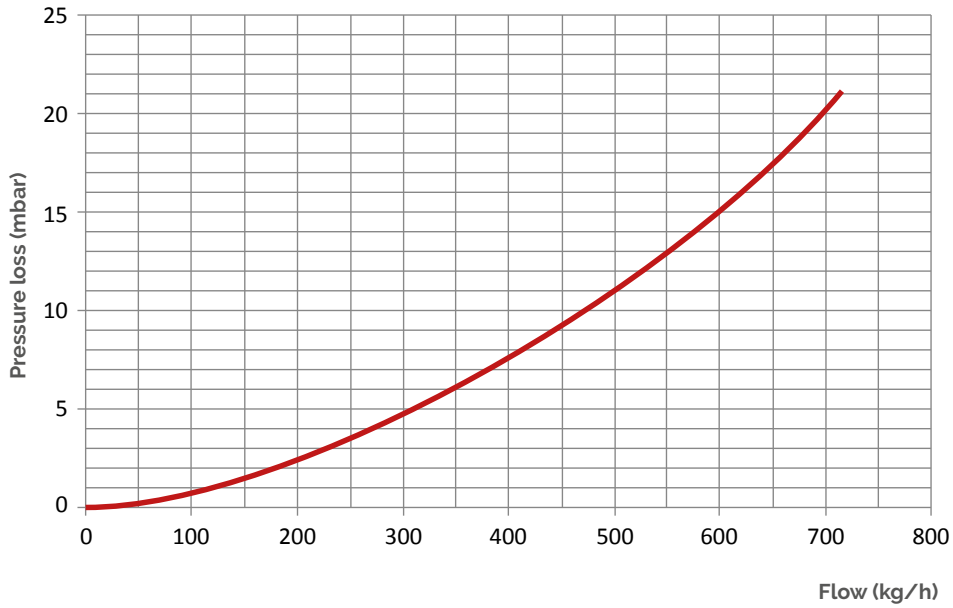


Based on pressure drop

H2500 - High efficiency flat plate solar panels with aluminium tank

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

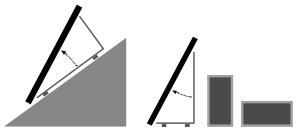
Efficiency coefficient	Opening	Absorber
η_0	0,807	0,807
a_1	4,04	4,04
a_2	0,012	0,012



Assembly



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



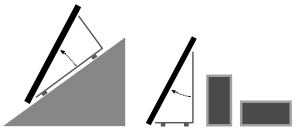
Supported
Frame for horizontal or vertical structure

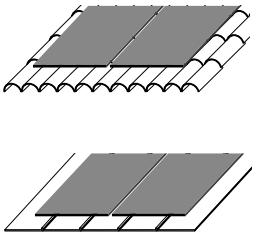
Assembly and materials

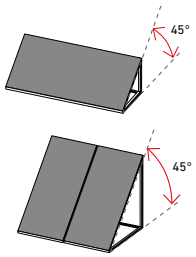
Assembly and materials

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

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

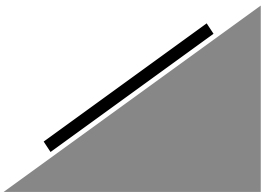
Installation	
 On the roof vertical/horizontal installation kit, frame and accessories	On tile System for fixing the solar collector on a tiled pitched roof by means of sturdy hooks and frames. On sheet System for fixing the solar collector on a pitched sheet roof, with resistant aluminium structures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

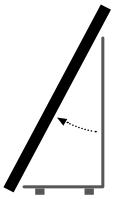




Collector fixing systems

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





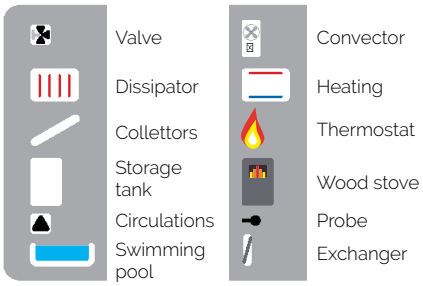
MTDC Solar regulator

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

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

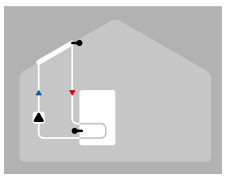
Code	Price
C22130020	

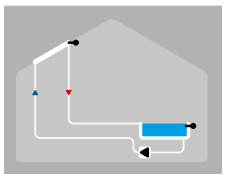


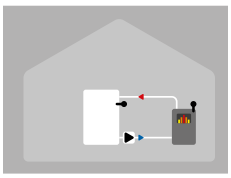


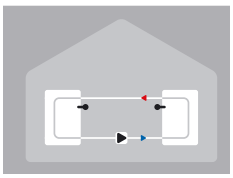
TESTED

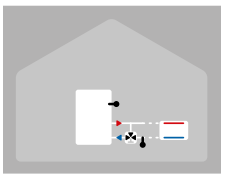
Pre-set installations

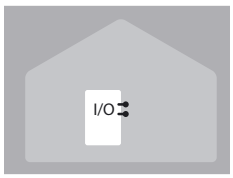

Solar + tank


Solar + pool


Wood-fired boiler with tank


Tank recharge

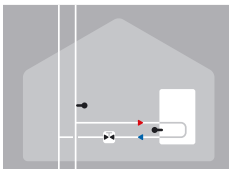

Solar with heating circuit

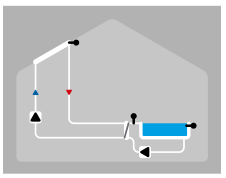


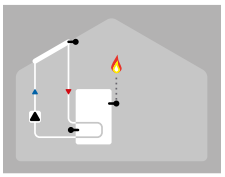
Thermostat

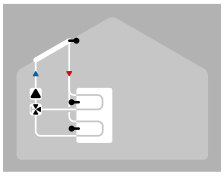


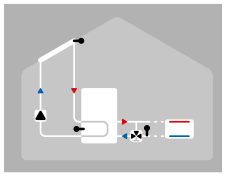
Universal temperature

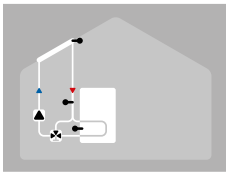

Cut-off valve

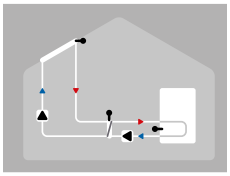

Solar with heat exchanger (sensor on secondary) and pool

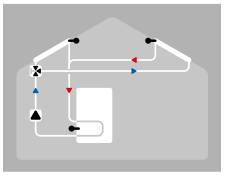

Solar with thermostat (auxiliary heating)

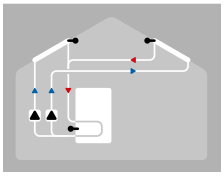

Solar with double zone tank

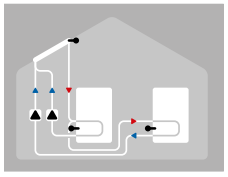

Solar with heating circuit

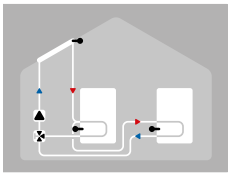

Solar with bypass

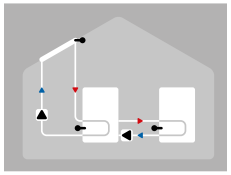

Solar with exchanger

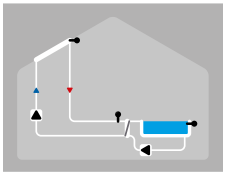

Solar with two collectors

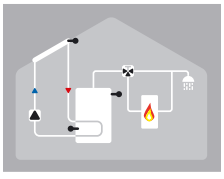

Solar with two collectors and two pumps

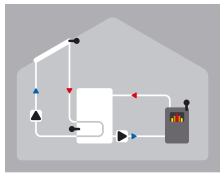

Solar with two tanks and two pumps

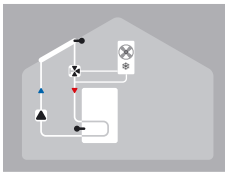

Solar with two tanks and valve

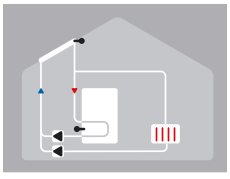

Solar with storage tank

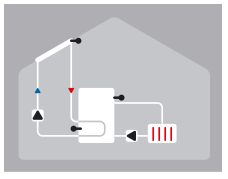

Solar with pool and exchanger


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



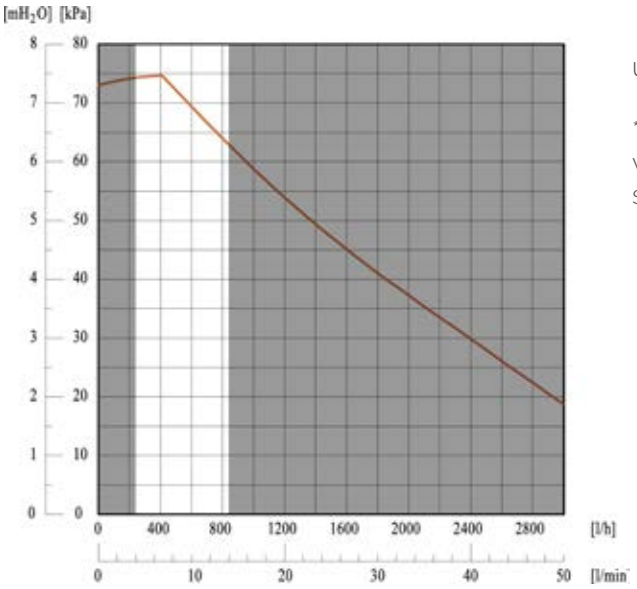
TESTED

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

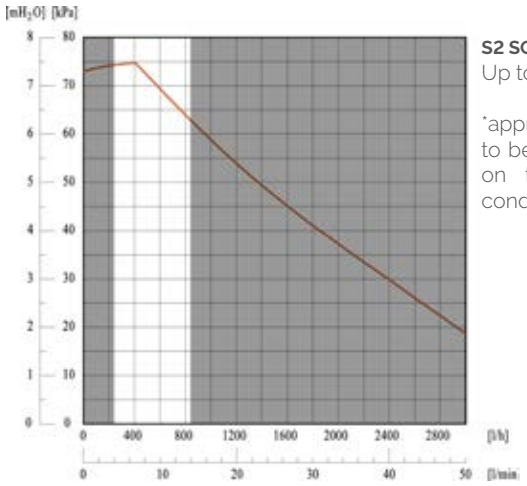
Return circuit comes with:
- Flow meter and flow regulator, equipped with fill and drain connections
- Solar circulation pump
- Ball valve with check valve. The check valve can be de-activated by turning the handle 45° (useful when filling the device)
- Safety valve (6 bar) with manometer
- Coupling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

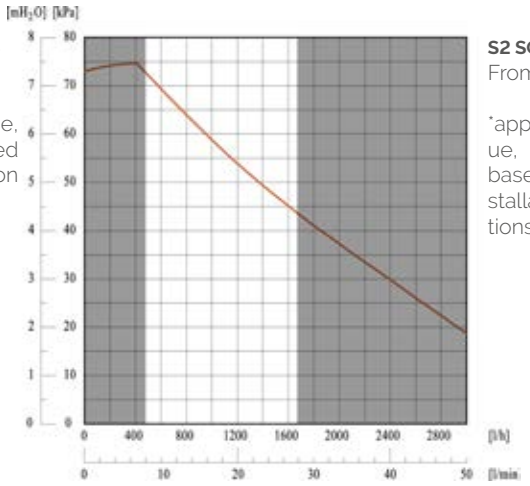
(*) For a brief period (20s) the max T is 160°C

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:

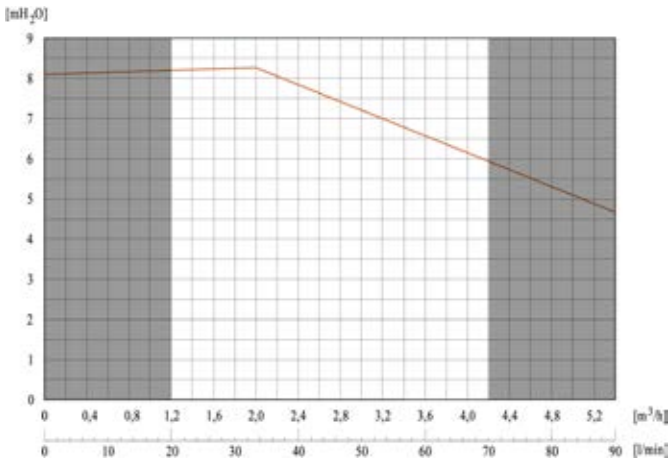
Return:
- Flow regulator gauge 20-70 l/min
- high efficiency synchronous solar circulator 0-10V command
- ball valve with non-return valve 18 bar (the non-return
- valve can be left out by turning the handle for 45 degrees) with a thermometer handle (thermometer with blue ring; 0°C-120°C).
- T coupling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

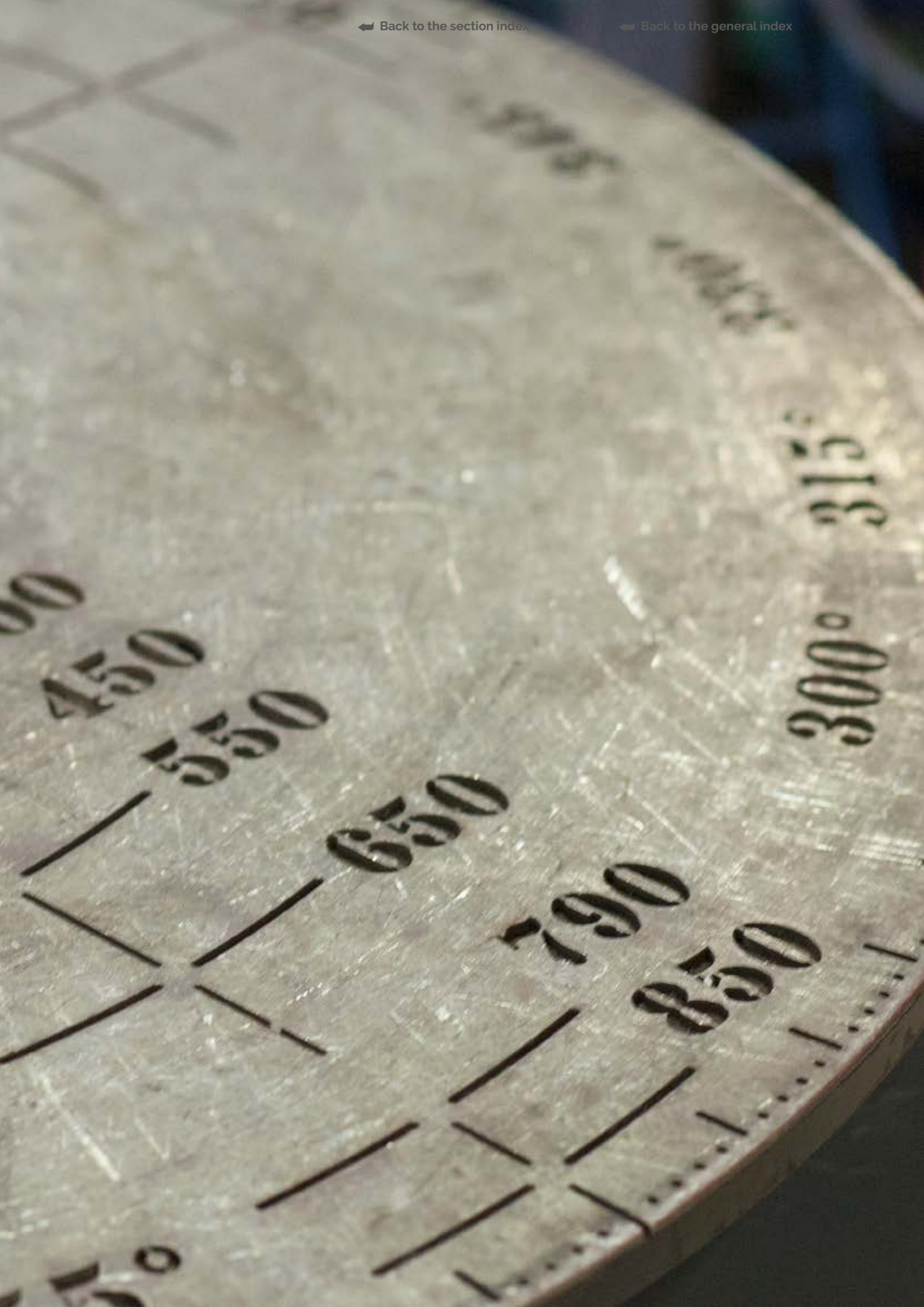
Dimensions:
- Couplings: 11/4"
- Wheelbase: 125 mm
- Width with insulation: 285 mm
- Height with insulation: 500 mm





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 re-set), 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	

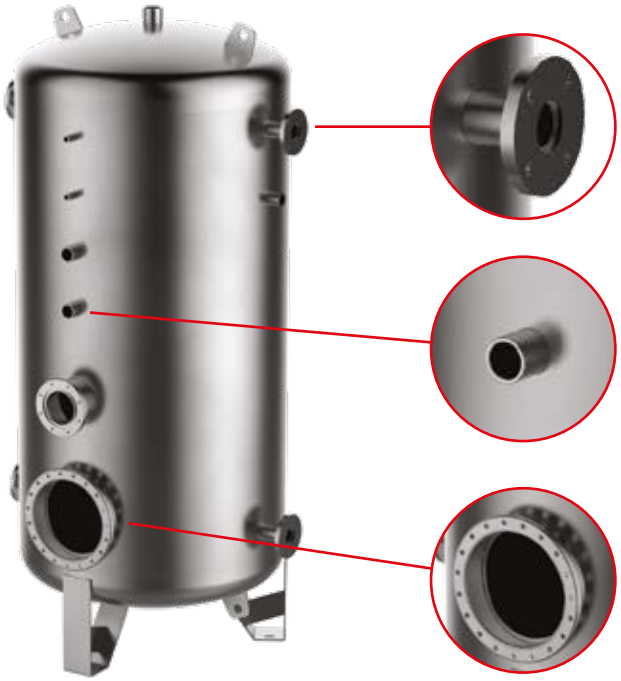
The copper coils have a gasket without cross-beam with the same diameter as the assembly plate.
The tube heat exchangers have two gaskets: one with and one without a cross-beam. Both have the same diameter as the closing head.
The blind closing heads have one gasket without cross-beam with the same diameter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

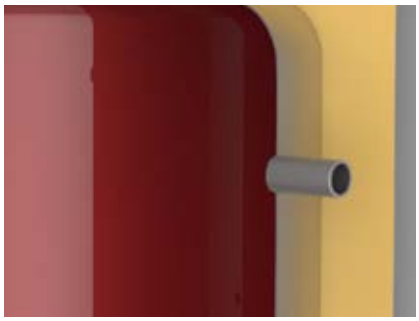
Stainless steel

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

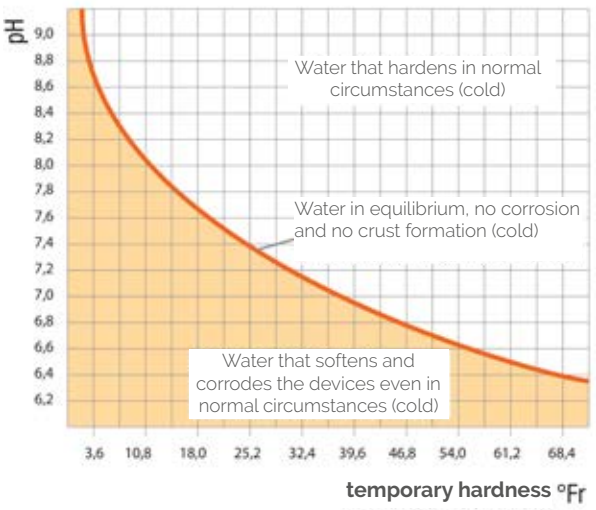
(*) The water is treated according to the Tillmann diagram to satisfy the hygienic requirements and to ensure an equilibrium (no crust formation, no hardness). The prescribed treatments (UNI 8065) cannot hinder the use of the water for food preparation and have to be carried out with the right devices.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

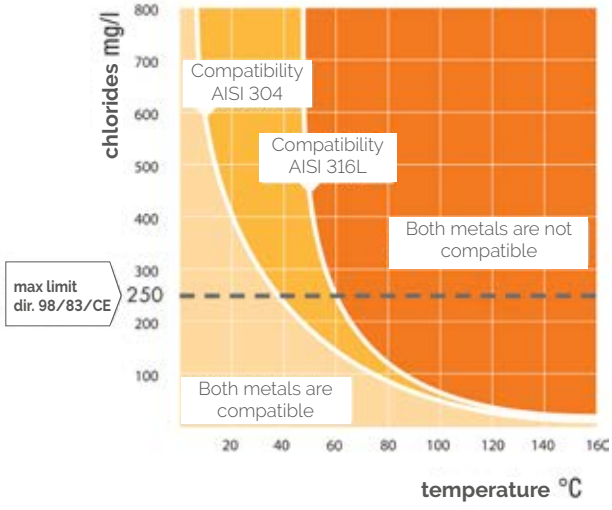
Water and usage

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

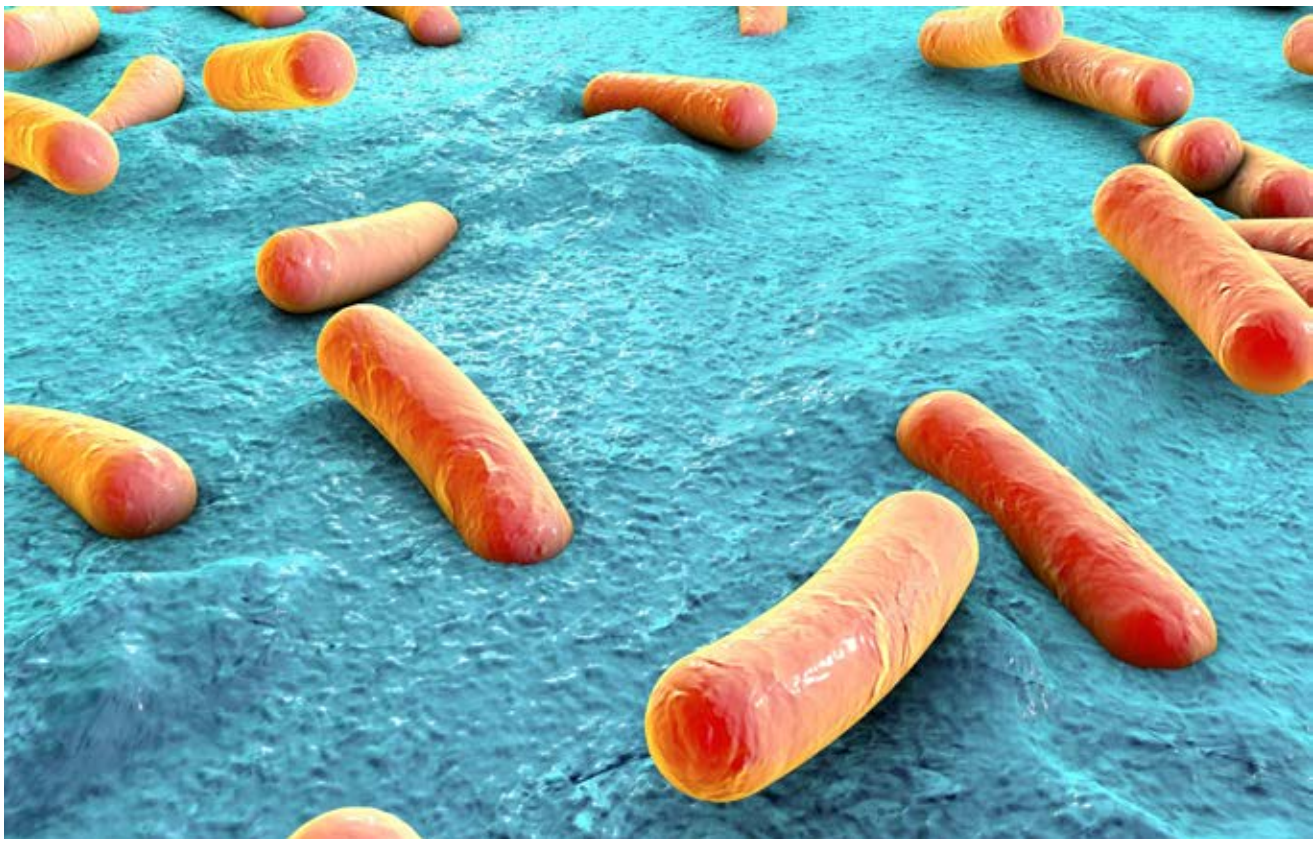
In case of central distribution, a recirculation system has to be provided. In this way the water is continuously in movement and the consequences of heat loss in case of stagnation are prevented.

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 l	PS 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 l	PS 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 l	PS 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 l	PS 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 l	PS 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

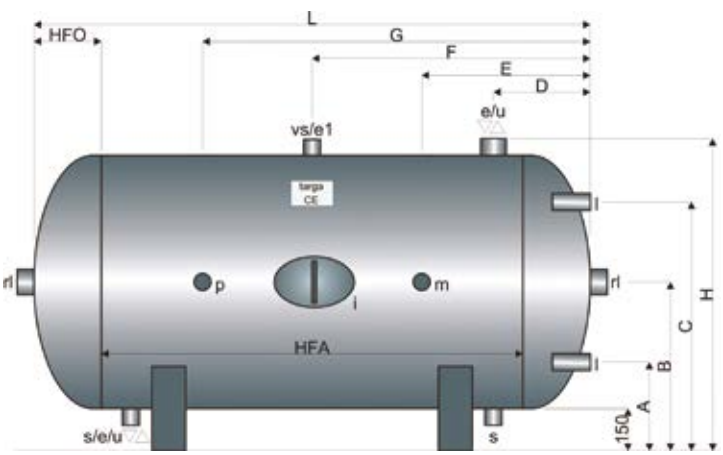
Special versions: the AC storage tanks can be modified on demand in order to meet your specific requirements

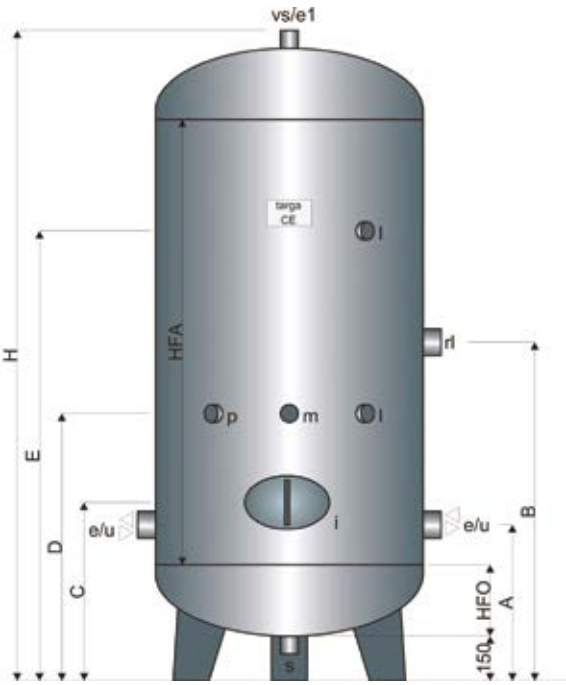


TESTED

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



TESTED

✔ **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





P.E.D. tested 16-64 bar compressed air tanks, under high pressure – AP series

The AP tanks for compressed air under high pressure are used in all compressed air distribution systems with elevated pressure. The AP series is different from the AK series because of the operating pressure which is superior in the AP series.

The models, with CE label, are available in the vertical and horizontal version, with various capacities in function of the max operating pressure:

16 bar version: 300 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: 300 up to 6.000 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, 20, 25, 30, 35, 64 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







P.E.D. tested expansion vessel for pressurized water, 6, 8, 12 bar – VE series



The VE expansion vessels are generally used in industrial installations in order to compensate for the volume variation of the heat transfer fluid caused by temperature variations. They have no membrane, which brings the heat transfer fluid in direct contact with the air cushion in the tank. Because of the absence of the membrane, you do not have to think about replacing it. The models, with the CE label, are available in capacities from 300 to 20.000 litres in the horizontal, vertical, 6 bar, 8 bar and 12 bar versions.

✔ **Material:** carbon steel
✔ **Protective treatment:** hot dip galvanizing and external coating
✔ **Covering:** rock wool insulation with variable thickness and an external bush-hammered aluminium cover
✔ **Operative conditions:** The storage tanks have a max operating temperature from 10°C to the max temperatures, which vary in the versions

Special versions: the VE expansion vessels can be modified on demand in order to meet your specific requirements

Max. pressure	Max. temperature
6 bar	165°C
8 bar	175°C
12 bar	200°C





P.E.D. tested expansion vessel for pressurized heat transfer oil – VO series

The VO series are installed in industrial heaters with heat transfer oil in a closed circuit in order to compensate for the thermal expansion of the heat transfer fluid. The models, with CE label, are available in capacities from 300 up to 15.000 litres in the horizontal, vertical and 6 bar version. It operates with a maximum operating temperature of 350°C.



TESTED

✔ **Material:** carbon steel
✔ **Protective treatment:** external painting
✔ **Covering:** on demand rock wool insulation with variable thickness and an external bush-hammered aluminium cover
✔ **Operative conditions:** the storage tanks have a max operating pressure of 6 bar and a max operating temperature of di 350 °C

Special versions: the VO expansion vessels can be modified on demand in order to meet your specific requirements





P.E.D. tested steam accumulator tanks 12 bar 200°C – AV series



The AV steam accumulators are generally installed to support industrial steam generators (fast and with a forced circulation). The accumulator is the lung in applications in which the steam content of the heaters is low and not sufficient to manage the numerous transitions generated by the start-up and shut-down cycles of the heater.
The models, with CE label, are available in capacities from 300 up to 20.000 litres in the vertical and horizontal versions with a max pressure of 12 bar and a max operating temperature of 200°C.

✔ **Material:** carbon steel
✔ **Protective treatment:** external painting
✔ **Covering:** on demand rock wool insulation with variable thickness and an external bush-hammered aluminium cover
✔ **Operative conditions:** the storage tanks have a max operating pressure of 12 bar and a max operating temperature of di 200 °C

Special versions: the AV expansion vessels can be modified on demand in order to meet your specific requirements







Heat pump systems

Contents

DHW Systems pag. 325



EOS
pag. 325

Galileus System pag. 330

Geothermal Systems pag. 334



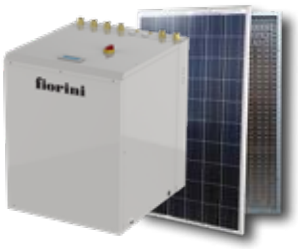
GEO HFE 6-42
pag. 336



GEO HFS 60-100
pag. 339



GEO EASY-E HT/HTR
pag. 344



IANUS SYSTEM
pag. 350



Air-water heat pumps for DHW production EOS

The line of heat pump water heaters was devised to minimize households energy consumption. Unlike a traditional water heater, heat pump water heaters make use of the heat included in the air to generate hot water. This results into a saving in the electricity cost.
The electricity used by the system is only that necessary for the operation of the compressor and fan. The electric heaters are inserted only if really necessary or if requested by the user (with the Boost function).

Internal protective coating: enamelled coating
Insulation: 50mm of polyurethane foam
High efficiency and savings

- ✔ 3.2 for EOS MINI models; 3.56 for EOS 250S
- ✔ Wider range of possible energy sources
- ✔ High performance compressor
- ✔ Micro-Channel Capacitor
- ✔ Possibility to program the operation according to the time bands or remote contact on / off
- ✔ ECO mode: heat pumpt operations attach priority to the production of hot water
- ✔ HOLIDAY mode: The heat pump stops working during the set holiday period. It turns on the day before the end of the period in AUTO mode to prepare hot water upon returning home.

Installation: EOS 250S is free to install; EOS Mini models are wall units and are supplied complete with support for the montage. Possibility of ducting suction / delivery to use ambient or external air.
Plus: An additional coil at the bottom of the tank increases the exchange area and improves efficiency, reducing heating times
Programming: The control of the water heater allows the inhibition of operation in the periods programmed by the user (for example when the cost of energy is high). The operation of the heat pump can be maximized! With a digital command it is possible to raise the set point to 65°C. Programming allows you to select the simultaneous operation of the compressor and heater or just one of the two.
Anti-legionella function: The water is automatically heated to 65 ° C, every seven days, to eliminate any bacteria that may form in the tank.
Auxiliary coil exchanger: for EOS 250S, a coil exchanger for external auxiliary heating source (solar/boiler) is included.

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



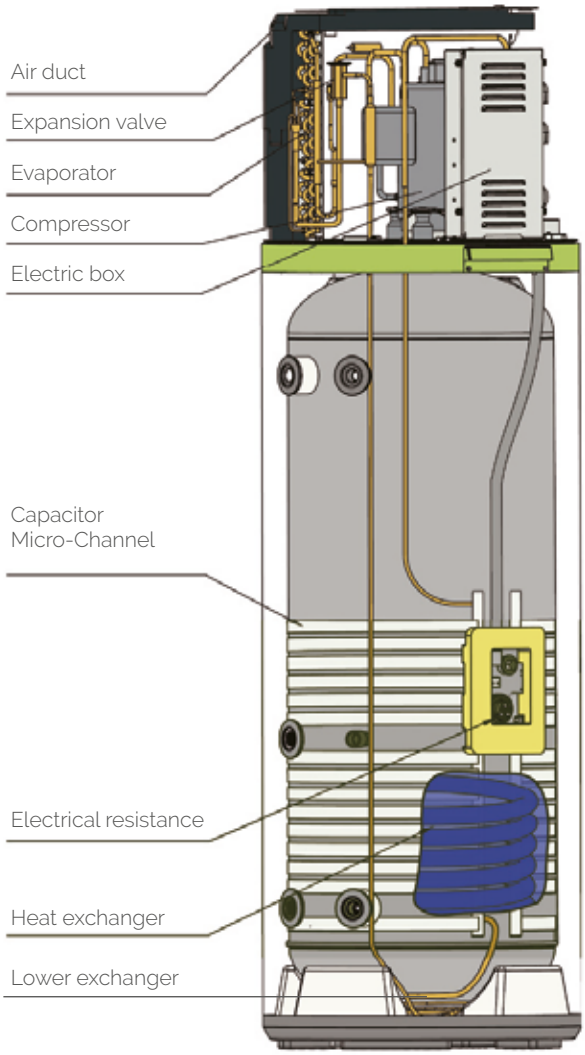


model	code	price
EOS MINI 80	844020019X	
EOS MINI 110	844020020X	
EOS 250S	844020018X	

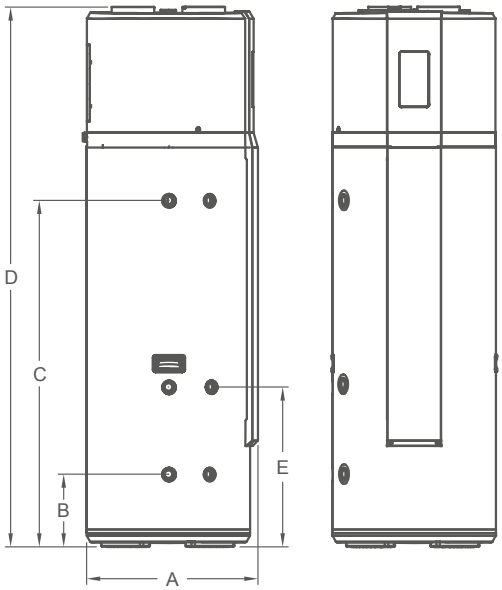
Air-water heat pumps for DHW production EOS

Tank	U.M.	EOS MINI 80	EOS MINI 110	EOS 250S
Installation		Wall unit	Wall unit	Floor
Tank volume	l	80	110	240
Power supply	V-Hz	220-240V/50Hz	220-240V/50Hz	220-240V/50Hz
Tank pressure	bar	8	8	7
Extra coil exchange surface	m^2	-	-	1
Anticorrosion magnesium anode	n.	1	1	2
IP protection class		IPX4	IPX4	IPX4
System data				
Auxiliary electric resistance power	W	1200	1200	1500
Average power consumption (heat pump only)	W	240	240	495
Maximum absorbed power (heat pump only)	W	350	350	865
Maximum absorbed power (with electrical resistance)	W	1550	1550	2365
Nominal power (heat pump only)	W	672	858	1815
Default water temperature	°C	55	55	55
Water temperature range with resistance	°C	35÷75	35÷75	35÷75
Water temperature range heat pump only	°C	35÷65	35÷65	35÷65
Refrigerant / quantity	Type / kg	R134a / 0,45 kg	R134a / 0,45 kg	kg R134a / 0,9
Max pressure of the refrigeration circuit (suction / delivery)	Mpa	0,8/2,8	0,8/2,8	0,2 / 2,8
Ozone Elimination Potential (ODP)		0	0	0
Global warming potential (GWP)		1430	1430	1430
Sound power	dB(A)	50	50	59
Sound pressure level at 2 m in open field	dB(A)	36	36	43
Operating temperature	min-max °C	-7÷45	-7÷45	-7÷45
Performance				
Type of extraction		Ambiente / Esterno	Ambiente / Esterno	Ambiente / Esterno
COP @ 7 ° C (EN16147)		2,71	2,64	3,1
COP @ 14 ° C (EN16147)		3,17	3,2	3,56
Heating time (@ 7 ° C)	h	4 h 58 min	6 h 35 min	6 h 55 min
Heating time (@ 14 ° C)	h	4 h 09 min	5 h 23 min	6 h
Tapping cycle (EN16147)		M	M	L
Power consumption in standby / Pes (@ 7 ° C)	W	20	20	27
Maximum usable volume of hot water (EN16147) V40	l	102,5	132,6	303
Energy efficiency class (ERP)		A+	A+	A+
Dimensions and connections				
Water outlet	Inch	G1/2"M	G1/2"M	G3/4"F
Water inlet / Condensate drain	Inch	G1/2"M	G1/2"M	G3/4"F
Safety valve	Inch	G1/2"M	G1/2"M	G3/4"F
Duct hole diameter for air intake / delivery	mm	Ø 160	Ø 160	Ø 180
Max length of air intake ducts	m	5	5	5
Water heater dimensions (LxWxH)	mm	492x537x1170	492x537x1320	600x629x1987
Packaging dimensions (LxWxH)	mm	-	-	736x695x2250
Packaging dimensions without pallet (LxWxH)	mm	587x587x1247	587x587x1397	736x695x2120
Gross weight	kg	59	63	132
Net weight	kg	51	55	119

Air-water heat pumps for DHW production EOS

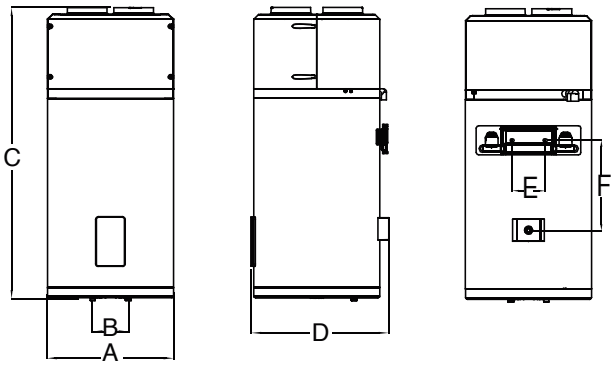


*included on EOS 250S only

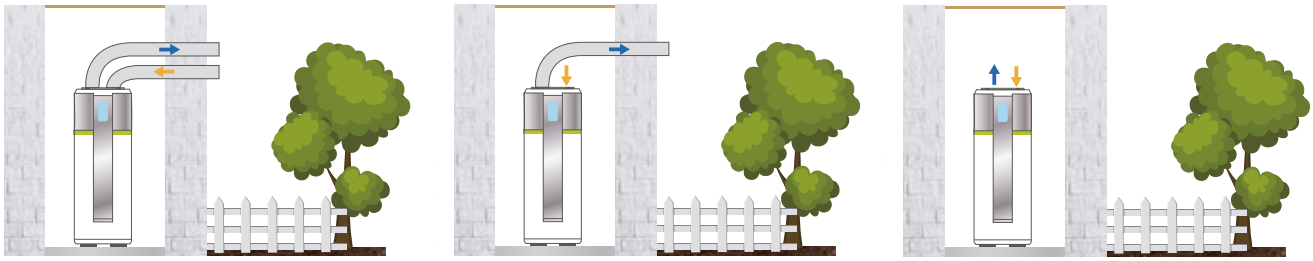


Model	A mm	B mm	C mm	D mm	E mm
EOS 250S	629	270	1275	1987	590

Ducting hole diameter for air suction / delivery Ø 180mm



Model	A mm	B mm	C mm	D mm	E mm	F mm
EOS Mini 80	492	140	1170	537	159	362
EOS Mini 110	492	140	1320	537	159	362




fiorini
fiorini
fiorini

Heat pumps, why?

Why choose geothermal heating for our home?
...for five excellent reasons

✔ energy saving
✔ user-friendly
✔ eco-friendly
✔ independence from fossil fuels
✔ system flexibility

Innovation, safety, user-friendly, eco-friendly:
4 key words

For over forty years, Fiorini has been operating in the plumbing and heating sector, giving a strong impetus to innovation, which in Italy makes it a pioneer in an advanced sector such as heat pumps. Building on this, Fiorini not only offers heat pumps, but also "systems". The goal is to provide a complete device in which each element is carefully selected and the components are perfectly integrated to provide a quick and flexible response ensuring the highest level of comfort and efficiency. The applications are varied: winter heating, summer cooling, efficient production of domestic hot water, from a single residence up to an industrial complex. Our strength is a comprehensive knowledge of renewable energy technologies, which makes it possible to design and build integrated systems aimed at exploiting and integrating various energy sources such as geothermal, aerothermal, solar thermal, photovoltaic sources, etc..

The heart of the system: the heat pump

The heart of the system is the heat pump, which is designed and manufactured in-house from scratch: the wide range of powers makes it possible to satisfy every need. Our highly technical expertise ensures excellent support at all stages, from project assessment and investment analysis with targeted amortization schemes to system design, commissioning and after-sales service. Despite being standardized, the system can be customized. Every customer is our partner. The technical information on the device is conserved in order to be able to add further components, at any time, based on changing needs.

The brain of the system: continuous monitoring and easy management

The brain of the system is the control and adjustment software, stemming from the experience of our in-house technicians. The control system makes it possible to manage and to monitor the correct operation of all hydraulic and mechanical components. The GEO HFE-HFS and ADV plus series heat pumps are operated by micro-processors equipped with our flagship software Galileus. That software has been conceived by Fiorini not only to supervise all operational modes of the device, but also to monitor the whole air conditioning and DHW production system. It is an integrated system capable of independently managing the terminals of a radiant system, ambient dehumidification and the integration of a solar thermal system. It also makes it possible to control free cooling during intermediate seasons. All Galileus functions can be managed through the LCD panel supplied with it, which indicates the set operation mode and any system malfunctioning. Adjustment and control can also be remotely managed through a special kit that enables you to conveniently check and change any operation parameter from your own computer or from the service centre.

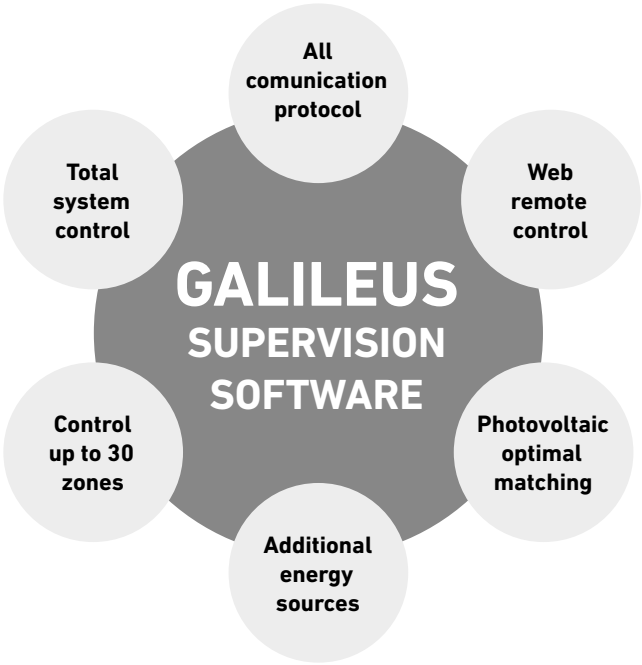


Galileus System

What is the Galileus system?

The Galileus software is installed in the GEO HF Heat pumps. The software is developed by the research office and is meant to completely and meticulously manage the mechanisms present in a modern conditioning system.

Therefore, the Galileus system coordinates all the energy sources (heat pump, solar thermal, integrated water heater, etc) and it manages all mechanisms of the installation (floor heating, high temperature installation, DHW production, mechanical ventilation system, etc).



Legend
1. GEO heat pump
2. Probe or well
3. Thermal storage tank
4. SET fresh water station
5. Fan
6. Environment Zone Kit (inside the heat pump)
7. Room thermostat
8. Remote keypad
9. Deviation valve kit
10. Mixing valve kit
11. Device pump
12. Solar panel (Additional source)
13. Solar kit (inside the heat pump)
14. Storage tank
15. Web module (inside the machine control unit)
16. Freecooling
17. Towel warmer
18. Outdoor air probe



Basic functions

1. **Facilitated start-up:** Galileus has a guided configuration, which invites you to respond to a number of questions. In this way, the world around the Galileus and the installation it manages is construed systematically.

2. **Integrated sources:** Galileus has a complete and rational management of the integrated sources, from solar thermal to stove, from water heater to electrical resistor. Its use is based on the operation costs and the most convenient energy source is always used in order to satisfy the demand of the installation.

3. **Sanitary production:** Galileus meticulously manages the production of domestic water since it is one of the biggest costs on the overall heat production. Thanks to the heat exchanger that is installed on the flow of the compressor (for GEO HFE/R), Galileus uses this device and recuperates surplus heat from the compressor while the heat pump works for the installation in either summer or winter mode. For large withdrawals of sanitary water Galileus has the priority on the production of domestic water by giving all power generated by the compressor.

4. **Freecooling:** Galileus intelligently manages the cooling by transporting heat from the environment directly to the thermal source (ex. Geothermal probe). This can be done in two ways: manually or automatically. In the automatic mode, Galileus checks whether the heat taken from the environment is sufficient for the user's requirements. If not, it activates the compressor of the heat pump..

5. **outside air temperature probe:** GThrough the outside air temperature probe, the Galileus manages the compensation of the setpoint of the heat pump or the setpoint of the mixing valves (installation). Moreover, it makes the automatic seasonal change between "Summer – Domestic – Winter" possible.

6. **Visualisation:** Galileus is easy to use. It gives a series of clear information about the central installation, the integrated sources and the zones it manages.

Ambient regulation

7. **Ambient zones:** Galileus can coordinate 30 different climate zones by controlling the temperature and the humidity (control of the dew point in summer mode) and by activating the dehumidifiers (also with integration in summer). Galileus also completely manages the bathrooms. It manages the radiant installation and the towel heaters either in integration or as an independent system in the transitional seasons (fall and spring). There is also a chronothermostat (daily or weekly) with 6 temperature levels.

8. **Mixing valves:** Galileus can manage up to 16 mixing valves, their flow probe and their set point (fixed, compensated or controlled from the dew point).

9. **Modulating zone valve:** Galileus can also manage up to 16 modulating zone valves which are regulated on the basis of the ambient temperature and have the capacity of change the flow to the radiant system when the set point is almost reached in order to maintain a constant comfort.

10. **Management fan coil:** Galileus can completely manage up to 15 fan coil; 3 more automatic velocity, fan coil valve, minimum temperature valve, either in winter or summer mode. The control can also be mixed: up to 30 radiant zones in winter and 15 fan coil in summer.

11. **Relaunch pump or zone valve:** Galileus can operate up to 30 relaunch pumps on the tank/installation side or 30 zone valves, depending on the demands of the various zones or the domestic precedence.

12. **Heat recuperation:** Galileus has an integrated function: heat recuperation from the sources (solar thermal or other systems) and is able to transfer and distribute heat to the installation and the domestic side in an intelligent way.

13. **Heat pumps in series:** Galileus manages up to 5 heat pumps in series with the Master-Slave function.

14. **BMS system:** Galileus is easily combined with supervision system with various types of protocols (modbus – Lon – Bacnet etc). Through the web ports, the system can go on the internet and send alarm mails. Moreover, it can be interrogated by whichever pc or smartphone without installing any software.

15. **Managing the recirculation:** Galileus can manage the recirculation of the domestic water, not only through time slots, but also through the temperature of the loop.

Special functions

16. **Optimization of the photovoltaic source:** Galileus is easily combined with photovoltaic installations. It monitors the production of electric energy and transforms it in thermal energy. The consumption of the other generators is always controlled by Galileus in order to be able to make a perfect balance of produced, consumed and transformed (in thermal) energy.

17. **Load control:** Next to the optimization of the photovoltaic source the Galileus can also manage the electrical loads. Because Galileus knows the production of the photovoltaic system, the limit of the contactor and the electric loads in the residence, the system can shut off when the requested power in the residence will reach the limit of the contactor.

18. **Touchscreen:** Galileus also has a touchscreen. You can easily reach every detail of the installation and manage it.

Self-diagnosis and safety

1. **Loss of refrigerant:** Upon the first start-up, Galileus knows whether the heat pump has lost refrigerant between the trip from the manufacturing plant and the installation.

2. **Sequence of phases:** When the compressor is started up, Galileus knows whether the rotation sense of the motor is correct.

3. **Compression alarm:** Galileus detects when the compressor is not able to compress the refrigerant gas because of 'a broken by-pass valve' or seizure.

4. **Alarm installation:** Galileus helps the user by explicitly stating the type of alarm. In this way, it is easier to make a diagnosis, without using installation codes.

5. **Alarm history:** A part of the physic memory of the Galileus is dedicated to the registration of date and hour of the alarms and its reset.

6. **Assistance:** Galileus helps those that have to carry out assistance thanks to the temperature and pressure sensors in the frigorific circuit. In this way, it gives a complete vision of that frigorific circuit. The technician does not have to connect the manometers to the frigorific circuit, which guarantees the integrity and the efficiency of that system.



Recuperating heat for DHW production

All GEO HFE/R Fiorini heat pumps have a circuit for DHW production. This circuit consists of a heat exchanger (refrigerant/water) with high efficiency circulator and at the refrigerant side it is directly connected to the outlet of the compressor.

In this position the refrigerant gas is at its max temperature (70-80°C) and makes it therefore possible to quickly produce domestic water at a temperature which is higher than the temperature in traditional heat pumps.
The power the heat exchanger can exchange is equal to the total power of the compressor. This means that during the DHW production phase all the power of the heat pump can be used.

Another specific feature of this heat pump is that, thanks to the Galileus software, it can recuperate 20% of the total power. This recuperation can take place at any time during the heating or cooling in order to produce domestic hot water by using the high temperature gas that comes out of the compressor. Briefly, the production of domestic hot water is guaranteed in every operation phase of the heat pump with a quota between 20% and 100% of its power.
Normally the major part of the functioning hours of heat pumps is dedicated to DHW production. Therefore, improving the efficiency of this function means sensibly improving the efficiency of the heat pump in se and the installation in which it is assembled.

Main features

1. -20% of the total power is recuperated and used for DHW production at high temperatures.

2. Simultaneously producing DHW and heating

3. Possibility to modulate the power meant for DHW production from 20% up to 100% of the available thermal power.

4. In summer mode, DHW is produced free of charge thanks to the condensation heat which is dispersed in the thermal source.

5. Possibility to simultaneously produce hot water for heating and cold water for cooling installations.



Geothermal systems

Earth heat

- Earth is a renewable heat source. The energy it contains comes from the sun and the natural heat of the earth crust. This energy is free of charge and available in large amounts; it must only be transferred from the soil to the homes. Geothermal and clean energy represents an essential source not only for the end user but also for the entire ecosystem.

How to exchange heat between the soil and the house

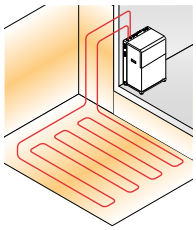
- Geothermal energy is available at a constant temperature (approximately 14°C at a depth of 20 to 100 m) throughout the year, but it is not enough to supply the entire heating system.
- GEO heat pumps transfer the heat from the soil and increase the temperature of the thermovector fluid by means of the compressor powered solely by electricity.
- This process is particularly efficient; in fact, 1 kW of electricity can produce up to 5 kW of thermal energy. Efficiency is ensured throughout the year, unlike with air-heat exchangers.
- By reversing the cycle during summer, GEO heat pumps can cool your home by releasing the heat captured inside to the outdoors, thereby settling the energy balance.

How does a geothermal system work?

- The soil on which the house is built can be a sufficient energy source to heat and cool your home.
- There are several solutions to exchange heat between an underground source and the thermovector fluid:
  - horizontal heat exchanger probes buried 2 metres deep;
  - vertical probes (buried 80 - 120 m deep);
  - Stratum, river or lake water.
- A thermovector fluid, usually water or a glycol-water mixture, flows inside the probes, transferring the heat to the GEO heat pump, thereby making it available for heating, cooling and sanitary production.

Probes

Horizontal heat exchanger probes

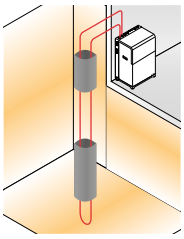


- This type of probes must be buried 1 - 1.5 m deep (always 20 cm below the freezing limit) in the soil, which must be left unsown.
- PE probes (DN 25 o DN 32) require an average lawn surface equal to 2.5 – 3 times the area to be heated.

Indications:

- moist and clay soils.
- Do not divert rainwater through drains to optimise soil regeneration.
- Do not pave over the surface of the manifold
- Avoid trees and bushes with deep roots.
- The circuit piping must be provided with a water vapour barrier to prevent condensation and ice dams from forming.

Closed circuit vertical probes (water-glycol)



- Vertical probes require a perforation of approximately 150 mm diameter where a PE pipe circuit is placed (geothermal probe) sealed with a bentonite mixture.
- PE probes (DN 32 for double-U pipes or DN 40 for U-pipes)
- According to the soil quality, for every thermal kW yielded by the heat pump an average between 15 and 20 m probe is required.

Indications:

- Drilling depth ranges between 80 and 120 m. For larger demands, several parallel probes must be used.
- In the event of multiple drilling, keep the probes at a distance of at least 8 - 10 m (grid) to prevent thermal interference.
- When drilling vertical probes, always provide an adequate distance from the building foundations in order to prevent soil subsidence and thermal strain. It is advisable to consult a geologist.

Performance	
Subsoil	**Performance [W/m2]**
Dry sandy soil	10–15
Moist sandy soil	15–20
Dry cohesive soil	20–25
Moist cohesive soil	25–30
Saturated sand/gravel	30–40

Performance	
Subsoil	**Performance [W/m2]**
Bad subsoil (dry soil)	20
Rock or moist soil	50
High conductivity rock	70
Dry gravel/sand	<20
Saturated gravel/sand	55-65
Moist clay, silt	30-40
Limestone rock	45-60
Sandstone	55-65
Granite	55-70
Gneiss	60-70

Geothermal systems

Stratum-water wells

Placement close to a water source or an underground stratum makes a direct heat exchange possible. The water which is collected is reintroduced by a second well after the heat exchange with the heat pump.

The geothermal system flow rate is 4 l/min/kW (heating).

Indications:
- The use of groundwater strata requires authorisation by the Province of competence.
- The minimum water temperature must not drop below 7°C, whereas the maximum water temperature must not exceed 20°C.
- The quality of the water must comply with the indications in the "chemical-physical properties" table at the end of the paragraph; otherwise, an external inspectable plate heat exchanger must be placed between the heat pump and the well water circuit.
- The level of the detected stratum must be measured by having it pour continuously for 24 – 48 hours, making sure that after this period the level of the stratum has not decreased (if so, a deeper or larger stratum must be found).
- It is important to ensure a distance of at least 10-15 m between the suction well and the drainage well to prevent underground hydraulic short-circuits (unless water is reintroduced in a stratum at a different level from the suction well).

Heating systems

Geothermal heat pumps are advanced energy systems that are integrated in systems with certain basic features e.g., good thermal insulation class, especially for cooling applications during summer. It is important to consider the operating temperatures: The economic convenience of using a geothermal heat pump is set to a 50°C flow temperature in domestic hot water production and at lower temperatures (35-40 °C) for the flow to the heating system.

This is why a typical system which is to be installed downstream a geothermal system (except for heated towel rails and radiators for bathrooms) can be:
- a low temperature floor radiant heating system
- a low temperature radiant wall heating system
- a low temperature ceiling radiant heating system
- a low temperature radiant plate heating system (e.g. as a replacement for old radiators)
- a medium temperature convection heating system (e.g. as a replacement for old radiators)
- a medium temperature fan coil heating system (e.g. as a replacement for old radiators)
- an oversized heated towel rail with auxiliary heating element or pouring of the primary boiler circuit.

Should there be several areas designed on the (floor or wall) radiant system i.e., in the event the heating system does not have enough water content/thermal inertia, the installation has to be adapted with a hydraulic breaker or a heat storage device to ensure adequate water circulation in the geothermal pump for regular operation.





Water-water geothermal heat pumps GEO HFE 6-42

Reversible geothermal heat pump with highly efficient domestic hot water production unit



Power from 6 to 33 kW

Functions

✔ Production of hot water for installation
✔ Production of chilled water for installation
✔ Production of high temperature domestic water
✔ Production in priority of DHW simultaneous with the production for the installation

Main features

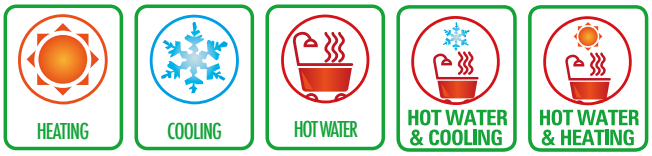
✔ high efficiency scroll-compressor
✔ inverter circulators on the three circuits (device, domestic, geothermal)
✔ total DHW recovery
✔ DHW production up to 65°C
✔ Galileus regulation for the whole system
✔ up to 5 heat pumps in series



Applications

✔ Exchange on probe (standard)
✔ Exchange on well (upon request)

Start-up: first start-up is mandatory. See page 361



		Probe			
		GEO HFE Without recovery		With recovery GEO HFE/R	
Gas	Model	Code	Price	Code	Price
R410a	6 M	444090045		444090001	
	6 T	444090047		444090003	
	8 M	444090049		444090005	
	8 T	444090051		444090007	
	12 M	444090053		444090009	
	12 T	444090055		444090011	
	16 T	444090059		444090015	
	20 T	444090061		444090017	
	24 T	444090063		444090019	
	33 T	444090065		444090021	
	42 T	444090120		444090124	

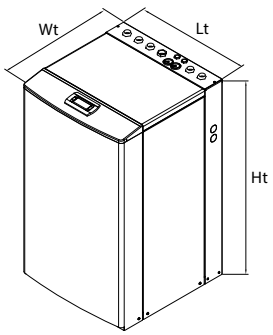
Models	
GEO	Heating-cooling for device with geothermal probe
GEO/R	Heating-cooling for device and DHW production with geothermal probe
GEO/P	Heating-cooling for device with well (upon request)
GEO/R/P	Heating-cooling for device and DHW production with well (upon request)

Technical data
GEO HFE 6-42

Sizes		6	8	12	16	20	24	33	42
Winter functioning B0/W35									
Energy label		A++	A++	A++	A++	A++	A++	A++	A++
Thermal power	kW	5,8	7,5	10,2	13,2	17,1	21,0	25,4	33,8
Compressor absorbed power	kW	1,30	1,7	2,2	2,9	3,7	4,4	5,5	7,8
COP		4,43	4,57	4,68	4,60	4,60	4,82	4,60	4,4
Device									
Device's water flow rate	m3/h	0,99	1,30	1,75	2,26	2,93	3,61	4,37	5,8
Head pressure	mca	6,5	6,2	5,8	5,0	6,7	6,0	11,1	81,5
Pump's absorbed power	kW	0,07	0,07	0,07	0,07	0,14	0,14	0,31	0,31
Geothermal									
Cooling power to exchange in probe	kW	4,5	6,0	8,1	10,5	13,5	16,0	20,2	26,0
Probe liquid flow rate	m3/h	1,30	1,71	2,32	3,00	3,87	4,58	5,79	8,1
Head pressure	mca	5,9	5,5	8,9	6,1	5,1	4,1	8,7	4,89
Pump's absorbed power	kW	0,07	0,07	0,14	0,14	0,14	0,14	0,31	0,31
DHW side B0/W50									
Thermal power	kW	5,3	7,0	9,4	11,9	15,7	18,6	23,7	31,5
Domestic water flow	m3/h	0,91	1,21	1,62	2,05	2,70	3,20	4,08	5,5
Head pressure	mca	6,6	6,2	5,7	5,5	4,1	5,2	5,3	9,18
Pump's absorbed power	kW	0,07	0,07	0,07	0,07	0,07	0,14	0,14	0,31
Winter functioning									
Thermal power	kW	7,5	9,9	13,3	16,7	22,2	26,1	33,5	42,3
Compressor absorbed power	kW	1,3	1,6	2,2	2,8	3,8	4,4	5,6	7,8
COP		5,85	6,10	6,14	6,04	5,88	5,99	6,02	5,5
Device									
Device's water flow rate	m3/h	1,27	1,67	2,24	2,82	3,75	4,40	5,64	7,4
Head pressure	mca	5,94	5,59	4,93	3,70	5,40	4,61	8,82	6,62
Well									
Cooling power to exchange in well	kW	6,2	8,2	11,1	13,9	18,4	21,6	27,8	34,5
Well liquid flow rate	m3/h	1,06	1,40	1,88	2,37	3,14	3,68	4,73	6,1
Exchanger pressure loss	mca	0,3	0,4	0,6	0,7	0,7	0,9	0,9	14,4
Summer functioning									
Cooling power	kW	9,5	12,5	16,6	20,9	27,5	32,7	41,6	47,6
Compressor's absorbed power	kW	1,3	1,5	2,1	2,8	3,8	4,3	5,7	8,6
EER		7,39	8,19	7,84	7,44	7,33	7,68	7,35	5,6
Device									
Device's water flow rate	m3/h	1,63	2,14	2,85	3,59	4,55	5,62	7,16	8,2
Device's head pressure	mca	5,8	5,0	3,7	3,0	3,3	3,3	6,6	4,58
Geothermal									
Thermal power to exchange in probe	kW	10,7	13,9	18,6	23,6	31,0	36,8	47,0	56,2
Probe liquid flow rate	m3/h	1,91	2,39	3,20	4,06	5,33	6,33	8,08	10,2
Head pressure	mca	5,1	4,5	5,4	3,1	3,4	4,2	4,1	2,55
Features									
Compressor type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Number of compressors		1	1	1	1	1	2	2	2
Refrigerant		R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a
Power supply	V/Ph/Hz	230/1/50	230/1/50 400/3/50	230/1/50 400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Diametric hydraulic fittings		1"	1"	1"	1"	1"	1"1/4	1"1/4	1"1/4
Expansion vessels (device and geothermal)	litres	2	2	4	4	8	8	8	8
Water circuit's max content	litres	29	29	57	57	114	114	114	114
Sound pressure at 1m	dB(A)	48	49	50	52	54	56	60	66
Weight (unpacked)	Kg	146	153	169	195	215	262	302	320
Weight (packed)	Kg	151	158	175	200	220	270	310	345

All indicated operating conditions comply with the regulation EN14511

Utility circuit				
B0/W35	radiant plant	°C	30/35	In-Out
W5/W35	radiant plant	°C	30/35	In-Out
B30/W18	radiant plant	°C	23/18	In-Out
	Domestic circuit			
B0/W50	DHW	°C	45/50	In-Out
External circuit				
B0/W35	glycol water geothermal probe 20%	°C	0/-3	In-Out
W5/W35	well water	°C	10/5	In-Out
B30/W18	glycol water geothermal probe 20%	°C	30/35	In-Out
B0/W50	glycol water geothermal probe 20%	°C	0/-3	In-Out



Dimensions	Sizes			
	6-8	12	16-20	24-42
Lt	620	620	620	800
Wt	575	650	650	880
Ht	1000	1080	1080	1070

Accessories
GEO HFE 6-42

Control/regulation accessories			
code	description	price	function
452010006*	Web Kit (pCOweb - remote control)		Makes it possible to control and supervise the installation via internet.
452010010*	Serial port kit RS485 Modbus		Makes it possible to communicate with the supervision systems through the Modbus protocol
452010074*	Serial port kit Konnex		Makes it possible to communicate with the supervision systems through the Konnex protocol
452010075*	Serial prot kit RS485 BACnet		Makes it possible to communicate with the supervision systems through the Bacnet protocol
452010050	My-zone kit with T/U thermostat		Thermostat for temperature and humidity. Max 30
452010051	My-board kit expansion kit for My-zone		Expansion kit to control the dehumidifier, the circulation pump, zone valve and mixing valve
452010053	Field-bus for zone RS485 kit		Necessary for connection of Galileus5 with Myzone and Myboard
452010061	My-power kit		It optimizes the self-consumption of the energy produced by the photovoltaic system and allows the activation of the heat pump according to the active electrical loads to prevent excessive consumption. It is possible to monitor a maximum phase current of 40 A.
452020123	Soundproofing Kit GEO HFE/EASY 6-8		The soundproofing kit must be installed on the compressor to attenuate the noise of the heat pump (the sound insulating panels are installed as standard). If purchased together with the heat pump, the soundproofing kit comes already installed.
452020124	Soundproofing Kit GEO HFE/EASY 12		
452020125	Soundproofing Kit GEO HFE/EASY 16		
452020126	Soundproofing Kit GEO HFE/EASY 20		
452020127	Soundproofing Kit GEO HFE 24		
452020128	Soundproofing Kit GEO HFE 33		
452020129	Soundproofing Kit GEO HFE 42		
452020136	Soft starter kit GEO HFE 24-33 T		Electronic device installed at the factory on a three-phase unit. Reduces the maximum value of the compressor starting current by using an inverter which powers the motor by varying the frequency so as to limit the inrush current
452020137	Soft starter kit GEO HFE 42 T		

* Kits 452010006, 452010010, 452010074, 452010075 are alternative options. Only one of these interfaces can be chosen.

Accessories for the device			
code	description	price	function
421120013	MFREE SMALL		Module for passive cooling – application size 6-8-12
421120014	MFREE MEDIUM		Module for passive cooling – application size 16-20-24
421120015	MFREE LARGE		Module for passive cooling – application size 33-42
452010003	Mixing kit		Makes it possible to regulate the supply temperature of the cooling device

Accessories for IANUS System with GEO (up to GEO 33)			
code	description	price	function
452010042	IANUS SOL KIT		Makes it possible to regulate thermal solar system for hybrid photovoltaic panels. Solar circulator not included
452010037	IANUS deviation kit		Optimized the use of thermal sources (PVT and probes) base on the environmental conditions. Obligated with mixed system (PVT + probe)

Water-water geothermal heat pumps GEO HFS 60-100

Reversible geothermal heat pump with highly efficient domestic hot water production unit. The circulation pumps on the three circuits not supplied as standard, but available as an accessory.



Power from 60 to 100 kW

Functions

✔ Production of hot water for installation
✔ Production of cold water for installation
✔ Production of high temperature domestic water
✔ Production in priority of DHW simultaneous with the production for the installation

Main features

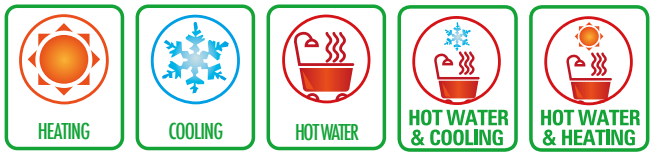
✔ high efficiency scroll-compressor
✔ total DHW recovery
✔ DHW production up to 65°C
✔ Galileus regulation for the whole system
✔ up to 5 heat pumps in series

Applications

✔ Exchange on probe (standard)
✔ Exchange on well (upon request)



Start-up: first start-up is mandatory. See page 361

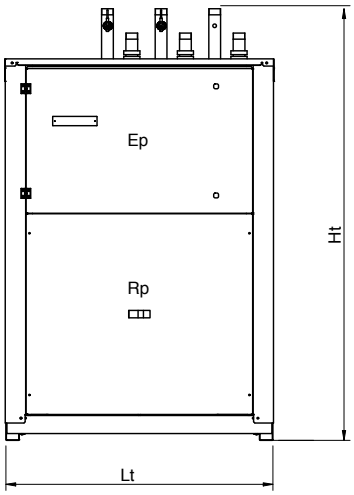


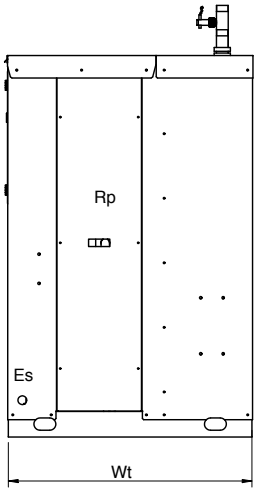
Models	
GEO/R	Heating, cooling for device and DHW production with geothermal probe
GEO/R/P	Heating, cooling for device and DHW production with well (upon request)
GEO	Heating, cooling for device with geothermal probe
GEO/P	Heating, cooling for device with well (upon request)

		without recovery GEO HFS		with recovery GEO HFS/R	
Gas	Model	Code	Price	Code	Price
R410a	60 T	444090121		444090125	
	80 T	444090122		444090126	
	100 T	444090123		444090127	

Technical data
GEO HFS 60-100

Sizes		60	80	100
Winter functioning B0/W35				
Energy label		A++	A++	A++
Thermal power	kW	48,8	64,6	85,4
Compressor absorbed power	kW	11,7	15,8	20
COP		4,2	4,1	4,3
Device				
Device's water flow rate	m3/h	8,2	10,8	14,4
Pump's absorbed power	kPa	18,0	29,3	17,5
Geothermal				
Cooling power to exchange in probe	kW	37,2	48,8	65,4
Probe liquid flow rate	m3/h	11,3	14,8	19,8
Exchanger load loss	kPa	41,9	56,3	40,6
DHW side B0/W50				
Thermal power	kW	44,9	58,5	78,6
Domestic water flow	m3/h	7,8	10,2	13,7
Exchanger load loss	kPa	15,2	20,2	14,8
Winter functioning W5/W35				
Thermal power	kW	60,1	79,3	105,0
Compressor absorbed power	kW	11,8	16,0	20,5
COP		5,2	5,0	5,2
Device				
Device's water flow rate	m3/h	10,5	13,8	18,3
Exchanger load loss	kPa	27,5	44,6	26,6
Well				
Cooling power to exchange in well	kW	48,3	63,3	84,6
Well liquid flow rate	m3/h	8,5	11,1	14,8
Exchanger pressure loss	kPa	20,1	32,2	19,2
Summer functioning B30/W18				
Cooling power	kW	65,3	86,9	117,7
Compressor's absorbed power	kW	13,0	16,8	22,0
EER		5,1	5,2	5,4
Device				
Device's water flow rate	m3/h	11,7	15,7	20,7
Device's exchanger load loss	mca	50,9	21,0	33,1
Geothermal				
Thermal power to exchange in probe	kW	78,2	103,6	139,7
Probe liquid flow rate	m3/h	14,6	19,5	25,7
Exchanger load loss	kPa	55,8	77,3	54,8
Features				
Compressor type		scroll	scroll	scroll
Number of compressors		2	2	2
Refrigerant		R410a	R410a	R410a
Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50
Diametric hydraulic fittings		1"1/2	1"1/2	1"1/2
Sound pressure at 1m	dB(A)	71	73	74
Weight (unpacked)	Kg	425	465	505
Weight (packed)	Kg	450	490	530





	Model
	60-80-100
Ht	1770
Lt	1100
Wt	1000

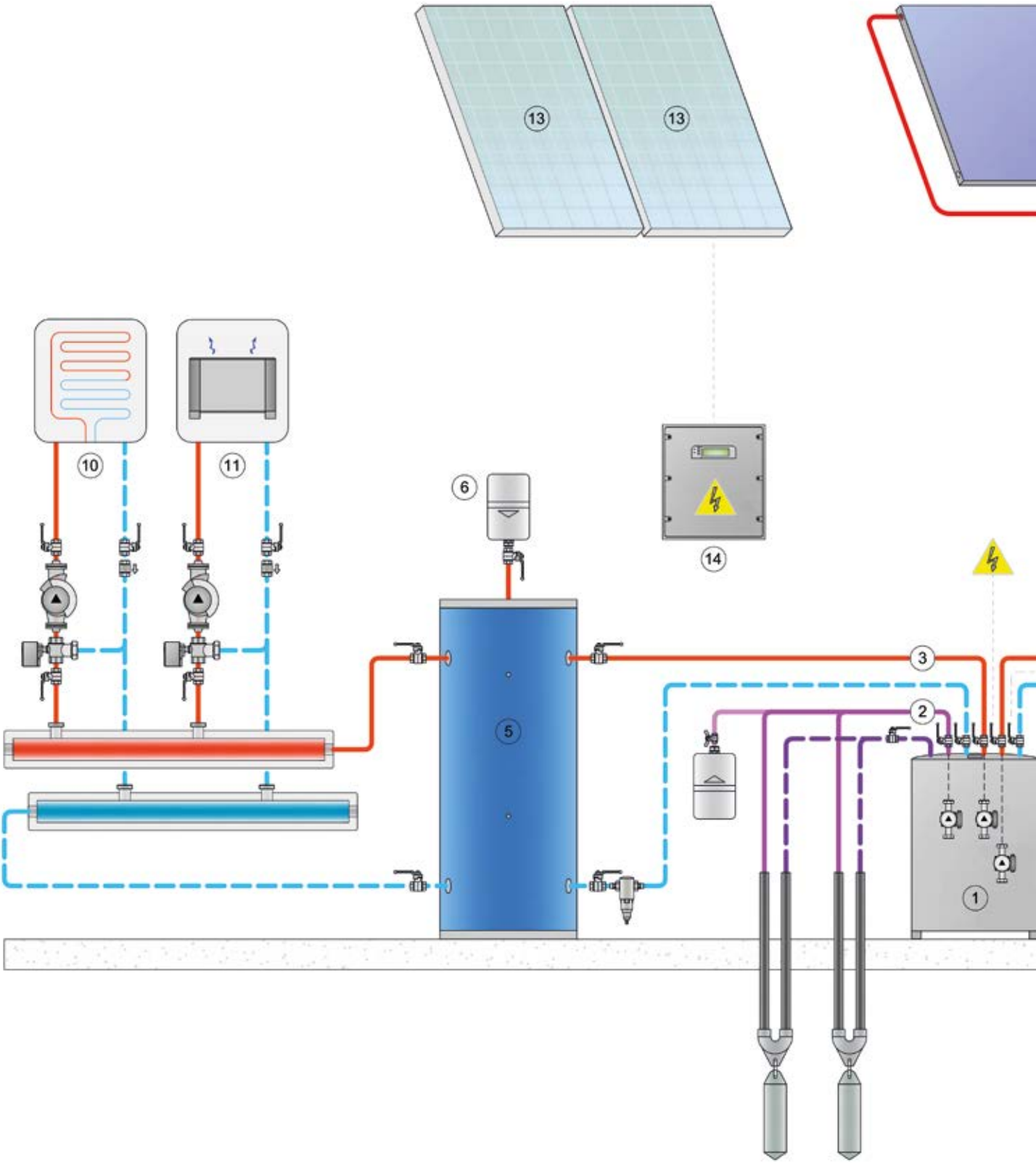
All indicated operating conditions comply with the regulation EN14511

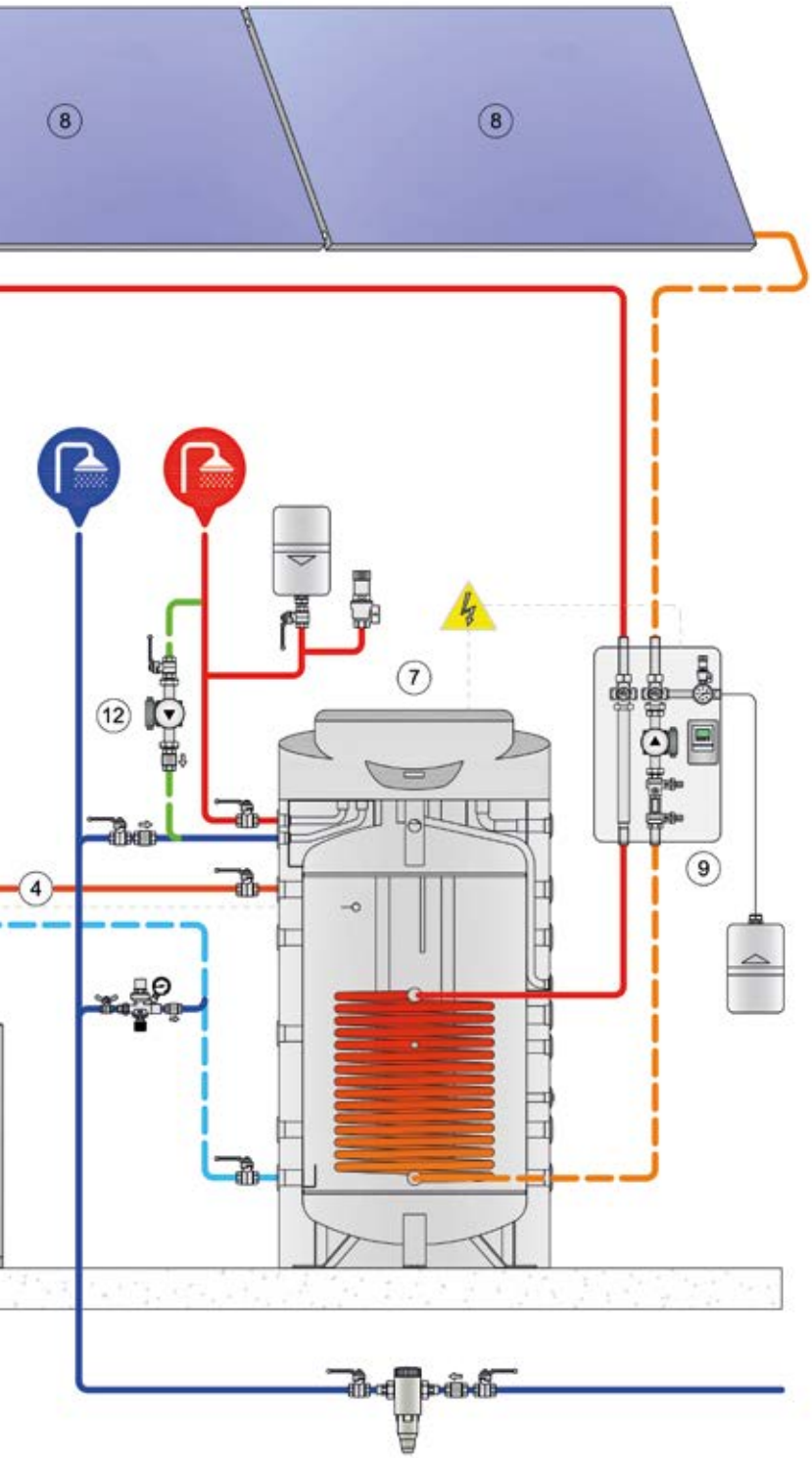
Utility circuit				
B0/W35	radiant plant	°C	30/35	In-Out
W5/W35	radiant plant	°C	30/35	In-Out
B30/W18	radiant plant	°C	23/18	In-Out
	Domestic circuit			
B0/W50	DHW	°C	45/50	In-Out
External circuit				
B0/W35	glycol water geothermal probe 20%	°C	0/-3	In-Out
W5/W35	well water	°C	10/5	In-Out
B30/W18	glycol water geothermal probe 20%	°C	30/35	In-Out
B0/W50	glycol water geothermal probe 20%	°C	0/-3	In-Out

Accessories
GEO HFS 60-100

code	description	price	function
452010006	Web Kit (remote control)		Makes it possible to control and supervise the installation via internet
452010010	Serial port kit RS485 Modbus		Makes it possible to communicate with the supervision systems through the Modbus protocol
452010074	Serial port kit Konnex		Makes it possible to communicate with the supervision systems through the Konnex protocol
452010075	Serial prot kit RS485 BACnet		Makes it possible to communicate with the supervision systems through the Bacnet protocol
452010050	My-zone kit with T/U thermostat		Thermostat for temperature and humidity. Max 30
452010051	My-board kit expansion kit for My-zone		Expansion kit to control the dehumidifier, the circulation pump, zone valve and mixing valve
452010053	Field-bus for zone RS485 kit		Necessary for connection of Galileus5 with Myzone and Myboard
452010061	My-power kit		It optimizes the self-consumption of the energy produced by the photovoltaic system and allows the activation of the heat pump according to the active electrical loads to prevent excessive consumption. It is possible to monitor a maximum phase current of 40 A.
452020122	Anti-vibration kit GEO HFS 60-80-100		Anti-vibration feet and hardware for fixing to the unit to be installed on site during the heat pump positioning. It allows to damp the vibrations transmitted by the heat pump to the structure on which it rests. For the smaller units, the anti-vibration feet are included in the supply of the unit.
452020130	Soundproofing Kit GEO HFS 60-80		The soundproofing kit must be installed on the compressor to attenuate the noise of the heat pump (the sound insulating panels are installed as standard). If purchased together with the heat pump, the soundproofing kit comes already installed.
452020131	Soundproofing Kit GEO HFS 100		
452020138	Soft starter kit GEO HFS 60 T		Electronic device installed at the factory on a three-phase unit. Reduces the maximum value of the compressor starting current by using an inverter which powers the motor by varying the frequency so as to limit the inrush current
452020139	Soft starter kit GEO HFS 80 T		
452020140	Soft starter kit GEO HFS 100 T		
452010003	Mixing kit		Makes it possible to regulate the supply temperature of the cooling device
452020142	Pumps kit GEO HFS 60		Module that includes the pumps of the geothermal, the plant and the sanitary. The electric power circuit of the pumps must be prepared by the customer. Through a command provided by special outputs set up in the electrical panel of the unit, the pumps for the circulation of hydraulic fluids between the machine and the geothermal probes, the system storage and the sanitary puffer are controlled.
452020143	Pumps kit GEO HFS 80		
452020144	Pumps kit GEO HFS 100		
452020145	Pumps kit GEO/R HFS 60		
452020146	Pumps kit GEO/R HFS 80		
452020147	Pumps kit GEO/R HFS 100		

Installation chart
GEO HFE - HFS





1	GEO heat pump
2	Geothermal or well circuit with inverter pump
3	System circuit with inverter pump
4	DHW circuit with inverter pump
5	Accumulator tank, VKG-HC model
6	Safety kit
7	Semi-instantaneous DHW preparer AQUAMATIC
8	Thermal solar collector
9	Solar pump kit
10	Heating system 1
11	Heating system 2
12	DHW recirculation sytem
13	PV system
14	PV inverter

Water-water geothermal heat pumps GEO EASY-E HT/HTR

High temperature geothermal heat pump

Power from 6 to 33kW



Functions

✔ Production of very hot water for the installation
✔ Production of cold water for the installation (HTR version)
✔ Production of DHW (with accessory)

Main features

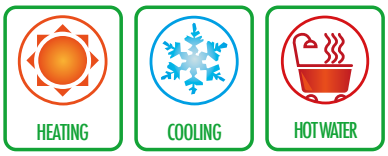
✔ High efficiency scroll-compressor
✔ On-off circulators on the three circuits as accessory to install on the outside of the device
✔ DHW production up to 65°C with kit to assembly on the outside of the device

Applications

✔ Exchange on probe (standard)
✔ Exchange on well (upon request)



Start-up: first start-up is mandatory. See page 361



Models	
GEO EASY-E HT	Heating and DHW production (accessory)
GEO EASY-E HTR	Heating-cooling and DHW production (accessory)

Compatibility

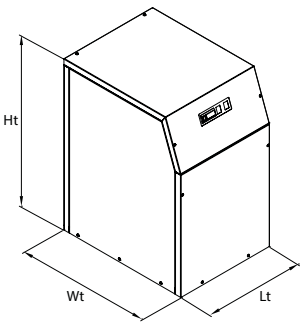
	Domestic diverter control kit	Easy diverter kit	MFREE	Control kit MFREE	Plant circulator kit	Geotherm circulator kit	Pressure switch kit	Solenoid kit	External air probe kit	Guard resistance kit	Exchangers resistance kit	Phase cut kit (1)	Compressor insulation kit
EASY-E HT geothermal probe	✔	✔	✔	✔	✔	✔	-	-	✔	✔	✔	-	✔
EASY-E HT well water	✔	✔	✔	✔	✔	-	-	✔	✔	✔	✔	-	✔
EASY-E HTR geothermal probe	✔	✔	✔	✔	✔	✔	-	-	✔	✔	✔	✔	✔
EASY-E HTR well water	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	-	✔

Technical data
GEO EASY-E HT/HTR

Sizes		6	8	12	16	20	24	33
Energy label		A++	A++	A++	A++	A++	A++	A++
Winter functioning BO/W35								
Thermal power	kW	5,8	7,5	10,2	13,2	17,1	21,1	28,3
Compressor's absorbed power	kW	1,3	1,7	2,2	2,9	3,7	4,6	6,1
COP		4,43	4,34	4,68	4,60	4,60	4,64	4,62
Device								
Device's water flow rate	m^3/h	0,99	1,30	1,75	2,26	2,93	3,63	4,87
Exchanger pressure loss	mca	0,3	0,3	0,5	0,7	0,7	0,8	1,0
Geothermal								
Cooling power to exchange in probe	kW	4,5	6,0	8,1	10,5	13,5	16,8	22,5
Probe liquid flow rate	m^3/h	1,30	1,71	2,32	3,00	3,87	4,82	6,45
Exchanger pressure loss	mca	0,7	0,7	1,1	1,4	1,4	1,4	1,7
Domestic W5/W35								
Thermal power	kW	7,5	9,9	13,3	16,7	22,2	27,5	37,2
Compressor's absorbed power	kW	1,3	1,6	2,2	2,8	3,8	4,7	6,3
COP		5,85	6,10	6,14	6,04	5,88	5,86	5,95
Device								
Domestic water flow	m^3/h	1,27	1,67	2,24	2,82	3,75	4,64	6,28
Exchanger pressure loss	mca	0,46	0,51	0,78	1,00	1,10	1,19	1,62
Well								
Cooling power to exchange in well	kW	6,2	8,2	11,1	13,9	18,4	22,7	30,9
Well liquid flow rate	m^3/h	1,06	1,40	1,88	2,37	3,14	3,87	5,26
Exchanger's pressure loss	mca	0,3	0,4	0,6	0,7	0,7	0,9	0,9
Summer functioning B30/W18								
Cooling power	kW	9,5	12,5	16,6	20,9	27,5	34,3	43,8
Compressor's absorbed power	kW	1,3	1,5	2,1	2,8	3,8	4,9	6,7
COP		7,39	8,19	7,84	7,44	7,33	6,97	6,55
Device								
Device's water flow rate	m^3/h	1,63	2,14	2,85	3,59	4,55	5,90	7,53
Device's head pressure	mca	0,7	0,8	1,2	1,5	3,3	1,6	1,9
Geothermal								
Thermal power to exchange in probe	kW	10,7	13,9	18,6	23,6	31,0	39,0	50,5
Probe's liquid flow rate	m^3/h	3,07	2,39	3,20	4,06	5,33	6,71	8,69
Exchanger pressure loss	mca	0,9	1,0	1,5	2,0	3,4	2,4	3,0
Features								
Refrigerant		R410a	R410a	R410a	R410a	R410a	R410a	R410a
Compressor type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Number of compressors		1	1	1	1	1	1	1
Power supply	V/Ph/Hz	230/1/50 400/3/50	230/1/50 400/3/50	230/1/50 400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Hydraulic coupling		1"	1"	1"	1"	1"	1"1/4	1"1/4
Sound pressure at 1m	dB(A)	48	49	50	52	54	59	61
Weight (unpacked)	kg	112	117	127	139	172	197	215
Weight (packed)	kg	130	135	145	157	192	217	235

All indicated working conditions comply with the regulation EN14511

Utility circuit				
BO/W35	radiant plant	°C	30/35	In-Out
W5/W35	radiant plant	°C	30/35	In-Out
B30/W18	radiant plant	°C	23/18	In-Out
External circuit				
BO/W35	glycol water geothermal probe 20%	°C	0/-3	In-Out
W5/W35	glycol water geothermal probe 20%	°C	10/5	In-Out
B30/W18	glycol water geothermal probe 20%	°C	30/35	In-Out



Dim.	Sizes	
	6-16	20-33
Lt	500	670
Wt	660	855
Ht	885	965

Code
GEO EASY-E HT/HTR



HEATING

GEOTHERM WELL

HEATING COOLING

GEOTHERM WELL

EASY geothermal systems					
		Only hot GEO EASY-E HT		Hot/cold GEO EASY-E HTR*	
gas	model	code	price	code	price
R410a	6 M	444100001		444100012	
	6 T	444100003		444100014	
	8 M	444100004		444100015	
	8 T	444100006		444100017	
	12 M	444100009		444100018	
	12 T	444100008		444100020	
	16 T	444100010		444100021	
	20 T	444100011		444100022	
	24 T	444100023		444100025	
	33T	444100024		444100026	

*R indicated that the heat pump is reversible

Accessories
GEO EASY-E HT/HTR

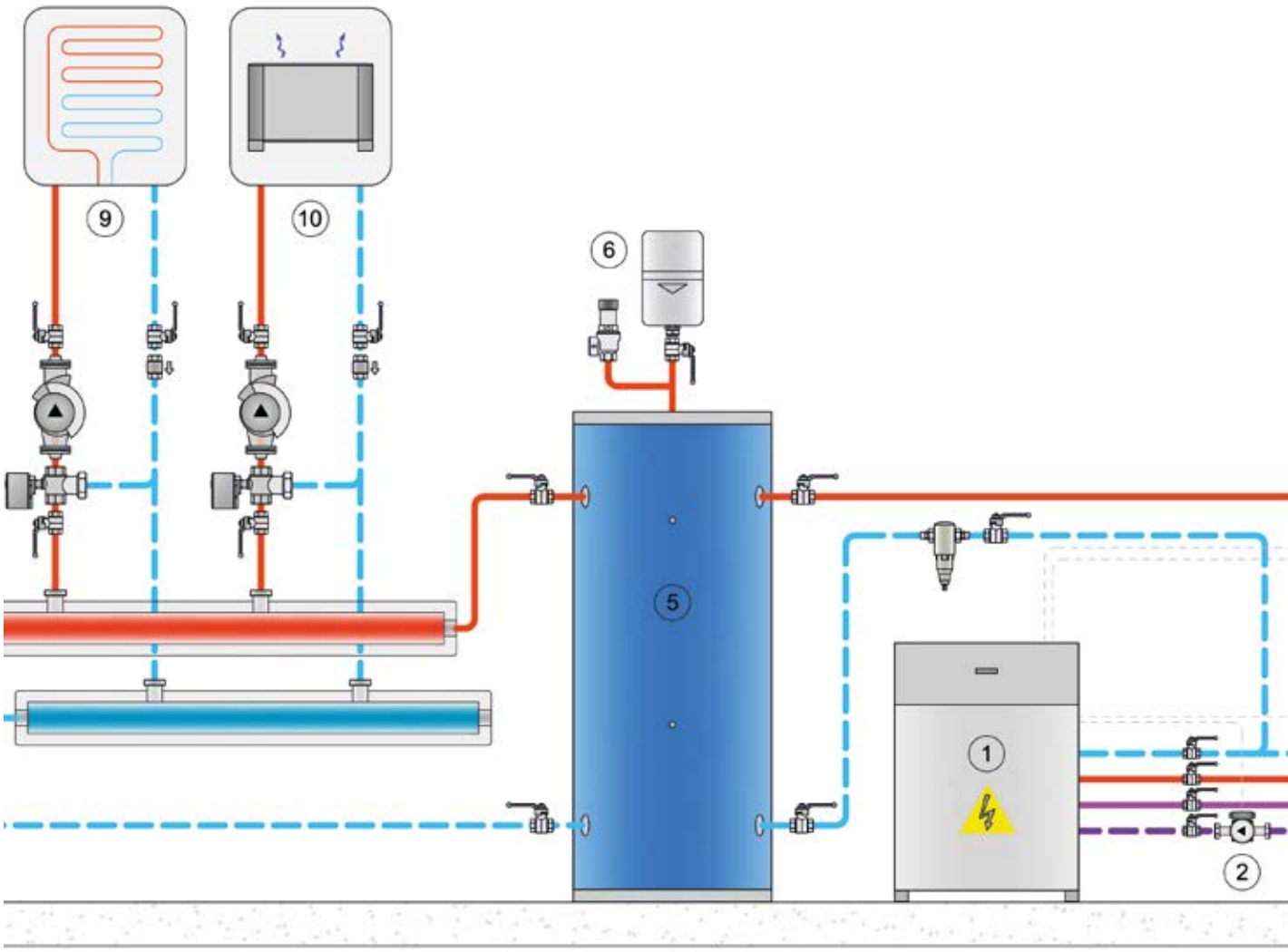
Device accessories			
code	**description**	**price**	**function**
452020028	KIT DEVIATRICE SANITARIO EASY-E		Valvola deviatrice per la produzione di ACS.
452020123	Soundproofing Kit GEO HFE/EASY 6-8		The soundproofing kit must be installed on the compressor to attenuate the noise of the heat pump (the sound insulating panels are installed as standard). If purchased together with the heat pump, the soundproofing kit comes already installed.
452020124	Soundproofing Kit GEO HFE/EASY 12		
452020125	Soundproofing Kit GEO HFE/EASY 16		
452020126	Soundproofing Kit GEO HFE/EASY 20		
452020132	Soundproofing Kit GEO EASY 24		
452020133	Soundproofing Kit GEO EASY 33		
452020134	Soft starter kit GEO HFE/EASY 6-8-12 M		Electromechanical device installed at the factory instead of the compressor contactor on single-phase units. It reduces the maximum value of the compressor starting current by varying the supply voltage of the motor through the management of a specific starting capacitor.
452020135	Soft starter kit GEO HFE/EASY 6-8-12-16-20 T		Electronic device installed at the factory on a three-phase unit. Reduces the maximum value of the compressor starting current by using an inverter which powers the motor by varying the frequency so as to limit the inrush current
452020141	Soft starter kit GEO EASY 24-33 T		

Accessories for control and regulation			
code	**description**	**price**	**function**
452010008	External air probe kit		Makes it possible to check the outside air temperature for the EASY series with box, external assembly

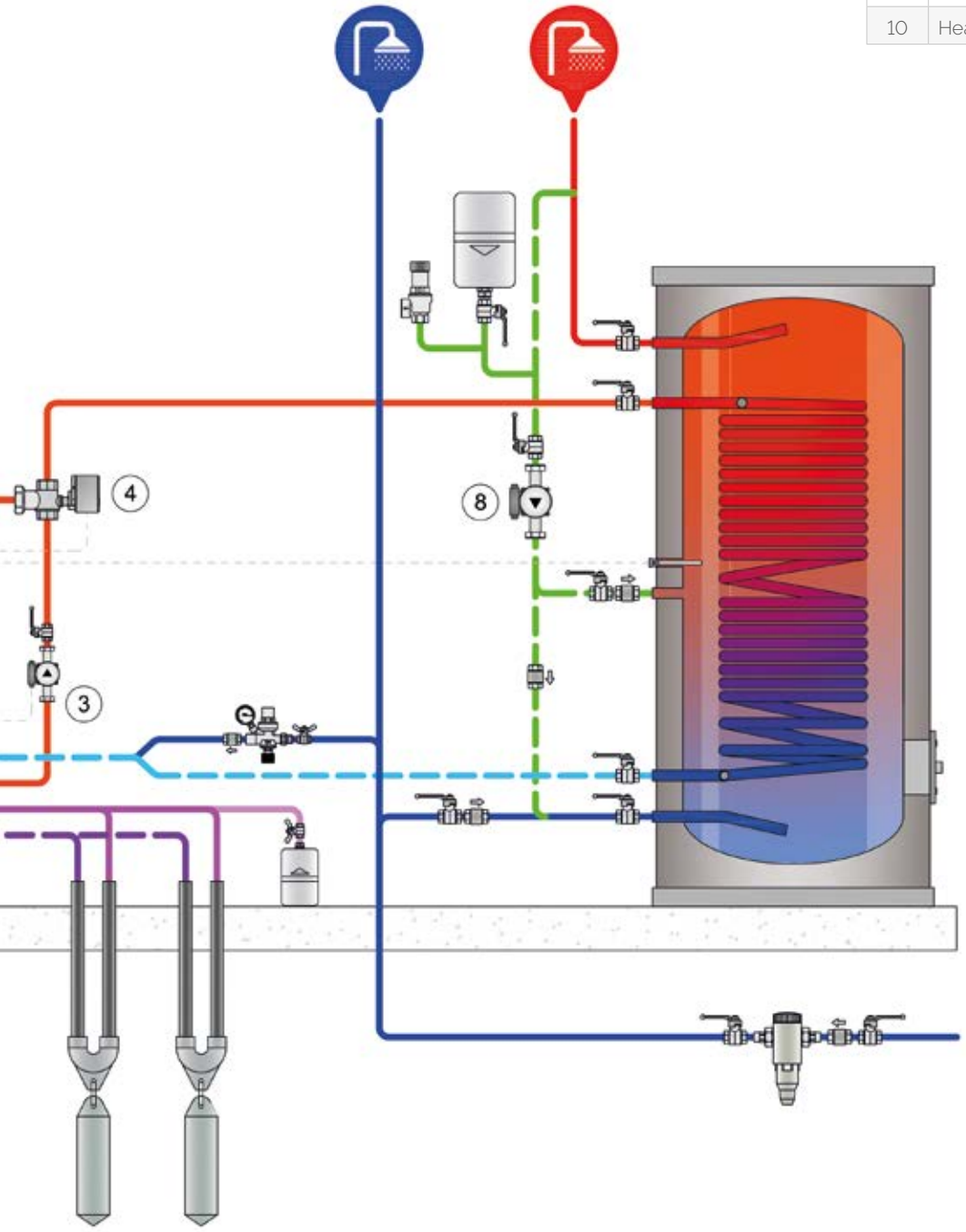
Accessori Macchina			
codice	**descrizione**	**prezzo**	**funzione**
452020097	Circ with inverter kit EASY-E 6-8-12-16 for device		Circulator with inverter for the installation (external assembly) sizes 6 to 16 kW
452020098	Circ with inverter kit EASY-E 20 for device		Circulator with inverter for the installation (external assembly) size 20 kW
452020099	Circ with inverter kit EASY-E 24 for device		Circulator with inverter for the installation (external assembly) size 24 kW
452020100	Circ with inverter kit EASY-E 33 for device		Circulator with inverter for the installation (external assembly) size 33 kW
452020101	Circ with inverter kit EASY-E 6-8 for geothermal		Circulator with inverter for the installation (external assembly) sizes 6 to 8 kW
452020102	Circ with inverter kit EASY-E 12-16 for geothermal		Circulator with inverter for the installation (external assembly) sizes 12 to 16 kW
452020103	Circ with inverter kit EASY-E 20 for device		Circulator with inverter for the installation (external assembly) size 20 kW
452020104	Circ with inverter kit EASY-E 24 for device		Circulator with inverter for the installation (external assembly) size 24 kW
452020105	Circ with inverter kit EASY-E 33 for device		Circulator with inverter for the installation (external assembly) size 33 kW

Layout
GEO EASY-E HT / HTR

Installation diagram with SMART HP water heater for DHW production.
It is also possible to make the plant with AQUAMATIC storage unit..



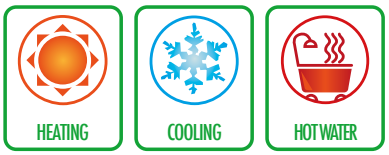
1	GEO EASY-E HT/HTR heat pump
2	Geothermal pump kit
3	System pump kit
4	3 way diverting valve for DHW sytem
5	Accumulator tank, VKG-HC model
6	Safety kit
7	SMART HP indirect water heater
8	DHW recirculation sytem
9	Heating system 1
10	Heating system 2



Hybrid systems
IANUS system

Ianus: The latest green technology generation

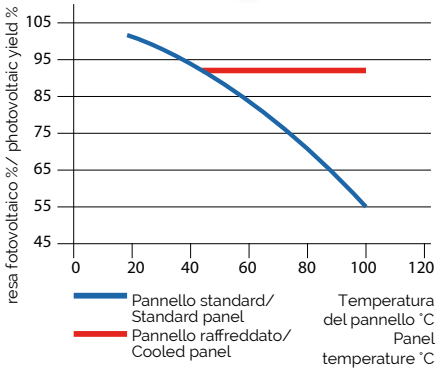
IANUS is an autonomous system combining a geothermal heat pump with hybrid photovoltaic thermal panels. It provides residential heating, cooling and domestic hot water production by using the generated electrical power. The IANUS system transforms free and renewable air and solar energy into the thermal and electric power needed by the housing unit. IANUS makes the most out of available renewable energy with no need for any fossil fuels, and without contributing to greenhouse gas emissions.



Benefits of the IANUS system

- Thermal and electrical energy form the same solar panel
- Improved use of panel absorbing surface area
- Increase photovoltaic performance through cell cooling
- Reduced material and installation costs
- Autonomous electrical power generation
- Use of state incentives feed –in tariff + tax relief
- Use of reduced rate meter for the heat pump, resulting in improved energy consumption balance





What does “hybrid system” mean?

Hybrid photovoltaic collectors transform part of the absorbed solar radiation into electric power and transfer the thermal energy generated by radiation and by the electric power to the heat pump.

Two important benefits are therefore obtained:

- the conditions for the efficient operation of the heat pump are created (high COP), as the pump receives the necessary electric and thermal energy from photovoltaic collectors;
- photovoltaic cell operating temperature is reduced, thus increasing kWh production by up to 30%.

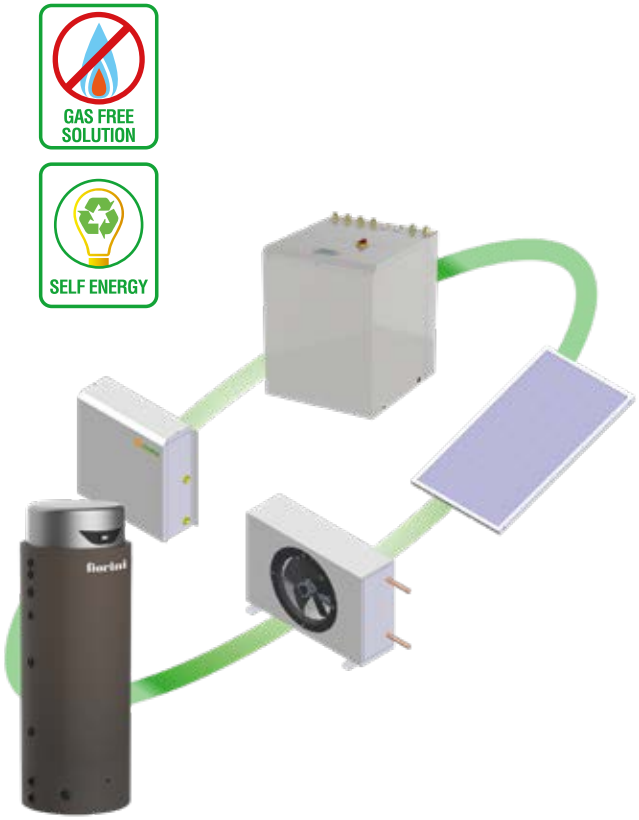
Hydrid systems
IANUS system

The system components' operation is coordinated and improved by the Galileus software, which creates the right conditions for high comfort and user-friendly technology. In case of frost or ice formation on the front side of the photovoltaic panel that would cause an interruption in electricity production, the system automatically removes the ice by shortly reversing the refrigeration cycle and heating the glass surface.

The system ensures the same level of comfort with high performance even in case of snow, ice or frost. It improves power production efficiency by heating the panel surface in the most cost-effective way and making it run in the shortest time possible.

Main components of the IANUS system are:

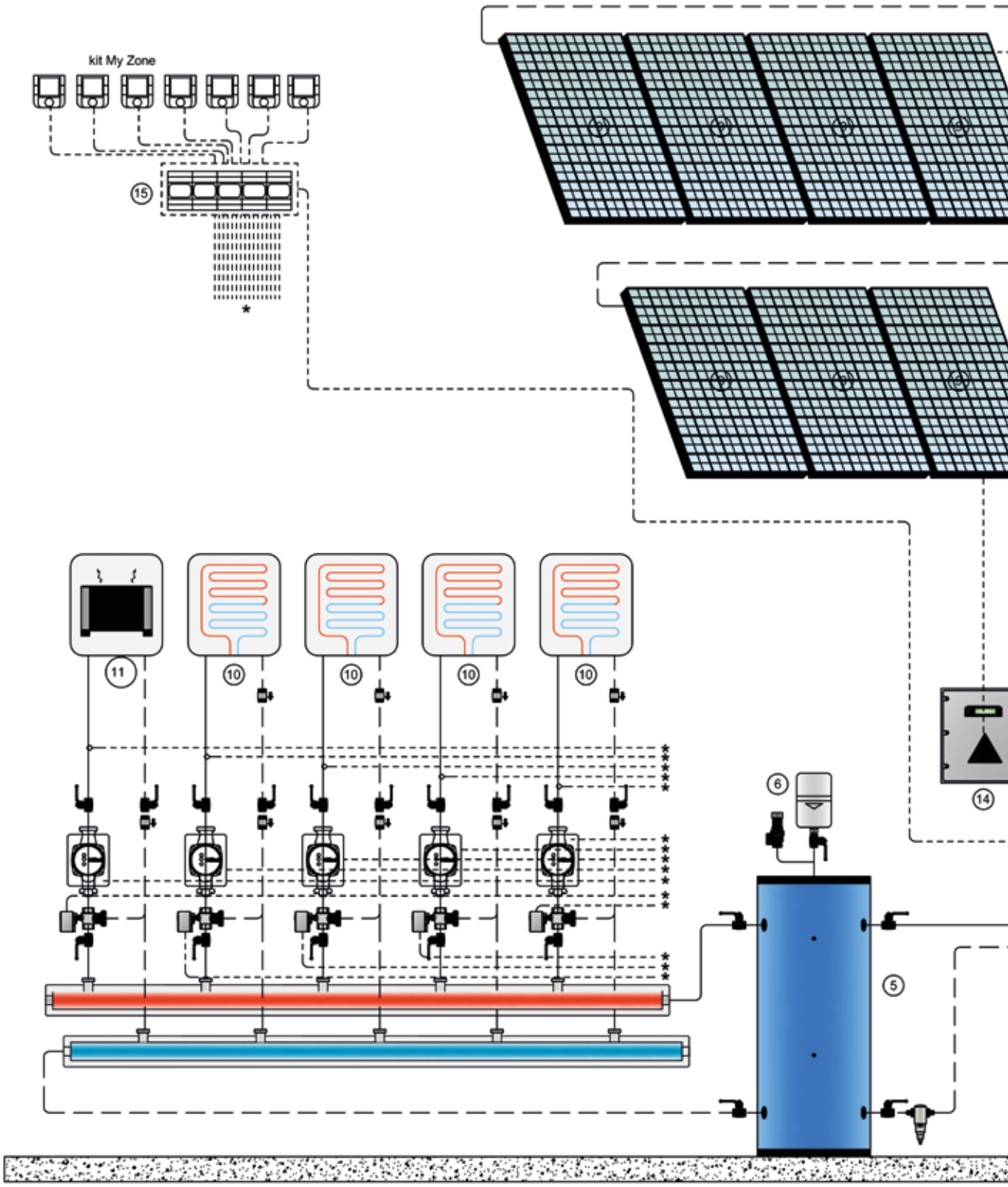
- Heat pump for heating, cooling and DHW productions
- Hybrid photovoltaic panels
- Device's storage tank
- FREE HEATING kit which contains a plate heat exchanger, a 3-way deviation valve and a circulation pump; it heats DHW under sufficient solar radiation conditions without activating the heat pump compressor.

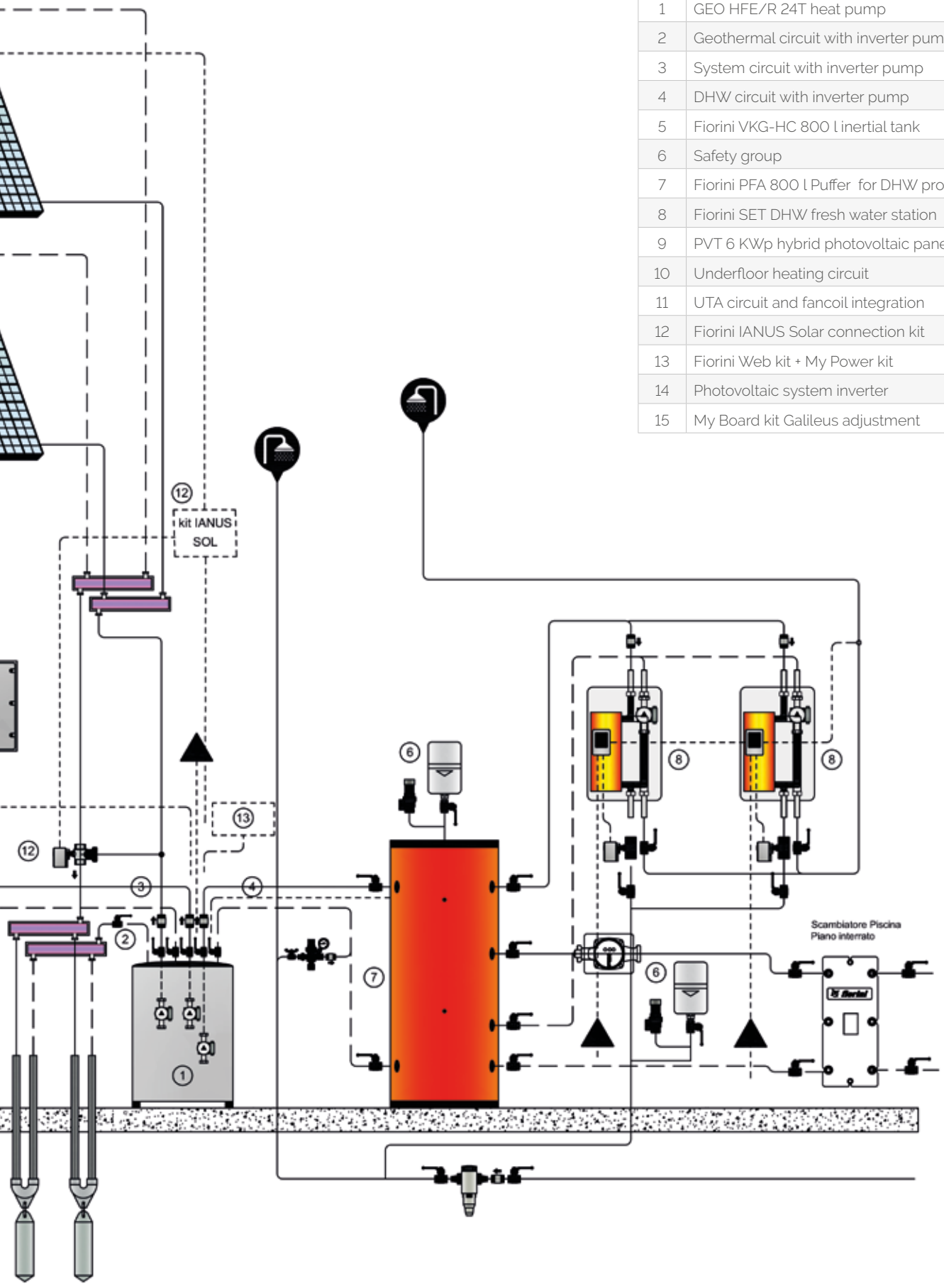


Typical combinations for housing units from 6 to 10 kW
(Some components are available only on request)

GEO HFE	Thermal photovoltaic panel		Kit Freeheating	Kit Drycooler	Diverter kit
					
Size	**n°**	**kWp**	**n°**	**Size**	**n°**
6	19	4,5	1	Dry 6-8	1
8	26	6	1	Dry 6-8	1
10	34	8	1	Dry 10-12	1

IANUS hybrid system solutions





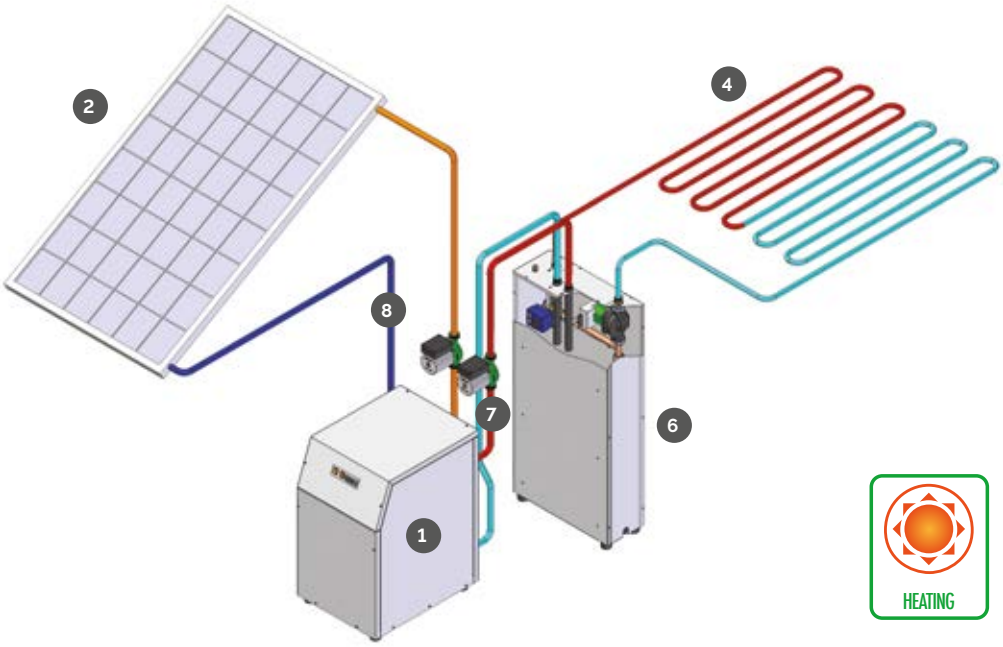
1	GEO HFE/R 24T heat pump
2	Geothermal circuit with inverter pump
3	System circuit with inverter pump
4	DHW circuit with inverter pump
5	Fiorini VKG-HC 800 l inertial tank
6	Safety group
7	Fiorini PFA 800 l Puffer for DHW production
8	Fiorini SET DHW fresh water station
9	PVT 6 KWp hybrid photovoltaic panels
10	Underfloor heating circuit
11	UTA circuit and fancoil integration
12	Fiorini IANUS Solar connection kit
13	Fiorini Web kit + My Power kit
14	Photovoltaic system inverter
15	My Board kit Galileus adjustment

IANUS hybrid system solutions

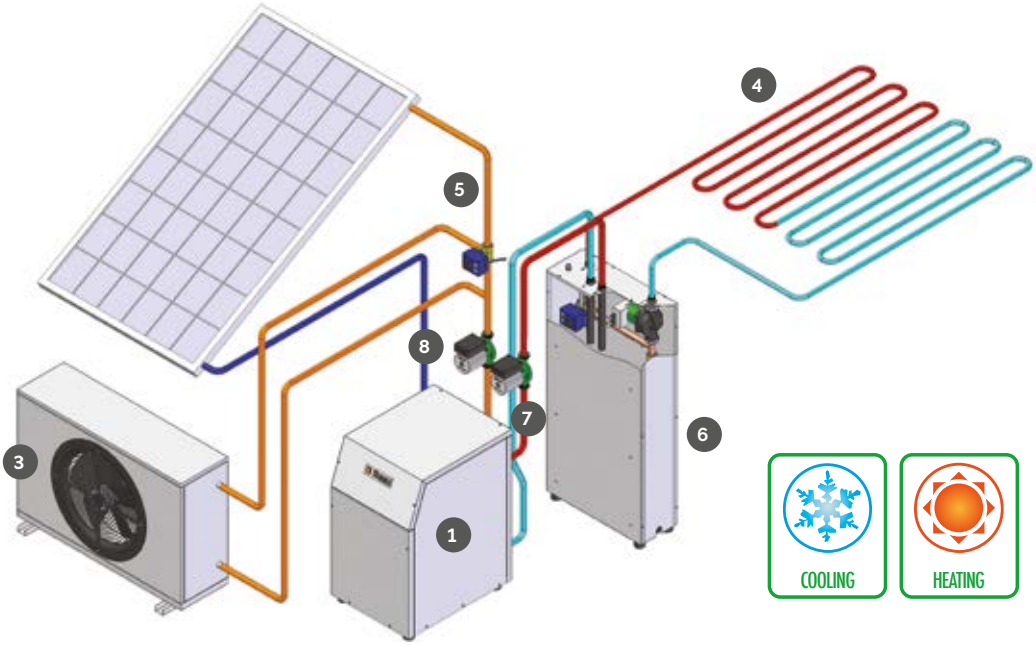
1	GEO EASY-E HT heat pump
2	thermal photovoltaic panel
3	dry cooler
4	floor heating
5	IANUS deviation valve kit
6	compact storage tank for the installation
7	device's circulation kit
8	geothermal circulation kit

Device's solutions with Ianus system are proposed below according to the energy demand of the housing unit.

Heating with EASY-E HT

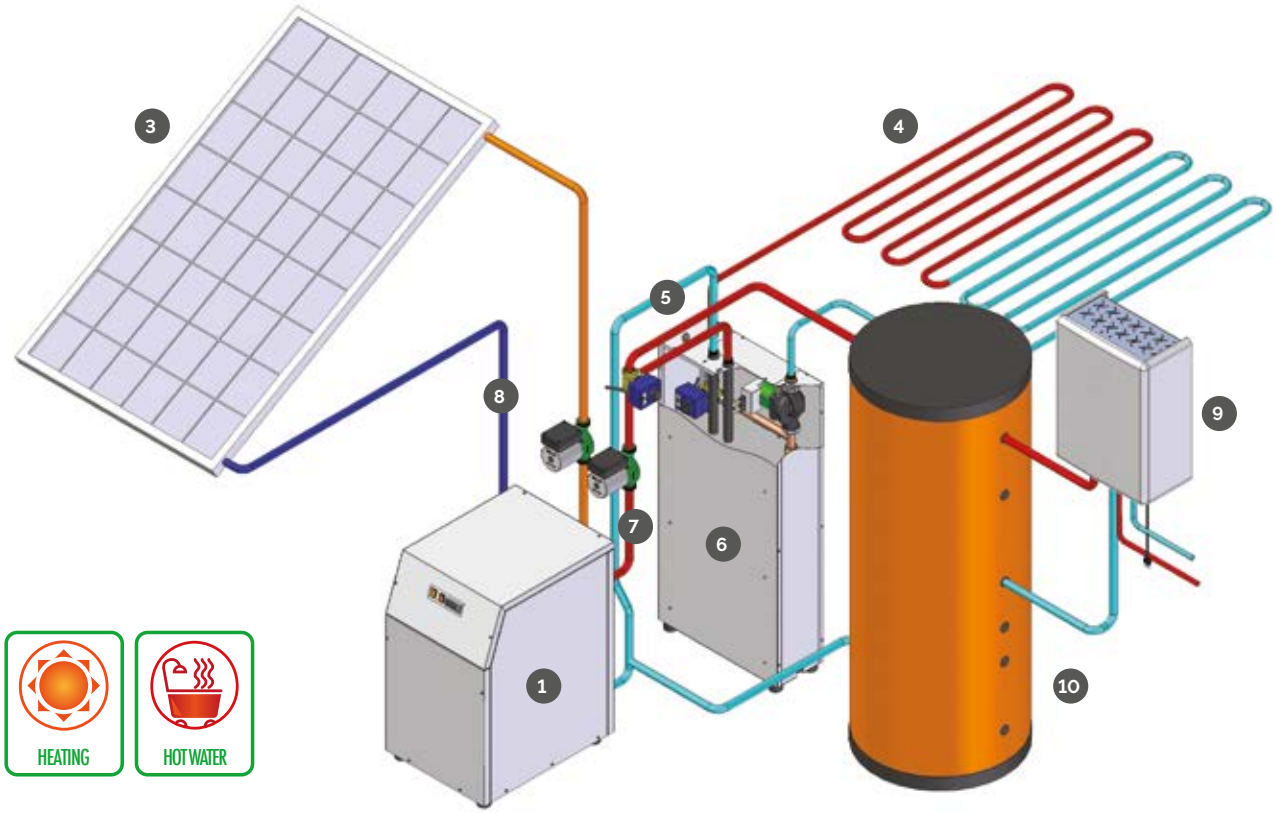


Heating and cooling with EASY-E HTR



IANUS hybrid system solutions

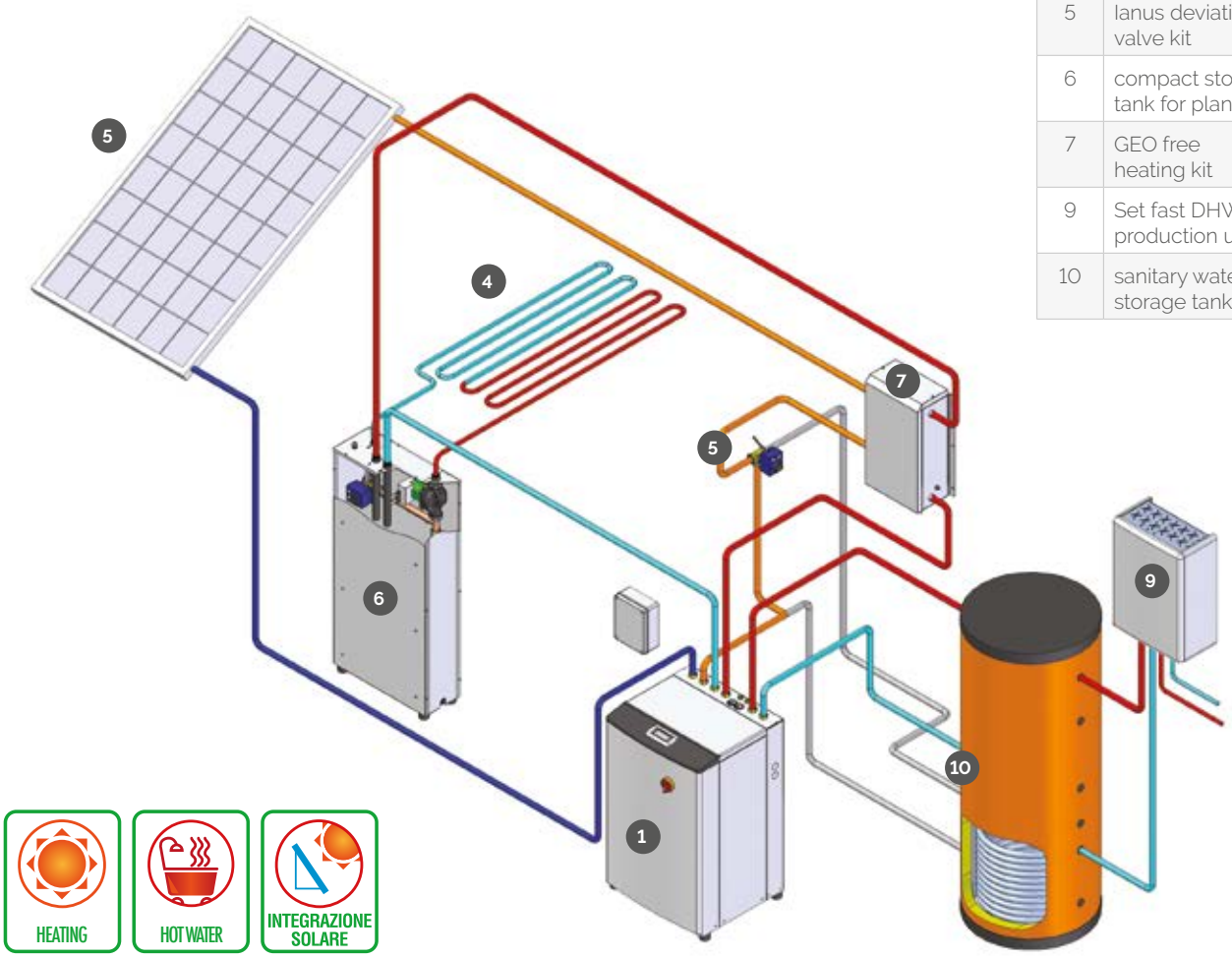
Heating and DHW production with EASY-E HT + DHW kit



1	GEO EASY-E HT heat pump
3	thermal photovoltaic panel
4	floor heating
5	IANUS deviation valve kit
6	Compact inertial storage tank
7	device circulator kit
8	geothermal probe circulator kit
9	SET fast DHW production unit
10	sanitary water storage tank

IANUS hybrid system solutions

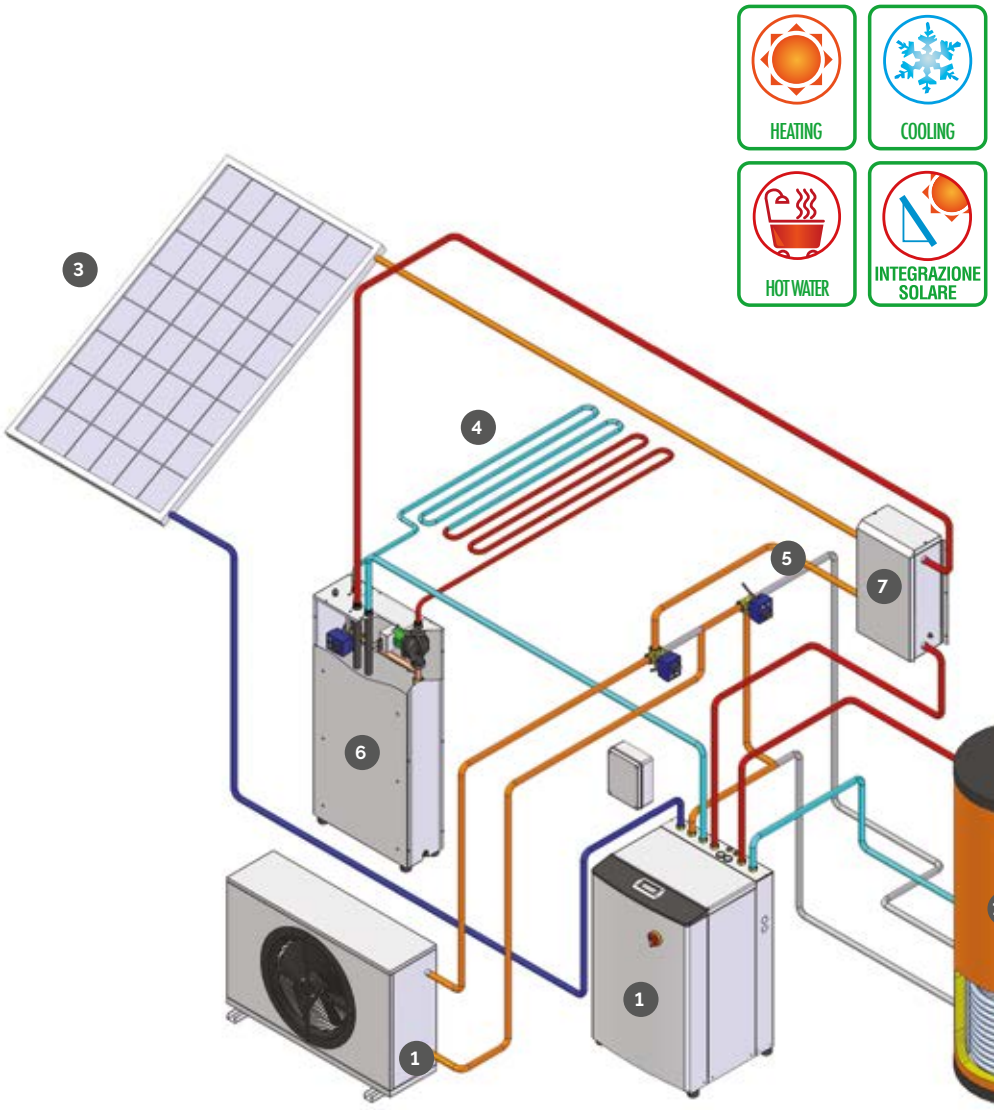
Heating + DHW + solar thermal
With GEO HFE + HFREE kit free heating



1	GEO HFE heat pump
3	thermal photovoltaic panel
4	floor heating
5	Ianus deviation valve kit
6	compact storage tank for plant
7	GEO free heating kit
9	Set fast DHW production unit
10	sanitary water storage tank

IANUS hybrid system solutions

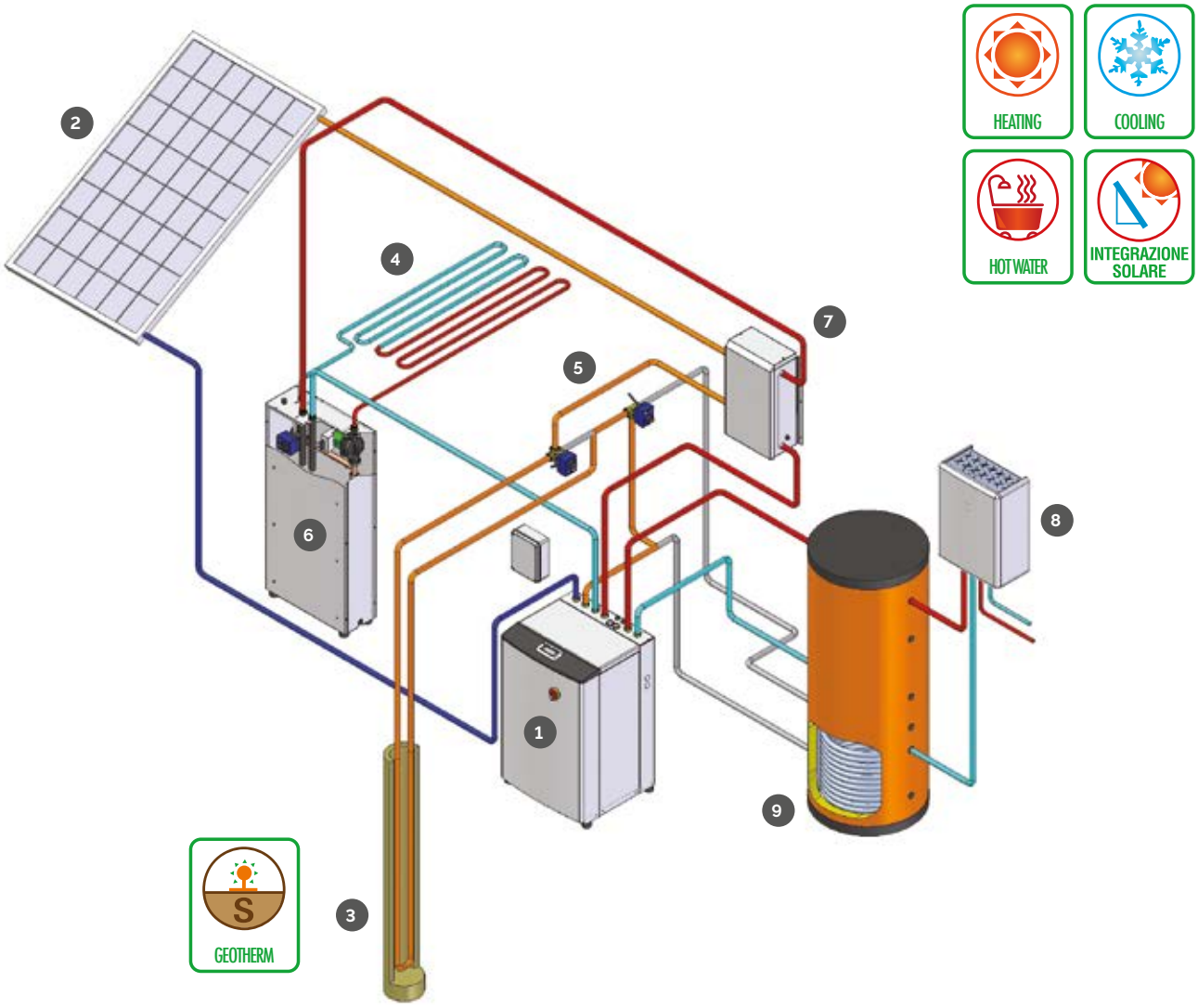
heating + cooling + DHW + solar thermal with GEO HFE



1	GEO HFE heat pump
3	thermal photovoltaic panel
4	floor heating
5	Ianus deviation valve kit
6	compact storage tank for plant
7	GEO free heating kit
9	Set fast DHW production unit
10	sanitary water storage tank

IANUS hybrid system solutions

COMBINED SYSTEM WITH PHOTOVOLTAIC PANEL AND GEOTHERMAL PROBE
HEATING + COOLING + DHW + SOLAR THERMAL con GEO HF / with GEO HFE



1	GEO HFE heat pump
2	thermal photovoltaic panel
3	geothermal probe
4	floor heating
5	IANUS deviation valve kit
6	compact inertial tank for the installation
7	GEO free heating kit
8	SET fast DHW production unit
9	sanitary water storage tank

By combining the heat pump with a double source (geothermal probe + PV/T panel), the heat pump receives the power needed to ensure the proper operation for winter heating and summer cooling. It also makes it possible to improve energy source management, by reducing the area of the photovoltaic field and the depth and number of probes. During cooling, the heat dissipated by the heat pump and the panel – which, in the meantime, is cooled down – is exchanged in the geothermal probe to obtain a useful soil regeneration effect, working as thermal storage for the following heating phase.

Accessories for geothermal devices MFREE

The Freecooling module contains a brazed plate heat exchanger and a diverter valve. In summer mode, the heat pump manages the diverting valve so as to subtract heat from the system circuit transferring it to the geothermal one, obtaining a passive cooling effect (without the use of the compressor, if the conditions allow it).

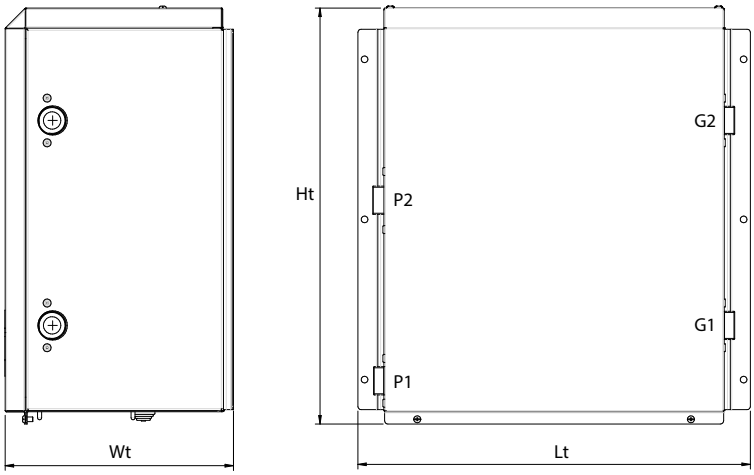
Model	HFE compatibility	Code	Price
MFREE small	for sizes 6-8-12	421120013	
MFREE medium	for sizes 16-20-24	421120014	
MFREE large	for sizes 33-42	421120015	





Technical data

				System		Source	
HFE size	Compatible MFREE	Exchanger model	Cooling power kW	Flow m³/h	Load loss kPa	Flow m³/h	Load loss kPa
6	SMALL	P7-30	9,46	1,63	7,1	1,63	6,1
8			12,45	2,14	11,7	2,14	10
12			16,55	2,85	19,7	2,85	16,9
16	MEDIUM	P7-70	20,9	3,59	6,5	3,59	6
20			27,5	4,73	10,6	4,73	9,9
24			32,7	5,64	14,6	5,64	13,6
33	LARGE	P15-70	41,6	7,16	5,4	7,16	5,5
42			49,75	8,56	7,6	8,56	7,6



Couplings legend

P1	To energy source
P2	From energy source
G1	From plant
G2	To plant

For other connection solutions see installation manual.

Size and couplings chart

Model	Ht mm	Lt mm	Wt mm	P1 inch	P2 inch	G1 inch	G2 inch
SMALL	623	588	342	1"1/4	1"1/4	1"1/4	1"1/4
MEDIUM	623	588	342	1"1/4	1"1/4	1"1/4	1"1/4
LARGE	623	600	441	1"1/4	1"1/4	1"1/4	1"1/4

Accessories



SOLAR KIT	
Model	**Description**
GEOSOL	Solar kit for GEO HFE heat pumps is a control unit supplied with a solar circulator management board and a temperature sensor contact board(2), which have to be placed on collectors and the storage tank. The Galileus software manages the integration of the collectors and their correct operation.
IANUS SOL	The solar system control module for the IANUS System, manages the PVT thermal-photovoltaic panel as a thermal collector. Controlled and managed by the Galileus software (only for GEO HFE).
EOS PLUS SOLAR KIT	It consists of a control card to adjust solar collectors. Fitted inside the EOS PLUS unit, it makes it possible to transfer the heat supplied by thermal solar collectors to the water heater through an internal heat exchanger.



WEB KIT
Description
Network board for the connection and complete management of the heat pump via Internet, does not require the installation of software. It requires a permanent Internet connection with fixed IP.



AREA KIT
Description
Temperature/humidity control kit for up to 30 room areas. It consists of the following elements: 1. Kit My-Zone: room temperature and humidity thermostat. There are as many kits as room areas to control. 2. My-Board kit: RS485 expansion board with connectors. It is used to control: - 2 dehumidifiers - 2 area valves / area pumps - 1 mixer valve. Here are its main features: - Standard power supply (115-230 Vac) - Measurement of temperature and relative humidity - Internal Clock - Compatible with IT, DE, CN and US - Time-based programs: for 5+2 days, for 7 days or for individual days (up to 6 time slots a day). - Communication with the RS485 control board with the "master Modbus protocol". - Connection of up to 30 My-Zone room thermostats on the same network. - Operating limits: -10 / 50°C. 3. Kit RS485 field-bus: RS485 board that can provide communication between Galileus 5 (on the machine), My-Zone and My-Board. Fixed component.



DIVERTER KIT
Description
Diverter valve with electric actuator at 24V governed by the Galileus system for the transfer and recovery of the free thermal energy and distributing it inside the domestic storage or the device's storage (with electric control kit for GEO EASY-E).



MIXING KIT
Description
Servo-motor modulating mixing valve for controlling the temperature of the flow to the radiant floor.

Price list and AFTER-SALES information
Start-up Price List

First start-up is mandatory

Start-up of GEO heat pumps

Description	Net price	Note
GEO up to model 16		
GEO from model 20 to model 100		
For each GEO unit beyond the first to be started in the same site and during the same intervention, up to a maximum of five total units		(3)

Start-up of EASY heat pumps

Description	Net price	Note
EASY up to model 20		
EASY from model 20 to model 33		
For each EASY unit beyond the first to be started on the same site		(3)

First start-up is recommended

Various products start-up

Description	Net price	Note
AQUAMATIC		
T-SET, SET, HP, HPT, AQUAFAST		
FST start-up		
For each unit T-SET, SET, HP, HPT, AQUAFAST beyond the first one to start at the same site		(3)
For each unit AQUAMATIC and FST beyond the first one to start at the same site		

Start-up of EOS heat pumps

Description	Net price	Note
EOS		
For each unit, EOS in addition to the first from start on the same site		(1) (3)

Start-up of accessories for EOS heat pumps

Description	Net price	Note
Solar kit		(2)

Start-up of accessories for EASY heat pumps

Description	Net price	Note
Mfree EASY control kit		(2)
EASY sanitary diverter control kit		(2)
External probe kit		(2)
System / geothermal circulator kit		(2)
Well solenoid kit		(2)
Well pressure switch kit		(2)

Start-up of accessories for various products

Description	Net price	Note
Solar mode for AQUAMATIC		(2)
Activation of integration for Aquamatic		(2)
Aquamatic Resistance Kit		(2)
SET / Aquamatic recirculation kit		(2)
SET / Aquamatic diverter kit		(2)
SET / Aquamatic mixer kit		(2)
Waterfall SET / Aquamatic Kit (for each unit)		(2)
Starting mixer kit for FST		(2)
Inverter for HP / HPT		(2)

Start-up of accessories for GEO heat pumps

Description	Net price	Note
Web kit, RS485 serial port kit (Modbus, BACnet) or Konnex: activation only - configuration and communication verification by the customer		(2)
My-Board Kit (for the first expansion)		(2)
My-Board Kit (for each expansion beyond the first)		(2)
My-Power Kit		(2)
Accounting Kit		(2)
MyTouch Kit		(2)
Mfree / Free Heating Kit		(2)
Mixer or diverter kit		(2)
Resistance kit		(2)
Solar kit		(2)
Ianus kit + Managed accessories		(2)
Dry-cooler kit		(2)

Price list and AFTER-SALES information
Preliminary inspections

Description	Net price	Note
Preliminary inspections		

Notes

- The prices indicated are valid for the commissioning activities included in the sales order together with the groups to which they refer. For interventions requested after the sale of the units, reference will be made to the rates for Technical Interventions.
- The prices are valid for interventions carried out within 50 km from the local CAT office. For longer distances, it will be necessary to add the costs of the mileage reimbursement and of the travel hours to the rates provided for the Technical Interventions.
- Any additional expenses incurred for the execution of the intervention (such as, for example, road tolls, parking, overnight stays, airline tickets, etc.) will be reimbursed at the bottom of the list, upon presentation of adequate supporting documents.
- Out-of-warranty interventions can be managed directly with the TAC in the area.
- If the goodwill cannot be concluded due to the absence of the requirements listed in the application form or, in any case, for reasons beyond the responsibility of Fiorini Industries S.r.l., the subsequent intervention will be carried out for a fee based on the rates listed below.

(1) The price DOES NOT include the construction of the refrigeration lines connecting the indoor and outdoor units, the execution of the vacuum and the refrigerant charge; if necessary, these transactions will be requested explicitly and will be listed separately.

(2) The price DOES NOT include the installation of accessories, whose assembly is the responsibility of the customer.

(3) The price is applicable to each unit of any type to be put into service on the same site of a group for which the first start-up has been envisaged and for which this intervention has not been explicitly quoted. For example, if in the same site there are a GEO 12 unit and two SET 25 units in cascade and an HPT group, the following rates must be applied

Example

GEO up to model 16	
SET to start on the same site as the GEO x 2	
Waterfall Kit SET x 2	
HPT (without inverter) to be started on the same site as the GEO	
TOTAL	

Technical interventions

Description	Net price	Note
Ordinary technical labor (work and travel)		(4)
Extraordinary technical manpower (work and travel)		(4)
Festive labor (technician, work and travel)		(4)
Meal refund (if the surgery takes more than half a day)		(4)
Mileage reimbursement (round trip)		(4)

Notes

- The above prices apply to interventions invoiced by Fiorini Industries S.r.l., while if the customer contacts the local TAC directly, he will have to agree on the conditions with the latter.
- Any additional expenses incurred for the execution of the intervention (such as, for example, road tolls, parking, overnight stays, airline tickets, etc.) will be reimbursed at the bottom of the list, upon presentation of adequate supporting documents.

(4) Out-of-warranty interventions can be managed directly with the local TAC.

NOTES

NOTES

NOTES

NOTES

NOTES

The personal data included in this form will be processed according to current laws about privacy. Please see the privacy notice, full text is available at **go.fiorinigroup.it/eng/privacy**
Filling this form you agree to the privacy notice and allow data processing.

NEW CUSTOMER REGISTRATION FORM

NOTE: THIS FORM, COMPLETELY FILLED IN, MUST RETURN TO FIORINI INDUSTRIES S.R.L..

Fill in the form online **go.fiorinigroup.it/eng/registrazionecliente**

PERSONAL DATA

VAT ID | TAX PAYER'S ID

BUSINESS NAME

ADDRESS

ZIP CODE | CITY

PROVINCE | COUNTRY

PH | FAX

E-MAIL

OPERATING OFFICE (if different from registered office)

ADDRESS

ZIP CODE | CITY

PROVINCE | COUNTRY

BUSINESS TYPOLOGY

- ☐ INDUSTRY
- ☐ WHOLESALER
- ☐ CONSULTANT
- ☐ INSTALLER
- ☐ PRIVATE
- ☐ OTHER _____

BANK DATA

BANK

BRANCH

BIC/SWIFT

IBAN

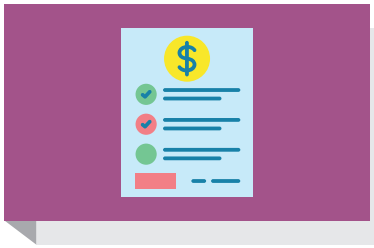
COUNTRY CODE		CIN EU	CIN IT	ABI					CAB					N° C/C											

GENERAL INFORMATION (agent's care: payment terms, discounts to be approved by Fiorini)

DATE

COMPILER | SIGNATURE

fiorini INDUSTRIES



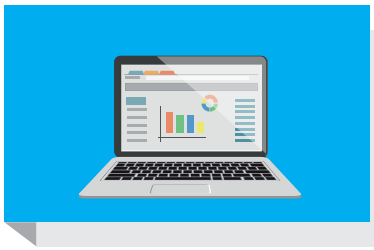
View online prices always updated

go.fiorinigroup.it/pr



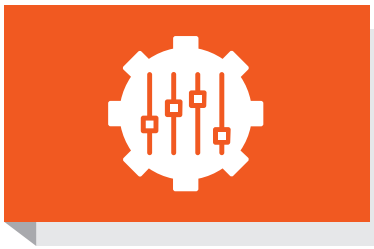
Download now the updated catalogue

go.fiorinigroup.it/eng/catalogo



Login to Fiorini website reserved area

go.fiorinigroup.it/eng/login



Login to FioriniLAB, the configuration platform

go.fiorinigroup.it/eng/login



Subscribe now to Fiorini newsletter

go.fiorinigroup.it/eng/newsletter

The manufacturer assumes no responsibility for any errors or inaccuracies on the content of this price list, reserves the right to make changes to its products, at any time and without notice, deemed appropriate for technical improvements or commercial requirements, in constant pursuit of quality improvement . Drawings and photos related to the products are not contractual. If the data indicated become mandatory the customer is required to communicate it during the quote or order.

Visit our web site
www.fiorini-industries.com

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

826080112_REV0_022025_CATALOGO-LISTINO 2025 FIORINI EN