



I N T E G R A T E D  

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S O L A R T H E R M A L S Y S T E M S

CATALOGUE 9



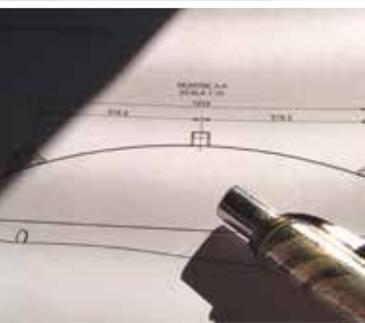
Cordivari Company has a proven industrial tradition and is now one of the most important manufacturers in the heating and plumbing industry in Italy. Founded in 1972 by Ercole Cordivari, the company is producing calorifiers, thermal Storage and heating components, solar thermal systems, compressed air receivers, Design radiators, chimney flues and food containers.

Cordivari plants are situated on an area of 290.000 square meters and employ more than 500 employees.

Thanks to its development strategies, all addressed to the new technologies and to the training of new human resources, Cordivari is equipped with modern structures and advanced production processes. All the products are designed and produced in Italy and the technological, ergonomic and ecological choices allow to work respecting the human being and its environment. UNI EN ISO 14001 environment managing systems and UNI EN ISO 9001 Quality system are perfectly integrated to grant and ensure company's main goals and values. The highly qualified management, the constant research for innovative solutions and the extremely customer-oriented company policy stand for the leading market position and the exclusive know-how in the field of integrated heating systems that the Cordivari group has acquired. All this is the result of a continuous commitment to achieving Customer Satisfaction.



Cav. Ercole Cordivari



# Technologies for Wellness

**D**evelopment, design and innovation studies are key points in Cordivari's production process. Each proposed solution conveys technical reliability, design, ergonomics, ease of use and installation. The continuous development of our product offer, wants to witness the company's attention to the market needs. Similarly, the research and development of new solutions follows the trends of an efficiency and energy savings oriented market.

**T**he different phases of production are in perfect harmony with the best techniques for industrial automation, robotics and advanced craftsmanship. Every product undergoes several times during the production stages, a rigorous control, manual and visual.

**C**ordivari products meet the most important certifications, such as the PED (Pressure Equipment Directive) and the Directive 2009/125/CE (ErP – eco-friendly planning regulations) in compliance with the cylinders and other pressure vessels manufactured. All items for Domestic Hot Water storage are certified for drinkable water use in accordance with the strictest Italian and foreign regulations (SSICA, Attestation DHW, DVGW W270, UBA, WRAS).

**I**n Cordivari quality care and attention to the environment has always been home. In fact we were the first company of the heating sector to obtain the certification according to UNI EN ISO 9001 integrated with environmental management certification UNI EN ISO 14001. This production philosophy, which is now a way of life for us, means reduction of emissions and energy inefficiencies, waste reduction and recycling over 60% and allows us to operate in a sustainable and environmentally friendly way, using clean energy from renewable sources, using only eco-friendly materials from raw materials to packaging.

## CERTIFICATIONS

Quality systems certified  
UNI EN ISO 9001

Environment certification  
UNI EN ISO 14001

**CORDIVARI** Lab



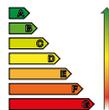
## PRODUCT CERTIFICATES



**EN 12975-2 e SOLAR KEYMARK**  
Solar collectors are certified according to EN 12975-2 and Solar Keymark



**2014/68/UE**  
**2014/29/CE**



**ErP**  
Products in conformity to EUP Directive Energy Using Products-2009/125/UE



Water Regulation Advisory Scheme certificate



## ICONS

### ENERGY SOURCES



SOLAR SYSTEM



HEAT PUMP



TRADITIONAL BOILERS



BIOMASS

### USE



DOMESTIC HOT WATER (DHW)



HEATING



AIR



ELECTRICITY

### SYSTEM WITH HEAT PUMP WATER HEATER

### SOLAR SYSTEM FIXING KITS

#### VERTICAL COLLECTORS



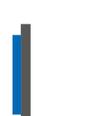
PITCHED ROOF



FLAT ROOF



ON ROOF



WALL VERTICAL INSTALLATION

#### HORIZONTAL COLLECTORS



PITCHED ROOF



FLAT ROOF



# INTEGRATED SOLUTIONS FOR ENERGY SAVINGS AND HOME WELLNESS



RADIATORS AND  
TOWEL RAILS



WATER TANKS



SOLAR THERMAL  
SYSTEMS



CALORIFIERS, HEAT PUMP WATER  
HEATERS AND BUFFER TANKS



CORDIVARI DESIGN  
RADIATORS



FOOD CONTAINERS



RADIATORS FOR LOW  
TEMPERATURE SYSTEMS



CHIMNEY PIPES



# CERTIFIED QUALITY



## CHOOSE SERENITY

Today, more than ever, who chooses Cordivari products chooses to be peaceful!

By introducing the new ErP standards, we choose to offer you guaranteed performances and reliability.

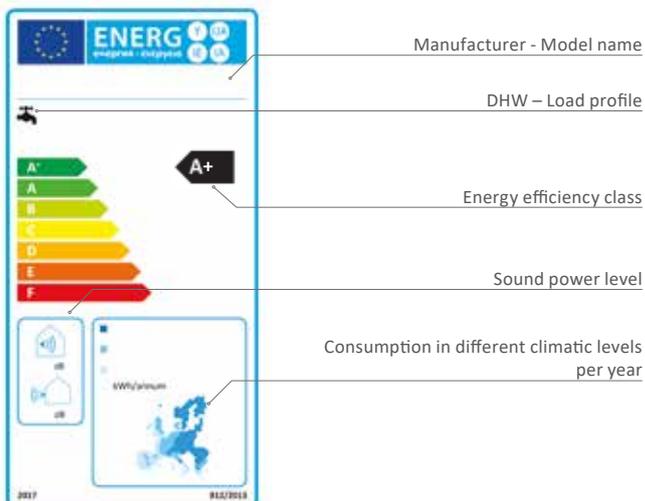
The construction of the new building Cordivari LAB is the result of this choice. As from 2015, the company is equipped with a laboratory and an advanced test room which allow to test any product or system, measuring and certifying its performances. Thanks to its strict procedures, conformed to European standards, and sophisticated

tools, nowadays Cordivari is the only Italian manufacturer able to carry out accurate tests on every product in its own laboratory. As a consequence, research and development on performance and energy efficiency are always running towards the best solutions, in order to guarantee you reliability, savings and high results. Cordivari LAB is the only qualified laboratory inside a manufacturing company, approved by the TÜV.

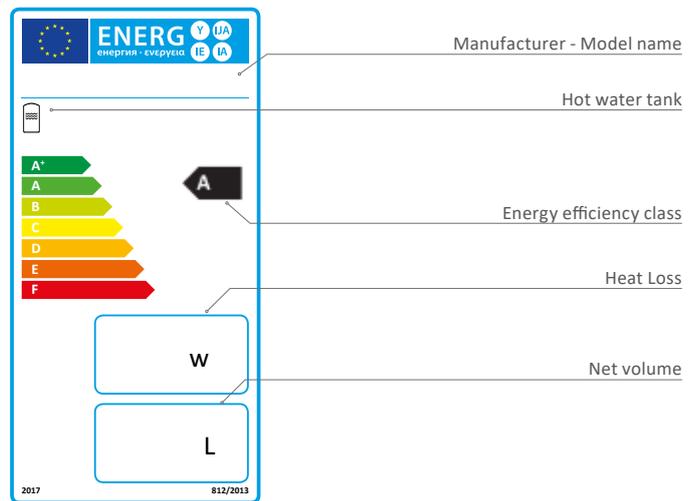
Choose to be safe with certified quality!



## EXAMPLE OF LABEL FOR TANK WITH HEAT PUMP



## EXAMPLE OF LABEL FOR TANK/MULTI-HEAT ENERGY BUFFERS



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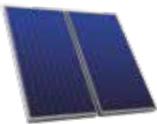
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STRATOS®



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FORCED CIRCULATION SYSTEMS



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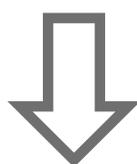


COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT



# STRATOS®



DHW



STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON  
SYSTEMS

FORCED CIRCULATION  
SYSTEMS

COLLECTORS AND  
ACCESSORIES

TECHNICAL  
SUPPORT

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# 365 DAYS OF SUN

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# STRATOS<sup>®</sup> 4s

S Y S T E M



STRATOS<sup>®</sup>

STRATOS<sup>®</sup> SYSTEMS

THERMOSIPHON  
SYSTEMS

FORCED CIRCULATION  
SYSTEMS

COLLECTORS AND  
ACCESSORIES

TECHNICAL  
SUPPORT

Percorso  
Efficienza  Innovazione





# STRATOS<sup>®</sup> 4s

S Y S T E M

The system **Stratos<sup>®</sup> 4S** is an innovative, compact, highly-efficient solar thermal system with integrated DHW storage. It is equipped with a patented self-balancing and anti-stagnation system. It is indicated for the production of domestic hot water in all climatic zones thanks to its ability to retain the captured heat.

The system can in fact be installed in areas with temperatures up to -20 °C.



# STRATOS® 4S SYSTEM

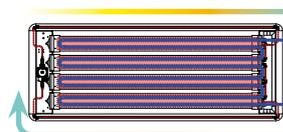
## THE MOST EFFICIENT COMPACT SOLAR THERMAL SYSTEM

- ✖ LESS SPACE
  - ⚙ MINOR INSTALLATION COSTS
  - 📈 GREATER PERFORMANCES
  - ⌚ SHORTER INSTALLATION TIME
  - 📉 MORE ENERGY SAVING
- ↑ SAVINGS



- Available in two versions: ROTOSHIELD®, the patented self-protecting and anti-stagnation system and HEAT CONTROL, the active protection system against over temperature
- The ROTOSHIELD® version does not require any electricity
- Thermosiphon system
- The HEAT CONTROL version is equipped with electric heaters
- Domestic Hot Water in any zone and season
- Suitable up to -20 °C
- Retains the heat thanks to the vacuum technology
- DHW accumulation in stainless steel AISI 316L
- Anodized aluminum frame marine grade

**ROTOSHIELD®**  
S Y S T E M



**ACTIVE PROTECTION SYSTEM**



STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

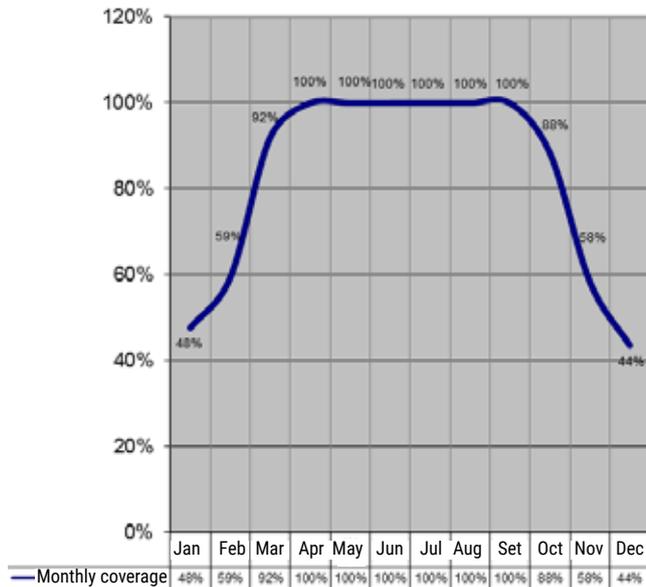
TECHNICAL SUPPORT

# STRATOS® 4S - TECHNICAL INSIGHTS

## USABILITY CURVE\*

### STRATOS® 4S SYSTEM

Percentage coverage of energy requirements

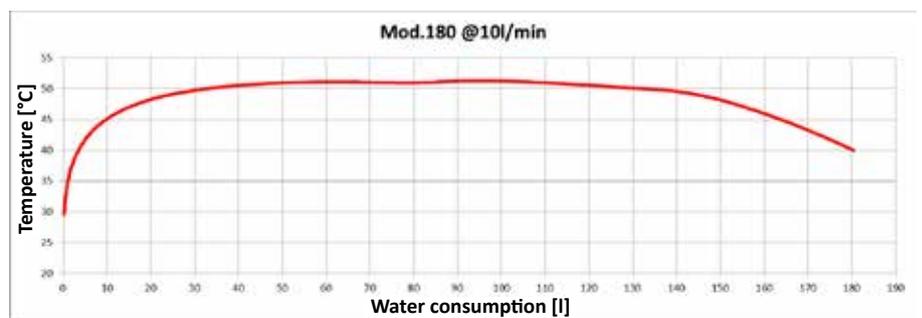
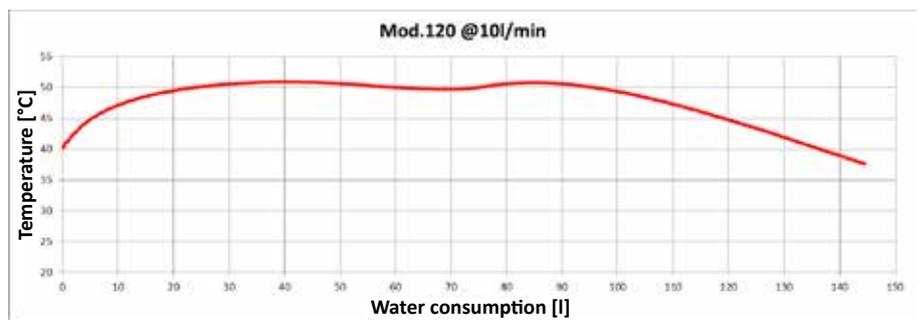


- ANNUAL DHW NEEDS COVERAGE EXCEEDING 80%
- HOT WATER EVEN IN THE MIDDLE SEASONS

\* Primary temperature 90° C  
 \* Sanitary water inlet temperature 15° C  
 \* DHW required 150 lt, collector oriented to the south, model 180.

## EFFICIENCY TEST

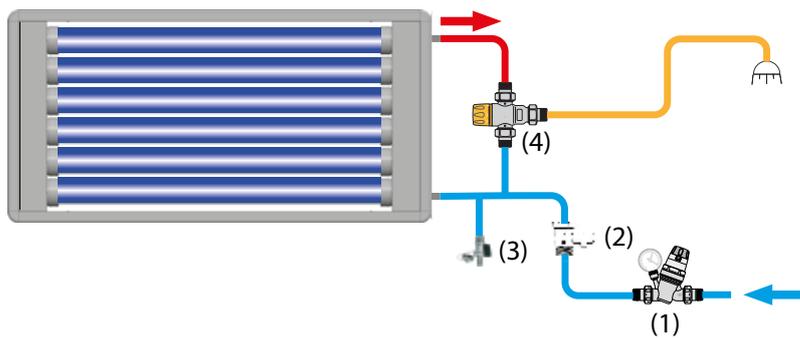
In collaboration with the Industrial engineering department and mathematical sciences – DIISM of the Polytechnic University of Marche



SINGLE LEVY TEST OF DHW AT 45 °C, WHICH CAN BE CARRIED OUT WITH PRIMARY STORAGE AT 85 °C AND DOMESTIC HOT WATER FLOW OF 10LT/MIN

# STRATOS® 4S - TECHNICAL INSIGHTS

## TYPICAL INSTALLATION SCHEME



### CONNECTIONS LEGEND

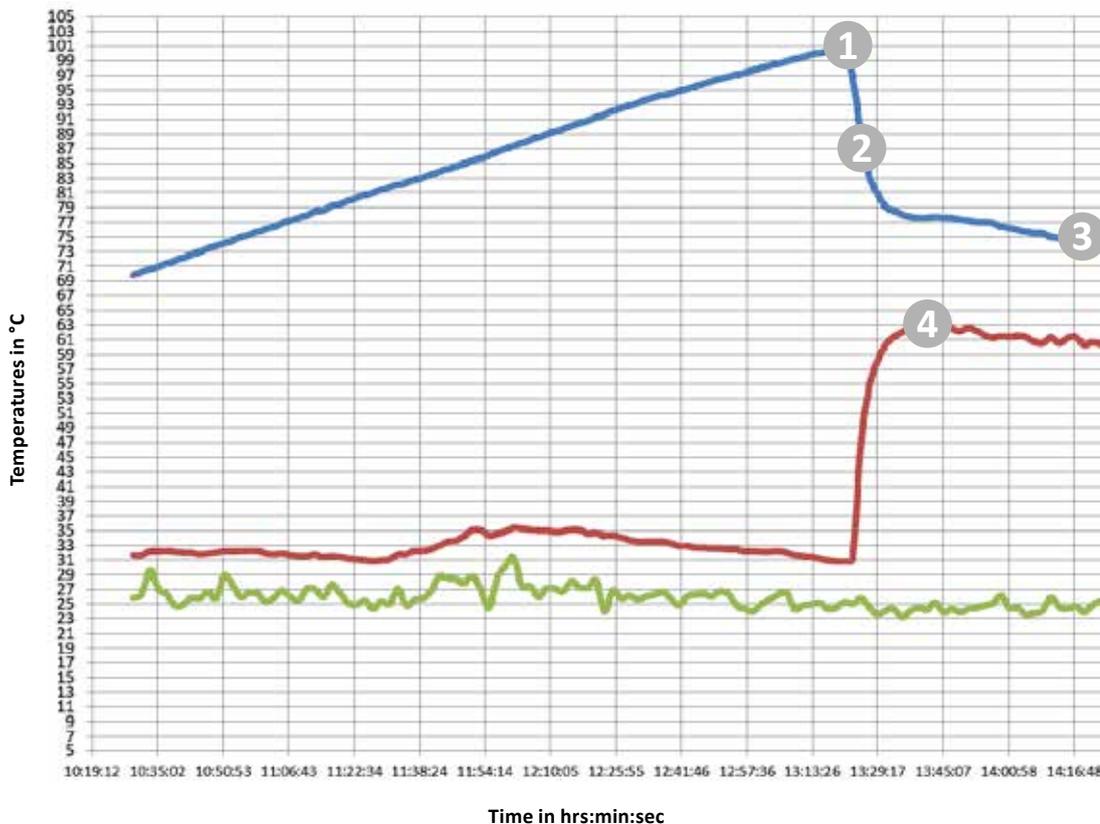
- |   |  |
|---|--|
| 1 | Eventual pressure reducer                                      |
| 2 | Safety and non-return valve (included)                         |
| 3 | Drain tap for panel draining (to be provided by the installer) |
| 4 | Thermostatic mixing valve (optional-to be ordered separately)  |

## TESTS OF DISSIPATION AND TEMPERATURE MONITORING OF STRATOS® 4S HC PROFILE

Laboratory test carried out to evaluate the efficiency of the dissipation system (patented) of the STRATOS® 4S HEAT CONTROL and monitoring of the surface temperature of the heat dissipation profile.

- - BLUE LINE: Primary accumulation temperatures
- - RED LINE: Surface temperatures of the aluminum profile
- - GREEN LINE: Ambient temperatures

As shown from the chart, the profile of the solar system never reaches levels of temperature as to present a risk to the user.



- 1 Circulator ON
- 2 Initial mixing that causes a temperature collapse. Phase duration: 8 minutes
- 3 Circulator OFF
- 4 Maximum temperature reached by the surface of the heat dissipation profile

# STRATOS<sup>®</sup>4s

S Y S T E M



- 1 Structure of anodized marine grade 15 µm aluminium 6060.
- 2 Active HEAT CONTROL system, against overheating, with high efficiency circulator.
- 3 Anti-stagnation heat dissipation profile.
- 4 Vacuum tube Sydney type with high vacuum grade, minimum  $10^{-3}$  Pa, with highly selective PVD coating.
- 5 Sanitary exchanger, corrugated anti-limescale tube in stainless steel Aisi 316L.
- 6 Primary circuit accumulation (water and glycol) in stainless steel.
- 7 Integration electric heaters.



The STRATOS® 4S HC SYSTEM, represents the latest generation of compact solar systems.

Thanks to its patented HEAT CONTROL technology, the system allows to quickly accumulate all the captured energy, managing to retain it for a long time without dispersion and risk of over temperature or freezing during the winter months.



STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT



BREVETTATO  
PATENTED

MADE IN ITALY

Percorso  
Efficienza  Innovazione

# SOLAR THERMAL SYSTEM STRATOS® 4S HC

COMPACT AND HIGH-EFFICIENCY SOLAR THERMAL SYSTEM



NEW

Percorso Efficienza Innovazione



The **STRATOS® 4S HC** system, represents the latest generation of Cordivari compact solar systems.

Thanks to its patented HEAT CONTROL technology, the systems allows to quickly accumulate all the captured energy, managing to retain it for long time without dispersion and risk of over temperature or freezing during the winter months.

### STRUCTURE AND MATERIALS

Frame structure in anodized Marine Grade aluminum.

Support and fixing kit in galvanized steel.

Capturing system consisting of tubes with Sydney type vacuum technology with highly selective PVD coating and high vacuum grade (minimum 10<sup>-3</sup> pa).

Primary accumulation circuit (water and glycol) in stainless steel AISI 304.

DHW exchanger in corrugated stainless steel AISI 316L, suitable and certified for drinking water, according to 98/83/CE and subsequent amendments.

### INCLUDED ACCESSORIES

6 bar safety valve. Fixing kit for flat surfaces (inclination 30°) as well for pitched roofs. Non-toxic heat transfer fluid. Integration electric heaters. Electromechanical time switch.

### CONNECTIONS

2 threaded female connections of ½".

### WARRANTY

5 years - See general sales and warranty conditions.

MAX PRESSURE INLET	MAX PRESSURE ACCUMULATION	MAX TEMPERATURE	MIN. TEMPERATURE	PITCH INCLINATION
4 bar	7,5 bar	100°C	-20°C	10° - 70°

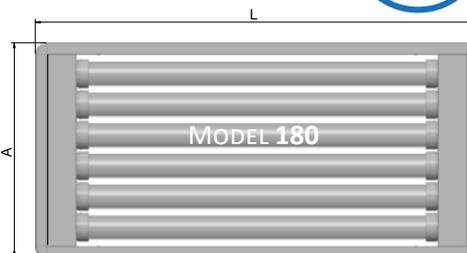
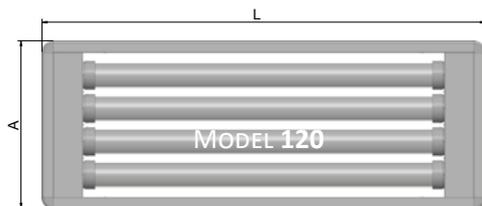
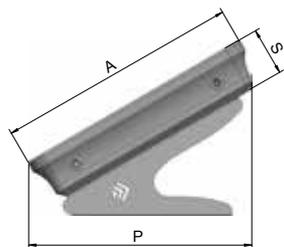


## SISTEMA STRATOS® 4S HC

SYSTEM COMPONENTS	INCLUDED	INCLUDED	
Frame structure in marine grade anodized aluminum 15 um	✓	Integration electric heaters (n°4 for model 120 lt and n°6 for model 180 lt) with set point at 75°C	✓
6 bar safety valve	✓	Automatic anti-stagnation system with high efficiency circulator and thermal switch	✓
Fixing kit for flat surfaces and pitched roofs	✓	Electromechanical time switch	✓
Non-toxic heat transfer fluid	✓		

# SOLAR THERMAL SYSTEM STRATOS® 4S HC

COMPACT AND HIGH-EFFICIENCY SOLAR THERMAL SYSTEM



Model	L	P	H	A	S	DHW connections	Gross surface area	Total weight In function	Weight per m <sup>2</sup> in function
	[mm]						[m <sup>2</sup> ]	[kg]	[kg/m <sup>2</sup> ]
120	2160	752	589	822	163	1/2" F	1,77	122	69
180	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S HC

Model	Utilities	Description	Art. Nr.
120		HEAT CONTROL 120	3410316603207
180		HEAT CONTROL 180	3410316603208

Model	Total power integration heaters
120	1000 watt
180	1500 watt

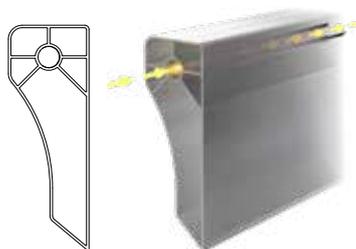
Electrical heaters and electromechanical time switch included.

Before starting the system, fill the system with water (all the pipes are already preloaded with glycol). Installation and filling must be performed with the covered system, only after completing this procedure it will be possible to uncover the system.

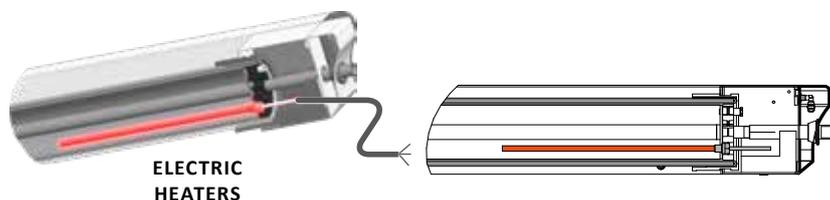
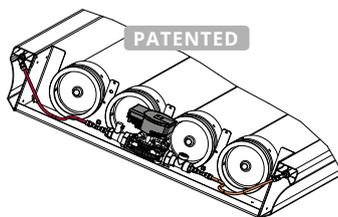
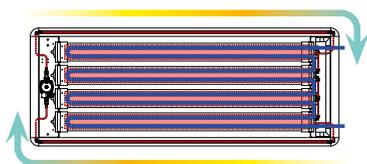
**For the correct installation, always refer to the enclosed user manual.**

## COMPACT AND HIGH EFFICIENCY SOLAR THERMAL SYSTEM

The **HEAT CONTROL SYSTEM** is the new active protection system against over heating of the STRATOS® 4S HC. Thanks to the patented solution for the dissipation of the excess heat through the same structure of the system, the new STRATOS® 4S HC is always safe against over temperature in periods of maximum solar radiation, even in the absence of DHW withdrawal. The system is equipped with sensors that activate a circulation of the primary exchange fluid, that dissipates the excess heat if excessive overheating is detected.



Profile section (**PATENTED**) with heat dissipation function



**ELECTRIC HEATERS**



### HEAT MANAGER - SMART CONTROLLER



Stratos 4S HC system is equipped with the Smart Controller Wi-Fi HEAT MANAGER for the remote management of the electric heaters by smartphone IOS or Android. Thanks to this app it is possible to manage, to set and to monitor the functioning of

the electric heaters easily from the mobile phone, by setting the temperature and the operating time slots.

HEAT MANAGER is user friendly and intuitive. You just have to install the app and connect the smart controller to your home Wi-Fi network.



[www.cordivariheatmanager.com](http://www.cordivariheatmanager.com)

### THE FIRST SOLAR WATER HEATER

Stratos® 4S HC is the first high efficiency compact solar system with included electric integration. Thanks to the integrated electric heaters, the systems becomes a real solar water heater, able to offer always the maximum comfort, maximum safety and great savings in every season of the year. The electromechanical time switch device is included, for the rational use of the electrical integration.

# STRATOS<sup>®</sup>4s

S Y S T E M

ROTO  
SHIELD<sup>®</sup>  
S Y S T E M

- 1 Structure of anodized marine grade 15 µm aluminium 6060.
- 2 Vacuum tube Sydney type with high vacuum grade, minimum  $10^{-3}$  Pa, with highly selective PVD coating.
- 3 ROTOSHIELD<sup>®</sup> patented system against overheating with hydraulic cylinder with stainless steel stem, tested for more than 50.000 cycles.
- 4 Sanitary exchanger, corrugated anti-limescale tube in stainless steel Aisi 316L.
- 5 Primary circuit accumulation (water and glycol) in stainless steel.



The thermal solar system STRATOS® 4S ROTOSHIELD®, is an innovative high efficiency compact solar system with integrated DHW storage.

It is equipped with a patented anti-stagnation self-balancing system. The ROTOSHIELD® patent protects the system by maximizing the performance.

It is indicated to produce domestic hot water in all climatic zones, thanks to its ability to preserve the captured heat. In fact, the system can be installed in areas with temperatures up to -20°C.



BREVETTATO  
PATENTED

MADE IN ITALY

Percorso  
Efficienza  Innovazione

# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD®

COMPACT AND HIGH-EFFICIENCY SOLAR THERMAL SYSTEM



The thermal system **STRATOS® 4S ROTOSHIELD®**, is an innovative high efficiency compact solar system with integrated DHW storage.

It is equipped with a patented anti-stagnation self-balancing system. The ROTOSHIELD® patent protects the system by maximizing the performance.

It is indicated to produce domestic hot water in all climatic zones, thanks to its ability to preserve the captured heat. In fact, the system can be installed in areas with temperatures up to -20°C.

## STRUCTURE AND MATERIALS

Frame structure in anodized Marine Grade aluminum.

Support and fixing kit in galvanized steel.

Capturing system consisting of tubes with Sydney type vacuum technology with highly selective PVD coating and high vacuum grade.

Primary accumulation circuit (water and glycol) in stainless steel AISI 304.

DHW exchanger in corrugated stainless steel AISI 316L, suitable and certified for drinking water, according to 98/83/CE and subsequent amendments.

## INCLUDED ACCESSORIES

6 bar safety valve. Fixing kit for flat surfaces (inclination 30°) as well for pitched roofs. Non-toxic heat transfer fluid.

## CONNECTIONS

2 threaded female connections of ½".

## WARRANTY

5 years - See general sales and warranty conditions.

MAX PRESSURE INLET	MAX PRESSURE ACCUMULATION	MAX TEMPERATURE	MIN. TEMPERATURE	PITCH INCLINATION
4 bar	7,5 bar	100°C	-20°C	10° - 70°



## STRATOS® 4S WITH ROTOSHIELD® SYSTEM

SYSTEM COMPONENTS	INCLUDED
Frame structure in marine grade anodized aluminum 15 um	✓
6 bar safety valve	✓
Fixing kit for flat and pitched roof	✓
Non-toxic heat transfer fluid	✓
Automatic anti-stagnation and self-balancing system	✓



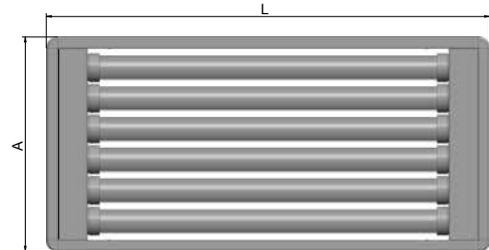
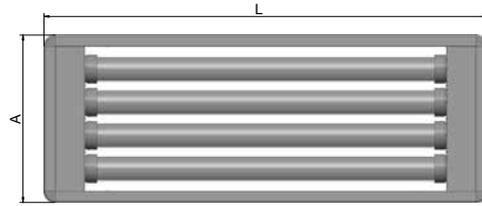
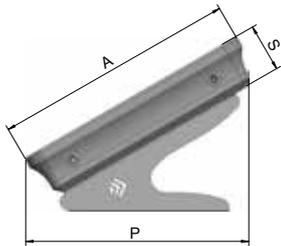
# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD®

COMPACT AND HIGH-EFFICIENCY SOLAR THERMAL SYSTEM



MODEL 120

MODEL 180

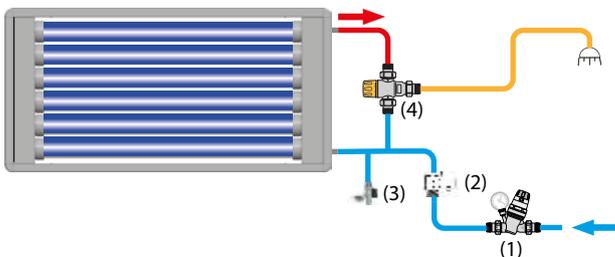


Model	L	P	H	A	S	DHW connections	Gross surface area	Total weight In function	Weight per m <sup>2</sup> In function
	[mm]						[m <sup>2</sup> ]	[kg]	[kg/m <sup>2</sup> ]
120	2160	752	589	822	163	1/2" F	1,77	122	69
180	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S WITH ROTOSHIELD® SYSTEM

Model	Utilities	Description	Art. Nr.
120		ROTOSHIELD 120	3410316603203
180		ROTOSHIELD 180	3410316603204

## TYPICAL INSTALLATION SCHEME



### LEGEND

- 1 Eventual pressure reducer.
- 2 Safety and non-return valve (included)
- 3 Drain tap for panel draining (to be provided by the installer)
- 4 Thermostatic mixing valve (optional to be ordered separately)

Before starting the system, fill the ducts tubes (already filled with glycol) with tap water. The first tube at the bottom, the motor tube, is already preloaded with both liquids, water and glycol. Only the first 5 upper tubes must be filled for Model 180 lt and the first 3 upper tubes for Model 120 lt. Installation and filling must be carried out with the covered system, only after completing this procedure it will be possible to uncover the system.

**For the correct installation, always refer to the enclosed user manual.**

## THE LIGHTEST SYSTEM

STRATOS® 4S ROTOSHIELD® is the lightest solar thermal system on the market. In order of functioning, thanks to the reduced weight / square meter ratio, the STRATOS® 4S SYSTEM turns out to be the lightest and the least weighty on roofs.



The PATENTED **ROTOSHIELD® SYSTEM** has been expressly studied to avoid overheating of the system during the periods of major insolation and in absence of DHW levy. The rotation takes place in a natural way without the use of any electric device.





**GERMAN  
DESIGN  
AWARD  
WINNER  
2018**

oltre la classe A © 2016

# STRATOS® DR



STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON  
SYSTEMS

FORCED CIRCULATION  
SYSTEMS

COLLECTORS AND  
ACCESSORIES

TECHNICAL  
SUPPORT

# STRATOS<sup>®</sup>DR



## DESIGN, PERFORMANCES AND SAVINGS



INTEGRATED DHW STORAGE

MAXIMUM SPACE SAVING

HIGH PERFORMANCES

ELEGANT AESTHETICS

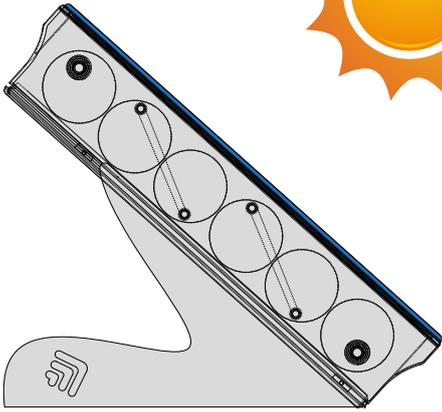
ENERGY SAVINGS



Percorso Efficienza  Innovazione oltre la **classe A**  2016



FREE HOT WATER FROM THE SUN  
THANKS TO THE SOLAR THERMAL  
SYSTEM WITH INTEGRATED  
STORAGE. EFFICIENT, ECOLOGICAL  
AND AESTHETICAL DESIGN



MODEL 110



MODEL 150



MODEL 180



MODEL 220



MODEL 260



# SOLAR THERMAL SYSTEM STRATOS® DR

STRATOS® DR- COMPACT SOLAR THERMAL SYSTEM WITH DIRECT HEATING



Compared to traditional solar systems with natural circulation, which have an external storage tank, separated from the collector, the revolutionary **STRATOS® DR** system, produces domestic hot water through direct heating of the sanitary storage tank, which is integrated in the panel. Thanks to its elegant design and extremely small dimensions, the STRATOS® system is the ideal choice to combine quality, aesthetics and energy savings.

### STRUCTURE

Aluminum profile, anodizing treatment included. Tempered glass according to EN 12150, tested against impact according to EN 12976. Bottoms

and walls with high insulation power ( $\lambda$  0,023 W/mk), thickness 30 mm.

### ABSORBING SYSTEM AND THERMAL EXCHANGE CIRCUIT

Direct heating of the integrated DHW accumulation treated with special high selective solar painting.

### DHW ACCUMULATION

Sanitary accumulation made of stainless steel AISI 316L suitable and certified for drinking water according to 98/83/CE and subsequent amendments.

### INCLUDED ACCESSORIES

- Vacuum break valve
- 6 bar safety valve
- Fixing kit for flat and pitched roof
- Nr. 1 Cap of 1 1/4 gas M
- Nr. 1 Cap of 1/2" gas M

### CONNECTIONS

- 3 connections 1/2" gas F
- 1 connection 1 1/4 gas F for heating element

### WARRANTY

5 years - See general sales and warranty conditions.

### SYSTEM COMPONENTS

### INCLUDED

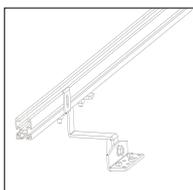
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
Vacuum break valve	✓
Nr. 1 cap of 1 1/4 gas M + Nr. 1 cap of 1/2" gas M	✓
Fixing kit for flat surfaces (42°) and pitched roofs	✓



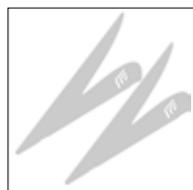
MAX PRESSURE INLET	MAX PRESSURE ACCUMULATION	MAX TEMPERATURE
4 bar	6 bar	100°C

### ACCESSORIES ON REQUEST *(for more information see accessories section)*

<sup>(\*)</sup>Essential to protect the system if it is emptied during periods of non-use or in the post installation phase before initial start-up.



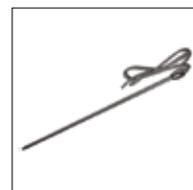
Suspended fixing kit for pitched roof



30° inclination Stratos® support kit



Protective PVC cloth <sup>(\*)</sup>



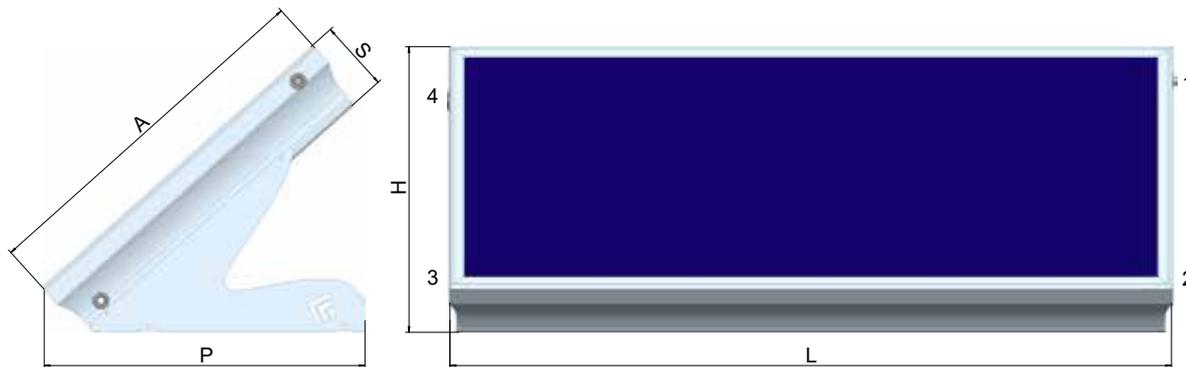
Anti-freeze device



Electrical immersion heater

# SOLAR THERMAL SYSTEM STRATOS® DR

STRATOS® DR- COMPACT SOLAR THERMAL SYSTEM WITH DIRECT HEATING



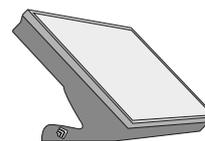
Model	L	P	H	A	S	DHW connections			Gross surface area [m <sup>2</sup> ]	Empty weight [kg]	Weight per m <sup>2</sup> In function [kg/m <sup>2</sup> ]
						1	2-3	4			
<b>110</b>	2288	644	528	572	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	1,31	40	110
<b>150</b>	2288	644	631	727	198	1/2" Gas F	1/2" Gas F	1" 1/4 Gas F	1,66	52	115
<b>180</b>	2288	926	736	882	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,02	62	117
<b>220</b>	2288	926	831	1036	198	1/2" Gas F	1/2" Gas F	1" 1/4 Gas F	2,37	72	120
<b>260</b>	2288	926	935	1192	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,73	84	120

## STRATOS® DR

STRATOS® DR - COMPACT SOLAR THERMAL SYSTEM WITH DIRECT HEATING

MODEL	Net volume DHW accumulation [LT.]	Gross absorbing area [m <sup>2</sup> ]	Art. Nr.	Art. Nr. set of 3 pieces
<b>110</b>	105	1,31	3410316603215	341031660321503
<b>150</b>	140	1,66	3410316603216	341031660321603
<b>180</b>	175	2,02	3410316603217	341031660321703
<b>220</b>	210	2,37	3410316603218	341031660321803
<b>260</b>	245	2,73	3410316603219	341031660321903

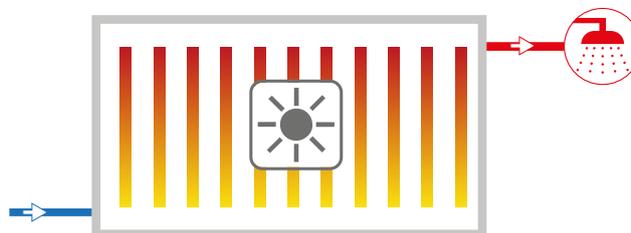
PATENTED MODEL



### RESISTANT, RELIABLE DESIGN PRODUCT



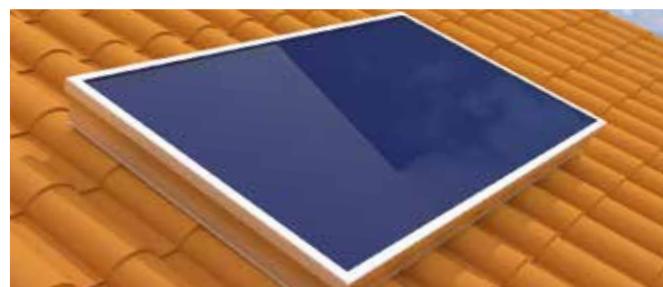
### HEAT FROM THE SUN



### AESTHETICAL SUPPORT WITH 42° INCLINATION (FLAT SURFACES)



### INCLINATION ANGLE FROM 10° TO 70° (PITCHED ROOFS)



STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

FORCED CIRCULATION SYSTEMS

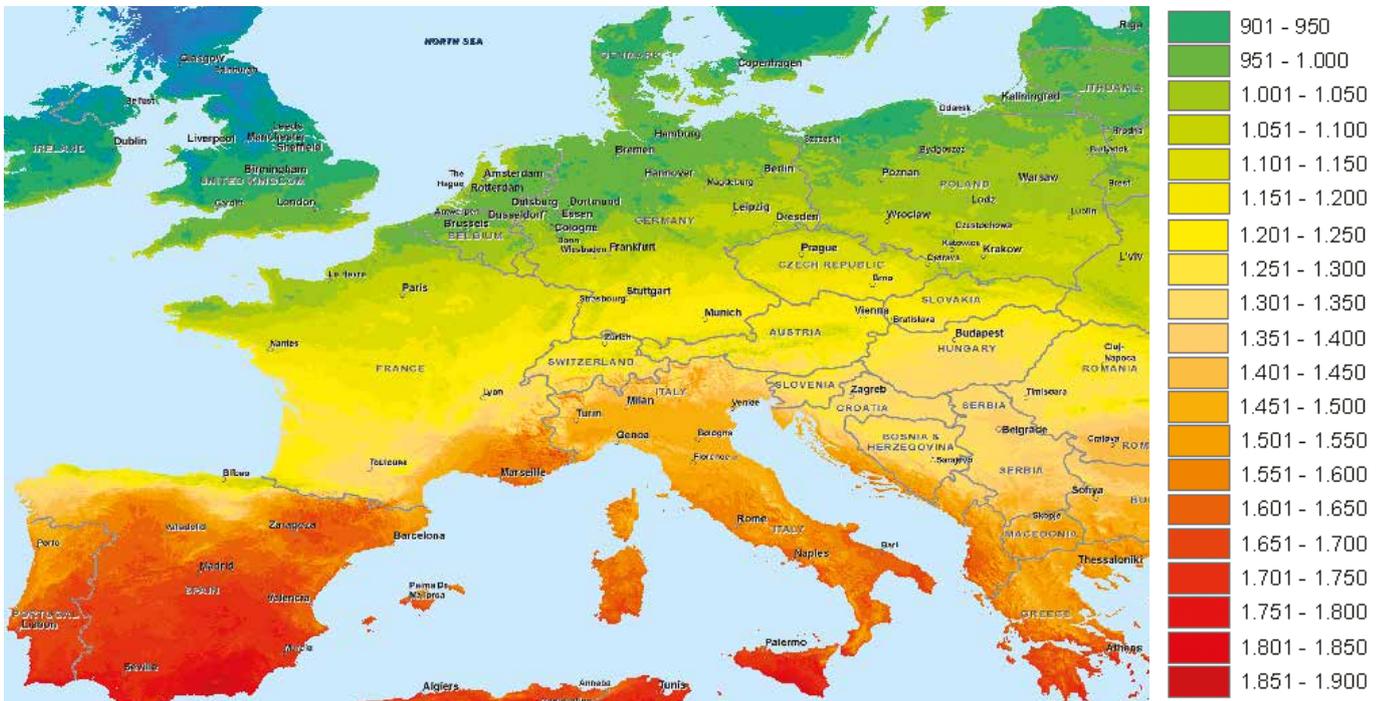
COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT

# TECHNICAL INSIGHTS

## CHOICE OF THE SYSTEM

For a better overall efficiency of the system we recommend the installation of the STRATOS DR in areas with high annual solar irradiation (Min. 1600W/m<sup>2</sup> per year). In these areas it is estimated that the needs of 3 people is covered with the model of 150 lt instead for 4 people the model of 200 lt is indicated.



MODEL 110



MODEL 150



MODEL 180



MODEL 220

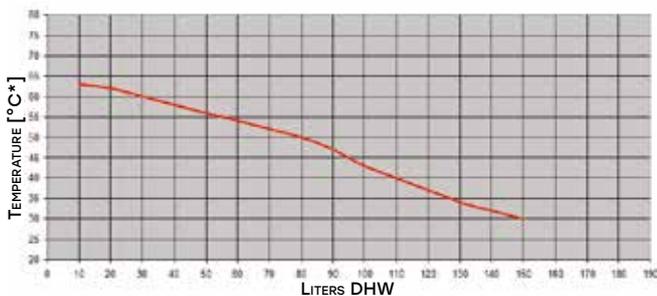


MODEL 260



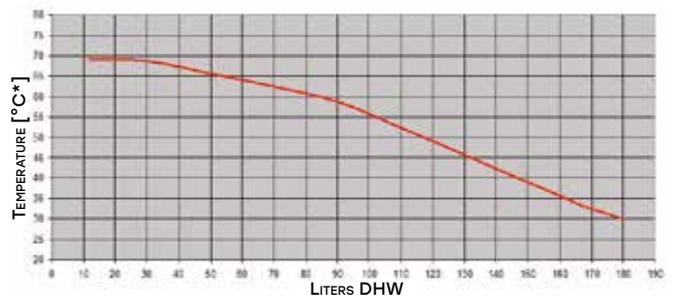
## DHW LEVY TEST

TEST PERFORMED IN FEBRUARY



The graphic shows the result of the domestic hot water levy test performed on the 150 lt STRATOS® model installed in central Italy (latitude 42° north). Average results achieved during a period in the month of February. On the axis of the ordinates the value drawn in liters is reported according to the outlet temperature.

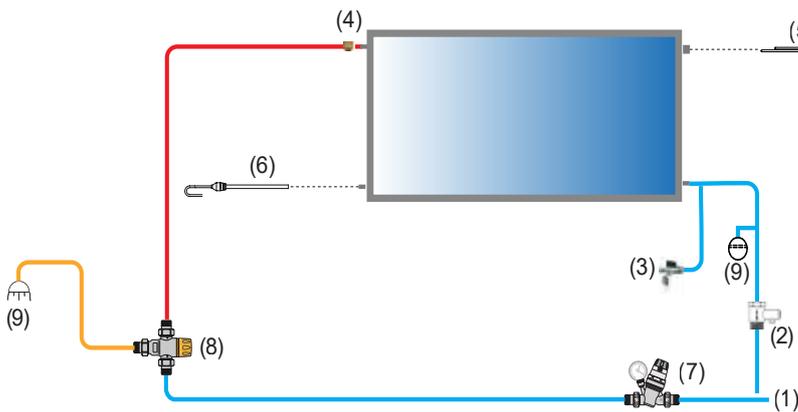
TEST PERFORMED IN MAY



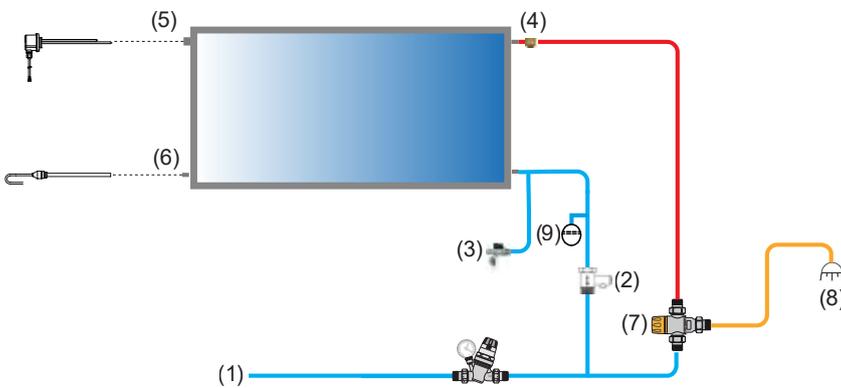
The graphic shows the result of the domestic hot water levy test performed on the 150 lt STRATOS® model installed in central Italy (latitude 42° north). Average results achieved during a period in the month of May. On the axis of the ordinates the value drawn in liters is reported according to the outlet temperature.

# TECHNICAL INSIGHTS

## TYPICAL INSTALLATION SCHEME



INSTALLATION SCHEME FOR MODELS 110/180/260



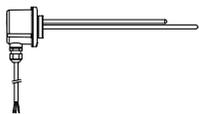
INSTALLATION SCHEME FOR MODELS 150/220

### Connection legend

1	Domestic cold water inlet. If the pressure exceeds 4 bar, insert a pressure reducer. The water must be treated according to UNI 8065 standard and the adduction installation must be built according to UNI EN 806
2	6 bar safety and non-return valve (included)
3	Drain tap for panel emptying (to be provided by the installer)
4	Vacuum break valve (included)
5	1"1/4 gas F connection for integration of electrical immersion heater (to be ordered separately)
6	1/2" gas F connection for anti-freeze Electrical heating (to be ordered separately)
7	Thermostatic mixing valve (to be ordered separately)
8	User
9	Expansion vessel

For other schemes with preheating functions, please refer to the section TECHNICAL SUPPORT

## ANTI-FREEZE PROTECTION AND USE OF HEATING ELEMENT



HEATING ELEMENT

### HEATING ELEMENT

It is possible to integrate the STRATOS® DR with an electric heating element. The heater is equipped with a comfort temperature regulation thermostat as well as a manual safety reset thermostat. The use of the heating element guarantees DHW available at a comfortable temperature able to meet the minimum requirements of the user.



ANTI-FREEZE HEATING ELEMENT

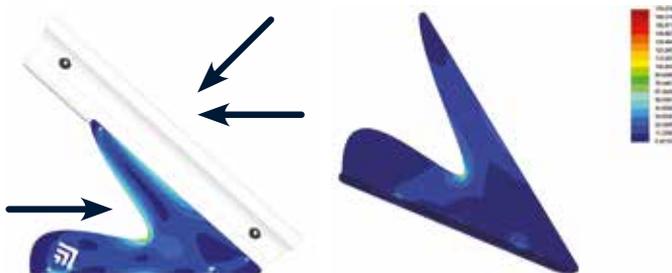
### ANTI-FREEZE HEATING ELEMENT

The STRATOS® DR system must be installed in areas free from frost risk. When it is exposed to temperatures below 0 °C (and in any case not below than -5 °C) the installation and use of the anti-freeze safety heater element is necessary. If the temperature falls below -5°C the system must be emptied and suitably covered and protected. Always refer to the installation manual provided with the product.

## ANCHORAGE AND INSTALLATION WITH WINDPROOF BALLAST

The STRATOS® fixing systems, thanks to their specific design are extremely efficient and safe in all circumstances. Design studies and simulations carried out with the aid of highly sophisticated computer simulations such as the FEM, do not show structural criticalities and provide excellent resistance results to wind and snow loads, even in the most unfavorable conditions. The STRATOS® system if installed on flat surfaces must be secured to the ground to prevent

any risk of overturning due to wind forces. Fixing kits for flat surfaces allow anchoring directly to the ground through bolting with screws and dowels. If it is not possible to drill the support surfaces it is necessary to anchor the system through the fixing on ballast in solid and compact material with adequate overall weight. Always refer to the installation manual provided with the product.



SIMULATION WITH REM ANALYSIS OF WIND AND SNOW LOAD



INSTALLATION WITH WINDPROOF BALLAST



# SOLAR THERMAL SYSTEMS

# STRATOS®



**DHW**



STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON  
SYSTEMS

FORCED CIRCULATION  
SYSTEMS

COLLECTORS AND  
ACCESSORIES

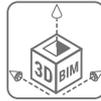
TECHNICAL  
SUPPORT

# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 ST



NEW

## BOLLY® 1 ST



The solar thermal system **STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 ST**, for DHW production, it's composed of the compact solar thermal system **STRATOS® 4S ROTOSHIELD®** and the **BOLLY® 1 ST** calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® 4S ROTOSHIELD®

Frame structure of anodized marine grade aluminum.  
Support and fixing brackets in galvanized steel.  
Capturing system consisting of tubes with Sydney

type vacuum technology with highly selective coating and high vacuum grade.  
Primary accumulation in stainless steel AISI 304.  
DHW exchanger in stainless steel AISI 316L suitable for drinking water according to 98/83/CE and subsequent amendments.

### CALORIFIER

Model **BOLLY 1 ST** with fixed heat exchanger.  
Tank in carbon steel.  
Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-

DVGW-W270-UBA-WRAS.  
Connections for integration of electrical heater.  
Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.  
Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

[cordivari.com/erp](http://cordivari.com/erp)



ON LINE ErP LABEL TOOL

### SYSTEM COMPONENTS

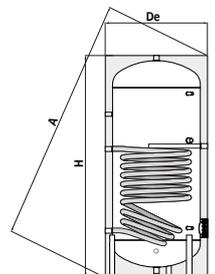
### INCLUDED

Compact solar thermal system Stratos® 4S Rotoshield®	✓
BOLLY® 1 ST Calorifier	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Fixing kit for flat surfaces and pitched roofs	✓
Non-toxic heat transfer fluid	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.

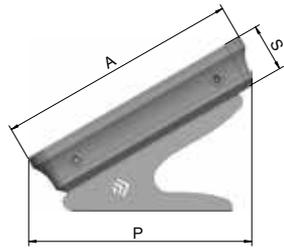


### BOLLY® 1 ST

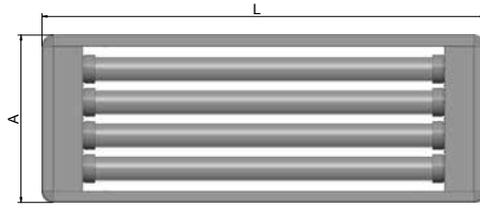
MODEL	De	H	A	ENERGY EFFICIENCY CLASS
				TESTED ErP
	[mm]			
<b>200</b>	550	1434	1536	<b>B</b>
<b>300</b>	650	1486	1622	<b>B</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

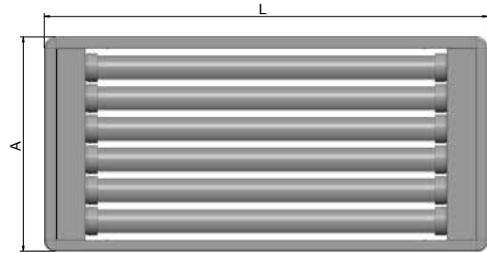
# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 ST



MODEL 120



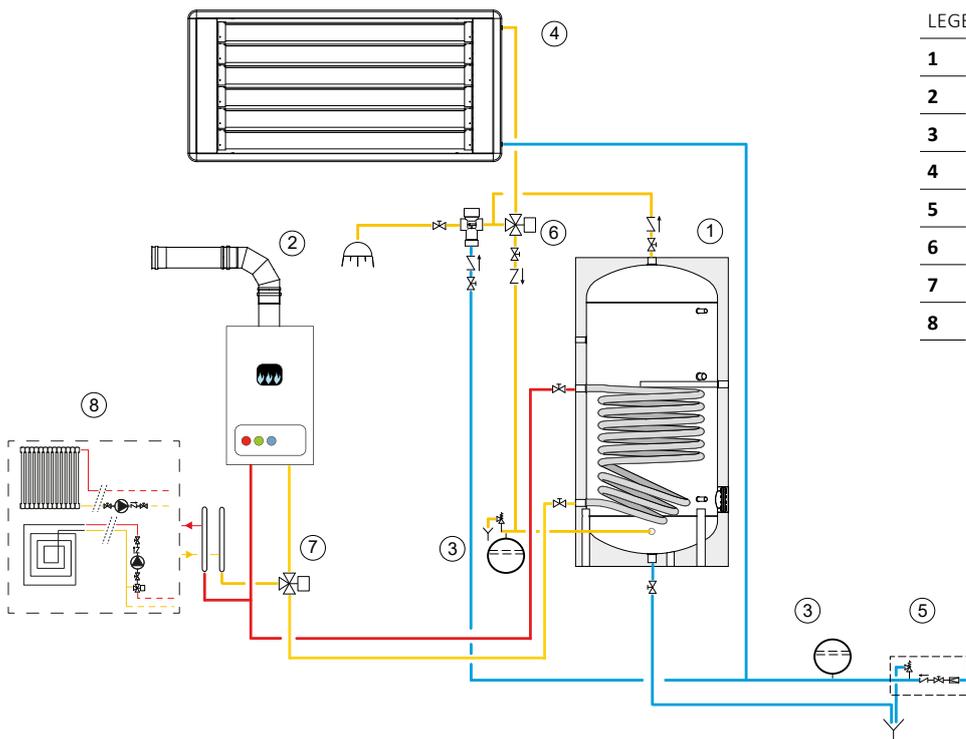
MODEL 180



Model	L	P	H	A	S	DHW connections	Gross surface area	Total weight in function	Weight per m <sup>2</sup> in function
<b>120</b>	2160	752	589	822	163	1/2" F	1,77	122	69
<b>180</b>	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S ROTOSHIELD® SYSTEM WITH BOLLY® 1 ST

Stratos® 4S	Calorifier	Model	Description	Art. Nr.
<b>120</b>	<b>BOLLY® 1 ST</b>	<b>200</b>	STRATOS 4S ROTO 120-B1 200	3410316619000
<b>180</b>	<b>BOLLY® 1 ST</b>	<b>300</b>	STRATOS 4S ROTO 180-B1 300	3410316619007



### LEGEND

- |          |                                |
|----------|--------------------------------|
| <b>1</b> | Calorifier BOLLY® 1 ST         |
| <b>2</b> | Heat source                    |
| <b>3</b> | Expansion vessel               |
| <b>4</b> | Stratos® 4S Rotoshield®        |
| <b>5</b> | Hydraulic safety group         |
| <b>6</b> | 5-way diverting / mixing valve |
| <b>7</b> | Diverting valve                |
| <b>8</b> | Heating system                 |

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 XL



NEW

## BOLLY® 1 XL POLYWARM®



The solar thermal system **STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 XL POLYWARM®**, for DHW production, it's composed of the compact solar thermal system STRATOS® 4S ROTOSHIELD® and the BOLLY® 1 XL POLYWARM® calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® 4S ROTOSHIELD®

Frame structure of anodized marine grade aluminum.  
Support and fixing brackets in galvanized steel.  
Capturing system consisting of tubes with Sydney

type vacuum technology with highly selective coating and high vacuum grade.  
Primary accumulation in stainless steel AISI 304.  
DHW exchanger in stainless steel AISI 316L suitable for drinking water according to 98/83/CE and subsequent amendments.

### CALORIFIER

Model **BOLLY® 1 XL POLYWARM®** with fixed heat exchanger.  
Tank in carbon steel.  
Internal Polywarm® coating, suitable for drinking water according to 98/83/CE and subsequent

amendments and DHW certifications ACS-SSICA-DVGW-W270-UBA-WRAS.  
Connections for integration of electrical heater.  
Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.  
Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

[cordivari.com/erp](http://cordivari.com/erp)



ON LINE ErP LABEL TOOL

### SYSTEM COMPONENTS

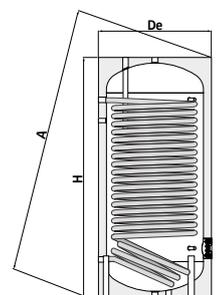
### INCLUDED

Compact solar thermal system Stratos® 4S Rotoshield®	✓
BOLLY® 1 XL POLYWARM® Calorifier	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Fixing kit for flat surfaces and pitched roofs	✓
Non-toxic heat transfer fluid	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



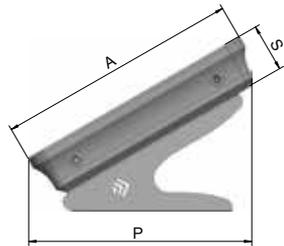
### BOLLY® 1 XL POLYWARM®

ENERGY EFFICIENCY CLASS

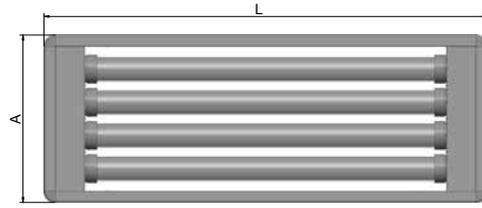
MODEL	De	H	A	TESTED ErP
	[mm]			
<b>200</b>	550	1440	1541	<b>B</b>
<b>300</b>	650	1492	1627	<b>B</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

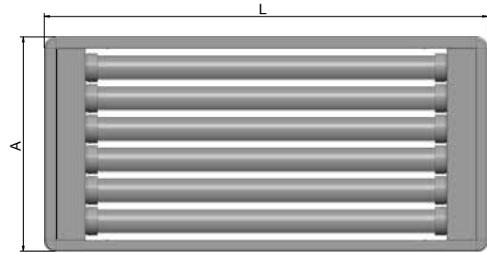
# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 XL



MODEL 120



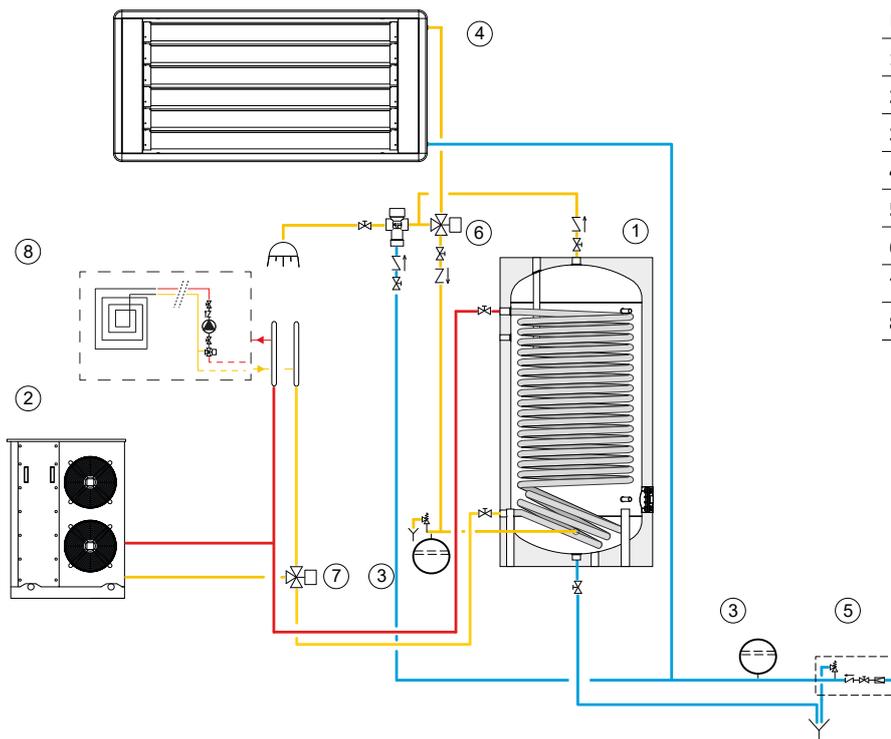
MODEL 180



Model	L	P	H	A	S	DHW connections	Gross surface area	Total weight in function	Weight per m <sup>2</sup> in function
<b>120</b>	2160	752	589	822	163	1/2" F	1,77	122	69
<b>180</b>	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S ROTOSHIELD® SYSTEM WITH BOLLY® 1 XL

Stratos® 4S	Calorifier	Model	Description	Art. Nr.
<b>120</b>	<b>BOLLY® 1 XL</b>	<b>200</b>	STRATOS 4S ROTO 120-B1XL 200 WB	3410316619001
<b>180</b>	<b>BOLLY® 1 XL</b>	<b>300</b>	STRATOS 4S ROTO 180-B1XL 300 WB	3410316619008



### LEGEND

- |          |                                  |
|----------|----------------------------------|
| <b>1</b> | Calorifier BOLLY® 1 XL POLYWARM® |
| <b>2</b> | Heat source                      |
| <b>3</b> | Expansion vessel                 |
| <b>4</b> | Stratos® 4S Rotoshield®          |
| <b>5</b> | Hydraulic safety group           |
| <b>6</b> | 5-way diverting / mixing valve   |
| <b>7</b> | Diverting valve                  |
| <b>8</b> | Heating and cooling system       |

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 XL INOX



NEW

## BOLLY® 1 XL INOX



The solar thermal system **STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 XL**, for DHW production, it's composed of the compact solar thermal system **STRATOS® 4S ROTOSHIELD®** and the **BOLLY® 1 XL** calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® 4S ROTOSHIELD®

Frame structure of anodized marine grade aluminum.  
Support and fixing brackets in galvanized steel.  
Capturing system consisting of tubes with Sydney

type vacuum technology with highly selective coating and high vacuum grade.  
Primary accumulation in stainless steel AISI 304.  
DHW exchanger in stainless steel AISI 316L suitable for drinking water according to 98/83/CE and subsequent amendments.

### CALORIFIER

Model **BOLLY® 1 XL INOX** with fixed extra-large heat exchanger in stainless steel 316L.  
Tank made of stainless steel 316L suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications

ACS-SSICA-DVGW-W270-UBA-WRAS.  
Connections for integration of electrical heater.  
Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.  
Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

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ON LINE ErP LABEL TOOL

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

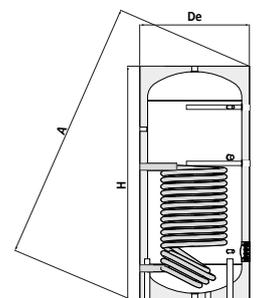
TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



### SYSTEM COMPONENTS

### INCLUDED

Compact solar thermal system Stratos® 4S Rotoshield®	✓
BOLLY® 1 XL INOX calorifier in stainless steel	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Fixing kit for flat surfaces and pitched roofs	✓
Non-toxic heat transfer fluid	✓

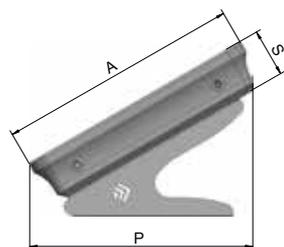


### BOLLY® 1 XL INOX

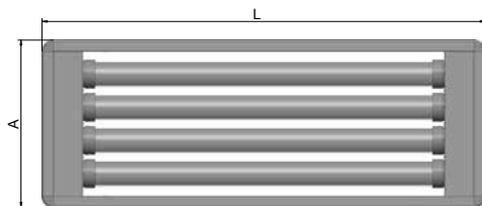
MODEL	De	H	A	ENERGY EFFICIENCY CLASS <b>TESTED ErP</b>
	[mm]			
<b>200</b>	550	1446	1547	<b>B</b>
<b>300</b>	650	1501	1636	<b>B</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

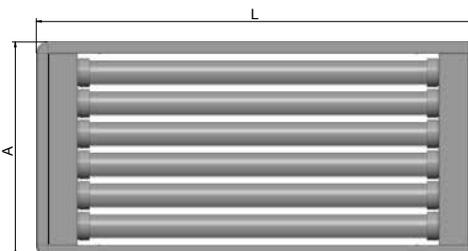
# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 XL INOX



MODEL 120



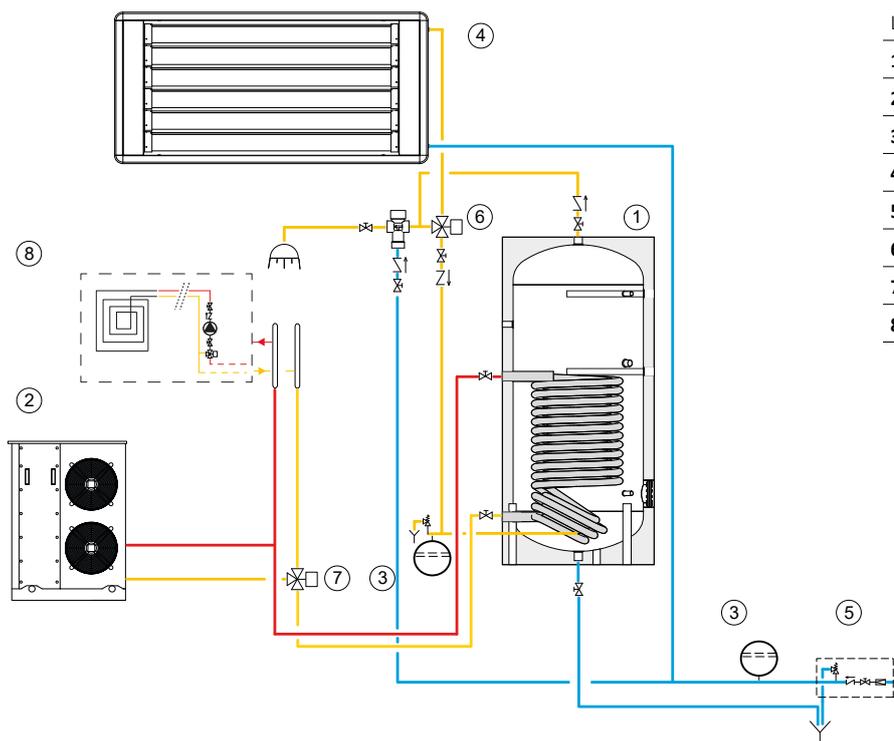
MODEL 180



Model	L	P	H	A	S	DHW connections	Gross surface area	Total weight in function	Weight per m <sup>2</sup> in function
<b>120</b>	2160	752	589	822	163	1/2" F	1,77	122	69
<b>180</b>	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S ROTOSHIELD® SYSTEM WITH BOLLY® 1 XL INOX

Stratos® 4S	Calorifier	Model	Description	Art. Nr.
<b>120</b>	<b>BOLLY® 1 XL INOX</b>	<b>200</b>	STRATOS 4S ROTO 120-B1 XL 200 XB	3410316619002
<b>180</b>	<b>BOLLY® 1 XL INOX</b>	<b>300</b>	STRATOS 4S ROTO 180-B1 XL 300 XB	3410316619009



### LEGEND

- |          |                               |
|----------|-------------------------------|
| <b>1</b> | Calorifier BOLLY® 1 XL INOX   |
| <b>2</b> | Heat source                   |
| <b>3</b> | Expansion vessel              |
| <b>4</b> | Stratos® 4S Rotoshield®       |
| <b>5</b> | Hydraulic safety group        |
| <b>6</b> | 5-way diverter / mixing valve |
| <b>7</b> | Diverter valve                |
| <b>8</b> | Heating and cooling system    |

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 PDC



NEW

## BOLLY® 1 PDC



The solar thermal system **STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 PDC**, for DHW production, it's composed of the compact solar thermal system **STRATOS® 4S ROTOSHIELD®** and the **BOLLY® 1 PDC** calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® 4S ROTOSHIELD®

Frame structure of anodized marine grade aluminum.  
Support and fixing brackets in galvanized steel.  
Capturing system consisting of tubes with Sydney

type vacuum technology with highly selective coating and high vacuum grade.  
Primary accumulation in stainless steel AISI 304.  
DHW exchanger in stainless steel AISI 316L suitable for drinking water according to 98/83/CE and subsequent amendments.

### CALORIFIER

Model **BOLLY® 1 PDC** with integration exchange unit specific for heat pumps.  
Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-

DVGW-W270-UBA-WRAS.

Connections for integration of electrical heater.  
Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.  
Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

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ON LINE ErP LABEL TOOL

## SYSTEM COMPONENTS

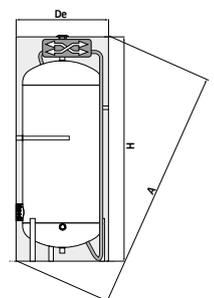
## INCLUDED

Compact solar thermal system Stratos® 4S Rotoshield®	✓
BOLLY® 1 PDC calorifier	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Fixing kit for flat surfaces and pitched roofs	✓
Non-toxic heat transfer fluid	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



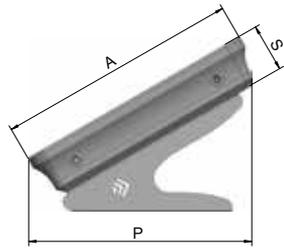
## BOLLY® 1 PDC

ENERGY EFFICIENCY CLASS

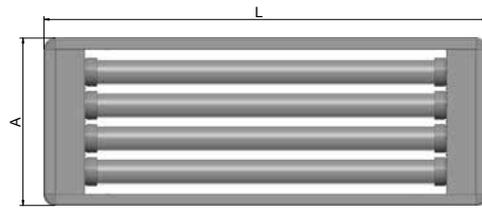
MODEL	De	H	A	TESTED ErP ENERGY EFFICIENCY CLASS
	[mm]			
<b>300</b>	650	1680	1800	<b>B</b>
<b>500</b>	750	1970	2110	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

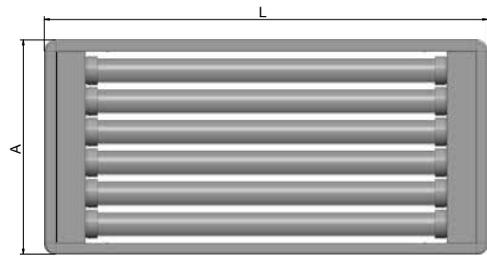
# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® 1 PDC



MODEL 120



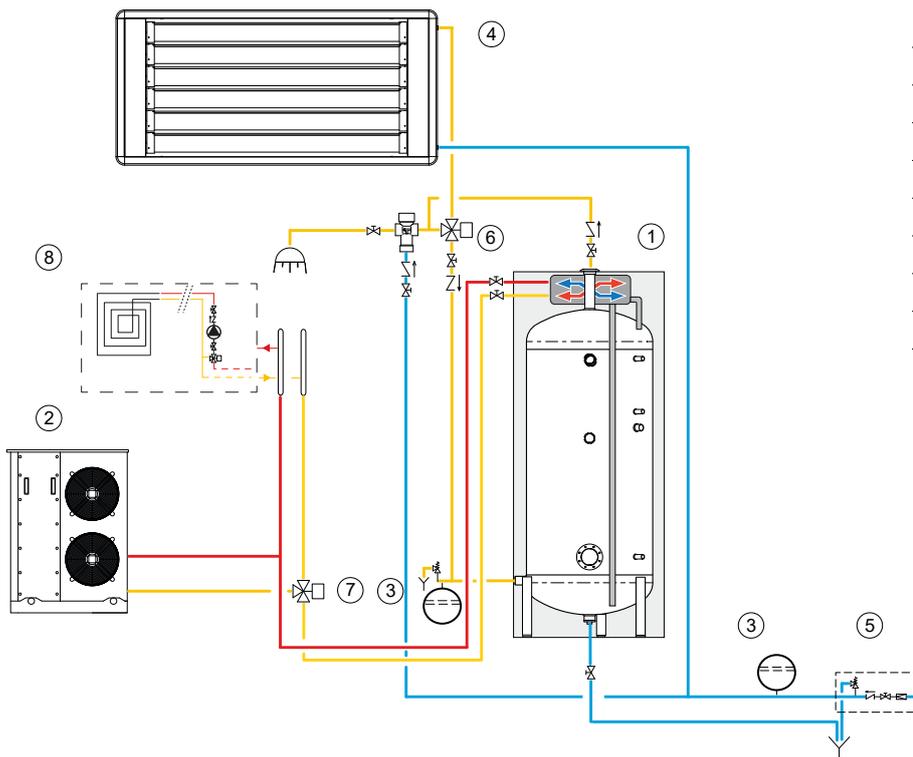
MODEL 180



Model	L	P	H	A	S	DHW connections	Gross surface area	Total weight in function	Weight per m <sup>2</sup> in function
<b>120</b>	2160	752	589	822	163	1/2" F	1,77	122	69
<b>180</b>	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S ROTOSHIELD® SYSTEM WITH BOLLY® 1 PDC

Stratos® 4S	Calorifier	Model	Description	Art. Nr.
<b>120</b>	<b>BOLLY® 1 PDC</b>	<b>300</b>	STRATOS 4S ROTO 120-B1 PDC 300 WB	3410316619003
<b>180</b>	<b>BOLLY® 1 PDC</b>	<b>500</b>	STRATOS 4S ROTO 180-B1 PDC 500 WB	3410316619010



### LEGEND

- |          |                                |
|----------|--------------------------------|
| <b>1</b> | Calorifier BOLLY® 1 PDC        |
| <b>2</b> | Heat source                    |
| <b>3</b> | Expansion vessel               |
| <b>4</b> | Stratos® 4S Rotoshield®        |
| <b>5</b> | Hydraulic safety group         |
| <b>6</b> | 5-way diverting / mixing valve |
| <b>7</b> | Diverting valve                |
| <b>8</b> | Heating and cooling system     |

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLYTERM® HP 1



NEW

## BOLLYTERM® HP 1



The solar thermal system **STRATOS® 4S ROTOSHIELD® WITH BOLLYTERM® HP 1**, for DHW production, it's composed of the compact solar thermal system STRATOS® 4S ROTOSHIELD® and the BOLLYTERM® HP 1 heat pump water heater with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® 4S ROTOSHIELD®

Frame structure of anodized marine grade aluminum.  
Support and fixing brackets in galvanized steel.  
Capturing system consisting of tubes with Sydney

type vacuum technology with highly selective coating and high vacuum grade.  
Primary accumulation in stainless steel AISI 304.  
DHW exchanger in stainless steel AISI 316L suitable for drinking water according to 98/83/CE and subsequent amendments.

### CALORIFIER

Model **BOLLYTERM® HP 1** with fixed heat exchanger and integrated heat pump with condenser coiled outside the storage tank.  
Tank in carbon steel.  
Internal Polywarm coating, suitable for drinking

water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-DVGW-W270-UBA-WRAS.  
1500 watt electrical heater included.  
Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.  
Tested in accordance with European standard EN 12897:2006.

### WARRANTY

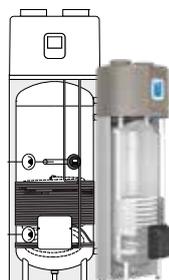
5 years - See general sales and warranty conditions

[cordivari.com/erp](http://cordivari.com/erp)



ON LINE ErP LABEL TOOL

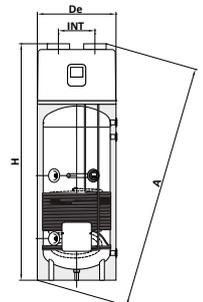
### BOLLYTERM® HP 1 WITH 1 HEAT EXCHANGER



ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



### SYSTEM COMPONENTS

### INCLUDED

Compact solar thermal system Stratos® 4S Rotoshield®	✓
BOLLYTERM® HP 1 heat pump water heater	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Fixing kit for flat surfaces and pitched roofs	✓
Non-toxic heat transfer fluid	✓
1500 watt electrical heater	✓

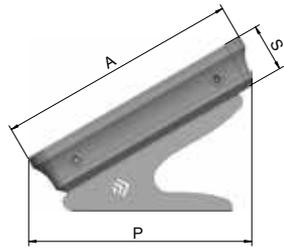
### BOLLYTERM® HP 1

ENERGY EFFICIENCY CLASS

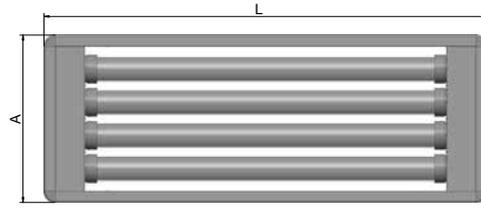
MODEL	INT	De	H	A	TESTED ErP
<b>200</b>	340	640	1585	1684	<b>A+</b>
<b>300</b>	340	640	1960	2040	<b>A+</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

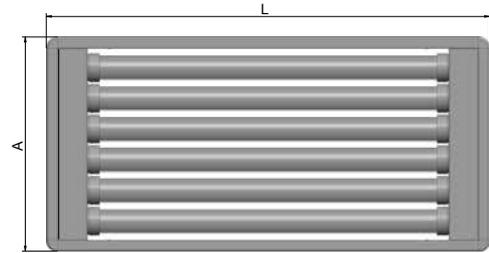
# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLYTERM® HP 1



MODEL 120



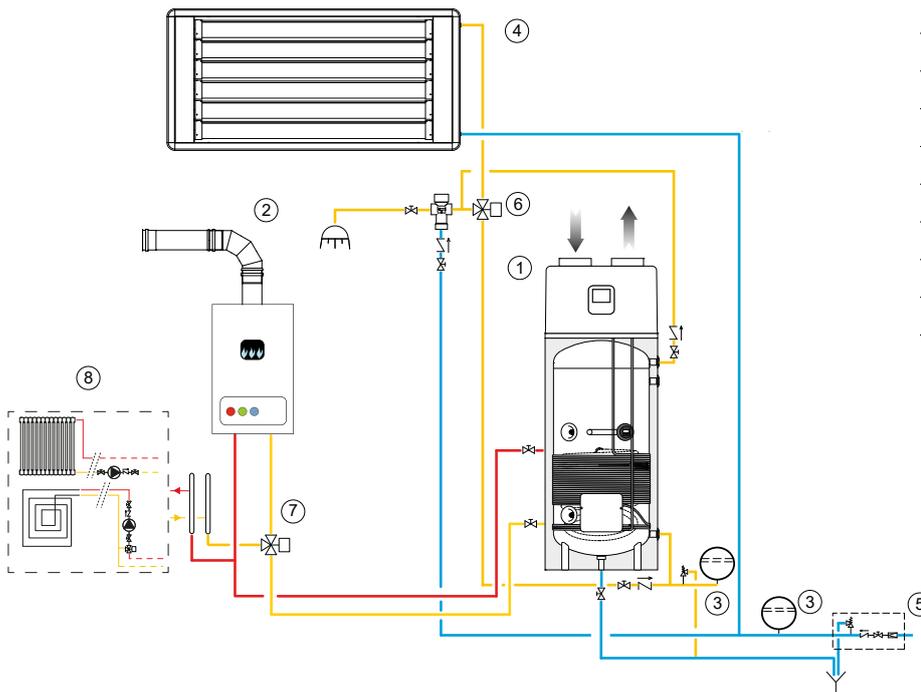
MODEL 180



Model	L	P	H	A	S	DHW connections	Gross surface area [m <sup>2</sup> ]	Total weight in function [kg]	Weight per m <sup>2</sup> in function [kg/m <sup>2</sup> ]
	[mm]								
<b>120</b>	2160	752	589	822	163	1/2" F	1,77	122	69
<b>180</b>	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S ROTOSHIELD® SYSTEM WITH BOLLYTERM® HP 1

Stratos® 4S	Calorifier	Model	Description	Art. Nr.
<b>120</b>	<b>BOLLYTERM® HP 1</b>	<b>200</b>	STRATOS 4S ROTO 120-BOLLYTERM1 200 WB	3410316619004
<b>180</b>	<b>BOLLYTERM® HP 1</b>	<b>300</b>	STRATOS 4S ROTO 180-BOLLYTERM1 300 WB	3410316619011



### LEGEND

<b>1</b>	BOLLYTERM® HP 1 heat pump water heater
<b>2</b>	Heat source
<b>3</b>	Expansion vessel
<b>4</b>	Stratos® 4S Rotoshield®
<b>5</b>	Hydraulic safety group
<b>6</b>	5-way diverter / mixing valve
<b>7</b>	Diverter valve
<b>8</b>	Heating system

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLYTERM® HOME



NEW

## BOLLYTERM® HOME



The solar thermal system **STRATOS® 4S ROTOSHIELD® WITH BOLLYTERM® HOME**, for DHW production, it's composed of the compact solar thermal system STRATOS® 4S ROTOSHIELD® and the BOLLYTERM® HOME heat pump water heater.

### CHARACTERISTICS OF THE STRATOS® 4S ROTOSHIELD®

Frame structure of anodized marine grade aluminum.  
Support and fixing brackets in galvanized steel.  
Capturing system consisting of tubes with Sydney

type vacuum technology with highly selective coating and high vacuum grade.  
Primary accumulation in stainless steel AISI 304.  
DHW exchanger in stainless steel AISI 316L suitable for drinking water according to 98/83/CE and subsequent amendments.

### CALORIFIER

Model **BOLLYTERM® HOME** water heater with integrated heat pump.  
Tank in carbon steel.  
Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent

amendments and DHW certifications ACS-SSICA-DVGW-W270-UBA-WRAS.  
1500 watt electrical heater included.  
Rigid insulation of polyurethane foam with high thermal insulation. External lining in painted steel and ABS cover.  
Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

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### SYSTEM COMPONENTS

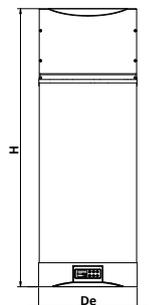
### INCLUDED

Compact solar thermal system Stratos® 4S Rotoshield®	✓
BOLLYTERM® HOME heat pump water heater	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Fixing kit for flat surfaces and pitched roofs	✓
Non-toxic heat transfer fluid	✓
1500 watt electrical heater	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.

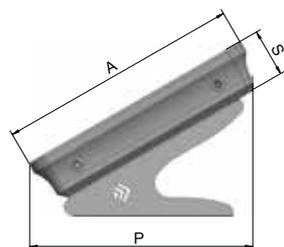


### BOLLYTERM® HOME

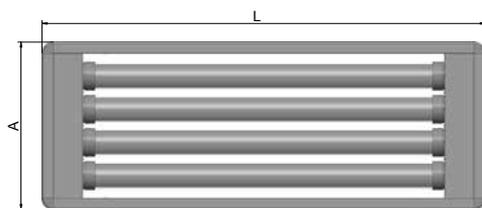
MODEL	Volume	De	H	ENERGY EFFICIENCY CLASS
	[liters]	[mm]		
<b>80</b>	80	480	1208	<b>A+</b>
<b>110</b>	102,5	480	1393	<b>A+</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

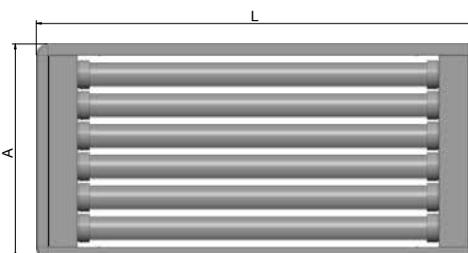
# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLYTERM® HOME



MODEL 120



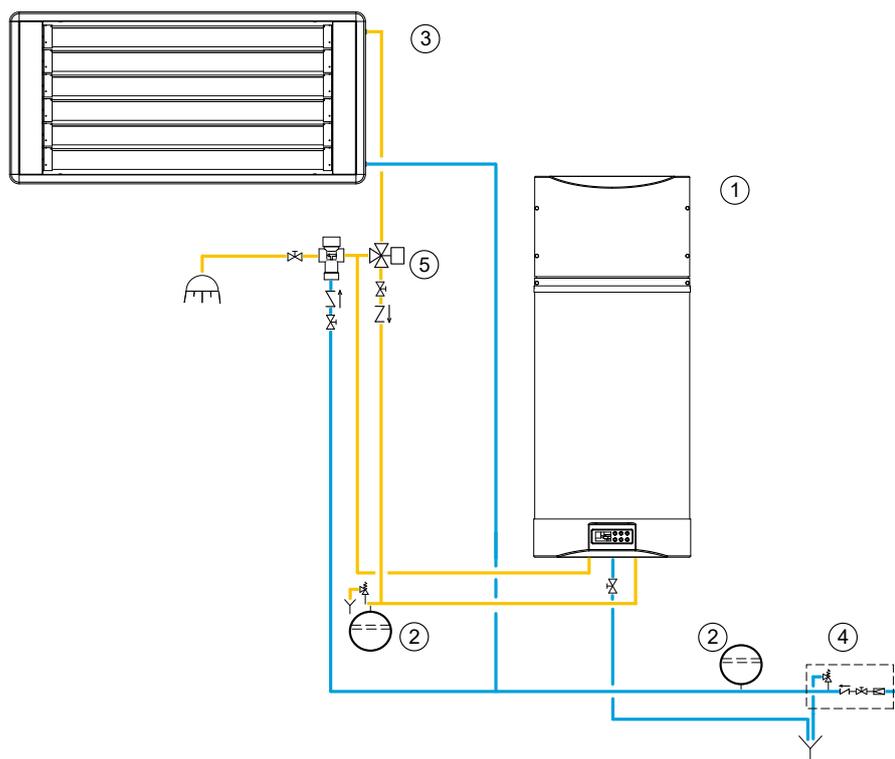
MODEL 180



Model	L	P	H	A	S	DHW connections	Gross surface area	Total weight in function	Weight per m <sup>2</sup> in function
<b>120</b>	2160	752	589	822	163	1/2" F	1,77	122	69
<b>180</b>	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S ROTOSHIELD® SYSTEM WITH BOLLYTERM® HOME

Stratos® 4S	Calorifier	Model	Description	Art. Nr.
<b>120</b>	<b>BOLLYTERM® HOME</b>	<b>80</b>	STRATOS 4S ROTO 120-B.T.HOME 80 WB	3410316619005
<b>180</b>	<b>BOLLYTERM® HOME</b>	<b>110</b>	STRATOS 4S ROTO 180-B.T.HOME 110 WB	3410316619012



### LEGEND

- 1 BOLLYTERM® HOME heat pump water heater
- 2 Expansion vessel
- 3 Stratos® 4S Rotoshield®
- 4 Hydraulic safety group
- 5 5-way diverting / mixing valve

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® HY



NEW

## BOLLY® HY



The solar thermal system **STRATOS® 4S ROTOSHIELD® WITH BOLLY® HY**, for DHW production, it's composed of the compact solar thermal system **STRATOS® 4S ROTOSHIELD®** and the **BOLLY® HY**, calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® 4S ROTOSHIELD®

Frame structure of anodized marine grade aluminum.  
Support and fixing brackets in galvanized steel.  
Capturing system consisting of tubes with Sydney

type vacuum technology with highly selective coating and high vacuum grade.  
Primary accumulation in stainless steel AISI 304.  
DHW exchanger in stainless steel AISI 316L suitable for drinking water according to 98/83/CE and subsequent amendments.

### CALORIFIER

Model **BOLLY® HY** hybrid calorifier for DHW with integrated hydraulic separator for heat pumps.  
Tank in carbon steel.  
Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent

amendments and DHW certifications ACS-SSICA-DVGW-W270-UBA-WRAS.  
Connections for integration of electrical heater.  
Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.  
Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

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## SYSTEM COMPONENTS

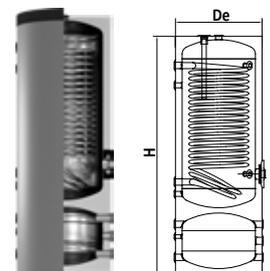
## INCLUDED

Compact solar thermal system Stratos® 4S Rotoshield®	✓
BOLLY® HY calorifier	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Fixing kit for flat surfaces and pitched roofs	✓
Non-toxic heat transfer fluid	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

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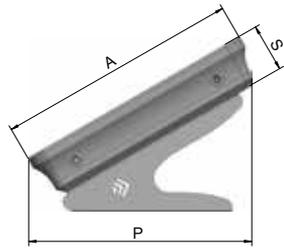
## BOLLY® HY

ENERGY EFFICIENCY CLASS

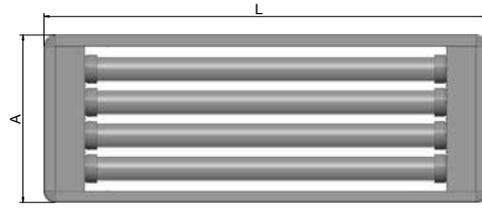
MODEL	De	H	TESTED ErP ENERGY EFFICIENCY CLASS
	[mm]		
<b>300</b>	650	1805	<b>B</b>
<b>500</b>	750	1910	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

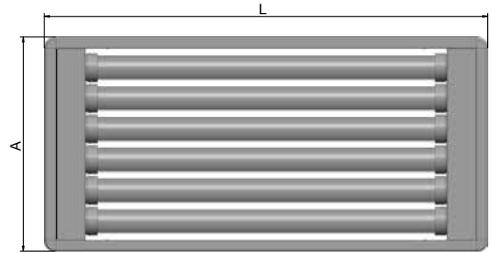
# SOLAR THERMAL SYSTEM STRATOS® 4S ROTOSHIELD® WITH BOLLY® HY



MODEL 120



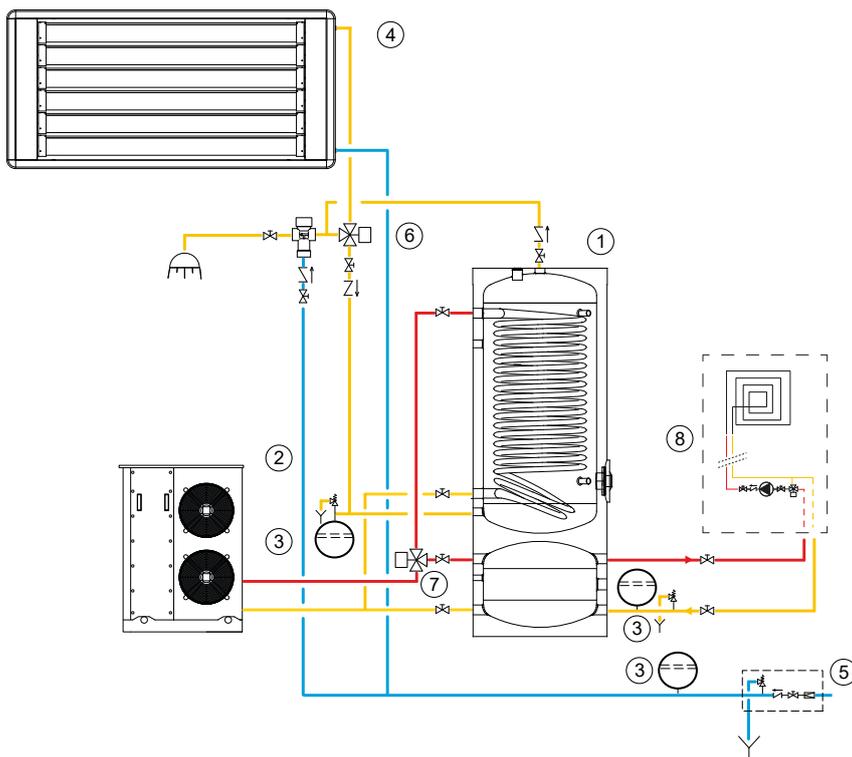
MODEL 180



Model	L	P	H	A	S	DHW connections	Gross surface area	Total weight in function	Weight per m <sup>2</sup> in function
<b>120</b>	2160	752	589	822	163	1/2" F	1,77	122	69
<b>180</b>	2160	951	704	1052	163	1/2" F	2,27	178	78

## STRATOS® 4S ROTOSHIELD® SYSTEM WITH BOLLY® HY

Stratos® 4S	Calorifier	Model	Description	Art. Nr.
<b>120</b>	<b>BOLLY® HY</b>	<b>300</b>	STRATOS 4S ROTO 120-B1 HY 300 WB	3410316619006
<b>180</b>	<b>BOLLY® HY</b>	<b>500</b>	STRATOS 4S ROTO 180-B1 HY 500 WB	3410316619013



### LEGEND

- 1 Calorifier BOLLY® HY
- 2 Heat source
- 3 Expansion vessel
- 4 Stratos® 4S Rotoshield®
- 5 Hydraulic safety group
- 6 5-way diverting / mixing valve
- 7 Diverting valve
- 8 Heating and cooling system

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® 1 ST



NEW



The solar thermal system **STRATOS® DR WITH BOLLY® 1 ST**, for DHW production, it's composed of the compact solar thermal system STRATOS® DR and the BOLLY® 1 ST calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® DR

Aluminum profile, anodizing treatment included. Tempered glass according to EN 12150, tested against impact according to EN 12976. Bottoms

and walls with high insulation power ( $\lambda$  0,023 W/mk), thickness 30 mm.

### CALORIFIER

Model **BOLLY 1 ST** with fixed heat exchanger. Tank in carbon steel.

Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-DVGW-W270-UBA-WRAS.

Connections for integration of electrical heater. Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.

Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

[cordivari.com/erp](http://cordivari.com/erp)



ON LINE ErP LABEL TOOL

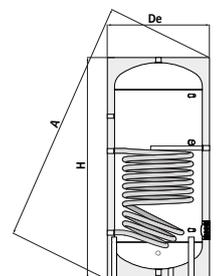
### SYSTEM COMPONENTS

SYSTEM COMPONENTS	INCLUDED
STRATOS® DR - Compact solar thermal system with direct heating	✓
BOLLY® 1 ST calorifier	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Vacuum break valve	✓
Nr. 1 Cap of 1"1/4 gas M + Nr. 1 Cap of 1/2" gas M	✓
Fixing kit for flat surfaces (42°) and pitched roofs	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

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### BOLLY® 1 ST

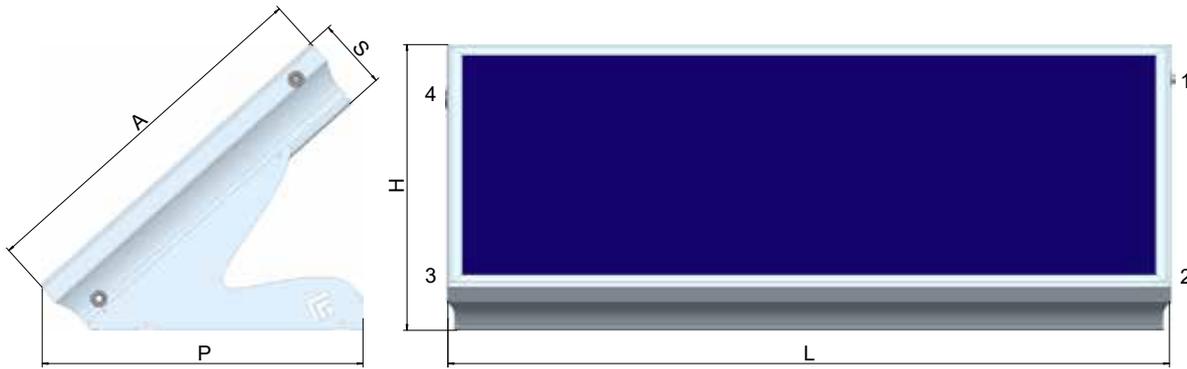
MODEL	ENERGY EFFICIENCY CLASS		
	De	H	A
	[mm]		
<b>200</b>	550	1434	1536
<b>300</b>	650	1486	1622

ENERGY EFFICIENCY CLASS



For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

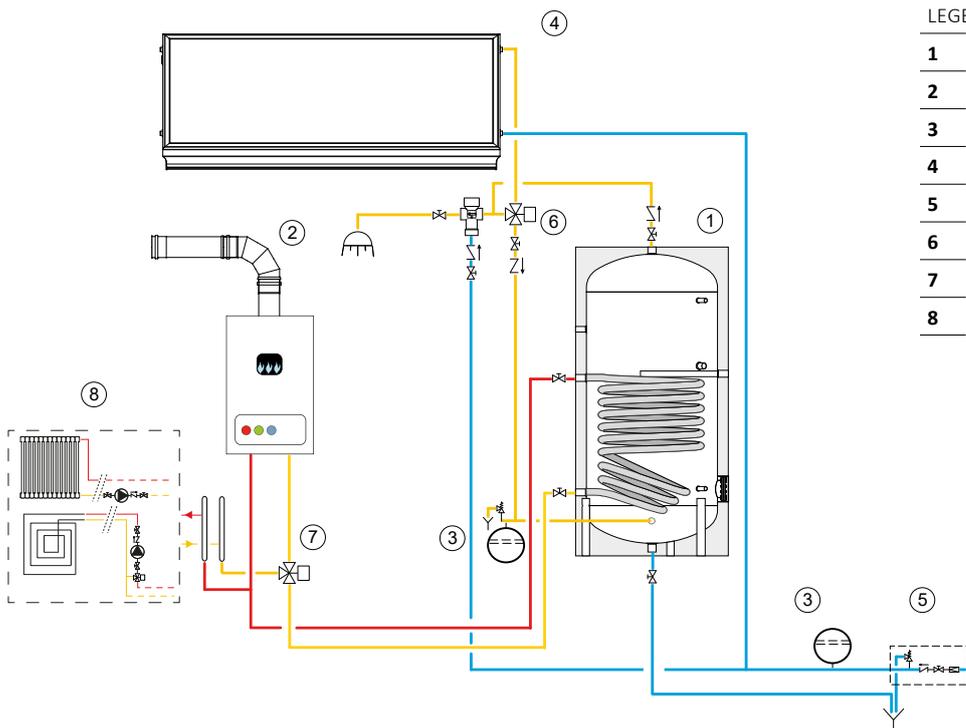
# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® 1 ST



Model	L	P	H	A	S	Connections			Gross surface area [m <sup>2</sup> ]	Empty weight [kg]	Weight per m <sup>2</sup> In function [kg/m <sup>2</sup> ]
						1	2-3	4			
<b>180</b>	2288	926	736	882	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,02	62	117
<b>260</b>	2288	926	935	1192	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,73	84	120

## STRATOS® DR WITH BOLLY® 1 ST

Stratos® DR	Calorifier	Calorifier model	Description	Art. Nr.
<b>180</b>	<b>BOLLY® 1 ST</b>	<b>200</b>	STRATOS DR 180-B1 200	3410316619021
<b>260</b>	<b>BOLLY® 1 ST</b>	<b>300</b>	STRATOS DR 260-B1 300	3410316619028

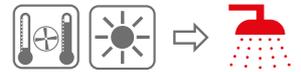


### LEGEND

- |          |                                |
|----------|--------------------------------|
| <b>1</b> | Calorifier BOLLY® 1 ST         |
| <b>2</b> | Heat source                    |
| <b>3</b> | Expansion vessel               |
| <b>4</b> | Stratos® DR                    |
| <b>5</b> | Hydraulic safety group         |
| <b>6</b> | 5-way diverting / mixing valve |
| <b>7</b> | Diverting valve                |
| <b>8</b> | Heating system                 |

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® 1 XL



NEW

BOLLY® 1 XL  
POLYWARM®



The solar thermal system **STRATOS® DR WITH BOLLY® 1 XL POLYWARM®**, for DHW production, it's composed of the compact solar thermal system STRATOS® DR and the BOLLY® 1 XL POLYWARM® calorifier with fixed heat exchanger.

#### CHARACTERISTICS OF THE STRATOS® DR

Aluminum profile, anodizing treatment included. Tempered glass according to EN 12150, tested against impact according to EN 12976. Bottoms

and walls with high insulation power ( $\lambda$  0,023 W/mk), thickness 30 mm.

#### CALORIFIER

Model **BOLLY® 1 XL POLYWARM®** with fixed heat exchanger.

Tank in carbon steel.

Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-

DVGW-W270-UBA-WRAS.

Connections for integration of electrical heater. Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.

Tested in accordance with European standard EN 12897:2006.

#### WARRANTY

5 years - See general sales and warranty conditions

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ON LINE ErP LABEL TOOL

#### SYSTEM COMPONENTS

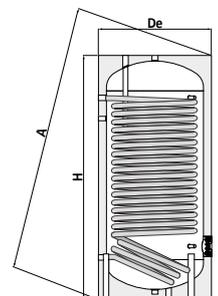
INCLUDED

STRATOS® DR - Compact solar thermal system with direct heating	✓
BOLLY® 1 XL POLYWARM® calorifier	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Vacuum break valve	✓
Nr. 1 Cap of 1"1/4 gas M + Nr. 1 Cap of 1/2" gas M	✓
Fixing kit for flat surfaces (42°) and pitched roofs	✓

ALWAYS ASK FOR  
CERTIFIED LABORATORIES  
DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



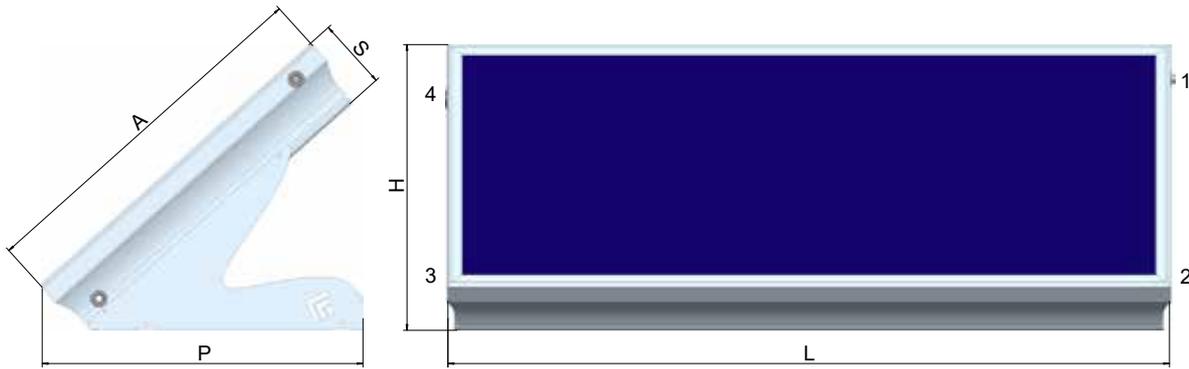
#### BOLLY® 1 XL POLYWARM®

ENERGY EFFICIENCY CLASS

MODEL	De	H	A	TESTED ErP B
	[mm]			
<b>200</b>	550	1440	1541	<b>B</b>
<b>300</b>	650	1492	1627	<b>B</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

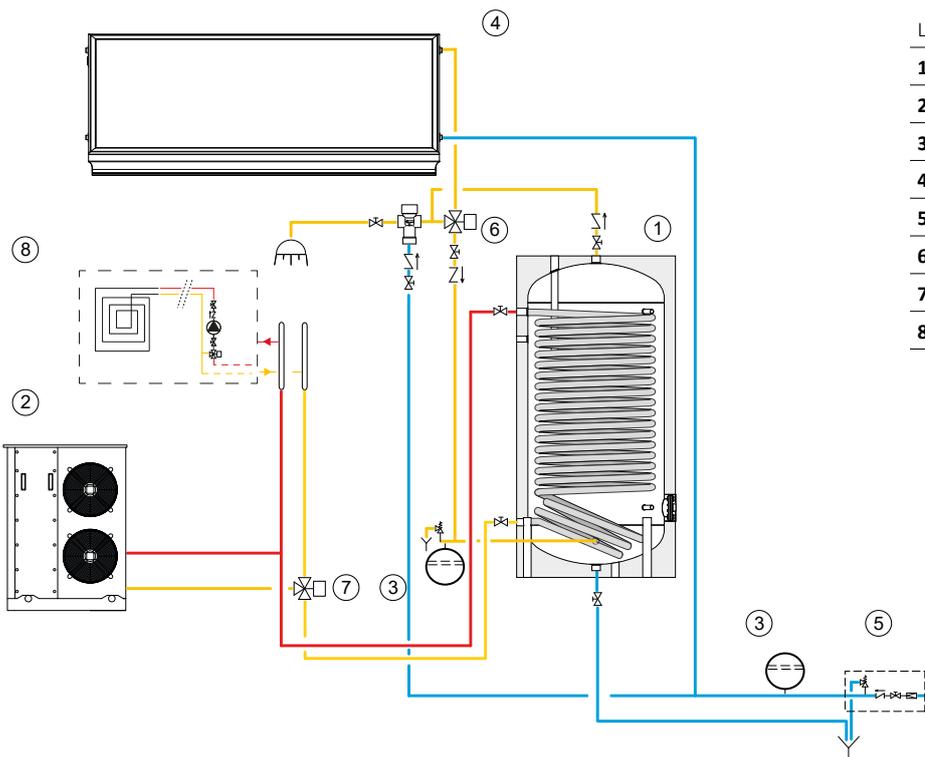
# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® 1 XL



Model	L	P	H	A	S	Connections			Gross surface area	Empty weight	Weight per m <sup>2</sup> In function
	[mm]					1	2-3	4	[m <sup>2</sup> ]	[kg]	[kg/m <sup>2</sup> ]
<b>180</b>	2288	926	736	882	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,02	62	117
<b>260</b>	2288	926	935	1192	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,73	84	120

## STRATOS® DR WITH BOLLY® 1 XL

Stratos® DR	Calorifier	Calorifier model	Description	Art. Nr.
<b>180</b>	<b>BOLLY® 1 XL</b>	<b>200</b>	STRATOS DR 180-B1XL 200 WB	3410316619022
<b>260</b>	<b>BOLLY® 1 XL</b>	<b>300</b>	STRATOS DR 260-B1XL 300 WB	3410316619029

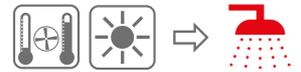


### LEGEND

- 1** Calorifier BOLLY® 1 XL POLYWARM®
- 2** Heat source
- 3** Expansion vessel
- 4** Stratos® DR
- 5** Hydraulic safety group
- 6** 5-way diverting / mixing valve
- 7** Diverting valve
- 8** Heating and cooling system

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® 1 XL INOX



NEW

## BOLLY® 1 XL INOX



The solar thermal system **STRATOS® DR WITH BOLLY® 1 XL INOX**, for DHW production, it's composed of the compact solar thermal system STRATOS® DR and the BOLLY® 1 XL INOX calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® DR

Aluminum profile, anodizing treatment included. Tempered glass according to EN 12150, tested against impact according to EN 12976. Bottoms

and walls with high insulation power ( $\lambda$  0,023 W/mk), thickness 30 mm.

### CALORIFIER

Model **BOLLY® 1 XL INOX** with fixed extra-large heat exchanger in stainless steel 316L.

Tank made of stainless steel 316L, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-DVGW-W270-UBA-WRAS.

Connections for integration of electrical heater. Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.

Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

[cordivari.com/erp](http://cordivari.com/erp)



ON LINE Erp LABEL TOOL

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

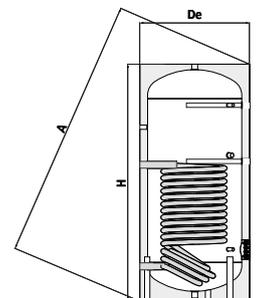
TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



## SYSTEM COMPONENTS

## INCLUDED

STRATOS® DR - Compact solar thermal system with direct heating	✓
BOLLY® 1 XL INOX calorifier in stainless steel	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Vacuum break valve	✓
Nr. 1 Cap of 1"1/4 gas M + Nr. 1 Cap of 1/2" gas M	✓
Fixing kit for flat surfaces (42°) and pitched roofs	✓

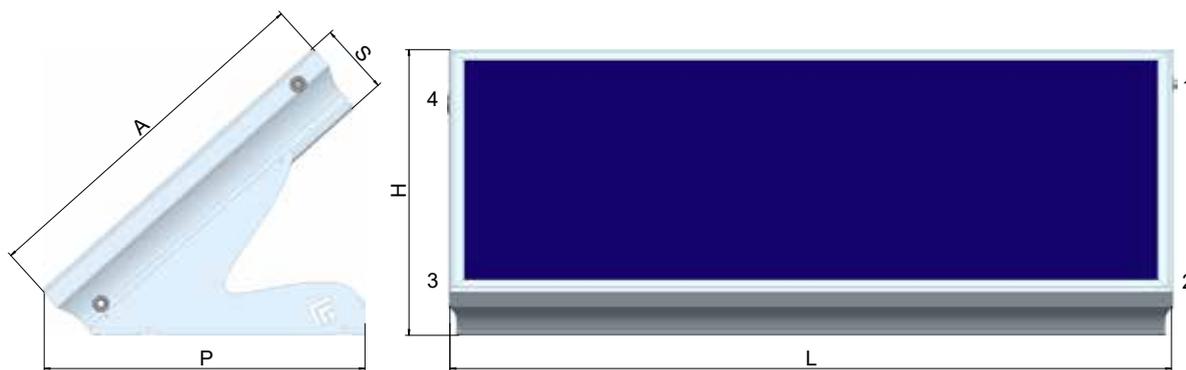


## BOLLY® 1 XL INOX

MODEL	De	H	A	ENERGY EFFICIENCY CLASS <b>TESTED ErP</b>
	[mm]			
<b>200</b>	550	1446	1547	<b>B</b>
<b>300</b>	650	1501	1636	<b>B</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

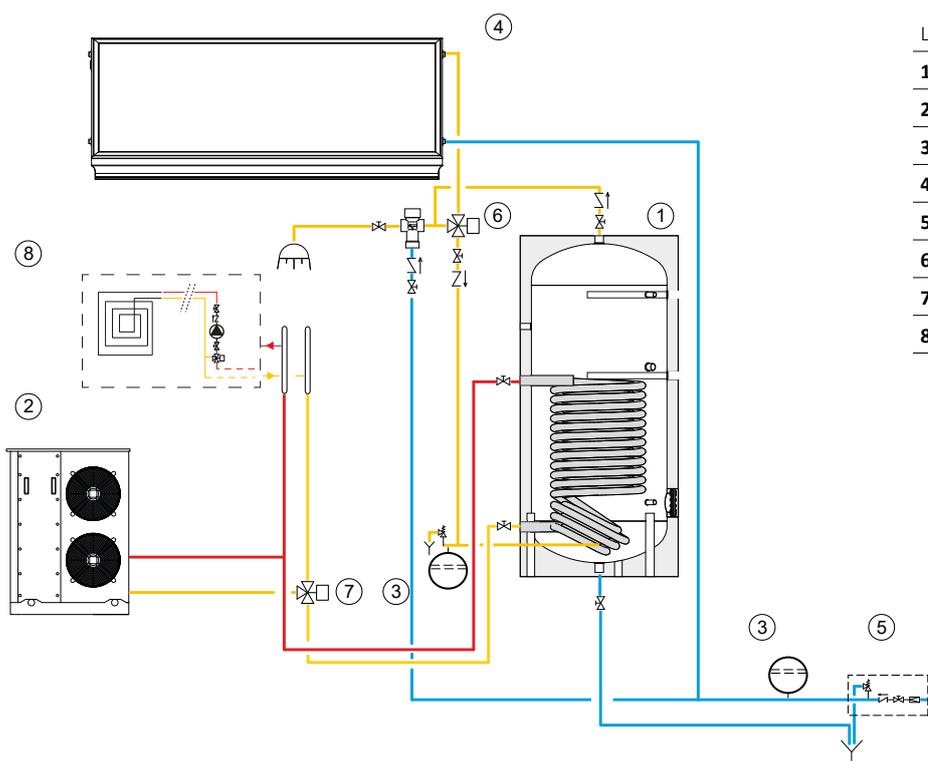
# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® 1 XL INOX



Model	L	P	H	A	S	Connections			Gross surface area [m <sup>2</sup> ]	Empty weight [kg]	Weight per m <sup>2</sup> In function [kg/m <sup>2</sup> ]
						1	2-3	4			
<b>180</b>	2288	926	736	882	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,02	62	117
<b>260</b>	2288	926	935	1192	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,73	84	120

## STRATOS® DR WITH BOLLY® 1 XL INOX

Stratos® DR	Calorifier	Calorifier model	Description	Art. Nr.
<b>180</b>	<b>BOLLY® 1 XL INOX</b>	<b>200</b>	STRATOS DR 180-B1 XL 200 XB	3410316619023
<b>260</b>	<b>BOLLY® 1 XL INOX</b>	<b>300</b>	STRATOS DR 260-B1 XL 300 XB	3410316619030



### LEGEND

- 1 Calorifier BOLLY® 1 XL INOX
- 2 Heat source
- 3 Expansion vessel
- 4 Stratos® DR
- 5 Hydraulic safety group
- 6 5-way diverting / mixing valve
- 7 Diverting valve
- 8 Heating and cooling system

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® 1 PDC



NEW



The solar thermal system **STRATOS® DR WITH BOLLY® 1 PDC**, for DHW production, it's composed of the compact solar thermal system STRATOS® DR and the BOLLY® 1 PDC calorifier with fixed heat exchanger.

**CHARACTERISTICS OF THE STRATOS® DR**  
Aluminum profile, anodizing treatment included. Tempered glass according to EN 12150, tested against impact according to EN 12976. Bottoms

and walls with high insulation power ( $\lambda$  0,023 W/mk), thickness 30 mm.

**CALORIFIER**  
Model **BOLLY® 1 PDC** with integration exchange unit specific for heat pumps.  
Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-DVGW-W270-UBA-WRAS.

Connections for integration of electrical heater. Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover. Tested in accordance with European standard EN 12897:2006.

**WARRANTY**  
5 years - See general sales and warranty conditions

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ON LINE ErP LABEL TOOL

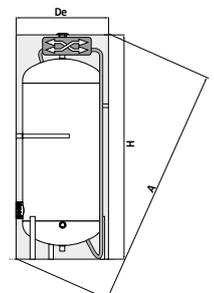
## SYSTEM COMPONENTS

SYSTEM COMPONENTS	INCLUDED
STRATOS® DR - Compact solar thermal system with direct heating	✓
BOLLY® 1 PDC calorifier	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Vacuum break valve	✓
Nr. 1 Cap of 1"1/4 gas M + Nr. 1 Cap of 1/2" gas M	✓
Fixing kit for flat surfaces (42°) and pitched roofs	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

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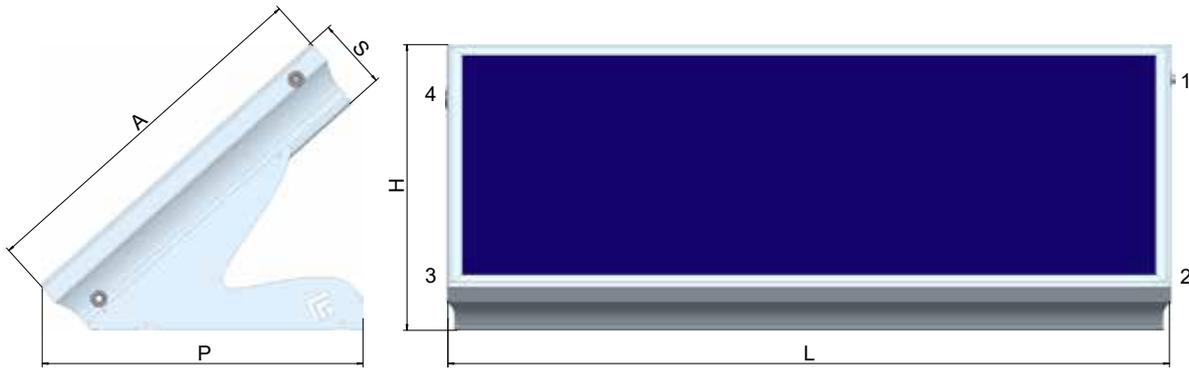


## BOLLY® 1 PDC

MODEL	De	H	A	ENERGY EFFICIENCY CLASS
	[mm]			
<b>300</b>	650	1680	1800	<b>B</b>
<b>500</b>	750	1970	2110	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

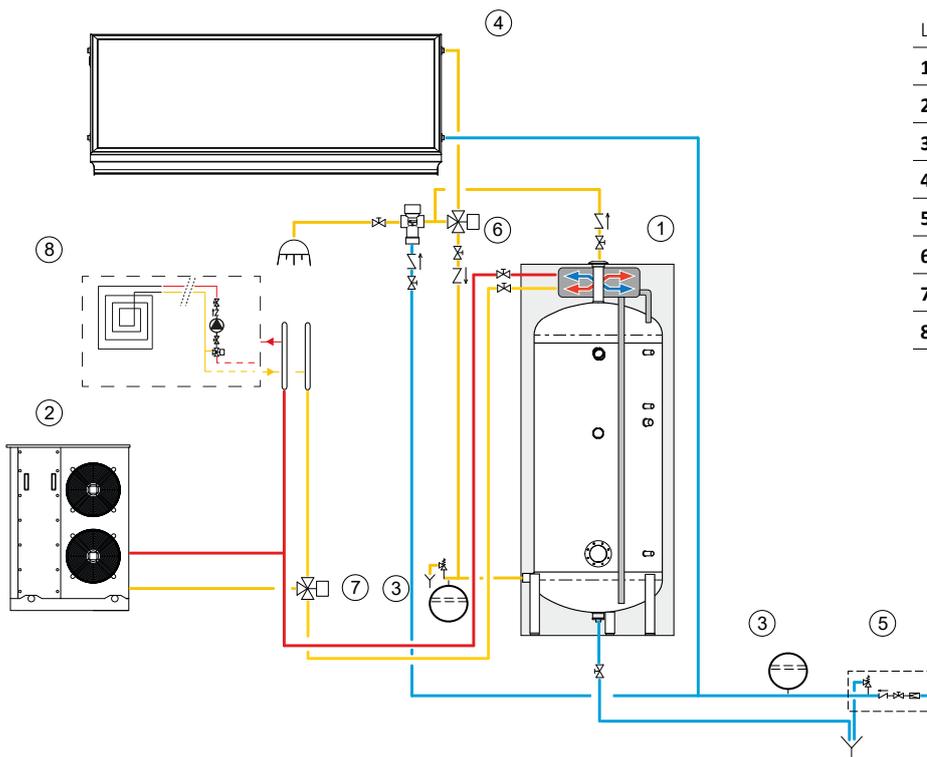
# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® 1 PDC



Model	L	P	H	A	S	Connections			Gross surface area [m <sup>2</sup> ]	Empty weight [kg]	Weight per m <sup>2</sup> In function [kg/m <sup>2</sup> ]
						1	2-3	4			
<b>180</b>	2288	926	736	882	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,02	62	117
<b>260</b>	2288	926	935	1192	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,73	84	120

## STRATOS® DR WITH BOLLY® 1 PDC

Stratos® DR	Calorifier	Calorifier model	Description	Art. Nr.
<b>180</b>	<b>BOLLY® 1 PDC</b>	<b>300</b>	STRATOS DR 180-B1 PDC 300 WB	3410316619024
<b>260</b>	<b>BOLLY® 1 PDC</b>	<b>500</b>	STRATOS DR 260-B1 PDC 500 WB	3410316619031



### LEGEND

- 1 Calorifier BOLLY® 1 PDC
- 2 Heat source
- 3 Expansion vessel
- 4 Stratos® DR
- 5 Hydraulic safety group
- 6 5-way diverting / mixing valve
- 7 Diverting valve
- 8 Heating and cooling system

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLYTERM® HP 1



NEW

## BOLLYTERM® HP 1



The solar thermal system **STRATOS® DR WITH BOLLYTERM® HP 1**, for DHW production, it's composed of the compact solar thermal system STRATOS® DR and the BOLLYTERM® HP 1 heat pump water heater with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® DR

Aluminum profile, anodizing treatment included. Tempered glass according to EN 12150, tested against impact according to EN 12976. Bottoms and walls with high insulation power ( $\lambda$  0,023

W/mk), thickness 30 mm.

### CALORIFIER

Model **BOLLYTERM® HP 1** with fixed heat exchanger and integrated heat pump with condenser coil outside the storage tank.

Tank in carbon steel.

Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-DVGW-W270-UBA-WRAS.

1500 watt electrical heater included.

Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.

Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

[cordivari.com/erp](http://cordivari.com/erp)



ON LINE ErP LABEL TOOL

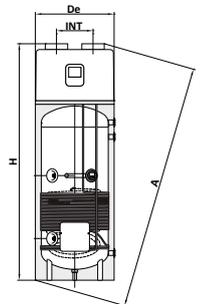
### BOLLYTERM® HP 1 WITH 1 HEAT EXCHANGER



ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

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### SYSTEM COMPONENTS

### INCLUDED

STRATOS® DR - Compact solar thermal system with direct heating	✓
BOLLYTERM® HP 1 heat pump water heater	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Vacuum break valve	✓
Nr. 1 Cap of 1"1/4 gas M + Nr. 1 Cap of 1/2" gas M	✓
Fixing kit for flat surfaces (42°) and pitched roofs	✓
1500 watt electrical heater	✓

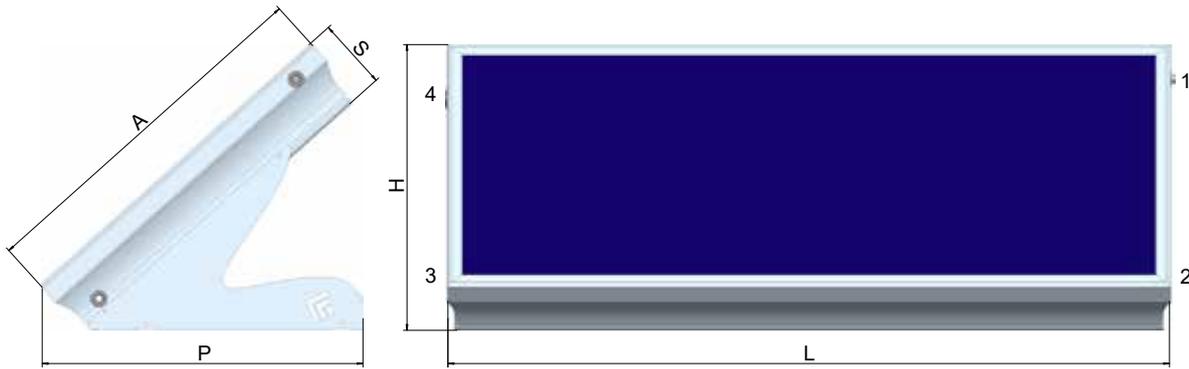
### BOLLYTERM® HP 1

ENERGY EFFICIENCY CLASS

MODEL	INT	De	H	A	TESTED ErP A+
[mm]					
<b>200</b>	340	640	1585	1684	<b>A+</b>
<b>300</b>	340	640	1960	2040	<b>A+</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

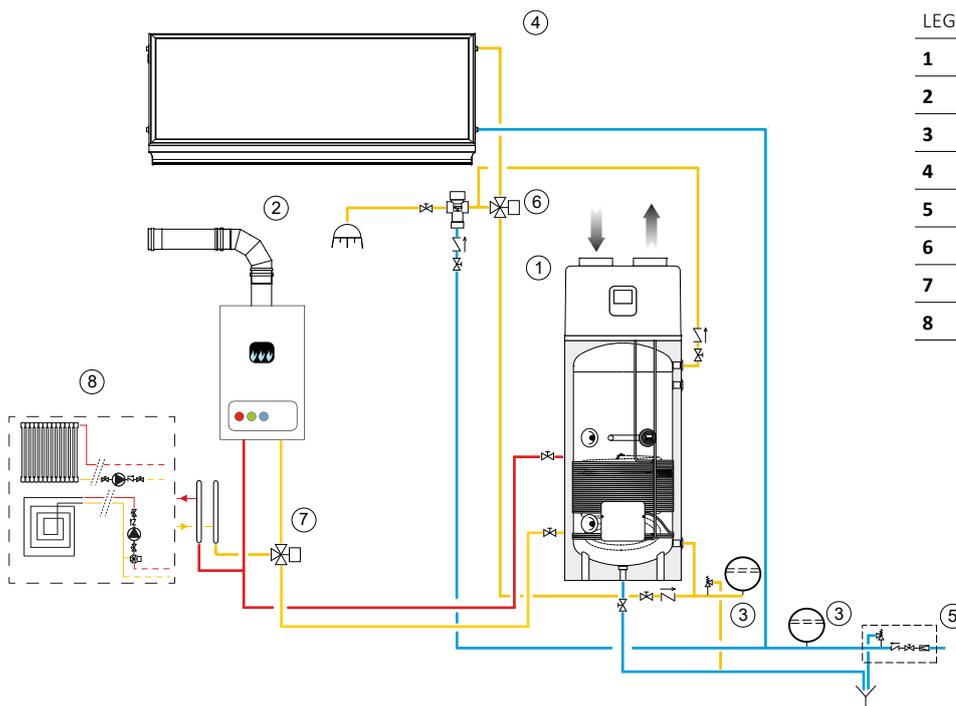
# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLYTERM® HP 1



Model	L	P	H	A	S	Connections			Gross surface area	Empty weight	Weight per m <sup>2</sup> In function
	[mm]					1	2-3	4	[m <sup>2</sup> ]	[kg]	[kg/m <sup>2</sup> ]
<b>180</b>	2288	926	736	882	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,02	62	117
<b>260</b>	2288	926	935	1192	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,73	84	120

## STRATOS® DR WITH BOLLYTERM® HP 1

Stratos® DR	Calorifier	Calorifier model	Description	Art. Nr.
<b>180</b>	<b>BOLLYTERM® HP 1</b>	<b>200</b>	STRATOS DR 180-BOLLYTERM1 200 WB	3410316619025
<b>260</b>	<b>BOLLYTERM® HP 1</b>	<b>300</b>	STRATOS DR 260-BOLLYTERM1 300 WB	3410316619032



### LEGEND

<b>1</b>	BOLLYTERM® HP 1 heat pump water heater
<b>2</b>	Heat source
<b>3</b>	Expansion vessel
<b>4</b>	Stratos® DR
<b>5</b>	Hydraulic safety group
<b>6</b>	5-way diverting / mixing valve
<b>7</b>	Diverting valve
<b>8</b>	Heating system

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLYTERM® HOME



NEW

## BOLLYTERM® HOME



The solar thermal system **STRATOS® DR WITH BOLLYTERM® HOME**, for DHW production, it's composed of the compact solar thermal system STRATOS® DR and the BOLLYTERM® HOME calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® DR

Aluminum profile, anodizing treatment included. Tempered glass according to EN 12150, tested against impact according to EN 12976. Bottoms

and walls with high insulation power ( $\lambda$  0,023 W/mk), thickness 30 mm.

### CALORIFIER

Model **BOLLYTERM® HOME** Water heater with integrated heat pump. Tank in carbon steel. Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-

DVGW-W270-UBA-WRAS.

1500 watt electrical heater included. Rigid insulation of polyurethane foam with high thermal insulation. External lining in painted steel and ABS cover.

Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

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ON LINE ErP LABEL TOOL

### SYSTEM COMPONENTS

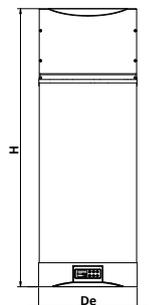
### INCLUDED

STRATOS® DR - Compact solar thermal system with direct heating	✓
BOLLYTERM® HOME heat pump water heater	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Vacuum break valve	✓
Nr. 1 Cap of 1"1/4 gas M + Nr. 1 Cap of 1/2" gas M	✓
Fixing kit for flat surfaces (42°) and pitched roofs	✓
1500 watt electrical heater	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

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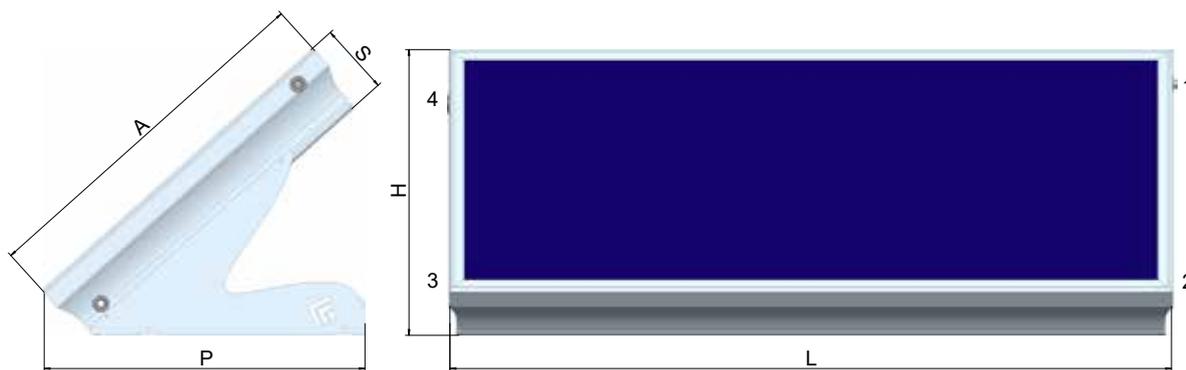


### BOLLYTERM® HOME

MODEL	Volume	De	H	ENERGY EFFICIENCY CLASS
	[liters]	[mm]		
<b>80</b>	80	480	1208	<b>A+</b>
<b>110</b>	102,5	480	1393	<b>A+</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

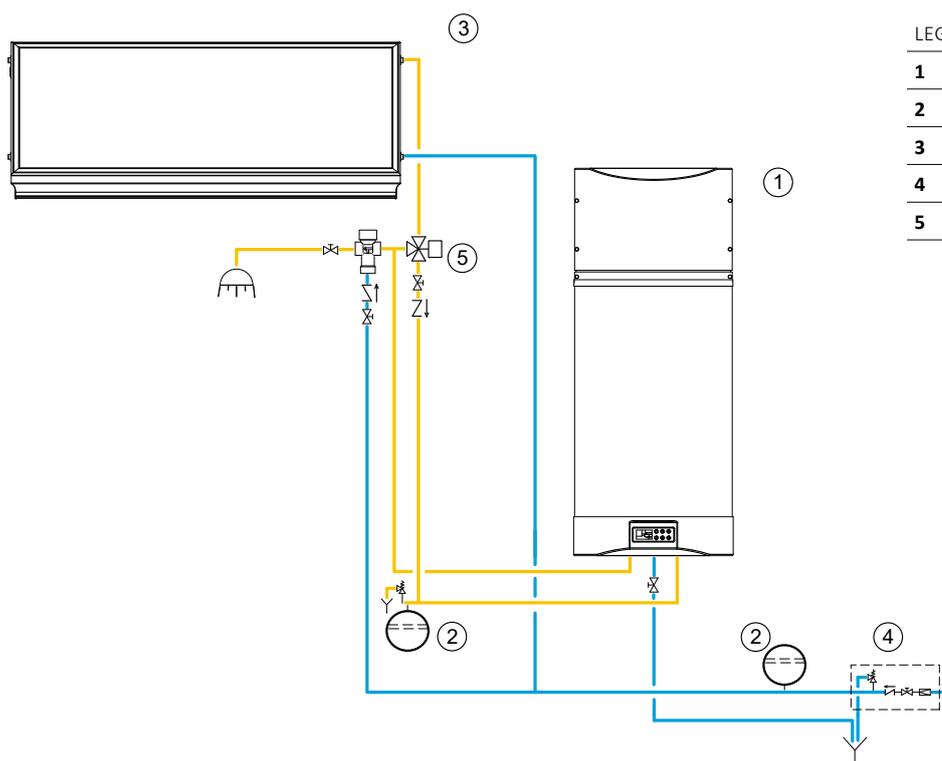
# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLYTERM® HOME



Model	L	P	H	A	S	Connections			Gross surface area [m <sup>2</sup> ]	Empty weight [kg]	Weight per m <sup>2</sup> In function [kg/m <sup>2</sup> ]
						1	2-3	4			
	[mm]										
<b>180</b>	2288	926	736	882	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,02	62	117
<b>260</b>	2288	926	935	1192	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,73	84	120

## STRATOS® DR WITH BOLLYTERM® HOME

Stratos® DR	Calorifier	Calorifier model	Description	Art. Nr.
<b>180</b>	<b>BOLLYTERM® HOME</b>	<b>80</b>	STRATOS DR 180-B.T.HOME 80 WB	3410316619026
<b>260</b>	<b>BOLLYTERM® HOME</b>	<b>110</b>	STRATOS DR 260-B.T.HOME 110 WB	3410316619033

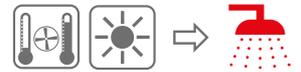


### LEGEND

- 1 BOLLYTERM® HOME heat pump water heater
- 2 Expansion vessel
- 3 Stratos® DR
- 4 Hydraulic safety group
- 5 5-way diverting / mixing valve

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® HY



NEW



The solar thermal system **STRATOS® DR WITH BOLLY® HY**, for DHW production, it's composed of the compact solar thermal system STRATOS® DR and the BOLLY® HY, calorifier with fixed heat exchanger.

### CHARACTERISTICS OF THE STRATOS® DR

Aluminum profile, anodizing treatment included. Tempered glass according to EN 12150, tested against impact according to EN 12976. Bottoms

and walls with high insulation power ( $\lambda$  0,023 W/mk), thickness 30 mm.

### CALORIFIER

Model **BOLLY® HY** hybrid calorifier for DHW with integrated hydraulic separator for heat pumps. Tank in carbon steel.

Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certifications ACS-SSICA-

DVGW-W270-UBA-WRAS.

Connections for integration of electrical heater Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover.

Tested in accordance with European standard EN 12897:2006.

### WARRANTY

5 years - See general sales and warranty conditions

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ON LINE ErP LABEL TOOL

### SYSTEM COMPONENTS

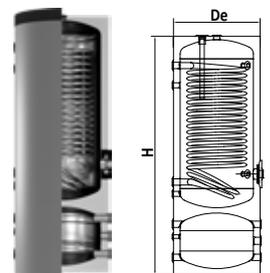
### INCLUDED

STRATOS® DR - Compact solar thermal system with direct heating	✓
BOLLY® HY calorifier	✓
Frame structure anodized marine grade aluminum	✓
6 bar safety valve	✓
5-way diverting / mixing valve	✓
Vacuum break valve	✓
Nr. 1 Cap of 1"1/4 gas M + Nr. 1 Cap of 1/2" gas M	✓
Fixing kit for flat surfaces (42°) and pitched roofs	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



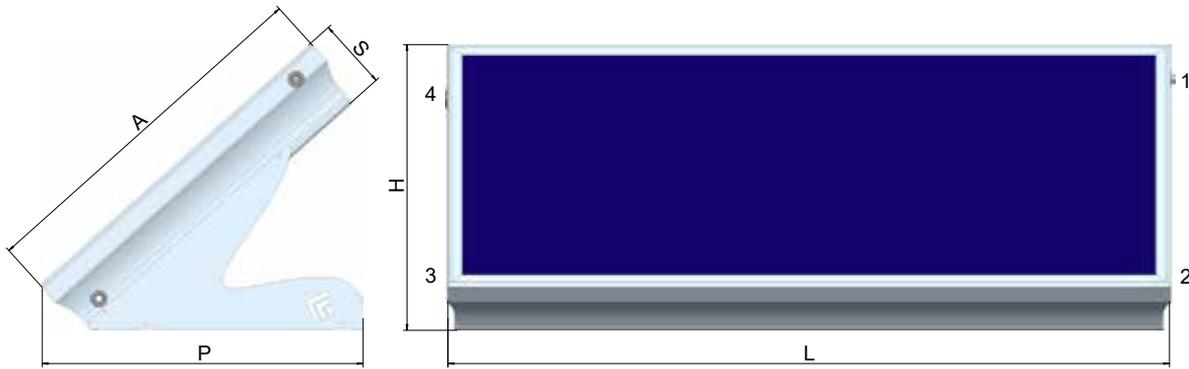
### BOLLY® HY

ENERGY EFFICIENCY CLASS

MODEL	De	H	TESTED ErP ENERGY EFFICIENCY CLASS
	[mm]		
<b>300</b>	650	1805	<b>B</b>
<b>500</b>	750	1910	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

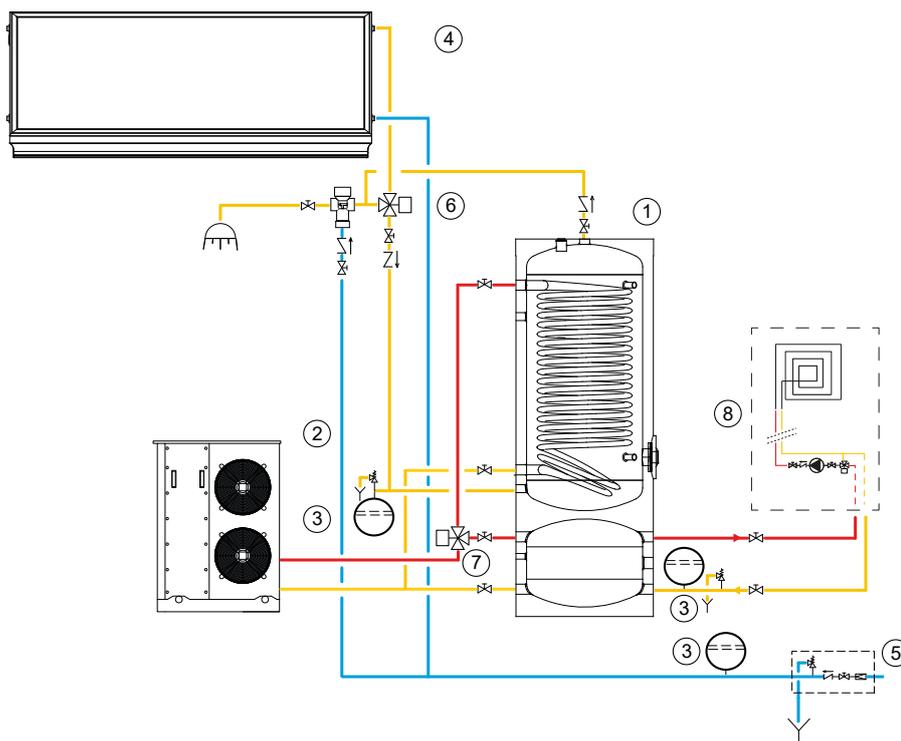
# SOLAR THERMAL SYSTEM STRATOS® DR WITH BOLLY® HY



Model	L	P	H	A	S	Connections			Gross surface area [m <sup>2</sup> ]	Empty weight [kg]	Weight per m <sup>2</sup> In function [kg/m <sup>2</sup> ]
						1	2-3	4			
<b>180</b>	2288	926	736	882	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,02	62	117
<b>260</b>	2288	926	935	1192	198	1" 1/4 Gas F	1/2" Gas F	1/2" Gas F	2,73	84	120

## STRATOS® DR WITH BOLLY® HY

Stratos® DR	Calorifier	Calorifier model	Description	Art. Nr.
<b>180</b>	<b>BOLLY® HY</b>	<b>300</b>	STRATOS DR 180-B1 HY 300 WB	3410316619027
<b>260</b>	<b>BOLLY® HY</b>	<b>500</b>	STRATOS DR 260-B1 HY 500 WB	3410316619034



### LEGEND

- 1 Calorifier BOLLY® HY
- 2 Heat pump
- 3 Expansion vessel
- 4 Stratos® DR
- 5 Hydraulic safety group
- 6 5-way diverting / mixing valve
- 7 Diverting valve
- 8 Heating and cooling system

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.



# THERMOSIPHON SYSTEMS



DHW



STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

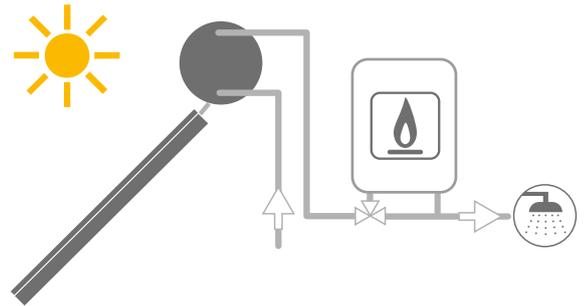
FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT

# PANAREA SYSTEM

THERMOSIPHON SOLAR SYSTEM FOR DOMESTIC HOT WATER PRODUCTION



The Solar Thermal System **PANAREA** is the most practical and economic solution, due to its reliability and because of an easy and quick installation.

## SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure
- Highly selective absorber
- Impact test according to EN 12975 and EN 9806
- Tempered glass according to EN 12150
- Certified by Dubai Municipality

## CALORIFIER

- **INTERKA POLYWARM® FOR PANAREA** with capacity from 150 to 300 lt
- Mild steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS
- Double walled heat exchanger
- High thermal insulation with ecological polyurethane hard foam and steel external lining, upper top and flange cover in steel.

- Fixing kit for flat or pitched roof galvanized according to UNI EN 1179 (99,9 % PURE ZINC)

## ACCESSORIES

See accessories section

## WARRANTY

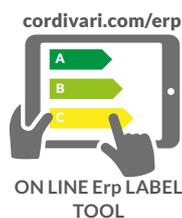
5 years - See general sales and warranty conditions

## ACCESSORIES ON REQUEST



Heating element

For more information see accessories section.

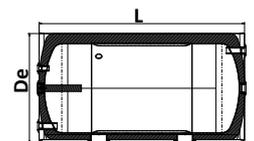


ON LINE ErP LABEL TOOL

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



## SYSTEM COMPONENTS

## INCLUDED

Highly selective solar collector	✓
INTERKA POLYWARM® FOR PANAREA calorifier	✓
Magnesium Anode	✓
Security valve and check valve	✓
Non-toxic heat transfer fluid	✓
Fittings	✓
Fixing kit for flat or pitched roofs	✓

## INTERKA POLYWARM® FOR PANAREA ENERGY EFFICIENCY CLASS

MODEL	L	De	TESTED ErP ENERGY CLASS
	[mm]		
<b>150</b>	1040	550	<b>C</b>
<b>200</b>	1300	550	<b>C</b>
<b>300</b>	1839	550	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# PANAREA SYSTEM

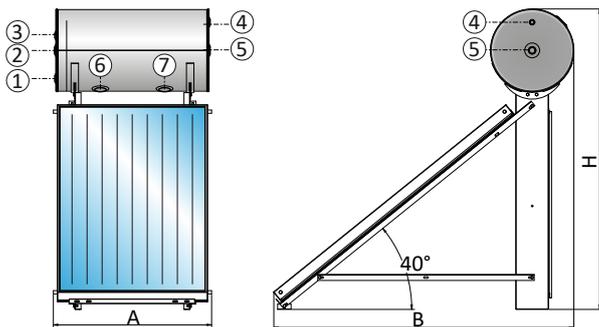
THERMOSIPHON SOLAR SYSTEM FOR DOMESTIC HOT WATER PRODUCTION



Calorifier type:  
**INTERKA POLYWARM®**

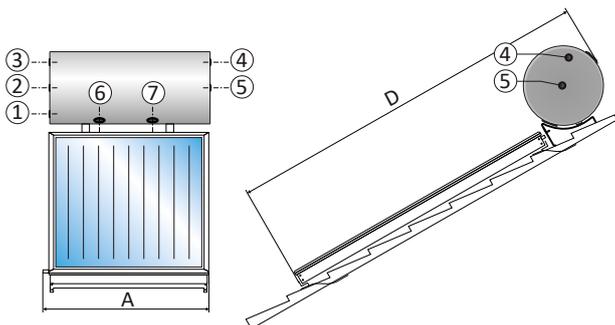
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	
				PITCHED ROOF	FLAT ROOF
<b>150</b>	1x2	2	1-3 <sup>(*)</sup>	150/2 TF	150/2 TP
				3410316603116	3410316603090
<b>200</b>	1x2	2	3-4 <sup>(*)</sup>	200/2 TF	200/2 TP
				3410316603117	3410316603091
<b>200</b>	2x2	4	4-5	200/4 TF	200/4 TP
				3410316603118	3410316603092
<b>300</b>	2x2	4	5-6 <sup>(*)</sup>	300/4 TF	300/4 TP
				3410316603119	3410316603093
<b>300</b>	2x2,5	5	5-6	300/5 TF	300/5 TP
				3410316603120	3410316603094
<b>300</b>	3x2	6	6-7	300/6 TF	300/6 TP
				3410316603121	3410316603095

<sup>(\*)</sup> Systems designed for use in areas with high annual sun irradiation more than **1600 Kw/h m<sup>2</sup>**.



## CONNECTIONS

<b>1</b>	Sanitary water inlet
<b>2</b>	Magnesium anode
<b>3</b>	Connection for Instrumentation
<b>4</b>	DHW outlet
<b>5</b>	Electric heater (not included)
<b>6</b>	Solar collectors connection
<b>7</b>	Solar collectors connection



Solar collectors surface [sqm]	2	2	4	4	5	6
Solar tank capacity [lt]	150	200	200	300	300	300
Inclination $\alpha$	fixed at 40°C					
Width A [mt]	1,1	1,1	2,2	2,2	2,6	3,2
Length B [mt]	2,01	2,01	2,01	2,01	2,01	2,01
Height H [mt]	2,03	2,03	2,03	2,03	2,03	2,03
Dimensions on the roof D [mt]	2,75	2,75	2,75	2,75	2,75	2,75

STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT

# PANAREA LOW SYSTEM

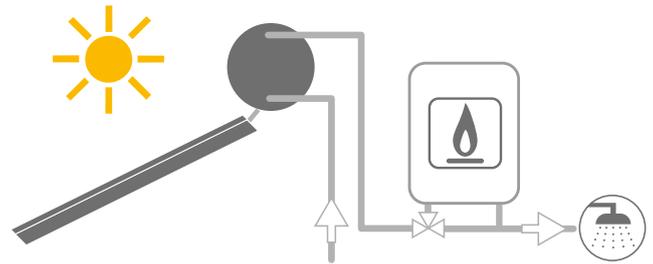
THERMOSIPHON SOLAR SYSTEM FOR DOMESTIC HOT WATER PRODUCTION



NEW



**INVISIBLE**  
LOW VISUAL IMPACT



The Solar Thermal System **PANAREA LOW** is the most practical and economic solution, due to its reliability and because of an easy and quick installation.

### SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure
- Highly selective absorber
- Impact test according to EN 12975 and EN 9806
- Tempered glass according to EN 12150
- Certified by Dubai Municipality

### CALORIFIER

- **INTERKA POLYWARM® FOR PANAREA** with capacity from 150 to 300 lt
- Mild steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS
- Double walled heat exchanger
- High thermal insulation with ecological polyurethane hard foam and steel external lining, upper top and flange cover in steel.

- Fixing kit for flat roof rapid mounting galvanized according to UNI EN 1179 (99,9 % PURE ZINC)

### ACCESSORIES

See accessories section

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



Heating element

For more information see accessories section.

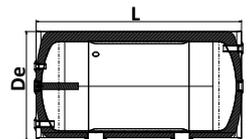


ON LINE ErP LABEL TOOL

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

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### SYSTEM COMPONENTS

### INCLUDED

Highly selective solar collector	✓
INTERKA POLYWARM® FOR PANAREA calorifier	✓
Magnesium Anode	✓
Security valve and check valve	✓
Non-toxic heat transfer fluid	✓
Fittings	✓
Fixing kit for flat or pitched roofs	✓

### INTERKA POLYWARM® FOR PANAREA ENERGY EFFICIENCY CLASS

MODEL	[mm]		ENERGY EFFICIENCY CLASS
	L	De	
<b>150</b>	1040	550	<b>C</b>
<b>200</b>	1300	550	<b>C</b>
<b>300</b>	1839	550	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# PANAREA LOW SYSTEM

THERMOSIPHON SOLAR SYSTEM FOR DOMESTIC HOT WATER PRODUCTION

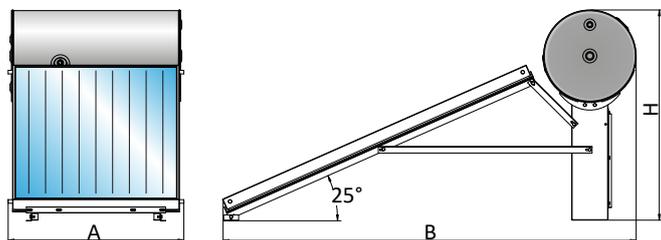


FLAT ROOF

DOUBLE WALL TANK:  
**INTERKA POLYWARM®**

Calorifier model	Nr. Collectors x surface sqm	Total surface sqm	Recommended nr. of people	Description/ Art. Nr.
<b>150</b>	1x2	2	1-3 <sup>(*)</sup>	150/2 TP
				3410316603096
<b>200</b>	1x2,5	2,5	3-4 <sup>(*)</sup>	200/2,5 TP
				3410316603097
<b>200</b>	2x2	4	4-5	200/4 TP
				3410316603098
<b>300</b>	2x2	4	5-6 <sup>(*)</sup>	300/4 TP
				3410316603099
<b>300</b>	2x2,5	5	5-6	300/5 TP
				3410316603100

<sup>(\*)</sup>Systems designed for use in areas with high annual sun irradiation more than **1600 Kw/h m<sup>2</sup>**.



Solar collectors surface [sqm]	<b>2</b>	<b>2,5</b>	<b>4</b>	<b>4</b>	<b>5</b>
Solar tank capacity [lt]	150	200	200	300	300
Inclination $\alpha$	fixed at 25°C				
Width A [mt]	1,1	1,3	2,2	2,2	2,6
Length B [mt]	2,49	2,49	2,49	2,49	2,49
Height H [mt]	1,27	1,27	1,27	1,27	1,27

STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT



# FORCED CIRCULATION SOLAR THERMAL SYSTEMS



DHW



STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON  
SYSTEMS

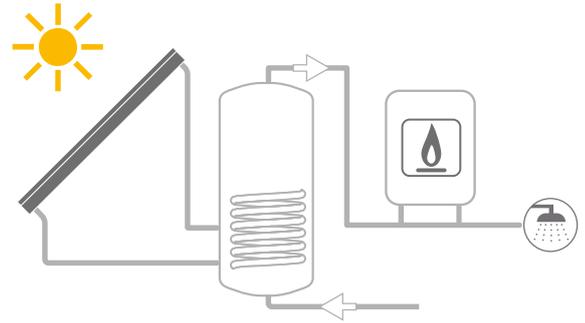
FORCED CIRCULATION  
SYSTEMS

COLLECTORS AND  
ACCESSORIES

TECHNICAL  
SUPPORT

# SOLAR THERMAL SYSTEM B1

FORCED CIRCULATION SYSTEM WITH A SINGLE FIXED COIL CALORIFIER



The forced circulation system **B1**, for DHW production, is composed of the BOLLY® 1 ST calorifier with fixed heat exchanger in combination with the flat CSP solar collector.

### SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure
- Highly selective absorber
- Impact test according to EN 12975 and EN 9806

- Tempered glass according to EN 12150

### CALORIFIER

- **BOLLY® 1 ST** with capacity from 150 to 300 lt in compliance with EN 12897:2006 Regulation
- Mild steel
- Internal coating Polywarm® suitable for drinking water according to 98/83/CE and subsequent amendments and DHW attestations ACS-SSICA-DVGW-W270-UBA-WRAS

- 1 Polywarm® coated fixed heat exchanger
- High thermal insulation with ecological polyurethane hard foam and grey PVC external lining, upper top in PVC and flange cover in ABS.

### WARRANTY

5 years  
See general sales and warranty conditions

### ACCESSORIES ON REQUEST



Electrical heater

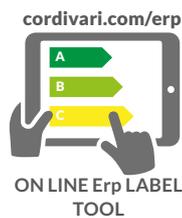


Pre-insulated pipe



Balancing valve

For more information see accessories section.

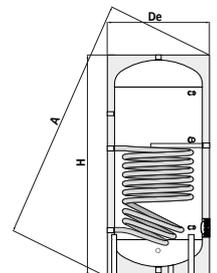


ON LINE ErP LABEL TOOL

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



ENERGY EFFICIENCY CLASS

### BOLLY® 1 ST

MODEL	De	H	A	TESTED ErP
	[mm]			
<b>150</b>	500	1414	1500	<b>B</b>
<b>200</b>	550	1434	1536	<b>B</b>
<b>300</b>	650	1486	1622	<b>B</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

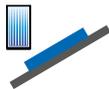
### SYSTEM COMPONENTS

SYSTEM COMPONENTS	INCLUDED
Highly selective solar collector	✓
BOLLY® 1 ST Polywarm® calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓

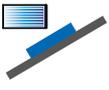
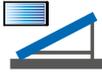
# SOLAR THERMAL SYSTEM B1

FORCED CIRCULATION SYSTEM WITH A SINGLE FIXED COIL CALORIFIER



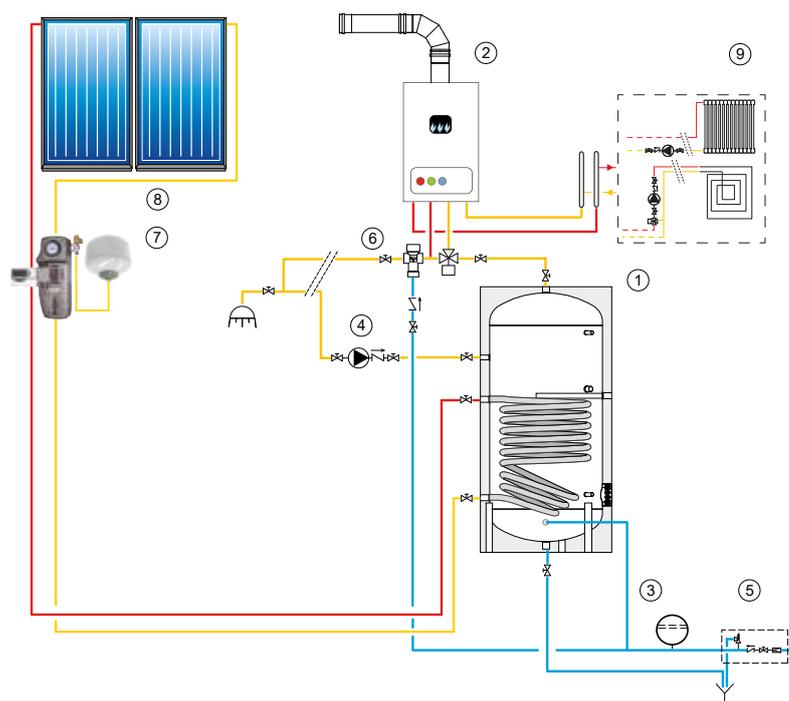
Calorifier type: <b>BOLLY® 1 ST</b>				 VT COLLECTORS - PITCHED ROOF	 VT COLLECTORS - FLAT ROOF	 VT COLLECTORS - ON ROOF
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>150</b>	1x2,5	2,5	1-3	150B1 2,5MQ TF 3410316614052	150B1 2,5MQ TP 3410316614152	150B1 2,5MQ INCAS. 3410316614252
<b>200</b>	1x2,5	2,5	3-4 <sup>(*)</sup>	200B1 2,5MQ TF 3410316614054	200B1 2,5MQ TP 3410316614154	200B1 2,5MQ INCAS. 3410316614254
<b>200</b>	2x2,5	5	4-5	200B1 5MQ TF 3410316614055	200B1 5MQ TP 3410316614155	200B1 5MQ INCAS. 3410316614255
<b>300</b>	2x2,5	5	5-6	300B1 5MQ TF 3410316614058	300B1 5MQ TP 3410316614158	300B1 5MQ INCAS. 3410316614258

## EXECUTIONS ON REQUEST

Calorifier type: <b>BOLLY® 1 ST</b>				 OR COLLECTORS - PITCHED ROOF	 OR COLLECTORS - FLAT ROOF	 VT COLLECTORS - WALL MOUNTED	SYSTEMS WITHOUT FIXING KIT WITH VERTICAL COLLECTORS
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>150</b>	1x2,5	2,5	1-3	150B1 2,5MQ TF OR ON REQUEST	150B1 2,5MQ TP OR ON REQUEST	150B1 2,5MQ VT ON REQUEST	150B1 2,5MQ SZ CARP. 3410316614352
<b>200</b>	1x2,5	2,5	3-4 <sup>(*)</sup>	200B1 2,5MQ TF OR 3410316614064	200B1 2,5MQ TP OR 3410316614164	200B1 2,5MQ VT ON REQUEST	200B1 2,5MQ SZ CARP. 3410316614354
<b>200</b>	2x2,5	5	4-5	200B1 5MQ TF OR 3410316614065	200B1 5MQ TP OR 3410316614165	200B1 5MQ VT ON REQUEST	200B1 5MQ SZ CARP. 3410316614355
<b>300</b>	2x2,5	5	5-6	300B1 5MQ TF OR ON REQUEST	300B1 5MQ TP OR ON REQUEST	300B1 5MQ VT ON REQUEST	300B1 5MQ SZ CARP. 3410316614358

For fixing kit and other components see accessories section.

<sup>(\*)</sup> Systems designed for use in areas with high annual sun irradiation more than 1600 Kw/h m<sup>2</sup>.



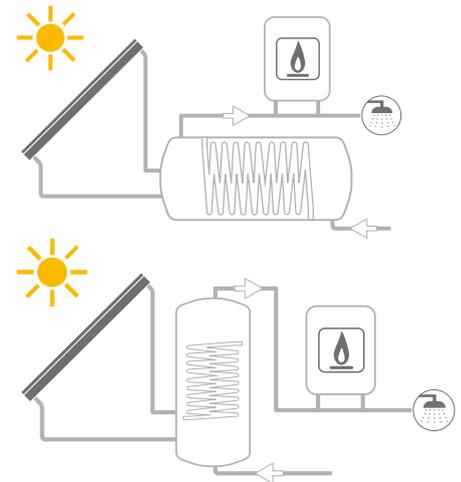
### LEGEND

- |   |   |
|---|---|
| 1 | CALORIFIER BOLLY® 1 ST                          |
| 2 | Heat source (gas boiler)                        |
| 3 | Expansion vessel                                |
| 4 | DHW circulation group pump                      |
| 5 | Hydraulic safety group                          |
| 6 | Diverting valve/Solar thermostatic mixing valve |
| 7 | Complete solar circulation group                |
| 8 | Solar collector/s                               |
| 9 | Heating system                                  |

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM BM

FORCED CIRCULATION SYSTEMS WITH HANGED BOLLY MURALE WITH SINGLE FIXED HEAT EXCHANGER



The forced circulation system **BM**, for DHW production, is composed of the hanged calorifier with fixed heat exchanger BOLLY MURALE combined with flat CSP solar collector.

### SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure
- Highly selective absorber
- Impact test according to EN 12975 and EN 9806

- Tempered glass according to EN 12150

### CALORIFIER

- MODEL **BOLLY® MURALE** with fixed heat exchanger
- Tank in carbon steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW

- W270 - UBA - WRAS
- Insulation of rigid polyurethane foam with high thermal insulation. External PVC cover
- Tested in accordance with European standard EN 12897:2006

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



Electrical heater



Pre-insulated pipe



Balancing valve

For more information see accessories section.

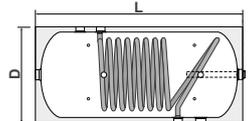
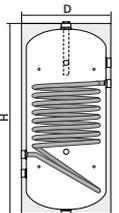


ON LINE ErP LABEL TOOL

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



### SYSTEM COMPONENTS

SYSTEM COMPONENTS	INCLUDED
Highly selective solar collector	✓
BOLLY® MURALE calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓

### BOLLY® MURALE

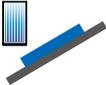
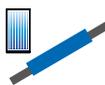
MODEL	ENERGY EFFICIENCY CLASS		TESTED
	D	H/L	
	[mm]		
<b>150</b>	456	1330	<b>C</b>
<b>200</b>	510	1350	<b>C</b>
<b>300</b>	610	1400	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

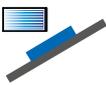
# SOLAR THERMAL SYSTEM BM

FORCED CIRCULATION SYSTEMS WITH HANGED BOLLY MURALE WITH SINGLE FIXED HEAT EXCHANGER



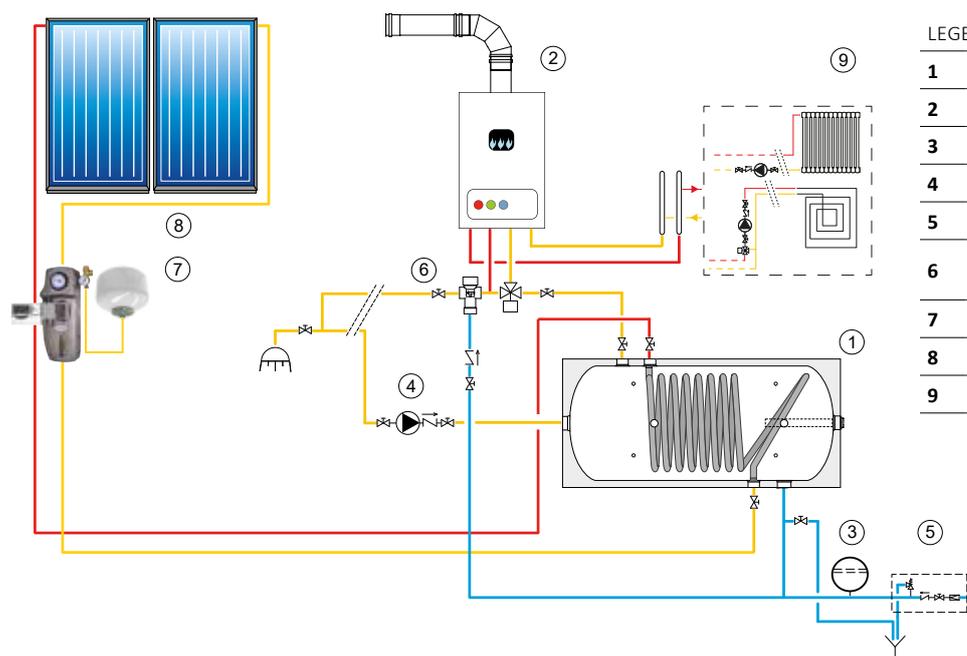
Calorifier type: <b>BOLLY® MURALE</b>				 VT COLLECTORS - PITCHED ROOF	 VT COLLECTORS - FLAT ROOF	 VT COLLECTORS - ON ROOF
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>150</b>	1x2,5	2,5	1-3	150BM 2,5MQ TF 3410316614072	150BM 2,5MQ TP 3410316614172	150BM 2,5MQ INCAS. 3410316614272
<b>200</b>	1x2,5	2,5	3-4 <sup>(*)</sup>	200BM 2,5MQ TF 3410316614074	200BM 2,5MQ TP 3410316614174	200BM 2,5MQ INCAS. 3410316614274
<b>300</b>	2x2,5	5	5-6	300BM 5MQ TF 3410316614075	300BM 5MQ TP 3410316614175	300BM 5MQ INCAS. 3410316614275

## EXECUTIONS ON REQUEST

Calorifier type: <b>BOLLY® MURALE</b>				 OR COLLECTORS - PITCHED ROOF	 OR COLLECTORS - FLAT ROOF	 VT COLLECTORS - WALL MOUNTED	SYSTEMS WITHOUT FIXING KIT WITH VERTICAL COLLECTORS
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>150</b>	1x2,5	2,5	1-3	150BM 2,5MQ TF OR ON REQUEST	150BM 2,5MQ TP OR ON REQUEST	150BM 2,5MQ VT ON REQUEST	150BM 2,5MQ SZ CARP. 3410316614372
<b>200</b>	1x2,5	2,5	3-4 <sup>(*)</sup>	200BM 2,5MQ TF OR ON REQUEST	200BM 2,5MQ TP OR ON REQUEST	200BM 2,5MQ VT ON REQUEST	200BM 2,5MQ SZ CARP. 3410316614374
<b>300</b>	2x2,5	5	5-6	300BM 5MQ TF OR ON REQUEST	300BM 5MQ TP OR ON REQUEST	300BM 5MQ VT ON REQUEST	300BM 5MQ SZ CARP. 3410316614375

For fixing kit and other components see accessories section.

<sup>(\*)</sup> Systems designed for use in areas with high annual sun irradiation more than 1600 Kw/h m<sup>2</sup>.



### LEGEND

- 1 BOLLY® MURALE calorifier
- 2 Heat source (gas boiler)
- 3 Expansion vessel
- 4 DHW circulation group pump
- 5 Hydraulic safety group
- 6 Diverting valve/Solar thermostatic mixing valve
- 7 Complete solar circulation group
- 8 Solar collector/s
- 9 Heating system

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

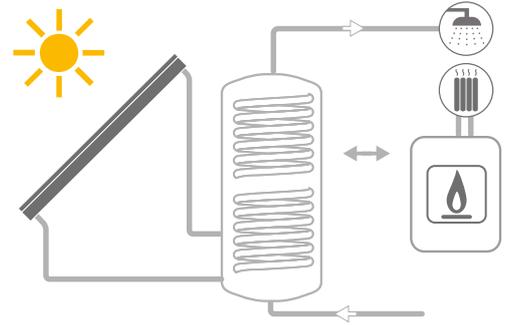


**TECHNOLOGY**  
and  
**WELLNESS**



# SOLAR THERMAL SYSTEM B2

FORCED CIRCULATION SYSTEM WITH A DOUBLE FIXED COIL CALORIFIER



The Solar thermal system **B2** represents the most widespread and consolidated configuration of installations. It best expresses the reliability and high performances in the production of DHW through solar source.

### SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure
- Highly selective absorber
- Impact test according to EN 12975 and EN 9806
- Tempered glass according to EN 12150

### CALORIFIER

- Model **BOLLY® 2 ST** with double polywarm coated fixed heat exchanger
- Tank in carbon steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS
- Insulation: Rigid fixed polyurethane hard foam with high thermal insulation (up to 500) or removable soft NOFIRE polsiter fiber 100%

recyclable with high thermal insulation and fire resistance class B s2d0 (EN13501) and external PVC cover.

- Tested in accordance with European standard EN 12897:2006

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



Electrical heater



Pre-insulated pipe

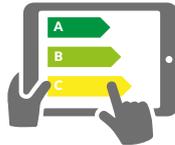


Balancing valve



Thermostatic mixing valve (for systems up to 500)

[cordivari.com/erp](http://cordivari.com/erp)



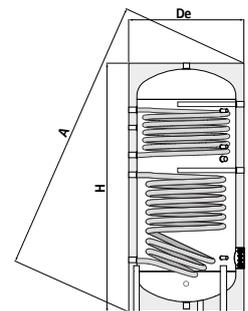
ON LINE Erp LABEL TOOL

For more information see accessories section.

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



### SYSTEM COMPONENTS

INCLUDED

Highly selective solar collector	✓
BOLLY® 2 ST calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel	✓
Until mod. 500: 1x24 lt - from 800 to 1500: 1x50 lt	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve (Included up to model 500)	✓
Fixing kit and fittings	✓

### BOLLY® 2 ST

ENERGY EFFICIENCY CLASS

MODEL	De	H	A	ENERGY EFFICIENCY CLASS
	[mm]			
<b>150</b>	500	1414	1500	<b>B</b>
<b>200</b>	550	1434	1536	<b>B</b>
<b>300</b>	650	1486	1622	<b>B</b>
<b>400</b>	700	1766	1900	<b>C</b>
<b>500</b>	750	1786	1937	<b>C</b>
<b>800</b>	950	2163	2343	<b>C</b>
<b>1000</b>	1050	2217	2432	<b>C</b>
<b>1500</b>	1150	2440	2654	<b>C</b>



For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM B2

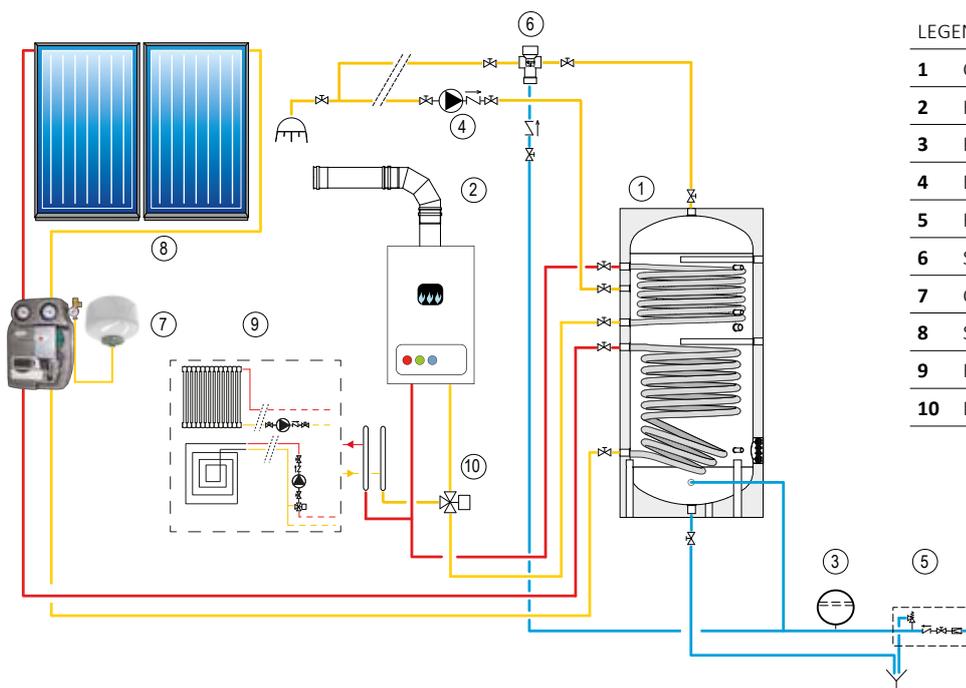
FORCED CIRCULATION SYSTEM WITH A DOUBLE FIXED COIL CALORIFIER



Calorifier type: <b>BOLLY® 2 ST</b>				<b>VT COLLECTORS - PITCHED ROOF</b>	<b>VT COLLECTORS - FLAT ROOF</b>	<b>VT COLLECTORS - ON ROOF</b>
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>150</b>	1x2,5	2,5	1-3	150B2 2,5MQ TF 3410316618532	150B2 2,5MQ TP 3410316618632	150B2 2,5MQ INCAS. 3410316618232
<b>200</b>	1x2,5	2,5	3-4 <sup>(*)</sup>	200B2 2,5MQ TF 3410316618533	200B2 2,5MQ TP 3410316618633	200B2 2,5MQ INCAS. 3410316618233
<b>200</b>	2x2,5	5	4-5	200B2 5MQ TF 3410316618534	200B2 5MQ TP 3410316618634	200B2 5MQ INCAS. 3410316618234
<b>300</b>	2x2,5	5	5-6	300B2 5MQ TF 3410316618535	300B2 5MQ TP 3410316618635	300B2 5MQ INCAS. 3410316618235
<b>300</b>	3x2,5	7,5	5-7	300B2 7,5MQ TF 3410316618244	300B2 7,5MQ TP 3410316618248	300B2 7,5MQ INCAS. 3410316618245
<b>400</b>	2x2,5	5	6-7 <sup>(*)</sup>	400B2 5MQ TF 3410316618536	400B2 5MQ TP 3410316618636	400B2 5MQ INCAS. 3410316618236
<b>400</b>	3x2,5	7,5	7-8	400B2 7,5MQ TF 3410316618537	400B2 7,5MQ TP 3410316618637	400B2 7,5MQ INCAS. 3410316618237
<b>500</b>	3x2,5	7,5	8-9	500B2 7,5MQ TF 3410316618538	500B2 7,5MQ TP 3410316618638	500B2 7,5MQ INCAS. 3410316618238
<b>500</b>	4x2,5	10	9-12	500B2 10MQ TF 3410316618539	500B2 10MQ TP 3410316618639	500B2 10MQ INCAS. 3410316618239
<b>800</b>	5x2,5	12,5	12-15	800B2 12,5MQ TF 3410316618540	800B2 12,5MQ TP 3410316618640	800B2 12,5MQ INCAS. 3410316618240
<b>1000</b>	6x2,5	15	15-20	1000B2 15MQ TF 3410316618541	1000B2 15MQ TP 3410316618641	1000B2 15MQ INCAS. 3410316618241
<b>1000</b>	8x2,5	20	20-24	1000B2 20MQ TF 3410316618542	1000B2 20MQ TP 3410316618642	1000B2 20MQ INCAS. 3410316618242
<b>1500</b>	10x2,5	25	24-32	1500B2 25MQ TF 3410316618543	1500B2 25MQ TP 3410316618643	1500B2 25MQ INCAS. 3410316618243

For fixing kit and other components see accessories section.

<sup>(\*)</sup> Systems designed for use in areas with high annual sun irradiation more than 1600 Kw/h m<sup>2</sup>.



## LEGEND

- 1 Calorifier BOLLY® 2 ST
- 2 Heat source (gas boiler)
- 3 Expansion vessel
- 4 DHW circulation group pump
- 5 Hydraulic safety group
- 6 Solar thermostatic mixing valve
- 7 Complete solar circulation group
- 8 Solar collector/s
- 9 Heating system
- 10 Diverting valve

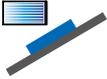
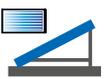
NOTE: The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM B2

FORCED CIRCULATION SYSTEM WITH A DOUBLE FIXED COIL CALORIFIER



## EXECUTIONS ON REQUEST

Calorifier type: <b>BOLLY® 2 ST</b>				 <b>OR COLLECTORS - PITCHED ROOF</b>	 <b>OR COLLECTORS - FLAT ROOF</b>	 <b>VT COLLECTORS - WALL MOUNTED</b>	<b>SYSTEMS WITHOUT FIXING KIT WITH VERTICAL COLLECTORS</b>
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>150</b>	1x2,5	2,5	1-3	150B2 2,5MQ TF OR ON REQUEST	150B2 2,5MQ TP OR ON REQUEST	150B2 2,5MQ VT ON REQUEST	150B2 2,5MQ SZ CARP. 3410316618332
<b>200</b>	1x2,5	2,5	3-4 <sup>(*)</sup>	200B2 2,5MQ TF OR 3410316618563	200B2 2,5MQ TP OR 3410316618663	200B2 2,5MQ VT ON REQUEST	200B2 2,5MQ SZ CARP. 3410316618333
<b>200</b>	2x2,5	5	4-5	200B2 5MQ TF OR 3410316618564	200B2 5MQ TP OR 3410316618664	200B2 5MQ VT ON REQUEST	200B2 5MQ SZ CARP. 3410316618334
<b>300</b>	2x2,5	5	5-6	300B2 5MQ TF OR 3410316618565	300B2 5MQ TP OR 3410316618665	300B2 5MQ VT ON REQUEST	300B2 5MQ SZ CARP. 3410316618335
<b>300</b>	3x2,5	7,5	5-7	300B2 7,5MQ TF OR 3410316618246	300B2 7,5MQ TP OR 3410316618249	300B2 7,5MQ VT 3410316618250	300B2 7,5MQ SZ CARP. 3410316618247
<b>400</b>	2x2,5	5	6-7 <sup>(*)</sup>	400B2 5MQ TF OR 3410316618566	400B2 5MQ TP OR 3410316618666	400B2 5MQ VT ON REQUEST	400B2 5MQ SZ CARP. 3410316618336
<b>400</b>	3x2,5	7,5	7-8	400B2 7,5MQ TF OR ON REQUEST	400B2 7,5MQ TP OR ON REQUEST	400B2 7,5MQ VT ON REQUEST	400B2 7,5MQ SZ CARP. 3410316618337
<b>500</b>	3x2,5	7,5	8-9	500B2 7,5MQ TF OR 3410316618568	500B2 7,5MQ TP OR 3410316618668	500B2 7,5MQ VT ON REQUEST	500B2 7,5MQ SZ CARP. 3410316618338
<b>500</b>	4x2,5	10	9-12	500B2 10MQ TF OR ON REQUEST	500B2 10MQ TP OR ON REQUEST	500B2 10MQ VT ON REQUEST	500B2 10MQ SZ CARP. 3410316618339
<b>800</b>	5x2,5	12,5	12-15	800B2 12,5MQ TF OR ON REQUEST	800B2 12,5MQ TP OR ON REQUEST	800B2 12,5MQ VT ON REQUEST	800B2 12,5MQ SZ CARP. 3410316618340
<b>1000</b>	6x2,5	15	15-20	1000B2 15MQ TF OR 3410316618571	1000B2 15MQ TP OR 3410316618671	1000B2 15MQ VT ON REQUEST	1000B2 15MQ SZ CARP. 3410316618341
<b>1000</b>	8x2,5	20	20-24	1000B2 20MQ TF OR ON REQUEST	1000B2 20MQ TP OR ON REQUEST	1000B2 20MQ VT ON REQUEST	1000B2 20MQ SZ CARP. 3410316618342
<b>1500</b>	10x2,5	25	24-32	1500B2 25MQ TF OR ON REQUEST	1500B2 25MQ TP OR ON REQUEST	1500B2 25MQ VT ON REQUEST	1500B2 25MQ SZ CARP. 3410316618343

For fixing kit and other components see accessories section.

<sup>(\*)</sup> Systems designed for use in areas with high annual sun irradiation more than **1600 Kw/h m<sup>2</sup>**.

STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

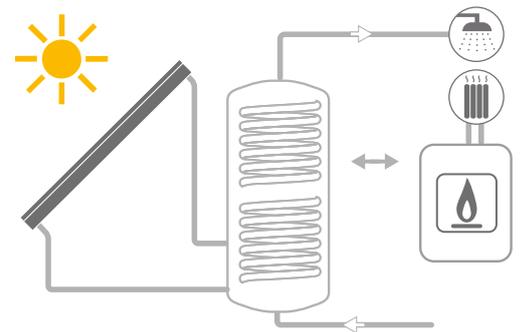
TECHNICAL SUPPORT

# SOLAR THERMAL SYSTEM B2 SLIM CLASSE A

FORCED CIRCULATION SYSTEM WITH A DOUBLE FIXED COIL CALORIFIER



STORAGE IN  
**CLASS A**



The **B2 SLIM CLASS A** forced circulation system, for DHW production, is composed of calorifier with double fixed heat exchanger top of range, with energy efficiency class A, BOLLY 2 SLIM CLASS A in combination with flat CSP solar collectors. The B2 SLIM CLASS A system best expresses reliability, high efficiency and high energy savings, thanks to the energy efficiency class A of the sanitary storage.

## SOLAR COLLECTOR

- Insulation in mineral wool

- Anodized aluminum structure
- Highly selective absorber
- Impact test according to EN 12975 and EN 9806
- Tempered glass according to EN 12150

## CALORIFIER

- **BOLLY® 2 SLIM CLASSE A** with double fixed heat exchanger
- Tank in carbon steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal

- Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS
- Rigid polyurethane foam insulation with vacuum layer for high thermal insulation. External PVC cover
- Connection for integration of electric heater.
- Tested in accordance with European standard EN 12897:2006

## WARRANTY

5 years - See general sales and warranty conditions

## ACCESSORIES ON REQUEST



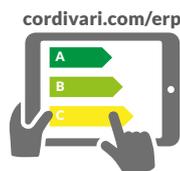
Electrical heater



Pre-insulated pipe



Balancing valve



ON LINE Erp LABEL TOOL

For more information see accessories section.

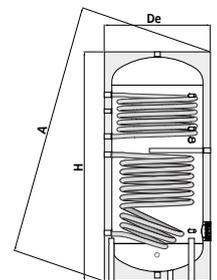
## SYSTEM COMPONENTS

SYSTEM COMPONENTS	INCLUDED
Highly selective solar collector	✓
BOLLY® 2 SLIM CLASSE A calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



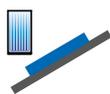
## BOLLY® 2 SLIM CLASSE A

MODEL	De	H	A	ENERGY EFFICIENCY CLASS
	[mm]			
<b>200</b>	550	1430	1530	<b>A</b>
<b>300</b>	650	1480	1620	<b>A</b>
<b>500</b>	750	1780	1930	<b>A</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM B2 SLIM CLASSE A

FORCED CIRCULATION SYSTEM WITH A DOUBLE FIXED COIL CALORIFIER



VT COLLECTORS - PITCHED ROOF



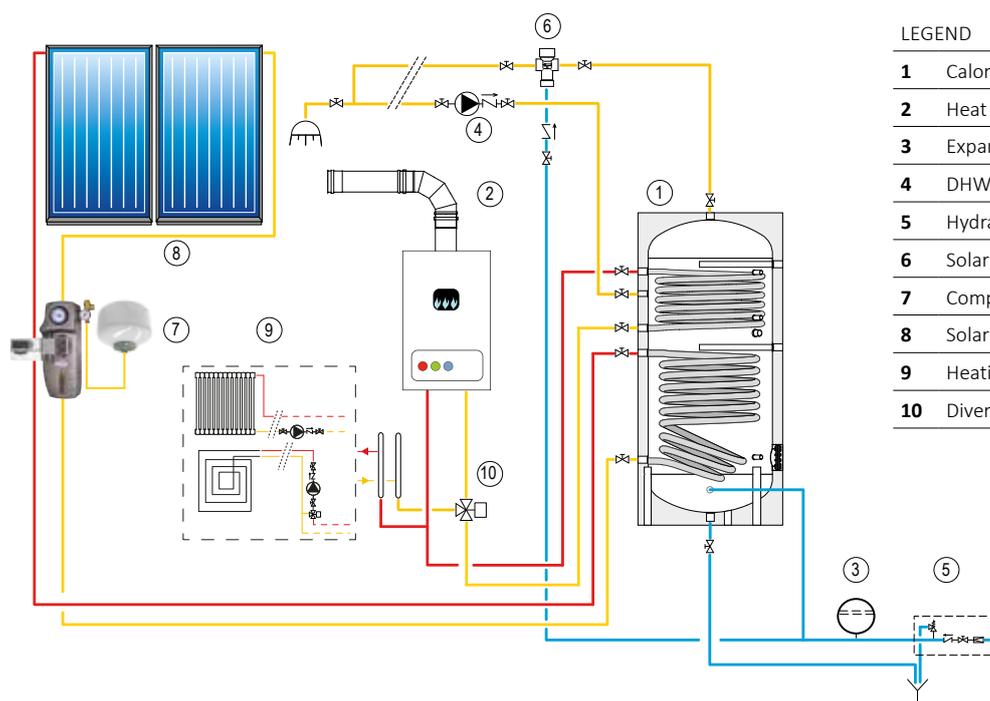
VT COLLECTORS - FLAT ROOF

Calorifier type:

## BOLLY® 2 SLIM CLASSE A

Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.
200	1x2,5	2,5	1-3	200B2 CLASSE A 2,5MQ TF	200B2 CLASSE A 2,5MQ TP
				3410316618550	3410316618650
200	2x2,5	5	5-6	200B2 CLASSE A 5MQ TF	200B2 CLASSE A 5MQ TP
				3410316618551	3410316618651
300	2x2,5	5	5-6	300B2 CLASSE A 5MQ TF	300B2 CLASSE A 5MQ TP
				3410316618552	3410316618652
500	3x2,5	7,5	8-9	500B2 CLASSE A 7,5MQ TF	500B2 CLASSE A 7,5MQ TP
				3410316618553	3410316618653
500	4x2,5	10	9-12	500B2 CLASSE A 10MQ TF	500B2 CLASSE A 10MQ TP
				3410316618554	3410316618654

For fixing kit and other components see accessories section.



### LEGEND

- |    |                                   |
|----|-----------------------------------|
| 1  | Calorifier BOLLY® 2 SLIM CLASSE A |
| 2  | Heat source                       |
| 3  | Expansion vessel                  |
| 4  | DHW circulation group pump        |
| 5  | Hydraulic safety group            |
| 6  | Solar thermostatic mixing valve   |
| 7  | Complete solar circulation group  |
| 8  | Solar collector/s                 |
| 9  | Heating system                    |
| 10 | Diverting valve                   |

NOTE: The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

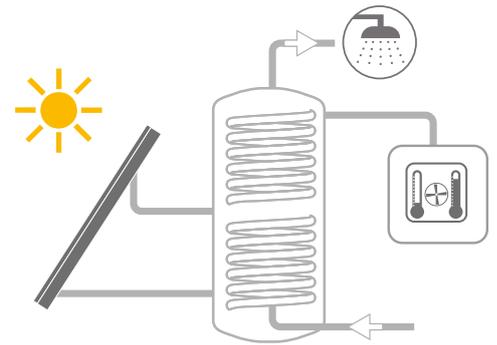
# SOLAR THERMAL SYSTEM B2 XL

FORCED CIRCULATION SYSTEM FOR DHW WITH DOUBLE FIXED HEAT EXCHANGER FOR HEAT PUMP OR BOILER INTEGRATION



NEW

## BOLLY® 2 XL



The forced circulation system **B2 XL** for DHW production is composed of the calorifier BOLLY 2 XL with double fixed extra-large heat exchanger, combined with flat CSP solar collectors. The B2 XL system best expresses its performance with integration of a heat pump.

### SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure
- Highly selective absorber

- Impact test according to EN 12975 and EN 9806
- Tempered glass according to EN 12150

### CALORIFIER

- MODEL **BOLLY® 2 XL** with double fixed extra-large heat exchanger
- Tank in carbon steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW

- W270 - UBA - WRAS
- Insulation of rigid polyurethane foam with high thermal insulation. External PVC cover
- Connections for integration of electrical heater
- Rigid insulation of polyurethane foam with high thermal insulation. External PVC cover
- Tested in accordance with European standard EN 12897:2006

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



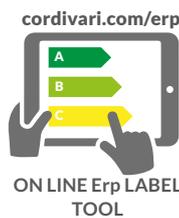
Electrical heater



Pre-insulated pipe



Balancing valve



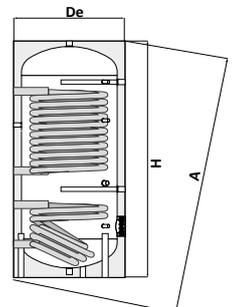
ON LINE ErP LABEL TOOL

For more information see accessories section.

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



### SYSTEM COMPONENTS

SYSTEM COMPONENTS	INCLUDED
Highly selective solar collector	✓
BOLLY® 2 XL calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓

### BOLLY® 2 XL

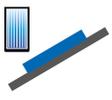
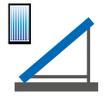
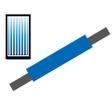
MODEL	De	H	A	ENERGY EFFICIENCY CLASS
	[mm]			
<b>200</b>	550	1440	1540	<b>B</b>
<b>300</b>	650	1486	1620	<b>B</b>
<b>500</b>	750	1786	1940	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

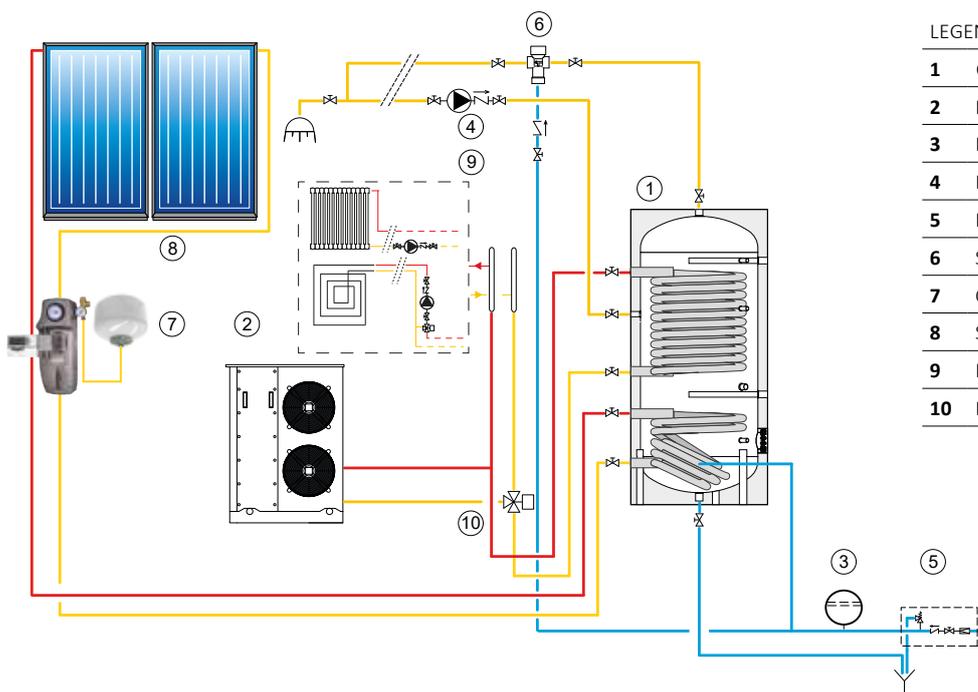
# SOLAR THERMAL SYSTEM B2 XL

FORCED CIRCULATION SYSTEM FOR DHW WITH DOUBLE FIXED HEAT EXCHANGER FOR HEAT PUMP OR BOILER INTEGRATION



Calorifier type: <b>BOLLY® 2 XL</b>				 <b>VT COLLECTORS - PITCHED ROOF</b>	 <b>VT COLLECTORS - FLAT ROOF</b>	 <b>VT COLLECTORS - ON ROOF</b>	<b>SYSTEMS WITHOUT FIXING KIT WITH VERTICAL COLLECTORS</b>
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>200</b>	1x2,5	2,5	1-3	200B2 XL 2,5MQ TF	200B2 XL 2,5MQ TP	200B2 XL 2,5MQ INCAS.	200B2 XL 2,5MQ SZ CARP.
				3410316618251	3410316618257	3410316618263	3410316618271
<b>200</b>	2x2,5	5	5-6	200B2 XL 5MQ TF	200B2 XL 5MQ TP	200B2 XL 5MQ INCAS.	200B2 XL 5MQ SZ CARP.
				3410316618252	3410316618258	3410316618264	3410316618272
<b>300</b>	2x2,5	5	5-6	300B2 XL 5MQ TF	300B2 XL 5MQ TP	300B2 XL 5MQ INCAS.	300B2 XL 5MQ SZ CARP.
				3410316618253	3410316618259	3410316618265	3410316618273
<b>300</b>	3x2,5	7,5	6-7	300B2 XL 7,5MQ TF	300B2 XL 7,5MQ TP	300B2 XL 7,5MQ INCAS.	300B2 XL 7,5MQ SZ CARP.
				3410316618254	3410316618260	3410316618266	3410316618274
<b>500</b>	3x2,5	7,5	8-9	500B2 XL 7,5MQ TF	500B2 XL 7,5MQ TP	500B2 XL 7,5MQ INCAS.	500B2 XL 7,5MQ SZ CARP.
				3410316618255	3410316618261	3410316618267	3410316618275
<b>500</b>	4x2,5	10	9-12	500B2 XL 10MQ TF	500B2 XL 10MQ TP	500B2 XL 10MQ INCAS.	500B2 XL 10MQ SZ CARP.
				3410316618256	3410316618262	3410316618268	3410316618276

For fixing kit and other components see accessories section.



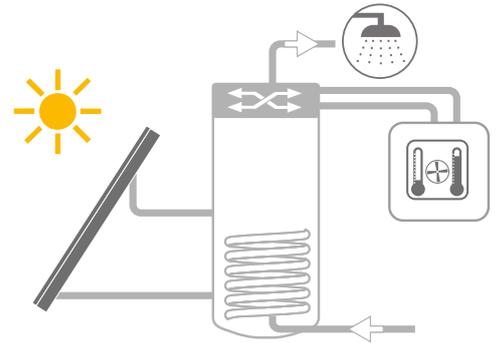
## LEGEND

- 1 Calorifier BOLLY® 2 XL
- 2 Heat source (heat pump)
- 3 Expansion vessel
- 4 DHW circulation group pump
- 5 Hydraulic safety group
- 6 Solar thermostatic mixing valve
- 7 Complete solar circulation group
- 8 Solar collector/s
- 9 Heating system
- 10 Diverting valve

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM B2 PDC

SOLAR THERMAL SYSTEMS WITH FORCED CIRCULATION FOR THE PRODUCTION OF DHW WITH INTEGRATION FOR HEAT PUMP



The Solar Thermal System **B2 PDC** represents the most advanced evolution of thermal solar system suitable to produce DHW. Thanks to the new exchanger group for heat pumps, it provides the most efficient integration system.

### SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure
- Highly selective absorber
- Impact test according to EN 12975 and EN 9806
- Tempered glass according to EN 12150

### CALORIFIER

- **BOLLY® 2 PDC** with fixed solar heat exchanger and integrated heat exchange unit for heat pump, with stainless steel AISI 316 L plates.
- Tank in carbon steel
- Internal Polywarm® coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS
- Insulation of rigid polyurethane foam with high thermal insulation. External PVC cover

- Connection for electrical heater
- Tested in accordance with European standard EN 12897:2006

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



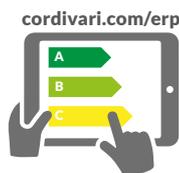
Electrical heater



Pre-insulated pipe



Balancing valve



ON LINE Erp LABEL TOOL

For more information see accessories section.

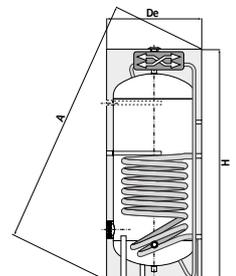
### PATENTED EXCHANGE SYSTEM



ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



SYSTEM COMPONENTS	INCLUDED
Highly selective solar collector	✓
BOLLY® 2 PDC calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓

### BOLLY® 2 PDC

MODEL	De	H	A	ENERGY EFFICIENCY CLASS
	[mm]			
<b>300</b>	650	1600	1727	<b>B</b>
<b>500</b>	750	1900	2043	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM B2 PDC

SOLAR THERMAL SYSTEMS WITH FORCED CIRCULATION FOR THE PRODUCTION OF DHW WITH INTEGRATION FOR HEAT PUMP

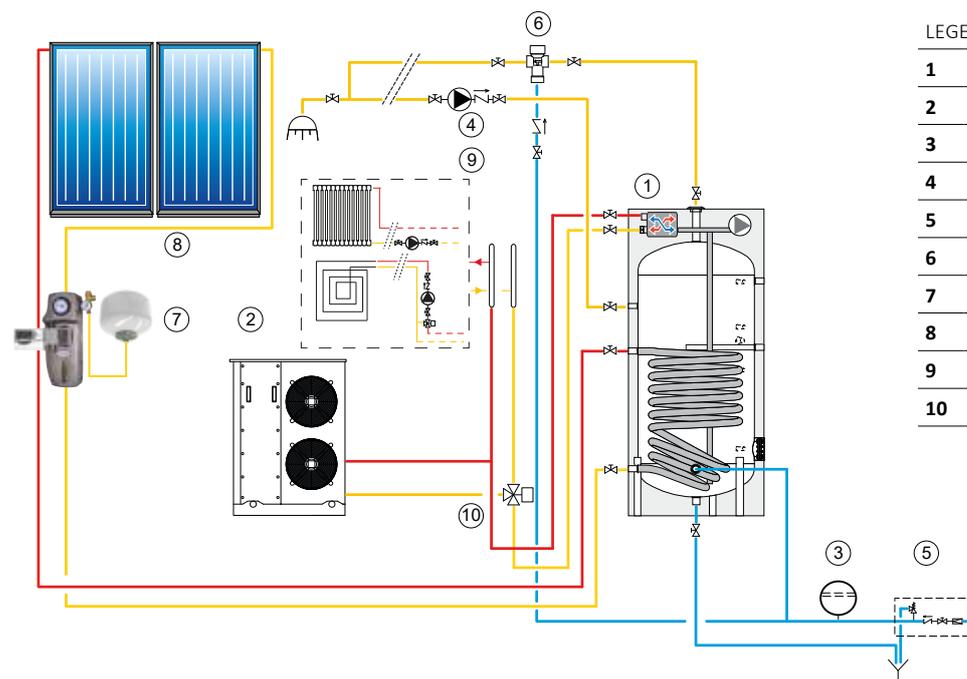


Calorifier type: <b>BOLLY® 2 PDC</b>				<b>VT COLLECTORS - PITCHED ROOF</b>	<b>VT COLLECTORS - FLAT ROOF</b>	<b>VT COLLECTORS - ON ROOF</b>
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>300</b>	2x2,5	5	1-6	300B2PDC 5MQ TF	300B2PDC 5MQ TP	300B2PDC 5MQ INCAS.
				3410316618585	3410316618685	3410316618285
<b>500</b>	3x2,5	7,5	6-9	500B2PDC 7,5MQ TF	500B2PDC 7,5MQ TP	500B2PDC 7,5MQ INCAS.
				3410316618588	3410316618688	3410316618288
<b>500</b>	4x2,5	10	9-12	500B2PDC 10MQ TF	500B2PDC 10MQ TP	500B2PDC 10MQ INCAS.
				3410316618589	3410316618689	3410316618289

## EXECUTIONS ON REQUEST

Calorifier type: <b>BOLLY® 2 PDC</b>				<b>OR COLLECTORS - PITCHED ROOF</b>	<b>OR COLLECTORS - FLAT ROOF</b>	<b>VT COLLECTORS - WALL MOUNTED</b>	<b>SYSTEMS WITHOUT FIXING KIT WITH VERTICAL COLLECTORS</b>
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>300</b>	2x2,5	5	1-6	300B2PDC 5MQ TF OR	300B2PDC 5MQ TP OR	300B2PDC 5MQ VT	300B2PDC 5MQ SZ CARP.
				ON REQUEST	ON REQUEST	ON REQUEST	3410316618385
<b>500</b>	3x2,5	7,5	6-9	500B2PDC 7,5MQ TF OR	500B2PDC 7,5MQ TP OR	500B2PDC 7,5MQ VT	500B2PDC 7,5MQ SZ CARP.
				ON REQUEST	ON REQUEST	ON REQUEST	3410316618388
<b>500</b>	4x2,5	10	9-12	500B2PDC 10MQ TF OR	500B2PDC 10MQ TP OR	500B2PDC 10MQ VT	500B2PDC 10MQ SZ CARP.
				ON REQUEST	ON REQUEST	ON REQUEST	3410316618389

For fixing kit and other components see accessories section.



### LEGEND

- 1 BOLLY® 2 PDC calorifier
- 2 Heat source (heat pump)
- 3 Expansion vessel
- 4 DHW circulation group pump
- 5 Hydraulic safety group
- 6 Solar thermostatic mixing valve
- 7 Complete solar circulation group
- 8 Solar collector/s
- 9 Heating system
- 10 Diverting valve

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM BOLLYTERM® HP

FORCED CIRCULATION SYSTEM WITH HEAT PUMP WATER HEATER



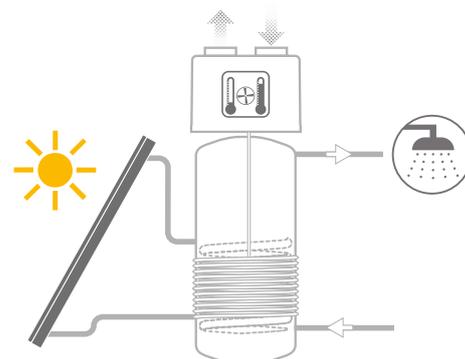
## BOLLYTERM® HP 1 - HP 2



HEAT PUMP  
WATER  
HEATER

SYSTEM WITH  
ENERGY EFFICIENCY

**CLASS  
A+++**



The solar thermal system **BOLLYTERM® HP** guarantees the total coverage of the DHW requirements with renewable energy source through the integrated heat pump and solar collectors.

The elevated C.O.P of the thermodynamic water heater ensures maximum energy savings in support of the solar collectors by configuring a system with energy efficiency class A+++.

### SOLAR COLLECTOR

- Insulation in mineral wool

- Anodized aluminum structure
- Highly selective absorber
- Impact test according to EN 12975 and EN 9806
- Tempered glass according to EN 12150

### CHARACTERISTICS OF THE CALORIFIER

- Model **BOLLYTERM® HP** with fixed solar heat exchanger and integrated heat pump with condenser coiled outside the storage tank
- Tank in carbon steel
- 1500 watt electrical heater integration included with boost function

- Insulation of rigid polyurethane foam with high thermal insulation. External PVC cover.
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW - W270 - UBA - WRAS

### WARRANTY

5 years - See general sales and warranty conditions

### INTEGRATED HEAT PUMP

The Cordivari calorifier with integrated heat pump **BOLLYTERM® HP** produces domestic hot water using the heat naturally present in the air, allowing significant energy and economic savings.

The principle of the heat pump is based on the exploitation of a particular ecological gas (R134a), thanks to compression and expansions, allows high and advantageous energy efficiency. The heat taken from the air is transferred to the water by means of a condenser coil that is wrapped around the outside of the tank. In this way any contact between the heat transfer fluid and the domestic hot water is avoided as a guarantee of maximum safety and hygiene. The efficiency is indicated by the coefficient of performance (C.O.P) that indicates the ratio between the energy used and the one obtained to heat the water contained in the tank.



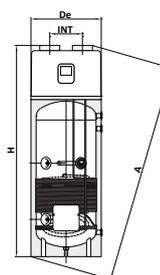
ALWAYS ASK FOR  
CERTIFIED LABORATORIES  
DATA RESULTS

**CORDIVARI Lab**

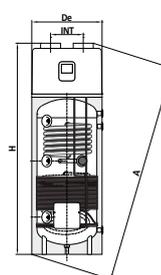
TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



**BOLLYTERM® HP 1**  
WITH 1 HEAT EXCHANGER



**BOLLYTERM® HP 2**  
WITH 2 HEAT EXCHANGERS



### SYSTEM COMPONENTS

### INCLUDED

Highly selective solar collector	✓
BOLLYTERM® HP heat pump water heater (HP1 or HP2)	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel lt 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓
1500 W electrical heater	✓

### BOLLYTERM® HP 1

MODEL	INT	De	H	A	ENERGY EFFICIENCY CLASS <b>TESTED ErP</b>
	[mm]				
<b>200</b>	340	640	1585	1684	<b>A+</b>
<b>300</b>	340	640	1960	2040	<b>A+</b>

### BOLLYTERM® HP 2

<b>300</b>	340	640	1960	2040	<b>A+</b>
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For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM BOLLYTERM® HP

FORCED CIRCULATION SYSTEM WITH HEAT PUMP WATER HEATER

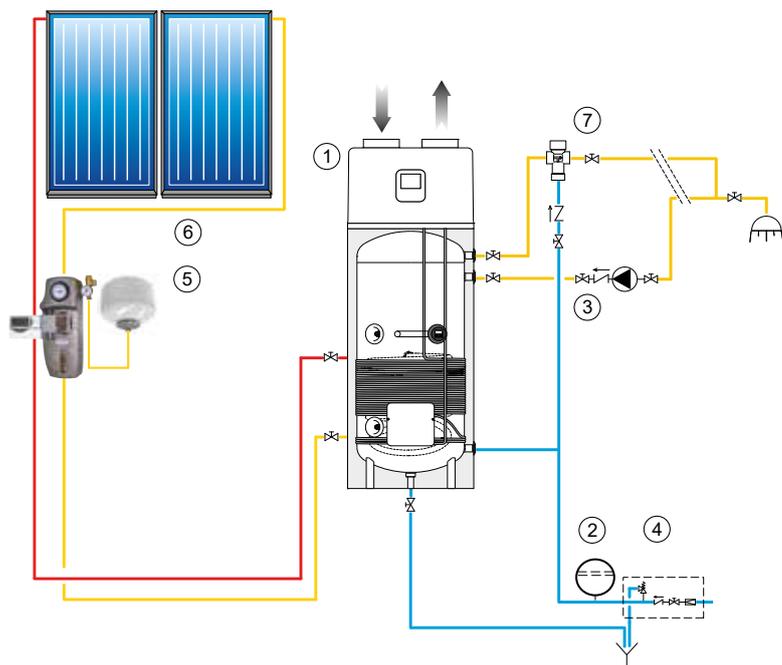


Calorifier type: <b>BOLLYTERM® HP 1</b>				VT COLLECTORS - PITCHED ROOF	VT COLLECTORS - FLAT ROOF	VT COLLECTORS - ON ROOF
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>200</b>	2x2,5	5	4-5	200HP1 5MQ TF 3410316617405	200HP1 5MQ TP 3410316617415	200HP1 5MQ INCAS. 3410316617425
<b>300</b>	2x2,5	5	5-6	300HP1 5MQ TF 3410316617407	300HP1 5MQ TP 3410316617417	300HP1 5MQ INCAS. 3410316617427
Calorifier type: <b>BOLLYTERM® HP 2</b>						
<b>300</b>	2x2,5	5	5-6	300HP2 5MQ TF 3410316617438	300HP2 5MQ TP 3410316617439	300HP2 5MQ INCAS. 3410316617440

## EXECUTIONS ON REQUEST

Calorifier type: <b>BOLLYTERM® HP 1</b>				OR COLLECTORS - PITCHED ROOF	OR COLLECTORS - FLAT ROOF	VT COLLECTORS - WALL MOUNTED	SYSTEMS WITHOUT FIXING KIT WITH VERTICAL COLLECTORS
Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>200</b>	2x2,5	5	4-5	200HP1 5MQ TF OR ON REQUEST	200HP1 5MQ TP OR ON REQUEST	200HP1 5MQ VT ON REQUEST	200HP1 5MQ SZ CARP. 3410316617435
<b>300</b>	2x2,5	5	5-6	300HP1 5MQ TF OR ON REQUEST	300HP1 5MQ TP OR ON REQUEST	300HP1 5MQ VT ON REQUEST	300HP1 5MQ SZ CARP. 3410316617437
Calorifier type: <b>BOLLYTERM® HP 2</b>							
<b>300</b>	2x2,5	5	5-6	300HP2 5MQ TF OR ON REQUEST	300HP2 5MQ TP OR ON REQUEST	300HP2 5MQ VT ON REQUEST	300HP2 5MQ SZ CARP. 3410316617441

For fixing kit and other components see accessories section.



### LEGEND

- 1 BOLLYTERM® HP heat pump water heater
- 2 Expansion vessel
- 3 DHW circulation group pump
- 4 Hydraulic safety group
- 5 Complete solar circulation group
- 6 Solar collector/s
- 7 Solar thermostatic mixing valve

NOTE: The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

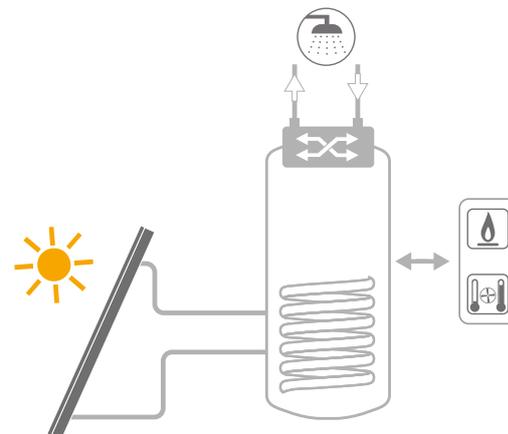
# SOLAR THERMAL SYSTEM PUFFERMAS® 2 DOMUS

FORCED CIRCULATION SYSTEM FOR INSTANTANEOUS DHW PRODUCTION WITH STORAGE TANK



NEW

## PUFFERMAS® 2 DOMUS



The forced circulation system **PUFFERMAS 2 DOMUS**, for DHW production, is composed of the combined buffer tank PUFFERMAS 2 DOMUS combined with flat CSP solar collectors

### SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure
- Highly selective absorber

- Impact test according to EN 12975 and EN 9806
- Tempered glass according to EN 12150

### CHARACTERISTICS OF THE BUFFER TANK

- **PUFFERMAS® 2 DOMUS** with fixed solar heat exchanger and instantaneous DHW production module with stainless steel AISI 316L plates
- Tank in carbon steel
- Insulation of rigid polyurethane foam with high

- thermal insulation. External PVC cover
- Electronic control unit

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



Electrical heater

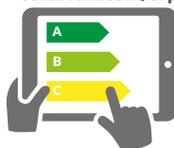


Pre-insulated pipe



Balancing valve

[cordivari.com/erp](http://cordivari.com/erp)



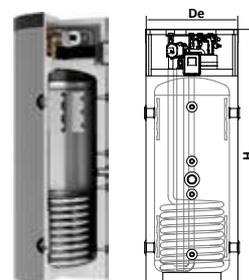
ON LINE ErP LABEL TOOL

For more information see accessories section.

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

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### SYSTEM COMPONENTS

SYSTEM COMPONENTS	INCLUDED
Highly selective solar collector	✓
Buffer tank PUFFERMAS® 2 DOMUS	✓
Circulation unit PROFESSIONAL ONE: complete of circulator, electric control unit basic, flow regulator, safety valve, thermometers, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Fixing kit and fittings	✓

### PUFFERMAS® 2 DOMUS

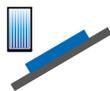
ENERGY EFFICIENCY CLASS

MODEL	De	H	TESTED ErP
	[mm]		
<b>200</b>	550	1539	<b>B</b>
<b>300</b>	650	1580	<b>B</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM PUFFERMAS® 2 DOMUS

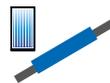
FORCED CIRCULATION SYSTEM FOR INSTANTANEOUS DHW PRODUCTION WITH STORAGE TANK



VT COLLECTORS - PITCHED ROOF



VT COLLECTORS - FLAT ROOF



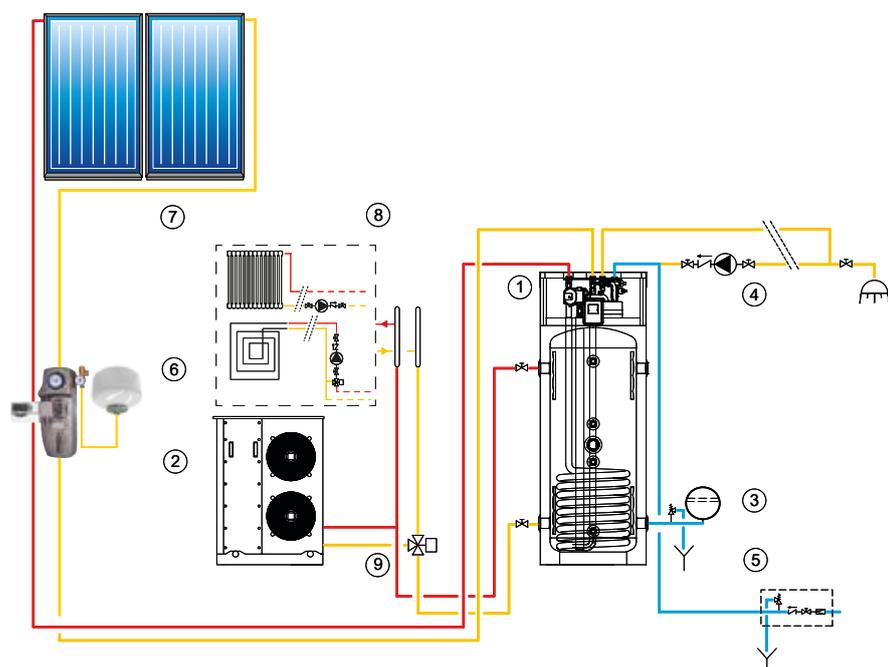
VT COLLECTORS - ON ROOF

Buffer tanks type:

## PUFFERMAS® 2 DOMUS

Calorifier model	Nr. of collectors m <sup>2</sup>	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.	Description/ Art. Nr.
<b>200</b>	2x2,5	5	1-6	200PM2D 5MQ TF	200PM2D 5MQ TP	200PM2D 5MQ INCAS.
				3410316611470	3410316611480	3410316611490
<b>300</b>	3x2,5	7,5	6-9	300PM2D 7,5MQ TF	300PM2D 7,5MQ TP	300PM2D 7,5MQ INCAS.
				3410316611471	3410316611481	3410316611491
<b>300</b>	4x2,5	10	9-12	300PM2D 10MQ TF	300PM2D 10MQ TP	300PM2D 10MQ INCAS.
				3410316611472	3410316611482	3410316611492

For fixing kit and other components see accessories section.



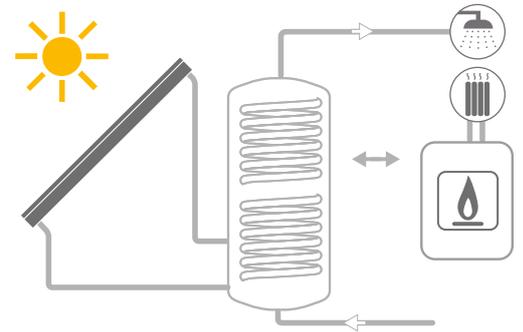
### LEGEND

- 1 Buffer tank PUFFERMAS® 2 DOMUS
- 2 Heat source (heat pump)
- 3 Expansion vessel
- 4 DHW circulation group pump
- 5 Hydraulic safety group
- 6 Complete solar circulation group
- 7 Solar collector/s
- 8 Heating system
- 9 Diverting valve

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM B2 CVT

FORCED CIRCULATION SYSTEM FOR DHW WITH VACUUM TUBE COLLECTORS AND DOUBLE COIL CALORIFIER FOR BOILER INTEGRATION



The **B2 CVT** solar thermal system employs the Cordivari CVT vacuum tube collectors in combination with the configuration with the calorifier with 2 fixed heat exchangers. This maximizes the performance in the production of DHW from solar heat source even at higher latitudes or in very cold climates thanks to the high selective collectors with vacuum technology.

### SOLAR COLLECTOR

High selective solar vacuum tube collector PVD, of the type Sydney with heat pipe technology.  
- Anodized aluminum structure.

- Parabolic concentrator mirror CPC
- Impact test according to EN 12975 and EN 9806

### CALORIFIER

- **BOLLY® 2 ST** with double fixed heat exchanger
- Tank in carbon steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS
- Insulation: Rigid fixed polyurethane hard foam with high thermal insulation or removable soft

- NOFIRE polster fiber 100% recyclable with high thermal insulation and fire resistance class B s2d0 (EN13501) and external PVC cover.
- Tested in accordance with European standard EN 12897:2006

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



Electrical heater



Pre-insulated pipe



Balancing valve

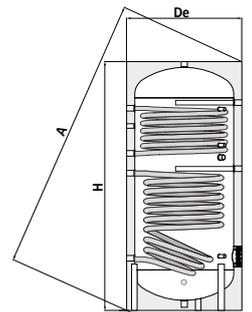


Thermostatic mixing valve (for systems up to 500)

For more information see accessories section.



ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS  
**CORDIVARI Lab**  
TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



### SYSTEM COMPONENTS

### INCLUDED

High selective solar vacuum tube collector PVD, of the type Sydney with heat pipe technology	✓
BOLLY® 2 ST calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel Until mod. 500: 1x24 lt - from 800 to 1500: 1x50 lt	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve (Included up to model 500)	✓
Fixing kit and fittings	✓

### BOLLY® 2 ST

### ENERGY EFFICIENCY CLASS

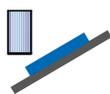
MODEL	De	H	A	TESTED ErP
	[mm]			
<b>150</b>	500	1414	1500	<b>B</b>
<b>200</b>	550	1434	1536	<b>B</b>
<b>300</b>	650	1486	1622	<b>B</b>
<b>400</b>	700	1766	1900	<b>C</b>
<b>500</b>	750	1786	1937	<b>C</b>
<b>800</b>	950	2189	2367	<b>B</b>
<b>1000</b>	1050	2223	2438	<b>B</b>
<b>1500</b>	1150	2471	2705	<b>C</b>



For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM B2 CVT

FORCED CIRCULATION SYSTEM FOR DHW WITH VACUUM TUBE COLLECTORS AND DOUBLE COIL CALORIFIER FOR BOILER INTEGRATION



Calorifier type:

**BOLLY® 2 ST**

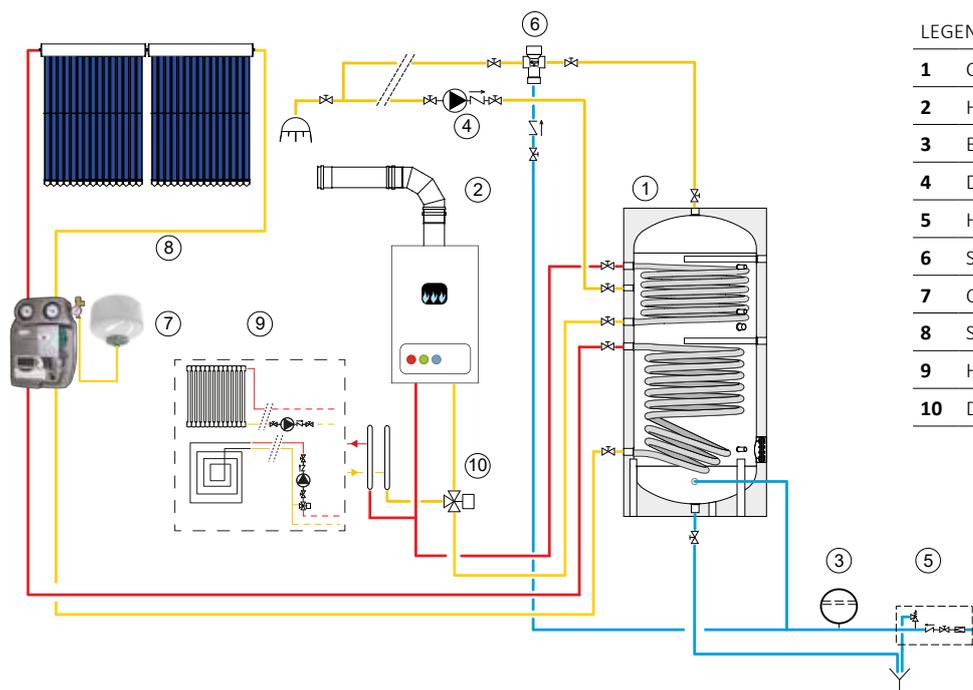
VT COLLECTORS - PITCHED ROOF

VT COLLECTORS - FLAT ROOF

Calorifier model	Nr. of collectors (*)	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.
150	1x10	2,17	1-3	150B2 CVT10 TF	150B2 CVT10 TP
				3410316618901	3410316618914
200	1x10	2,17	3-4	200B2 CVT10 TF	200B2 CVT10 TP
				3410316618902	3410316618915
200	1x15	3,22	4-5	200B2 CVT15 TF	200B2 CVT15 TP
				3410316618903	3410316618916
300	2x10	4,34	5-6	300B2 2CVT10 TF	300B2 2CVT10 TP
				3410316618904	3410316618917
300	2x15	6,44	5-7	300B2 2CVT15 TF	300B2 2CVT15 TP
				3410316618905	3410316618918
400	2x15	6,44	6-7	400B2 2CVT15 TF	400B2 2CVT15 TP
				3410316618906	3410316618919
500	2x15	6,44	7-8	500B2 2CVT15 TF	500B2 2CVT15 TP
				3410316618907	3410316618920
500	4x10	8,68	8-9	500B2 4CVT10 TF	500B2 4CVT10 TP
				3410316618908	3410316618921
800	4x15	12,88	9-12	800B2 4CVT15 TF	800B2 4CVT15 TP
				3410316618909	3410316618922
800	5x15	16,1	12-15	800B2 5CVT15 TF	800B2 5CVT15 TP
				3410316618910	3410316618923
1000	5x15	16,1	15-20	1000B2 5CVT15 TF	1000B2 5CVT15 TP
				3410316618911	3410316618924
1500	6x15	19,32	20-24	1500B2 6CVT15 TF	1500B2 6CVT15 TP
				3410316618912	3410316618925
1500	8x15	25,76	24-32	1500B2 8CVT15 TF	1500B2 8CVT15 TP
				3410316618913	3410316618926

(\*) Cordivari vacuum tubes collector – (Vacuum tube with heat pipe technology).

For fixing kit and other components see accessories section.



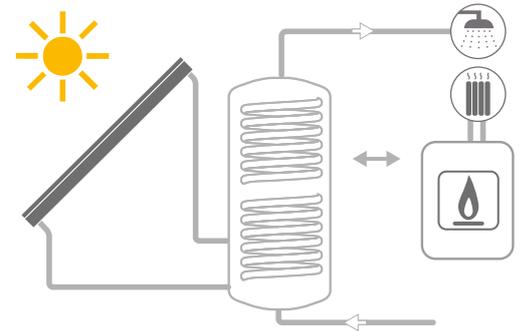
## LEGEND

- |    |                                  |
|----|----------------------------------|
| 1  | Calorifier BOLLY® 2 ST           |
| 2  | Heat source (gas boiler)         |
| 3  | Expansion vessel                 |
| 4  | DHW circulation group pump       |
| 5  | Hydraulic safety group           |
| 6  | Solar thermostatic mixing valve  |
| 7  | Complete solar circulation group |
| 8  | Solar collector/s                |
| 9  | Heating system                   |
| 10 | Diverting valve                  |

NOTE: The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM B2 SLIM CLASSE A CVT

FORCED CIRCULATION SYSTEMS FOR DHW PRODUCTION WITH VACUUM TUBE COLLECTORS AND CALORIFIER WITH ENERGY EFFICIENCY CLASS A AND DOUBLE FIXED HEAT EXCHANGER FOR BOILER INTEGRATION



STORAGE IN  
**CLASS A**



The forced circulation system **B2 SLIM CLASS A CVT**, for DHW production, is composed of the calorifier with top-range double fixed heat exchanger, in energy efficiency class A in combination with flat vacuum tube CVT collectors. The B2 SLIM CLASS A system best expresses reliability, high efficiency and high energy savings thanks to the energy efficiency class A of the sanitary storage.

## SOLAR COLLECTOR

High selective solar vacuum tube collector PVD, of

the type Sydney with heat pipe technology.

- Anodized aluminum structure.
- Parabolic concentrator mirror CPC
- Impact test according to EN 12975 and EN 9806

## CALORIFIER

- MODEL **BOLLY® 2 SLIM CLASSE A** with double fixed heat exchanger
- Tank in carbon steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal

- Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS
- Insulation of rigid polyurethane foam with high thermal insulation. External PVC cover
- Connection for electrical heater
- Tested in accordance with European standard EN 12897:2006

## WARRANTY

5 years - See general sales and warranty conditions

## ACCESSORIES ON REQUEST



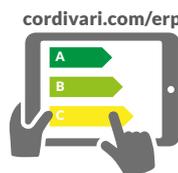
Electrical heater



Pre-insulated pipe



Balancing valve



ON LINE Erp LABEL TOOL

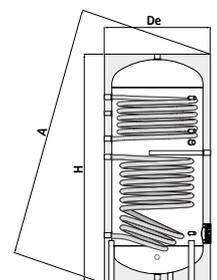
For more information see accessories section.

SYSTEM COMPONENTS	INCLUDED
High selective solar vacuum tube collector PVD, of the type Sydney with heat pipe technology	✓
BOLLY® 2 SLIM CLASSE A calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



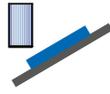
## BOLLY® 2 SLIM CLASSE A

MODEL	De	H	A	ENERGY EFFICIENCY CLASS
	[mm]			
<b>200</b>	550	1430	1530	<b>A</b>
<b>300</b>	650	1480	1620	<b>A</b>
<b>500</b>	750	1780	1930	<b>A</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM B2 SLIM CLASSE A CVT

FORCED CIRCULATION SYSTEMS FOR DHW PRODUCTION WITH VACUUM TUBE COLLECTORS AND CALORIFIER WITH ENERGY EFFICIENCY CLASS A AND DOUBLE FIXED HEAT EXCHANGER FOR BOILER INTEGRATION



Calorifier type:

## BOLLY® 2 SLIM CLASSE A

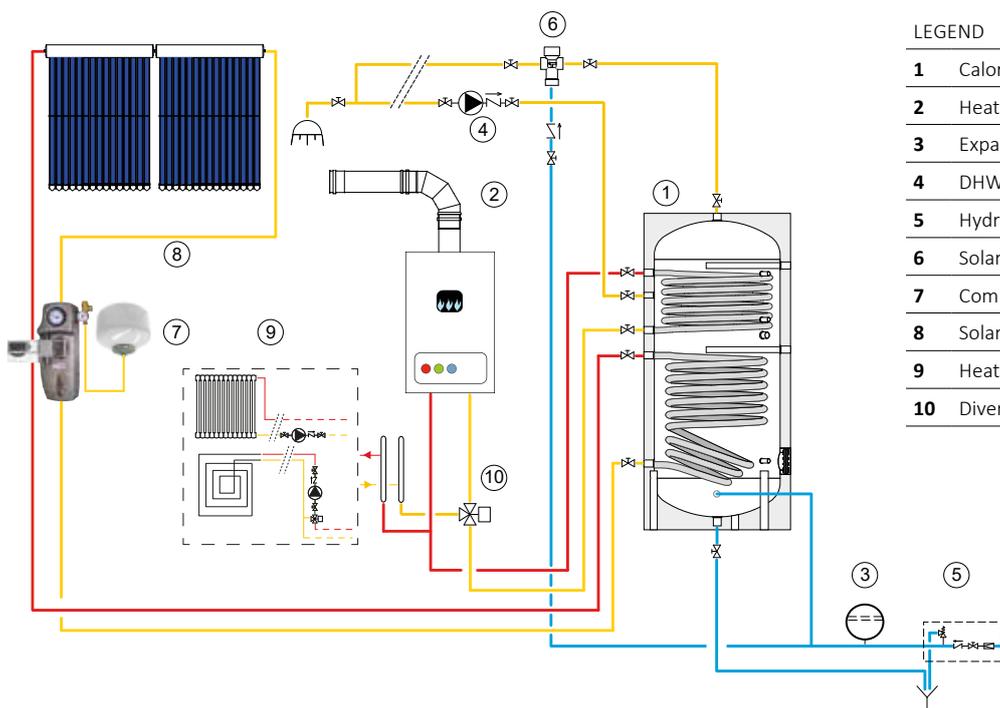
### VT COLLECTORS - PITCHED ROOF

### VT COLLECTORS - FLAT ROOF

Calorifier model	Nr. of collectors (*)	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.
200	1x10	2,17	4-5	200B2 CLASSE A 1CVT10 TF	200B2 CLASSE A 1CVT10 TP
				3410316618850	3410316618860
200	1x15	3,22	5-6	200B2 CLASSE A 1CVT15 TF	200B2 CLASSE A 1CVT15 TP
				3410316618851	3410316618861
300	2x10	4,34	5-6	300B2 CLASSE A 2CVT10 TF	300B2 CLASSE A 2CVT10 TP
				3410316618852	3410316618862
300	2x15	6,44	6-7	300B2 CLASSE A 2CVT15 TF	300B2 CLASSE A 2CVT15 TP
				3410316618853	3410316618863
500	2x15	6,44	8-9	500B2 CLASSE A 2CVT15 TF	500B2 CLASSE A 2CVT15 TP
				3410316618854	3410316618864
500	4x10	8,68	9-12	500B2 CLASSE A 4CVT10 TF	500B2 CLASSE A 4CVT10 TP
				3410316618855	3410316618865

(\*) Cordivari vacuum tubes collector – (Vacuum tube with heat pipe technology).

For fixing kit and other components see accessories section.



#### LEGEND

- |    |                                   |
|----|-----------------------------------|
| 1  | Calorifier BOLLY® 2 SLIM CLASSE A |
| 2  | Heat source                       |
| 3  | Expansion vessel                  |
| 4  | DHW circulation group pump        |
| 5  | Hydraulic safety group            |
| 6  | Solar thermostatic mixing valve   |
| 7  | Complete solar circulation group  |
| 8  | Solar collector/s                 |
| 9  | Heating system                    |
| 10 | Diverting valve                   |

NOTE: The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

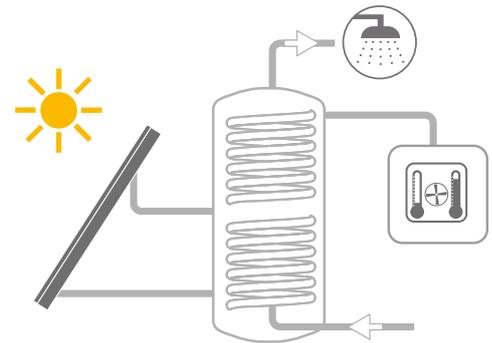
# SOLAR THERMAL SYSTEM BOLLY® 2 XL CVT

FORCED CIRCULATION SYSTEM FOR DHW WITH DOUBLE FIXED HEAT EXCHANGER FOR HEAT PUMP OR BOILER INTEGRATION



NEW

## BOLLY® 2 XL POLYWARM®



The forced circulation system **BOLLY® 2 XL CVT**, for DHW production, is composed of the calorifier with double extra-large fixed heat exchanger BOLLY® 2 XL in combination with vacuum tube solar collectors. The BOLLY® 2 XL system best expresses its performance when integrated with a heat pump.

### SOLAR COLLECTOR

High selective solar vacuum tube collector PVD, of the type Sydney with heat pipe technology.  
- Anodized aluminum structure.

- Parabolic concentrator mirror CPC
- Impact test according to EN 12975 and EN 9806

### CALORIFIER

- Model **BOLLY® 2 XL** with double extra-large fixed heat exchanger
- Tank in carbon steel
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS

- Insulation of rigid polyurethane foam with high thermal insulation. External PVC cover
- Connection for electrical heater
- Tested in accordance with European standard EN 12897:2006

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



Electrical heater



Pre-insulated pipe



Balancing valve



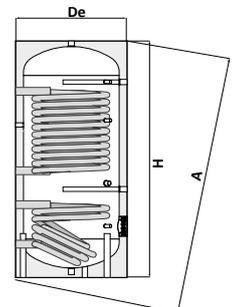
ON LINE ErP LABEL TOOL

For more information see accessories section.

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS

**CORDIVARI Lab**

TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



### SYSTEM COMPONENTS

INCLUDED

High selective solar vacuum tube collector PVD, of the type Sydney with heat pipe technology	✓
BOLLY® 2 XL POLYWARM® calorifier	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓

### BOLLY® 2 XL POLYWARM®

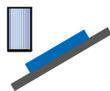
ENERGY EFFICIENCY CLASS

MODEL	De	H	A	TESTED ErP ENERGY EFFICIENCY CLASS
	[mm]			
<b>200</b>	550	1440	1540	<b>B</b>
<b>300</b>	650	1486	1620	<b>B</b>
<b>500</b>	750	1786	1940	<b>C</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM BOLLY® 2 XL CVT

FORCED CIRCULATION SYSTEM FOR DHW WITH DOUBLE FIXED HEAT EXCHANGER FOR HEAT PUMP OR BOILER INTEGRATION



Calorifier type:

**BOLLY® 2 XL**

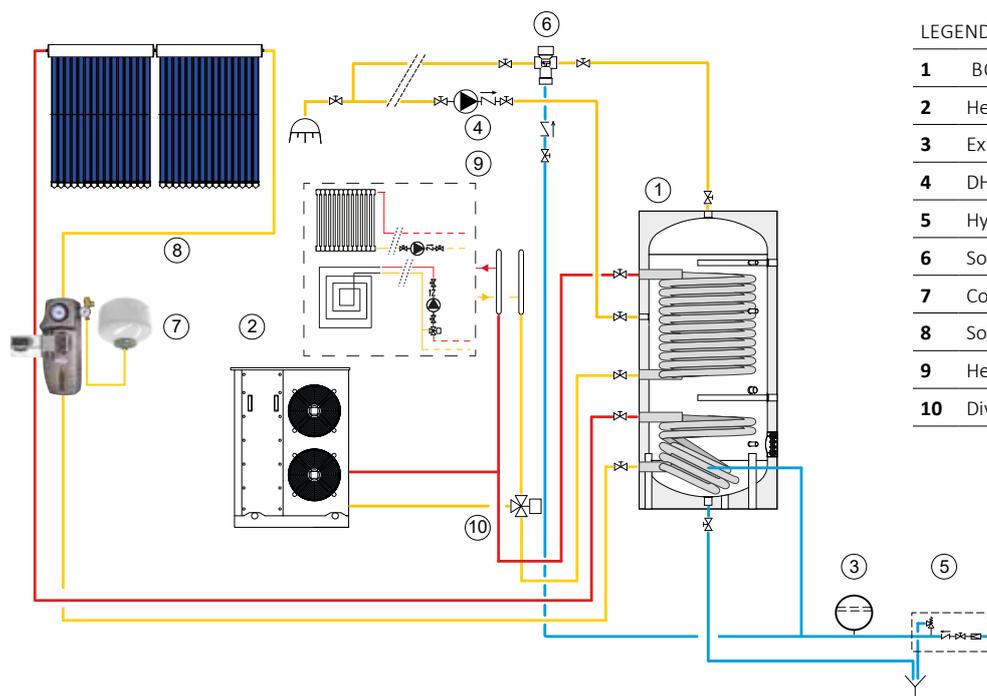
VT COLLECTORS - PITCHED ROOF

VT COLLECTORS - FLAT ROOF

Calorifier model	Nr. of collectors (*)	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.
200	1x10	2,17	4-5	200B2 XL CVT10 TF	200B2 XL CVT10 TP
				3410316618977	3410316618983
200	1x15	3,22	5-6	200B2 XL CVT15 TF	200B2 XL CVT15 TP
				3410316618978	3410316618984
300	2x10	4,34	5-6	300B2 XL 2CVT10 TF	300B2 XL 2CVT10 TP
				3410316618979	3410316618985
300	2x15	6,44	6-7	300B2 XL 2CVT15 TF	300B2 XL 2CVT15 TP
				3410316618980	3410316618986
500	2x15	6,44	8-9	500B2 XL 2CVT15 TF	500B2 XL 2CVT15 TP
				3410316618981	3410316618987
500	4x10	8,68	9-12	500B2 XL 4CVT10 TF	500B2 XL 4CVT10 TP
				3410316618982	3410316618988

(\*) Cordivari vacuum tubes collector – (Vacuum tube with heat pipe technology).

For fixing kit and other components see accessories section.



## LEGEND

- |    |                                  |
|----|----------------------------------|
| 1  | BOLLY® 2 XL POLYWARM® calorifier |
| 2  | Heat source (heat pump)          |
| 3  | Expansion vessel                 |
| 4  | DHW circulation group pump       |
| 5  | Hydraulic safety group           |
| 6  | Solar thermostatic mixing valve  |
| 7  | Complete solar circulation group |
| 8  | Solar collector/s                |
| 9  | Heating system                   |
| 10 | Diverting valve                  |

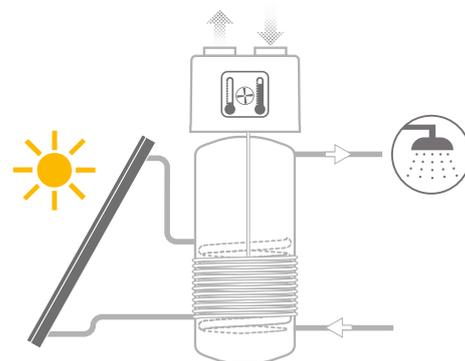
NOTE: The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

# SOLAR THERMAL SYSTEM BOLLYTERM® HP CVT

FORCED CIRCULATION SYSTEM WITH HEAT PUMP WATER HEATER



## BOLLYTERM® HP 1 - HP 2



SYSTEM WITH  
ENERGY EFFICIENCY

**CLASS  
A+++**



The solar thermal system **BOLLYTERM® HP CVT** guarantees total coverage of DHW demand even in the most difficult climatic conditions with renewable energy sources through the integrated heat pump and the solar collectors with Cordivari vacuum technology CVT.

The high C.O.P guarantees maximum energy savings in support of the CVT collectors and the specific calorifier for solar systems that maximizes the performances of both energy sources by configuring a system with energy efficiency class A+++.

### SOLAR COLLECTOR

High selective solar vacuum tube collector PVD, of the type Sydney with heat pipe technology.

- Anodized aluminum structure.
- Parabolic concentrator mirror CPC
- Impact test according to EN 12975 and EN 9806

### CHARACTERISTICS OF THE CALORIFIER

- Model **BOLLYTERM® HP** with fixed solar heat exchanger and integrated heat pump with condenser coiled outside the storage tank
- Tank in carbon steel
- 1500 watt electrical heater integration included

with boost function

- Insulation of rigid polyurethane foam with high thermal insulation. External PVC cover.
- Internal Polywarm coating, suitable for drinking water according to 98/83/CE and subsequent amendments and DHW certification of internal Polywarm treatment DHW - SSICA - DVGW -W270 - UBA - WRAS

### WARRANTY

5 years - See general sales and warranty conditions

### INTEGRATED HEAT PUMP

The Cordivari calorifier with integrated heat pump BOLLYTERM HP produces domestic hot water using the heat naturally present in the air, allowing significant energy and economic savings.

The principle of the heat pump is based on the exploitation of a particular ecological gas (R134a), thanks to compression and expansions, allows high and advantageous energy efficiency. The heat taken from the air is transferred to the water by means of a condenser coil that is wrapped around the outside of the tank. In this way any contact between the heat transfer fluid and the domestic hot water is avoided as a guarantee of maximum safety and hygiene. The efficiency is indicated by the coefficient of performance (C.O.P) that indicates the ratio between the energy used and the one obtained to heat the water contained in the tank.

[cordivari.com/erp](http://cordivari.com/erp)



ON LINE ERP LABEL  
TOOL

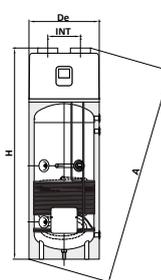
ALWAYS ASK FOR  
CERTIFIED LABORATORIES  
DATA RESULTS

**CORDIVARI Lab**

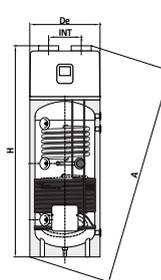
TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



**BOLLYTERM® HP 1**  
WITH 1 HEAT  
EXCHANGER



**BOLLYTERM® HP 2**  
WITH 2 HEAT  
EXCHANGERS



### SYSTEM COMPONENTS

INCLUDED

High selective solar vacuum tube collector PVD, of the type Sydney with heat pipe technology	✓
BOLLYTERM® HP 1 or HP 2	✓
Circulation unit BASIC complete of circulator electronic control, flow regulator, safety valve, thermometer, temperature probes	✓
Expansion vessel lt 24	✓
Non-toxic heat transfer fluid	✓
Solar thermostatic mixing valve	✓
Fixing kit and fittings	✓
1500 W electrical heater	✓

### BOLLYTERM® HP 1

MODEL	INT	De	H	A	ENERGY EFFICIENCY CLASS
<b>200</b>	340	640	1585	1684	<b>A+</b>
<b>300</b>	340	640	1960	2040	<b>A+</b>

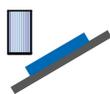
### BOLLYTERM® HP 2

<b>300</b>	340	640	1960	2040	<b>A+</b>
------------	-----	-----	------	------	-----------

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM BOLLYTERM® HP CVT

FORCED CIRCULATION SYSTEM WITH HEAT PUMP WATER HEATER



VT COLLECTORS - PITCHED ROOF



VT COLLECTORS - FLAT ROOF

Calorifier type:

## BOLLYTERM® HP 1

Calorifier model	Nr. of collectors (*)	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	Description/ Art. Nr.
200	1x10	2,17	4-5	200HP1 CVT10 TF	200HP1 CVT10 TP
				3410316618939	3410316618943
200	1x15	3,22	5-6	200HP1 CVT15 TF	200HP1 CVT15 TP
				3410316618940	3410316618944
300	2x10	4,34	5-6	300HP1 2CVT10 TF	300HP1 2CVT10 TP
				3410316618941	3410316618945
300	2x15	6,44	6-7	300HP1 2CVT15 TF	300HP1 2CVT15 TP
				3410316618942	3410316618946

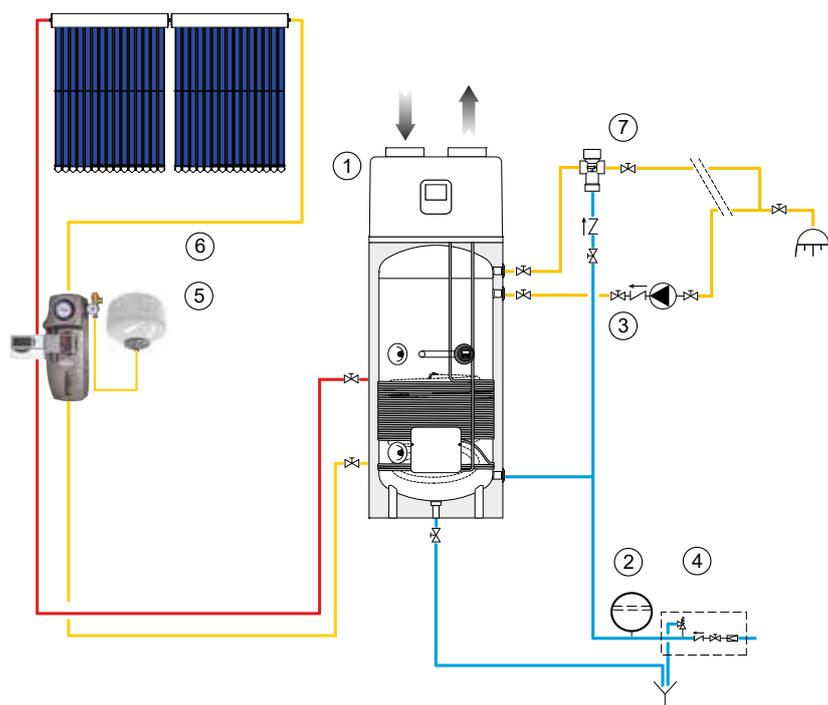
Calorifier type:

## BOLLYTERM® HP 2

300	2x10	4,34	5-6	300HP2 2CVT10 TF	300HP2 2CVT10 TP
				3410316618947	3410316618949
300	2x15	6,44	6-7	300HP2 2CVT15 TF	300HP2 2CVT15 TP
				3410316618948	3410316618950

(\*) Cordivari vacuum tubes collector – (Vacuum tube with heat pipe technology).

For fixing kit and other components see accessories section.



### LEGEND

- |   |                                      |
|---|--------------------------------------|
| 1 | BOLLYTERM® HP heat pump water heater |
| 2 | Expansion vessel                     |
| 3 | DHW circulation group pump           |
| 4 | Hydraulic safety group               |
| 5 | Complete solar circulation group     |
| 6 | Solar collector/s                    |
| 7 | Solar thermostatic mixing valve      |

NOTE: The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.

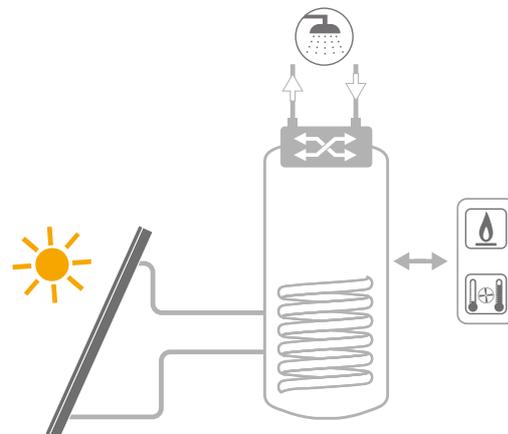
# SOLAR THERMAL SYSTEM PUFFERMAS® 2 DOMUS CVT

FORCED CIRCULATION SYSTEM WITH STORAGE TANK FOR INSTANTANEOUS DHW PRODUCTION



NEW

## PUFFERMAS® 2 DOMUS



The forced circulation system **PUFFERMAS 2 DOMUS CVT**, for DHW production, is composed of the combined buffer tank PUFFERMAS 2 DOMUS combined with vacuum solar collectors

### SOLAR COLLECTOR

- Insulation in mineral wool
- Anodized aluminum structure

- Highly selective absorber
- Impact test according to EN 12975 and EN 9806

### CHARACTERISTICS OF THE BUFFER TANK

- **PUFFERMAS® 2 DOMUS** with fixed solar heat exchanger and instantaneous DHW production module with stainless steel AISI 316L plates
- Tank in carbon steel

- Insulation of rigid polyurethane foam with high thermal insulation. External PVC cover
- Electronic control unit

### WARRANTY

5 years - See general sales and warranty conditions

### ACCESSORIES ON REQUEST



Electrical heater

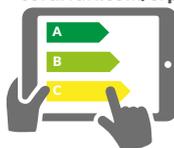


Pre-insulated pipe



Balancing valve

[cordivari.com/erp](http://cordivari.com/erp)



ON LINE Erp LABEL TOOL

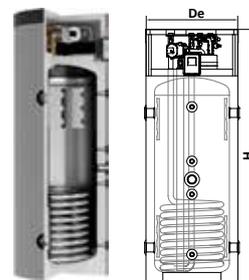
For more information see accessories section.

### SYSTEM COMPONENTS

### INCLUDED

High selective solar vacuum tube collector PVD, of the type Sydney with heat pipe technology	✓
Buffer tank PUFFERMAS® 2 DOMUS	✓
Circulation unit PROFESSIONAL ONE: complete of circulator, electric control unit basic, flow regulator, safety valve, thermometers, temperature probes	✓
Expansion vessel It 24	✓
Non-toxic heat transfer fluid	✓
Fixing kit and fittings	✓

ALWAYS ASK FOR CERTIFIED LABORATORIES DATA RESULTS  
**CORDIVARI Lab**  
 TÜV Rheinland Energie und Umwelt GmbH states that test procedures and Cordivari LAB are certified conforming to European standard EN 15332, as indicated by EArt. Nr.sign ErP Directive.



### PUFFERMAS® 2 DOMUS

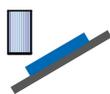
ENERGY EFFICIENCY CLASS

MODEL	[mm]		TESTED ErP
	De	H	
<b>200</b>	550	1539	<b>B</b>
<b>300</b>	650	1580	<b>B</b>

For more information and technical data of the calorifiers and buffer tanks please refer to the Cordivari Calorifiers and buffer tanks catalogue.

# SOLAR THERMAL SYSTEM PUFFERMAS® 2 DOMUS CVT

FORCED CIRCULATION SYSTEM WITH STORAGE TANK FOR INSTANTANEOUS DHW PRODUCTION



VT COLLECTORS - PITCHED ROOF



VT COLLECTORS - FLAT ROOF

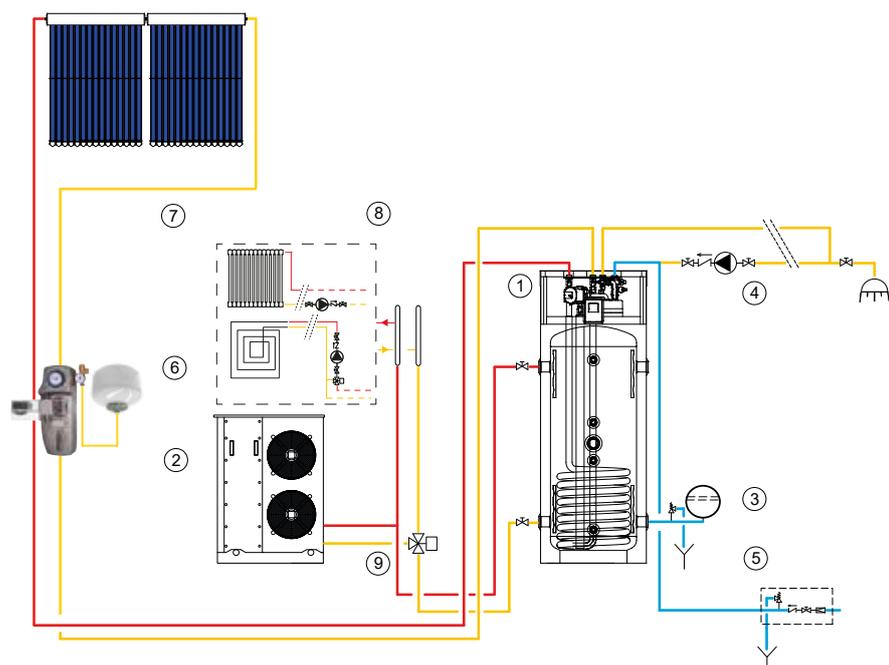
Buffer tanks type:

## PUFFERMAS® 2 DOMUS

Calorifier model	Nr. of collectors (*)	Total surface area m <sup>2</sup>	Nr. Recommended users	Description/ Art. Nr.	
				VT COLLECTORS - PITCHED ROOF	VT COLLECTORS - FLAT ROOF
<b>200</b>	1x15	3,22	5-6	200PM2D CVT15 TF	200PM2D CVT15 TP
				3410316618990	3410316618991
<b>300</b>	2x15	6,44	6-7	300PM2D 2CVT15 TF	300PM2D 2CVT15 TP
				3410316618992	3410316618993

(\*) Cordivari vacuum tubes collector – (Vacuum tube with heat pipe technology).

For fixing kit and other components see accessories section.



### LEGEND

- 1 PUFFERMAS® 2 DOMUS buffer tank
- 2 Heat source (heat pump)
- 3 Expansion vessel
- 4 DHW circulation group pump
- 5 Hydraulic safety group
- 6 Complete solar circulation group
- 7 Solar collector/s
- 8 Heating system
- 9 Diverting valve

**NOTE:** The shown installation examples are for illustrative purposes only. For the correct configuration always refer to a qualified installer.



# COLLECTORS AND ACCESSORIES



STRATOS®

STRATOS® SYSTEMS

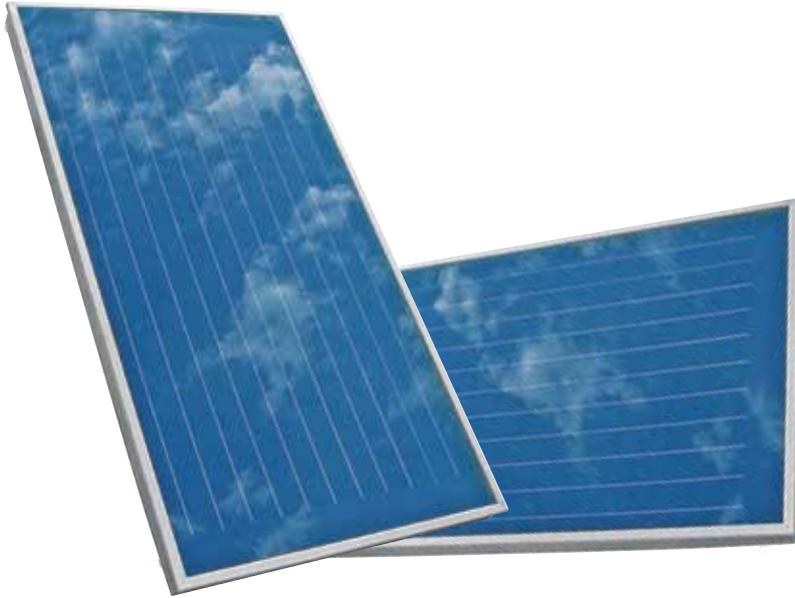
THERMOSIPHON  
SYSTEMS

FORCED CIRCULATION  
SYSTEMS

COLLECTORS AND  
ACCESSORIES

TECHNICAL  
SUPPORT

# FLAT PLATE SOLAR COLLECTORS



## Applications:

Forced circulation thermal systems.

## Characteristics:

Lateral connections, universal collector for forced circulation systems.

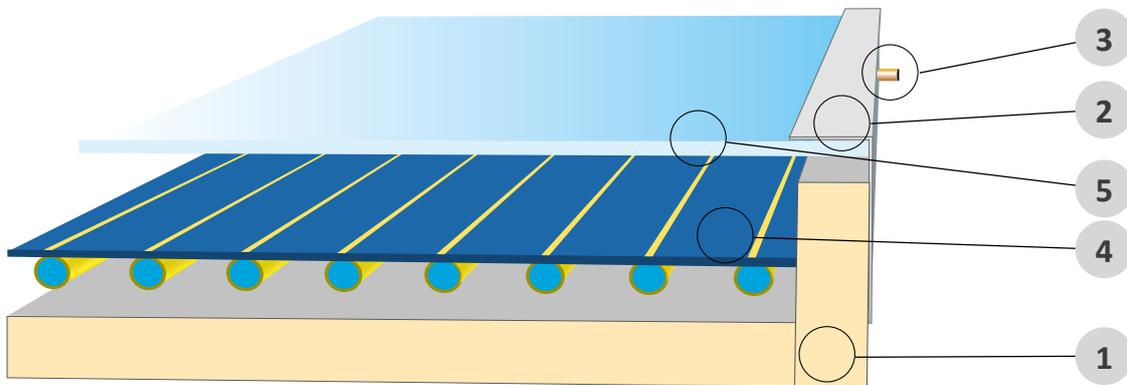
## Solar Keymark

### Technical data

Max P.	10 bar
Max T.	199° C
Gaskets	EPDM - Silicone

Cordivari flat plate solar collectors are manufactured with aluminum frame, insulation of mineral wool, highly selective absorber covered in titanium oxides and tempered glass according to EN 12150, tested against impact according to EN 12975 and EN 9806.

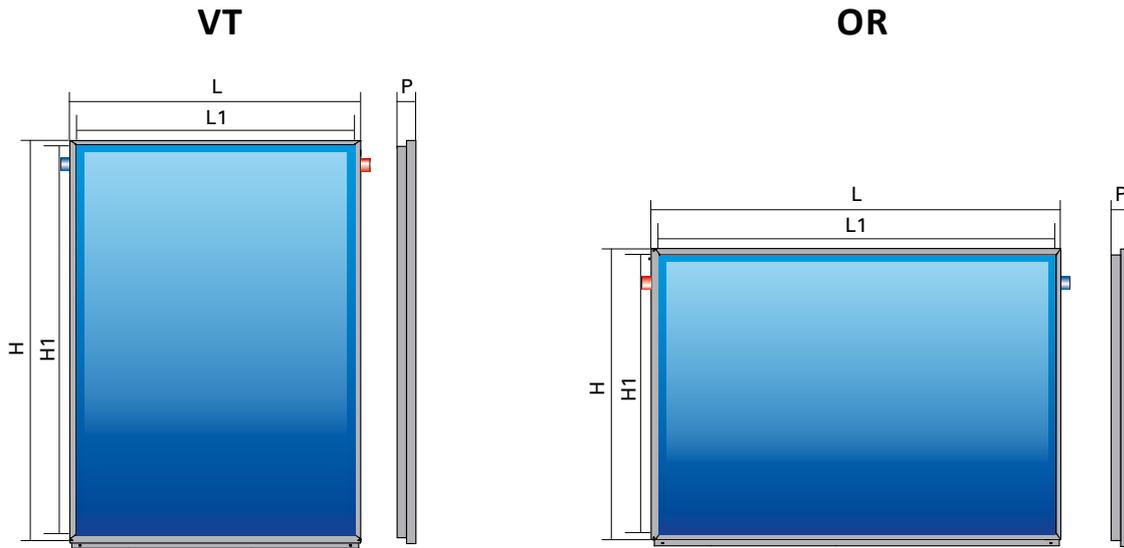
Cordivari flat plate solar collectors are the best solution for efficient and high-performing solar thermal systems thanks to the quality of the materials, the reliability of the functioning and to the multiple opportunities of integration.



### DESCRIPTION

1	Insulation in mineral wool
2	Aluminium frame
3	Connections $\varnothing$ 22 mm
4	Full plate absorber with high selective coating
5	Impact test according to EN 12975 and EN 9806 Tempered according to EN 12150

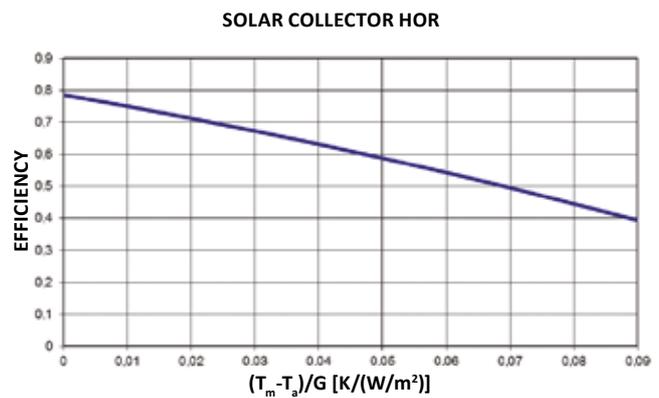
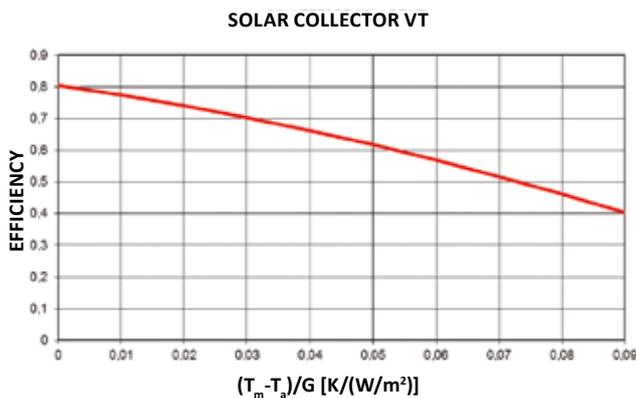
# FLAT PLATE SOLAR COLLECTORS



ART. NR.	VERSION	GROSS DIMENSIONS				OPENING SURFACE	WEIGHT	CAP.	CONNECTIONS	
		L	H	P	SURFACE				N°	[mm]
		[mm]							[m²]	[kg]
3400306501310	VT	1250	2000	85	2,5*	2,32	34	1,9	2	∅ 22
3400306501311	OR	2000	1250	85	2,5*	2,32	34	1,9	2	∅ 22

\* For the detailed calculation please always refer to the product certification and to test reports.

## EFFICIENCY CURVES (Solar radiation values $G_{dir} = 850 \text{ W/m}^2$ $G_{dif} = 150 \text{ W/m}^2$ )



## FLAT PLATE COLLECTORS EFFICIENCY CURVES

The immediate efficiency curve of a solar collector represents its performances "ID", that allows to quantify the collector capacity to turn solar energy into thermal energy.

Efficiency is defined as the relationship between the thermal power captured by the heat transfer fluid and the solar radiation that affects the collector. For the sake of convenience, the ratio is always applied to a square meter (1 m<sup>2</sup>) of surface.

So on the vertical axis, the efficiency  $\eta$  (eta) is the relationship between the

power absorbed by the heat transfer fluid circulating in one square meter of the solar collector (W/m<sup>2</sup>) and the solar radiation on the collector surface. It is clear that the efficiency so defined is an instantaneous value depending on test conditions as well as on the collector type.

On the horizontal axis we find the relationship between the difference in temperature  $\Delta t$  and the power of the solar radiation affecting the collector.  $\Delta t$  is the difference between the average temperature of the heat transfer fluid inside the solar collector and the environment temperature.

# VACUUM TUBE COLLECTORS CVT



## Technical data

Max P.	10 bar
Max T.	280° C
Gaskets	EPDM - Silicone

### Applications:

Forced circulation thermal systems.

### Characteristics:

Lateral connections, universal collector for forced circulation systems.

### Solar Keymark

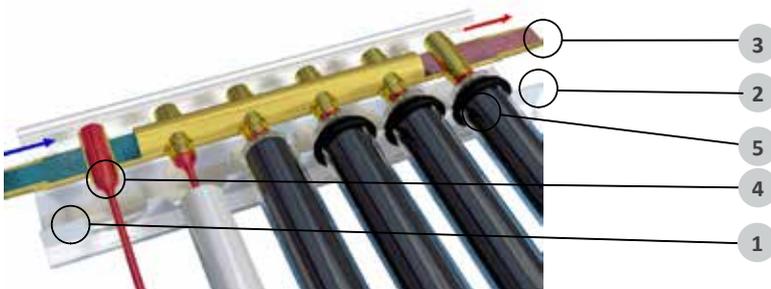
Cordivari CVT solar collectors are composed of a series of vacuum tubes Sydney type, that captures the incidence of solar energy. Thanks to the vacuum technology, this kind of collector can reach high performances even in colder seasons.

The collectors CVT are designed with heat pipe technology that allows a better maintenance and protection against stagnation.

## HEAT PIPE TECHNOLOGY

The pipe heats up with the heat coming from the absorber and vaporizes the small quantity of fluid that naturally raises to the top, then it condenses and transfers heat to the heat-transfer fluid of the primary circuit and comes back to liquid state.

Heat pipes are placed inside the double concentric tubes made in borosilicate glass (Sydney type). Thanks to its insulating properties (thermos effect), the vacuum between the glass pipes drastically reduces the heat loss, increasing the available energy captured from the sun.

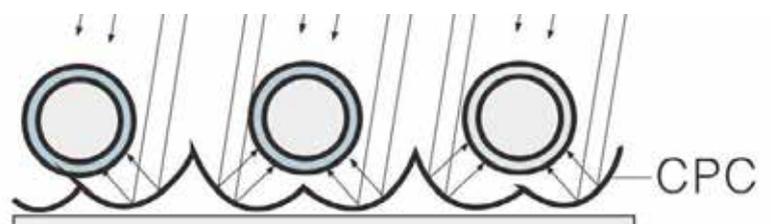
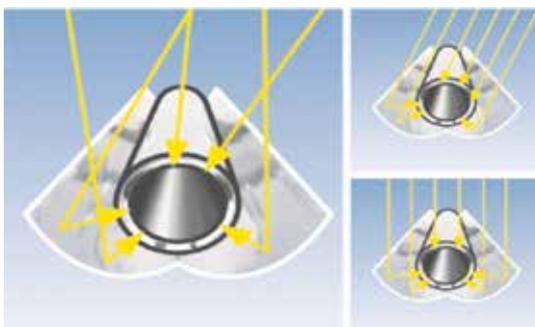


## DESCRIPTION

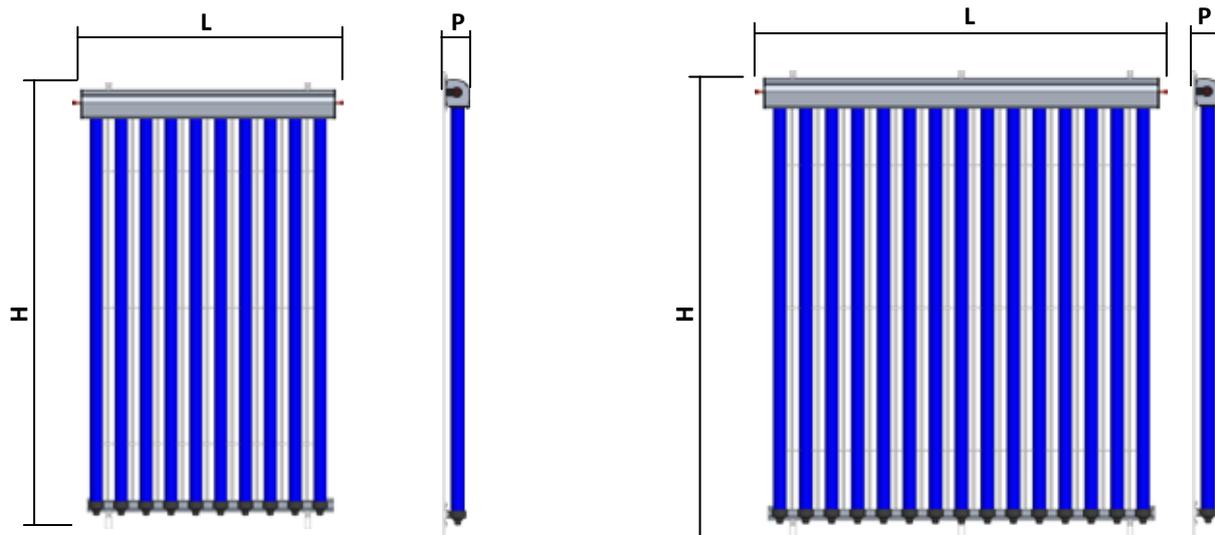
1	Insulation in mineral wool
2	Anodized aluminum structure
3	Connection Ø 22 mm
4	Heat pipe
5	Vacuum glass tube Sydney type Ø 58 mm

## COMPOUND PARABOLIC CONCENTRATOR (CPC)

A special CPC behind the tubes leads the sunlight, even from different angles, exactly to the absorber. This system allows Cordivari vacuum tube collectors CVT to reach high performances with small dimensions and maximum energy absorption, direct or indirect.



# VACUUM TUBE COLLECTORS CVT

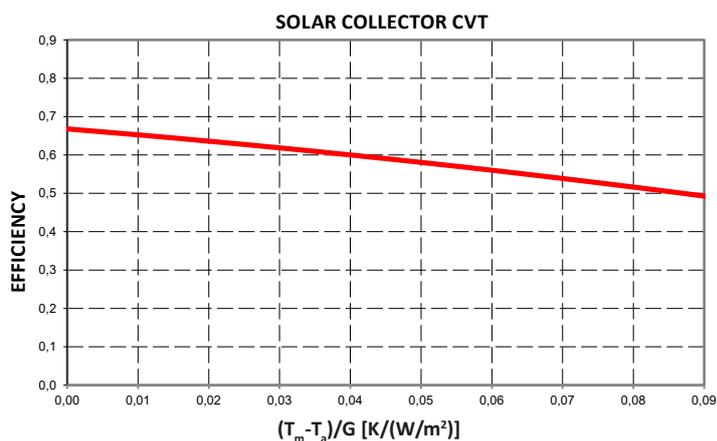


ART. NR.	VERSION	GROSS DIMENSIONS				OPENING SURFACE [m <sup>2</sup> ]	WEIGHT [kg]	CAPACITY [lt]	CONNECTIONS	
		L	H	P	SURFACE [m <sup>2</sup> ]				N°	[mm]
3400306500201	10 TUBES	1130	1917	133	2,17*	1,78	28,5	0,94	2	ø 22
3400306500202	15 TUBES	1680	1917	133	3,22*	2,72	39	1,41	2	ø 22

\* For the detailed calculation please always refer to the product certification and to test reports.

Fixing kit for pitched roofs is included with vacuum tube collectors CVT.

## EFFICIENCY CURVES (Solar radiation values $G_{dir} = 850 \text{ W/m}^2$ $G_{dif} = 150 \text{ W/m}^2$ )



## VACUUM TUBE COLLECTORS EFFICIENCY CURVES

The immediate efficiency curve of a solar collector represents its performances "ID", that allows to quantify the collector capacity to turn solar energy into thermal energy.

Efficiency is defined as the relationship between the thermal power captured by the heat transfer fluid and the solar radiation that affects the collector. For the sake of convenience, the ratio is always applied to a square meter (1 m<sup>2</sup>) of surface.

So on the vertical axis, the efficiency  $\eta$  (eta) is the relationship between the

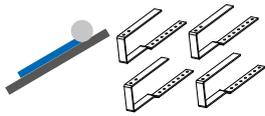
power absorbed by the heat transfer fluid circulating in one square meter of the solar collector (W/m<sup>2</sup>) and the solar radiation on the collector surface. It is clear that the efficiency so defined is an instantaneous value depending on test conditions as well as on the collector type.

On the horizontal axis we find the relationship between the difference in temperature  $\Delta t$  and the power of the solar radiation affecting the collector.  $\Delta t$  is the difference between the average temperature of the heat transfer fluid inside the solar collector and the environment temperature.

# FIXING KIT FOR THERMOSIPHON SYSTEMS



## PITCHED ROOFS



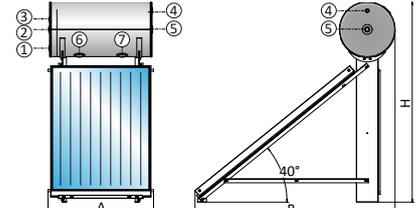
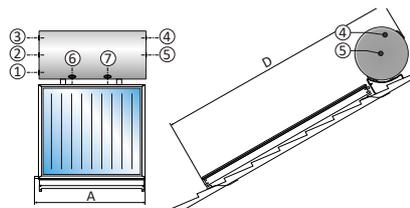
Art. Nr.	5770001100895		5770001100896		5770001100897
Description	Kit for 1 collector of 2,0 or 2,5 m <sup>2</sup>		Kit for 2 collectors of 2,0 m <sup>2</sup>		Kit for 2 collectors of 2,0 or 2,5 m <sup>2</sup>
	With support saddles for solar INTERKA calorifier				
	from 150 or 200 lt		from 200 lt		from 300 lt
MATERIAL	Galvanized carbon steel				

## DIMENSIONS OF COLLECTORS' STRINGS

### PANAREA

#### PITCHED ROOF

#### FLAT ROOF



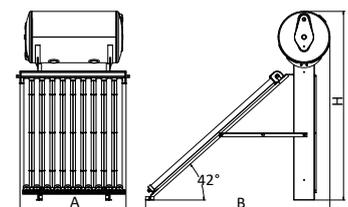
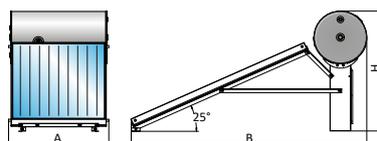
Solar collectors surface [sqm]	<b>2</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>6</b>
Solar tank capacity [lt]	150	200	200	300	300	300
Inclination $\alpha$	fixed at 40°C					
Width A [mt]	1,1	1,1	2,2	2,2	2,6	3,2
Length B [mt]	2,01	2,01	2,01	2,01	2,01	2,01
Height H [mt]	2,03	2,03	2,03	2,03	2,03	2,03
Dimensions on the roof D [mt]	2,75	2,75	2,75	2,75	2,75	2,75

### PANAREA LOW

### NATURAL EVO CVT

#### FLAT ROOF

#### FLAT ROOF



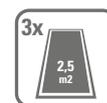
Solar collectors surface [sqm]	<b>2</b>	<b>2,5</b>	<b>4</b>	<b>4</b>	<b>5</b>
Solar tank capacity [lt]	150	200	200	300	300
Inclination $\alpha$	fixed at 25°C				
Width A [mt]	1,1	1,3	2,2	2,2	2,6
Length B [mt]	2,49	2,49	2,49	2,49	2,49
Height H [mt]	1,27	1,27	1,27	1,27	1,27

N° of collectors	<b>1 x CVT10</b>	<b>1 x CVT15</b>	<b>2 x CVT10</b>
Width A [mm]	1130	1680	2330
Height H [mm]	1980	1980	1980
Length B [mm]	2025	2025	2025

# FIXING KIT FOR FORCED CIRCULATION SYSTEMS

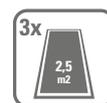
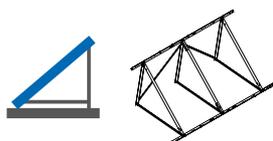


## PITCHED ROOFS



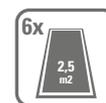
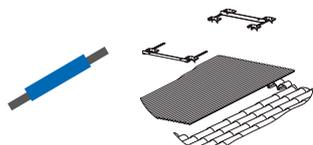
Art. Nr.	5770001100231	5770001100232	5770001100234
Description	Kit for 2,5 m <sup>2</sup> collector	Kit for 2 x 2,5 m <sup>2</sup> collectors	Kit for 3 x 2,5 m <sup>2</sup> collectors
MATERIAL	Galvanized carbon steel		

## FLAT ROOFS



Art. Nr.	5770001100322	5770001100324	5770001100326
Description	Kit for 2,5 m <sup>2</sup> collector	Kit for 2 x 2,5 m <sup>2</sup> collectors	Kit for 3 x 2,5 m <sup>2</sup> collectors
MATERIAL	Galvanized carbon steel		

## BUILT-IN SYSTEMS



Art. Nr.	5770001100723	5770001100722	5770001100726	5770001100724	5770001100725
Description	Kit for 2,5 m <sup>2</sup> collector	Kit for 2 x 2,5 m <sup>2</sup> collectors	Kit for 3 x 2,5 m <sup>2</sup> collectors	Kit for 4 x 2,5 m <sup>2</sup> collectors	Kit for 6 x 2,5 m <sup>2</sup> collectors
MATERIAL	Galvanized carbon steel and bituminous wavy panels				

STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT



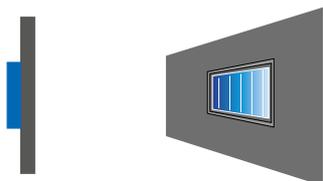
## DIMENSIONS OF COLLECTORS' STRINGS

### FORCED CIRCULATION

	PITCHED ROOF SYSTEMS			SUSPENDED PITCHED ROOF SYSTEMS			FLAT ROOF SYSTEMS		
	1	2	3	1	2	3	1	2	3
N° of collector per row	1	2	3	1	2	3	1	2	3
Width L [m]	1,26	2,62	3,98	1,9	3	4,4	1,26	2,62	3,98
Height H [m]	-	-	-	-	-	-	1,42	1,42	1,42
Dimension on the roof D [m]	2,06	2,06	2,06	2,7	2,7	2,7	1,8	1,8	1,8

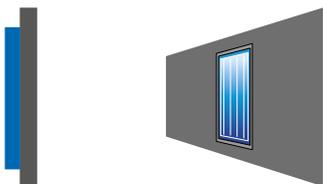
## FIXING KIT ON VERTICAL WALLS

### HORIZONTAL INSTALLATION



Art. Nr.	5770001100406
DESCRIPTION	1 x 2,5 m <sup>2</sup> horizontal collector
MATERIAL	Galvanized steel

### VERTICAL INSTALLATION



Art. Nr.	5770001100407
DESCRIPTION	1 x 2,5 m <sup>2</sup> vertical collector
MATERIAL	Galvanized steel



## BUILT-IN PROCEDURE

### CORDIVARI PATENTED

- RELIABLE AND SAFE
- QUICK TO INSTALL
- IT CAN BE USED WITH STANDARD COLLECTORS

Cordivari patented built-in solar panels represents the best solution for built-in installations of flat plate solar collectors. It guarantees the maximum safety sealing against water infiltrations under the cover, it allows a quick and easy installation without specialized metal process interventions. It ensures maximum flexibility and represents a quick solution according to the installation type. In fact, this built-in system adapt to standard Cordivari collectors, does not need a special or customized collector. The aesthetic result is great and it fits with all the most common roof types.



1) Carpentry removal and placement of the holders.



2) Installation of the fixing kit.



3) Collectors placing and fixing on the framework and fittings installation.



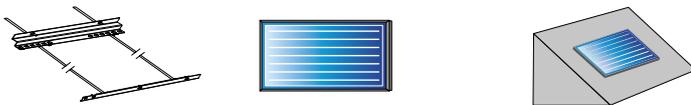
4) Final finishing and repositioning of the roof cover.

## HORIZONTAL SYSTEMS FOR FLAT ROOFS



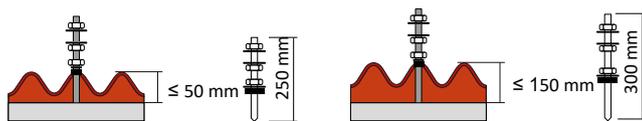
Art. Nr.	5770001100327
DESCRIPTION	1 x 2,5 m <sup>2</sup> horizontal collector
MATERIAL	Galvanized steel

## HORIZONTAL SYSTEMS FOR PITCHED ROOFS



Art. Nr.	5770001100235
DESCRIPTION	1 x 2,5 m <sup>2</sup> horizontal collector
MATERIAL	Galvanized steel

## FIXING KITS FOR INSULATED PITCHED ROOFS



Carpentry to be used in addition to standard fixing kit in case of pitched roofs with insulation between the slab and roofing tiles. The kit includes:

- 2 Galvanized steel brackets
- 2 steel screws, 250-300 mm length
- 2 rubber dowels
- Fittings

	With 250 mm screws	With 300 mm screws
ART. NR.	5770001100602	5770001100604

Insulated roof fixing kits quantity to order = n° of panels + 1



= 2 INSULATED PITCHED ROOF FIXING KITS

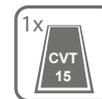
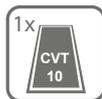


= 3 INSULATED PITCHED ROOF FIXING KITS

# FIXING KIT FOR VACUUM TUBE COLLECTORS CVT



## FLAT ROOFS

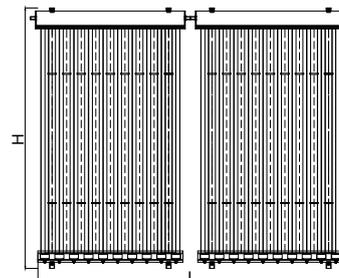
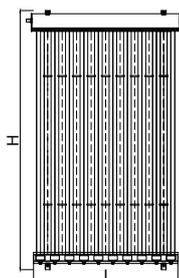
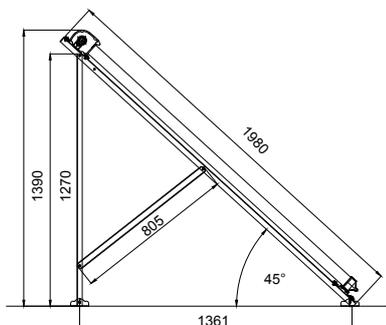


Art. Nr.	5770001100878	5770001100879
Description	FIXING KIT FOR CVT 10	FIXING KIT FOR CVT 15
MATERIAL	ANODIZED ALUMINIUM	

## SIZE OF THE COLLECTORS' STRINGS CVT

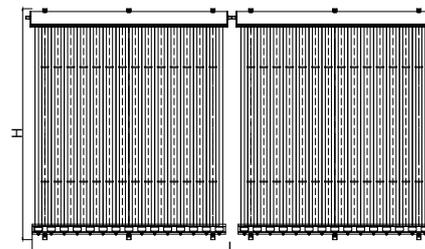
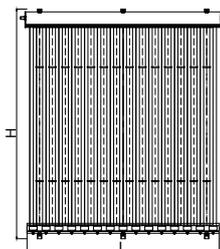
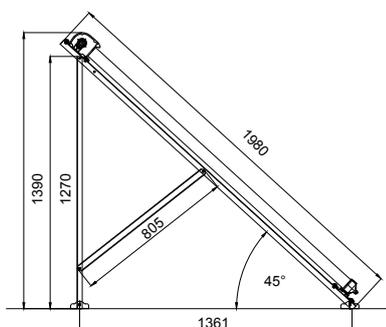
### FLAT ROOFS

#### CVT10 MODEL



N° of collectors per row	1	2
Width L [m]	1,13	2,3
Height H [m]	1,98	1,98

#### CVT15 MODEL



N° of collectors per row	1	2
Width L [m]	1,68	3,4
Height H [m]	1,98	1,98



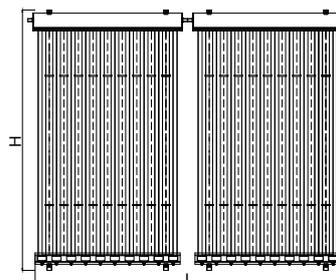
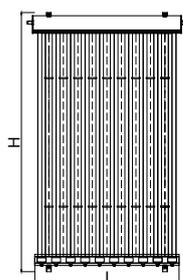
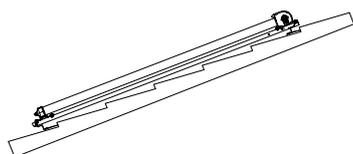
## PITCHED ROOFS

Cordivari vacuum tubes collectors CVT fixing kits for pitched roofs are included with solar panel.

## SIZE OF THE COLLECTORS' STRINGS CVT

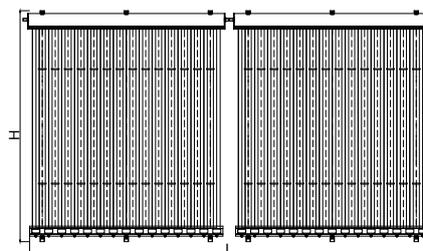
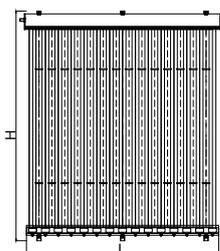
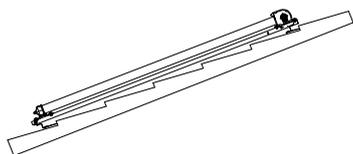
### PITCHED ROOFS

#### CVT10 MODEL



N° of collectors per row	1	2
Width L [m]	1,13	2,3
Height H [m]	1,98	1,98

#### CVT15 MODEL



N° of collectors per row	1	2
Width L [m]	1,68	3,4
Height H [m]	1,98	1,98

# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

ACCORDING TO EN 2009/125 CE DIRECTIVE **ErP** READY APPLIES TO EUROPEAN DIRECTIVE FOR ENERGY RELATED PRODUCTS

## CIRCULATION GROUP WITH **BASIC** CONTROL UNIT

### COMPONENTS:

- Circulator
- **BASIC (\*)** control unit
- Flow regulator
- Safety valve
- Thermometers
- Temperature probes

	ART. NR.	DESCRIPTION	CONNECTIONS
	5760000000018	CIRCULATION GROUP WITH <b>BASIC</b> CONTROL UNIT FLOW RATE: 2-12 LT/MIN	3/4" GAS M
	5760000000020	CIRCULATION GROUP WITH <b>BASIC</b> CONTROL UNIT FLOW RATE: 8-28 LT/MIN	1" GAS M
	5760000000022	CIRCULATION GROUP WITH <b>BASIC</b> CONTROL UNIT FLOW RATE: 8-38 LT/MIN	1" GAS M
	5760000000024	CIRCULATION GROUP WITH <b>BASIC</b> CONTROL UNIT FLOW RATE: 20-70 LT/MIN	1" 1/2 GAS M

## CIRCULATION GROUP WITH **PROFESSIONAL** CONTROL UNIT

### COMPONENTS:

- Circulator
- **PROFESSIONAL (\*)** control unit
- Flow regulator
- Safety valve
- Thermometers
- Temperature probes

	ART. NR.	DESCRIPTION	CONNECTIONS
	5760000000019	CIRCULATION GROUP WITH <b>PROFESSIONAL</b> CONTROL UNIT FLOW RATE: 2-12 lt/min	1" GAS M
	5760000000021	CIRCULATION GROUP WITH <b>PROFESSIONAL</b> CONTROL UNIT FLOW RATE: 8-28 lt/min	1" GAS M
	5760000000023	CIRCULATION GROUP WITH <b>PROFESSIONAL</b> CONTROL UNIT FLOW RATE: 8-38 lt/min	1" GAS M
	5760000000025	CIRCULATION GROUP WITH <b>PROFESSIONAL</b> CONTROL UNIT FLOW RATE: 20-70 lt/min	1 1/2" GAS M

(\*) For control unit features, see pages 116-117.

# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## PRIMARY SOLAR EXCHANGE STATION WITH STRATIFICATION MODULE FOR BUFFER TANK



### STRATIFICATION SOLAR MODULE FOR EXTERNAL EXCHANGE

ART. NR.

5760000000026

#### TECHNICAL DESCRIPTION:

##### SOLAR PRIMARY CIRCUIT:

- High efficiency solar circulator.
- 3-way return ball valve with non-return valve.
- 6 bar safety group.
- Inlet ball valve with non-return valve 10 mbar equipped with thermometer holder clip.
- Brass deaerator with automatic release valve and interception faucet.
- AISI 316 stainless steel brazed plate exchanger.

##### SECONDARY CIRCUIT:

- Switch valve.
- Safety valve.
- High efficiency circulator.

FULL PACKAGE SOLAR STATION, INCLUDING PRIMARY SOLAR EXCHANGE MODULE TO BE CONNECTED TO PUFFER TANK AND STRATIFICATION SYSTEM SO TO ALLOW THE THERMAL STRATIFICATION OF THE TANK FROM THE TOP TO THE BOTTOM.

LOW-FLOW TILL 70 M<sup>2</sup> COLLECTOR LIGHT RECEIVING SURFACE.

## PRIMARY SOLAR EXCHANGE STATION FOR BUFFER TANK



### SOLAR MODULE FOR EXTERNAL EXCHANGE

ART. NR.

5760000000027

#### TECHNICAL DESCRIPTION:

##### SOLAR PRIMARY CIRCUIT:

- Solar circulator.
- Flow rate regulator with system loading and drain valve.
- 3-way return ball valve with non-return valve.
- 6 bar safety group with pressure gauge.
- Inlet ball valve with non-return valve 10 mbar equipped with thermometer holder clip.
- Brass deaerator with automatic release valve and interception faucet.
- AISI 316 stainless steel brazed plate exchanger.

##### SECONDARY CIRCUIT:

- Safety valve.
- High efficiency circulator.

FULL PACKAGE SOLAR STATION, INCLUDING PRIMARY SOLAR EXCHANGE MODULE TO BE CONNECTED TO PUFFER TANK.

THE MODULE DRAWS THE HEAT THROUGH THE PRIMARY CIRCUIT CONVEYING IT INTO THE EXCHANGER. THE THERMAL ENERGY IS TRANSFERRED TO THE SECONDARY CIRCUIT.

LOW-FLOW TILL 70 M<sup>2</sup> COLLECTOR LIGHT RECEIVING SURFACE.

## SOLAR EXCHANGE STATION FOR DHW PRODUCTION



### SOLAR MODULE FOR EXTERNAL EXCHANGE DHW

ART. NR.

5760000000028

#### TECHNICAL DESCRIPTION:

##### SOLAR PRIMARY CIRCUIT:

- High efficiency solar circulator.
- Flow rate regulator with system loading and drain valve.
- 3-way return ball valve with non-return valve.
- 6 bar safety group with pressure gauge.
- Inlet ball valve with non-return valve 10 mbar equipped with thermometer holder clip.
- Brass deaerator with automatic release valve and interception faucet.
- AISI 316 stainless steel brazed plate exchanger.

##### DHW CIRCUIT WITH AISI 316 STAINLESS STEEL PIPES:

- 6 bar safety valve.
- DHW circulator.
- DHW flow rate till 37 L/min

FULL PACKAGE SOLAR STATION, INCLUDING PRIMARY SOLAR EXCHANGE MODULE TO BE CONNECTED TO DHW ACCUMULATION TANK.

THE MODULE DRAWS THE HEAT THROUGH THE PRIMARY CIRCUIT CONVEYING IT INTO THE EXCHANGER. THE THERMAL ENERGY IS TRANSFERRED TO THE SECONDARY CIRCUIT.

DHW LOW-FLOW TILL 70 M<sup>2</sup> COLLECTOR LIGHT RECEIVING SURFACE.

STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT

# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## BASIC CONTROL UNIT

New **BASIC** control unit for solar thermal installations is equipped with 2 Outlets and 3 Inlets (probes). It can set and manage till 6 different solar installations. Selecting one of the 6 installation diagram, the control unit will automatically deal with outlets and inlets for the selected system. On the backlit LCD screen you can see the configuration of the hydraulic installation diagram, outlets status, probes status and many other useful data and information.

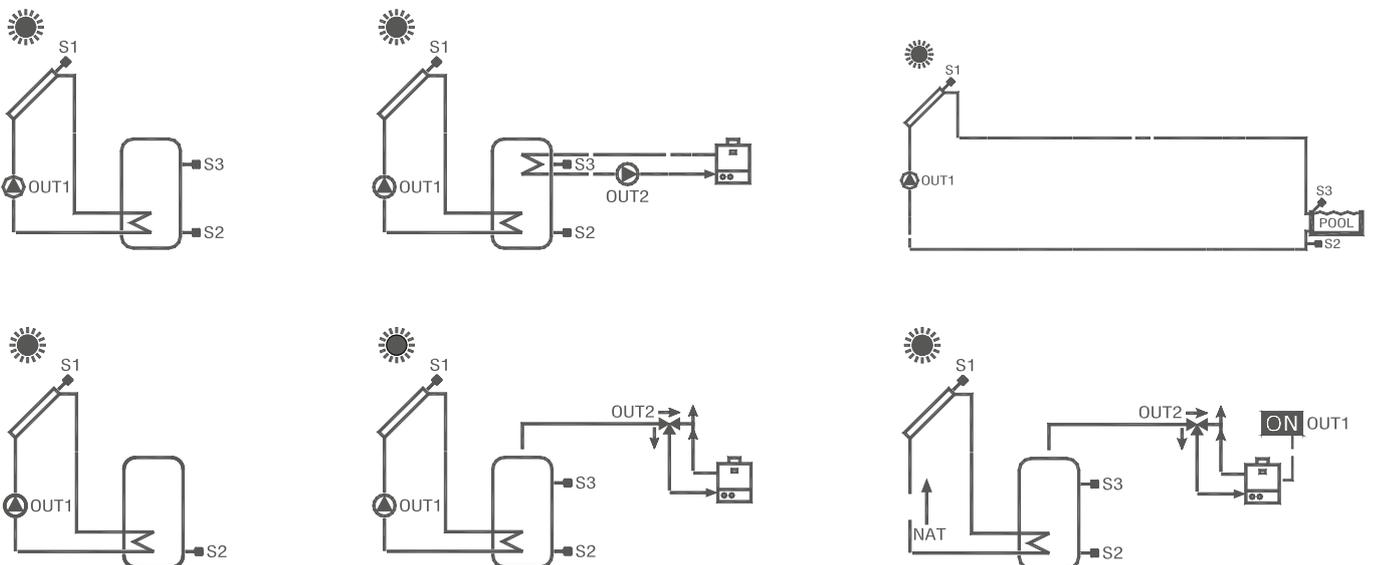


**BASIC CONTROL UNIT WITH  
TEMPERATURE PROBES  
INCLUDED**

ART. NR.

575528000020

## MAIN EXEMPLE OF SETTINGS MANAGED BY BASIC CONTROL UNIT



# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## PROFESSIONAL CONTROL UNIT

New **PROFESSIONAL** solar control unit combines a practical design and a clear graphical user interface. This control unit is particularly easy to use also thanks to its feature to assist the user step by step during the settings to easily and quickly start the unit. PROFESSIONAL V15 control unit can be used to run different complex installations till 42 system types. It is equipped with a backlit LCD display which easily allows to set all the functions, such as to see current values, system analysis and monitoring using statistics, customized settings for special features, extensible menus including instructions, safety lock.

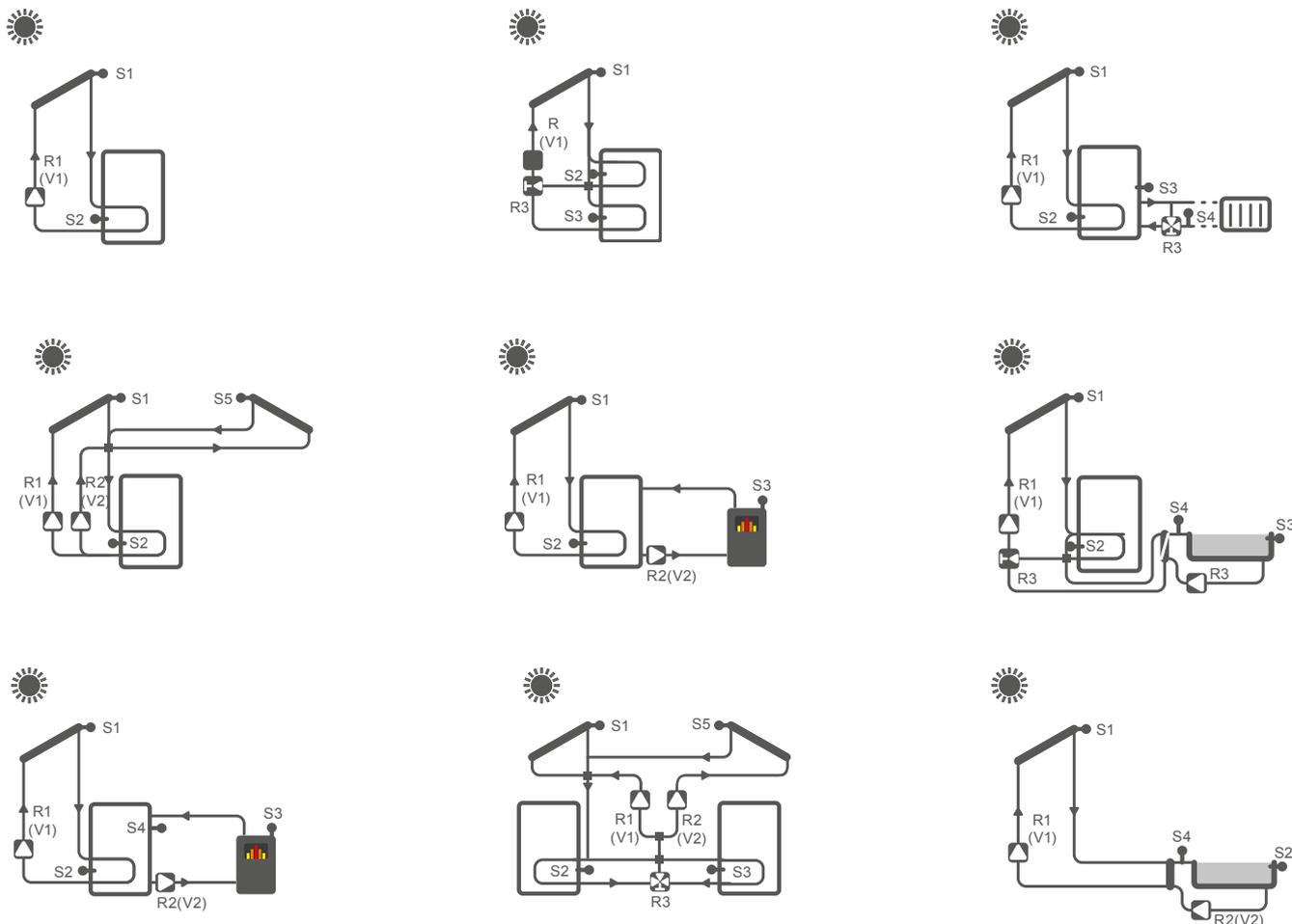


**PROFESSIONAL CONTROL UNIT  
WITH TEMPERATURE PROBES  
INCLUDED**

ART. NR.

5755280000021

## MAIN EXEMPLE OF SETTINGS MANAGED BY PROFESSIONAL CONTROL UNIT



# CASCADE MACS® SYSTEM

CASCADE MACS® SYSTEM WITH ELECTRONIC CONTROL UNIT FOR INSTANTANEOUS DHW PRODUCTION ON BIG INSTALLATION



### APPLICATION

MACS® module produces instantly D.H.W. with high flow rate even if there is installed a small power thermal generator.

### HEAT EXCHANGERS, MATERIAL

Copper circuitry, fittings and valves in brass .  
316L stainless steel brazed plate heat exchanger with variable flow rate control on the primary side, in order to avoid overheating in the plate exchanger, thus reducing risk of formation of limestone deposit. Module's frame in PPE that protects and makes insulated the heat exchanger and the circuit.

### TECHNICAL DESCRIPTION

The management of additional MACS module in cascade

allows meeting high requirements of DHW.

The complete system manage trough the electronic control unit the working of each module following the request of DHW from the users.

The cascade configuration can eventually also manage the link of the DHW recycling. The use of the MACS module in cascade takes all the benefits from the MACS module also in big installation where big DHW flows are needed to produce instantaneous DHW without the necessity to accumulate it.

### WARRANTY

2 years  
1 year electronical parts  
See general sales conditions and warranty



## CASCADE MACS® SYSTEM

Art. Nr.	N° of MACS® module 120 kW	Total input	DHW flow rate
		[kW]	[lt/min]
3316006700015	x 2	240	100
3316006700016	x 3	360	150



For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.

## — Accessories on request —

### D.H.W. recirculation kit

Art. Nr.
5221000000073



The recirculation kit for Electronic MACS® module allows the implementation of a sanitary recirculation ring on the system where modules are installed. The main advantage of such sanitary recirculation ring is to improve comfort and speed in achieving and enjoying the desired DHW temperature, reducing energy waste.

The control unit included as standard with electronic MACS® modules allow the complete management of all settings of the recirculation ring, such as temperature, setting etc...

# PRS MODULE

MODULE FOR IMMEDIATE DHW PREPARATION



## DESCRIPTION

The new PRS modules are designed to rapidly prepare Domestic Hot Water for medium and large-scale facilities; they can work both with accumulation (semi-immediate mode) or without (immediate mode).

## COMPONENTS

- Inspectable plate heat exchanger with steel structure and exchanger plates made in stainless steel AISI 316L with EPDM gaskets
- Single or double pump for primary circuit
- Motorized 3-way mixing valve
- Electrical control panel with control unit for programming
- Temperature probes
- Galvanized steel frame
- 230V AC single phase supply.

## OPTIONAL

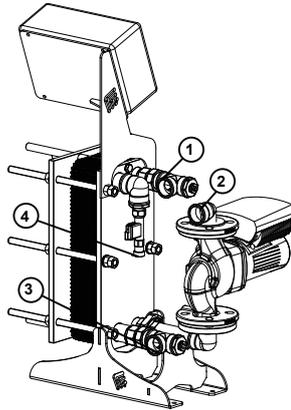
- Insulation for the heat exchanger in aluminum and mineral wool (M0-A1 reaction to fire class)
- Data Logger

## EXTREME OPERATING CONDITIONS

Maximum Working pressure = 10 bar  
Maximum temperature of the gaskets = 140 °C

## WARRANTY

2 years – See general sales conditions and warranty on the Calorifiers catalogue in force.



- 1 Primary Inlet
- 2 Primary Outlet
- 3 Domestic water inlet
- 4 Domestic hot water circuit outlet



For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.

Mod.	N° of Plates	P	H	L mod.	L mod.
				HIGH temp.	LOW temp.
[mm]					
4620 SINGLE PUMP	9	400	906	760	596
	13				
	17				
	21				
	25				
	29				
	33				
4620 DOUBLE PUMP	9	403	906	868	703
	13				
	17				
	21				
	25				
	29				
	33				
4620 DOUBLE PUMP	37	403	906	888	724
	41				
	45				

Mod.	N° of Plates	P	H	L mod.	L mod.					
				HIGH temp.	LOW temp.					
[mm]										
7420 SINGLE PUMP	9	400	1192	760	596					
	13									
	17									
	21									
	25									
	29									
	33									
7420 DOUBLE PUMP	37	403	1192	868	703					
	41									
	45									
	7420 DOUBLE PUMP					9	403	1192	888	724
						13				
						17				
						21				
25										
29										
33										
7420 DOUBLE PUMP	37	403	1192	888	724					
	41									
	45									

## FEATURES AND FUNCTIONS OF THE PRS CONTROL UNIT



- Back-lighted display with representation of graphs and texts
- Self-explanatory menu with captions
- Simple visualization of the measured values
- Temperature maintenance of the DHW inlet and of the DHW accumulation, set from the controller
- High operational efficiency thanks to the proportional control of primary pumps speed
- Performance of a series of disinfection cycles anti-legionella, schedulable at preferred time and day of the week, final result showed on the display
- DHW circulation group function control
- Analysis and monitoring of the system through statistics
- Computation of the exchanged heat, on a daily and weekly basis
- Diagnostic unit function for temperature and flow probes

# SPARE PARTS AND ACCESSORIES FOR COMPACT SOLAR THERMAL

## ACCESSORIES FOR STRATOS® 4S

### STRATOS® 4S HEAT CONTROL / ROTOSHIELD® COVERING



Cover for Stratos® 4S protection. Essential to protect the system in case it would be drained, during periods it is not working or after the installation before starting to work.

MODEL	ART. NR.
120	5775000000017
180	5775000000018

### HEATING CABLE



The heating cable guarantees a great protection against freezing and avoids possible damages at the pipes or fittings caused by low temperatures in installations in those environments subject to risks of ice. This accessory is made of a heating cable with constant power of 10W/m (220 V), including the thermostat and cable with Schuko plug.

LENGTH	WATT	ART. NR.
3	30	5240000005003
6	60	5240000005004

### 3/4" PRESSURE ADAPTOR



The pressure reduction is an essential device to reduce and stabilise the incoming pressure from the water supply network for a correct use of the domestic installation as well as of the related devices.

ART. NR.
5046000000042

### 3/4" SAFETY GROUP



The safety group has to be used for DHW storage protection. The product is made of several components which have the following functions:

- safety against overpressure
- anti-pollution, so to avoid the hot water to return back to the public network
- interception, allowing to seal the supply network for control and maintenance of other devices.

The installation of such device is mandatory as per the existing law. Cordivari safety group is certified according to the European law EN 1487 requirements.

ART. NR.
5760000001002

### SOLAR STORAGE-TO-BOILER THERMOSTATIC CONNECTION KIT – 5-WAY VALVE



The solar storage-to-boiler connection kits automatically control and optimize the thermal energy contained in the solar water storage, ensuring that domestic hot water is distributed throughout the system at a controlled optimum temperature. They ensure that users always receive hot water at the set temperature and switch the boiler on if the temperature of the water coming from the solar storage falls below the set point.

These compact kits are designed for quick and easy installation in both new and existing systems. Complete with:

- Thermostatic diverter valve
- Anti-scald thermostatic mixing valve

ART. NR.
57650000000518

### HEAT MANAGER - SMART CONTROLLER WITH TEMPERATURE PROBE



The Smart Controller Wi-Fi HEAT MANAGER enables remote management through smartphone of devices such as electric heaters. Thanks to the app available for IOS and Android, it is possible to manage, to set and to monitor the electric heaters of the calorifiers or of compact systems, by setting the temperature and the operating time slots. The device HEAT MANAGER works with Wi-Fi networks at 2,4 GHz.

**Main Features:** Relay max 230V 16 A Wi-Fi 2,4 GHz; protection grade IP20. The measuring temperature range is from -55°C to + 125°, with temperature range adjustable -55°C +100°C.

CORDIVARI HEAT MANAGER WITH 3 METERS PROBE		10 METERS PROBE FOR CORDIVARI HEAT MANAGER	
ART. NR.	5755280000031	ART. NR.	522100000104

[www.cordivariheatmanager.com](http://www.cordivariheatmanager.com)

# SPARE PARTS AND ACCESSORIES FOR COMPACT SOLAR THERMAL

## ACCESSORIES FOR STRATOS® DR

### ELECTRICAL IMMERSION KIT IP65

Monophase Electrical heating as 1500W integration, set-point at 50°C, protection class IP65, safety thermostat manual reset.



ART. NR.	Tension	Output	Set-point temperature	Connection
	Volt	[W]	[°C]	Gas M
5240000000061	220 V MONO PHASE	1500	50	1"1/4

### ANTI-FREEZE ELECTRICAL IMMERSION KIT IP65

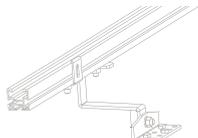
Anti-Freeze Electrical heating of 200W, set-point at 4°C, protection class IP65, it allows Stratos® DR system protection against freezing. It starts working when the Temperatures inside the storage falls below 4°C. If the environment temperature drops below -5°C, the system has to be drained and accurately protected following the user manual.



ART. NR.	Tension	Output	Set-point temperature	Connection
	Volt	[W]	[°C]	Gas M
5240000000060	220 V MONO PHASE	200	4	1/2"

### SUSPENDED FIXING KIT FOR PITCHED ROOFS

Suspended fixing kit for pitched roofs. It allows to direct the weight of the system to the roof framework instead to the roof.



ART. NR.
5770001100885

### STAINLESS STEEL PIT FOR TEMPERATURE PROBE WITH WATERTIGHT CABLE CLAMP

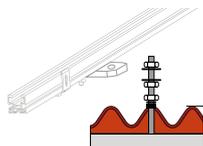
Stainless steel pit with 1/2" M thread, provided with watertight cable clamp for temperature probes to be mounted on solar collectors.



ART. NR.
5775000000021
Kit of 3 pcs.

### INSULATED ROOF FIXING KIT

Fixing kit for insulated pitched roofs. It allows to mount the system on the roof, crossing the insulation without causing burden or damages.



ART. NR.
5770001100886

### 30° SUPPORT KIT FOR STRATOS® DR

Support system for flat surfaces with 30° fixed inclination. Suitable to maximize the solar radiation as well as the output with low temperatures, especially during summer.



MODEL	ART. NR.
110/150	5770001100906
180/220/260	5770001100902

### PVC PROTECTION COVER

Cover for Stratos® DR protection. Essential to protect the system in case it would be drained, during periods it is not working or after the installation before starting to work.



MODEL	ART. NR.
110	5775000000030
150	5775000000031
180	5775000000032
220	5775000000033
260	5775000000034

# ACCESSORIES AND SPARE PARTS FOR THERMOSIPHON SYSTEMS

## SPARE PARTS AND ACCESSORIES FOR PANAREA - NATURAL EVO CVT

### PROTECTIVE COVER IN PVC

Cover and protection sheet for solar collectors. Indispensable to protect the system if it is emptied, in periods of inactivity, or in the post-installation phase, before commissioning.



MODEL	ART. NR.
SOLAR COLLECTOR 2 MQ	5775000000035
SOLAR COLLECTOR 2,5 MQ	5775000000036

### MAGNESIUM ANODE 3/4"

Sacrificial magnesium anode with 3/4" connection suitable for cathodic protection of the solar Interka tank. Essential to protect the tank also from possible corrossions and stray currents.



For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.

ART. NR.	INTERKA SOLARE [liters]	[mm]
5200000041008	150	32x200
5200000041009	200-300	32x400

For INTERKA POLYWARM®. Kit of 3 pcs.

### PRIMARY SAFETY VALVE

Safety valve for the primary circuit of the solar systems with thermosiphon circulation. Connections of 1/2"M and 1/2"F and calibration at 2,5 bar. This safety device is indispensable to avoid the overpressure of the primary circuit of the solar systems with thermosiphon circulation.



ART. NR.  
5775000000010

1/2"M x 1/2"F (calibrated at 2,5 bar)  
Package of 5 pc.

### SAFETY VALVE TP 1/2" M

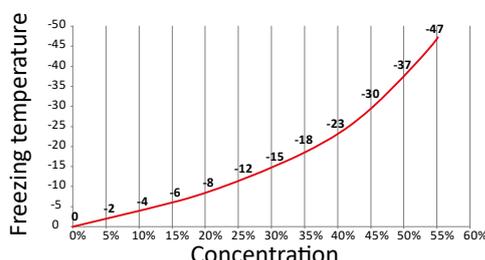
The safety valve TP combines the temperature and pressure control of the DHW storage tank. The safety device protects the solar systems with thermosiphon circulation from the excessive raising of one or the two factors in case of non-levy for long periods in situations of strong sun irradiation.



ART. NR.  
5302000000020

### CONCENTRATED HEAT TRANSFER FLUID

Non-toxic biodegradable heat transfer fluid, propylene glycol-based. It is indicated for thermosiphon systems, it is safe thanks to its composition suitable for food applications, it also protects the primary circuit against corrosion as well as deposits and foams development. Concentrated fluid to be diluted.



ART. NR.	PACKAGE KG
5000500000004	10
5000500000006	5

### HEATING ELEMENT

Monophase electric heater of 1500 watt with IP65 protection level, complete with protection cover against dirt, dust and UV rays. Useful as integration in systems with thermosiphon circulation. Connection of 1"1/4, manual reset, indicated for Interka solar tank.



ART. NR.  
5240000000062

IP65 1,5 kw 220v 1"1/4M with protection cover.

# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## PROTECTIVE COVER IN PVC

Cover and protection sheet for solar collectors. Indispensable to protect the system if it is emptied, in periods of inactivity, or in the post-installation phase, before commissioning.



MODEL	ART. NR.
SOLAR COLLECTOR 2 MQ	5775000000035
SOLAR COLLECTOR 2,5 MQ	5775000000036

## PROBES FOR BASIC CONTROL UNIT

Probes kit for BASIC control unit. The kit includes 2 temperature probes for the tank + 1 temperature probe for solar panel.



ART. NR.  
5755280000022

## PROBES FOR PROFESSIONAL CONTROL UNIT

Probes kit for PROFESSIONAL control unit. The kit includes 3 temperature probes for the tank + 2 temperature probe for solar panel.



ART. NR.  
5755280000023

## SHIELDED CABLE

Electrical cable to extend the temperature probe length. This cable allows to extend the length of the different probes to the control unit, avoiding the signal loss. Cable 2x1mm.



ART. NR.  
5220000000021  
LENGTH 20 mt.

## JUNCTION BOX

In-wall junction box to easily and quickly connect the temperature probes cables thanks to the terminal block and the cables seal included.



ART. NR.  
5775000000003  
5 pcs box

## OVERVOLTAGE PROTECTION

The junction box includes a power surge protection device. This accessory is essential to guarantee the solar control unit protection and safety against power surge or electrical discharges caused by lightning.



ART. NR.  
5775000000004  
2 pcs box

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# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## ELECTRICAL IMMERSIONS KIT

Electrical heating can be used as integration on calorifiers and tanks, stainless steel heaters, protection class min IP44, supplied with thermostat, safety thermostat with manual reset and 2 mt of electrical cable wired and without plug.



ART. NR.	Tension	Output	Lenght L	Connection R
	Volt	[Kw]	[mm]	Gas M
5240000000051	220 V MONO PHASE	1,5	320	1"1/2
5240000000052		2	320	
5240000000053		3	320	



For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.

## 24L EXPANSION VESSEL KIT

The kit includes:

- expansion vessel - flexible pipe, fixing bracket and fittings



LITERS	ART. NR.
24	5765000000101

## EXPANSION VESSEL KIT

The kit includes:

- expansion vessel - flexible pipe and fittings

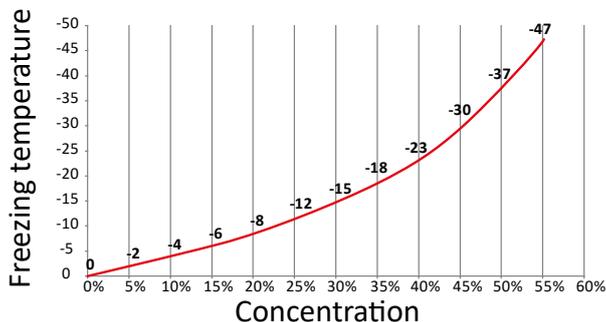


LITERS	ART. NR.
50	5765000000104
80	5765000000105
100	5765000000106
200	5765000000107

# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## CONCENTRATED HEAT TRANSFER FLUID

Non-toxic biodegradable heat transfer fluid, propylene glycol-based. It is indicated for thermosiphon systems, it is safe thanks to its composition suitable for food applications, it also protects the primary circuit against corrosion as well as deposits and foams development. Concentrated fluid to be diluted.



ART. NR.	Package KG
5000500000004	10
5000500000006	5

## CASE WITH MEASUREMENT AND PARAMETERS CHECK TOOLS FOR THERMAL SOLAR SYSTEM

Components: pressure gauge, test jar, refractometer, pH test strips, digital multimeter, monitoring and warning labels, compass, distilled water and tools.



ART. NR.
5765000000401

## SOLAR COLLECTORS REFILLING SYSTEM

The kit is made of:

- cart with 30 L can
- self-priming pump (230V - Pmax 5,9 bar)
- Heat resistant pipe (from -40°C to +60°C)



ART. NR.
5765000001001

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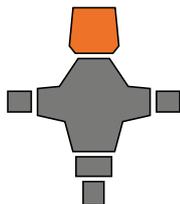
COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT

# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## THERMOSTATIC MIXING VALVE

Thermostatic mixing valve for solar systems.



CONNECTIONS	ART. NR.
3/4"	5750000000001
1"	5750000000003

## THERMOSTATIC SWITCH VALVE

Auto-operated thermostatic switch valve, calibrated at 45°C. It can easily integrate solar thermal systems for DHW production with a boiler.



ART. NR.	Connections
5046000000007	3/4"
5046000000008	1"

## BALANCING VALVE WITH FLOWMETER

The balancing valve for hydraulic primary circuit can settle the flow rate on single collectors rows in order to get the correct flow on every string of solar collectors with the purpose of an optimal thermal exchange. This accessory made in brass allows the flow regulation and direct control thanks to the graduated flow meter and the magnetic flow indicator.



ART. NR.
5046000000023

# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## PRE-INSULATED PIPE EXTENSION KIT



ART. NR.	Connection	Diameter $\varnothing$ [mm]
5775000000005	3/4"	16
5775000000006	1"	20

2 pcs box

## FLOW REGULATOR

Flow regulator for circulation groups.



FLOW RATE lt/min	ART. NR.
2 ÷ 12	5046000000035
20 ÷ 70 /V15	5046000000036
8 ÷ 28	5046000000037
8 ÷ 38	5046000000038

## PRE-INSULATED PIPE

Flexible AISI 316L stainless steel corrugated pipe, with 13mm EPDM insulation at high efficiency, with protection against UV finishing. The pre-insulated pipe integrates the silicone sensor cable for temperature probe. This accessory is useful to easily and quickly create the connections of solar primary circuit.



ART. NR.	Lenght [mt]	Diameter $\varnothing$ [mm]
5768000010001	10	16
5768000010002	15	16
5768000010003	10	20
5768000010004	15	20

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# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## SOCKETS FOR TEMPERATURE PROBE ON SOLAR COLLECTORS

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Nickel plated copper probe socket with male 1/2" thread to add temperature probes in solar collectors, sealing cable clamp included.



ART. NR.

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5775000000001

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Kit of 3 pcs.

## COPPER SOCKET FOR PROBE

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Copper probe socket with male 1/2" thread to add temperature probes in tanks.



ART. NR.

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57750000000011

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5 pcs box

## MANUAL AIR VENT

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Manual air vent for solar systems (1/2" M connection)



ART. NR.

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57750000000002

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5 pcs box

# ACCESSORIES AND SPARE PARTS FOR FORCED CIRCULATION SYSTEMS

## FITTINGS KIT

- 1 x 1/2" brass cross fitting F/F/F/F
- 2 x compression fitting with metallic sleeve  $\varnothing$  22 Dir.F/1/2" Male thread
- 1 x 1/2 M manual air vent
- 1 x 1/2" well probe H 150 with cable clamp and silicone gasket



FITTINGS KIT SUITABLE FOR SYSTEM WITH:	Art. Nr.	COMPONENTS
<b>1X1 COLLECTOR</b>	5765000000202	<ul style="list-style-type: none"> <li>• 1 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 2 X bulb in sheath stop spring</li> <li>• 2 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>
<b>1X2 COLLECTORS</b>	5765000000203	<ul style="list-style-type: none"> <li>• 2 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 2 X bulb in sheath stop spring</li> <li>• 2 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>
<b>1X3 COLLECTORS</b>	5765000000211	<ul style="list-style-type: none"> <li>• 3 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 2 X bulb in sheath stop spring</li> <li>• 2 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>
<b>2X2 COLLECTORS</b>	5765000000216	<ul style="list-style-type: none"> <li>• 5 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 2 X bulb in sheath stop spring</li> <li>• 2 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>
<b>1X4 COLLECTORS</b>	5765000000221	<ul style="list-style-type: none"> <li>• 4 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 3 X bulb in sheath stop spring</li> <li>• 3 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>
<b>1X5 COLLECTORS</b>	5765000000306	<ul style="list-style-type: none"> <li>• 5 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 2 X bulb in sheath stop spring</li> <li>• 2 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>
<b>2X3 COLLECTORS</b>	5765000000311	<ul style="list-style-type: none"> <li>• 7 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 2 X bulb in sheath stop spring</li> <li>• 2 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>
<b>2X4 COLLECTORS</b>	5765000000231	<ul style="list-style-type: none"> <li>• 9 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 3 X bulb in sheath stop spring</li> <li>• 3 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>
<b>2X5 COLLECTORS</b>	5765000000321	<ul style="list-style-type: none"> <li>• 11 Compression fitting with metallic sleeve <math>\varnothing</math> 22 Dir.F/1/2" Male thread</li> <li>• 2 X bulb in sheath stop spring</li> <li>• 2 X socket probe 1/2" gas connection 10x11 l.85</li> </ul>

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# TECHNICAL SUPPORT

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# SOLAR ENERGY

## GENERAL INDICATION FOR DIMENSIONING A SOLAR THERMAL SYSTEM (\*)

With a simple calculation it is possible to determine the number of solar collectors needed for a domestic hot water system. The surface of the Cordivari solar collectors is equal to the number of people living in the house.

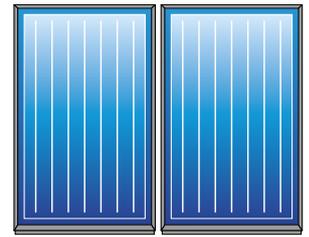
**SQM = P**

For instance, a family composed of 4 persons will need 4 sqm of solar absorbing surface.

It is possible to calculate the volume needed for a domestic hot water system multiplying the surface of the collectors times 50:

**V = 50 x SQM**

Following the previous example we will need: **50 x 4 = 200 liters**



4 m<sup>2</sup>



200 lt

### LEGEND

**SQM** = squared meters of the solar collectors

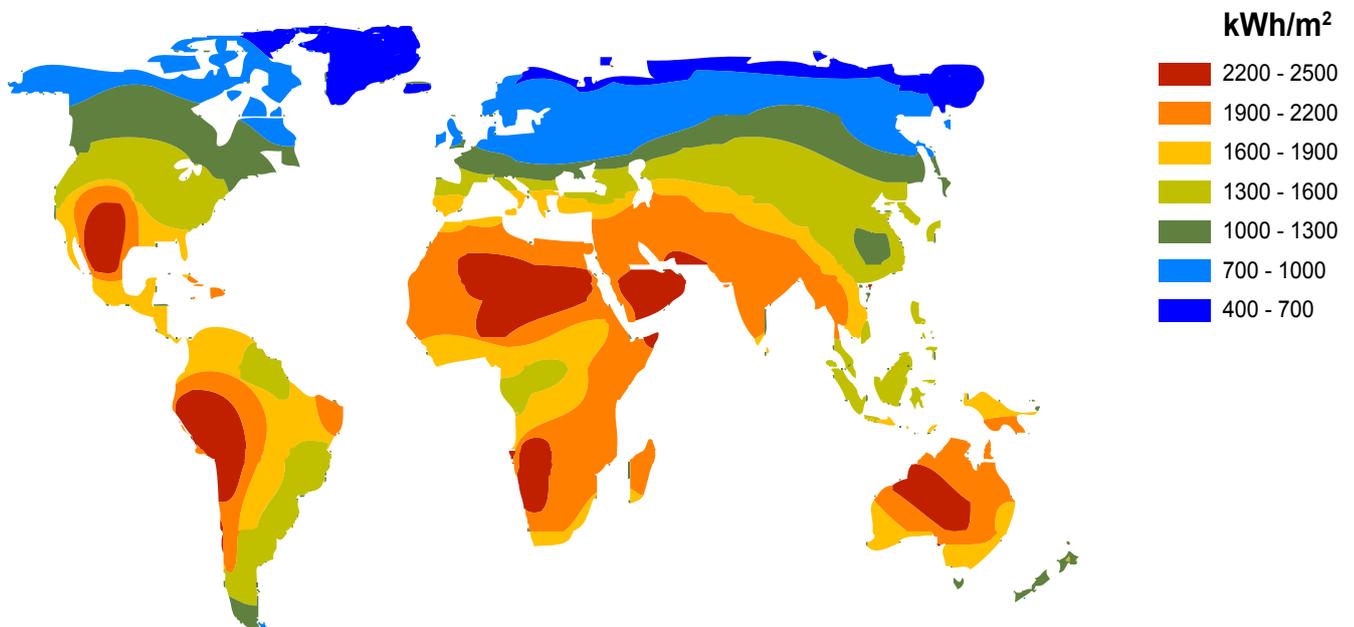
**P** = number of persons living in the house

**V** = minimum accumulation volume for domestic hot water

*(\*) The calculation proposed is merely indicative and cannot take into consideration multiple variables (place, inclination, orientation, etc.). Always refer to a qualified designer for the detailed calculation of the most suitable system according to the specific parameters of the installation.*

## SOLAR ANNUAL RADIATION AND SOLAR THERMAL ENERGY

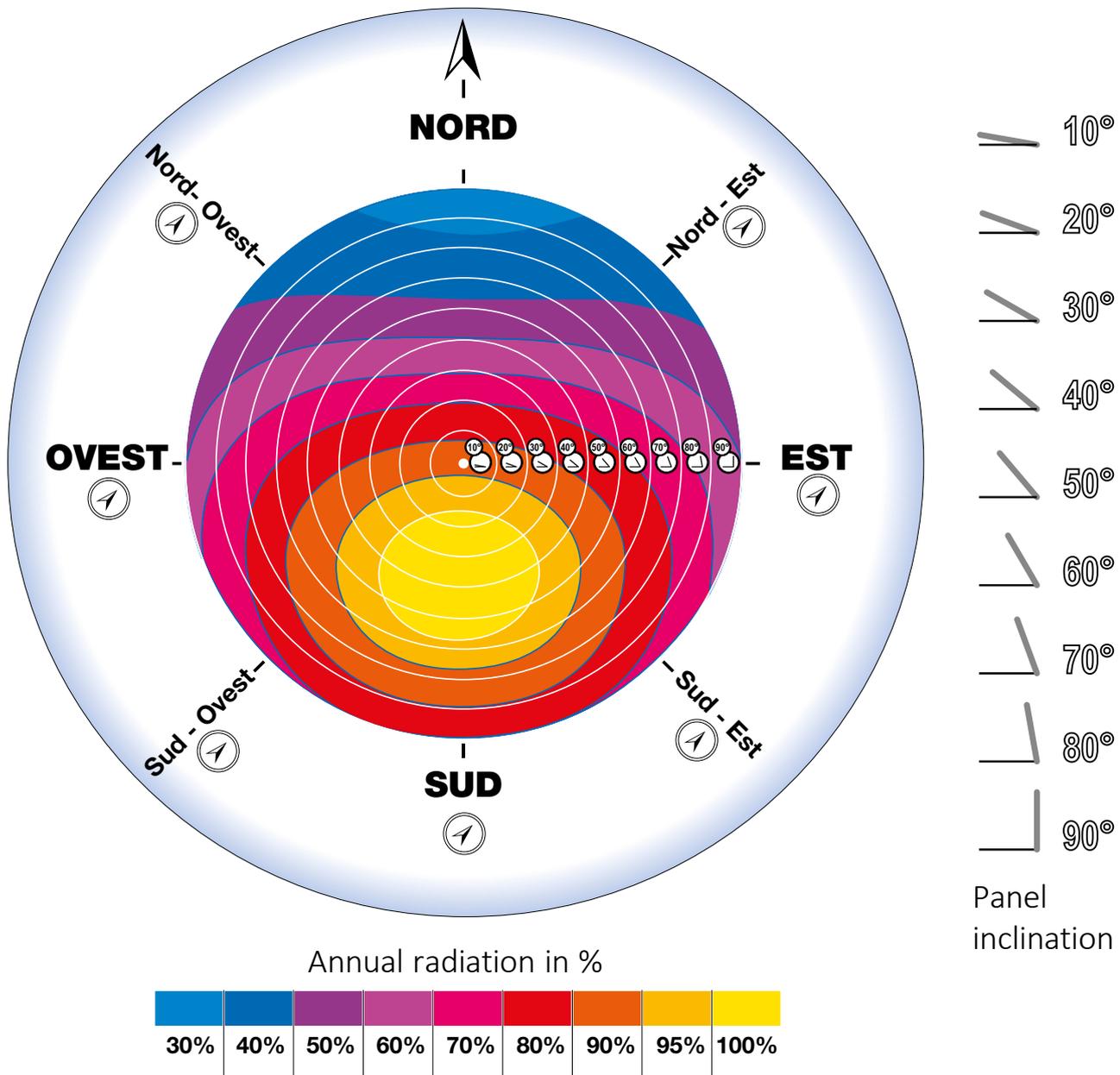
Global solar radiation kW/hm<sup>2</sup> – (source ENEA)



# SOLAR ENERGY

## SOLAR RADIATION SCHEME

To estimate the solar radiation loss on the solar collectors according to their orientation and inclination, it is necessary to obtain a diagram similar to the following, which must be realized for each specific place.



The above graph refers to a place in central Italy (latitude 42°) and gives information about the percentage of annual solar radiation on the collectors at the best conditions.

According to this specific example, the optimum installation is with collectors oriented to south and inclined to the same angle of the latitude (in this case 42°). Under these conditions the annual solar radiation will be

at its maximum (100%).

A different orientation and inclination of the solar collectors will result into a different position on the diagram, having a different color; using the color scale it is possible to identify the correspondent annual solar radiation referred to the maximum conditions.

# SOLAR ENERGY

## ORIENTATION AND INCLINATION OF THE SOLAR COLLECTORS

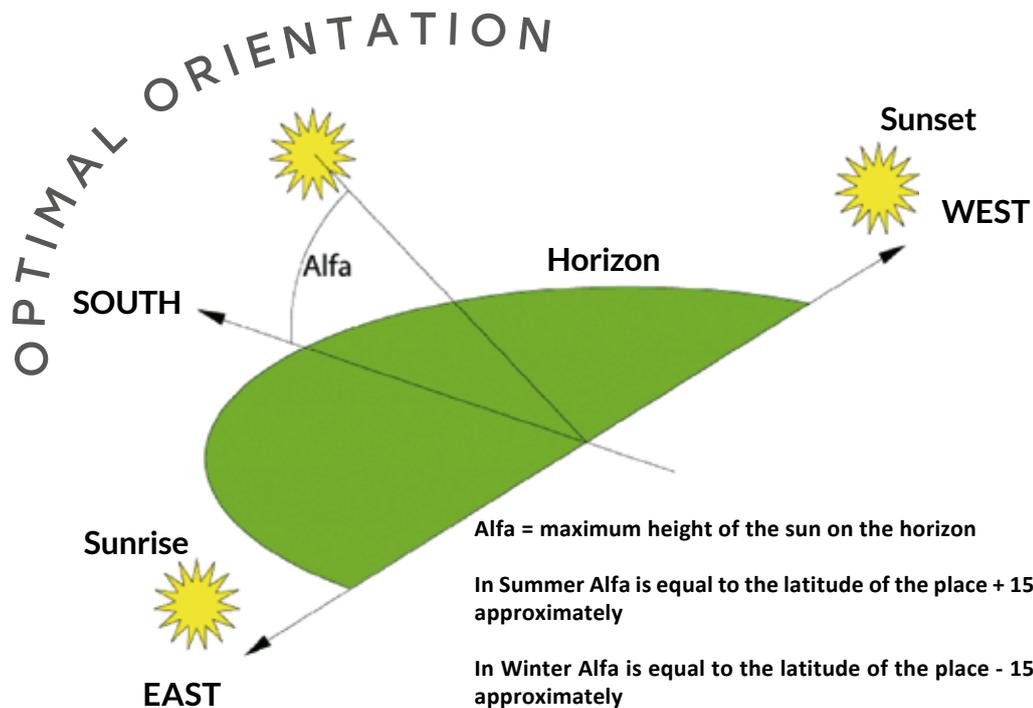
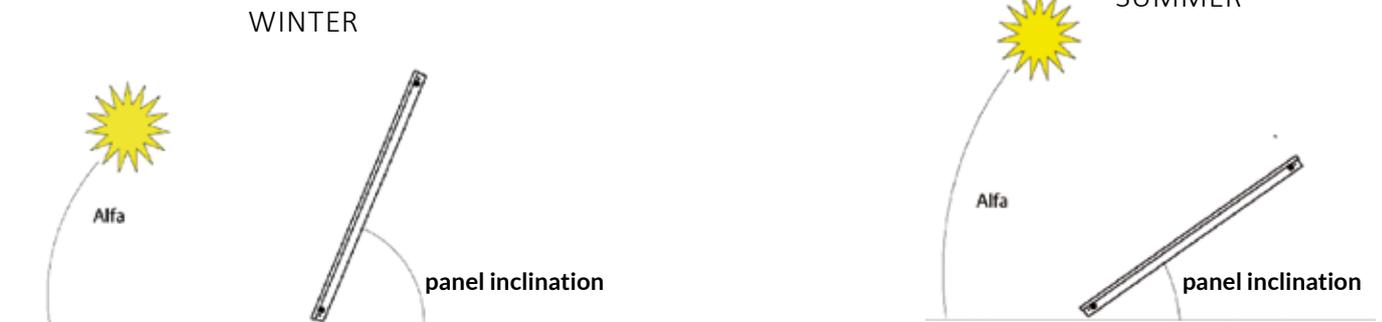
The effective solar radiation available on a square meter of solar collector depends on:

- Inclination of the solar collector
- Orientation of the solar collector

In general, the solar radiation that hits a squared meter of solar collector in any day of any month can be higher, lower or equal to the radiation calculated on the horizontal plane.

The norm UNI 8477 gives information on how it is possible to calculate

the available solar radiation for any orientation and inclination. It can be easily understood that during Winter period (when the sun is lower on the horizon), an inclined surface will receive more radiations compared to a similar surface positioned horizontally (or with a lower inclination). On the contrary, during Summer period (when the sun is higher on the horizon), a less inclined surface will receive a higher quantity of energy compared to the same surface positioned vertically (or with a higher inclination).



### INCLINATION OF SOLAR COLLECTORS

SUMMER PERIOD	$L - 15^\circ$
OVER THE YEAR	$L \pm 15^\circ$
WINTER PERIOD	$L + 15^\circ$

L= LATITUDE

The Sun rises in the East, reaches its highest position in the South and sets in the West. Moreover, when the Sun is at its highest on the horizon the solar radiation has to cross a thinner atmosphere layer compared to when it is lower. For these reasons the optimal orientation for the solar collector is South. An important characteristic of the solar collectors is that they can exploit also the diffuse solar radiation (hence also the radiation that hits the collectors not directly from the Sun); this characteristic makes the solar collectors more flexible and less sensible to small deviations from the optimal orientation. It is proven that the same surface which is optimally oriented to the South loses 15% of its efficiency if it is oriented to the East or to the West. This loss can be easily compensated during the design phase.

The orientation of the collector is also affected by its inclinations: collectors with low inclination are almost uninfluenced by the orientation, while collectors with higher inclination suffer more if the orientation is not optimized.

# SOLAR ENERGY

## INSTALLATION ON PITCHED ROOF

If the collector is installed on a PITCHED ROOF, the inclination will be influenced by the inclination of the roof (using the fixing kit Cordivari the collector is mounted in parallel to the roof). Knowing this, during the designing phase it will be possible to adapt the total surface of the collectors according to the specific installation needs.

## INSTALLATION ON FLAT ROOF

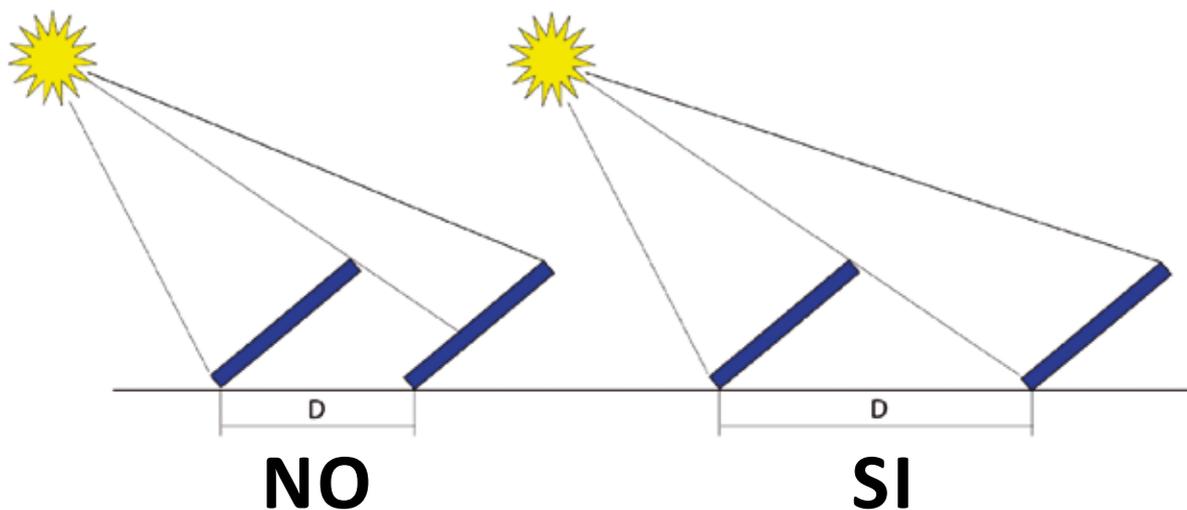
If the collector is installed on a FLAT ROOF (terrace, garden, or any other flat area), the fixing kit will be provided with a 40° angulation for the NATURAL systems, and with 45° angulation for the FORCED CIRCULATION systems.

## POSITION OF THE SOLAR COLLECTORS ON FLAT SURFACE

The position of the solar collectors on a flat surface has to be carefully studied, in order to avoid that the shade of one may cover the other.

The distance **D** will vary according to:

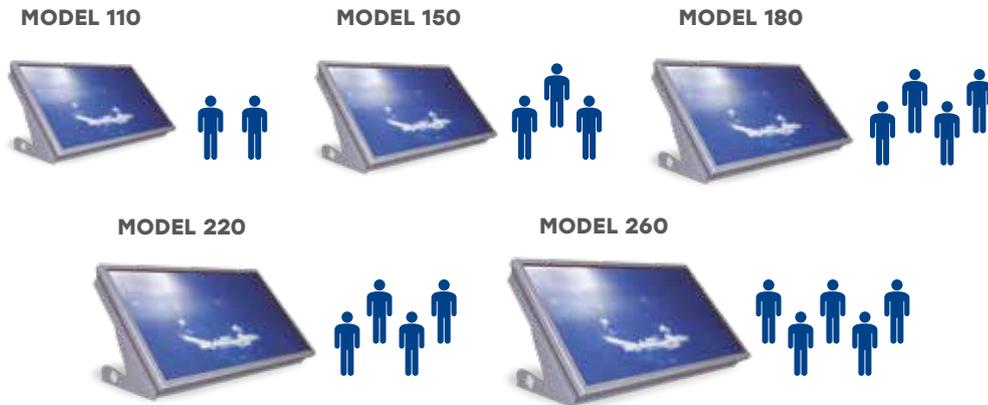
- PLACE (the height of the Sun varies according to the place, and as a consequence also the shade effect)
- PERIOD OF USE (Summer, annual or Winter, also in this case the height of the Sun varies)
- INCLINATION OF SOLAR COLLECTORS
- SIZE OF THE SOLAR COLLECTOR (the shade will vary according to the size of the collectors)



# CHOICE OF THE SYSTEM – TERMOSIPHON SYSTEM

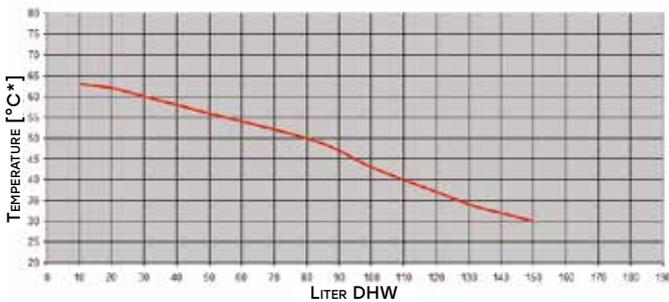
## STRATOS® DR SYSTEM – TERMOSIPHON SYSTEM – CHOICE OF THE SYSTEM

For a better overall productivity of the system, it is recommended to install Stratos DR in areas with high annual solar radiation (at least 1500 W/sqm per year).



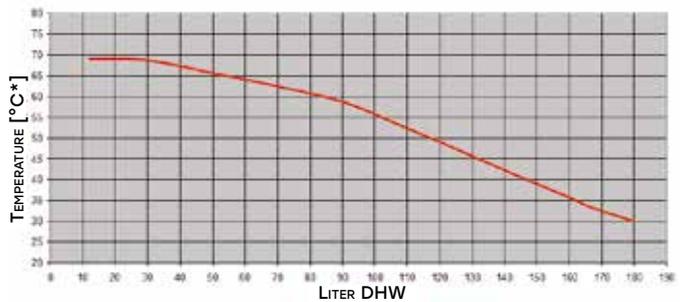
## DHW CONSUMPTION TEST

### TEST PERFORMED IN FEBRUARY



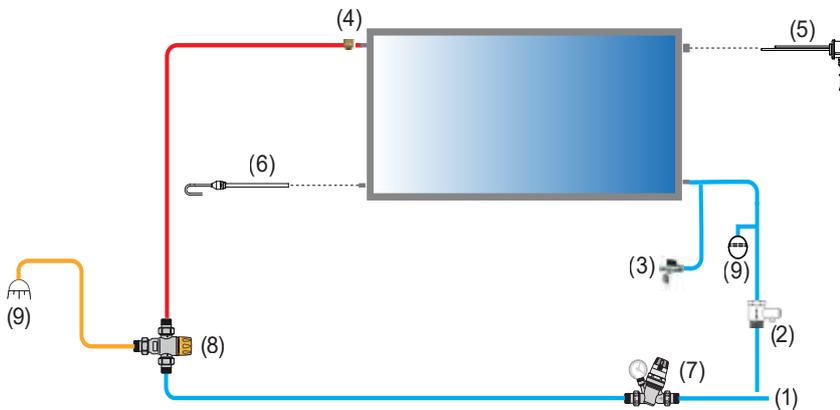
The graph shows the results of the domestic hot water consumption test performed on a Stratos DR 150 system installed in central Italy (latitude 42° North). Average of the results collected in a period of the month of February. On the horizontal axis there is the amount of consumed water expressed in liters in relation to the temperature measured on the outlet.

### TEST PERFORMED IN MAY



The graph shows the results of the domestic hot water consumption test performed on a Stratos DR 150 system installed in central Italy (latitude 42° North). Average of the results collected in a period of the month of May. On the horizontal axis there is the amount of consumed water expressed in liters in relation to the temperature measured on the outlet.

## TYPICAL INSTALLATION SCHEME



INSTALLATION SCHEME FOR MODELS 110/180/260

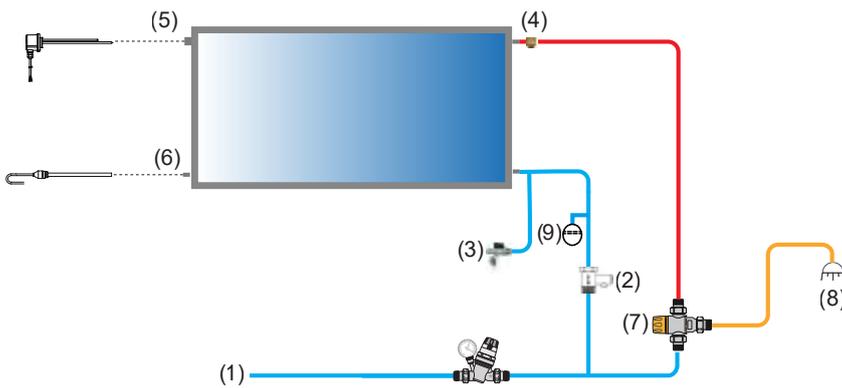
### Connection legend

1	Domestic cold water inlet. If the pressure exceeds 4 bar, insert a pressure reducer. The water must be treated according to UNI 8065 standard and the adduction installation must be built according to UNI EN 806
2	6 bar safety and non-return valve (included)
3	Drain tap for panel emptying (to be provided by the installer)
4	Vacuum break valve (included)
5	1" 1/4 gas F connection for integration of electrical immersion heater (to be ordered separately)
6	1/2" gas F connection for anti-freeze Electrical heating (to be ordered separately)
7	Thermostatic mixing valve (to be ordered separately)
8	User
9	Expansion vessel

For other schemes with preheating functions, please refer to the section TECHNICAL SUPPORT

# CHOICE OF THE SYSTEM – TERMOSIPHON SYSTEM

## TYPICAL INSTALLATION SCHEME



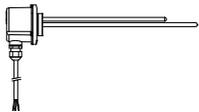
### INSTALLATION SCHEME FOR MODELS 150/220

#### Connection legend

Domestic cold water inlet. If the pressure exceeds 4 bar, insert a pressure reducer. The water must be treated according to UNI 8065 standard and the adduction installation must be built according to UNI EN 806	
1	6 bar safety and non-return valve (included)
2	Drain tap for panel emptying (to be provided by the installer)
3	Vacuum break valve (included)
4	1"1/4 gas F connection for integration of electrical immersion heater (to be ordered separately)
5	1/2" gas F connection for anti-freeze Electrical heating (to be ordered separately)
6	Thermostatic mixing valve (to be ordered separately)
7	User
8	Expansion vessel

For other schemes with preheating functions, please refer to the section TECHNICAL SUPPORT

## ANTI-FREEZE PROTECTION AND USE OF HEATING ELEMENT

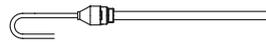


HEATING ELEMENT

#### HEATING ELEMENT

It is possible to integrate the STRATOS® DR with an electric heating element. The heater is equipped with a comfort temperature regulation thermostat as well as a manual safety reset thermostat.

The use of the heating element guarantees DHW available at a comfortable temperature able to meet the minimum requirements of the user.



ANTI-FREEZE HEATING ELEMENT

#### ANTI-FREEZE HEATING ELEMENT

The STRATOS® DR system must be installed in areas free from frost risk. If this does not happen and in any case when it is exposed to temperatures below 0 °C (and in any case not below than -5 °C) the installation and use of the anti-freeze safety heater element is necessary. If the temperature falls below -5°C the system must be emptied and suitably covered and protected. Always refer to the installation manual provided with the product.

## ANCHORAGE AND INSTALLATION WITH WINDPROOF BALLAST

The STRATOS® fixing systems, thanks to their specific design are extremely efficient and safe in all circumstances. Design studies and simulations carried out with the aid of highly sophisticated computer simulations such as the FEM, do not show structural criticalities and provide excellent resistance results to wind and snow loads, even in the most unfavorable conditions. The STRATOS® system if installed on flat surfaces must be secured to the ground to prevent

any risk of overturning due to wind forces. Fixing kits for flat surfaces allow anchoring directly to the ground through bolting with screws and dowels. If it is not possible to drill the support surfaces it is necessary to anchor the system through the fixing on ballast in solid and compact material with adequate overall weight. Always refer to the installation manual provided with the product.



SIMULATION WITH REM ANALYSIS OF WIND AND SNOW LOAD



INSTALLATION WITH WINDPROOF BALLAST

# CONNECTION OF THERMOSIPHON SYSTEMS

The fundamental components of a SOLAR THERMAL SYSTEM are essentially 2:

1. Solar collectors
2. Tank

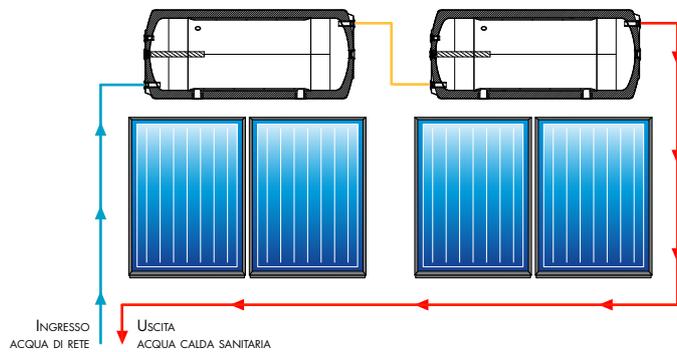
If the installation foresees more than one collector or tank, it is necessary to evaluate how to connect the multiple collectors and tanks. The systems for preparation of domestic hot water are divided into THERMOSIPHON and FORCED circulation.

In Thermosiphon systems it is possible to connect multiple complete systems. It is important to underline that the collectors will be linked solely to their correspondent tank, while the tanks will be connected on the sanitary circuit. In these cases the multiple connections will involve only the inlet for cold water and the outlet for hot water of the double walled tanks. Three options are available:

- Connection in series
- Connection in parallel
- Mixed connection (series and parallel)



## CONNECTION IN SERIES



In the series connection the tap water enters the first tank, and the hot water outlet of this tank will be connected to the cold water inlet for the second, continuing until the last tank where the hot water will go directly to the final user.

In this type of connection it is possible to achieve high temperature of sanitary water, but the overall efficiency of the system is reduced because the downstream tanks will have to work with higher temperatures, with relevant higher thermal loss of the tanks and solar collectors. The Best Practice in design suggests to not to link more than 2-3 systems in series.

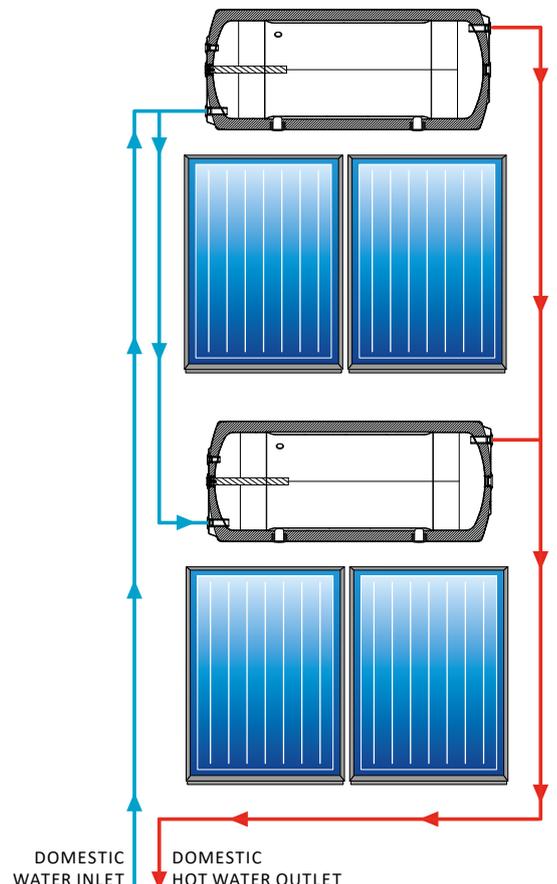
**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

## PARALLEL CONNECTION

In parallel connection the tap water will enter into all the cold water inlet of the tanks, while all the hot water outlets will be directed to the final user.

In this kind of installation there is a larger quantity of domestic hot water available, and because of the larger flow rates it is necessary to foresee larger pipes to keep a sustainable circulation of the water.

In order not to favor one tank instead of another, it will be necessary to balance the system providing the inversed return circulation. The flow rate must be equal for each tank. The design will evaluate the maximum number of systems to be connected in parallel, also considering the economic viability of the project.



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# CONNECTION OF FORCED CIRCULATION SYSTEMS

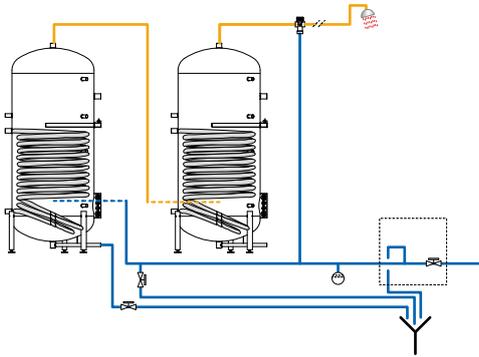
## FORCED CIRCULATION SYSTEMS

In forced circulation systems it is possible to obtain larger installation by increasing the number of solar collectors or by using bigger tanks or more tanks connected. In this case, all the collectors are linked to the tank (or tanks). It is important to establish how to connect the collectors and the tanks among them. The subject is quite complex and cannot be completely explained in this catalog, but some indications can be given. The connection of the tanks follows similar rules that have been explained in the thermosiphon system section: it is possible to make series or parallel connections, and several other variants can be evaluated by the designer according to the specific installation needs.



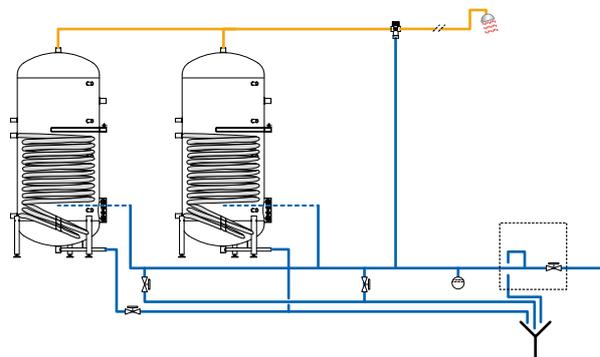
### CONNECTION OF THE TANKS IN SERIES

In the series connection of the tanks the tap water will enter only in the first tank, while the domestic hot water outlet will be connected to the cold water inlet of the following tank, until the last tank is reached and will provide domestic hot water directly to the final user.



### CONNECTION OF THE TANKS IN PARALLEL

In the parallel connection of the tanks the tap water will enter into all the tanks and all the hot water outlet will be directed to the user.

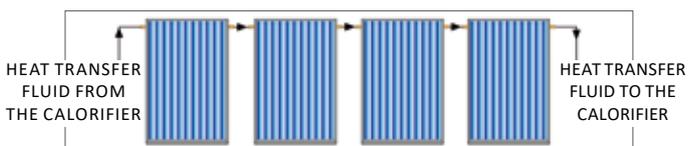
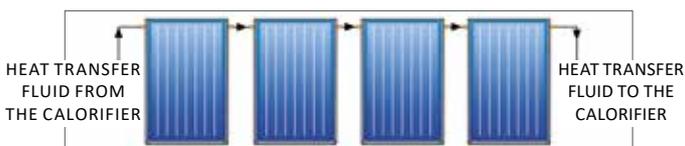


**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

### CONNECTION IN SERIES OF FLAT AND VACUUM SOLAR COLLECTORS

The solar collector connection follows similar rules to those illustrated for thermosiphon systems. Also in this case it is possible to connect the collectors in series, in parallel or in mixed solutions. The below examples are for CORDIVARI collectors specific for FORCED CIRCULATION systems, variant V5. The series connection favors the raise of the temperature of

the heat transfer fluid, optimizing the exchange with domestic water, but reducing the efficiency of the downstream collectors that, because of their high temperatures, will have higher thermal loss with the external environment. In this case the best practice suggests to not to connect more than 5 collectors in series among them.

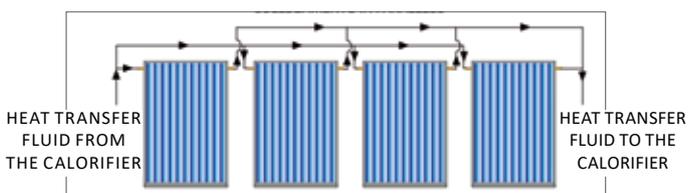
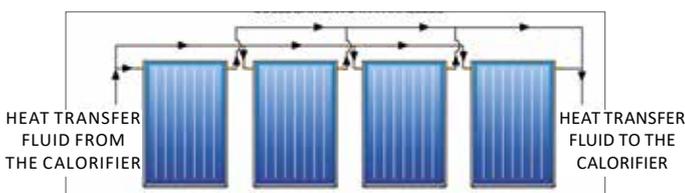


**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

### PARALLEL CONNECTION OF FLAT AND VACUUM SOLAR COLLECTORS

The parallel connection allows to have higher flow rates of heat transfer fluid, hence higher amount of producible hot water. On the other hand, higher flow rates require larger diameter of the pipes and of the control

units, that result in the higher cost of the system. Also, in this case the designer will evaluate the maximum number of solar collectors to be linked in parallel.



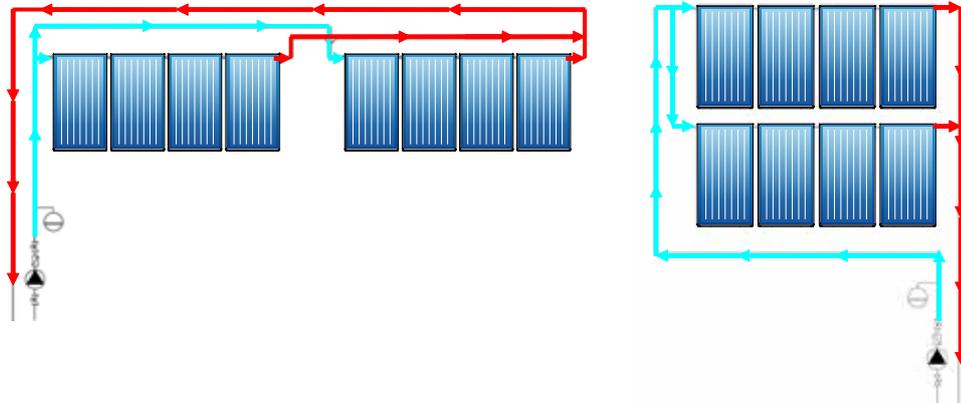
**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# CONNECTION OF FORCED CIRCULATION SYSTEMS

## HIDRAULIC BALANCING

The mixed connection represents the optimal compromise, using string of collectors connected in series and then in parallel among them. In the mixed series-parallel connection it is fundamental to pay attention to the pipes system that will connect the collectors. The length of the pipes and

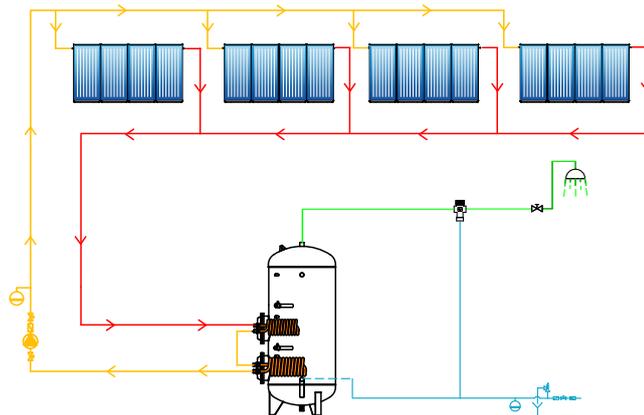
the pressure loss balance will have to be particularly studied, so to avoid that the heat transfer fluid follows a preferred path unbalancing the system.



**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

The above pictures show two examples of balanced systems, the one on the left has two strings of 4 collectors put one beside the other, while the second shows two strings one above the other. In these circuits the total

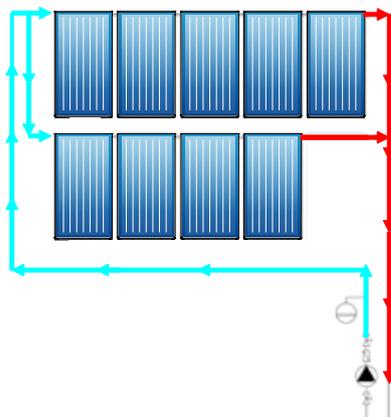
flow rate of the heat transfer fluid is equally distributed on each collector string.



**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

The last picture show a wrong installation, where it clear a thermodynamic disequilibrium: the circulation of the heat transfer fluid in the last strings, that have higher pressure losses (local or distributed), tends to go into overheating with thermal output close to zero. In this case it is possible to

correct the system by adding to the primary circuit balancing valves that allow to regulate precisely the flow rate for each string of collectors. In particular, the balancing valve is necessary to connect strings composed of a different number of solar collectors (see pictures below).



**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# CONNECTION OF FORCED CIRCULATION SYSTEMS

## FLOW RATE OF THE HEAT TRANSFER FLUID ON FORCED CIRCULATION SYSTEMS

### PIPES OF THE PRIMARY CIRCUIT

The connection pipes between solar collectors, circulator and exchanger with the accumulation tank, must be in material suitable for high temperatures that can be achieved in this type of installation. In this case do not use pipes in plastic or galvanized steel. Cordivari suggest pre-insulated piping in stainless steel to realize the connections between collectors and calorifiers.

The table refers to minimum suggested diameters for copper pipes to be welded.

TOTAL SURFACE AREA COLLECTORS	PIPES DIAMETER	CORRUGATED DIAMETER
	[mm]	[mm]
Up to 6 m <sup>2</sup>	18	1/2"
Above 6 m <sup>2</sup> e up to 25 m <sup>2</sup>	22	3/4"
Above 25 m <sup>2</sup> e up to 50 m <sup>2</sup>	28	1"
Above 50 m <sup>2</sup> e up to 75 m <sup>2</sup>	35	1" 1/4
Above 75 m <sup>2</sup>	42	1" 1/2

## FLOW RATE IN FORCED CIRCULATION SYSTEMS

The flow rate of the primary circuit which connects the collectors to the calorifier in forced circulation solar thermal systems is a very important parameter. The right flow rate will ensure the most efficient exchange between the panel and the domestic hot water, keeping the temperature in the collector low enough to limit thermal losses, and keeping the heat transfer fluid temperature high enough to allow a good thermal exchange with the domestic hot water.

$$I * \eta = \frac{Q * Mv * C * \Delta T}{60}$$

Follows:

$$Q = \frac{60 * I * \eta}{Mv * C * \Delta T}$$

With:

**I** = radiation on the collector [Watts/m<sup>2</sup>]

**η** = solar collector efficiency

**Q** = flow rate circulating in a square meter of the collector [lt/min m<sup>2</sup>]

**Mv** = density of the heat transfer fluid = 1 kg/lt

**C** = specific heat of the heat transfer fluid = 4000 Joule/Kg °C

**ΔT** = thermal jump of the heat transfer fluid in the panel = 10°C

## REGULATION OF THE FLOW RATE

The suggested flow rate on forced circulation systems is between 20 and 40 lt/h for each squared meter of solar collector. It is often necessary to regulate the flow rate on each system, increasing the flow rate in case of excessive difference between the temperature of the collectors and the temperature of the tanks (in the opposite case, it will be necessary to decrease the temperature).

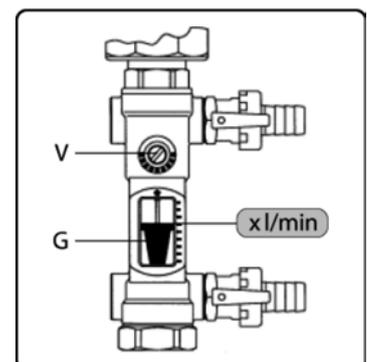
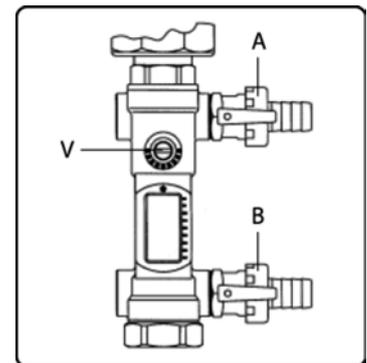
For the regulation of the flow rate proceed as follow:

- activate the circulator at speed 1
- set the flow rate regulator at the maximum flow rate using a slotted screwdriver to regulate the device placed between the load and drain valves, if the required flow rate is lower than the one achieved regulate accordingly;
- if the first speed of the circulator is not sufficient, proceed with speed 2 and repeat the previous steps
- if speed 2 is not sufficient, proceed with speed 3 and repeat the previous steps

Note: at commissioning, also with an adequate solar radiation, the system will need some time to win the thermal inertia and run normally. Usually the hot water is available after one day from the installation.

### Note:

at commissioning, also with an adequate solar radiation, the system will need some time to win the thermal inertia and run normally. Usually the hot water is available after one day from the installation.

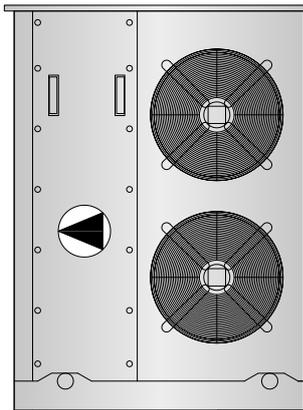


# DIMENSIONING OF BUFFER TANKS

The calculation of a buffer tank's volume depends on the type and on the potential of the heat generators. The installation of a buffer tank has a double function, as it allows the generator to work regularly by limiting the number of interruptions, and it also constitute a thermal flywheel for the heating system, improving the overall comfort of the installation. Cordivari offers a wide range of buffer tanks, providing besides the mainstream version also combined solutions ideal for production of domestic hot water. The wide spectrum of products available is characterized by advanced technology that allow a strong thermal stratification, to consistently reduce the energy consumption.

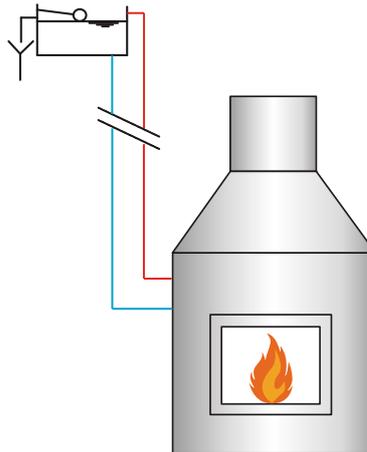
For calculation purposes we give an indication of the volumetric ratios according to the thermal potential of various sources with non-continuous operation. These suggestions are merely indicative and cannot substitute a closer evaluation made by a qualified technician.

## HEAT PUMP



1 kW<sub>T</sub> ~ 10 ÷ 15 LITERS

## FIREPLACE STOVE



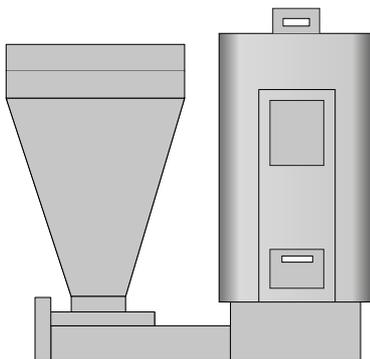
1 kW<sub>T</sub> ~ 30 LITERS

## FLAT SOLAR COLLECTOR



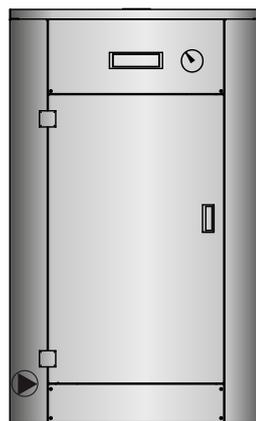
1 MQ ~ 60 ÷ 70 LITERS

## POLYCOMBUSTIBLE BOILER



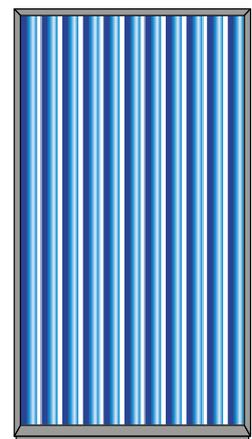
1 kW<sub>T</sub> ~ 20 LITERS

## PELLET STOVE



1 kW<sub>T</sub> ~ 20 LITERS

## VACUUM SOLAR COLLECTOR



1 MQ ~ 60 ÷ 70 LITERS

# DIMENSIONING OF THE EXPANSION VESSEL

## FORCED CIRCULATION SYSTEMS

The expansion vessel has a key function for the primary circuit of a solar thermal system with forced circulation (generally speaking, expansion vessels are important in any heating system). To calculate the nominal volume of the vessel refer to the following formula:

$$V_n = (V_u \cdot (P_f + 1)) / (P_f - P_i)$$

Where :  
**V<sub>n</sub>** = nominal volume of the Expansion vessel [lt]  
**V<sub>u</sub>** = useful volume of the Expansion vessel =  $V_u = (\Delta V + V_c) \cdot 1,1$  [lt]  
**P<sub>f</sub>** = maximum working pressure of the solar thermal system: to be considered in the designing phase of the project according to the characteristics of the materials used and the safety devices installed = 5,5 [bar]  
**P<sub>i</sub>** = loading pressure of the solar thermal system: linked to the difference in level between solar collectors and expansion vessel (approximately 1 bar each 10 meters) plus a safety coefficient; in domestic systems the cold water loading pressure is about 2,5 [bar]

With:

**ΔV** = variation of the volume of the fluid =  $e \cdot V_f$  [lt]  
**V<sub>c</sub>** = fluid contained in the solar collectors [lt]  
 In which:  
**e** = heat transfer fluid coefficient of cubic expansion = 0,07  
**V<sub>f</sub>** = heat transfer fluid contained in the system

The heat transfer fluid contained in the system is given by the sum of:

fluid content in solar collectors	V <sub>c</sub> +
fluid content in pipes	V <sub>t</sub> +
fluid content in heat exchangers	V <sub>s</sub> +
fluid content in other components	V <sub>a</sub> =
	V <sub>f</sub>

The preload value of the expansion vessel will be 0,3-0,5 bar less than pressure **P<sub>i</sub>**.



### EXAMPLE

#### SOLAR THERMAL SYSTEM 500B2-10 TF

- 4 SOLAR COLLECTORS 2,5 MQ
- 1 CALORIFIER BOLLY® 2 500 LT
- 1 BASIC CIRCULATION GROUP
- 30 MT COPPER PIPE (SUPPLY + RETURN) D. 22 MM

To determine the necessary volume of the expansion vessel

$$V_f = (V_c + V_t + V_s + V_a) \sim 31 \text{ LT}$$

$$\Delta V = e \cdot V_f = (0,07 \cdot 31) = 2,17 \text{ LITERS}$$

$$V_u = (\Delta V + V_c) \cdot 1,1 = (2,17 + 3,8) \cdot 1,1 = 10,75 \text{ LITERS}$$

$$V_n = V_u \cdot (P_f + 1) / (P_f - P_i) = 6,56 \cdot (5,5 + 1) / (5,5 - 2,5) = 23,30 \text{ LITERS} \rightarrow \mathbf{24 \text{ LITERS EXPANSION VESSEL}}$$



# FLAT SOLAR COLLECTORS FOR HEATING OF SWIMMING POOL

One of the most common applications of solar thermal systems is the heating of in-ground swimming pools.

The use of solar collectors is particularly convenient for outdoor swimming pool during Spring-Summer-Autumn, or indoor pools in general.

For domestic use swimming pools it is always recommended to provide a back-up boiler for:

- START-UP: the first heating period of the mass of water from the tap water temperature to the desired comfort;
- INTEGRATION: to ensure the comfort temperature also when the wheatear is cloudy

In maintaining mode, the solar collectors will be dimensioned considering the thermal loss of the swimming pool. Those can be of three types:

1. Thermal loss through the surface of the water (P1)
2. Thermal loss through lateral walls (P2)
3. Thermal loss through the bottom of the pool (P3)

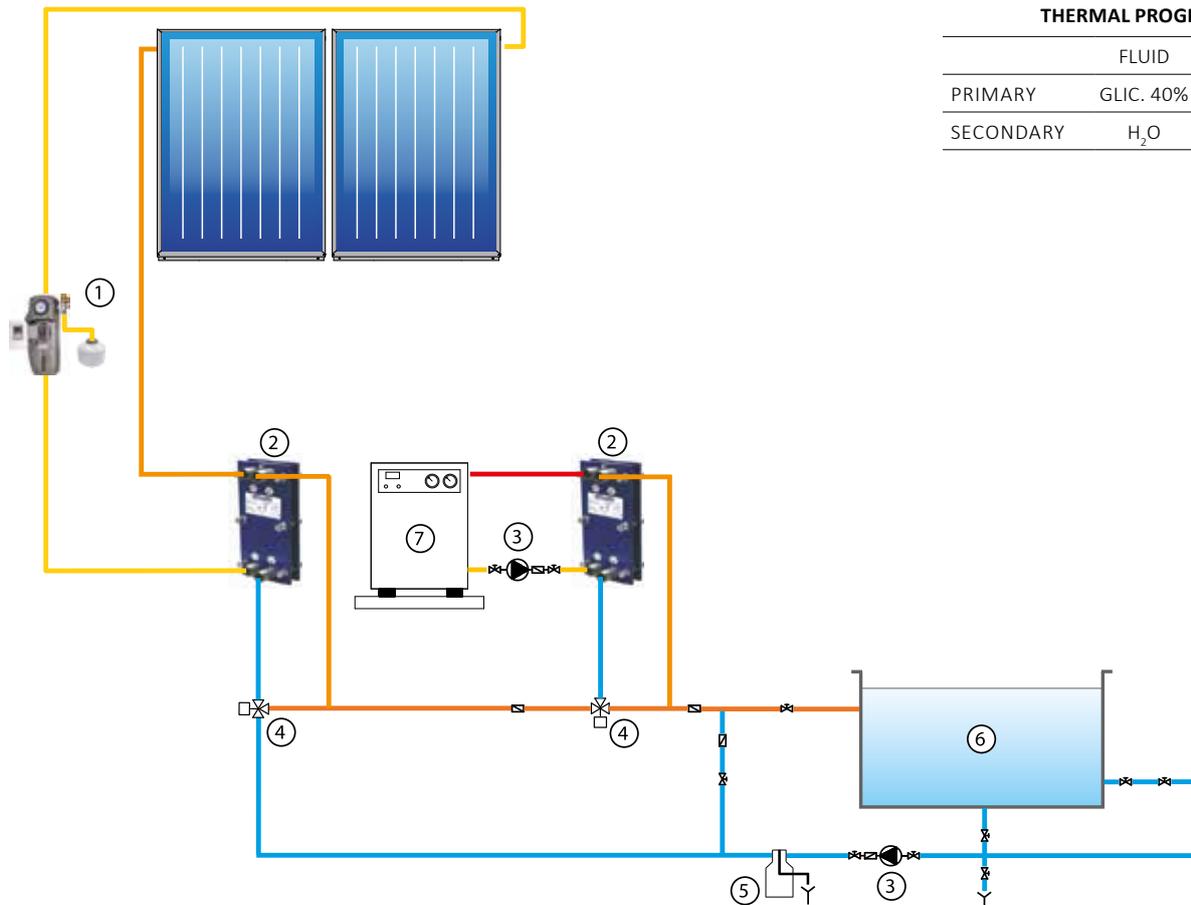
It is possible to have an approximate calculation of the thermal loss as follow:

$$P_{tot} = P_1 + P_2 + P_3 \quad [Kcal/h]$$

$$P_1 = (109 + 8,9 * (T_{comfort} - T_{environment})) * S_{surface} \quad [Kcal/h]$$

$$P_2 = (1,1 * (T_{comfort} - T_{ground})) * S_{walls} \quad [Kcal/h]$$

$$P_3 = (T_{comfort} - T_{ground}) * S_{bottom} \quad [Kcal/h]$$



**THERMAL PROGRAM**

	FLUID	IN	OUT
PRIMARY	GLIC. 40%	55	35
SECONDARY	H <sub>2</sub> O	29	33

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# FLAT SOLAR COLLECTORS FOR HEATING OF SWIMMING POOL

With:

Tcomfort = desired temperature of the swimming pool water [°C]

Tenvironment = air temperature around the swimming pool [°C]

Tground = ground temperature [°C]

Ssurface = water surface of the swimming pool [mq]

Swalls = Surface of the lateral walls of the swimming pool [mq]

Sbottom = Surface of the bottom of the swimming pool (equal to Ssurface) [mq]

Being A, B, H the sides of the pool and its average height:

Ssurface = Ax B

Swalls = (2xAxH) + (2xBxH)

Sbottom = Ssurface

One of the ways to calculate the surface of the solar collectors necessary to maintain the Temperature of the swimming pool is to divide the total thermal loss of the swimming pool by the thermal loss immediately available with one squared meter of solar collector.

$$S_{sol} = \frac{P_{tot}}{E1}$$

With:

Ssol = needed surface of solar collectors

E1 = average thermal Output available on 1 squared meter of solar collector

We can assume E1 equal to 400 Kcal/h mq (for high selective flat solar collectors).

CORDIVARI offers a wide range of products to be applied in solar thermal systems for the heating of swimming pools:

- Solar collectors
- Plate heat exchangers (PHC series)
- Circulation groups and electronic control units
- Accessories (diverting valves and thermostats)

STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON  
SYSTEMS

FORCED CIRCULATION  
SYSTEMS

COLLECTORS AND  
ACCESSORIES

TECHNICAL  
SUPPORT

# PLATE HEAT EXCHANGERS



WORKING CONDITION

Max pressure	Max temperature
10/16 bar	140 °C (*)

(\*) Is intended as maximum working temperature of Gaskets. The maximum operating temperature must be lower between those corresponding to the vapor pressure of 0.5 bar above the pressure in normal atmospheres considered for two circulating fluids. For a use of temperatures above 110 °C please see the TECHNICAL SUPPORT section

## APPLICATION

PHC Heat exchangers are used in domestic and industrial installation. In particular they're suitable for production of D.H.W., as well as for heating of swimming pools using different energy sources (traditional boiler, solid fuel, solar thermal system). For domestic application, the PHC are suitable for district heating installation.

## MATERIAL

- Frame (not in contact with fluids) in painted mild steel
- Guide for Heat exchanger plates, bolts and screw nuts (not in contact with fluids) in galvanized mild steel
- Nipples and plates (in contact with fluid) in 316L Stainless Steel
- EPDM Gaskets.

## TECHNICAL DESCRIPTION

PHC exchangers are inspectionable plate to plate type. Their shape ensures the possibility of opening the

exchanger for cleaning.

The modular design allows you to change the configuration of the exchanger even after a period of use (within certain limits).

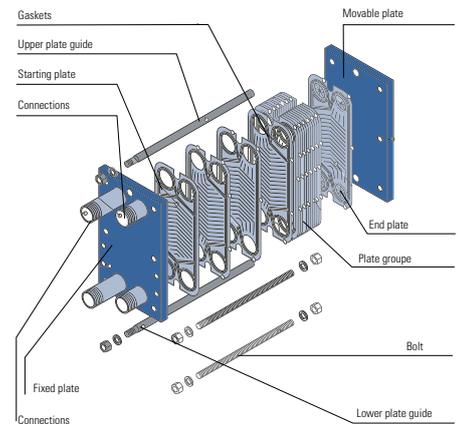
PHC exchangers are designed for the use stated on Art. 3.3 of PED 97/23/CE. In particular, they are intended to be used with non-dangerous liquids with steam pressure at maximum operating temperature not exceeding 0.5 bar above normal atmospheric pressure.

Every Exchanger has serial number label and end-user manual.

## CHEMICAL COMPATIBILITY

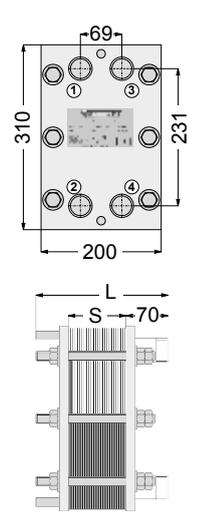
Material used for PHC Exchangers are suitable for following liquids:

- Water • Swimming pool water • Milk • Whisky • Acetone • Glycole • Glycoled Water • Mineral Water • Wine • Wine Vinegar • Etanol • Etilenic Glycole • De-mineralized Water • Acetic Acid • Beer • Liquors • Methanol • Propylenic Glycol



# EXCHANGERS PHC 3120 - DN32

EXCHANGERS PHC 3120 (PN16 VERSION ON REQUEST)



CONNECTIONS	
DN32 (1"1/4)	
Gas M	
1	Primary Inlet
2	Primary Outlet
3	Secondary Outlet
4	Secondary Inlet

N° of plates	With EPDM gaskets	With NBR gaskets	S Fixing quote	L	Primary Vol. = Secondary Vol.
	PN10 VERSION	PN10 VERSION			
Art. Nr.	Art. Nr.	[mm]	[mm]	[lt]	
9	3175056654151	3175056654121	27	220	0,20
11	3175056654152	3175056654122	33		0,25
13	3175056654153	3175056654123	39		0,30
15	3175056654154	3175056654124	45		0,35
17	3175056654155	3175056654125	51		0,40
19	3175056654156	3175056654126	57		0,45
21	3175056654157	3175056654127	63		0,50
23	3175056654158	3175056654128	69		0,55
25	3175056654159	3175056654129	75		0,60
27	3175056654160	3175056654130	81		0,65
29	3175056654161	3175056654131	87		0,70
31	3175056654162	3175056654132	93		0,75
33	3175056654163	3175056654133	99		0,80
35	3175056654164	3175056654134	105		0,85
37	3175056654165	3175056654135	111	0,90	
39	3175056654166	3175056654136	117	0,95	
41	3175056654167	3175056654137	123	1,00	
43	3175056654168	3175056654138	129	1,05	
45	3175056654169	3175056654139	135	1,10	
47	3175056654170	3175056654140	141	1,15	
49	3175056654171	3175056654141	147	1,20	
51	3175056654172	3175056654142	153	1,25	
53	3175056654173	3175056654143	159	1,30	
55	3175056654174	3175056654144	165	1,35	
57	3175056654175	3175056654145	171	1,40	
59	3175056654176	3175056654146	177	1,45	
61	3175056654177	3175056654147	183	1,50	
63	3175056654178	3175056654148	189	1,55	
65	3175056654179	3175056654149	195	1,60	
67	3175056654180	3175056654150	201	1,65	

For operational conditions please refer to our on-line tool [https://www.cordivari.com/configurator\\_plate\\_exchangers](https://www.cordivari.com/configurator_plate_exchangers)

For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.



# PLATE HEAT EXCHANGERS

## EXCHANGERS PHC 7420 - DN32

EXCHANGERS PHC 4620 (PN16 VERSION ON REQUEST)

N° of plates	With EPDM gaskets PN10 VERSION		With NBR gaskets PN10 VERSION		S Fixing quote	L	Primary Vol. = Secondary Vol.
	Art. Nr.	Art. Nr.	[mm]	[mm]	[lt]		
9	3175056654271	3175056654241	27	220	0,36		
11	3175056654272	3175056654242	33	220	0,45		
13	3175056654273	3175056654243	39	220	0,54		
15	3175056654274	3175056654244	45	220	0,63		
17	3175056654275	3175056654245	51	220	0,72		
19	3175056654276	3175056654246	57	220	0,81		
21	3175056654277	3175056654247	63	220	0,90		
23	3175056654278	3175056654248	69	220	0,99		
25	3175056654279	3175056654249	75	220	1,08		
27	3175056654280	3175056654250	81	220	1,17		
29	3175056654281	3175056654251	87	220	1,26		
31	3175056654282	3175056654252	93	220	1,35		
33	3175056654283	3175056654253	99	220	1,44		
35	3175056654284	3175056654254	105	220	1,53		
37	3175056654285	3175056654255	111	220	1,62		
39	3175056654286	3175056654256	117	220	1,71		
41	3175056654287	3175056654257	123	220	1,80		
43	3175056654288	3175056654258	129	220	1,89		
45	3175056654289	3175056654259	135	220	1,98		
47	3175056654290	3175056654260	141	220	2,07		
49	3175056654291	3175056654261	147	370	2,16		
51	3175056654292	3175056654262	153	370	2,25		
53	3175056654293	3175056654263	159	370	2,34		
55	3175056654294	3175056654264	165	370	2,43		
57	3175056654295	3175056654265	171	370	2,52		
59	3175056654296	3175056654266	177	370	2,61		
61	3175056654297	3175056654267	183	370	2,70		
63	3175056654298	3175056654268	189	370	2,79		
65	3175056654299	3175056654269	195	370	2,88		
67	3175056654300	3175056654270	201	370	2,97		

For operational conditions please refer to our on-line tool [https://www.cordivari.com/configurator\\_plate\\_exchangers](https://www.cordivari.com/configurator_plate_exchangers)

## EXCHANGERS PHC 7420 - DN32

EXCHANGERS PHC 7420 (PN16 VERSION ON REQUEST)

N° of plates	With EPDM gaskets PN10 VERSION		With NBR gaskets PN10 VERSION		S Fixing quote	L	Primary Vol. = Secondary Vol.
	Art. Nr.	Art. Nr.	[mm]	[mm]	[lt]		
9	3175056654391	3175056654361	27	220	0,68		
11	3175056654392	3175056654362	33	220	0,85		
13	3175056654393	3175056654363	39	220	1,02		
15	3175056654394	3175056654364	45	220	1,19		
17	3175056654395	3175056654365	51	220	1,36		
19	3175056654396	3175056654366	57	220	1,53		
21	3175056654397	3175056654367	63	220	1,70		
23	3175056654398	3175056654368	69	220	1,87		
25	3175056654399	3175056654369	75	220	2,04		
27	3175056654400	3175056654370	81	220	2,21		
29	3175056654401	3175056654371	87	220	2,38		
31	3175056654402	3175056654372	93	220	2,55		
33	3175056654403	3175056654373	99	220	2,72		
35	3175056654404	3175056654374	105	220	2,89		
37	3175056654405	3175056654375	111	220	3,06		
39	3175056654406	3175056654376	117	220	3,23		
41	3175056654407	3175056654377	123	220	3,40		
43	3175056654408	3175056654378	129	220	3,57		
45	3175056654409	3175056654379	135	220	3,74		
47	3175056654410	3175056654380	141	220	3,91		
49	3175056654411	3175056654381	147	370	4,08		
51	3175056654412	3175056654382	153	370	4,25		
53	3175056654413	3175056654383	159	370	4,42		
55	3175056654414	3175056654384	165	370	4,59		
57	3175056654415	3175056654385	171	370	4,76		
59	3175056654416	3175056654386	177	370	4,93		
61	3175056654417	3175056654387	183	370	5,10		
63	3175056654418	3175056654388	189	370	5,27		
65	3175056654419	3175056654389	195	370	5,44		
67	3175056654420	3175056654390	201	370	5,61		

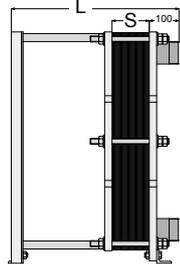
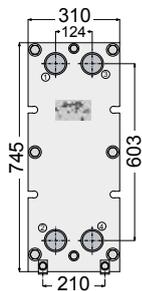
For operational conditions please refer to our on-line tool [https://www.cordivari.com/configurator\\_plate\\_exchangers](https://www.cordivari.com/configurator_plate_exchangers)

For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.

# PLATE HEAT EXCHANGERS

## EXCHANGERS PHC 7431 - DN65

EXCHANGERS PHC 7431 (PN16 VERSION ON REQUEST)



CONNECTIONS	
<b>DN65 2" 1/2</b>	

1	Primary Inlet
2	Primary Outlet
3	Secondary Outlet
4	Secondary Inlet

N° of plates	With EPDM gaskets		With NBR gaskets		S Fixing quote [mm]	L [mm]	Primary Vol. = Secondary Vol. [lt]
	Art. Nr.	Art. Nr.	Art. Nr.	Art. Nr.			
13	3175056654533	3175056654481			44	405	2,16
15	3175056654534	3175056654482			51		2,52
17	3175056654535	3175056654483			58		2,88
19	3175056654536	3175056654484			65		3,24
21	3175056654537	3175056654485			71		3,60
23	3175056654538	3175056654486			78		3,96
25	3175056654539	3175056654487			85		4,32
27	3175056654540	3175056654488			92		4,68
29	3175056654541	3175056654489			99		5,04
31	3175056654542	3175056654490			105		5,40
33	3175056654543	3175056654491			112	5,76	
35	3175056654544	3175056654492			119	6,12	
37	3175056654545	3175056654493			126	6,48	
39	3175056654546	3175056654494			133	6,84	
41	3175056654547	3175056654495			139	7,20	
43	3175056654548	3175056654496			146	7,56	
45	3175056654549	3175056654497			153	7,92	
47	3175056654550	3175056654498			160	8,28	
49	3175056654551	3175056654499			167	8,64	
51	3175056654552	3175056654500			173	9,00	
53	3175056654553	3175056654501			180	9,36	
55	3175056654554	3175056654502			187	9,72	
57	3175056654555	3175056654503			194	10,08	
59	3175056654556	3175056654504			201	10,44	
61	3175056654557	3175056654505			207	10,80	
63	3175056654558	3175056654506			214	11,16	
65	3175056654559	3175056654507			221	11,52	
67	3175056654560	3175056654508			228	11,88	
69	3175056654561	3175056654509			235	12,24	
71	3175056654562	3175056654510			241	12,60	
73	3175056654563	3175056654511			248	12,96	
75	3175056654564	3175056654512			255	13,32	
77	3175056654565	3175056654513			262	13,68	
79	3175056654566	3175056654514			269	14,04	
81	3175056654567	3175056654515			275	14,40	
83	3175056654568	3175056654516			282	14,76	
85	3175056654569	3175056654517			289	15,12	
87	3175056654570	3175056654518			296	15,48	
89	3175056654571	3175056654519			303	15,84	
91	3175056654572	3175056654520			309	16,20	
93	3175056654573	3175056654521			316	16,56	
95	3175056654574	3175056654522			323	16,92	
97	3175056654575	3175056654523			330	17,28	
99	3175056654576	3175056654524			337	17,64	
101	3175056654577	3175056654525			343	18,00	
103	3175056654578	3175056654526			350	18,36	
105	3175056654579	3175056654527			357	18,72	
107	3175056654580	3175056654528			364	19,08	
109	3175056654581	3175056654529			371	19,44	
111	3175056654582	3175056654530			377	19,80	
113	3175056654583	3175056654531			384	20,16	
115	3175056654584	3175056654532			391	20,52	

On request configurations available up to a maximum of 259 plates.

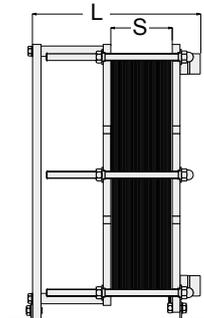
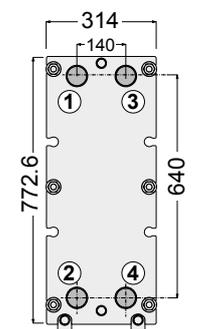
For operational conditions please refer to our on-line tool [https://www.cordivari.com/configurator\\_plate\\_exchangers](https://www.cordivari.com/configurator_plate_exchangers)

For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.

# PLATE HEAT EXCHANGERS

## EXCHANGERS PHC 8031 - DN50

EXCHANGERS PHC 8031 (PN16 VERSION ON REQUEST)



CONNECTIONS	
<b>DN50 (2")</b>	

1	Primary Inlet
2	Primary Outlet
3	Secondary Outlet
4	Secondary Inlet

N° of plates	With EPDM gaskets	With NBR gaskets	S Fixing quote	L	Primary Vol. = Secondary Vol.
	Art. Nr.	Art. Nr.	[mm]	[mm]	[lt]
13	3175056654741	3175056654689	46	405	2,28
15	3175056654742	3175056654690	53		2,66
17	3175056654743	3175056654691	60		3,04
19	3175056654744	3175056654692	67		3,42
21	3175056654745	3175056654693	74		3,80
23	3175056654746	3175056654694	81		4,18
25	3175056654747	3175056654695	88		4,56
27	3175056654748	3175056654696	95		4,94
29	3175056654749	3175056654697	102		5,32
31	3175056654750	3175056654698	109		5,70
33	3175056654751	3175056654699	116	6,08	
35	3175056654752	3175056654700	123	6,46	
37	3175056654753	3175056654701	130	505	6,84
39	3175056654754	3175056654702	137		7,22
41	3175056654755	3175056654703	144		7,60
43	3175056654756	3175056654704	151		7,98
45	3175056654757	3175056654705	158		8,36
47	3175056654758	3175056654706	165		8,74
49	3175056654759	3175056654707	172		9,12
51	3175056654760	3175056654708	179		9,50
53	3175056654761	3175056654709	186		9,88
55	3175056654762	3175056654710	193		10,26
57	3175056654763	3175056654711	200	605	10,64
59	3175056654764	3175056654712	207		11,02
61	3175056654765	3175056654713	214		11,40
63	3175056654766	3175056654714	221		11,78
65	3175056654767	3175056654715	228		12,16
67	3175056654768	3175056654716	235		12,54
69	3175056654769	3175056654717	242		12,92
71	3175056654770	3175056654718	249		13,30
73	3175056654771	3175056654719	256		13,68
75	3175056654772	3175056654720	263		14,06
77	3175056654773	3175056654721	270	14,44	
79	3175056654774	3175056654722	277	14,82	
81	3175056654775	3175056654723	284	15,20	
83	3175056654776	3175056654724	291	15,58	
85	3175056654777	3175056654725	298	15,96	
87	3175056654778	3175056654726	305	16,34	
89	3175056654779	3175056654727	312	16,72	
91	3175056654780	3175056654728	319	855	17,10
93	3175056654781	3175056654729	326		17,48
95	3175056654782	3175056654730	333		17,86
97	3175056654783	3175056654731	340		18,24
99	3175056654784	3175056654732	347		18,62
101	3175056654785	3175056654733	354		19,00
103	3175056654786	3175056654734	361		19,38
105	3175056654787	3175056654735	368		19,76
107	3175056654788	3175056654736	375		20,14
109	3175056654789	3175056654737	382		20,52
111	3175056654790	3175056654738	389	20,90	
113	3175056654791	3175056654739	396	21,28	
115	3175056654792	3175056654740	403	21,66	

On request configurations available up to a maximum of 205 plates.

For operational conditions please refer to our on-line tool [https://www.cordivari.com/configurator\\_plate\\_exchangers](https://www.cordivari.com/configurator_plate_exchangers)

For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.

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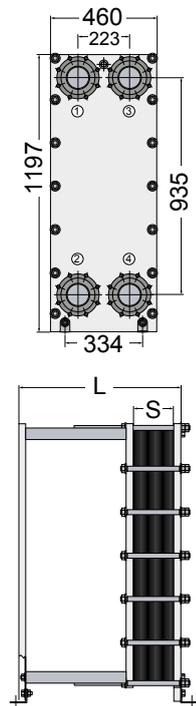
COLLECTORS AND ACCESSORIES

TECHNICAL SUPPORT

# PLATE HEAT EXCHANGERS

## EXCHANGERS PHC 12046 - DN100

EXCHANGERS PHC 12046 (PN16 VERSION ON REQUEST)



CONNECTIONS	
<b>DN100 PN16</b>	

- |   |                  |
|---|------------------|
| 1 | Primary Inlet    |
| 2 | Primary Outlet   |
| 3 | Secondary Outlet |
| 4 | Secondary Inlet  |

N° of plates	With EPDM gaskets		With NBR gaskets		S Fixing quote [mm]	L [mm]	Primary Vol. = Secondary Vol. [lt]
	Art. Nr.	Art. Nr.	Art. Nr.	Art. Nr.			
13	3175056654949	3175056654897			40		5,07
15	3175056654950	3175056654898			47		5,92
17	3175056654951	3175056654899			53		6,76
19	3175056654952	3175056654900			59		7,61
21	3175056654953	3175056654901			65		8,45
23	3175056654954	3175056654902			71		9,30
25	3175056654955	3175056654903			78		10,14
27	3175056654956	3175056654904			84		10,99
29	3175056654957	3175056654905			90		11,83
31	3175056654958	3175056654906			96		12,68
33	3175056654959	3175056654907			102		13,52
35	3175056654960	3175056654908			109		14,37
37	3175056654961	3175056654909			115	550	15,21
39	3175056654962	3175056654910			121		16,06
41	3175056654963	3175056654911			127		16,90
43	3175056654964	3175056654912			133		17,75
45	3175056654965	3175056654913			140		18,59
47	3175056654966	3175056654914			146		19,44
49	3175056654967	3175056654915			152		20,28
51	3175056654968	3175056654916			158		21,13
53	3175056654969	3175056654917			164		21,97
55	3175056654970	3175056654918			171		22,82
57	3175056654971	3175056654919			177		23,66
59	3175056654972	3175056654920			183		24,51
61	3175056654973	3175056654921			189		25,35
63	3175056654974	3175056654922			195		26,20
65	3175056654975	3175056654923			202		27,04
67	3175056654976	3175056654924			208		27,89
69	3175056654977	3175056654925			214		28,73
71	3175056654978	3175056654926			220		29,58
73	3175056654979	3175056654927			226		30,42
75	3175056654980	3175056654928			233		31,27
77	3175056654981	3175056654929			239		32,11
79	3175056654982	3175056654930			245		32,96
81	3175056654983	3175056654931			251		33,80
83	3175056654984	3175056654932			257		34,65
85	3175056654985	3175056654933			264		35,49
87	3175056654986	3175056654934			270		36,34
89	3175056654987	3175056654935			276	710	37,18
91	3175056654988	3175056654936			282		38,03
93	3175056654989	3175056654937			288		38,87
95	3175056654990	3175056654938			295		39,72
97	3175056654991	3175056654939			301		40,56
99	3175056654992	3175056654940			307		41,41
101	3175056654993	3175056654941			313		42,25
103	3175056654994	3175056654942			319		43,10
105	3175056654995	3175056654943			326		43,94
107	3175056654996	3175056654944			332		44,79
109	3175056654997	3175056654945			338		45,63
111	3175056654998	3175056654946			344		46,48
113	3175056654999	3175056654947			350		47,32
115	3175056655000	3175056654948			357		48,17

On request configurations available up to a maximum of 213 plates.

For operational conditions please refer to our on-line tool [https://www.cordivari.com/configurator\\_plate\\_exchangers](https://www.cordivari.com/configurator_plate_exchangers)

For the complete range and prices of calorifiers please refer to our calorifier and buffer tanks catalogue.

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# PUFFERMAS CTS®

## BUFFER TANK FOR HEATING WATER WITH MACS MODULE FOR INSTANTANEOUS PRODUCTION OF DHW AND 1 OR 2 FIXED HEAT EXCHANGERS

The new range of PUFFERMAS CTS tanks represent the last Cordivari's innovation in the field of buffer tanks designed to be integrated in solar thermal systems. PUFFERMAS CTS are designed to allow a better thermal stratification which gives an higher efficiency in the thermal exchange. Having the possibility to store most of the heat in the upper part of the tank, it is possible to produce also a small volume of hot water in a short time, thanks to the limitation of the internal convective movements with consistent advantages in efficiency.

The exclusive CTS stratification system allows to get energy from the first ray of Sun, and in a short time to produce domestic hot water. The separation disk and the CTS stratification system immediately convey the energy captured by the solar collectors in the upper part of the tank, so that the energy is loaded from the top to the bottom and immediately available. This is possible thanks to the combination of the following solutions:

1. The labyrinth diffuser is a device that conveys the water returning into the tank after the thermal exchange preserving the thermal stratification, so according to the temperature the water will naturally go to the most suitable position in tank without mixing with water at other temperatures and preserving the thermal stratification.
2. CTS system for thermal load from the top, which conveys the heat from the lower coil to the upper part of the tank, so that also a small amount of hot water is available in a short time and with a higher  $\Delta T$ .
3. The lower solar exchanger of the PUFFERMAS CTS, reduced and concentrated in the lower part of the tank, leaves more space for the accumulation volume and for the stratification of the other energy sources. This system allows and preserves the perfect natural thermal stratification of the tank, without using additional valves or circulators.

### PUFFERMAS® 2 CTS®

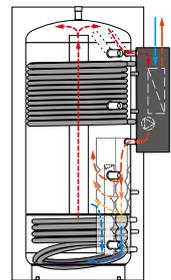
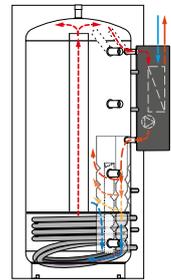


### PUFFERMAS® 3 CTS®

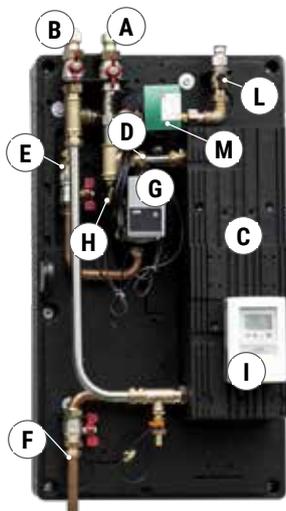


## SUITABLE FOR THERMAL SOLAR SYSTEMS

THE ILLUSTRATION UNDERLINES THE STRATIFICATION PROCESS (FROM TOP TO BOTTOM) THAT ALLOWS TO HAVE ALL ENERGY NEEDED RAPIDLY AVAILABLE



## ELECTRONIC MACS® MODULE - FOR IMMEDIATE DHW PRODUCTION WITH ELECTRONIC CONTROL UNIT



- |  |  |
|--|--|
| <b>A</b>                                   | Domestic hot water outlet (DHW)                |
| <b>B</b>                                   | Domestic Water entry                           |
| <b>C</b>                                   | Stainless Steel Plate Exchanger                |
| <b>D</b>                                   | Flow rate/ temperature probe                   |
| <b>E</b>                                   | Primary Inlet                                  |
| <b>F</b>                                   | Primary Outlet                                 |
| <b>G</b>                                   | "Energy Saving" Circulation Pump               |
| <b>H</b>                                   | Valves In/Out for DHW                          |
| <b>I</b>                                   | Electronic control unit                        |
| <b>D.H.W. RECIRCULATION KIT (optional)</b> |  |
| <b>L</b>                                   | Connection for D.H.W. recirculation (optional) |
| <b>M</b>                                   | D.H.W. recirculation pump (optional)           |

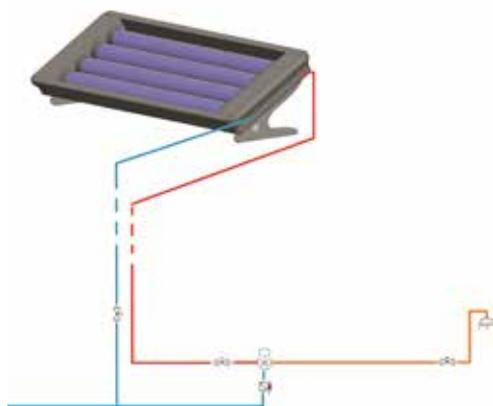
MACS® module is an external unit that immediately produces hot domestic water, using the heat energy stored in the Buffer thanks to the stainless steel plate exchanger, granting safety and comfort with the possibility to regulate outlet temperature.

With the new electronic regulation system, the management of the temperature on the DHW side is guaranteed and maintained in an optimal manner and with immediate response times from the electronic control unit on the module.

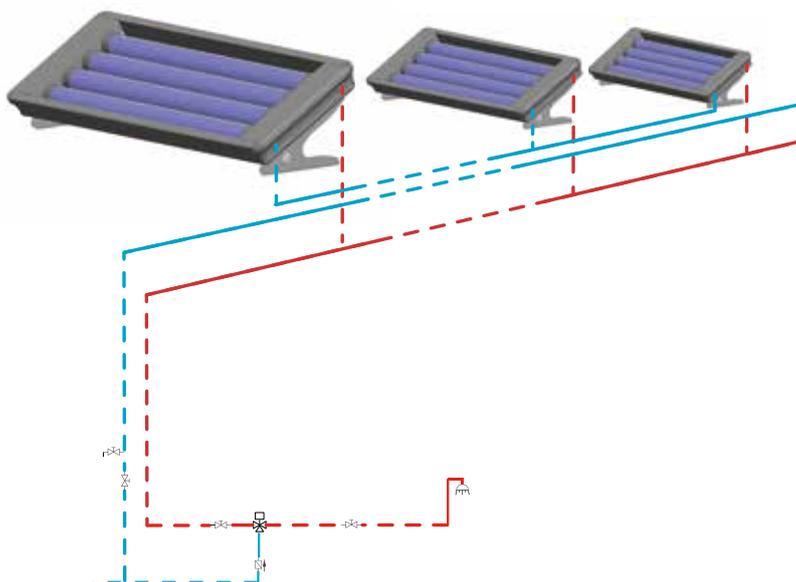


# EXAMPLE OF INSTALLATION - STRATOS® 4S

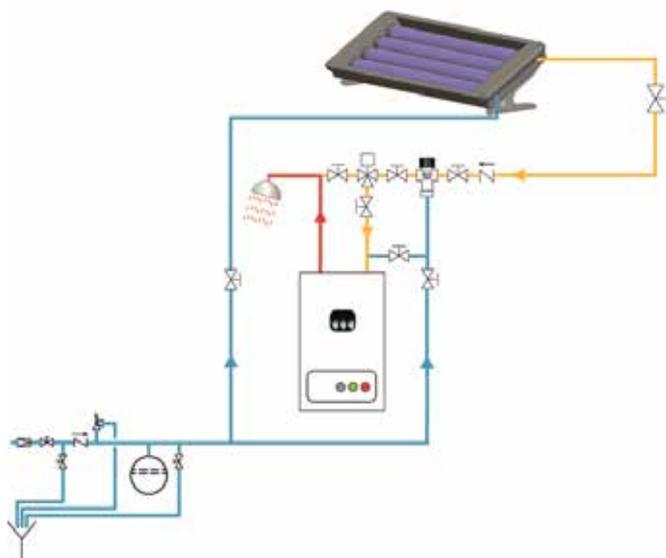
## SINGLE INSTALLATION STAND-ALONE



## INSTALLATION IN PARALLEL



## BOILER INTEGRATION



**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

STRATOS®

STRATOS® SYSTEMS

THERMOSIPHON SYSTEMS

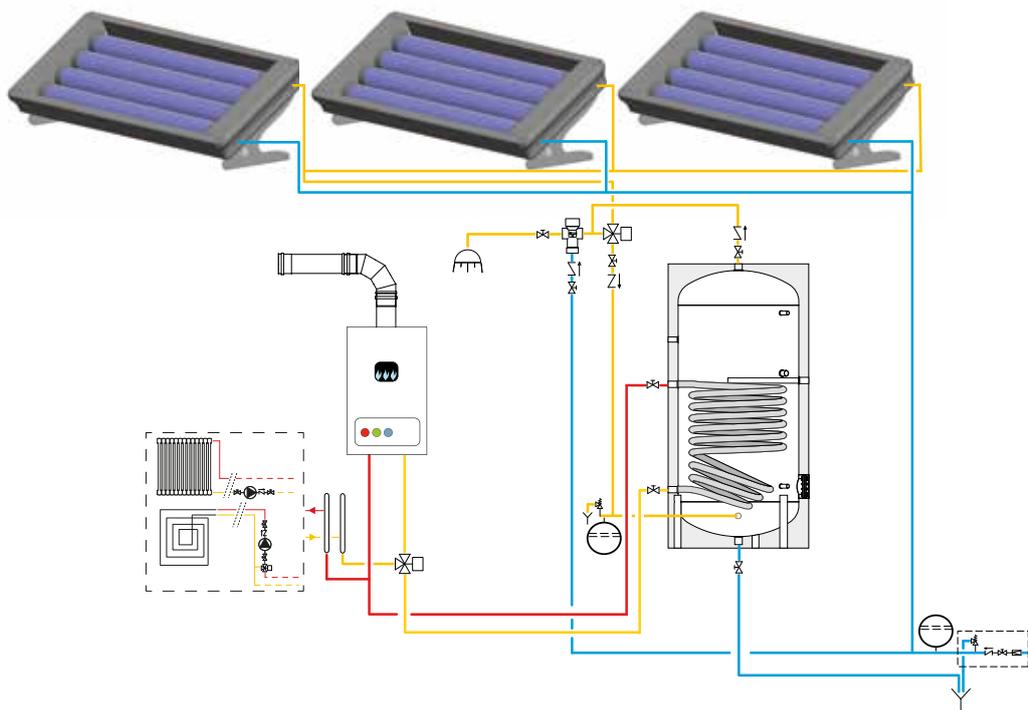
FORCED CIRCULATION SYSTEMS

COLLECTORS AND ACCESSORIES

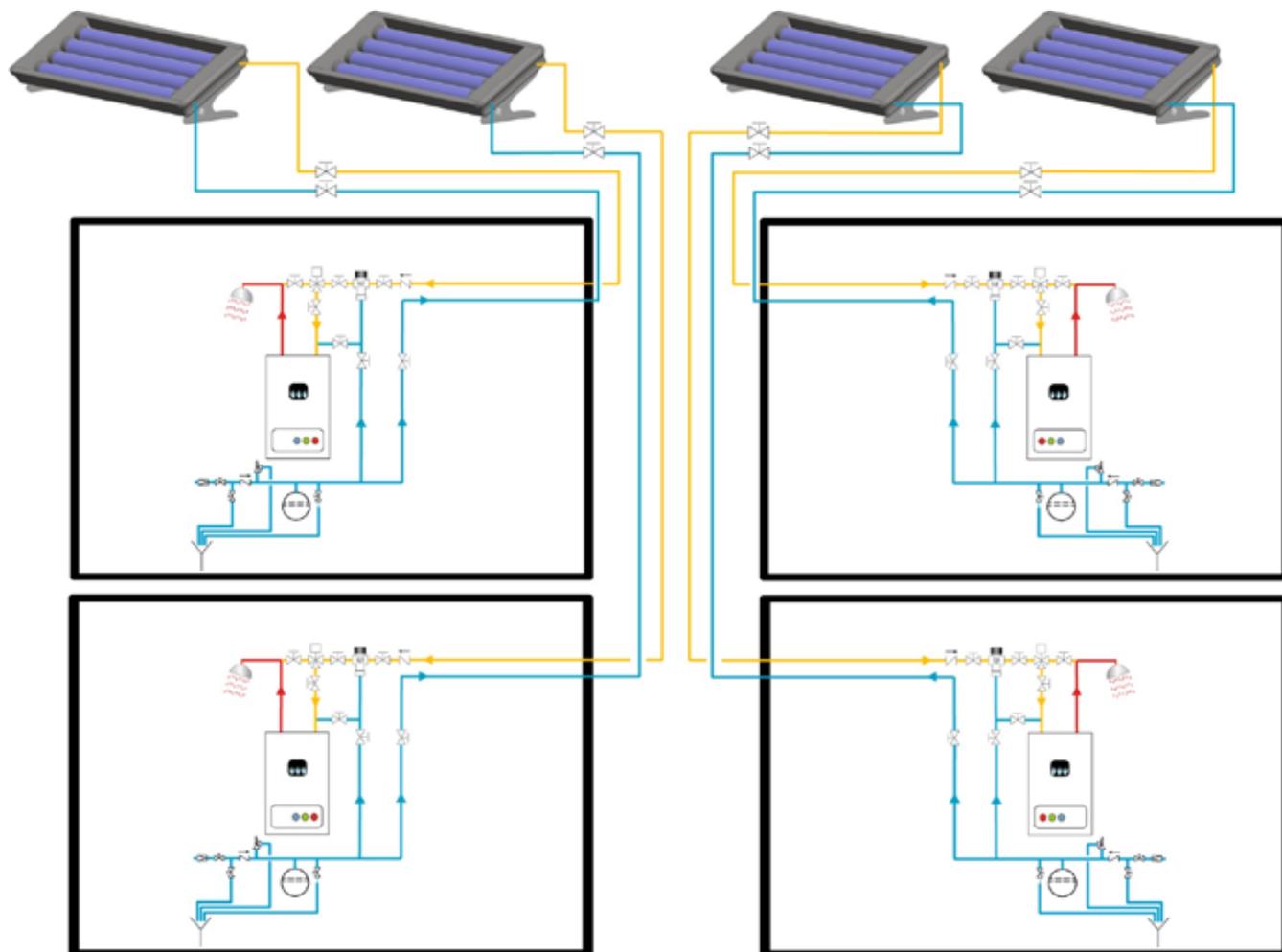
TECHNICAL SUPPORT

# EXAMPLE OF INSTALLATION - STRATOS® 4S

## INSTALLATION IN PARALLEL WITH PRE-HEATING CYLINDER FUNCTION



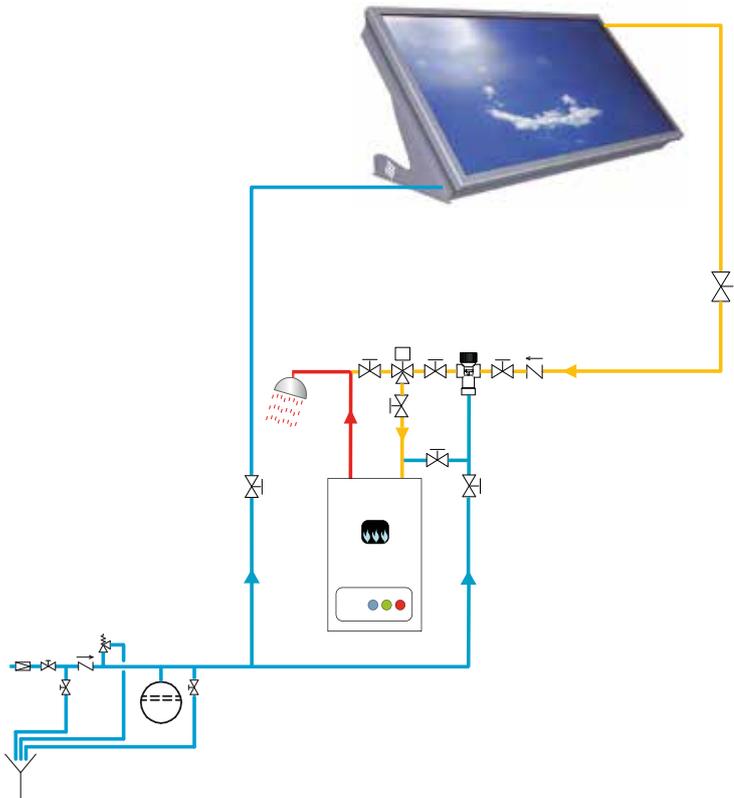
## CONDOMINIUM INSTALLATION DIAGRAM



**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

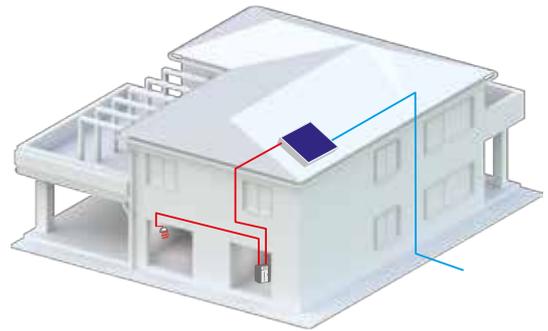
# EXAMPLE OF INSTALLATION

## INSTALLATION SCHEME OF A SINGLE STRATOS® DR WITH BOILER INTEGRATION

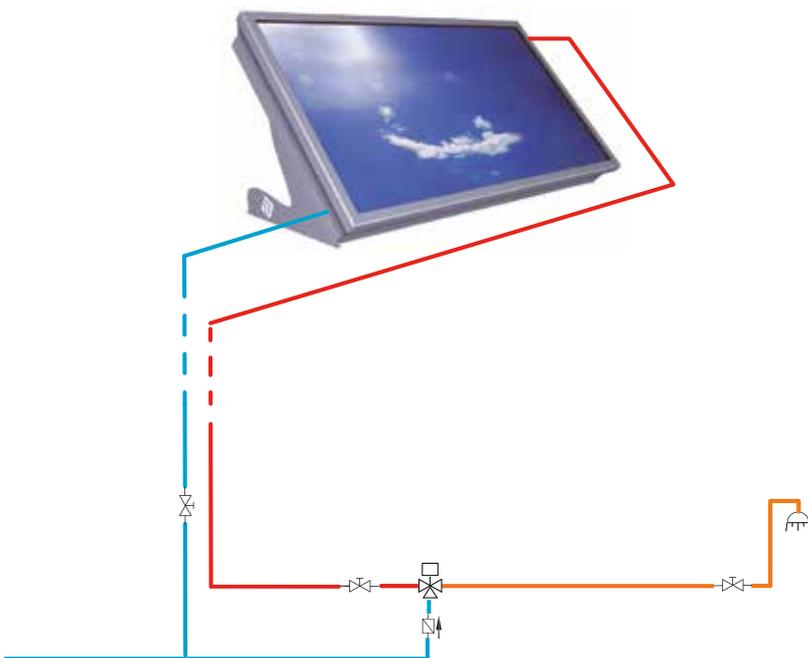


### SUGGESTION

It is advisable to always foresee an emptying tap on the cold water supply connection to the Stratos system

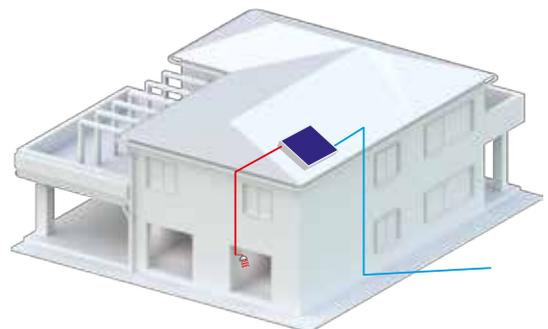


## INSTALLATION SCHEME OF A SINGLE STRATOS® DR WITHOUT INTEGRATION OF OTHER DHW GENERATORS



### SUGGESTION

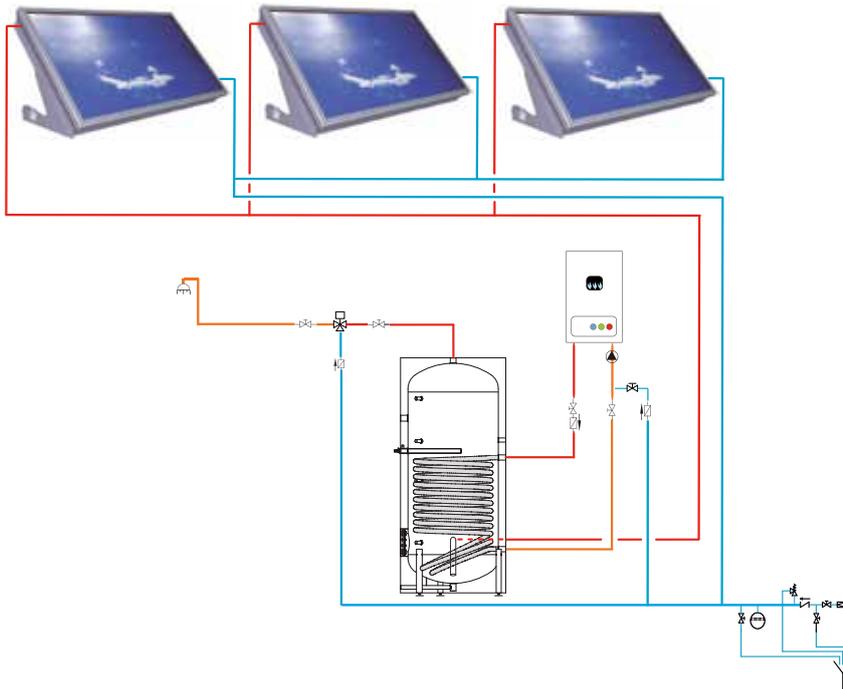
It is advisable to always foresee an emptying tap on the cold water supply connection to the Stratos system



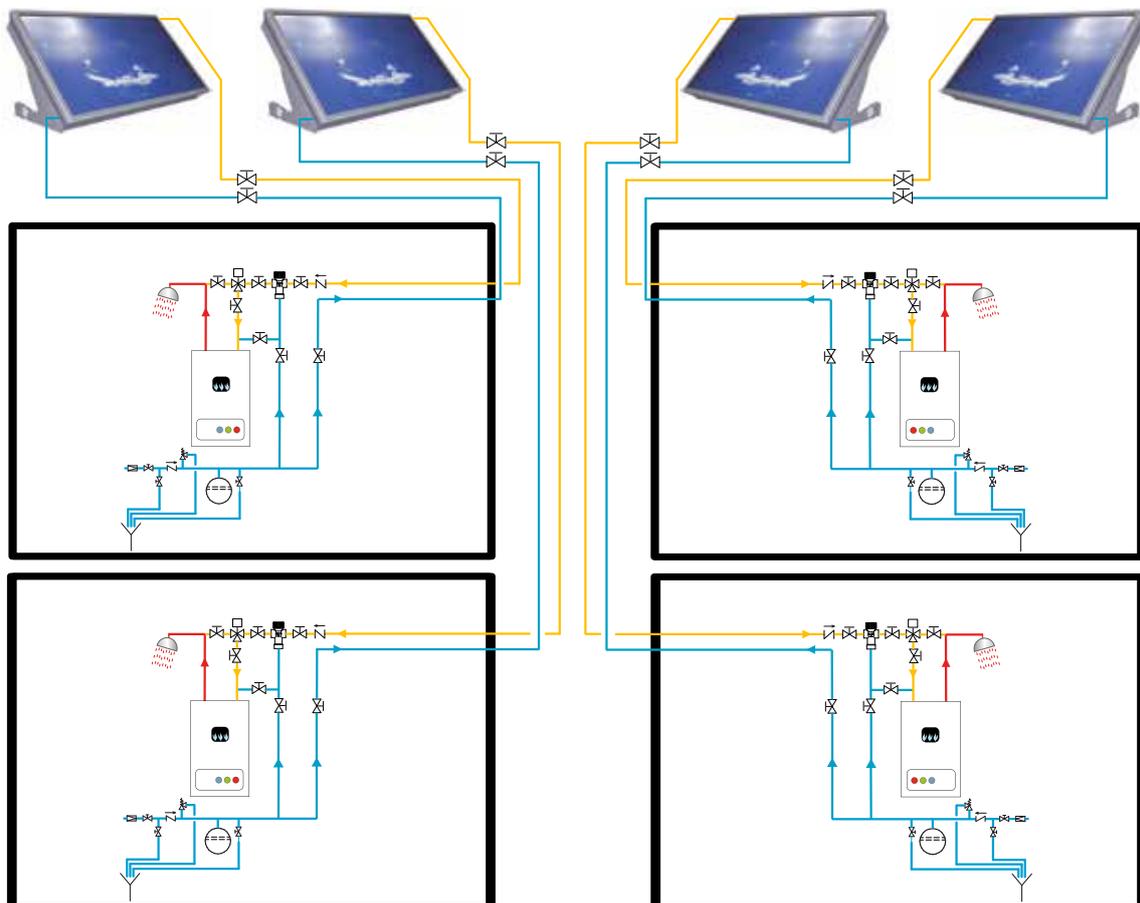
**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

## INSTALLATION DIAGRAM OF 3 STRATOS® DR IN PARALLEL WITH BOILER PRE-HEATING FUNCTION



## INSTALLATION SCHEME OF STRATOS® DR ON CONDOMINIUM OF MULTI-FAMILY HOUSE WITH AUTONOMOUS THERMIC SYSTEM

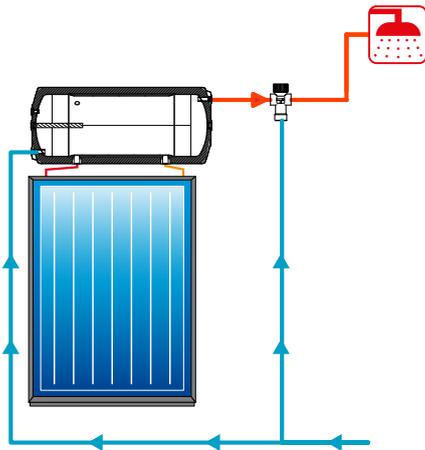


**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

## THERMOSIPHON SYSTEMS

A

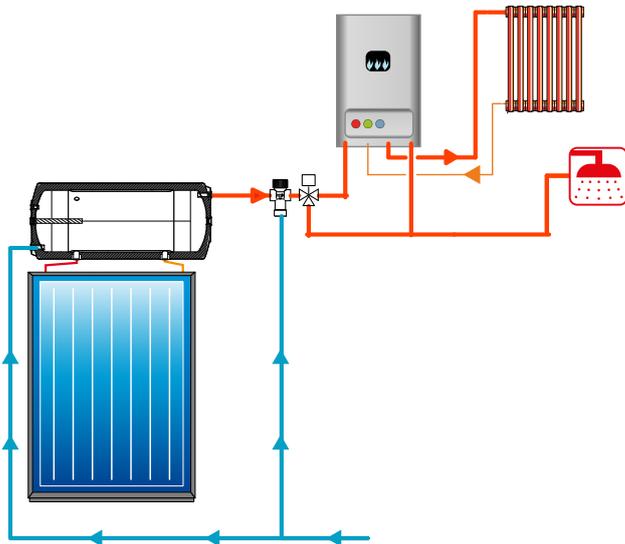


### A • Direct connection of the system to the DHW Utilities

This is the simplest installation scheme, used to ensure the normal seasonal continuity of the service. It is recommended to install a solar thermostatic mixing valve to avoid water overheating. Cordivari solar thermal systems are supplied with anti-freeze fluid resistant down to -25°C; anyway it is recommended to add an electric resistance to protect the system from freezing.

APPLICATIONS: utilities used in Summer when the need of domestic hot water coincides with the highest availability of solar radiation (ex. Beach resorts). Very simple installation, very high reliability.

B



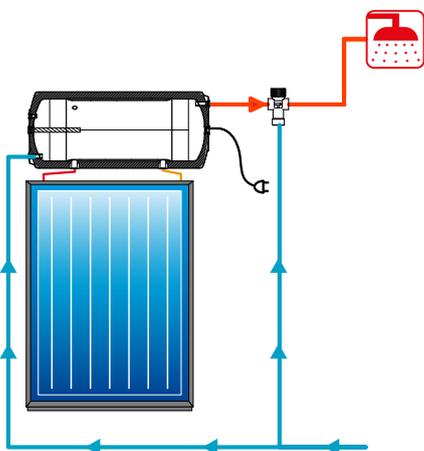
### B • Direct connection of the system to the instantaneous boiler

This installation scheme foresees the addition of a 3 way valve controlled by a thermostat that detects the temperature of the water inside the tank. If this temperature is higher than the value set on the thermostat the water is directly sent to the utilities, otherwise the water is further heated by the boiler. This installation scheme allows to avoid conveying to the boiler water at high temperature, and at the same time using the solar as a pre-heating support.

In any case it is recommended to use a solar thermostatic mixing valve to avoid the overheating risk. Cordivari solar thermal systems are supplied with anti-freeze fluid resistant down to -25°C; anyway it is recommended to add an electric resistance to protect the system from freezing.

APPLICATIONS: small domestic utilities with solar thermal system connected to an instantaneous boiler

C



### C • Direct connection to the DHW utilities with electric integration

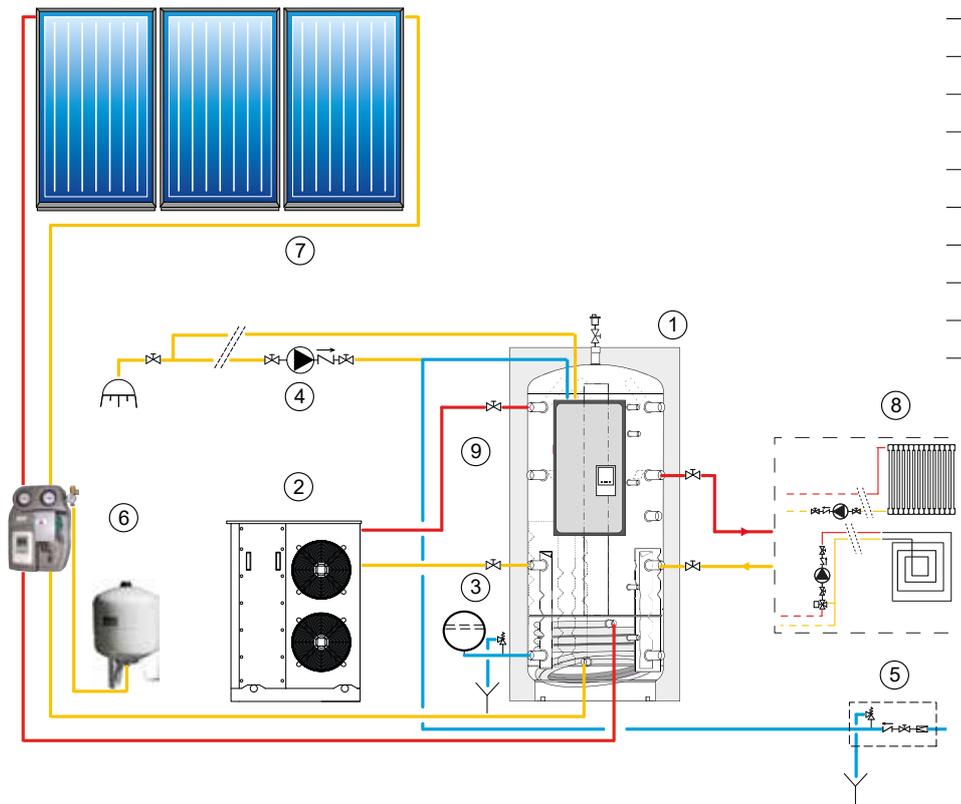
In this installation scheme the electric integration is applied directly on the double wall calorifier; this solution is considerably better than connecting in series electric water heaters. Cordivari solar thermal systems are supplied with anti-freeze fluid resistant down to -25°C; anyway it is recommended to add an electric resistance to protect the system from freezing.

APPLICATIONS: Utilities used mostly during the Summer, where there is no back-up boiler.

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

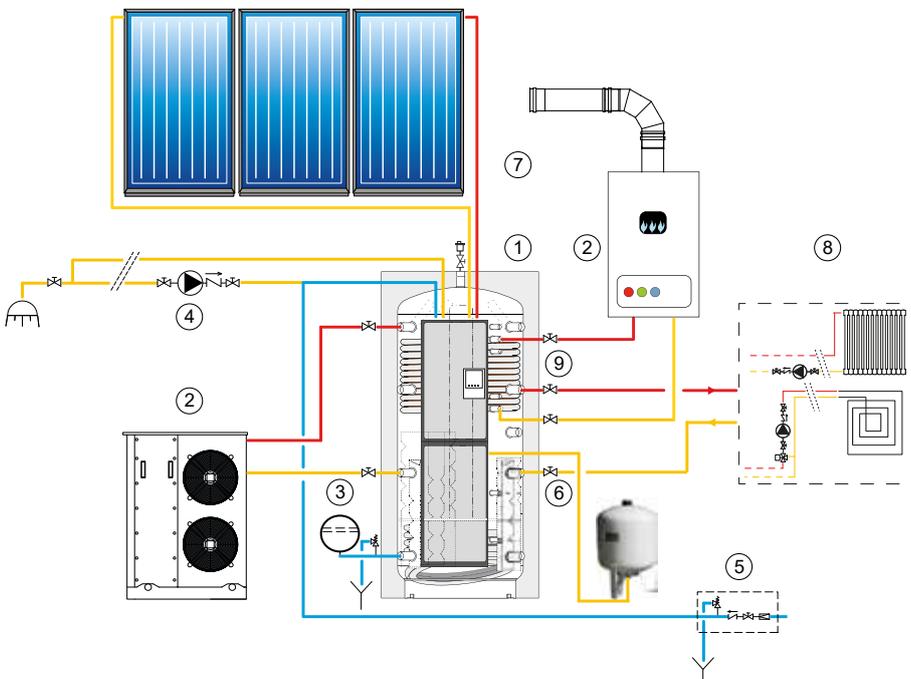
## SOLAR THERMAL SYSTEM PUFFERMAS® 2 CTS®



### LEGEND

1	PUFFERMAS® 2 CTS
2	Generator
3	Expansion vessel
4	DHW circulation group pump
5	Hydraulic safety group
6	Complete solar circulation group
7	Solar collector/s
8	Heating system
9	MACS® module

## SOLAR THERMAL SYSTEM PUFFERMAS® 3 CTS® POWER



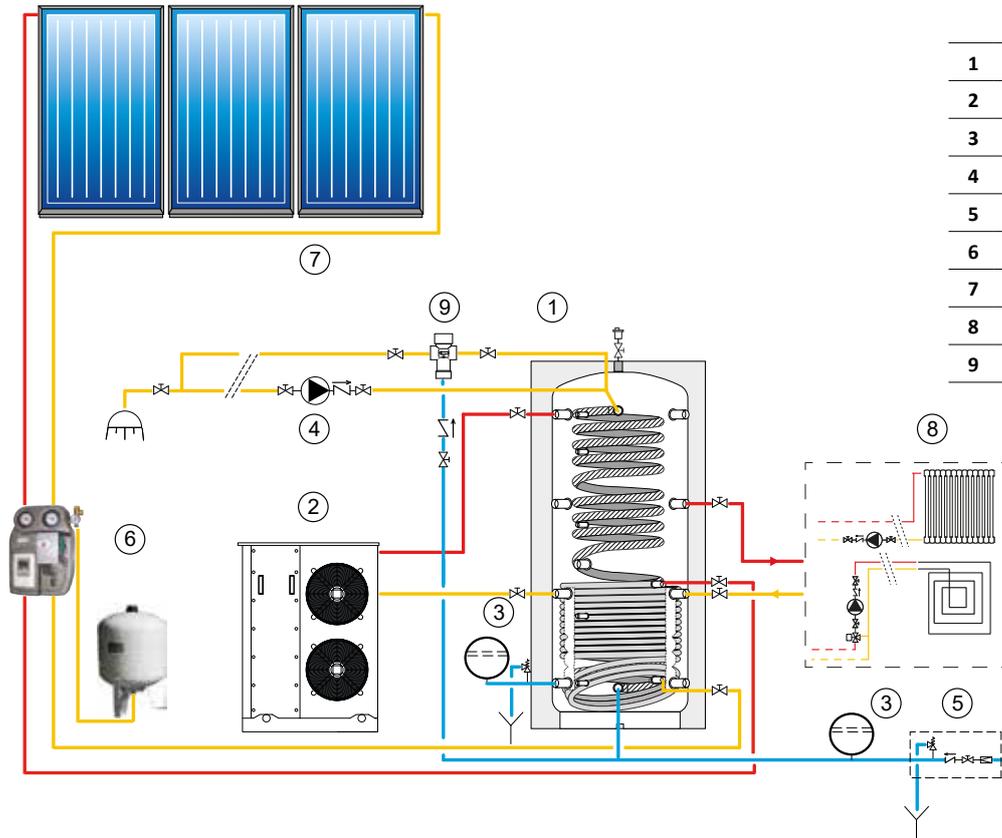
### LEGEND

1	PUFFERMAS® 3 CTS POWER
2	Generator
3	Expansion vessel
4	DHW circulation group pump
5	Hydraulic safety group
6	Complete solar circulation group
7	Solar collector/s
8	Heating system
9	MACS® module

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

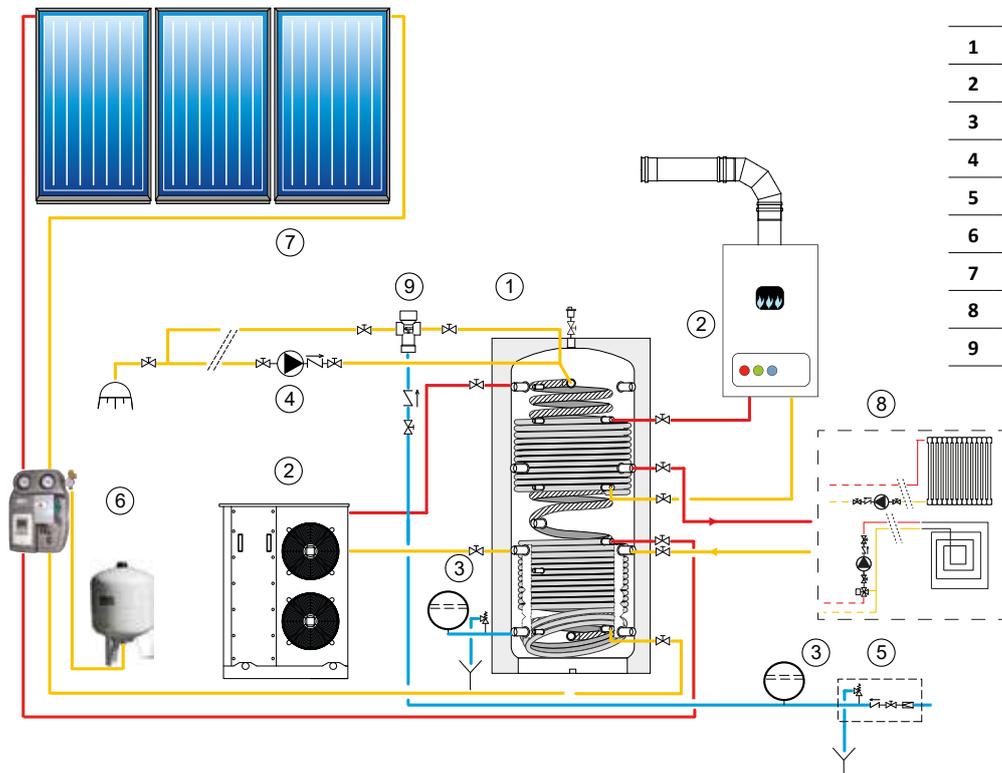
## SOLAR THERMAL SYSTEM ECO-COMBI 2



### LEGEND

- |   |                                  |
|---|----------------------------------|
| 1 | ECO-COMBI 2                      |
| 2 | Generator                        |
| 3 | Expansion vessel                 |
| 4 | DHW circulation group pump       |
| 5 | Hydraulic safety group           |
| 6 | Complete solar circulation group |
| 7 | Solar collector/s                |
| 8 | Heating system                   |
| 9 | Solar thermostatic mixing valve  |

## SOLAR THERMAL SYSTEM ECO-COMBI 3



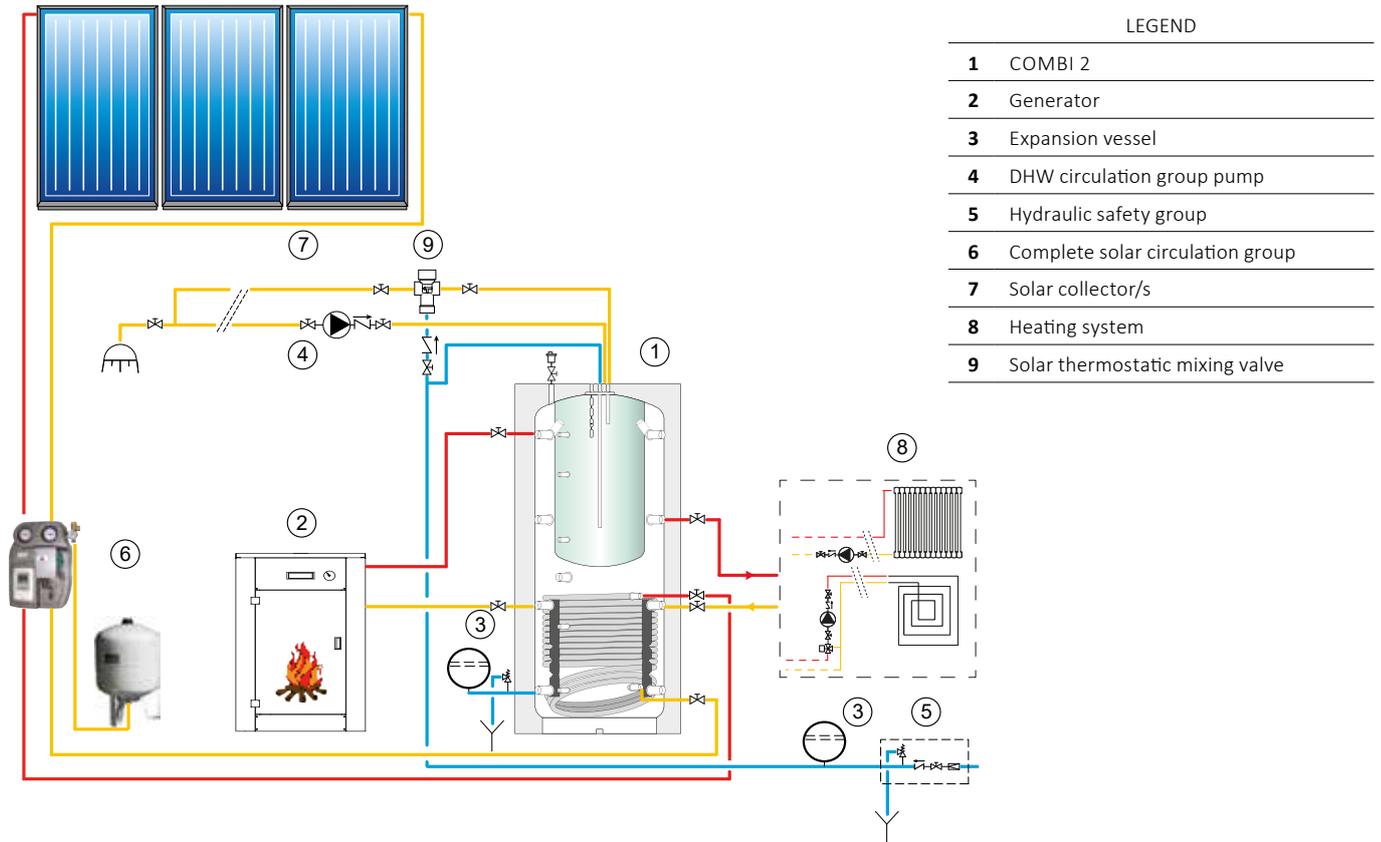
### LEGEND

- |   |                                  |
|---|----------------------------------|
| 1 | ECO-COMBI 3                      |
| 2 | Generator                        |
| 3 | Expansion vessel                 |
| 4 | DHW circulation group pump       |
| 5 | Hydraulic safety group           |
| 6 | Complete solar circulation group |
| 7 | Solar collector/s                |
| 8 | Heating system                   |
| 9 | Solar thermostatic mixing valve  |

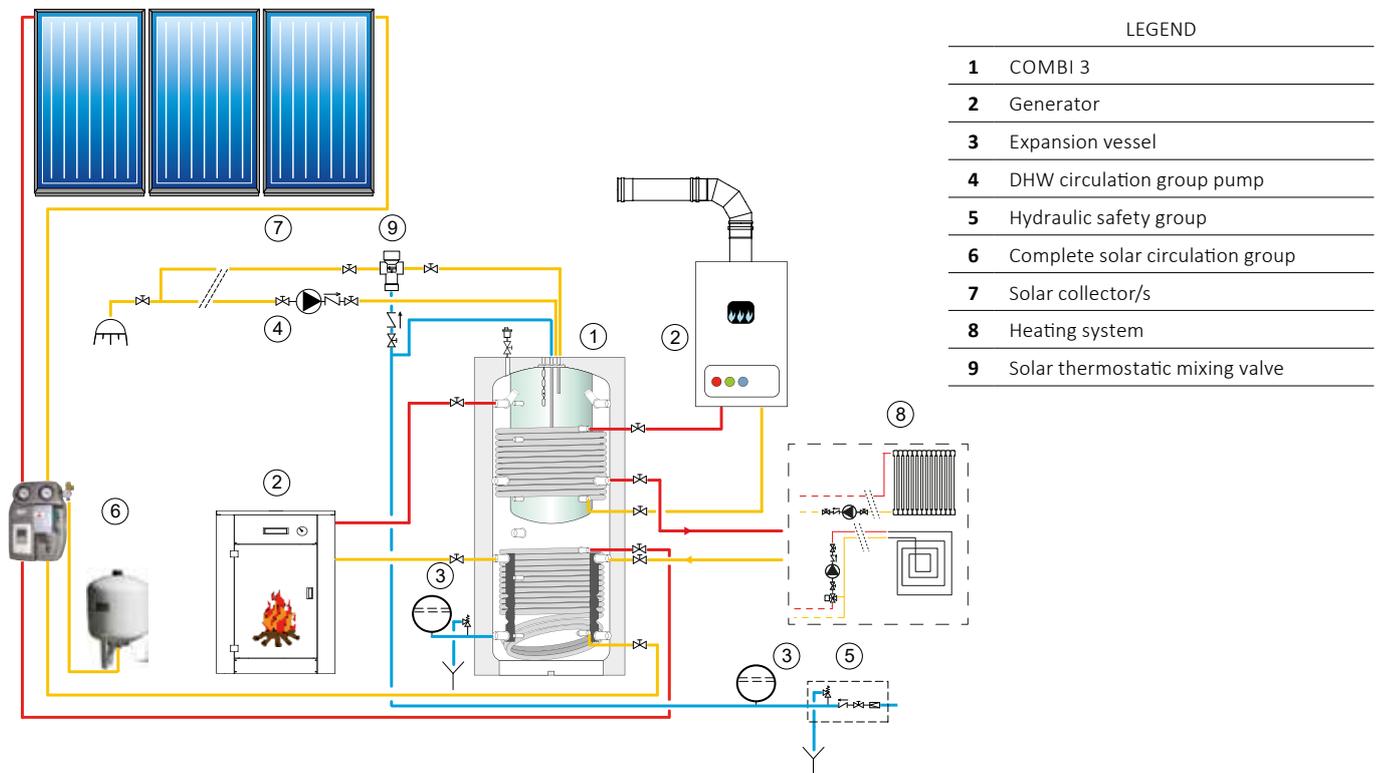
**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

## SOLAR THERMAL SYSTEM COMBI 2



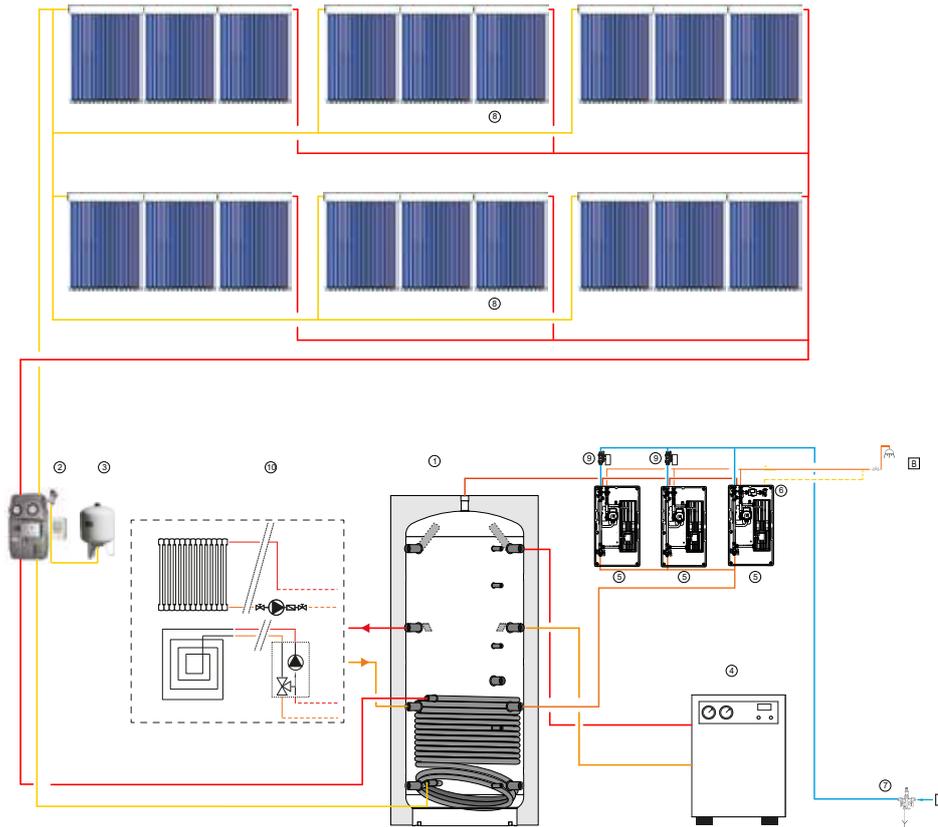
## SOLAR THERMAL SYSTEM COMBI 3



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# EXAMPLE OF INSTALLATION

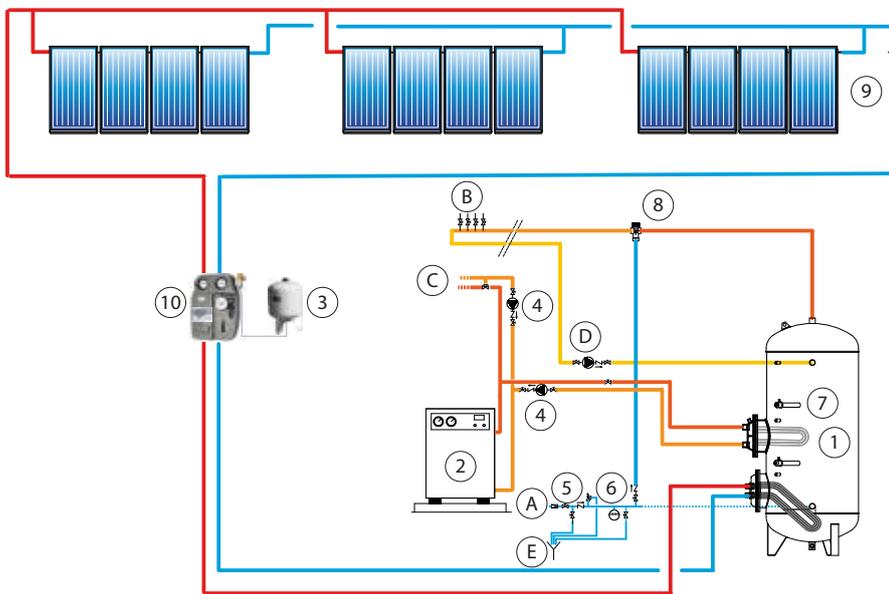
## SOLAR THERMAL SYSTEM COMBINED WITH PUFFER TANK WITH FIXED COIL



### LEGEND

A	Cold water inlet
B	DHW utilities
1	PUFFER 1
2	Solar circulation group
3	Solar circuit expansion vessel
4	Heat source
5	Electronic MACS modules in cascade
6	DHW circulation group
7	Hydraulic safety group
8	Solar collectors
9	2-way valve
10	Heating system

## SOLAR THERMAL SYSTEM EXTRA 2



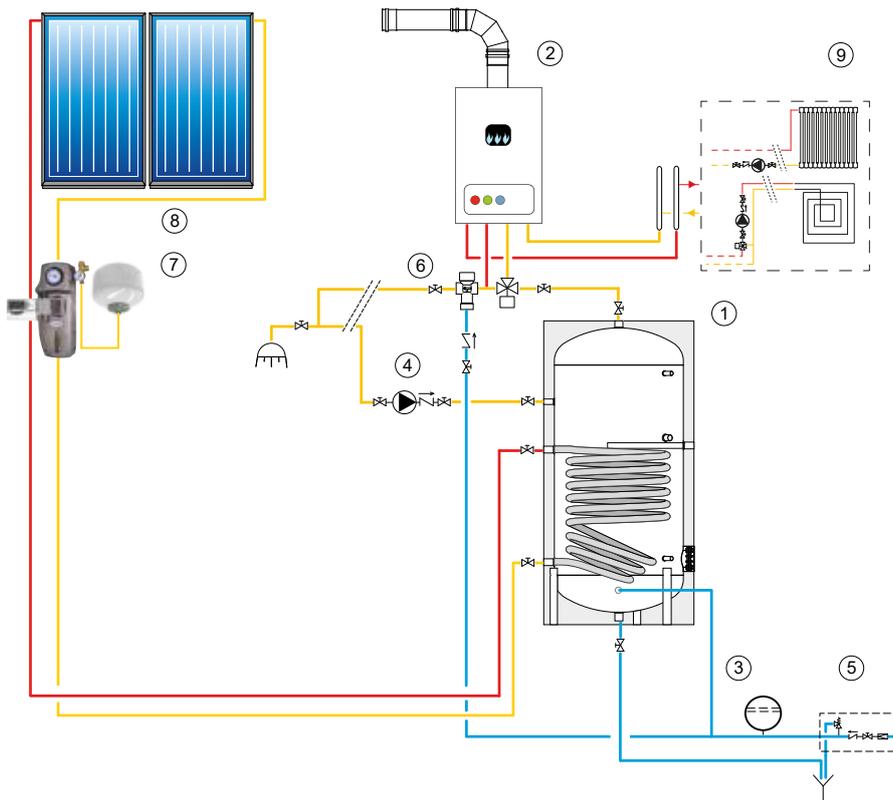
### LEGEND

A	Domestic water inlet
B	DHW utilities
C	Heating system
D	Recirculation
E	Drain
1	EXTRA 2
2	Heat source
3	Solar system expansion vessel
4	Circulation group
5	Hydraulic safety group
6	Safety valve
7	Magnesium anode
8	Solar thermostatic mixing valve
9	Solar collectors
10	Solar circulation group

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# EXAMPLE OF INSTALLATION

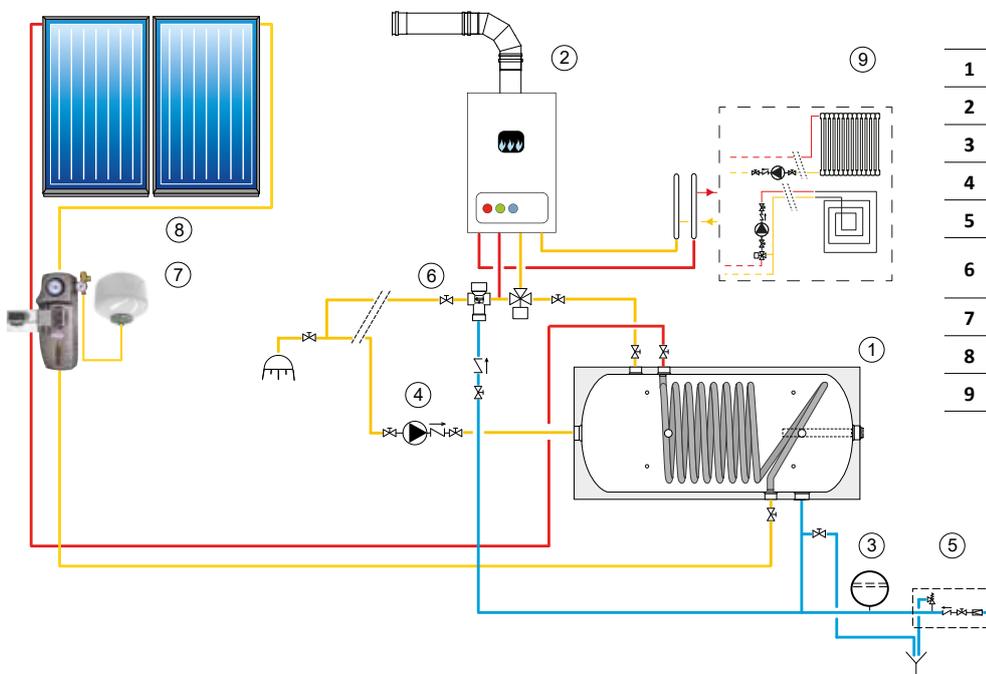
## SOLAR THERMAL SYSTEM B1



### LEGEND

1	BOLLY® B1
2	Heat source (gas boiler)
3	Expansion vessel
4	DHW circulation group pump
5	Hydraulic safety group
6	Diverting valve/Solar thermostatic mixing valve
7	Complete solar circulation group
8	Solar collector/s
9	Heating system

## SOLAR THERMAL SYSTEM BM



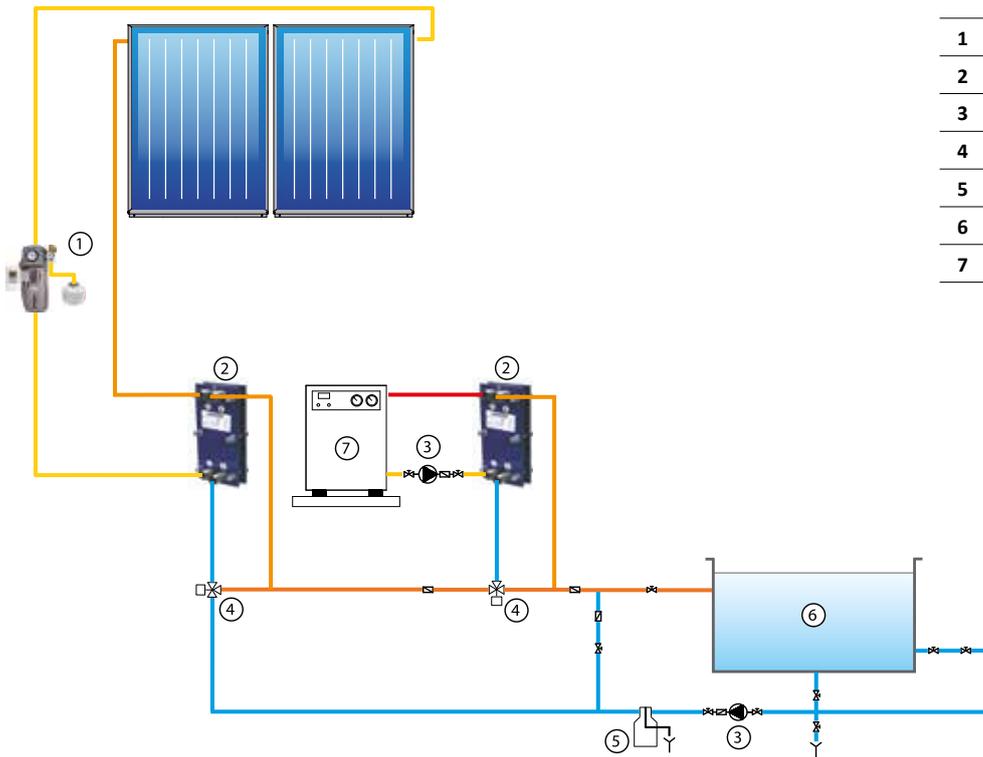
### LEGEND

1	BOLLY® MURALE
2	Heat source (gas boiler)
3	Expansion vessel
4	DHW circulation group pump
5	Hydraulic safety group
6	Diverting valve/Solar thermostatic mixing valve
7	Complete solar circulation group
8	Solar collector/s
9	Heating system

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# EXAMPLE OF INSTALLATION

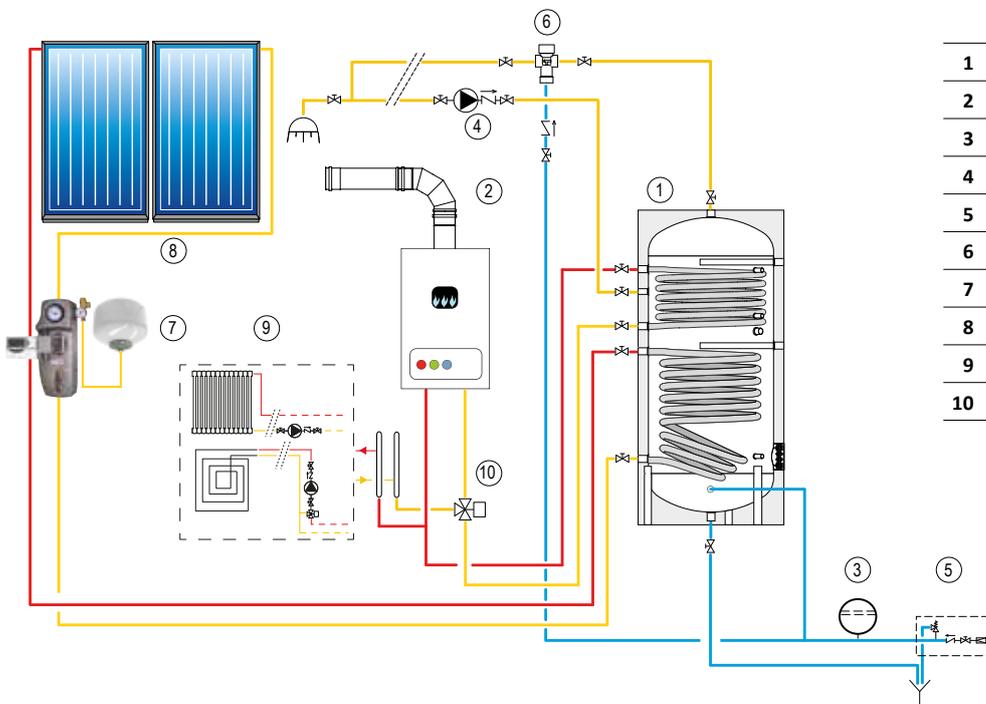
## INSTALLATION WITH PLATE-TO-PLATE HEAT EXCHANGERS AND SOLAR THERMAL SYSTEM FOR POOL HEATING



### LEGEND

- |   |  |
|---|--|
| 1 | Solar thermal system circulation group |
| 2 | Plate-to-plate heat exchanger PHC      |
| 3 | Pump                                   |
| 4 | Motorized 3-way valve                  |
| 5 | Pool filter                            |
| 6 | Pool                                   |
| 7 | Optional Generator                     |

## SOLAR THERMAL SYSTEM B2 CLASSE A



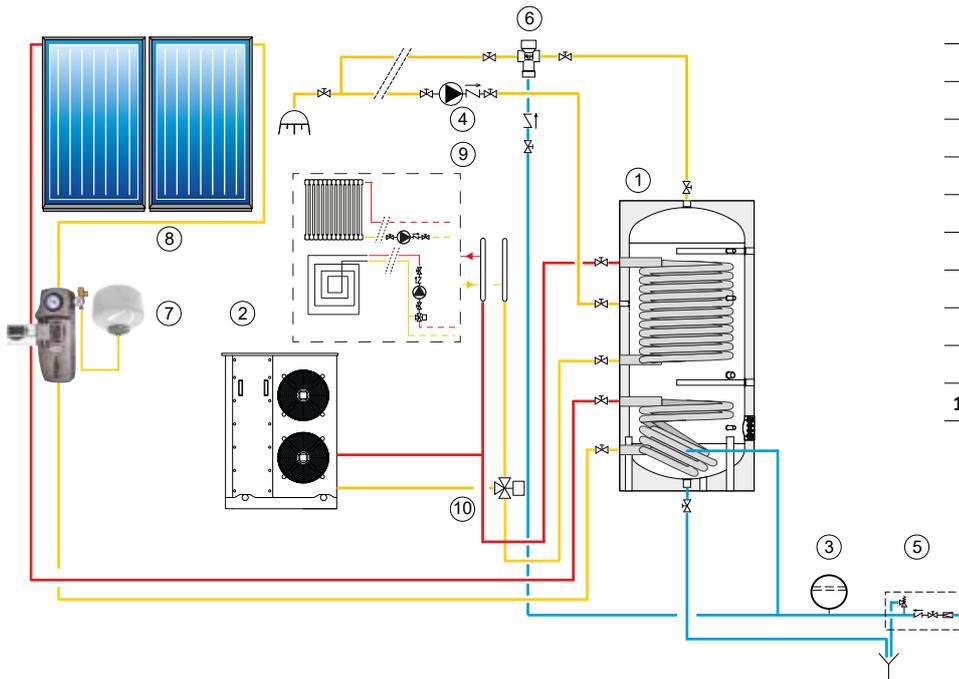
### LEGEND

- |    |                                  |
|----|----------------------------------|
| 1  | BOLLY® 2 CLASSE A                |
| 2  | Heat source                      |
| 3  | Expansion vessel                 |
| 4  | DHW circulation group pump       |
| 5  | Hydraulic safety group           |
| 6  | Solar thermostatic mixing valve  |
| 7  | Complete solar circulation group |
| 8  | Solar collector/s                |
| 9  | Heating system                   |
| 10 | Diverting valve                  |

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

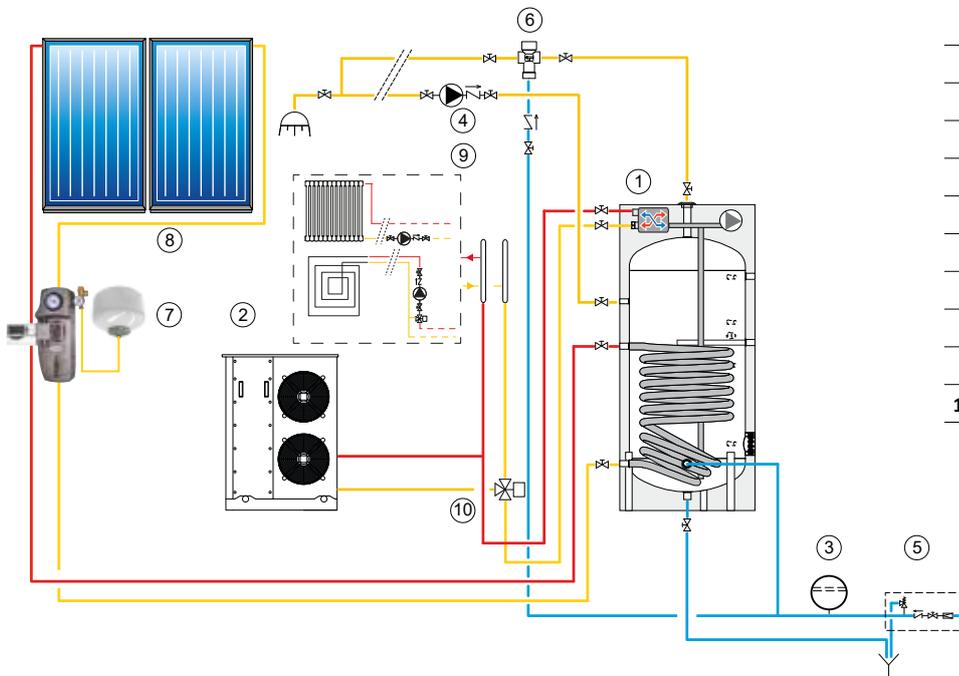
## SOLAR THERMAL SYSTEM B2 XL



### LEGEND

1	BOLLÝ® 2 XL
2	Heat source (heat pump)
3	Expansion vessel
4	DHW circulation group pump
5	Hydraulic safety group
6	Solar thermostatic mixing valve
7	Complete solar circulation group
8	Solar collector/s
9	Heating system
10	Diverting valve

## SOLAR THERMAL SYSTEM B2 PDC



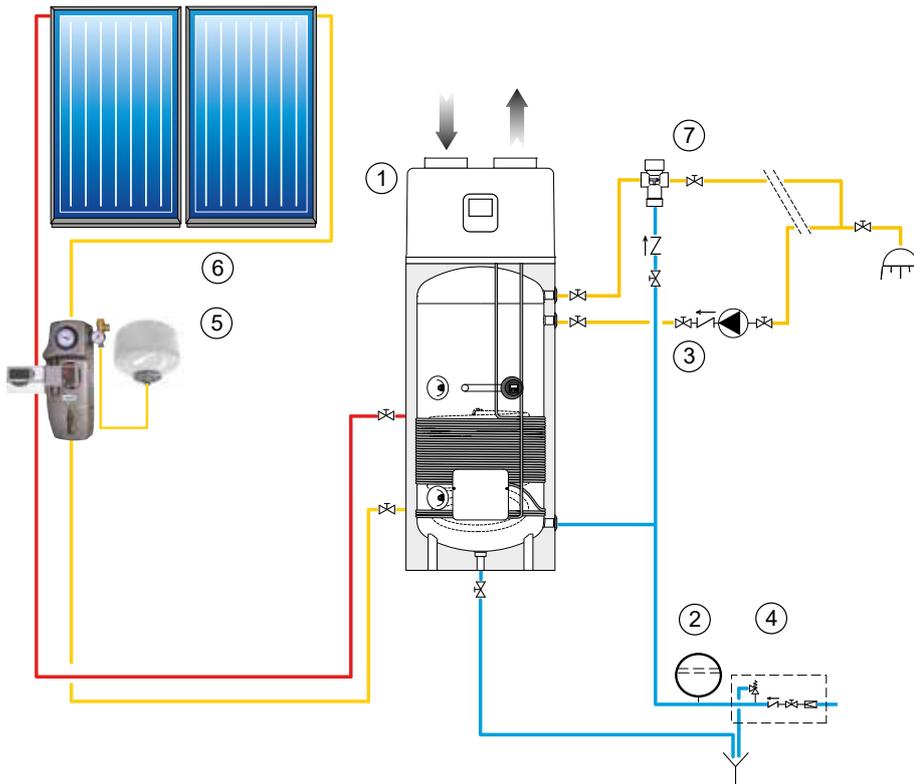
### LEGEND

1	BOLLÝ® 2 PDC
2	Heat source (heat pump)
3	Expansion vessel
4	DHW circulation group pump
5	Hydraulic safety group
6	Solar thermostatic mixing valve
7	Complete solar circulation group
8	Solar collector/s
9	Heating system
10	Diverting valve

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# EXAMPLE OF INSTALLATION

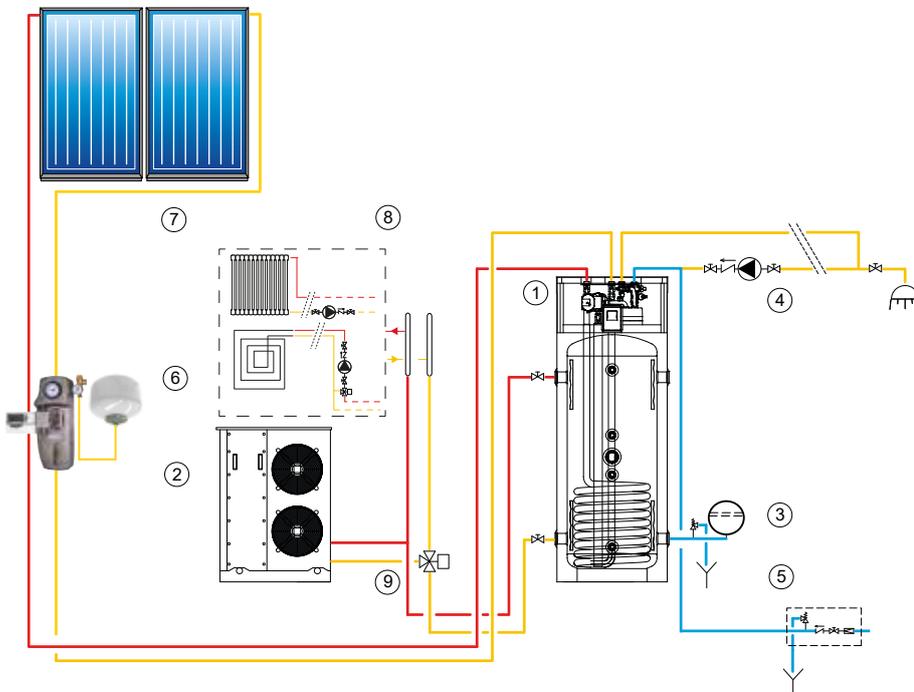
## SOLAR THERMAL SYSTEM BOLLYTERM® HP 1



### LEGEND

- |   |                                  |
|---|----------------------------------|
| 1 | BOLLYTERM® HP1                   |
| 2 | Expansion vessel                 |
| 3 | DHW circulation group pump       |
| 4 | Hydraulic safety group           |
| 5 | Complete solar circulation group |
| 6 | Solar collector/s                |
| 7 | Solar thermostatic mixing valve  |

## SOLAR THERMAL SYSTEM PUFFERMAS 2 DOMUS



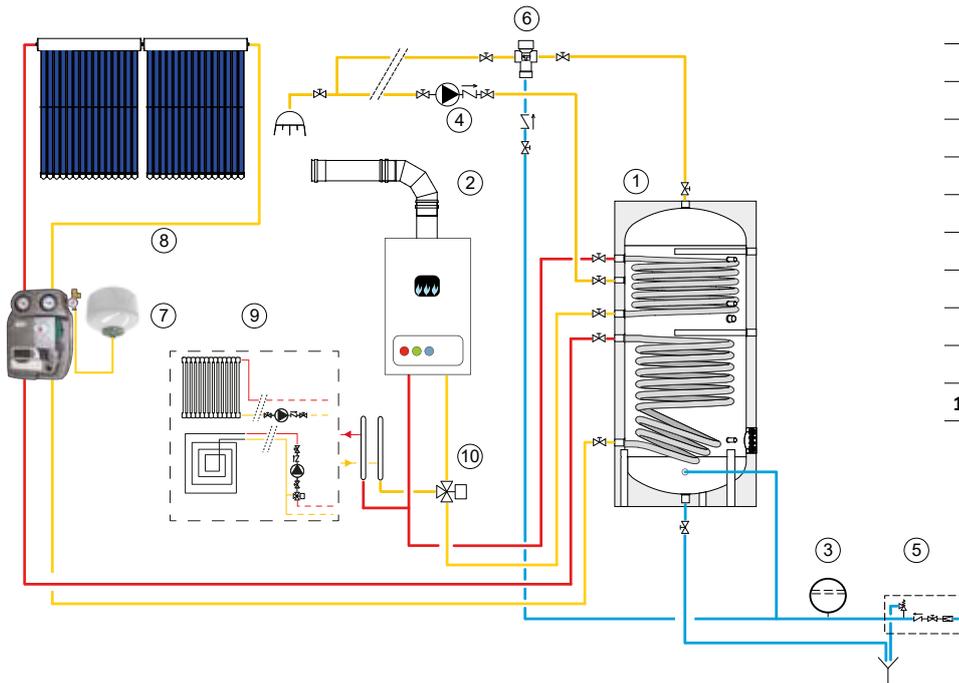
### LEGEND

- |   |                                  |
|---|----------------------------------|
| 1 | PUFFERMAS® 2 DOMUS               |
| 2 | Heat source (heat pump)          |
| 3 | Expansion vessel                 |
| 4 | DHW circulation group pump       |
| 5 | Hydraulic safety group           |
| 6 | Complete solar circulation group |
| 7 | Solar collector/s                |
| 8 | Heating system                   |
| 9 | Diverting valve                  |

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

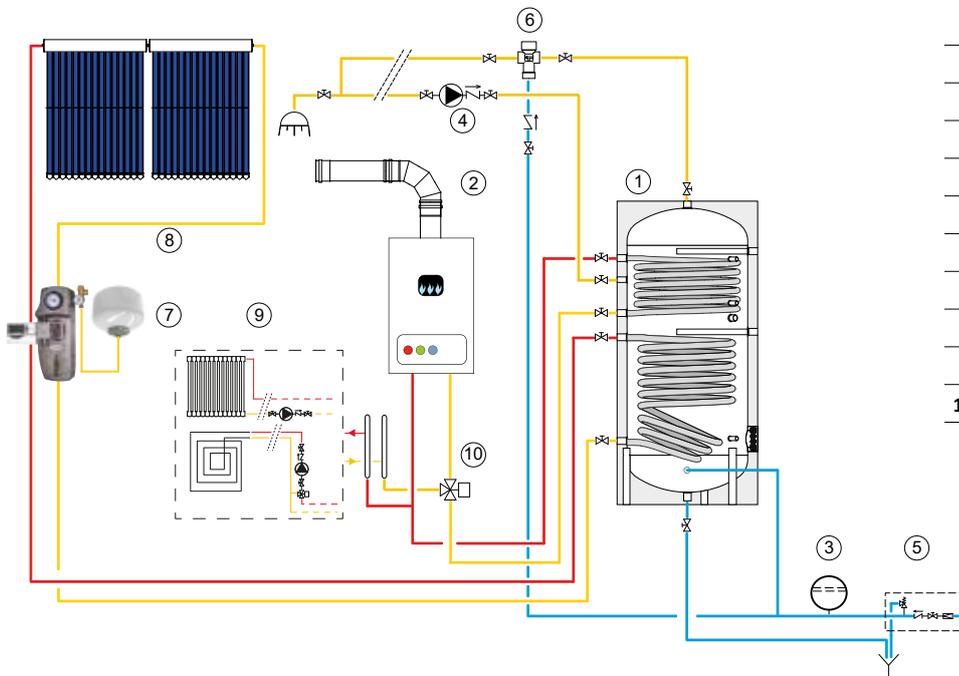
## SOLAR THERMAL SYSTEM B2 CVT



### LEGEND

1	BOLLY® 2
2	Heat source (gas boiler)
3	Expansion vessel
4	DHW circulation group pump
5	Hydraulic safety group
6	Solar thermostatic mixing valve
7	Complete solar circulation group
8	Solar collector/s
9	Heating system
10	Diverting valve

## SOLAR THERMAL SYSTEM B2 CLASSE A CVT



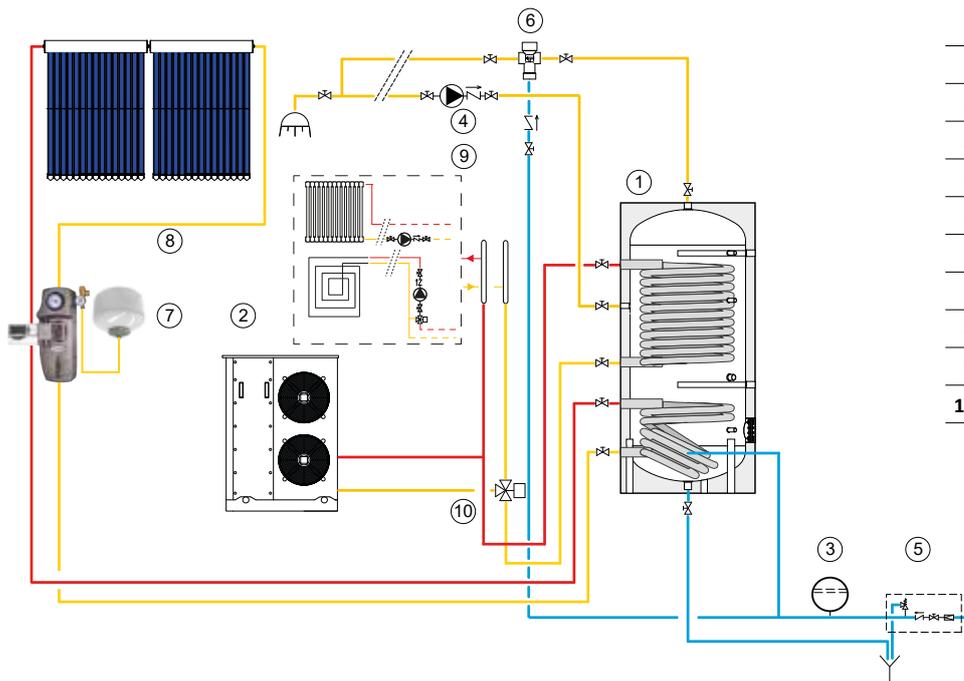
### LEGEND

1	BOLLY® 2 CLASSE A
2	Heat source
3	Expansion vessel
4	DHW circulation group pump
5	Hydraulic safety group
6	Solar thermostatic mixing valve
7	Complete solar circulation group
8	Solar collector/s
9	Heating system
10	Diverting valve

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

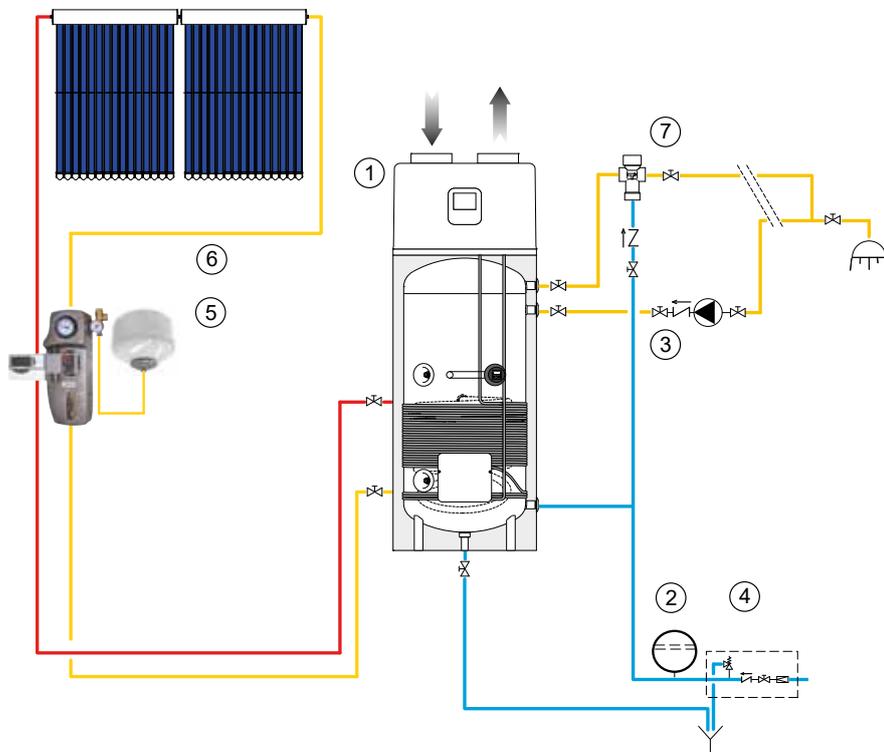
## SOLAR THERMAL SYSTEM BOLLY® 2 XL CVT



### LEGEND

- |    |                                  |
|----|----------------------------------|
| 1  | BOLLY® 2 XL                      |
| 2  | Heat source (heat pump)          |
| 3  | Expansion vessel                 |
| 4  | DHW circulation group pump       |
| 5  | Hydraulic safety group           |
| 6  | Solar thermostatic mixing valve  |
| 7  | Complete solar circulation group |
| 8  | Solar collector/s                |
| 9  | Heating system                   |
| 10 | Diverting valve                  |

## SOLAR THERMAL SYSTEM BOLLYTERM® HP1 CVT



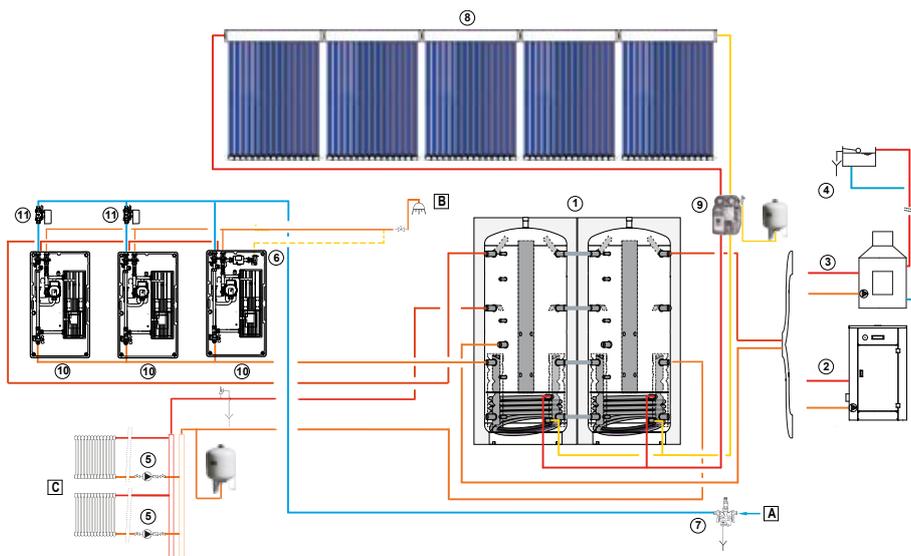
### LEGEND

- |   |  |
|---|--|
| 1 | Calorifier with heat pump BOLLYTERM® HP1 |
| 2 | Expansion vessel                         |
| 3 | DHW circulation group pump               |
| 4 | Hydraulic safety group                   |
| 5 | Complete solar circulation group         |
| 6 | Solar collector/s                        |
| 7 | Solar thermostatic mixing valve          |

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

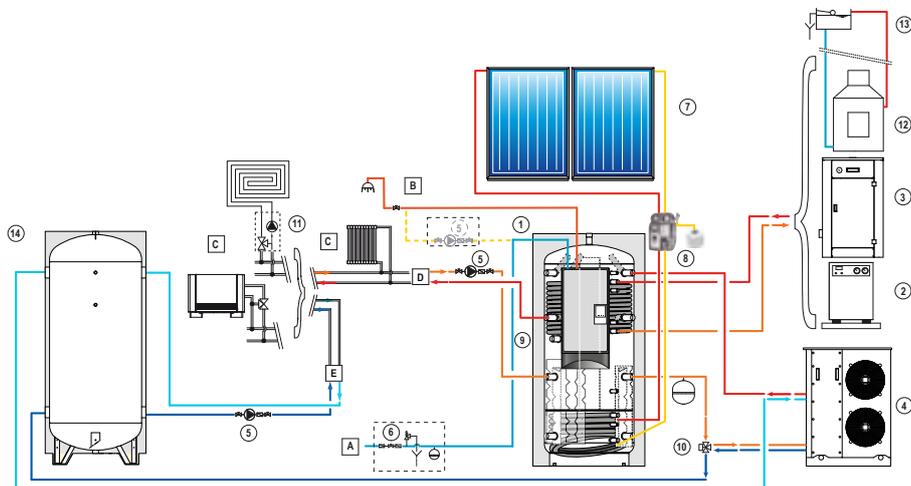
## SOLAR THERMAL SYSTEM WITH PUFFER 1 CTS® (CONNECTED IN SERIES) AND MACS® MODULES IN CASCADE



### LEGEND

A	Cold water inlet
B	DHW utilities
C	Heating terminals
1	PUFFER 1 CTS® connected in series
2	Biomass heat source
3	Wood burning thermo-fireplace
4	Open expansion vessel
5	Heating system circulation group
6	DHW circulation group
7	Hydraulic safety group
8	Solar collectors
9	Solar circulation group
10	Electronic MACS modules in cascade
11	2-way valve

## SOLAR THERMAL SYSTEM PUFFERMAS 3 CTS® AND CHILLED WATER ACCUMULATION TANK



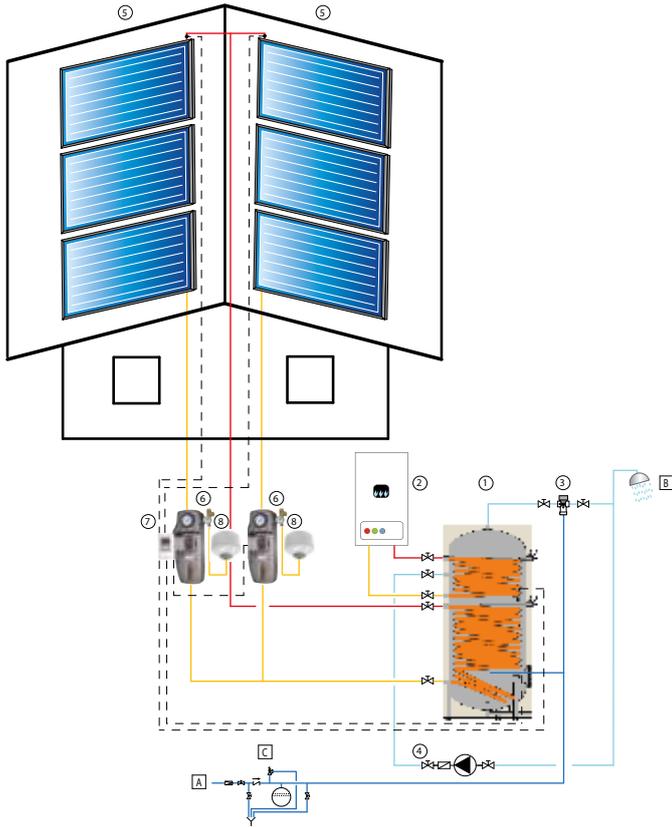
### LEGEND

A	Cold water inlet
B	DHW utilities
C	Heating terminals
D	Heating hydronic circuit
E	Cooling hydronic circuit
1	PUFFERMAS® 3 CTS®
2	Gas heat source
3	Biomass heat source
4	Heat pump
5	Circulation group
6	Hydraulic safety group
7	Solar collectors
8	Solar circulation group
9	MACS® module for DHW production
10	Motorized diverting valve
11	Automatic mixing group
12	Wood burning thermo-fireplace
13	Open expansion vessel
14	Chilled water accumulation tank

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

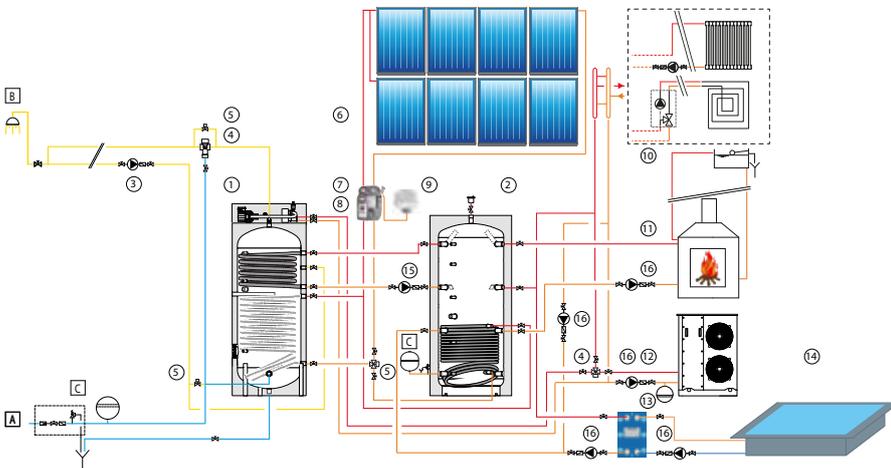
## SOLAR THERMAL SYSTEM PITCHED ROOF EAST/OVEST



### LEGEND

A	DHW inlet
B	DHW utilities
C	Hydraulic safety group
1	BOLLY® 2
2	Heat source
3	Solar thermostatic mixing valve
4	DHW circulation group
5	Solar collectors (Roof pitch East/Ovest)
6	Solar circulation group
7	Professional electronic control unit
8	Solar system expansion vessel

## SOLAR THERMAL SYSTEM WITH BOLLY® 3 PDC AND PUFFER 1



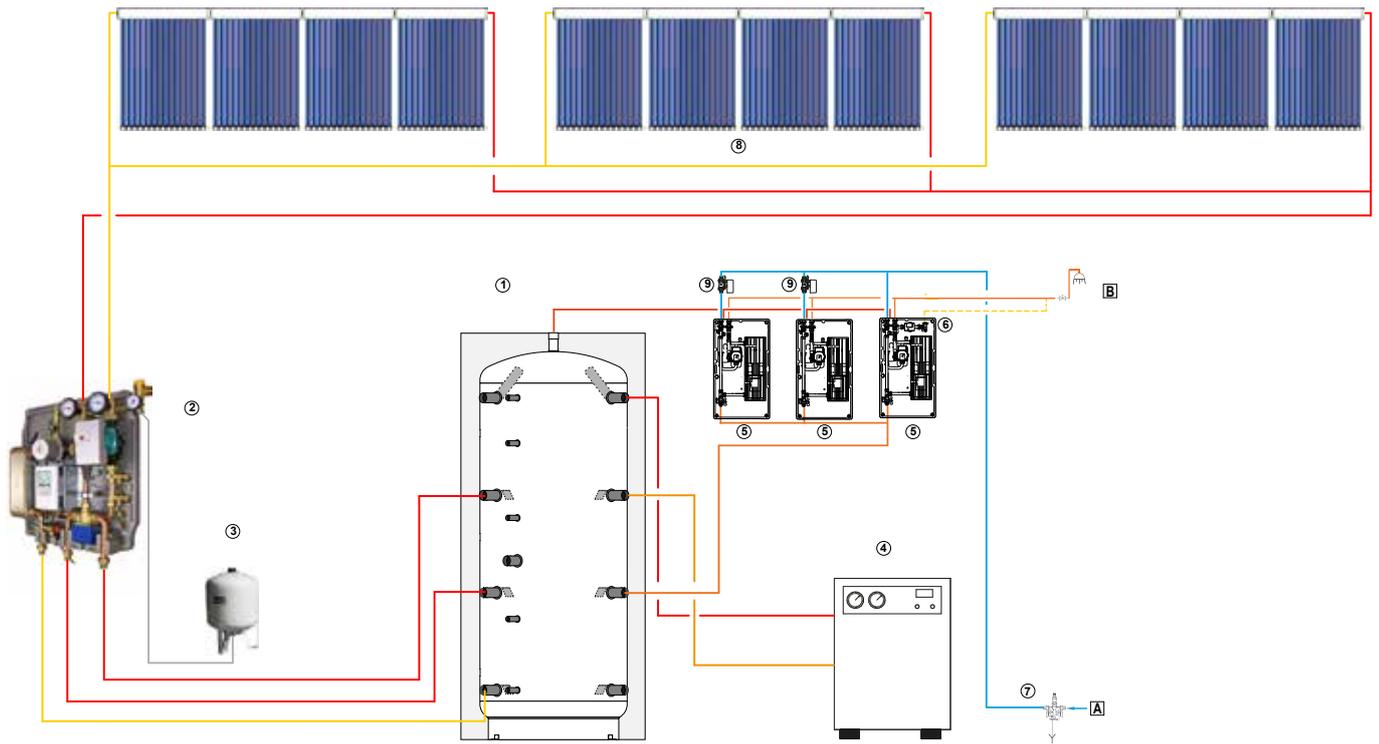
### LEGEND

A	DHW inlet
B	DHW utilities
C	Hydraulic safety group
1	BOLLY® 3 PDC
2	Puffer 1
3	DHW circulation group
4	Solar thermostatic mixing valve
5	Solenoid valve
6	Solar collectors
7	Solar circulation group
8	Professional electronic control unit
9	Solar system expansion vessel
10	Hot/cold system
11	Biomass heat source
12	Heat pump heat source
13	Plate-to-plate heat exchanger PHC
14	Pool
15	Circulation group
16	Circulation group

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

## SOLAR THERMAL SYSTEM FOR BIG UTILITIES WITH PUFFER TANK



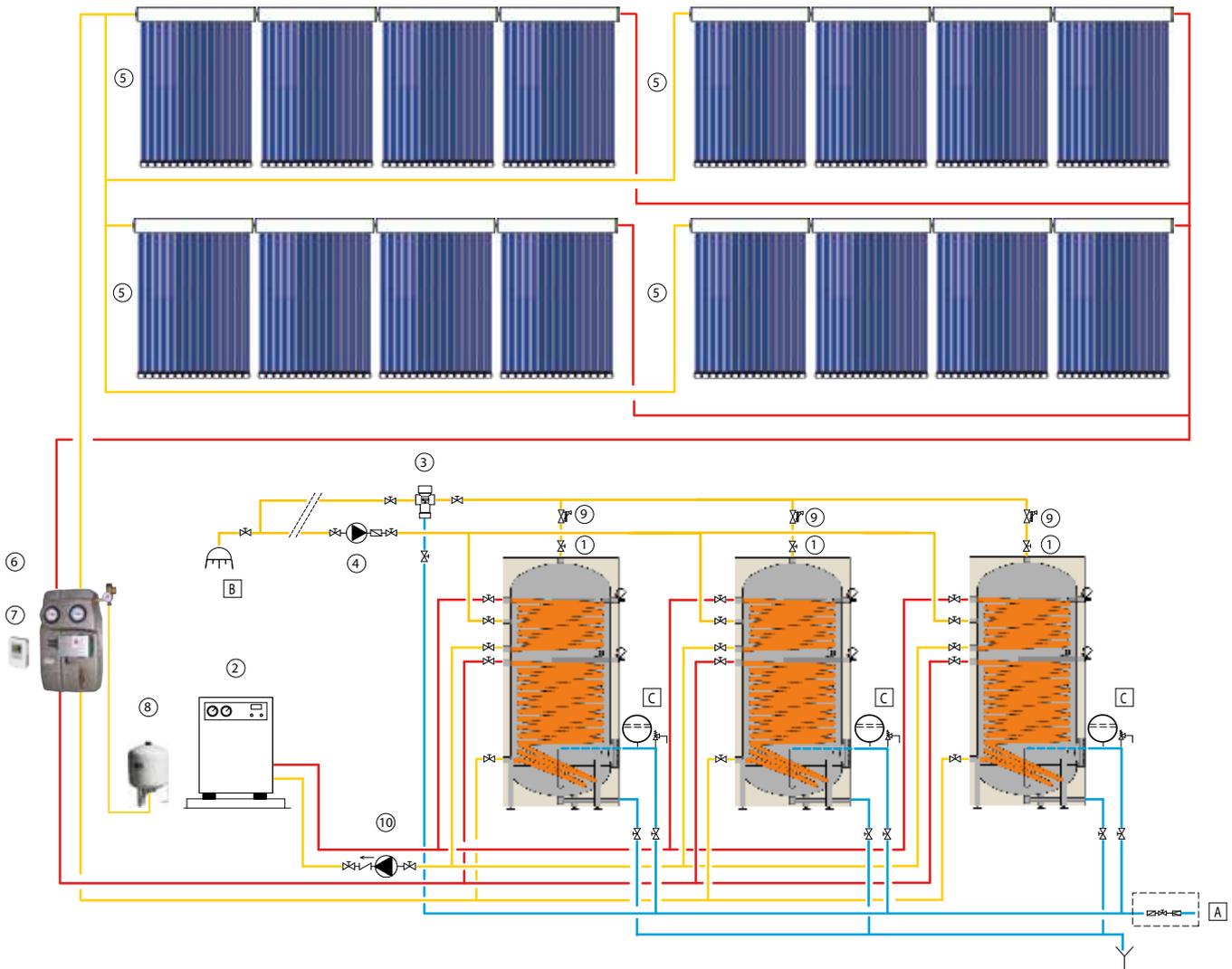
### LEGEND

<b>A</b>	Cold water inlet
<b>B</b>	DHW utilities
<b>1</b>	PUFFER 1
<b>2</b>	Solar circulation group
<b>3</b>	Solar circuit expansion vessel
<b>4</b>	Heat source
<b>5</b>	Electronic MACS modules in cascade
<b>6</b>	DHW circulation group
<b>7</b>	Hydraulic safety group
<b>8</b>	Solar collectors
<b>9</b>	2-way valve
<b>10</b>	Heating system

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

## SOLAR THERMAL SYSTEM WITH 3 CALORIFIERS AND VACUUM TUBE COLLECTORS CVT



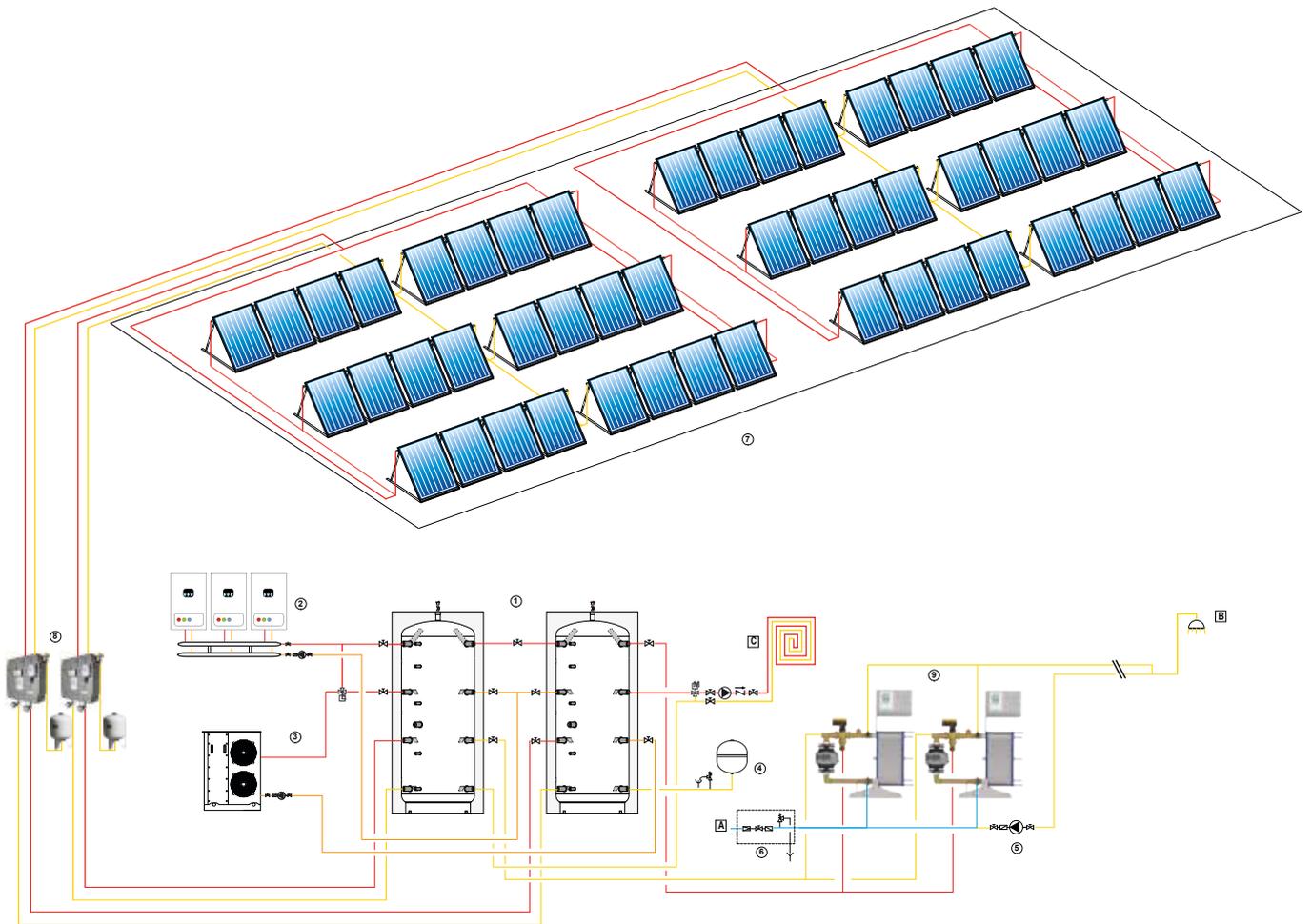
### LEGEND

A	DHW inlet
B	DHW utilities
C	Hydraulic safety group
1	BOLLY® 2
2	Heat source
3	Solar thermostatic mixing valve
4	DHW circulation group
5	Vacuum tube solar collectors CVT
6	Solar circulation group
7	Professional electronic control unit
8	Solar system expansion vessel
9	Balancing valve
10	Solar circulation group

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# EXAMPLE OF INSTALLATION

## SOLAR THERMAL SYSTEM BIG INSTALLATION WITH PRS MODULES CONNECTED IN SERIES AND PARALLEL



### LEGEND

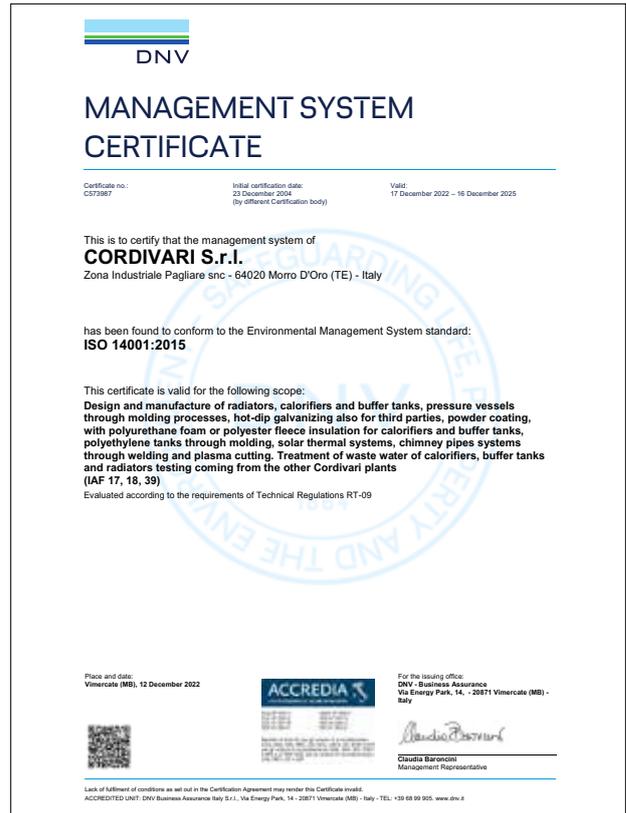
A	Cold water inlet
B	DHW utilities
C	Heating terminals
1	Puffer connected in series
2	Gas heat sources in cascade
3	Heat pump
4	Expansion vessel
5	DHW circulation group
6	Hydraulic safety group
7	Solar collectors
8	Solare modules for external exchange
9	PRS Modules

**NOTE:** The sample installation schemes are merely illustrative. For the correct design and configuration of the systems always refer to a qualified technician. Cordivari declines any responsibility in relation to the EXAMPLE OF INSTALLATIONS described in this catalog.

# COMPANY CERTIFICATES



QUALITY CERTIFICATE UNI EN ISO 9001



ENVIRONMENTAL MANAGING SYSTEM CERTIFICATE UNI EN ISO 14001

Cordivari has always placed as main objectives:

- The continuous improvement of the manufactured products
- The commitment to use low environmental impact materials that can be almost 100% recycled
- The achievement of the best quality

According to this, Cordivari has worked to obtain the most significant certifications which attest the commitment inside and outside of the company.

## MAIN STANDARDS WHICH REGULATE THE CONSTRUCTION OF SOLAR COLLECTORS

- **Uni EN 7855** - Glass tests, determination of the transmission factors of the sun energy
- **Uni EN 8477-1** - Sun energy, performance calculation for the application on buildings. Evaluation of the received energy of the sunshine.
- **Uni EN 8477-2** - Sun energy, performance calculation for the application on buildings. Evaluation of the reachable performances through active or passive systems.
- **Uni EN 12975-1** - Solar thermal systems and components - Solar captors - Part 1: General requirements
- **Uni EN 12975-2** - Solar thermal systems and components - Solar collectors - Part 2: Test methods
- **Uni EN 12976-1** - Solar thermal systems and components - Factory made systems - Part 1: General requirements
- **Uni EN 12976-2** - Solar thermal systems and components - Factory made systems - Part 2: Test methods
- **Uni EN 12977-1-2-3** - installations of solar thermal systems and components - Systems assembled according specifications - general requirements, test methods, characterization of tank performance
- **Uni EN 9711** - Thermal systems using solar energy. Data for offer, orders and testing.
- **Uni EN 9488** - Solar energy – Vocabulary

## LEGISLATION

Directive 2002/91/CE of the European parliament and the council of 16 December 2002 about the energy performances of buildings

Directive 2006/32/CE of the European parliament and the council of 5 April 2006 about energy end-use efficiency and energy services and repealing Council directive 93/76/CEE.

Law decree of 4 June 2013 n.63 urgent provisions for the transposition of directive 2010/31/EU of the European parliament and the Council of 19 May 2010, about the energy performance of buildings and for the definition of infringement procedures initiated by the European Commission, as well as other provisions on social cohesion.

Legislative decree 3 March 2011 n.28 implementation of Directive 2009/28/CE on the promotion of the use of energy from renewable sources, amending and subsequently repealing directives 2001/77/CE and 2003/30/CE.

# CERTIFICATES

**DIN CERTCO**  
Institut für Zertifizierungstechnik

## CERTIFICATO

**Proprietario del certificato:** Cordivari s.r.l.  
Zona Industriale Pagliare  
64020 Morro d'Oro TE  
ITALIA

**Sito produttivo:** 031

**Prodotto:** Collettore solare

**Tipo, modello:** ASA HQ 2.5 VT 4 CPDN

**Norme di riferimento:** DIN EN 12975-1:2011-01  
DIN EN 12975-2:2004-04  
DIN EN ISO 9806:2014-06  
CEN KEYMARK Regolarzione del programma per prodotti termici solari versione 31 (2018-01)

**Marchio di conformità:**

**Numero di registrazione:** 011-752185 F

**Valido fino al:** 2023-08-31

**Diretta di utilizzo:** Il presente certificato autorizza ad utilizzare il marchio di conformità di cui sopra in relazione al numero di matricola indicato.  
Vedi allegato per ulteriori indicazioni.

2018-07-03  
Robert Zorn RSC  
Amministratore

**Dakkis**  
DIN CERTCO

039 178722 Stockholm SE | info@din-certco.se | 0302101 Berlin | www.din-certco.de

SOLAR KEYMARK

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012

## Solar Keymark Certificate

SC0140-18

**Holder/Issued to/Manufacturer:** Cordivari S. R. L.  
Zona Industriale Pagliare – 64020 morro d'oro Teramo, Italy

**Product name and description:** Vacuum tube solar thermal collectors for water heating.  
For technical information see Appendix (2 pages).

**Models:** CVT10 CVT15

**Performance specification:** The product is found to comply with the requirements in EN 12975-1:2006+A1:2010 Solar collectors, Part 1: General requirements and the Specific CEN Keymark Scheme Rules for Solar Thermal Products and are based on test results according to EN 12975-2:2006 Solar collectors Part 2: Test methods.

**Marking:** Products conforming to this certificate shall be marked in accordance with the requirements in the Specific CEN Keymark Scheme Rules for Solar Thermal Products. The marking shall, together with the Keymark logo, show the identification code of the empowered certification body (RISE Research Institutes of Sweden AB, No. 012), also see CEN-CENELEC Internal Regulations Part 4 Certification, Annex A.

**Validity:** This certificate is valid until 2024-01-20 provided that the conditions in the Solar Keymark Rules are fulfilled and the standard or rules are not modified significantly. The validity of the certificate can be checked in the database, see Solar Keymark website <http://www.solarkeymark.org>.

**Miscellaneous:** The manufacturer's factory production control procedures are under surveillance by the responsibility of RISE. This certificate was first issued 2018-03-16. RISE certification rules SPCR 402 for Keymark - Solar Thermal Products applies.

Johan Åkesson  
Magnus Stenlund

Certificate No. SC0140-18 | Issue 2 | 2019-01-22  
RISE Research Institutes of Sweden AB | Certification  
Box 857, SE-501 15 Borås, Sweden  
Phone: +46 10-516 50 00  
certifisering@rise.se | www.rise.se

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## Annex to Solar Keymark Certificate

Page 1/2

**Annex to Solar Keymark Certificate - Summary of EN 12975-2**

**Test Results**

**Licence Number:** SC0140-18  
**Date issued:** 2018-03-16  
**Issued by:** RISE

**Licence holder:** Cordivari S. R. L.  
**Country:** Italy  
**Web:** <http://www.cordivari.it/>  
**E-mail:** info@cordivari.it  
**Tel:** +39 085 80401

**Collector Type:** Evacuated tubular collector

Collector name	Gross area (A <sub>g</sub> ) m <sup>2</sup>	Gross length mm	Gross width mm	Gross height mm	Power output per collector G <sub>a</sub> = 800 W/m <sup>2</sup> , G <sub>g</sub> = 150 W/m <sup>2</sup> θ <sub>m</sub> = θ <sub>a</sub>					
					0 K	10 K	30 K	50 K	70 K	84 K
CVT10	2.17	1.917	1.330	133	1.75	1.14	1.008	1.019	937	970
CVT15	3.22	1.917	1.680	133	1.743	1.703	1.634	1.515	1.406	1.440

**Power output per m<sup>2</sup> gross area:** 541 529 501 471 437 447

**Performance parameters test method:** Steady state - outdoor  
**Performance parameters (related to AG):** n<sub>0,hem</sub> a1 a2

**Units:** - W/(m<sup>2</sup>K) W/(m<sup>2</sup>K<sup>2</sup>)

**Test results:** 0.541 1.212 0.004

**Incidence angle modifier test method:** Dual dynamic - outdoor

**Bi-directional incidence angle modifiers:** Yes

Incidence angle modifier	Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
Transversal	K <sub>tr,ref</sub>	1.03	1.05	0.95	1.18	0.00	0.00	0.00	0.00	0.00
Longitudinal	K <sub>l,ref</sub>	1.03	1.05	0.95	1.18	0.00	0.00	0.00	0.00	0.00

**Heat transfer medium for testing:** Water  
**Flow rate for testing (per gross area, A<sub>g</sub>):** dm<sup>3</sup>/dt 0.020 kg/(sm<sup>2</sup>)  
**Maximum temperature difference for thermal performance calculations:** (θ<sub>m</sub> - θ<sub>a</sub>)<sub>max</sub> 61 K  
**Standard stagnation temperature (G = 1000 W/m<sup>2</sup>; θ<sub>a</sub> = 30 °C):** θ<sub>st</sub> 280 °C  
**Effective thermal capacity, incl. fluid (per gross area, A<sub>g</sub>):** C<sub>eff</sub> 3.37 kJ/(Km<sup>2</sup>)  
**Maximum operating temperature:** θ<sub>max</sub> 120 °C  
**Maximum operating pressure:** p<sub>max,op</sub> 1000 kPa

**Testing laboratory:** Testlab A  
**Test report(s):** 131016040GZU-001  
**Dated:** 2014-01-07

**Comments of testing laboratory:** Dataset version: 5.01, 2016-03-01  
Negative mechanical load test of collector was not performed.

Certification Body: RISE Research Institutes of Sweden | Certification  
Box 857, SE-501 15 Borås, Sweden, Phone: +46 10 516 50 00, certifisering@rise.se | www.rise.se

SOLAR KEYMARK

For the complete documentation consult the site [www.solarkeymark.dk](http://www.solarkeymark.dk)



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## Annex to Solar Keymark Certificate

Page 2/2

**Supplementary Information**

**Annual collector output in kWh/collector at mean fluid temperature θ<sub>m</sub>, based on EN 12975-2 test results**

Collector name	Standard Locations		Athens		Davos		Stockholm		Würzburg				
	θ <sub>m</sub>	25°C	30°C	35°C	25°C	30°C	35°C	25°C	30°C	35°C			
CVT10		1.958	1.718	1.435	1.602	1.418	1.171	1.212	982	756	1.304	1.063	854
CVT15		2.965	2.546	2.128	2.495	2.105	1.738	1.798	1.472	1.181	1.935	1.586	1.267

**Annual output per m<sup>2</sup> gross area:** 921 795 661 475 654 540 538 497 467 601 493 393

**Fixed (slope = latitude):** C<sub>fix</sub> required to nearest 5%

**Annual irradiation on collector plane:** 1765 kWh/m<sup>2</sup> 1714 kWh/m<sup>2</sup> 1166 kWh/m<sup>2</sup> 1244 kWh/m<sup>2</sup>

**Mean annual ambient air temperature:** 18.5°C 3.2°C 7.5°C 9.0°C

**Collector orientation or tracking mode:** South, 25° South, 30° South, 35° South, 35°

The collector is operated at constant temperature θ<sub>m</sub> (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 5.01 (March 2016). A detailed description of the calculations is available at [www.solarkeymark.org/scenocalc](http://www.solarkeymark.org/scenocalc).

**Additional Information**

**Collector heat transfer medium:** Water-Glycol  
**Hybrid Thermal and Photo-Voltaic collector:** No  
**The collector is deemed to be suitable for roof integration:** No  
**The collector was tested successfully according to EN ISO 9806:2013 under the following conditions:**

**Climate class (A, B or C):** C  
**Maximum tested positive load:** 2860 Pa  
**Maximum tested negative load:** -  
**Hail resistance using steel ball (maximum drop height):** 0.8 m

**Energy Labelling Information**

Reference Area, A <sub>ref</sub> (m <sup>2</sup> )	Data required for CDR (EU) No 811/2013 - Reference Area A <sub>ref</sub>	Data required for CDR (EU) No 812/2013 - Reference Area A <sub>ref</sub>
CVT10	2.17	Collector efficiency (η <sub>col</sub> ) 49 %
CVT15	3.22	Collector efficiency (η <sub>col</sub> ) 49 %

**Remarks:** Collector efficiency (η<sub>col</sub>) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m<sup>2</sup> expressed in % and rounded to the nearest integer. Deviating from the regulation η<sub>col</sub> is based on reference area (A<sub>ref</sub>) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2013.

**Data required for CDR (EU) No 812/2013 - Reference Area A<sub>ref</sub>**

Reference Area, A <sub>ref</sub> (m <sup>2</sup> )	Zero-loss efficiency (η <sub>0</sub> )	First-order coefficient (a <sub>1</sub> )	Second-order coefficient (a <sub>2</sub> )	Incidence angle modifier IAM (50°)
CVT10	0.541	1.21	0.004	0.00
CVT15	0.541	1.21	0.004	0.00

**Remarks:** The data given in this section are related to collector reference area (A<sub>ref</sub>) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.

Certification Body: RISE Research Institutes of Sweden | Certification  
Box 857, SE-501 15 Borås, Sweden, Phone: +46 10 516 50 00, certifisering@rise.se | www.rise.se

SOLAR KEYMARK

# CERTIFICATES



SOLAR KEYMARK - STRATOS® 4S ROTOSHIELD® MOD. 180



SOLAR KEYMARK - STRATOS® DR MOD. 150



TEST-REPORT EXTRACT

Per la documentazione completa consultare il sito [www.solarkeymark.dk](http://www.solarkeymark.dk).



DMC CERTIFICATE DUBAI MUNICIPALITY

STRATOS® SYSTEMS  
THERMOSIPHON SYSTEMS  
FORCED CIRCULATION SYSTEMS  
COLLECTORS AND ACCESSORIES  
TECHNICAL SUPPORT

# GENERAL SALES CONDITIONS AND WARRANTY

Sales of Cordivari Srl products are made in accordance with the below listed General Conditions of Sale and Guarantee. Any exception to these conditions is subject to written acceptance by Cordivari Srl.

## 1. SHIPMENT

The goods travel at the risk of the Customer, even if they are delivered at destination. The goods must be checked in the presence of the carrier at the time of delivery, verifying the integrity of the packaging, missing or wrongly shipped items. Any dispute must be immediately reported to the carrier / courier signing the transport document with reserve and confirming this reserve by registered letter within three days from reception of the goods. (Failure to observe this clause will release transport company and Cordivari srl from any liability).

## 2. DELIVERY TERMS

The delivery terms are approximate and if the proposed delivery time cannot be respected for any reason, the Customer will not be entitled to demand any compensation, penalty payments, cancellation or modification to the order given. In the event of extraordinary events such as natural disasters, strikes, lack of raw materials and force majeure, Cordivari srl reserves the right to choose the measures to be taken. If the ordered goods are not collected within the agreed terms, they will be invoiced and stored with costs, risks and risks for the customer.

## 3. WEIGHTS, MEASURES, SURFACES

Weights, measures, surfaces, shapes, illustrations, images and other data in this catalog or on the products are for illustrative purposes only and are not binding. Cordivari Srl reserves the right to make modifications or variations to its products without prior notice. Always refer to the technical documentation attached to the product and official certificates.

## 4. ORDER CANCELLATION OR MODIFICATION

Without the written consent of Cordivari Srl, the orders cannot be canceled or modified neither partially nor totally. No changes or modifications are agreed when the production has already begun. Any costs resulting from the cancellation or modification of the order will be invoiced to the customer.

## 5. WARRANTY:

### A) Complete SYSTEMS

The warranty period for manufacturing defects on complete systems is:

- 5 years for solar collectors and calorifiers.
- 2 years for all other accessories, technical, electrical and electronic components.
- In the case of systems sized by the purchaser, Cordivari guarantees only the quality of the components provided. The products and systems presented in our catalog are designed and manufactured in compliance with European legislation EC-EN-UNI and PED. The declarations of guarantee and conformity are therefore valid only in countries where these regulations are valid and in force. In non-European countries or in countries that do not comply with these standards, Cordivari assumes no responsibility for warranty and compliance.

The warranty is void if the limit values indicated in Annex I Part C of Legislative Decree No. 31 of 02/02/2001 and subsequent modifications, implementation of the European directive 98/83/EC, relating to the quality of the water intended for human consumption:

- pH (>7 and <9)
- Chloride <250 mg/l
- Iron <200 µg/l
- Sulphate <200 mg/l
- Residual disinfectant <0.2 mg/l

With regard to water hardness, reference is made to the UNI CTI 8065 standard which regulates the values in domestic hot water systems:

- Total hardness: 15-25 °f

Any warranty is void in the event of non-compliance with the instructions indicated on the user manual supplied with the product, and if the rules described below are not respected.

### B) SOLAR COLLECTORS

The warranty period for manufacturing defects on solar collectors is 5 years.

The use of non-original fixing structure or its improper assembly will void the warranty on the collector.

Changes in coloring, as well as the formation of stains, do not affect the performance of the solar collector, therefore they are not considered manufacturing defects.

### C) CALORIFIERS

For all calorifiers with internal anti-corrosion treatment in Polywarm® or in 316L stainless steel, the warranty is 5 years.

For all other pressure tanks the warranty is 2 years.

The warranty covers manufacturing defects and is void if the provisions of this article are not observed. The warranty exists under the condition that the product is permanently and efficiently equipped with the cathodic protection provided, and that the installation of the products is compliant with the criteria of protection against overpressure, corrosion, legionella, as well as what is prescribed in the instructions for use and in all the possible standards regarding system engineering (see. Catalog CALORIFIERS AND THERMAL STORAGE in force).

In the domestic hot water production systems, as well as in the heating ones, comply with the provisions of the UNI CTI 8065 standard which provides for various types of water treatments depending on its characteristics. The warranty does not cover damage resulting from failure to comply with the requirements of the UNI CTI 8065 standard.

The commitment to provide the warranty in points A, B, C of this article, exists provided that:

- The product has been stored in good condition and protected from adverse weather conditions before installation;
- The product has not been damaged during transport, handling or installation;
- No tampering or repairs have been carried out by unauthorized persons;
- The installation has been carried out by authorized personnel and in compliance with the instructions and the standards indicated in the technical documentation supplied, and compliance with any provisions of specific laws or technical standards;
- The accessories used are those regularly supplied by Cordivari Srl;
- The buyer pays in the pre-established terms;
- No additions of aggressive chemicals to the water have been made;
- The operating pressure and temperature indicated in the catalog correspond to the pressure and the limit temperature of use.
- Any repairs or replacement of parts or products under warranty can take place at the sole discretion of Cordivari Srl. If carried out during the warranty period, they do not change the starting date and duration of the warranty itself.
- The warranty does not cover costs due to demolition work for the passage of products, both inbound and outbound, and labor cost for any product replacements. During the warranty period, Cordivari srl undertakes to replace the returned product, if recognized as defective due to proven manufacturing defects, and the customer will not be able to claim any other compensation for direct or indirect damage costs of any kind to persons and / or things resulting from these defects.
- The warranty starts from the date of the Cordivari sales invoice and is not renewed in any case in the event of a product replacement.
- Cordivari srl is not liable for any direct or indirect damage caused to things or persons due to product damage, as well as to incorrect or improper use of the same.
- The personnel in charge of Cordivari always and only acts as assistance for the product. The installer remains the person in charge of the installation to all intents and purposes, who must respect the technical prescriptions reported in this document as well as the ANCC, UNI-CIG regulations, VVFF and CEI.

The Cordivari Srl reserves the right to make at any time and at its sole discretion, any changes it deems useful and necessary to the data and technical characteristics of its products without interfering in the general conditions described above. For the accessories and for all the residual articles of this catalog not contemplated in the general conditions of sale, the warranty is 2 years.

## 6. PAYMENTS

The payments of the invoices must be made within the established deadlines. The delay in the payment of the invoices, even if partial, gives rise to interest on arrears to the extent of the current rate, in addition to the immediate suspension of the shipments in progress.

## 7. RETENTION OF TITLE

Until the customer has paid the final price of the delivered goods, the products remain property of Cordivari srl. In the event of the buyer's non-fulfillment, even partial, Cordivari Srl may request the immediate return of the goods, withholding in any case the installments paid as compensation, without prejudice to greater damages.

## 8. PRICES

Prices are not binding and can be changed without notice. Prices can be reviewed based on the variations that may occur up to the time of delivery. Prices are intended for delivery FCA Morro D'Oro (TE), unless otherwise agreed. Prices are always shown in the price list, excluding VAT. For bulky models Cordivari Srl reserves the right to request a participation in the packaging costs.

## 9. ORDERS/DELIVERY

The minimum order value is 2.000 €. The confirmed orders definitively commit the Customer who must declare to know and accept all the conditions of sale. If the Customer draws up the order by name and on behalf and in the name of others, with the signing of the order he undertakes the fulfillment of what he has agreed. Delivery is intended exclusively at the Customer's headquarters / warehouse. Special requests of the Customer such as: express deliveries, delivery other than the office / warehouse, etc. will have additional costs that will be communicated from time to time to our sales office.

## 10. COURT AUTHORITY

For the present Catalogue and conditions only the provisions of Italian law will be used. For controversy, the Court of Teramo (Italy) shall have exclusive competence. Essential and trial law shall be exclusively Italian.

## 11. ORIGINAL VERSION

Translation of Cordivari General Sales Conditions and Warranty Terms, reported in this page, derives from the Italian version. In case of possible controversy, the official Cordivari General Sales Conditions and Warranty Terms are the one reported in the Italian language, stated at the back of the Italian catalogues.

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This catalog replaces and cancels all previous editions.

The company reserves the right to modify the products and data shown in the catalog at any time and is not responsible for any typographical errors.



# CONDIZIONI GENERALI DI VENDITA E GARANZIA

Le vendite dei prodotti della Cordivari Srl sono effettuate conformemente alle sotto elencate Condizioni Generali di Vendita e Garanzia. Ogni deroga a queste condizioni è subordinata all'accettazione scritta da parte della Cordivari Srl.

## 1. SPEDIZIONE

La merce viaggia a rischio e pericolo del Cliente, anche se viene spedita franco destino. La merce deve essere verificata all'atto della consegna, controllando l'integrità dell'imballaggio, articoli mancanti o sostituzioni in presenza del trasportatore. Ogni contestazione dovrà essere segnalata immediatamente al trasportatore/corriere firmando con riserva il DDT e confermando tale riserva a mezzo lettera raccomandata entro tre giorni dal ricevimento merce. (In caso di mancata osservanza di questa clausola l'impresa di trasporto e la Cordivari srl sono svincolate da ogni responsabilità).

## 2. TERMINI DI CONSEGNA

I termini di consegna si intendono approssimativi e comunque se il termine di consegna proposto non potesse essere rispettato per qualsiasi motivo, il Cliente non avrà diritto a esigere alcun indennizzo, pagamenti di penali, annullamento o modifica all'ordine conferito. In caso di eventi straordinari quali calamità naturali, scioperi, mancanza di materie prime e cause di forza maggiore, la Cordivari srl si riserva la scelta delle misure da adottare. Se la merce ordinata non viene ritirata entro i termini concordati, questa verrà fatturata e immagazzinata con costi, rischio e pericolo a carico del committente.

## 3. PESI, MISURE, SUPERFICI

Pesi, misure, superfici, forme e dimensioni, illustrazioni o immagini e altri dati presenti in questo catalogo o sui prodotti hanno puro scopo illustrativo e non impegnativi e possono subire delle modifiche o variazioni che la Cordivari Srl si riserva di apporare ai suoi prodotti senza preavviso. Fare sempre riferimento alla documentazione tecnica allegata al prodotto e ai certificati ufficiali.

## 4. ANNULLAMENTO O MODIFICA ORDINE

Senza il consenso scritto della Cordivari Srl, le ordinazioni conferite non possono essere né parzialmente né totalmente annullate o modificate. Non si accordano variazioni o modifiche quando è già stata intrapresa la lavorazione. Eventuali spese derivanti dall'annullamento o modifica dell'ordine saranno fatturate al cliente.

## 5. GARANZIA:

### A) SISTEMI COMPLETI

La durata della garanzia per vizi originari sui Sistemi completi è:

- 5 anni per i Collettori Solari e per i Bollitori.
- 2 anni per tutti i restanti accessori, componenti tecnici, elettrici ed elettronici.
- In caso di sistemi dimensionati dall'acquirente, la Cordivari garantisce esclusivamente la qualità dei componenti ordinati. I prodotti e sistemi presentati nel nostro catalogo sono concepiti e realizzati in conformità con la legislazione europea EC-EN-UNI e PED. Le dichiarazioni di garanzia e di conformità sono quindi valide nei paesi in cui tali normative sono valide e in vigore. In paesi extra-europei o comunque in paesi che non recepiscono tali norme, la Cordivari non si assume alcuna responsabilità in merito a garanzia e conformità.
- La garanzia decade qualora non vengano rispettati i valori limite indicati nell'allegato I Parte C del D.Lgs. n°31 del 02/02/2001 e successive modifiche, attuazione della direttiva europea 98/83/CE, relativa alla qualità dell'acqua destinata al consumo umano:
- pH (>7 e <9)
- Cloruro < 250 mg/l
- Ferro < 200 µg/l
- Solfato < 200 mg/l
- Disinfettante residuo < 0,2 mg/l

Per quanto riguarda la durezza dell'acqua si fa riferimento alla Norma UNI CTI 8065 che ne disciplina i valori negli impianti ad acqua calda sanitaria:

- Durezza totale: 15-25 °f

Ogni garanzia decade in caso di non rispetto delle prescrizioni indicate sulle istruzioni d'uso e di montaggio fornite a corredo del prodotto e se non sono rispettate le norme descritte a seguire.

### B) COLLETTORI SOLARI

La durata della garanzia per vizi originari sui collettori solari è di 5 anni.

L'utilizzo di strutture di fissaggio non originali, o il montaggio improprio delle stesse fanno decadere la garanzia sul collettore. Modifiche della colorazione, come anche la formazione di macchie, non influiscono sulle performance del collettore solare, pertanto non sono difetti di produzione.

### C) BOLLITORI

Per tutti i bollitori con trattamento anticorrosivo interno in Polywarm®, o acciaio inox 316L la garanzia è di 5 anni.

Per tutti gli altri recipienti in pressione la garanzia è di 2 anni.

La garanzia copre i difetti di fabbricazione e decade se non viene rispettato quanto indicato nel presente articolo. La garanzia sussiste a condizione che il prodotto sia sempre dotato in maniera permanente ed efficiente della protezione catodica prevista a corredo, che l'installazione dei prodotti abbia rispettato i criteri della protezione dalla sovrappressione, corrosione, legionella e norme e prescrizioni di installazione e utilizzo, oltre che quanto prescritto nelle istruzioni d'uso e in tutte le eventuali norme in materia impiantistica (vedi. Catalogo LISTINO BOLLITORI in vigore).

Negli impianti di produzione di acqua calda sanitaria, così come in quelli di riscaldamento, attenersi, ai fini della garanzia, a quanto disposto dalla norma UNI CTI 8065 che prevede vari tipi di trattamenti dell'acqua in funzione delle sue caratteristiche. La garanzia non copre danni derivanti da inadempienze alle prescrizioni della norma UNI CTI 8065.

L'impegno di prestare la garanzia nei punti A, B, C, D, del presente articolo, sussiste a condizione che:

- Il prodotto sia stato immagazzinato in buone condizioni e al riparo dalle intemperie prima dell'installazione;
- Il prodotto non abbia subito danneggiamenti durante il trasporto, le movimentazioni o l'installazione;
- Non siano state effettuate manomissioni o riparazioni da persone non autorizzate;
- L'installazione sia stata realizzata da personale autorizzato e in conformità alle istruzioni e alle norme indicate sulla documentazione tecnica fornita e rispettate eventuali disposizioni di leggi o norme tecniche specifiche;
- Gli accessori utilizzati siano quelli regolarmente forniti dalla Cordivari Srl;
- Il compratore abbia effettuato il saldo dei pagamenti nei termini prestabiliti;
- Non siano state effettuate aggiunte di sostanze chimiche aggressive all'acqua;
- La pressione e la temperatura di esercizio indicate sul catalogo corrispondano alla pressione e alla temperatura limite di utilizzo.
- Eventuali riparazioni o sostituzioni in garanzia di parti o prodotti possono avvenire solo ed esclusivamente a giudizio insindacabile della Cordivari Srl e se effettuati durante il periodo di garanzia, non spostano la decorrenza e la durata della garanzia stessa.
- La garanzia non copre costi dovuti a demolizioni lavori per il passaggio dei prodotti sia in ingresso che in uscita e la manodopera per eventuali sostituzioni di prodotto. Cordivari srl si impegna durante il periodo di garanzia alla sostituzione del prodotto reso, riconosciuto difettoso per accertati difetti di produzione, oltre a ciò il committente non potrà vantare alcun altro risarcimento per spese di danno, diretti o indiretti di qualsiasi natura a persone e/o cose derivanti da detti difetti.
- La garanzia decade dalla data della fattura di vendita della Cordivari e non si rinnova in alcun caso nell'eventualità di una sostituzione di prodotto.
- La Cordivari srl non risponde di eventuali danni diretti o indiretti causati a cose o persone per avarie del prodotto, così come per errato o improprio uso dello stesso.
- Il personale incaricato della Cordivari interviene sempre e solo a titolo di assistenza per il prodotto in quanto il responsabile dell'installazione rimane a tutti gli effetti l'installatore che dovrà rispettare le prescrizioni tecniche riportate nel presente certificato nonché le normative ANCC, UNI-CIG, VVFF e CEI.

La Cordivari Srl si riserva il diritto di apportare in qualsiasi momento ed a suo insindacabile giudizio, tutte le modifiche che riterrà utili e necessarie a dati e caratteristiche tecniche dei propri prodotti senza che ciò interferisca nelle condizioni generali sopra descritte. Per gli accessori e per tutti gli articoli residui del presente catalogo non contemplati nelle condizioni generali di vendita, la garanzia è di 2 anni.

## 6. PAGAMENTI

I pagamenti delle fatture relative alle forniture dovranno essere effettuati entro i termini di scadenza stabiliti. Il ritardo nel pagamento delle fatture, anche se parziale, dà luogo alla decorrenza degli interessi di mora nella misura del tasso corrente, oltre alla sospensione immediata delle spedizioni in corso.

## 7. RISERVA DI PROPRIETÀ

Fino a quando il cliente non ha pagato l'ultima rata di prezzo di merce consegnata, i prodotti restano di proprietà della Cordivari srl. In caso di inadempimento anche parziale del compratore la Cordivari Srl potrà chiedere l'immediata restituzione della merce trattando comunque le rate pagate a titolo di indennità salvo il maggior danno.

## 8. PREZZI

I prezzi non sono impegnativi e possono essere modificati senza preavviso. I prezzi sono revisionabili in funzione delle variazioni che dovessero intervenire fino al momento della consegna. I prezzi si intendono resa franco stabilimento di Morro D'Oro (TE), salvo diversi accordi. I prezzi sono sempre riportati nel listino al netto di IVA. Per modelli ingombranti la Cordivari Srl si riserva di chiedere una partecipazione alle spese di imballaggio.

## 9. ORDINI/CONSEGNA

Il valore minimo per ordine è di Euro 2.000.

Gli ordini impartiti impegnano definitivamente il Committente che deve dichiarare di conoscere e accettare tutte le condizioni di vendita. Nel caso in cui il Committente rediga l'ordine per nome e per conto e in nome di altri, con la firma dell'ordine si impegna in solido all'adempimento di quanto da egli convenuto. La consegna si intende esclusivamente presso la sede/magazzino del Committente.

Richieste particolari del Committente come: consegna espresso, consegna diversa dalla sede/magazzino, etc. avranno costi addizionali che verranno comunicati di volta in volta al nostro ufficio commerciale.

## 10. FORO COMPETENTE

Foro Competente. Per qualsiasi controversia derivante dal presente contratto o collegata allo stesso è competente il Foro di Teramo.

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Tutti i diritti, in particolare quelli di riproduzione, diffusione e traduzione sono riservati.

Nessuna parte di questa opera può essere ristampata o riprodotta in qualsiasi altra forma senza l'autorizzazione scritta della Cordivari.

Il presente catalogo sostituisce ed annulla tutte le edizioni precedenti.

La società si riserva la facoltà di modificare in qualsiasi momento i prodotti e i dati riportati a catalogo e non risponde degli eventuali errori tipografici.

## SOLAR THERMAL SYSTEMS - REQUEST FOR QUOTATION

### DHW SYSTEM

APPLICANT: \_\_\_\_\_

Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

Engineer/installer name: \_\_\_\_\_ Tel.: \_\_\_\_\_

### DHW DATA:

Daily consumption in liters: \_\_\_\_\_ Distribution temperature °C: \_\_\_\_\_ Recirculation:  YES  NO

If you do not know the DHW daily consumption, fill the following data:

Residential buildings: N° people \_\_\_\_\_ N° apartments \_\_\_\_\_  
Period of use: \_\_\_\_\_ annual  seasonal (indicate period): \_\_\_\_\_  
Working washing machine with DHW:  YES  NO N° daily washes \_\_\_\_\_  
Working dishwashing machine with DHW:  YES  NO N° daily washes \_\_\_\_\_

Hotel  Inn  Country House High category  Low category   
N° Room \_\_\_\_\_ N° people for room \_\_\_\_\_ N° daily meals at restaurant \_\_\_\_\_

Camping: N° of people \_\_\_\_\_ N° of showers \_\_\_\_\_ Period of use \_\_\_\_\_

Gym: N° daily users \_\_\_\_\_

Hospital: N° beds \_\_\_\_\_

School: N° people (alumnus + staff) \_\_\_\_\_

Laundry: Kg of every day washed material \_\_\_\_\_

Restaurant: N° daily meals \_\_\_\_\_

Offices  Industries  Army camps N° of people \_\_\_\_\_

### SOLAR COLLECTORS DATA:

Municipality or Province in which the plant will be realized:

Type of roofs: flat roof  pitched roof

Pitched roof orientation: \_\_\_\_\_ Pitch inclination: \_\_\_\_\_

Available space: length: \_\_\_\_\_ width: \_\_\_\_\_ meters

### EXISTING OR PREDICTED ENERGY SOURCES IN THE SYSTEM

Instant boiler - type and power: \_\_\_\_\_

Instant boiler with accumulation - type and power: \_\_\_\_\_

Floor standing boiler - type and power: \_\_\_\_\_

Biomass generator - type and power: \_\_\_\_\_

Electrical resistance power: \_\_\_\_\_  Other: \_\_\_\_\_

### TECHNICAL ROOM:

Door width: \_\_\_\_\_ Door height: \_\_\_\_\_ Room height: \_\_\_\_\_ Room width: \_\_\_\_\_ Room length: \_\_\_\_\_

Distance from collectors to accumulator: \_\_\_\_\_

**SOLAR THERMAL SYSTEMS - REQUEST FOR QUOTATION****SWIMMING POOL HEATING**

APPLICANT: \_\_\_\_\_

Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

Engineer/installer name: \_\_\_\_\_ Tel.: \_\_\_\_\_

**SWIMMING POOL DATA:**

Daily recirculation water intake: lt \_\_\_\_\_

Nr. of daily users: \_\_\_\_\_

Type of swimming pool: Indoor  Outdoor 

Temperature of the cold water in February °C: \_\_\_\_\_ and in August: \_\_\_\_\_

Temperature of the ground in February °C: \_\_\_\_\_ and in August: \_\_\_\_\_

Bathing season period: from \_\_\_\_\_ to \_\_\_\_\_

Swimming pool refill before the bathing season: YES  NO Beginning 10 days before the bathing season: YES  NO 

Length of the pool in meters: \_\_\_\_\_ Width: \_\_\_\_\_ Depth: \_\_\_\_\_

Theoretical temperature of the pool °C: \_\_\_\_\_

Maximum temperature of the pool °C: \_\_\_\_\_

For outdoor swimming pools only:

Pool bottom color: white  light blue  turquoise  dark blue Wind protection: not present  partial  complete Surrounding environment: highly exposed  exposed  protected  highly protected 

Only if a water cover is envisaged:

Effective coverage of the swimming pool in %: \_\_\_\_\_

Type of cover: not transparent shutters  transparent shutters tarpaulin  semi transparent shutters transparent tarpaulin  foam material 

For indoor swimming pools only:

Indoor temperature: \_\_\_\_\_

Outdoor temperature: \_\_\_\_\_

Humidity %: \_\_\_\_\_

**SOLAR COLLECTORS DATA:**

Municipality or Province in which the plant will be realized:

Type of roofs: flat roof  pitched roof 

Pitched roof orientation: \_\_\_\_\_

Pitch inclination: \_\_\_\_\_

Available space: length: \_\_\_\_\_ meters width: \_\_\_\_\_ meters

NOTE: \_\_\_\_\_





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**CORDIVARI** SRL

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