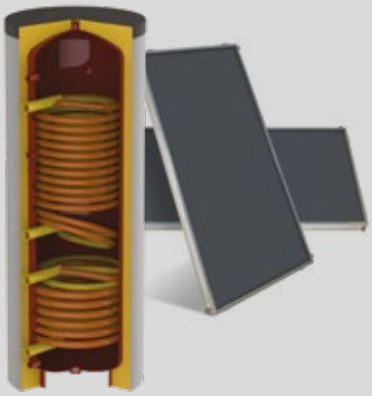
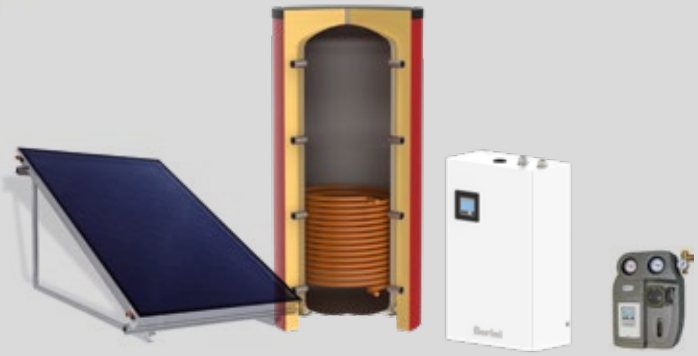
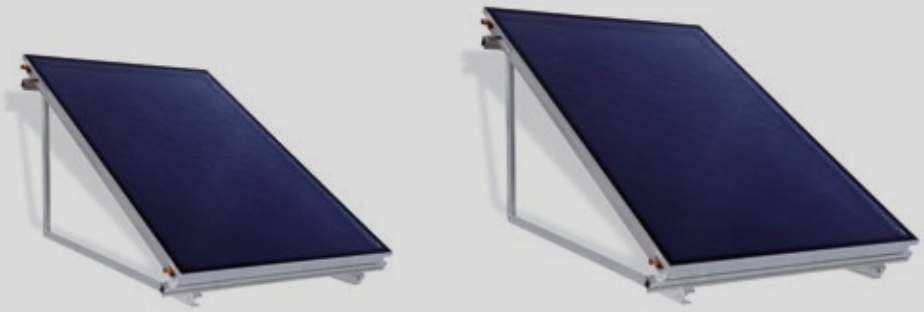
Thermal Solar Systems















Thermal Solar Kit for DHW production

HOT WATER AND SOLAR HEATING SYSTEM

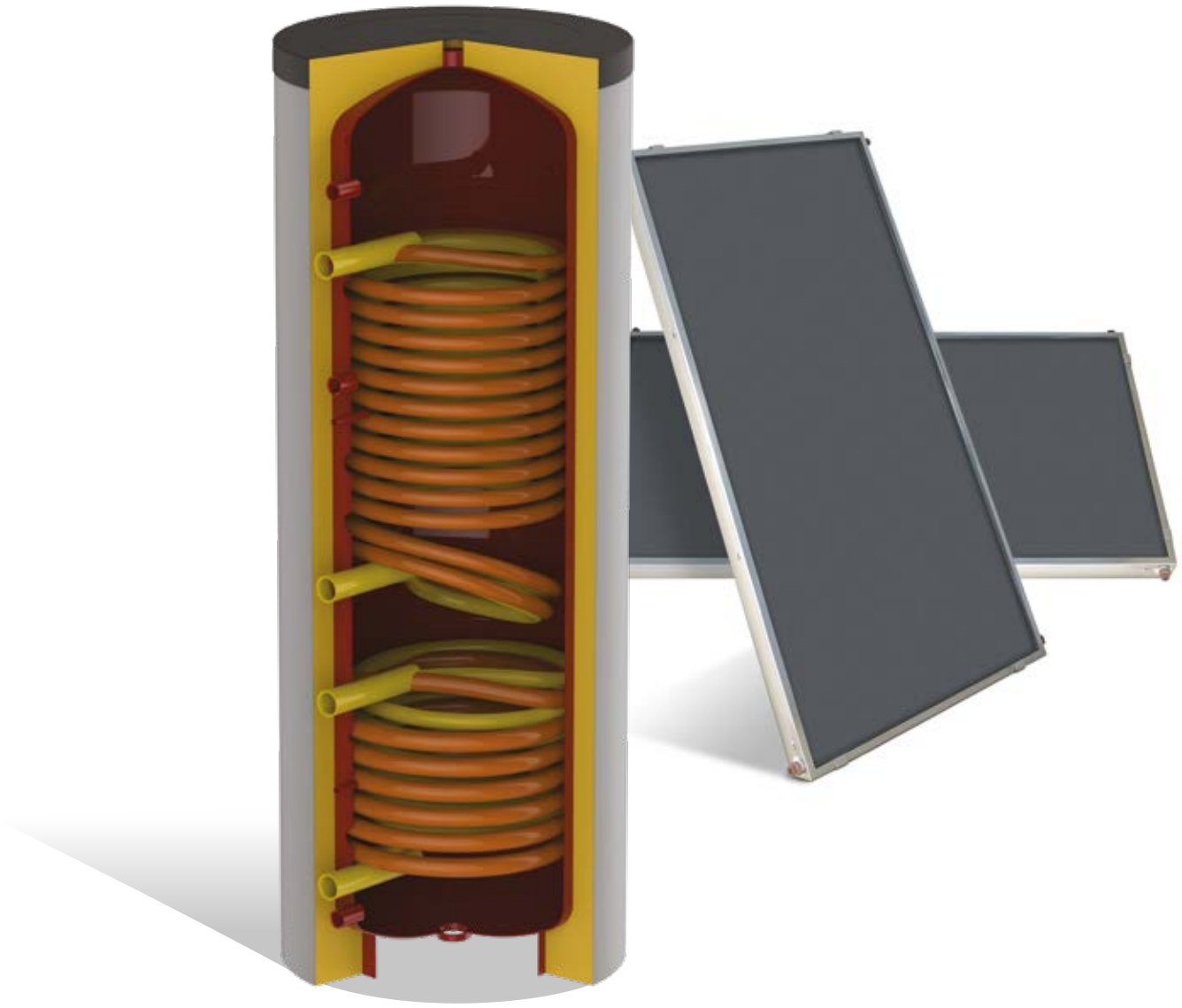
Solar energy is an inexhaustible source of energy that can be easily used both in hot water preparation and in the heating process. Solar energy helps protect the environment and ensures significant energy savings.

OUR SOLUTIONS

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

WHY THE SOLAR THERMAL KIT

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



Thermal Solar Kit for DHW production

ADVANTAGES

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

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

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

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

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

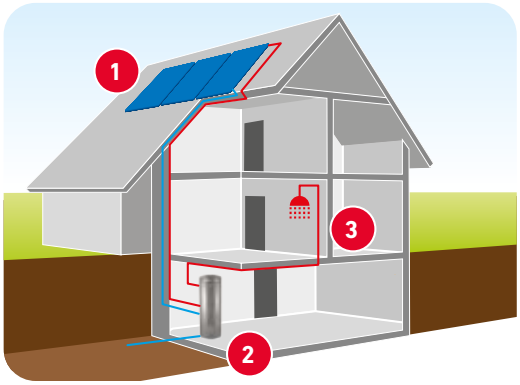
✪ Minimal maintenance. The equipment (collectors, regulators, pumps) and accessories require minimal maintenance.





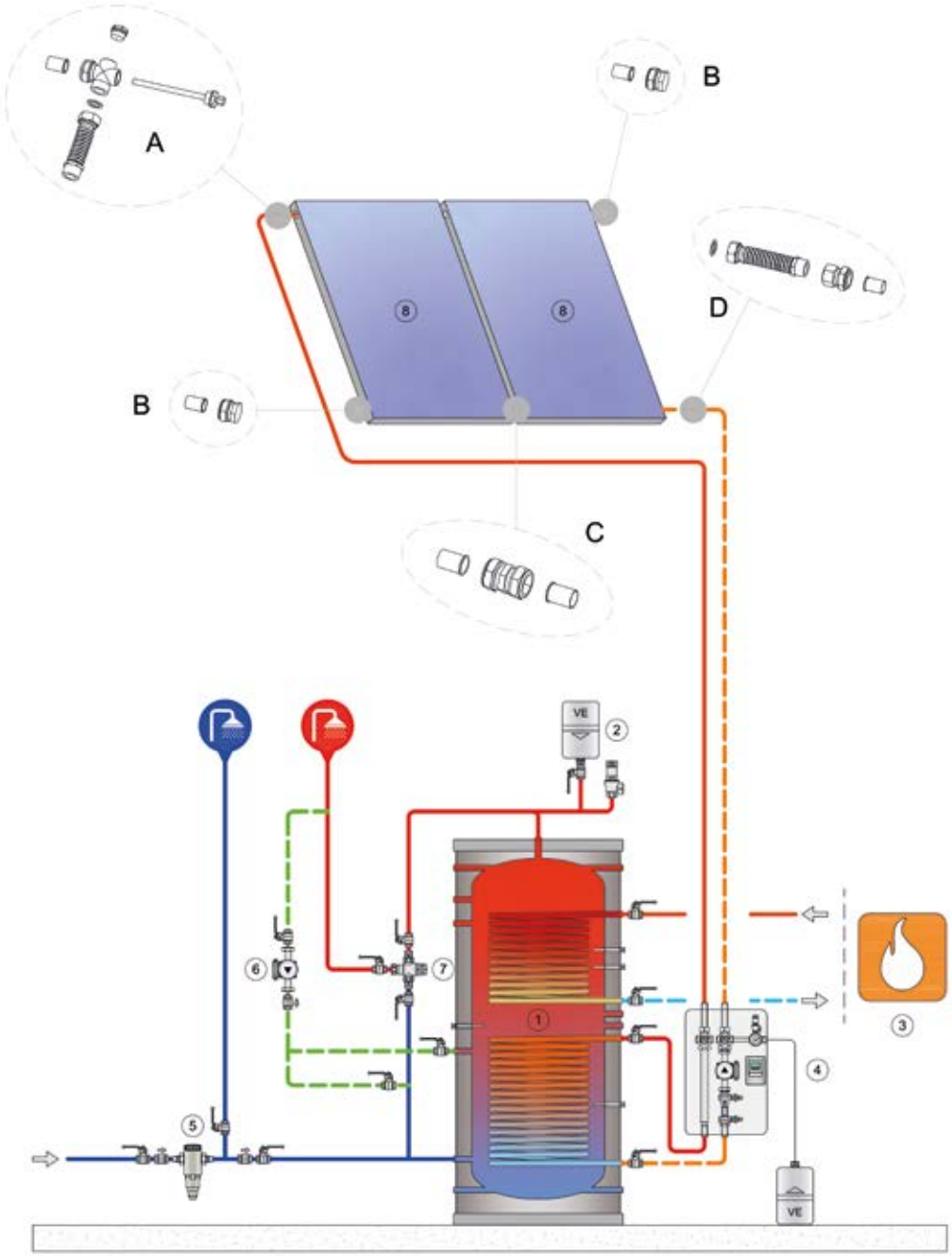
AQUA SUN Thermal Solar kit for DHW production

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



Principles

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



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

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

AQUA SUN Thermal Solar kit for DHW production

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

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

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

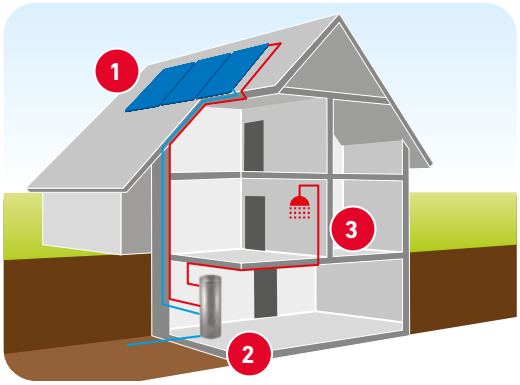
NOTE: Collector fixing kit not included (pag. 275)

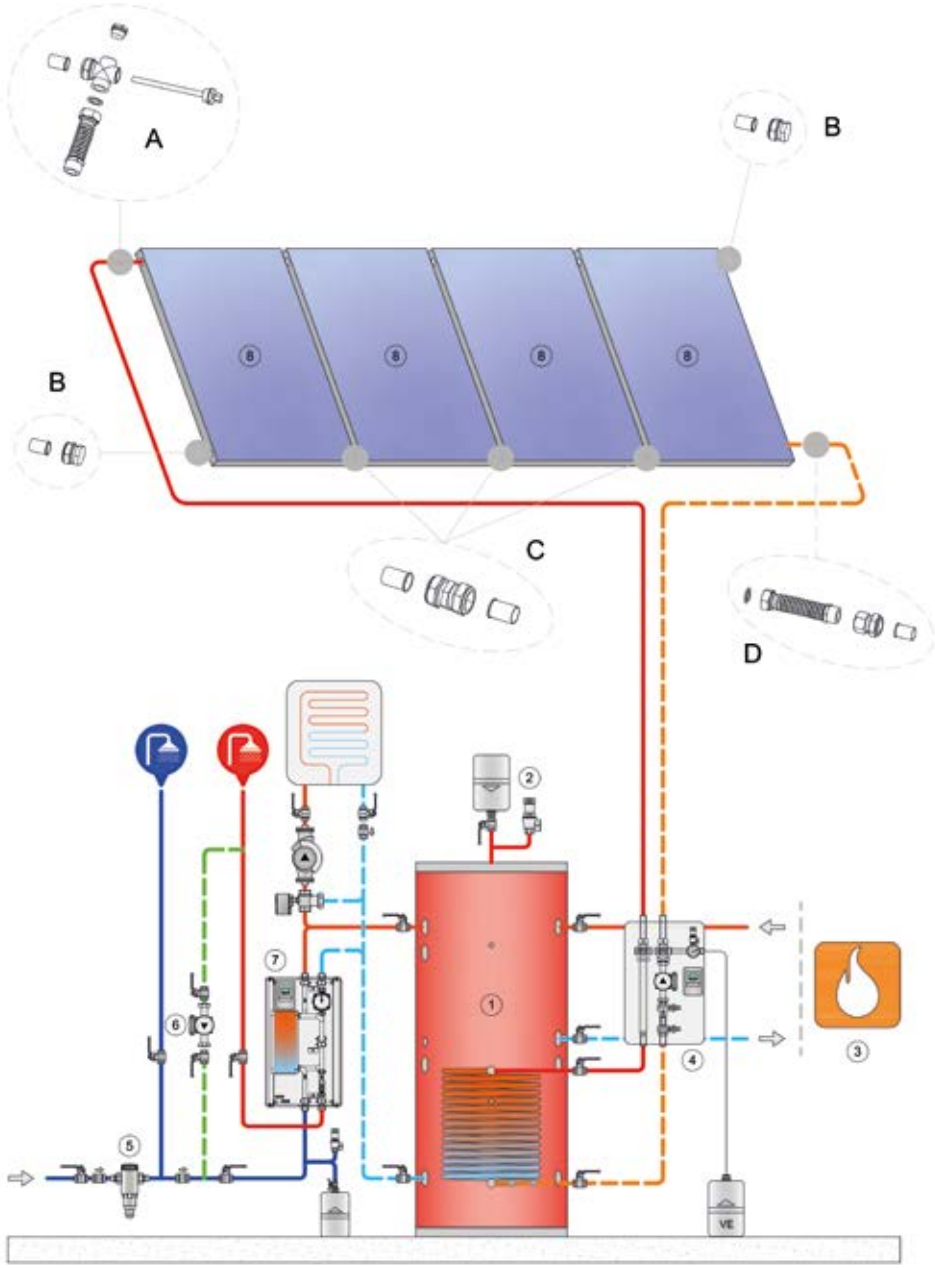
Thermal Solar power kit for DHW production and heating – COMBI SUN

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

Principles

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





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

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

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

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

N.A. Not Available













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

H2000 - High efficiency flat plate solar panels with aluminium tank

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

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



Features

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

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

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

CHECK UPDATED PRICE LIST

go.fiorinigroup.it/pr

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

CHECK UPDATED PRICE LIST

go.fiorinigroup.it/pr

Connection options

Parallel connection



Max 6 collectors

Series connection



Based on pressure drop

Combined connection

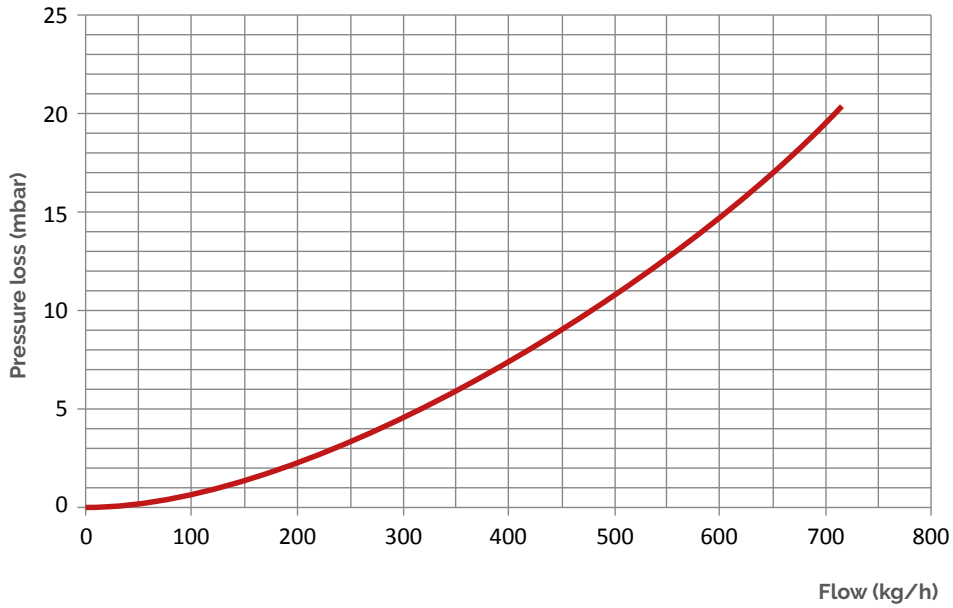


Based on pressure drop

H2000 - High efficiency flat plate solar panels with aluminium tank

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

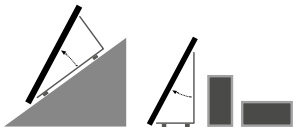
Efficiency coefficient	Opening	Absorber
η_0	0,814	0,814
a_1	4,061	4,061
a_2	0,013	0,013



Assembly



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



Supported
Frame for horizontal or vertical structure

H2500 - High efficiency flat plate solar panels with aluminium tank

H2500 high performance solar collector – 2,5 m² with an aluminium frame for vertical and horizontal installation

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



Features

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

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

CHECK UPDATED PRICE LIST

go.fiorinigroup.it/pr

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

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

CHECK UPDATED PRICE LIST

go.fiorinigroup.it/pr

Connection options

Parallel connection



Max 6 collectors

Series connection



Based on pressure drop

Combined connection

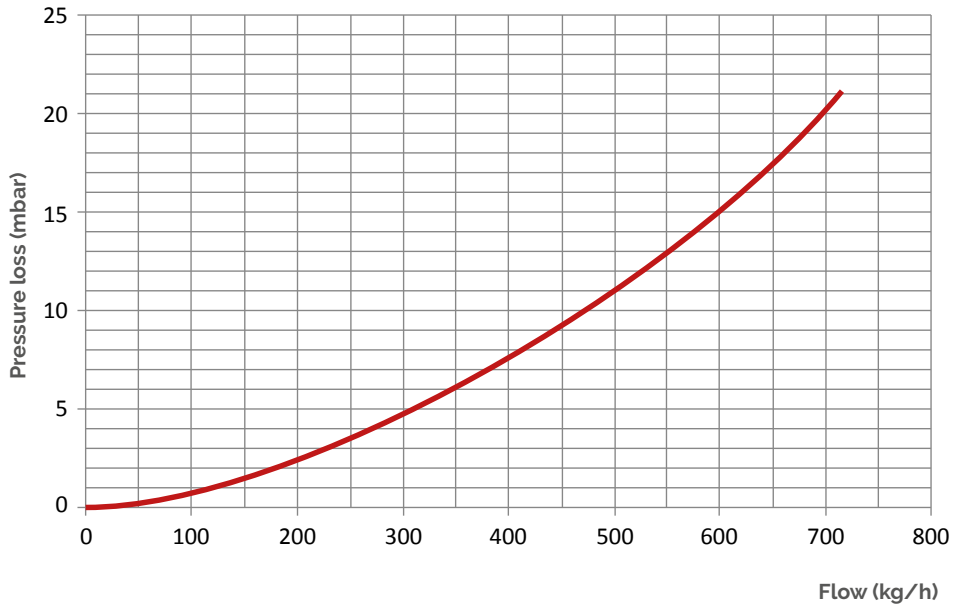


Based on pressure drop

H2500 - High efficiency flat plate solar panels with aluminium tank

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

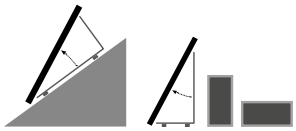
Efficiency coefficient	Opening	Absorber
η_0	0,807	0,807
a_1	4,04	4,04
a_2	0,012	0,012



Assembly



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



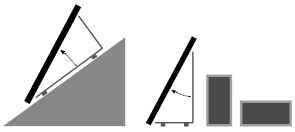
Supported
Frame for horizontal or vertical structure

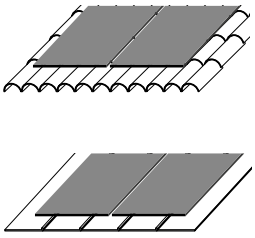
Assembly and materials

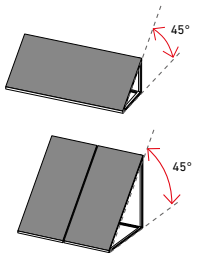
Assembly and materials

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

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

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



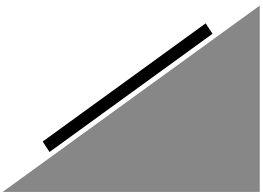


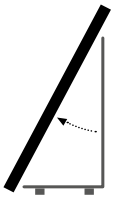
Collector fixing systems

CHECK UPDATED PRICE LIST

go.fiorinigroup.it/pr

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





MTDC Solar regulator

CHECK UPDATED PRICE LIST

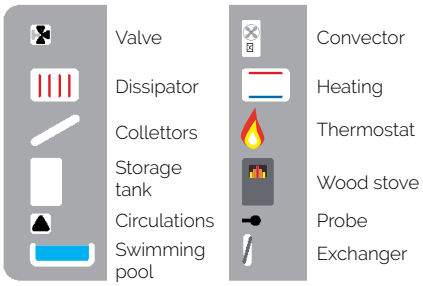
go.fiorinigroup.it/pr

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

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

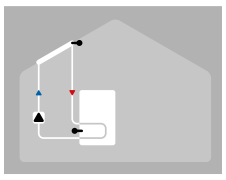
Code	Price
C22130020	

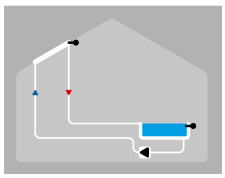


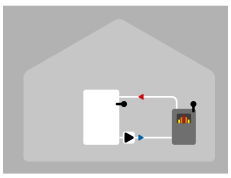


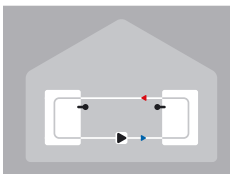
TESTED

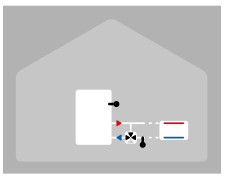
Pre-set installations

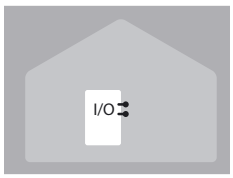

Solar + tank


Solar + pool


Wood-fired boiler with tank


Tank recharge

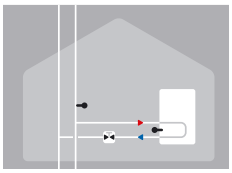

Solar with heating circuit

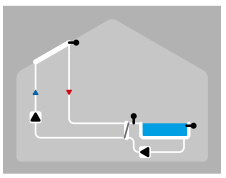


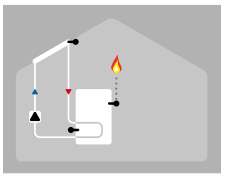
Thermostat

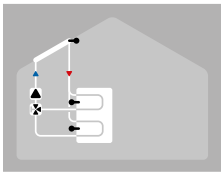


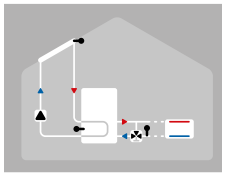
Universal temperature

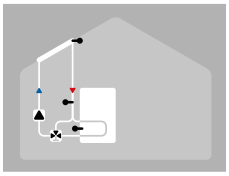

Cut-off valve

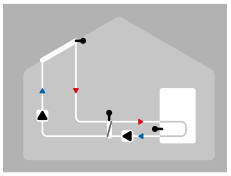

Solar with heat exchanger (sensor on secondary) and pool

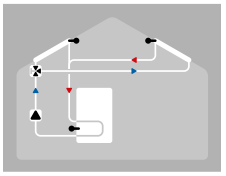

Solar with thermostat (auxiliary heating)

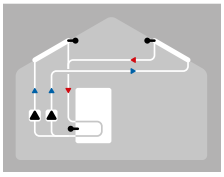

Solar with double zone tank

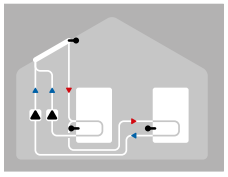

Solar with heating circuit

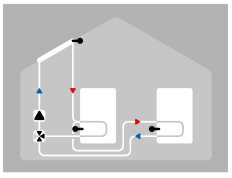

Solar with bypass

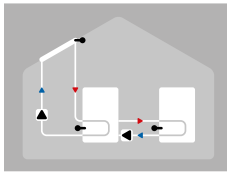

Solar with exchanger

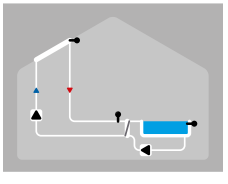

Solar with two collectors

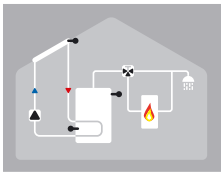

Solar with two collectors and two pumps

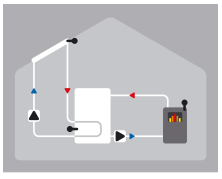

Solar with two tanks and two pumps

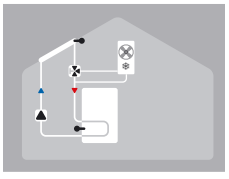

Solar with two tanks and valve

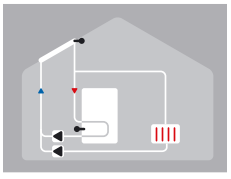

Solar with storage tank

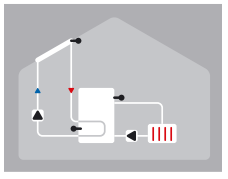

Solar with pool and exchanger


Solar with thermostat and valve


Solar with wood-fired boiler


Solar with cooling 1 (panel cooling)


Solar with cooling 2 (panel cooling)


Solar with cooling 3 (panel cooling)

CHECK UPDATED PRICE LIST

go.fiorinigroup.it/pr

S1 SOLAR 1
Solar module

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

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

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



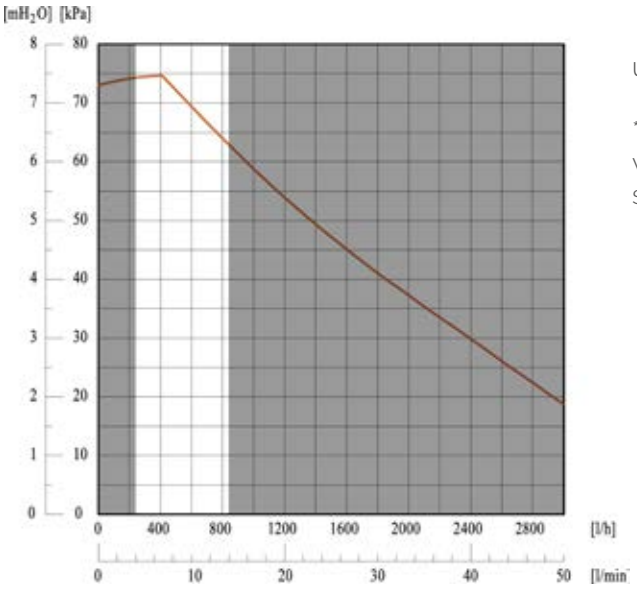
TESTED

The solar module is available in one version

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

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

Flow/performance curve



up to 16 m²*

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

CHECK UPDATED PRICE LIST

go.fiorinigroup.it/pr

S2 SOLAR 30
Solar module

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



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

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

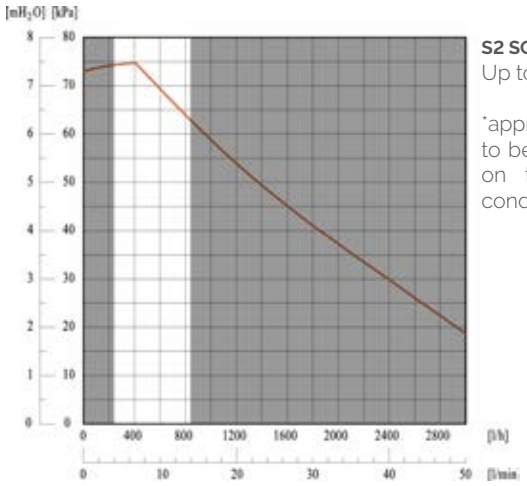
Return circuit comes with:
- Flow meter and flow regulator, equipped with fill and drain connections
- Solar circulation pump
- Ball valve with check valve. The check valve can be de-activated by turning the handle 45° (useful when filling the device)
- Safety valve (6 bar) with manometer
- Coupling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

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

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

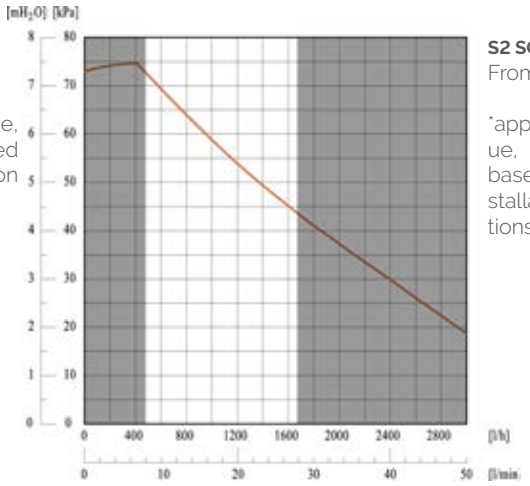
(*) For a brief period (20s) the max T is 160°C

Flow/performance curve



S2 SOLAR 30 - 25/6
Up to 16m²

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



S2 SOLAR 30 - 25/7
From 8 up to 35m²*

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

CHECK UPDATED PRICE LIST

go.fiorinigroup.it/pr

S2 SOLAR 2
Solar module

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

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

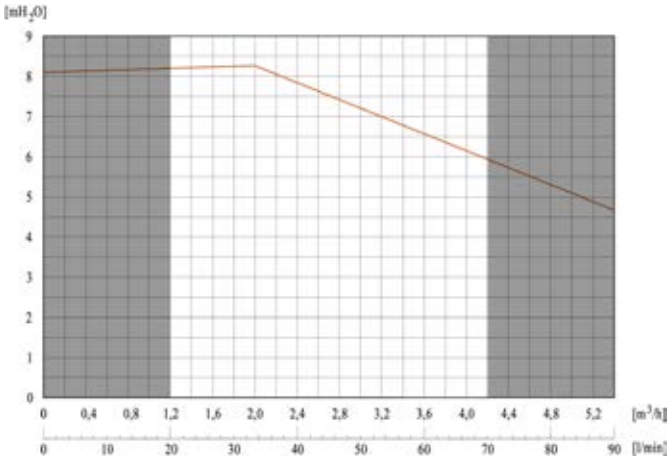
Delivery:
- T coupling for well probe holder
- ball valve with non-return valve 18 mbar (the non-return valve can be left out by turning the handle for 45 degrees) with a thermometer handle (thermometer with red ring; 0°C-120°C).
- coupling tube and coupling

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

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



TESTED



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

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



Download additional content

go.fiorinigroup.it/eng/content

fiorini

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