

**Photovoltaic pumping station ECOSOM  
with facility for generating set and battery charger**

EN

**INSTRUCTION AND  
INSTALLATION MANUAL**

*ECOSOM 4/80*

*For electric pump type  
SRF 4/80 DC 24 V*

*ECOSOM 320 - 290 - 262 - 190*

*For electric pumps  
type  
SEMISOM DC 24 V*

**“Translation of the  
Original  
Instructions”**



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## WARRANTY

The 24 months warranty against manufacturing defects is valid for any fault that may occur within 24 months from the date of delivery to the user. The date is determined by the Delivery Note or Invoice issued by the Dealer/Distributor. Without this relevant documentation, the term (24 months) shall be deemed to start from the date the product has been manufactured (month/year) which clearly is marked on the item itself. Warranty is limited to the replacement or repair, at our premises, of the products or components recognised as actually being defective and does not imply the possibility of requiring any indemnity.

Warranty will not cover failures caused by: wrong electric connection, lack of adequate protection, wrong installation, lack of accuracy in the execution either of the system or of the plant, any type of corrosion or abrasion caused by the liquid pumped, a non-respect of the limitations of use in the Service manual.

Warranty shall not be recognised as valid in case the products are disassembled, repaired or altered by persons not expressly authorised.

## SOME COMMENTS ABOUT THE USER'S MANUAL

The User's Manual is not an accessory of the Pumping station, but is an integral part of the station itself and represents a SAFETY MEASURE.



In order to make usage of the Manual easier, each subject has been divided into numbered points, which, where required are supported on drawings.

This manual has to be kept intact, near the electric pump and delivered to any operator, user or owner.

The manual shall not be damaged; it must be kept intact – do not tear any sheets –, be kept far from humidity and heat sources. While consulting, try not to damage its readability.

The most important sections are highlighted by symbols and detailed explanations above the pictures.

Giving these notices, the Manufacturer aims, in an unequivocal way, to alert the operator of measures, dangers and warnings that should concern him.

## PART 1 PRELIMINARY INFORMATION

### 1.1 MANUFACTURER'S STATEMENT

The pumping station ECOSOM is manufactured in accordance with regulations described on page 23.

BBC informs that any modifications or tampering to pumping station ECOSOM and/or operations carried out in non-compliance with the provisions of this manual, especially the non-observance of the Safety Regulations, imply the non-validity of the Warranty.

**Please, remember that:**

The technical data are referred to the pumping station ECOSOM 4/80 and ECOSOM 320 - 290 - 262 - 190 (SEE PART 3 – TECHNICAL FEATURES), drawings and any other documents are owned by BBC who owns all relevant rights that can not be placed at any third parties' disposal without BBC written authorization.

Consequently, any reproduction – even partial – of text and illustrations is strictly prohibited.

### 1.2 IDENTIFICATION OF THE UNIT

Always remember to quote the model of the pumping station ECOSOM in case you call BBC or its customer service.

Transcribe the type of unit, so that a copy of the manual can be requested, should this one be lost and/or should the label be unreadable.

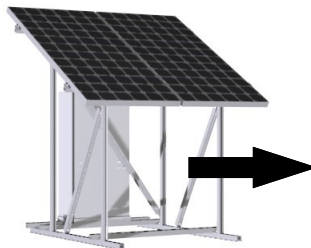
### 1.3 GENERAL INFORMATION AT DELIVERY



The pumping station ECOSOM is dispatched inside a rigid packaging.

When you receive them, always check that:

- the package is not damaged;
- the solar panels and their accessories have not been damaged.

Should there be any damage or missing parts, inform the supplier, the forwarding agent or his insurance company immediately, providing him detailed information.



		Cod.: DF360/100E
<b>ECOSOM 360/100 E</b>		
ALIMENTATION		
24	V DC	I MAX 30 A
BATTERIES		
2 x 100 Ah 12 V maintenance-free AGM Long-Life, monobloc, stationary type		
SOLAR MODULES		
2 x 180 Wp (+/- 3%) multicrystalline silicon solar cells.		
 Per una corretta installazione leggere il manuale di istruzioni For a proper installation read the instruction manual		

## 1.4 DESCRIPTION OF THE PUMPING STATION ECOSOM

### 1.4.1 USE (PURPOSE - SPECIFIC USE)

The **ECOSOM** solar station, being delivered in a stand-alone kit and being easy-to-install units, allow to pump liquids wherever there is a good solar radiation. They produce 24V DC renewable energy by using available solar light.

### 1.4.2 IMPROPER USE



#### **CAUTION, DANGER OF FIRE AND TOXICITY!**



THE PUMPING STATION ECOSOM MUST NOT BE USED TO PUMP DANGEROUS LIQUIDS (either inflammable or toxic)

Any use, other than that specified by the manufacturer, has to be considered as improper use.

### 1.4.3 PLACE OF USE



#### **CAUTION, DANGER OF EXPLOSION!**

THE PUMPING STATION ECOSOM MUST NOT BE INSTALLED IN EXPLOSIVE PLACES.



#### **CAUTION, DANGER OF ELECTROCUTION!**

THE PUMPING STATION ECOSOM MUST NOT BE INSTALLED IN PLACES WHERE THERE ARE PEOPLE IN CONTACT WITH LIQUIDS (i.e. swimming pools).

Maximum pump installation depth 20 m  
(ECOSOM 262, 265, 320, 190).

Maximum pump installation depth 30 m  
(ECOSOM 4/80).

Minimum and maximum operating temperature of the liquid pumped:

- 0 / 35 °C for limited use S2 (60 minutes)

ECOSOM 262, 265, 320, 190);

- 0 / 45 °C for limited use S2 (60 minutes)

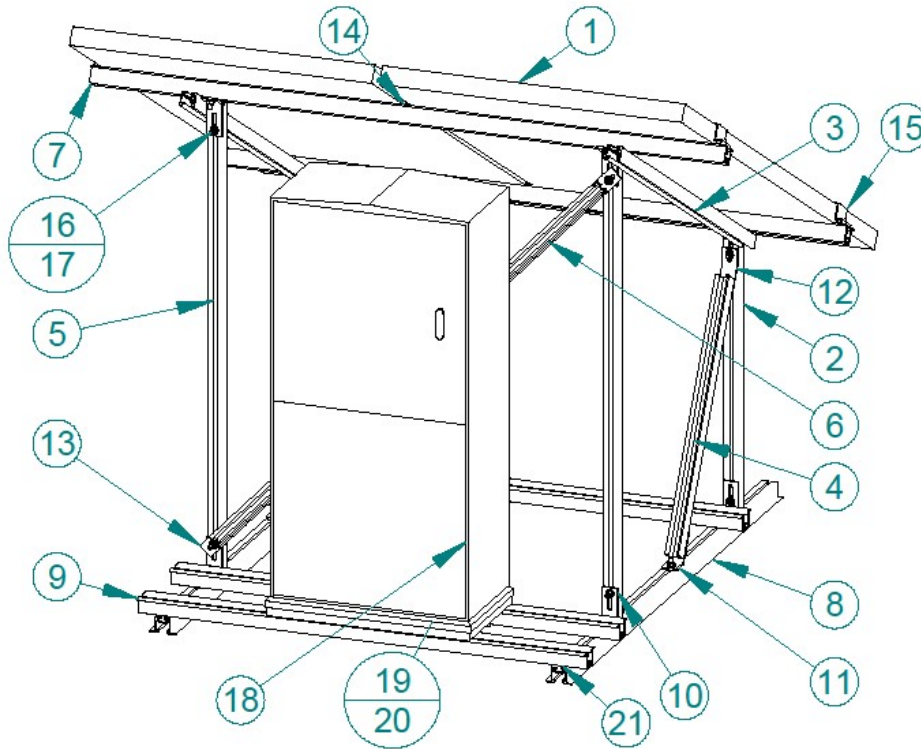
ECOSOM 4/80

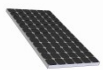









The pumping station ECOSOM has no vibrations and its noise is below 70 db (A).












In case of applications different from those specified in this manual, please contact BBC Elettropompe.



1.4.4  
**MAIN COMPONENTS OF THE PUMPING  
 STATION ECOSOM**



	<b>Position</b>	<b>Description</b>	<b>Q.ty</b>
	1	Solar module 180W (±3%)	2
	2	L Profile=75cm	2
	3	L Profile=1.1m	2
	4	L Profile=72cm	2
	5	L Profile=1.24m	2
	6	L Profile=1.44m	1
	7	L Profile=1.55m	2
	8	L Profile=1.5m	2
	9	L Profile=1.2m	3
	10	Square at 90°	4

	<b>Position</b>	<b>Description</b>	<b>Q.ty</b>
	11	Square at 120°	6
	12	Square at 150°	2
	13	Flat bracket	2
	14	Middle Clip 41-50mm	2
	15	End Clip 42mm	4
	16	Screw M8x20	28
	17	Fixing nut M8	28
	18	Cabinet	1
	19	Fixing nut M8 A4	4
	20	Square fixing clamp	2
	21	L Flat	10

## PART 2 SAFETY PRESCRIPTIONS

While consulting this user's manual you will find some symbols; each one has its precise meaning.

### CONVENTIONAL SYMBOLS AND THEIR DEFINITION



#### WARNING, DANGER OF ELECTROCUTION!

It shows the concerned personnel that the operation described presents **risk of electric shock** if not carried out in compliance with the safety regulations.



#### WARNING, GENERAL DANGER!

It shows the concerned personnel that the operation described presents **risks to get physical ly injured** if not carried out in compliance with the safety regulations.

Every time, **risks are detailed, in TEXT AND SYMBOLS.**



#### NOTE!

It shows the concerned personnel which subject is to be taken into better consideration.



#### WARNING!

It shows the concerned personnel basic information whose content, if not respected, can determine, slight injuries to people or damages to the machine.



#### OPERATION

Indicates that only qualified personnel with specific skills should carry out the operation.

**The operator cannot carry out any operation reserved for MECHANICAL OR ELECTRIC MAINTENANCE QUALIFIED PERSONNEL.**



#### MECHANICAL MAINTENANCE OPERATOR

Qualified technician able to manage the machine in normal conditions. He/she is able to operate on all mechanical parts so to carry out all adjustments, maintenance interventions and repairs required.

**He/she is not allowed to operate on electric systems with voltage presence.**



#### ELECTRIC MAINTENANCE OPERATOR OR TRAINED PERSON (See EN 60204-1 point 3.52)

Qualified technician able to manage the machine in normal conditions. He/she is put in charge of the interventions of electric adjustment, maintenance and repairing.

**He/she is able to operate with voltage presence inside electric panels or control boxes.**



#### PERSONAL PROTECTION

The operator is **OBLIGED** to use devices for personal protection in presence of one of these self explanatory symbols.

#### RECOMMENDATION

It is referred to a method of work experienced in our facilities. Please, consider that each operator can develop his/her own way to carry it out.



#### SPECIAL INTERVENTIONS

Any special maintenance intervention, evidenced by this symbol, are to be requested to BBC Elettropompe.

## CONTENTS

### 2.1

Before installing the pumping station, the customer shall make sure that the site is sufficiently levelled and can stand its weight (see Technical Features, Section 3). Furthermore, he/she will verify the presence of technological devices and sufficient room on all sides for any possible maintenance.

### 2.2

For all electric wiring, refer to the electric drawing (see 4.4.2).

### 2.3

The personnel chosen for the handling of the electric pump and its accessories will have to wear gloves and proper shoes to prevent accidents.

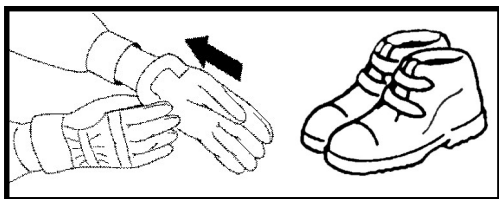
### 2.4



For all handling operations of the machine, once it is unpacked, See Section 4 - **Handling, Installation and Connection**.

### 2.5

All necessary operations of assistance, maintenance and repair must be carried out only by a **QUALIFIED ELECTRIC TECHNICIAN** or by a **MECHANICAL MAINTENANCE OPERATOR** who knows the safety prescriptions and the content of this manual.



### 2.6

#### ZERO POWER STATE

Before doing any operation, turn the switch on 0 "ZERO".

- Remove fuses;
- Indicate **WORK IN PROGRESS**;
- Lock the panel, remove the key and bring it with you.



**THE PUMPING STATION IS EQUIPPED WITH RE-SWITCHING DEVICES THAT MAY RESTART IT AUTOMATICALLY!**

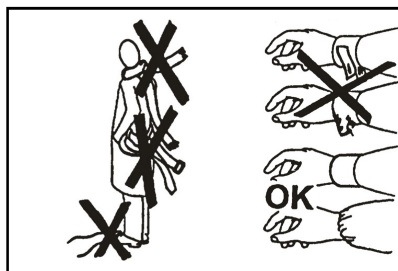


### 2.7

The trained personnel called to operate on the pumping station must have the following IPD (**Individual Protection Devices**) at disposal: helmet, protection glasses, oxygen set, safety sling, gloves, accident prevention shoes when required.

**Said personnel must also:**

- Wear overalls with closed cuffs;
- Tie hair if this is long;
- Never wear fluttering and/or torn objects and/or clothing (i.e., necklaces, watches, rings, bracelets, scarves, neckerchiefs, ties, etc.).







**2.8**

**CAUTION, DANGER OF INFECTIONS!**

Before carrying out any intervention, the personnel operating shall make sure to use all hygiene and health measures.

**2.9**

**NOTE!**



Do not move nor handle any part of the ECOSOM pumping station by using its wires.



**2.10**

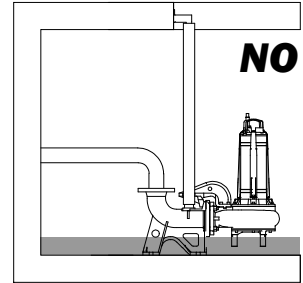
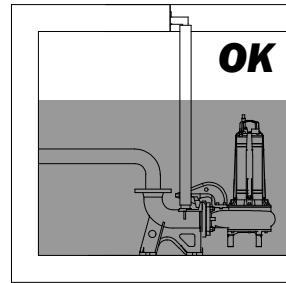
**CAUTION! DANGER OF SHEARING, CUTTING AND ABRASION!**

Be particularly careful while handling the aluminium profiles.

**2.11**

Start the electric pump only when it is duly installed and fixed.

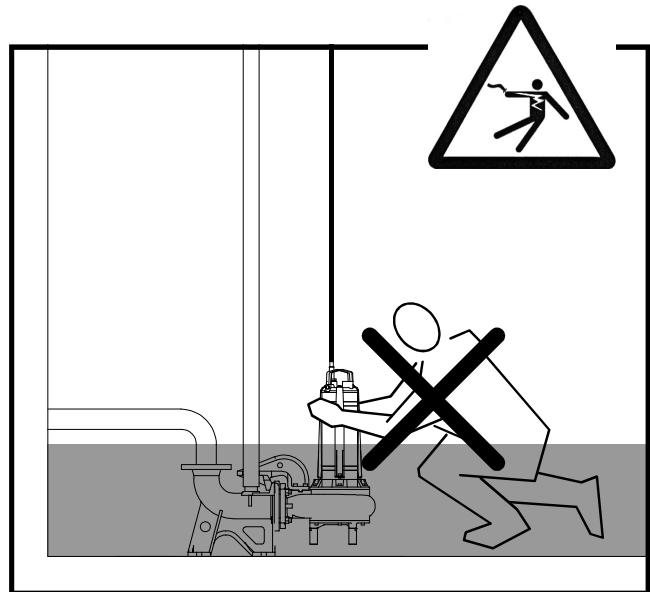
**NEVER START IT WITHOUT LIQUID.**



**2.12**

**CAUTION! DANGER OF ELECTROCUTION!**

Never run nor start the electric pump if somebody is in contact with the liquid to be pumped.



**2.13**

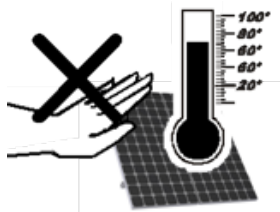
**IT IS FORBIDDEN TO CARRY OUT MAKESHIFT REPAIRS.**

**2.14**

Make sure that there are no tools, rags and other material left inside the panel or where the pump has been installed.

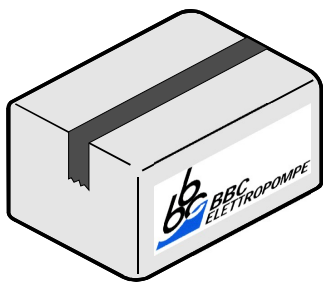
**2.15**

The solar panels can reach high temperatures. Consequently, handle them only once they are cool.



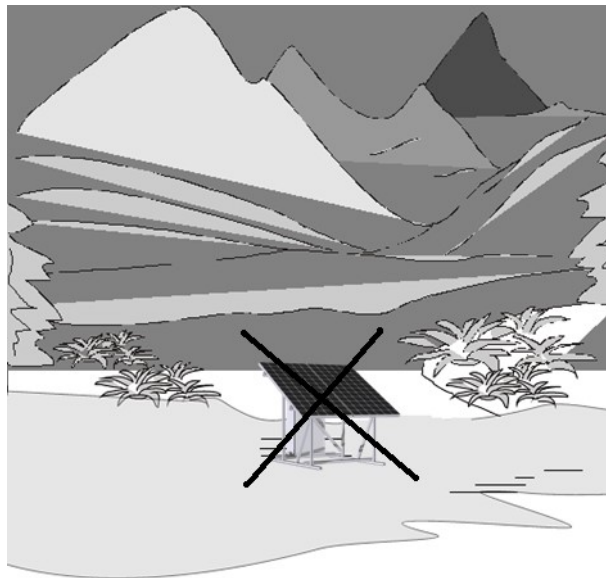
**2.16**

Always ask for and use original spare parts.



**2.17**

When the machine has finished its life cycle, please dispose of it in a responsible manner.



## PART 3 TECHNICAL FEATURES

### PERFORMANCE DATA ECOSOM for clean water

	Code			Available electric pumps					Q	Flow										
	Version E	Version I	Version L	Type	P2		P1	Max	Life of the batteries *	m <sup>3</sup> /h	Flow									
					hp	kW	kW	A		min	l/min	0	0,36	0,6	1,2	1,8	2,4	3	3,6	4,2
ECOSOM 4/80	DE80/04E	DE80/04I	DE80/04L	SR 4/80 24 V DC	0,75	0,55	0,67	28	120	H (m)	40	38	37	34	30	26	21	17	11	7

\* only for "E" and "I" versions

### PERFORMANCE DATA ECOSOM for sewage water

	Code			Available electric pumps					Q	Flow										
	Version E	Version I	Version L	Type	P2		P1	Max	Life of the batteries *	m <sup>3</sup> /h	Flow									
					hp	kW	kW	A		min	l/min	0	1,8	6	9	12	15	18	21	24
ECOSOM 190	DE190E	DE190I	DE190L	SEMISOM 190 24 V DC	0,5	0,37	0,58	24	160	H (m)	10,5	9,5	7	4	1					
ECOSOM 320	DE320E	DE320I	DE320L	SEMISOM 320 24 V DC	0,75	0,55	0,67	28	120		11,5	11	9	7,5	5,5	3	0,5			
ECOSOM 290	DE290E	DE290I	DE290L	SEMISOM 290 24 V DC	0,75	0,55	0,67	28	120		8,5	8	7	6,5	5,5	4,5	3,5	2,5	1	
ECOSOM 262	DE262E	DE262I	DE262L	SEMISOM 262 24 V DC	0,75	0,55	0,67	28	120		10,5	10	9	8	7	6	4,5	3	1	

\* only for "E" and "I" versions

## PART 4 HANDLING, INSTALLATION AND CONNECTION



Read thoroughly **Part 2** and **Part 3** of this manual before handling, installing or wiring the pumping station.

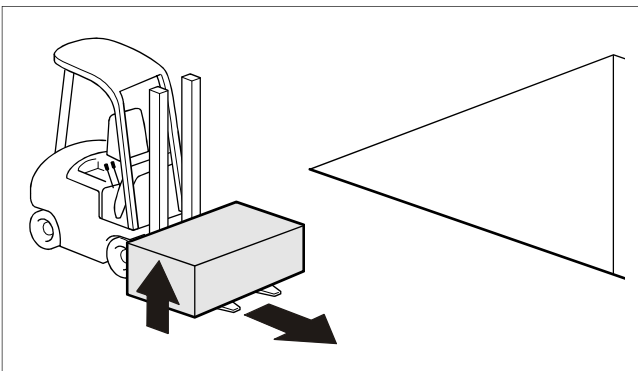
### 4.1 SOME PRELIMINARY INFORMATION ABOUT HANDLING, INSTALLATION AND WIRING

#### 4.1.1 CAUTION, DANGER OF CRUSH, SHOCK AND ABRA- SION!

The personnel operating while handling and installing the solar pumping station shall always wear gloves, accident prevention shoes and helmet.



**4.1.2**  
Bring the package/s near the place of installation by means of lifting equipment, fork lift or hand pallet truck.



**4.1.3**  
**NEVER** work alone during the installation of the pumping station ECOSOM.  
Always wear safety belts and Individual Protection Devices (IPD)



**4.1.4**  
**CAUTION! DANGER OF INTOXICATION OR  
POISONING BECAUSE OF TOXIC GAS!**

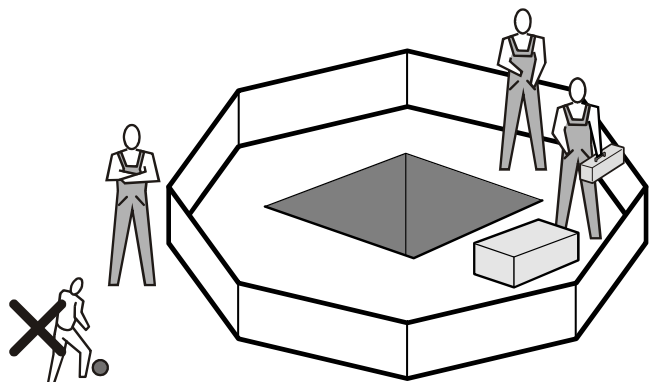
Make sure that there is neither toxic nor inflammable gas in the area where the pumping station ECOSOM will be installed.

**4.1.5**  
**CAUTION, DANGER OF SLIPPING!**  
Make sure that the area where the pumping station ECOSOM will be installed is not muddy.



**4.1.6**  
Make sure to have sufficient room where the pumping station ECOSOM will be installed.

**4.1.7**  
Surround the installation area with suitable barriers.



### 4.1.8

It is advisable to install a NON-RETURN valve at least 1 (one) metre from the delivery outlet of the electric pump to avoid a possible flow-back of liquid through the delivery pipe.

### 4.1.9

Make sure that the electric pump to be installed is suitable for the system (see Ø of the pipes, flow of the electric pump, length of the pipework, etc.). You can also consult the table of BBC General catalogue "pressure loss".

**Perdite di carico**  
Pressure loss

Perdite di carico ogni 100 metri di tubazione lineare - Pressure loss in linear pipes every 100 metres

Dimensione interna tubo - Inside diameter of pipe

Portata Flow l/sec m³/h	Dimensione interna tubo - Inside diameter of pipe																
	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	15"	20"	25"	
0.25	10	0.8	2.0	1	0.28	0.09											
0.28	13	0.9	6.3	2.19	0.95	0.36											
0.33	20	1.2	10	3.5	1	0.3	0.11										
0.41	28	1.6	15	5.0	1.6	0.5	0.16										
0.50	30	1.8	22	8	2.2	0.65	0.23										
0.60	40	2.4	40	13	4	1.2	0.4	0.1									
0.80	60	3	60	21	6	1.8	0.6	0.16									
1	80	3.6	75	26	8	2.4	0.85	0.22									
1.20	90	4.2	80	31.5	10	3.0	1.15	0.3	0.11								
1.33	90	4.8	84	34.5	4.5	1.5	0.4	0.14									
1.5	90	5.4	86	34	5.5	1.8	0.48	0.16									
1.60	100	6	77	32	6.5	2.2	0.52	0.2									
2	120	7.2	90	36	8	2.8	0.6	0.3									
2.33	140	8.4	82	32	4.2	1.1	0.36	0.13									
2.60	160	9.6	93	38	5.5	1.4	0.5	0.17									
3	160	10.8	95	38	6.5	1.7	0.6	0.21									
3.33	200	12	78	24	8	2.1	0.72	0.26									
3.60	200	13.2	90	28.5	9	2.4	0.84	0.3	0.1								
4	240	14.4	93	31.5	3	1.1	0.32	0.12									
4.33	260	15.6	40	13.5	3.8	1.22	0.43	0.14									
4.60	280	16.8	45	15	4	1.4	0.48	0.16									
5	300	18	51	17	4.5	1.6	0.53	0.18									
5.63	350	21	68	24	8	2.1	0.76	0.24									
6.00	400	24	87	29	7.8	2.65	0.94	0.31	0.12								
7.5	450	27	96	33	8.8	3.1	1.18	0.34	0.15								
8.33	500	30	45	11.8	4.2	1.4	0.47	0.18									
9.20	560	33	95	14	9	3.1	0.95	0.28	0.15								
10	600	36	64	16.5	5.5	2	0.85	0.25	0.12								
11.8	700	42	87	23	8	2.8	0.9	0.32	0.16								
13.3	800	48	90	23.5	3.5	1.98	0.95	0.29	0.11								
14.8	900	54	44	15	5.3	1.6	0.69	0.21	0.15								
20	1200	72	62	22	7.5	2.6	0.95	0.45	0.22								
23.3	1400	84	81	28.5	10	3.25	1.25	0.6	0.3	0.1							
26.8	1600	96	87	31	4.8	1.8	0.78	0.38	0.13								
30	1800	108	40	16	5.3	2	0.95	0.41	0.15								
33.3	2000	120	94.5	18.5	6.5	2.4	1.15	0.58	0.19								
36.6	2200	132	65	23	7.7	2.9	1.38	0.7	0.23								
40	2400	144	75	27	9	3.3	1.6	0.81	0.27	0.11							
43.3	2600	156	93	32.7	1	1.8	0.86	0.33	0.13								
46.8	2800	168	97	32	4.8	2.2	1.1	0.57	0.17								
50	3000	180	43	18	2.65	1.25	0.62	0.17									
56.3	3500	210	58	18	3.8	1.25	0.85	0.35	0.22								
64.8	4000	240	73	24	4.8	1.25	1.15	0.7	0.29								
75	4500	270	90	31	5.4	1.7	1.2	0.87	0.37								
83.3	5000	300	97	34	6.6	3.3	1.1	0.45	0.11								

Note:  
Le perdite di carico devono essere moltiplicate per:  
- 0.85 per tubi in PVC;  
- 0.8 per tubi in acciaio neri;  
- 1.28 per tubi in acciaio leggermente arrugginiti;  
- 1.7 per tubi incrostati.

Note:  
Pressure loss should be multiplied by:  
- 0.85 for PVC pipes;  
- 0.8 for new steel pipes;  
- 1.28 for slightly rusty steel pipes;  
- 1.7 for encrusted pipes.

## 4.2 INSTALLATION

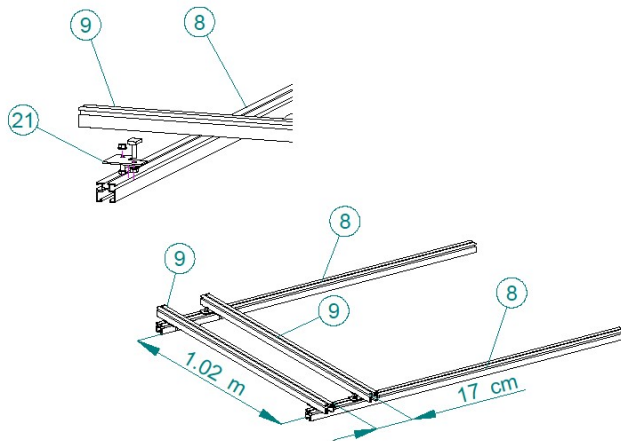
### 4.2.1

Necessary tools to assemble the station:  
6 mm Allen key  
13 mm wrench



### 4.2.2

Place the bars of 1.2 m (9), the bars of 1.5 m (8). Fix them with L-plates (21).



### NOTE! 4.1.10

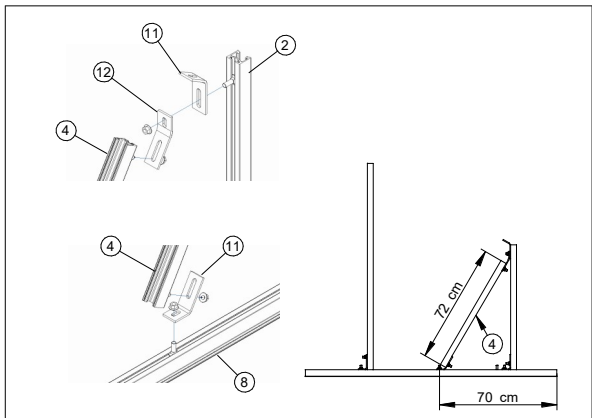
Before the installation, read all paragraphs (4.2, 4.3 and 4.4) so to be ready for any circumstance.

### 4.1.11

The preliminary information about HANDLING, INSTALLATION AND WIRING, is now complete.

**4.2.3**

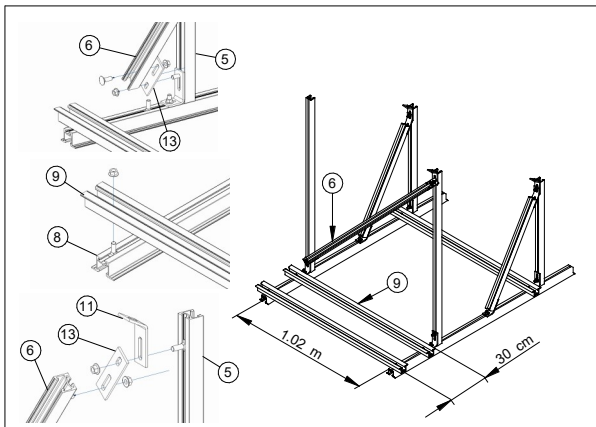
Fit the 72cm bar (4) with a 120° square (11) at the bottom, a 120° square (11) and a 150° square (12) at the top.



**4.2.4**

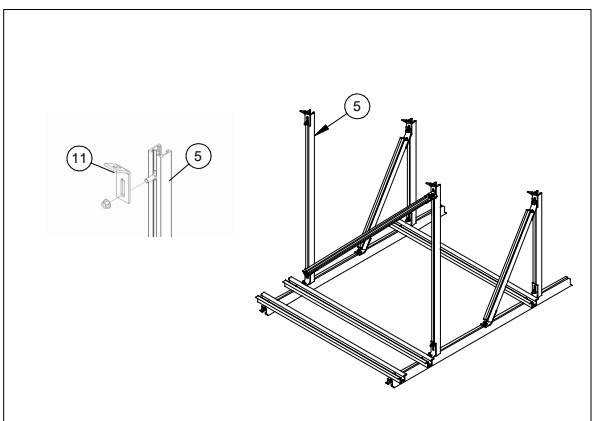
Repeat operations 4.2.3 and 4.2.4 adding a flat connector (13) at the bottom for the stiffening bar (6).

Space between the bars (9). Fix the stiffening bar (6) in the upper part using a flat connector (13) and a 120° one (11).



**4.2.5**

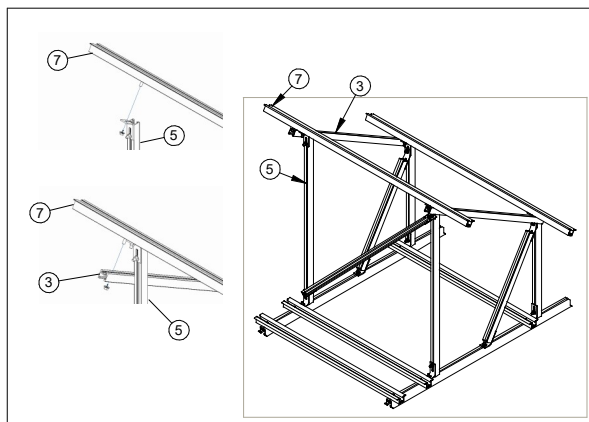
Fit the remaining 120° bracket (11) onto the remaining upright (5).



**4.2.6**

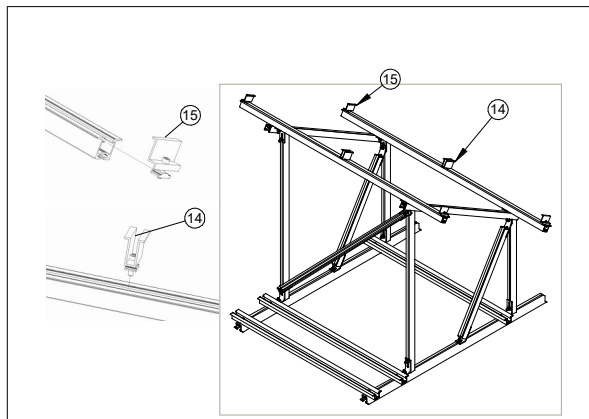
Fit the last two 1.1m bars (3).

Mount the 1.55 m upper profiles (7) using the L-shaped plates (21).



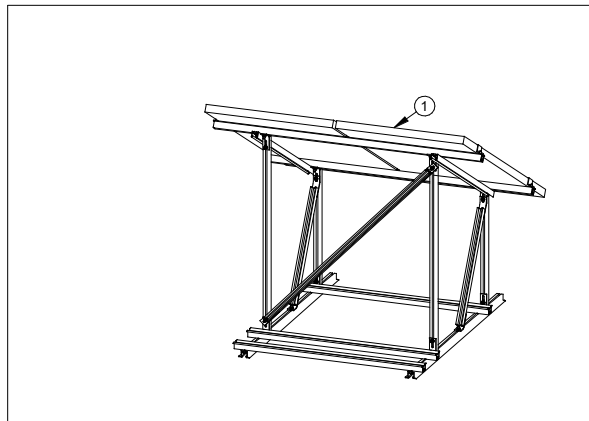
**4.2.7**

Insert, paying attention to the position of the spring, the 6 panel fixing clips.



**4.2.8**

Insert the panels (1) and tighten the screws.



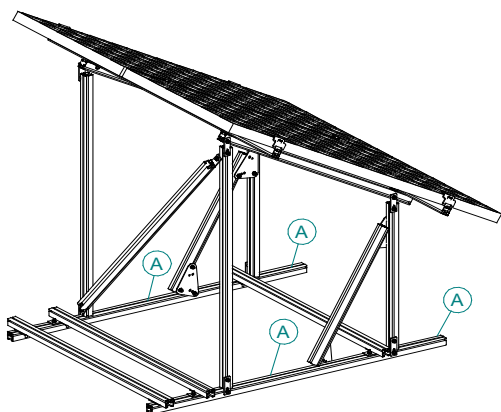
#### 4.2.9 POSITIONING:

Place the solar pumping station facing **SOUTH** if it is installed in the northern Hemisphere, **NORTH** if in the southern Hemisphere.

#### 4.2.10 ANCHORAGE

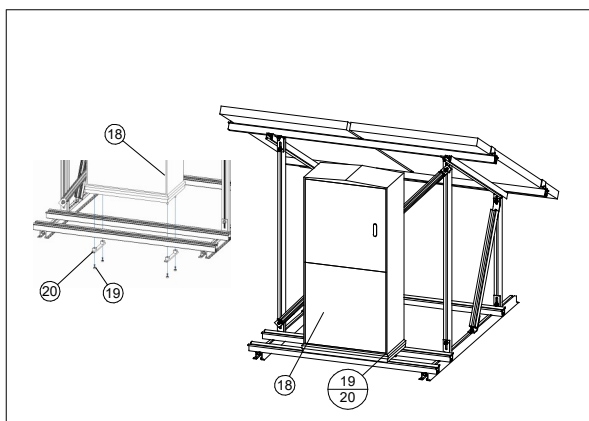
The best way to secure the pumping station is to fix the frame, firmly, to a rigid base. Its dimensions must be proportionate to the weight of the station and to the average wind speed of the area where the ECOSOM pumping station is to be installed.

Use the proper fixing spots (A).



#### 4.2.11 HOW TO FIX THE ELECTRIC PANEL

Place the panel on the structure, insert the fixing brackets (20) onto the screws coming out of the base of the panel. Tighten with the nuts (19).



#### 4.2.12 THE ASSEMBLING OF THE FRAME IS FINISHED.

## 4.3 ELECTRIC CONNECTION



### 4.3.1 CAUTION!

During the operation of electric connection, there is a high **RISK OF ELECTRIC SHOCK**.

This is why this operation must be carried out only by trained personnel (see EN 60204.1 point 3.52).

### 4.3.2

Take the electric diagram (see 4.4.2).

### 4.3.3 ELECTRIC PANEL

#### TECHNICAL FEATURES

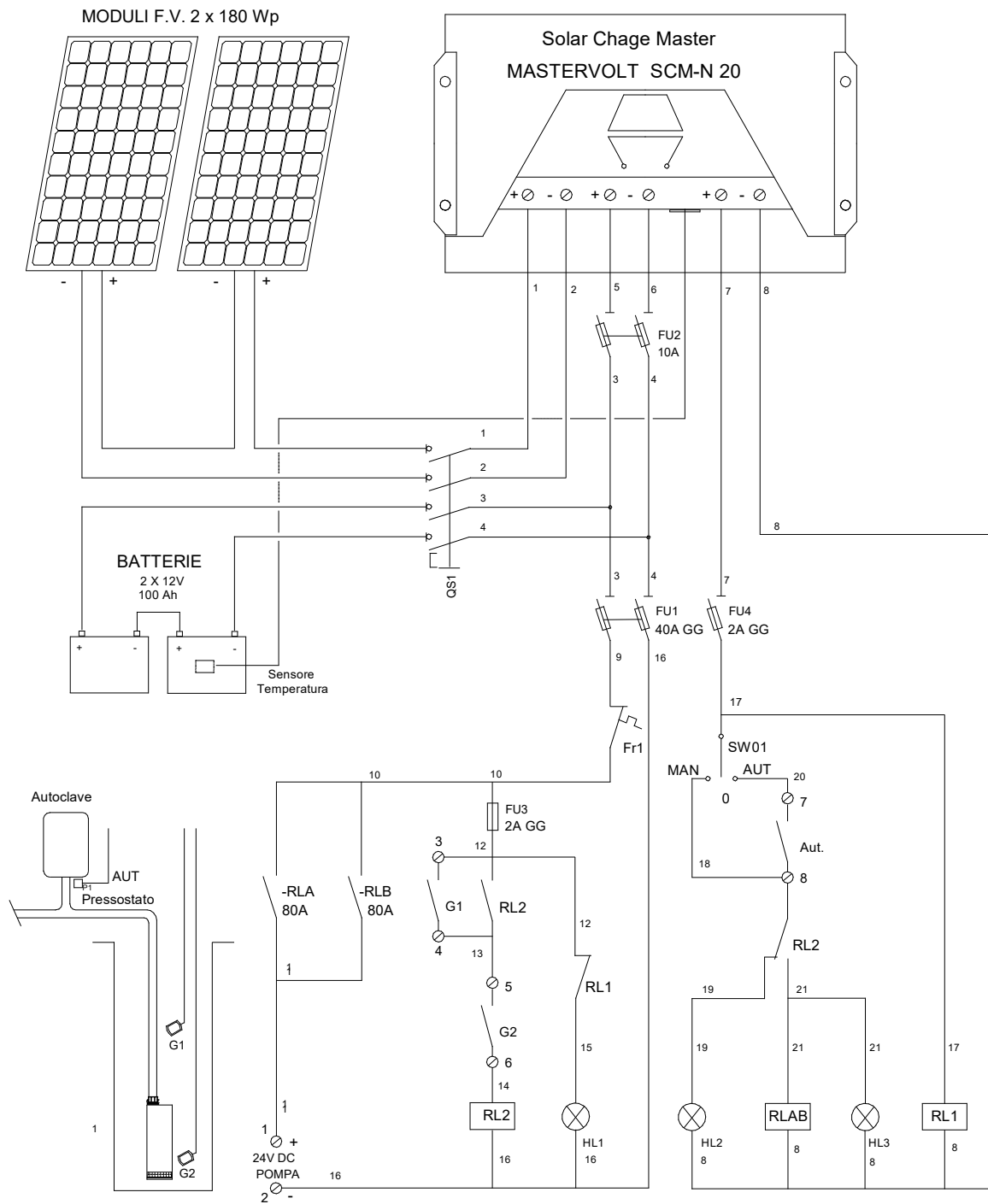
- 30 A Unipolar thermal protector switch;
- 80 A power relay;
- Predisposed to be connected with float switches for dry running protection;
- Predisposed to be connected with pressure switches, start and stop float switch, etc.;
- HAND-OFF-AUTO selector switch;
- Spy lamps for: Pump running, pump cut-out, low battery cut-out;
- 20 A automatic charge controller to supply the correct power to the batteries protecting them from any possible damage;
- Fibreglass cabinet that can be fixed to the main structure;
- Fuse holder with fuses on both main and auxiliary circuit;
- Rechargeable and easy-to-inspect batteries fit in a slot on the frame.

### 4.3.4 SYMBOLS OF THE COMPONENTS OF THE PANEL

- QS1 40A Opening interlock
- SCM-N 20 20A Charge controller;
- FU1 Fuses for PUMP protection;
- FU2 Fuses for SCM-N 20 protection;
- FU3 1A fuse to protect commands from batteries ;
- FU4 Fuse to protect commands from SCM-N 20;
- RL1 Signal relay from SCM-N 20-FU4;
- RL2 Signal relay from G1-G2-FU1-FU3;
- RLA/B 80A Power relay for pump control;
- SW01 HAND-OFF-AUTO selector switch for the pump ;
- HL1 Lamp for low battery cut-out / FU4 interrupted;
- HL2 Lamp for thermal cut-out / level cut-out / FU1 - 3 interrupted;
- HL3 Lamp for pump running;
- G1 RUN float switch;
- G2 STOP float switch;
- AUT Automatic device: i.e.: float switch, pressure switch etc.



**4.3.5**  
**ELECTRICAL DRAWING**



**4.3.6  
 POWER CABLE**

The electric pump is supplied with 5 Mt. cable.  
 If an extra length is needed, choose the right size according to the table 'CHOISE OF THE CABLE' on BBC CATALOGUE.



Cable joints must be **ABSOLUTELY WATER-TIGHT**

**Cable section mm<sup>2</sup>**

<b>Caratteristiche nominali Characteristic</b>	<b>Nominal</b>				
<b>Hp</b>	<b>A</b>	<b>2 x 6</b>	<b>2 x 10</b>	<b>2 x 16</b>	<b>2 x 25</b>
<b>Maximum cable length in meters</b>					
<b>0,75</b>	<b>28</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>30</b>

**Note**

- Voltage drop:  
**4%**

**Notes**

- Voltage drop:  
**4%**



**4.4  
WIRING**

Turn the MAIN SWITCH on "0" (zero).



**4.4.1 How to reach the terminal board**

Unscrew the fixing screws of the panel where the ON-OFF switch is placed and then take it out.

**4.4.2  
DRAWING OF THE TERMINAL BOARD**

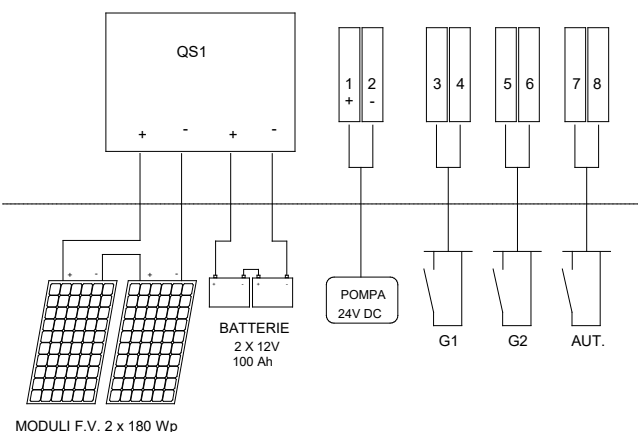
The electric pump is supplied with a two-wire power cable.

**Power cable (red - black):**

- their section is 6 mm<sup>2</sup>;
- they must be wired to terminals 1 and 2 of the control panel.
- 1** terminal (+) red wire;
- 2** terminal (-) black wire.

**AUTOMATIC DEVICE:**

- **G1** Run float switch;
- **G2** Stop float switch;
- **AUT** Automatic device (i.e. pressure switch);
- Start Stop Generator.



**NOTE!**

- Make sure that the electric cables are always in good conditions and that the terminals are well-tightened to their own clamps.
- Check, frequently and periodically, that all electric protections are duly working.
- In case of intervention of one of the protections, check the reason before resetting the system.
- Install the control and protection devices in an ambient according to their IP protection.

**4.4.3**

**CONNECTION OF THE SOLAR PANELS**



Turn the MAIN SWITCH on "0" (zero).

Use the quick connectors to wire the cables coming from the back of the panel to those of the solar panels. Be sure that polarities and colours match each other.

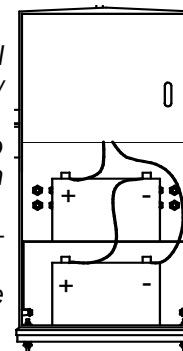
**4.4.4  
HOW TO PLACE AND CONNECT THE BATTERIES**

- DO NOT PUT TOOLS NOR ANY OTHER METAL OBJECT ON THE BATTERIES
- NEVER MAKE TEMPORARY CONNECTIONS



Turn the MAIN SWITCH on "0" (zero).

Open the upper part of the control panel, remove the lower panel by unscrewing the fixing nuts. The pre-wired cables to connect to the batteries are also supplied with eyelet. Connect the batteries in series according to the electric drawing. Connect the sensor of temperature to the battery.



**4.4.5  
THE ELECTRIC CONNECTION is now complete.**

## PART 5 START-UP

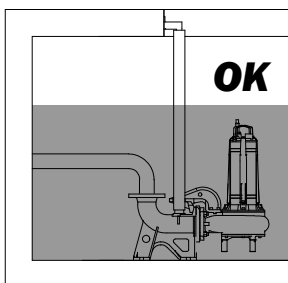


### 5.1

The operator must have read and understood this user's manual, particularly Part 2, 'Safety prescriptions'.

### 5.2

Before starting the electric pump, make sure that there is liquid inside the basin and that the electric pump is submerged.



### 5.3

Make sure that the basin or the pit are firmly and properly closed.

### 5.4

Start the electric pump supplied with the pumping station ECOSOM by turning the selector switch on MAN.



The electric pump is started and the liquid is pumped.

### 5.5

Stop the electric pump by turning the selector switch on "0".



### 5.6

The START-UP is now complete.

## 5.7 CHECK OF THE AUTOMATIC DEVICES

### 5.7.1

Turn the selector switch on "AUTO".  
The electric pump is started and stopped according to the status of the automatic devices (i.e. float switches, pressure switches, etc.).



## PART 6 STOPPING AND CLEANING



### 6.1

The operator must have read and understood this user's manual, particularly Part 2, 'Safety prescriptions'.

### 6.2

Stop the electric pump supplied with the pumping station ECOSOM by turning the MAINS SWITCH on "0".



### 6.3

IN CASE OF LONG PERIODS OF STOP, IT IS NECESSARY:

a - To turn the MAINS SWITCH on "0".



b - CAUTION, DANGER OF ELECTRIC SHOCK!



This operation must be carried out by an ELECTRIC MAINTENANCE OPERATOR.

Disconnect the power cable of the pump from the terminal board of the MAINS SWITCH.

- c - Pull out the electric pump;
- d - Clean all its parts using a hot water high pressure cleaner;
- e - Wrap the power cable;
- f - Store it in a place where the temperature does not fall below 0°.

#### 6.4

STOPPING AND CLEANING are complete.

## PART 7 MAINTENANCE

Please, call BBC Elettropompe for any operation of maintenance, repairing and clearing (**LONG STOPS OR PERIODS OF IDLENESS** excluded). Our Firm will give you all relevant and necessary instructions on the matter.

## PART 8 DISPOSAL AND ENVIRONMENTAL LABELLING OF PACKAGES



Please, dispose of the product in a responsible manner, not as domestic waste.

For further information visit  
<http://search.bbc.it/RAEE.asp>



For a proper disposal of the package, visit the website <http://search.bbc.it/CONAI.asp>

## PART 9 TROUBLES AND REMEDY



### 9.1

The operator must have read and understood this user's manual, particularly Part 2, 'Safety prescriptions'.



### 9.2

These operations must be carried out by an **ELECTRIC MAINTENANCE OPERATOR**. (SEE EN 60204-1 Point 3.52).
















### 9.3

These operations must be carried out by **MECHANICAL MAINTENANCE OPERATOR**.



### 9.4

These operations must be carried out by an **OPERATOR**.

TROUBLE	POSSIBLE CAUSE	REMEDY
1) The electric pump does not start.	The batteries are low	The pump will start as soon as the batteries have been re-charged 
	Intervention of the thermal protection	See point 3) Intervention of the thermal protection 
	Burn-out fuses	Replace fuses 
	The battery has been connected inverting the poles	Change connections 
	The charge regulator is overheated	Wait until the temperature goes down 
	The power cable is damaged	Call BBC Elettropompe 
2) The electric pump runs but its flow rate is reduced	Clogged suction	Clean 
	Clogged pipes or valves	Clean 
	Impeller excessively worn out	Call BBC Elettropompe 
	The sense of rotation of the impeller is inverted	Invert two phases 
	The level of the liquid is too low	Turn the MAINS SWITCH on "0" and wait until the level is restored 
3) Thermal protection cut-out	The sense of rotation of the impeller is inverted	Invert two phases 
	Clogged impeller	Clean 

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**Manufacturer** and place where all technical records are filed:

**BBC Elettropompe Srl**

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**CE STATEMENT OF CONFORMITY:**

**Products:** ECOSOM 4/80 - ECOSOM 320 - 290 - 262 - 190.

We declare that the products listed above comply with the following Directives:

- MACHINERY 2006/42/EC;
- ELETROMAGNETIC COMPATIBILITY 2014/30/EU.

Fossombrone, 05/04/2023

Il Legale Rappresentante  
Paolo Cecchini



---

**Manufacturer** and place where all technical records are filed:

**BBC Elettropompe Srl**

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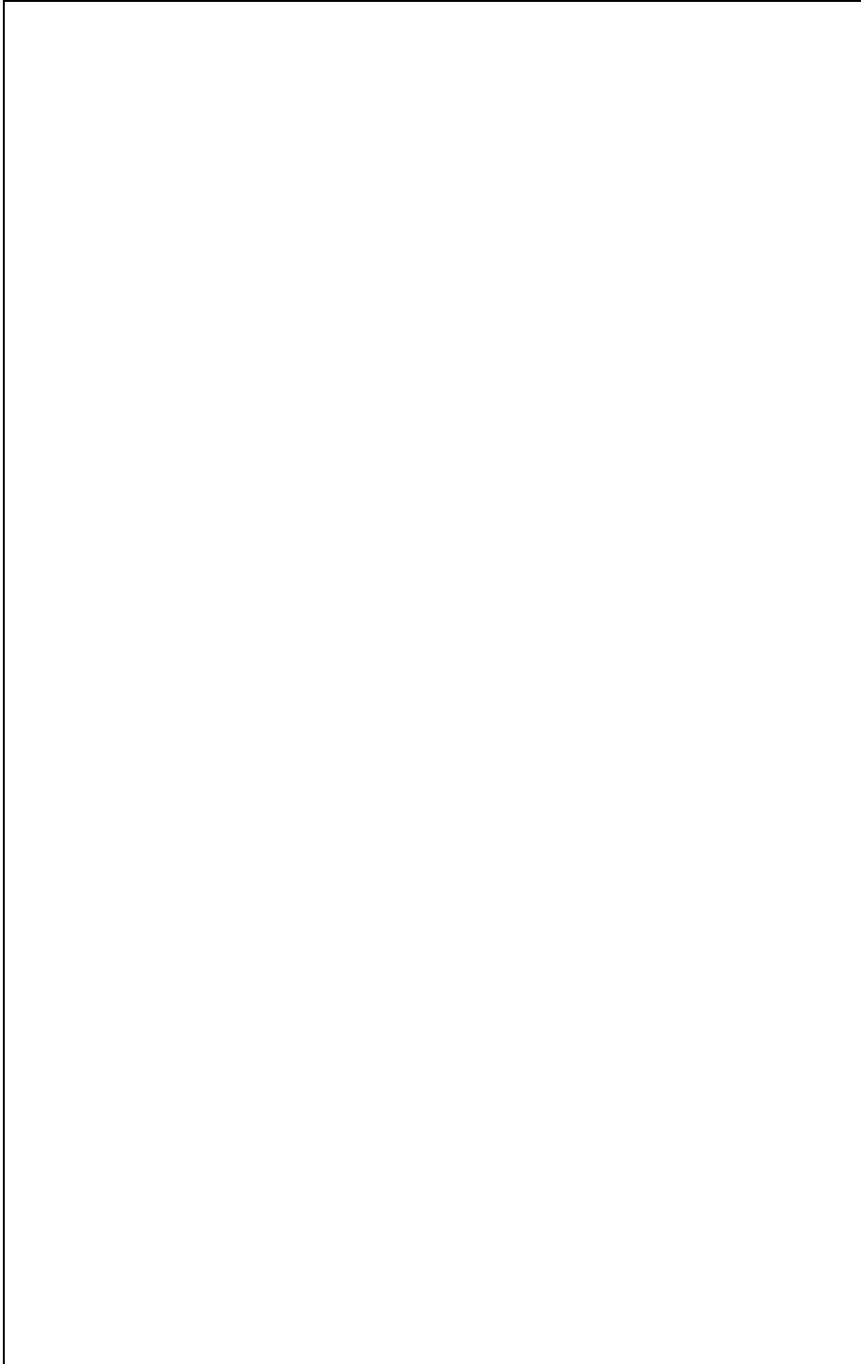
- SUPPLY OF MACHINERY (Safety) REGULATIONS 2008;
- ELECTROMAGNETIC COMPATIBILITY REGULATIONS 2016.

Fossombrone, 05/04/2023

Il Legale Rappresentante  
Paolo Cecchini



## PLATE DATA







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