



# **AQUA CLOR**

## **USER'S AND MAINTENANCE**

### **MANUAL**



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## 1 – GENERAL CHARACTERISTICS

**Aqua Clor** controls the SIATA multi-way valves for water treatment devices.

The regeneration cycle is completely programmable. It can be enabled in one of the following ways:

- At the programmed time, and after the programmed interval in days has elapsed;
- As soon as the treatable volume becomes exhausted;
- At the programmed time, without waiting the programmed interval in days, when the treatable volume becomes exhausted;
- Manually, by means of the **Manual Regen** key.

**Aqua Clor** has an output that can be connected to a chlorine production cell, during the brine suction.

**Aqua Clor** is provided with an **EEPROM** to store programming data, and a **buffer battery** that allows working parameters to be maintained in memory when power is off.

**Aqua Clor**, as well as all the SIATA *controllers*, complies with the EC Directives. It is assembled in the SIATA factory in Montespertoli, Florence, Italy, operating with its certified Quality System according to

**ISO 9001 / UNI EN ISO 9001.**

## 2 – TECHNICAL DATA

Supply Voltage	230 Vac $\pm$ 10% (*)
Mains Frequency	50 Hz $\pm$ 3% (*)
Adsorbed Power	4.6 VA
Working Temperature	4° C – 40° C
Case Size	165 mm x 127 mm x 70 mm
Total Weight	0.8 to 1.2 Kg

(\*) Special versions are available upon request.

### 3 – MEANING OF LEDs AND KEYS

Fig. 1



**Meaning of LEDs (Tab. 1)**

<b>TIME</b>	ON when the Time Mode is set
<b>VOLUME</b>	ON when the Volume Mode is set
<b>TIME + VOLUME</b>	Both are ON when Mixed Mode is set
<b>CL</b>	ON when the controller has activated the chlorine production cell.

**Meaning of keys (Tab. 2)**

<b>TIME OF DAY</b>	Allows to set the current time. At the end of the programming, it allows to change the duration of the regeneration process cycle.
<b>PROGRAM MODE</b>	Allows programming the working parameters.
<b>ADVANCE</b>	If pressed while in programming mode or time setting, it increases the digit currently blinking on the display. If pressed on normal operations, it leads to diagnostic functions (from ver. 9/98)
<b>VOLUME CLOCK</b>	Allows to change the data shown on display, switching between time and residual volume.
<b>MANUAL REGEN</b>	Allows to manually activate the regenerating process. If pressed while in stop, it sets the residual time to zero and allows to enter the next phase (step-by-step) from version 9/98.
<b>RESET</b>	Pressed while in programming mode, it allows exiting without saving the currently edited parameter. Pressed during the regeneration process, it terminates it.
<b>HIDDEN KEY</b>	It is located below the six keys, centered between Advance and Volume/Clock. It starts test regenerating process (1 min. for each phase). If pressed during some programming operations, it sets the currently blinking digit to zero.





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## 5 - GENERAL INFORMATION

Please find herewith below some instructions to be followed during the controller usage and maintenance in order to ensure its long operating life.

### 5.1 – Packing and storage

The package consists in a box with a product identification label.

The device must be stored in environments compliant with the following characteristics:

- temperature from +4°C to +40°C;
- relative humidity from 30 % to 95 %.

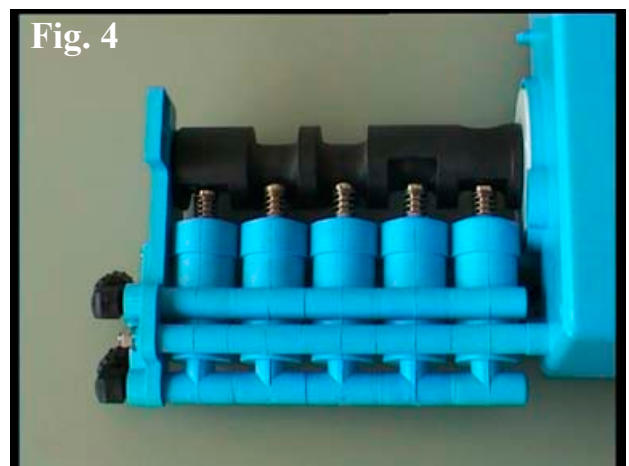
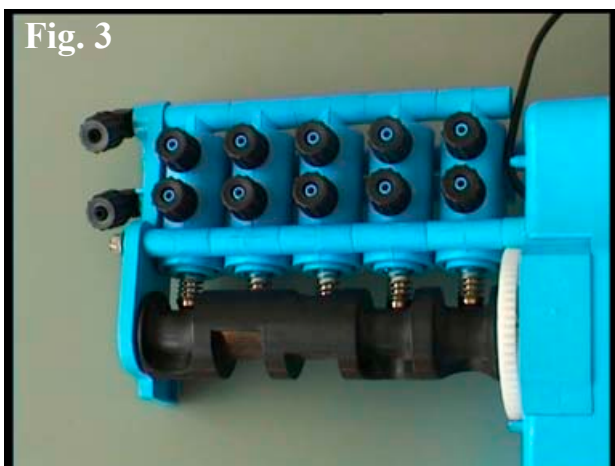
### 5.2 – Installation

The *controller* installation must be performed by qualified technical staff; the installation procedures must be performed when the device is disconnected from power.

The device consists in an ABS case closed on the front side by a cover blocked with 4 screws, fixed with four screws and protected by a transparent cover.

The controller is supplied by a 230/12 VAC transformer. Different transformer types (e.g. 115/12 VAC 60 Hz) are available upon request.

**Aqua Clor** is provided with the cable of SIATA, Hall effect-based magnetic counter already installed on the case (fig. 17), or with the case opened where the 180° DIN socket is located (fig. 12).





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Should you prefer to feed the *controller* external drivers (see Fig. 3 and 4) with compressed air, please verify that:

- The driving air pressure ranges from 1 to 6 bars. In no case the air pressure can be higher than the input water pressure;
- An air humidification system (using water or an adequate silicone lubricant) is mounted on the pneumatic line. This is required to prevent internal driver seals from getting dry.

SIATA recommends to always supply drivers with water. In this case it is necessary to use an input filter to avoid impurities.

Please be particularly careful when installing the controller in environments that are not compliant with the EN 50082-1 standard (Electromagnetic Compatibility).

**To install the timer on the valve** when it has the drivers on board (valve 132) as shown in the following figures, proceeds as follows:

Fig. 5 – The stems of the valve in the package are nearly completely inserted and the screw is placed in its casing.



Fig. 6 – Remove the screw and pull the stems until they reach the position shown below.

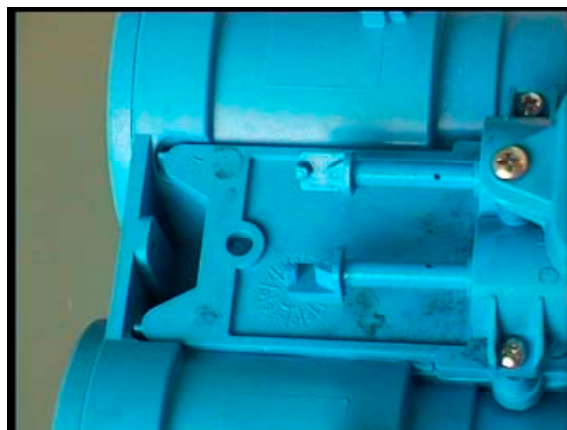


Fig. 7 – The final part of each stem is flat and has two centering marks. Place the cam edge on the space between those marks. Make sure the stems are directed inside so as to house the cam edge in the best way possible.

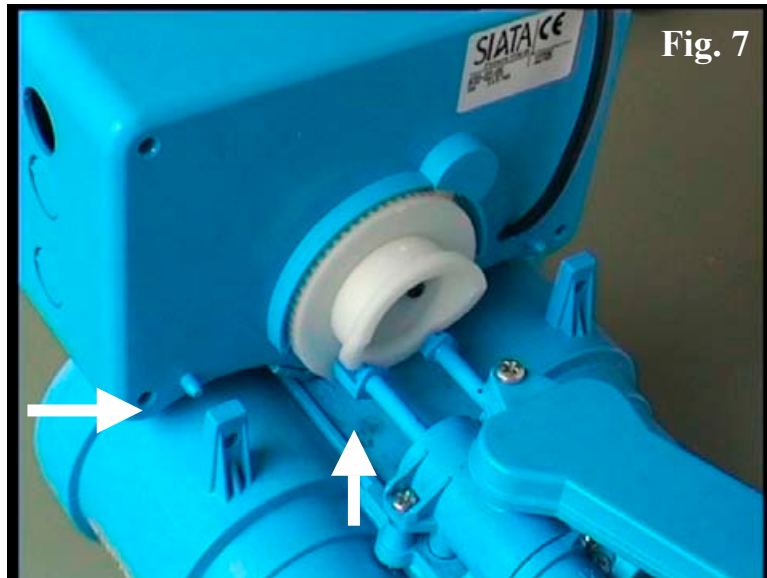


Fig. 8 – Push the timer towards the valve in order for the stems to go inside the drivers and for the two check pins shown in Fig. 7 to fit the proper holes. In the event the check pins should break, it is possible to replace them with brass pins code 117-81

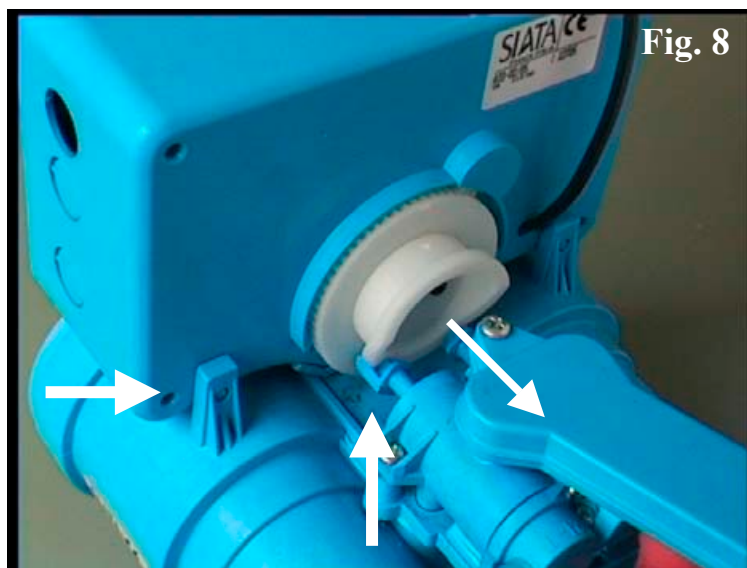
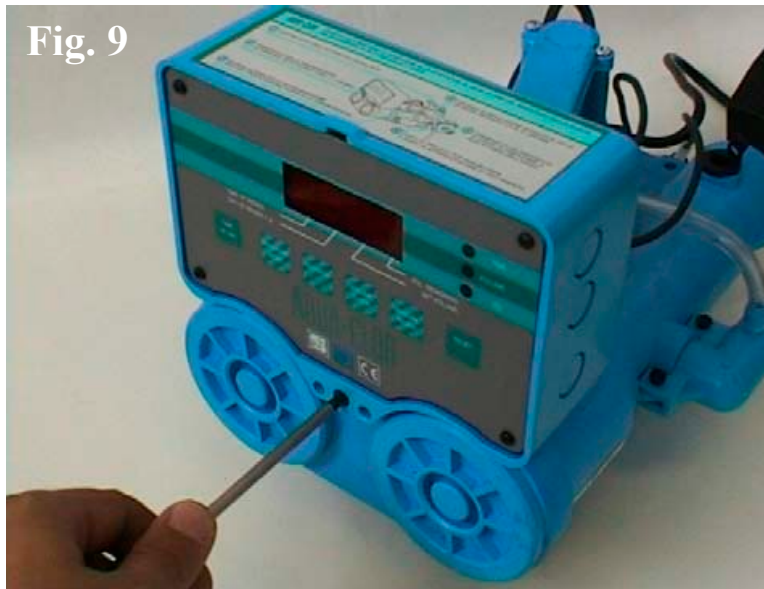


Fig. 9 – Fasten the timer to the valve using the screw.



### 5.3 – Maintenance

Please mind to check the battery efficiency about every 12 months as follows:

- Turn the timer off for about 15 minutes.
- Turn the timer on. Check the time shown on the display. If it displays midnight (**00.00**), then replace the battery using the spare part [code 867](#).

The following servicing operations **must always be performed when the controller is off power**. When replacing the sole electronic board, and each time you must operate with the case opened, avoid as much as possible touching components and welded parts with your hands, especially near the CPU, since electrostatic discharges could eventually cause serious damages to the *controller*. Moreover, it is better not to place the electronic board on a metal surface, unless this has been properly insulated (a few paper sheets are enough). To store electronic boards, always use the anti-static envelopes that come with the replacement kits. Avoid the electronic board to come in contact with liquids. Should this happen, dry the board with an air jet.

### 5.4 – Safety devices

The *controller* is equipped with the following safety devices:

- Safety and insulation transformer.
- Safety electronic circuit against voltage peaks and disturbances.
- Autoreset (from version 9/98). See chapter 6.9.

## 6 – INSTRUCTIONS FOR USE

### 6.1 – Powering on

**Aqua Clor** is not provided with power switches. Powering on is obtained by plugging the power transformer into the outlet.

### 6.2 – Working

After powering on, the display located on the front panel displays the timer. If the battery needs replacement, the time will display midnight (00.00), otherwise an updated time.

When powering on for the first time, it is advisable not to switch off the controller for at least 24 hours on end, in order to avoid an anomalous battery charge.

The regeneration starting modes are the following:

<b>Time</b>	Regeneration starts at the programmed time, after the programmed number of days has elapsed (the TIME LED on the panel is on).
<b>Volume</b>	Regeneration starts immediately after the available volume becomes exhausted (the VOLUME LED on the panel is on).
<b>Mixed</b>	Regeneration starts at the programmed time, after the programmed number of days has elapsed, or at the programmed time without waiting the programmed number of days to be elapsed, if the available volume becomes exhausted (both TIME and VOLUME LEDs are on)

Please note that, if Volume mode is set with no counter installed, the regenerating process can start only by pressing the **Manual Regen** key.

During service it is possible to switch between volume and clock by pressing the **Volume Clock** key. This key can be distinguished by means of a blinking dot on the display center. If no dot is present, then the display is showing the volume.


Event	What happens	Displayed value
Powering on	If the battery is charged, then the correctly updated time appears.	1 2.3 0
	If the battery is down, then the <i>controller</i> resets while the clock displays “midnight”.	0 0.0 0
Start of operation	When a regeneration process terminates, or when the Reset key is pressed, the working parameters are restored with the previously programmed values. Changes are available through the diagnostic (see 6.10).	
Volume exhausting	For volumetric timers, the impulses generated by the counter decrease the treatable volume.	1 9 9 9
	When the volume reaches zero, and the timer operates in the Volume mode, the regenerating process starts.	1 C 4 9

	When the volume reaches zero, and the timer operates in Time mode or Mixed mode, the volume remains at zero.	0 0 0 0
	If the Mixed mode is active, at the programmed time the regenerating process starts.	1 C 4 9
The programmed time is reached but the interval days have not elapsed.	The regenerating process does not start, unless the <i>controller</i> operates in Mixed mode and the volume is exhausted.	0 2.3 0
The programmed time is reached after the interval days have elapsed.	Regenerating process starts, unless the <i>controller</i> operates in the Volume mode.	1 C 4 9
An inhibition signal is present on the DIN 180° socket (see fig. 16).	This event is not indicated in any way on the display. The <i>controller</i> cannot start any regenerating process while this signal is active. Anyway the user can force a regenerating process start by pressing the <b>Manual Regen</b> key.	
<b>Manual Regen</b> key pressed while on service.	A regeneration cycle starts, even if the controller is inhibited (see previous event).	1 C 4 9

### 6.3 – Programming mode

Pressing the **Program Mode** key accesses programming of **Aqua Clor**. Pressing the **Advance** key changes values. Proceed as follows:

**Programming table (Tab. 3)**

Step		Display	Meaning
1	PROG. MODE	0.2 3 0	Regeneration starting time. The minutes are blinking.
2	PROG. MODE	0.2 3 0	Regeneration starting time. The hours are blinking.
3	PROG. MODE	F F 0 7	Number of days between two regenerating processes.
4	PROG. MODE	2 0 0.0	Treatable volume. Right digits are blinking.
5	PROG. MODE	2 0 0.0	Treatable volume. Left digits are blinking.
6	PROG. MODE	0 0 0 0.	Volume reserve. Right digits are blinking.
7	PROG. MODE	0 0 0 0.	Volume reserve. Left digits are blinking.
8	PROG. MODE	A A 1 4	Volume counter divider. The value is blinking.
9	PROG. MODE	A A d d	Selection of Time/Volume/Mixed mode.
10	PROG. MODE	A A d d	Display still shows the selection.
11	TIME OF DAY	1 C 1 0	Stopping time for the first regeneration phase.
12	PROG. MODE	2 C 3 0	Stopping time for second regeneration phase.
13	PROG. MODE	3 C 2 0	Stopping time for third regeneration phase.
14	PROG. MODE	4 C 1 0	Stopping time for fourth regeneration phase.
15	PROG. MODE	4 d 1 0	Programming is terminated. After about 3 seconds, the controller exits the programming mode.
16		1 2.3 0	The display shows the clock or the volume.

With reference to the **step 11** on **tab. 3**, pressing **Program Mode** instead of **Time of Day** will exit the programming mode without accessing the regeneration cycle phases. The latter is the suggested procedure that the user should follow.


Any time you press **Reset**, you will quit programming without saving the changes performed on the value currently blinking on the display.

At **step 15** of **tab. 3**, programmed parameters are written into the EEPROM.

**IMPORTANT !!**  
**The programming which is set according to the tab. 3 steps becomes operational only when the user presses the Reset key or performs a regeneration using the Manual Regen key. Neglecting this simple procedure will result in a behavior compliant with the previous programming, not with the new one.**

To set the clock, press the **Time of Day** key and change the values using the **Advance** key. To program the clock, proceed as follows:

**Clock setting (Tab. 4)**

Step		Display	Meaning
1	<b>TIME OF DAY</b>	<b>0 8 0 0</b>	Clock. The minutes are blinking.
2	<b>TIME OF DAY</b>	<b>0 8 0 0</b>	Clock. The hours are blinking.
3	<b>TIME OF DAY</b>	<b>0 8 0 0</b>	Pressing again the <b>Time of Day</b> key confirms changes.

Any time **Reset** is pressed while performing the procedure, you exit the clock setting without saving any changes.



## 6.4 – Filtering

**Aqua Clor** can also control filtering systems, by means of the appropriate SIATA valve model. To obtain a correct system behavior, set the time to **0** at step **12** and **13** of **Tab. 3**, unless a settling phase is required.

## 6.5 – Starting operations

**Aqua Clor**, as well as the other SIATA *controllers*, is considered “on duty” when it is able to accomplish a regeneration. This is possible **ONLY** when the *controller* “senses” that the cam is correctly positioned at the limit stop.

To perform some tests before installation, **Aqua Clor** must be connected to its case, so that the limit switch be correctly closed.

**Aqua Clor** does not allow any operation until the limit switch input is closed.

As already indicated in 6.3, after programming **Aqua Clor** press the **Reset** key or perform a regeneration process in order to transfer the new parameters into the memory.

## 6.6 – Managing the reserve

The value for reserve, set at **step 6** of **Tab. 3**, is **subtracted** from the treatable volume value, set at **step 4** of **Tab. 3**. The result is the *available volume*: after this has become exhausted, a regeneration process is scheduled. The regeneration starts immediately if the *controller* is working in the **Volume** mode. It takes place at the scheduled time if the *controller* works in the **Mixed** mode.

If you program **5000** liters of treatable volume and **1000** liters of reserve volume, the calculated available volume will be of **4000** liters.

When **Aqua Clor** works in the Volume mode, it is suggested to set the reserve to 0000. This allows to use at best the device capacity.

$$\text{Available Volume} = \text{Treatable Volume} - \text{Reserve}$$

## 6.7 – Managing the volume

Steps **4** and **5** of **tab. 4** show how to program the treatable volume.

If you use the Hall effect-based SIATA liter counter, then set the divider (**AA14, step 8 of tab. 3**) to 14, that is, every 14 impulses the available volume is decreased by an average, non settable amount of one liter. Thus the maximum programmable volume is **10.000** liters. If you need to use a larger volume, then use a simple arithmetical operation by multiplying the divider by two, three, four and so on. At the same time, divide the treatable volume by two, three, four and so on. If you need to program a reserve, this value should also be divided as well as the volume.

Examples:

**15.000 liters** of water must be treated, to obtain a reserve of **1.000 liters**.

Volume / 2	15.000 / 2	<b>7500 at steps 4 and 5 of tab. 3</b>
Reserve / 2	1.000 / 2	<b>500 at steps 6 and 7 of tab. 3</b>
Divider x 2	AA14 x 2	<b>AA28 at step 8 of tab. 3</b>

When starting operations, the treatable volume will be **7.000 liters** (7.500 – 500).

**50.000 liters** of water must be treated, to obtain a reserve of **1.000 liters**.

Volume / 5	50.000 / 5	<b>0000 at steps 4 and 5 of tab. 3</b>
Reserve / 5	1.000 / 5	<b>200 at steps 6 and 7 of tab. 3</b>
Divider x 5	AA14 x 5	<b>AA70 at step 8 of tab. 3</b>

When starting operations, the treatable volume will be **9.800 liters** (10.000 - 200).

Please note that setting the volume to **0000** means setting it to **10.000**, while setting the divider to **AA00** means setting it to **100**.

The maximum treatable volume when using the Hall effect-based SIATA liter counter is **70.000** liters, obtained by setting the treatable volume to **10.000** liters and the divider to **AA98**.

If you use a counter issuing one impulse each liter (or cubic meter), the maximum treatable volume is **1.000.000** of liters (or cubic meters). To do so set the treatable volume to **10.000** liters and the divider to **AA00** (this corresponds to 100 impulses each liter or cubic meter). Please note that, given the nature of the Reed counters, the usage of counters as 1 impulse/1 m<sup>3</sup> or similar is discouraged.

## 6.8 – Reset

Several events may influence the *controller*: battery exhausted, very high electromagnetic disturbance (beyond the limits established by the EN 50082-1 standard), handling the electronic board, a short circuit between connections or DIN sockets.

Such events may cause one of the following problems: the “out of program” and the “latch up”.

In the first case, the RAM on the CPU becomes “dirty” due to the disturbing event. Results are unpredictable: for example, complete failure of the *controller*, abnormal behavior, or the alteration of working parameters.

The second case happens when the CPU autonomously turns its state to “latch-up”, a special condition that allows it to be protected against potential damages.

The difference consists in the fact that the first condition is mostly autonomously solved by the controller thanks to an autoreset circuit that becomes active when it is not receiving any signal from the micro-controller for at least 5 seconds (from 9/98 version only); in the second case a manual intervention is always necessary.

**Figures 10** and **11** show where it is necessary to intervene in order to solve the above mentioned conditions.

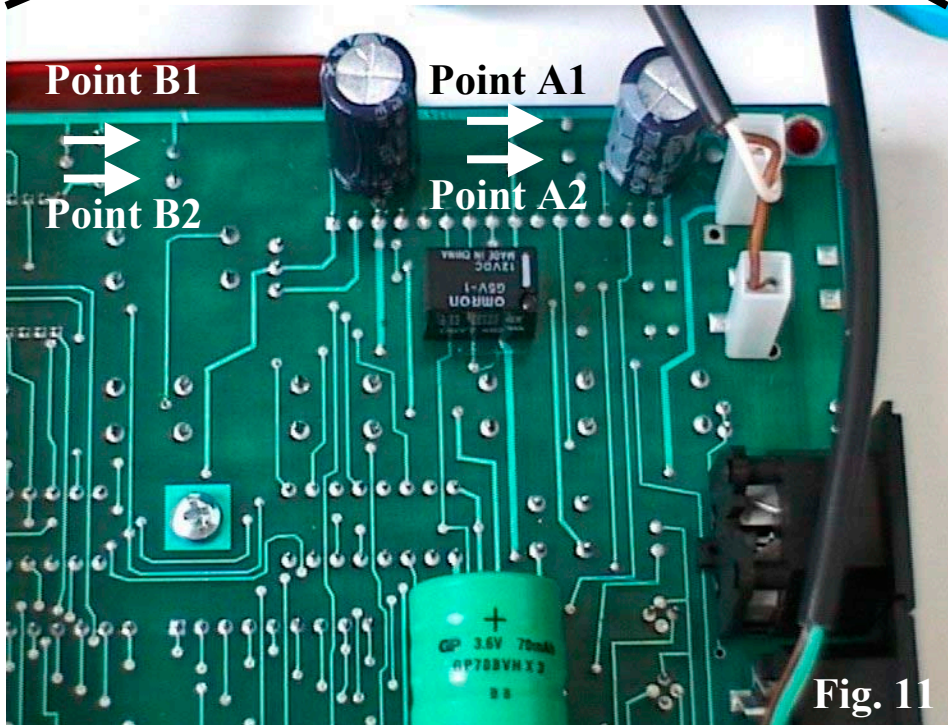
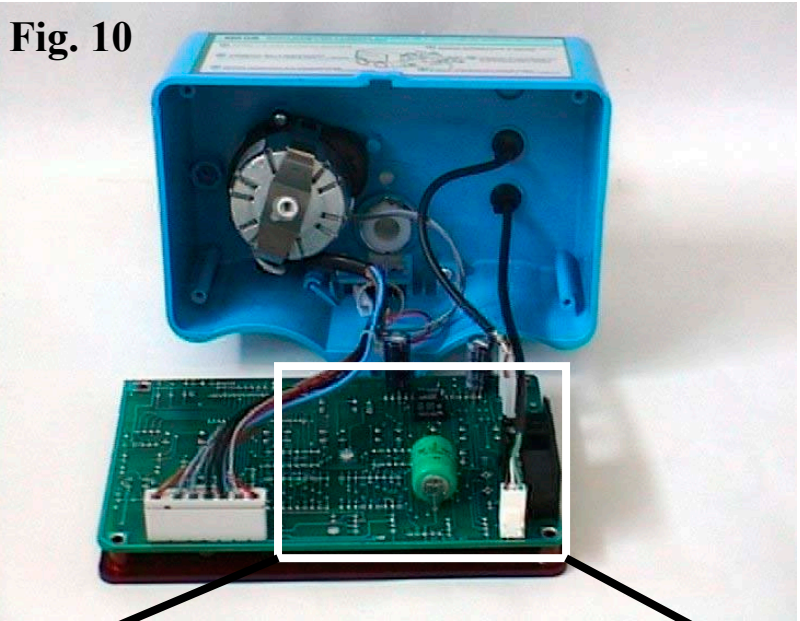
The first operation to be performed when the controller is apparently off, or when its behavior is anomalous, is the so called “software reset”. It consists in short-circuiting for a while point **A1** and **A2** shown in fig. 11 when the controller supply transformer is connected to the supply voltage.

If this operation gives no results, proceed with the second reset type: the “hardware reset”.

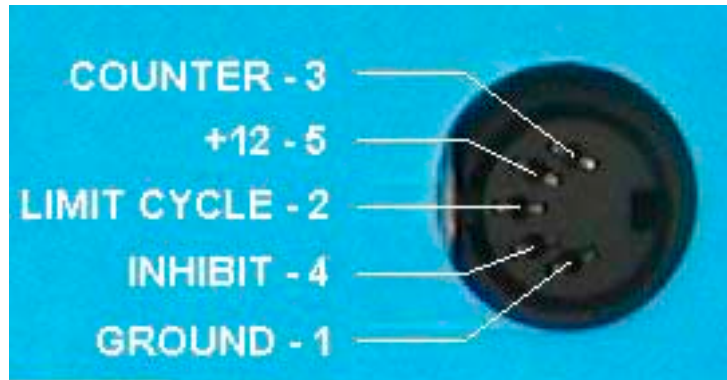
It consists in short-circuiting for 5 seconds point **B1** and **B2** shown in fig. 11 when the controller supply transformer is disconnected from the supply voltage. Once this operation is completed, connect the supply transformer to the supply voltage and check that the controller powers on immediately or after the 5 seconds necessary for the autoreset. If the controller does not power on, repeat the “software” reset on the points **A1** and **A2** shown in fig. 11.

If the controller still remains off, please refer to **Chapter 7**.

Figures 10 and 11 show the points involved in the reset procedure.



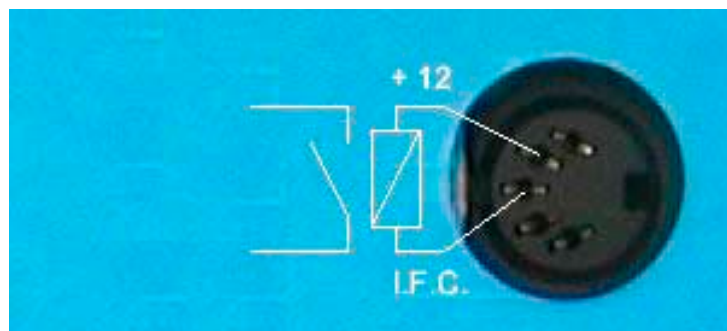
## 6.9 – Connections



**Fig. 12**

Through the 180° DIN socket, shown in fig. 12, **Aqua Clor** can be connected to some external devices as follows:

Contacts	Function
1 – 3	Volume, reed counters or counters with make, not supplied.
1 – 5 – 3	Volume, magnetic, Hall effect-based counter, +12 VDC supply.
1 – 4	Inhibit signal input (when closed).
2 – 5	Cycle End Impulse output, Open Collector.



**Fig. 13**

Fig. 13 shows the correct usage of Cycle End Impulse, available as Open Collector. The relays should not exceed a maximum coil activation current of **20mA**.

Below are the codes of some relays that can be used for this purpose. They all have a coil voltage of 12 VDC:

Manufacturer	Model
OMRON	G5V-1 12Vdc
TAKAMISAWA	MZ-12HS-U
MATSUSHITA	JQ1-12V or JQ1a-12V or HD1-M-DC12V



## 6.10 – Testing the regeneration automatic start

To test the regeneration autostart function, proceed as follows:

### Case 1: time-controlled regenerating process autostart.

- Set **0000** as regenerating process time at **steps 1** ad **2** of **tab. 3**.
- Set **F-01** as interval in days between two regenerating processes at **steps** of **tab. 3**.
- At **step 9** of **tab. 3**, press **Advance** in order to turn the **Time** LED on.
- Exit the programming mode, then press **Reset**.
- Set the clock to 23.59 then wait until the clock turns to midnight.
- After the clock has turned to midnight, the regenerating process should start.

### Case 2: volume-controlled regenerating process autostart.

- Set **0002** as treatable volume at **steps 4** and **5** of **tab. 3**.
- Set **0000** as reserve value at **steps 6** and **7** of **tab. 3**.
- At **step 9** of **tab. 3**, press **Advance** in order to turn the **Volume** led on.
- Exit the programming mode, and then press **Time/Volume** to switch the displayed value from clock to volume.
- Press **Reset**. The display should indicate the programmed value, that is, 0002.
- Using a magnetic sensor cable and a SIATA turbine, decrease the volume down to 0.
- After the volume has reached 0, the regenerating process should start.

### Case 3: Mixed-mode regenerating process autostart with delayed volume.

- Set **0000** as regenerating process time at **steps 1** and **2** of **tab. 3**.
- Set **0002** as treatable volume at **steps 4** and **5** of **tab. 3**.
- Set **0000** as reserve volume at **steps 6** and **7** of **tab. 3**.
- At **step 9** of **tab. 3**, press **Advance** in order to turn both **Time** and **Volume** led on.
- Exit the programming mode then press **Time/Volume** to switch the displayed value from clock to volume.
- Press **Reset**. The display should indicate the programmed value, that is, 0002.
- Using a magnetic sensor cable and a SIATA turbine, decrease the volume down to 0.
- Press **Time/Volume** to switch the displayed value from volume to clock.
- Set the clock to 23.59 then wait until the clock turns to midnight.
- After the clock has turned to midnight, the regenerating process should start.

### NOTE:

To perform these tests, the limit micro-switch of the controller must be correctly connected and operative. For this reason we recommend to use the controller when mounted in its case.



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## 6.11 – Diagnostics

**Aqua Clor** has a diagnostic system, that the maintenance personnel can use to learn the status of the controller.

To access this function, press and hold the **Advance** key for at least 5-6 seconds. The following parameters will be displayed:

<b>Display</b>	<b>Description</b>
<b>0 2.3 0</b>	Regenerating process time.
<b>F - 0 0</b>	Days elapsed since the last regenerating process.
<b>0.0.0.0.</b>	Number of regenerating processes performed.
<b>0 0 0 0</b>	Volume consumed since the last regenerating process.

The counter counting the performed regeneration processes cannot be reset by the user.

## 7 – TROUBLESHOOTING

Here follow some basic troubleshooting operations to solve those small problems that can arise while using **Aqua Clor**.

As a general rule it is suggested, whenever possible, to check the problem by replacing the sole electronic board with another one, new or certainly working. It is important to understand whether the problem comes from electronics, mechanics, or the wiring harness. Replacing the electronic board may be a precious help to identify the real cause of the defect. If our suggestions are not sufficient to solve your problems, please contact the SIATA assistance department.

DEFECT	POSSIBLE CAUSE	REMEDY
The <i>Controller</i> does not power on.	Outlet out of order. Transformer plug out of order. Transformer out of order.	Check the problem by connecting any other device to the same outlet, and by connecting the controller to another outlet.
	Wiring harness problems.	Open the case. Check that the wires are correctly mounted in the 7-pole connectors.
	The controller is blocked.	If you use the DIN lateral socket, verify that inside the connector there are no short-circuited terminals. Follow the instructions in 6.9
The motor does not stop after reaching the limit stop position.	The plastic parts are damaged.	Open the case. Verify the integrity of plastic parts that hold the micro-switch (see Fig. 15).
	The micro-switch is damaged.	Open the case and check (Fig. 15): integrity of the micro-switch; correct placement of the micro-switch; correct placement of the terminals; integrity of the wires; Integrity of the lever that activates the microswitch.
	The cam is out of place.	Open the case (Fig. 15). Verify that the Seeger ring that locks the cam is integer and correctly placed in its housing. Moving the cam with your hands, verify that it activates the microswitch lever.
The <i>controller</i> does not perform regeneration.	The controller is not correctly programmed.	Verify that the programming has been performed correctly. Verify that the regenerating process start mode corresponds to that really needed.
	The controller is inhibited.	If you use the DIN socket (Fig. 16), verify that inside the connector there are no short-circuited terminals.
The display shows wrong parameters.	The controller is in “out of program”.	Reset the controller, following the instruction in 6.8

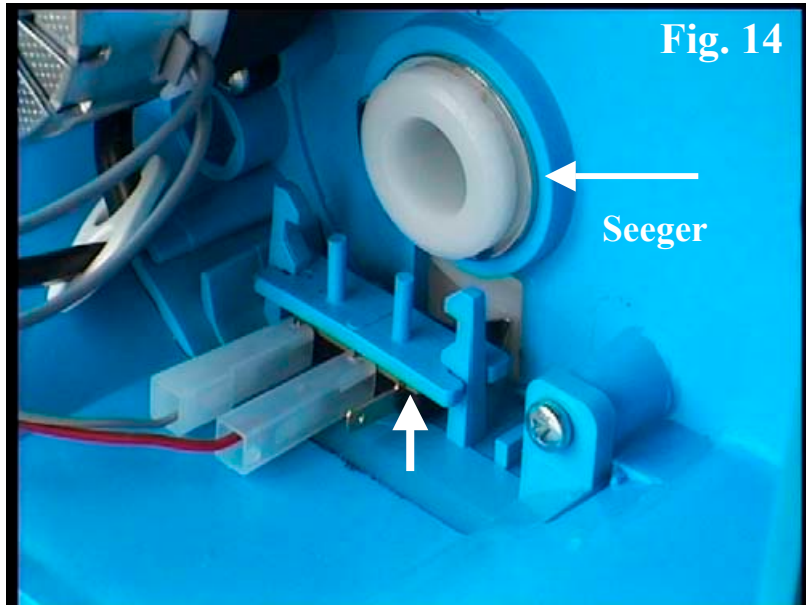


Fig. 14 clearly shows the microswitch, the mechanical parts for mounting and command, and the terminals connecting to the *controller*.

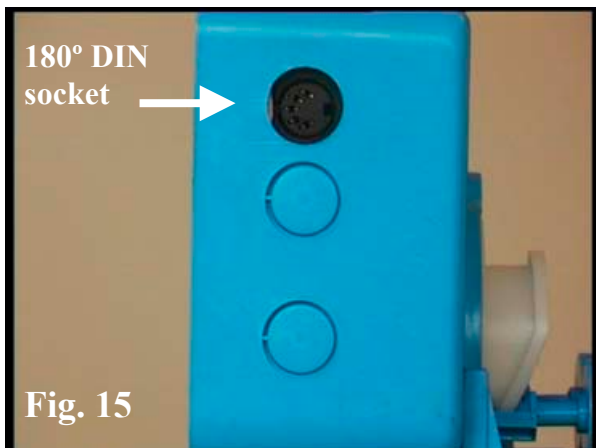


Fig. 15 shows the DIN 180° socket, where a liter counter sensor can be connected.



Fig. 16 shows the installation of a liter counter sensor on a valve model V132, when the cable is mounted on the *controller* case.

## 8 – SPARE PARTS

Attachments DA0189 and DA0191 show the assembling tables for spare parts of a timer with external drivers (the table shows 2 drivers, but there can be up to 9) and of a timer with no external driver (this model is normally named **132**).

The numbered items in the tables refer to **table 5, Table of items**. They are further distinguished into explicit variants and implicit variants.

Among implicit variant we have:

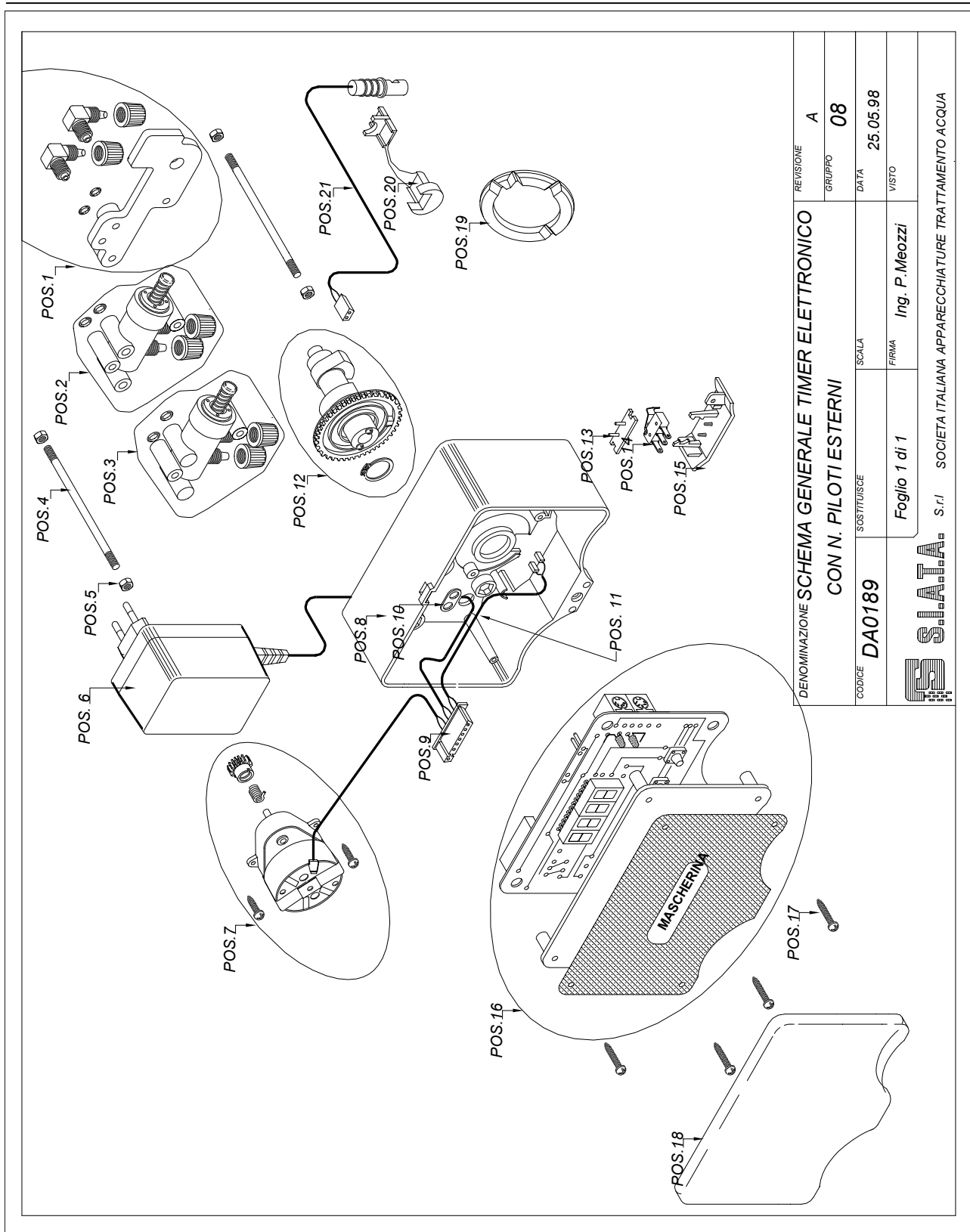
1. **The cam group**. Items from 1 to 5, and item 12 (external driver group) indicated in attachment DA0189 are replaced by the sole item 22 (cam group 132) in attachment DA0191.
2. **The turbine sensor cable**. Items 20 and 21 are shown in both attachments. They are present only on **volumetric** timer, no matter if external drivers are installed or not.
3. **Second microswitch**. Item 19 in both attachments indicates the ring that controls the second microswitch while the cam rotates. Please contact the SIATA sales department for further information on the performances obtainable with this modification.
4. The plug-shaped transformer (item 6) is available in two models: **chlorine timer** transformer code 95-STC1, and **non-chlorine timer** transformer code 95-STD.

The explicit variants concern only the timers with external drivers (attachment DA0189), which in the table are marked with an asterisk (\*):

1. **Number of pass-through drivers** (item 2). Their quantity changes according to the number of drivers installed on the timer. For example, a timer with 4 external drivers has 3 pass-through drivers (item 2) and only one closed driver (item 3).
2. **Coupling bars** (item 4). Their lengths change according to the number of drivers installed on the timer. The coupling bar code can be obtained by combining the base code (468-) with the number of drivers. Therefore, for a two-driver timer the code is 468-2, while for a five-driver timer is 468-5 and so on.
3. **Programming Cam** (item 12) for external drivers. It changes depending on the device type.

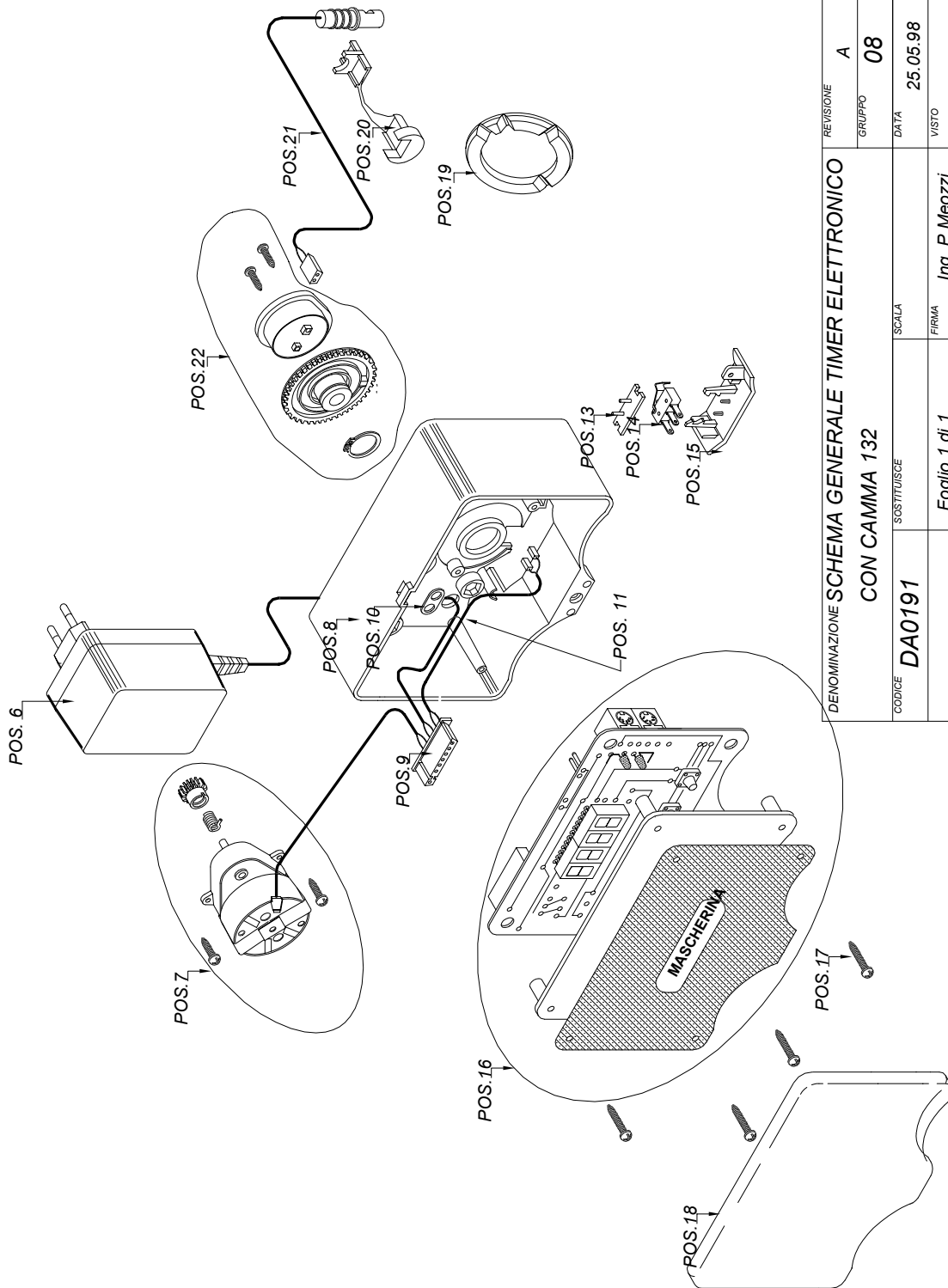
**Tab. 5 – Table of items shown in attachments DA0189 and DA0191**

<b>Item</b>	<b>Description</b>	<b>Code</b>
1	Complete driver shoulder	433-KIT
2	Complete driver (closed)	2253-A
3	Complete pass-through driver	2253-B*
4	Coupling bar for external drivers	468-*
5	M5 nut for threaded bar	468-D
6	230V – 12 V plug-shaped transformer	95-STD
	230V – 6 V plug-shaped transformer (CHLORINE)	95-STC1
7	Ratiomotor	94-R7
8	Timer case kit	81-KIT
9	7-pole connector	93-7
10	Timer supply cable lock	90
11	Micro-switch wire	97
12	External cam kit	2221-2*
13	Micro-switch locking plate	88-A
14	Microswitch	92-F
15	Micro-switch holder	88
16	Aqua Clor electronic board kit	873-CLK
17	Cover fastening screw	120
18	Transparent cover for timer case	82
19	Stop ring on power takeoff	84-AS
20	Black cable lock	90-XP
21	Turbine sensor cable, 50 cm length	2223-50
22	New driver timer programming cam kit	2229



DENOMINAZIONE <b>SCHEMA GENERALE TIMER ELETTRONICO</b>		REVISIONE	A
CON N. <b>PILOTTI ESTERNI</b>		GRUPPO	08
CODICE	SCALDA	DATA	25.05.98
<b>DA0189</b>	SOSTITUISCE	FIRMA	VISTO
		<b>Ing. P. Meozzi</b>	
		Foglio 1 di 1	
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DENOMINAZIONE <b>SCHEMA GENERALE TIMER ELETTRONICO</b>		REVISIONE	A
CON CAMMA 132		GRUPPO	08
CODICE	DA0191	DATA	25.05.98
SOSTITUISCE		VISTO	
SCALA		FIRMA	Ing. P. Meozzi
Foglio 1 di 1			
<b>SIATA</b> S.r.l. SOCIETA' ITALIANA APPARECCHIATURE TRATTAMENTO ACQUA			