

Service manual

THERMODISINFECTOR:

TD010TMD

TD011TMD

TD012TMD

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INTRODUCTION

Use of the appliance is easy and user-friendly. However, it must only be used by staff who are aware of the entire contents of this manual. The manual must accompany the machine or be easily found during operation. The TECNO-GAZ Service Centre is always available for any further information or direct assistance you may require.



This symbol shows a warning concerning the **USER** of the appliance.

The user **SHOULD NOT** try and perform any maintenance and must simply use the appliance as a replacement for consumption liquids when required.



This symbol indicates a warning concerning a routine or unscheduled maintenance operation that must be performed only by trained staff who are aware of both the techniques and the steps to be performed to operate the equipment in the event of malfunctioning or failure.



When this symbol is shown, staff must contact the TECNO-GAZ Service Centre or their nearest technical support centre as soon as possible, so that a qualified technician authorised by TECNO-GAZ can perform the required maintenance operations.

TECNO-GAZ S.p.A. Service Centre
Telephone +39 0521 8380



The symbol to the side indicates that the action requires the operator to be particularly careful.

This symbol is also used on specific parts of the machine that, before being used, require a careful examination of the enclosed documentation.



The symbol to the side indicates that the operation in question involves an electrocution hazard and therefore the operator must pay special attention.

This symbol is also used on machine parts near high voltage devices.



The symbol to the side indicates that the operation in question involves the risk of burns (hot surface of the material) and therefore the operator must pay special attention in performing it. This symbol is also used on machinery near potentially very hot surfaces.

GENERAL SAFETY RULES

FOR SAFETY REASONS PLEASE READ THE FOLLOWING INFORMATION

Do not cover the labels placed on the machine for any reason and replace them immediately if damaged.

The power supply socket must have an approved earthing system.

Do not use the machine in an explosive atmosphere.

Do not use the machine to wash or disinfect objects and/or containers that are not compatible with the manufacturer's instructions due to their shape or material.

For allowed objects and/or containers, follow the instructions clearly specified in this manual.

In the event of extended inactivity of the machine, cut off the power supply and close the water valves.

Do not try and open the tank door during operation: the device has a special safety locking system to prevent the door from being opened during operation.

Installation, removal, maintenance, adjustments or any kind of intervention requiring the removal of protections or panels to be opened with the keys **SHOULD BE CARRIED OUT BY QUALIFIED PERSONNEL AUTHORISED BASED ON THE MANUFACTURER'S INSTRUCTIONS.**

Qualified staff, according to current standards and in a highly professional way, must carry out work on the electrical and plumbing systems needed to prepare the site where the machine will be installed.

For any maintenance work, cut off the power supply by operating the multipolar switch installed upstream the appliance.

Also take all the necessary safety measures as, by cutting off the power supply, some protective devices provided by the manufacturer might be disconnected.

This appliance must be used by adults who are aware of the information supplied in this manual.

Do not change, for any reason, the characteristics of the appliance, its installation specifications and the parameters set.

After taking care of all the goods to be loaded and drained, always close the door of the washing tank to avoid potential unpleasant odours from the drain.

In case of fire, to extinguish the flames intervene with a powder fire extinguisher, **DO NOT USE WATER.**

Do not wash the machine with direct or pressure water jets or corrosive substances.

In the event of a malfunction, make sure this is not due to failure to perform routine maintenance, otherwise contact the TECNO-GAZ Service Centre. Repairs not carried out by personnel not specifically trained by TECNO-GAZ can cause further damage to property and/or injuries to persons.

If one or more components of the appliance need to be replaced, always use original TECNO-GAZ S.p.A. SPARE PARTS. Only use products recommended by TECNO-GAZ in this manual.

The machine must not be unloaded during demolition, as it contains materials governed by legislation requiring disposal in special centres.

Make sure that the floor is fit to support the load of the equipment when in operation, equal to 350 kg. The machine does not cause harmful vibrations.

Before installing the appliance, ensure that the supply voltage complies with the one shown on the data plate and that the water supply pressure is equal to the one indicated in the technical data.

Then make sure that the drain matches the dimensions provided on the installation drawing.

During installation, do not pinch the power supply cable or the water pipes.

If your new machine is damaged, contact your retailer before using it.

The machine is intended for the treatment and thermo-disinfection of instruments for medical use.

The machine is a **NON-STERILE** device.

Any use of the machine other than the one it was intended for is prohibited.

The user is forbidden from carrying out any kind of repair.

The technical service on this machine must only be performed by **QUALIFIED AND AUTHORISED OPERATORS**.

Do not expose the product to freezing conditions.

The electrical safety of this machine is only ensured if it is connected to an efficient earthing system.

Take great care when handling detergents and additives. Avoid any contact with them, wear gloves and always follow the safety requirements specified by the chemical producer.

Do not inhale chemicals. Chemicals cause eye irritation. In case of contact, wash with plenty of water and seek medical advice. In case of contact with skin, wash thoroughly with water.

The water in the tank is not safe to drink.

Do not lean on the door and do not use it as a step.

The machine during its work cycle reaches a temperature of 95°C. Be very careful, there may be a risk of scalding.

Failure to comply with these rules may affect the safety of the device and **IMMEDIATELY CAUSE THE WARRANTY TO BECOME NULL AND VOID**.

The machine may heat the room, thereby increasing humidity levels.

The product was validated in accordance with EN 15883 for a life expectancy of 10 years; the disinfection process must be validated by the user.

Safety instructions for personnel:

Risks for the maintenance of components inside the machine:



Burns of body parts due to contact with hot parts of the appliance.

Only allow trained and qualified personnel to perform maintenance wearing suitable safety overalls.



Electrocution

Cut off the power supply before working on parts inside the machine.



Contact with chemicals

Always use personal protective equipment (safety goggles and gloves) for eyes and hands.



- The operator must monitor the machine during the cycle;
- The connection with the washing water injection pipe must always be performed with a suitable basket;
- Do not interrupt the cycle during the operation, or this will affect disinfection;
- Only use recommended detergents and chemical additives. The use of other products can damage the machine;
- Recommending chemical additives does not mean the producer assumes liability for any damage to materials and objects to be treated that may occur;
- Carefully follow the instructions provided by chemical producers. Only use products in line with their intended use;
- The machine is designed to work with water and chemical additives. Do not use organic solvents or others, as they may result in a risk of explosion or rapid deterioration of some machine parts;
- Residues of solvents or acids, in particular "hydrochloric acid", can cause damage to the steel; avoid any contact;
- Only use original accessories;
- Never use powder detergents;
- Never use foaming detergents;
- The machine must be used only with baskets and/or accessories supplied by the manufacturer;
- Accessories that have not been approved by the manufacturer may affect the results obtained, as well as user safety;
- Never use chloride-based chemicals (chlorine bleach, sodium hypochlorite, hydrochloric acid, etc.). These types of products cause permanent damage on the machine, thereby affecting its integrity.

Manufacturer responsibility and limits:

THE MANUFACTURER SHALL NOT BE LIABLE FOR FAULTS DUE TO TAMPERING AND/OR INCORRECT APPLICATIONS AND/OR IMPROPER USE OF THE MACHINE. The user must follow the requirements specified in the user manual and in particular:

- Always work within the limits allowed by the machine;
- Always carry out constant and accurate maintenance;
- The machine must only be used by personnel suitably trained and instructed, with proven abilities and a conduct suitable to perform the requested work and purposes;
- Only use original spare parts of the manufacturer.

The instructions for installation, maintenance and operation described below have been prepared to ensure a long service life and correct and optimal operation of the machine.

Manual:

This manual should be carefully preserved with the machine for future reference. In case of machine sale or transfer to another user, make sure that the manual accompanies the equipment to allow the new owner to obtain information on its operation and relevant components. The manual represents the state of the art at the time of construction and delivery of the device and is valid for its entire life. To avoid potential accidents to persons or property due to incorrect translation of the instructions, we recommend the customer against performing operations or manoeuvres on the machine should there be doubts about the operation to carry out. Ask the Service Centre for clarifications concerning the instruction. If the manual is lost, please ask the manufacturer for a copy.

1. INTENDED USE

The machine is designed for washing and thermo-disinfection of instruments and equipment for the dental sector. Therefore, this appliance must **ONLY BE USED TO WASH AND THERMALLY DISINFECT** dental instruments normally used in clinics. Misuse of this equipment can be **DANGEROUS TO THE HEALTH AND SAFETY OF THE OPERATOR** and can cause severe damage to the machine itself.



If the machine is used for purposes other than those intended by the manufacturer, its safety systems may be impaired.

Misuse:

Do not wash instruments or objects:

- completely or partially made of wood;
- objects other than stainless steel ones;
- made of plastic material not suitable for high temperatures.



If the machine **IS NOT USED FOR MORE THAN 24 HOURS**, perform a BGA cycle (disinfection cycle) to avoid contamination.

2. PROGRAMMING

2.1 “Programming” menu structure:

Here below are the various options in the menus available through the PRG key on the keyboard.

The main controls to browse through the various options are:

- Key 1 and 2: to respectively move up and down the parameters
- START key: to select an item and go to the additional menu of the selected item;
- PRG button: to go back or exit the menu selected earlier.

2.2 Parameters that can be set:

This table shows the machine parameters, which are password-protected and can only be accessed by technicians. There are two ways to access the parameters:

1. with the machine's keyboard, hold down the PRG button for 5 seconds, to scroll through the menu use the "1" and "2" buttons, to confirm press "Start";
2. from an external computer connected to the machine and configured with the "WD2 Monitor" program.

Definitions		
TBD	To be defined	
RO	Read-only	
NA	Not applicable, depends on the program	
<input checked="" type="checkbox"/>	Enabled on machine menu	
<input type="checkbox"/>	Disabled on machine menu	
Menu 3131	Menu for the service technician, available from the keyboard on the machine. 3131 is the PASSWORD to enter the programming area, PROG. key.	3131
Menu 3211	Menu for the operator manager, available from the keyboard on the machine. 3211 is the PASSWORD to enter the programming area, PROG. key.	3211

Ref.	Type of Menu
#1	General
#2	Temperature
#3	Time
#4	Pumps
#5	Regeneration
#6	Alarm Enabling
#7	Conductivity Probe
#8	Drain Pump
#9	Probe Calibration
#10	Operator PIN
#11	
#12	
#13	
#14	
#15	
#16	
#17	Maintenance
#18	Validation
#19	Cycle Counter
#20	Printing Settings
#21	Water Loading Settings (Programs 1-20)
#22	Water Loading Settings (Programs 21-40)
#23	Chemicals Settings (Programs 1-20)
#24	Chemicals Settings (Programs 21-40)
#25	Program: PREWASHING phase
#26	Program: WASHING phase
#27	Program: RINSING phase
#28	Program: DISINFECTION phase
#29	Program: DRYING phase
#30	Program: DRAINING phase

GENERAL MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#1.01	Buzzer at end of cycle	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.02	Alarm buzzer	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.03	Key press buzzer	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.04	External device 1	0=Off 1=Printer	2= LAN	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.05	External device 2	0= Off 1= USB	2=Bluetooth	USB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.06	Demineralised water	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.07	Hot water	0= Off	1= On	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.08	Operator PIN	0= Off	1= On	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.09	Door unlocked at end of cycle	0= Off	1= On	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.10	Font Display	0= LCD (EUR-JAP)	1= LCD CY (EUR-CYR)	LCD EUR-JAP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.11	Language selection	1	8	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.12	Restart mode after alarm	0	2	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.13	Key 1 program	1	40	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.14	Key 2 program	1	40	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.15	Key 3 program	1	40	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.16	Printer language	1	8	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.17	Program to be repeated	1	40	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.18	Number of repetitions	0	99	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.19	External devices mode	0= Not locking	1= Locking	Not locking	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.20	Microswitch board 2 enabling	0= Off	1= On	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.21	Drying enabling	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.22	Spray arm control enabling	0= Off	1= On	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.23	White LED light always on	0= Off	1= On	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.24	Salt reserve sensor enabling	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#1.25	Number of regenerations for salt reserve	1	99	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

TEMPERATURE MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#2.01	Hysteresis	0	99	2 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#2.02	Maximum pre-wash temperature	0	99	35 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#2.03	Maximum tank temperature	0	250	97 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#2.04	Maximum air temperature	0	250	150 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#2.05	Maximum temperature difference between the probes in the tank	0	99	3 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#2.06	Offset beyond the phase temperature	0	99	10 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#2.07	Minimum difference control temperature of probes in tank	0	99	80 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#2.08	Minimum drying temperature	0	250	120 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#2.09	Cooling fan activation temperature	0	100	50 °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

TIME MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#3.01	Door lock timeout	0	99	5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.02	Door unlock timeout	0	99	5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.03	Water flowmeters timeout	0	99	5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.04	Product liquid flowmeters timeout	0	99	5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.05	Water loading in tank timeout	0	999	120 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.06	Drain timeout	0	999	80 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.07	1C° increase in tank timeout	0	999	60 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.08	Tank light ON time	0	999	30 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.09	Cooling fan activation time (Minutes)	0	99	5 Min	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.10	Alarm 42 time delay	0	99	5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.11	Alarm 47 time delay	0	999	30 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.12	Alarm 70 time delay	0	99	5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.13	Alarm 71 time delay	0	99	5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.14	LAN network lifetime	0	255	5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.15	Chemicals timeout	0	999	30 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.16	Product liquid supply waiting time	0	99	30 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.17	Spray arm control time delay	0	99	30 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.18	Minimum time for spray arm time	0	25.5	2.5 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#3.19	Maximum time for spray arm time	0	25.5	4.0 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

PUMP MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#4.01	Pulses for 1 litre of cold water	0	9999	310 Imp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#4.02	Pulses for 1 litre of cold demineralised/hot water	0	9999	310 Imp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#4.03	Product additional time during calibration (s)	0	255	2 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#4.04	Number of peristaltic pumps installed	1	3	2 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#4.05						

REGENERATION MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#5.01	Pause time between regeneration and rinsing (s)	0	999	180 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#5.02	Water loading time for regeneration (s)	0	999	10 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#5.03	Water loading time for rinsing (s)	0	999	30 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#5.04	French water degrees (°f)	0	60	0 °F	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

REGENERATION TABLE								
Index	Ref.	From	Ref.	To	Ref.	Cycles	Menu 3131	Menu 3211
1	#5.05	0 °F	#5.06	10 °F	#5.07	0 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	#5.08	11 °F	#5.09	15 °F	#5.10	13 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	#5.11	16 °F	#5.12	20 °F	#5.13	11 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	#5.14	21 °F	#5.15	25 °F	#5.16	9 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	#5.17	26 °F	#5.18	30 °F	#5.19	8 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	#5.20	31 °F	#5.21	35 °F	#5.22	7 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	#5.23	36 °F	#5.24	40 °F	#5.25	5 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	#5.26	41 °F	#5.27	45 °F	#5.28	4 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	#5.29	46 °F	#5.30	50 °F	#5.31	3 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	#5.32	51 °F	#5.33	55 °F	#5.34	2 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	#5.35	56 °F	#5.36	60 °F	#5.37	1 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	#5.38		#5.39		#5.40			
13	#5.41		#5.42		#5.43			
14	#5.44		#5.45		#5.46			
15	#5.47		#5.48		#5.49			

REGENERATION MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#5.50	Water loading time for regeneration after adding salt (s)	0	999	TBD Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#5.51	Pause time between regeneration and rinsing after addition of salt (Minutes)	0	999	TBD Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

ALARM ENABLING MENU (1-50)						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#6.01	E01 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.02	E02 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.03	E03(available) /	0= Off	1= On	/		
#6.04	E04(available) /	0= Off	1= On	/		
#6.05	E05(available) /	0= Off	1= On	/		
#6.06	E06(available) /	0= Off	1= On	/		
#6.07	E07 enabling /	0= Off	1= On	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.08	E08(available) /	0= Off	1= On	/		
#6.09	E09 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.10	E10(available) /	0= Off	1= On	/		
#6.11	E11 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.12	E12(available) /	0= Off	1= On	/		
#6.13	E13(available) /	0= Off	1= On	/		

ALARM ENABLING MENU (1-50)

Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#6.14	E14(available) /	0= Off	1= On	/		
#6.15	E15(available) /	0= Off	1= On	/		
#6.16	E16(available) /	0= Off	1= On	/		
#6.17	E17(available) /	0= Off	1= On	/		
#6.18	E18(available) /	0= Off	1= On	/		
#6.19	E19(available) /	0= Off	1= On	/		
#6.20	E20 enabling /	0= Off	1= On	On	☒	☒
#6.21	E21 enabling /	0= Off	1= On	On	☒	☒
#6.22	E22 enabling /	0= Off	1= On	On	☒	☒
#6.23	E23(available) /	0= Off	1= On	/		
#6.24	E24 enabling /	0= Off	1= On	On	☒	☒
#6.25	E25(available) /	0= Off	1= On	/		
#6.26	E26 enabling /	0= Off	1= On	On	☒	☒
#6.27	E27(available) /	0= Off	1= On	/		
#6.28	E28(available) /	0= Off	1= On	/		
#6.29	E29(available) /	0= Off	1= On	/		
#6.30	E30 enabling /	0= Off	1= On	On	☒	☒
#6.31	E31 enabling /	0= Off	1= On	On	☒	☒
#6.32	E32 enabling /	0= Off	1= On	On	☒	☒
#6.33	E33(available) /	0= Off	1= On	/		
#6.34	E34 enabling /	0= Off	1= On	On	☒	☒
#6.35	E35(available) /	0= Off	1= On	/		
#6.36	E36(available) /	0= Off	1= On	/		
#6.37	E37(available) /	0= Off	1= On	/		
#6.38	E38(available) /	0= Off	1= On	/		
#6.39	E39(available) /	0= Off	1= On	/		
#6.40	E40(available) /	0= Off	1= On	/		
#6.41	E41 enabling /	0= Off	1= On	On	☒	☒
#6.42	E42 enabling /	0= Off	1= On	Off	☒	☒
#6.43	E43 enabling /	0= Off	1= On	On	☒	☒
#6.44	E44 enabling /	0= Off	1= On	Off	☒	☒
#6.45	E45 enabling /	0= Off	1= On	On	☒	☒
#6.46	E46 enabling /	0= Off	1= On	On	☒	☒
#6.47	E47 enabling /	0= Off	1= On	On	☒	☒
#6.48	E48(available) /	0= Off	1= On	/		
#6.49	E49(available) /	0= Off	1= On	/		
#6.50	E50 enabling /	0= Off	1= On	On	☒	☒

ALARM ENABLING MENU (51-90)

Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#6.51	E51 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.52	E52 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.53	E53 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.54	E54(available) /	0= Off	1= On	/		
#6.55	E55(available) /	0= Off	1= On	/		
#6.56	E56(available) /	0= Off	1= On	/		
#6.57	E57(available) /	0= Off	1= On	/		
#6.58	E58(available) /	0= Off	1= On	/		
#6.59	E59(available) /	0= Off	1= On	/		
#6.60	E60(available) /	0= Off	1= On	/		
#6.61	E61(available) /	0= Off	1= On	/		
#6.62	E62 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.63	E63(available) /	0= Off	1= On	/		
#6.64	E64(available) /	0= Off	1= On	/		
#6.65	E65(available) /	0= Off	1= On	/		
#6.66	E66 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.67	E67 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.68	E68(available) /	0= Off	1= On	/		
#6.69	E69(available) /	0= Off	1= On	/		
#6.70	E70 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.71	E71 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.72	E72(available) /	0= Off	1= On	/		
#6.73	E73(available) /	0= Off	1= On	/		
#6.74	E74(available) /	0= Off	1= On	/		
#6.75	E75 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.76	E76 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.77	E77 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.78	E78(available) /	0= Off	1= On	/		
#6.79	E79 enabling / Alarm triggered signal This is not displayed	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.80	E80 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.81	E81(available) /	0= Off	1= On	/		
#6.82	E82(available) /	0= Off	1= On	/		
#6.83	E83(available) /	0= Off	1= On	/		
#6.84	E84(available) /	0= Off	1= On	/		
#6.85	E85(available) /	0= Off	1= On	/		
#6.86	E86(available) /	0= Off	1= On	/		
#6.87	E87(available) /	0= Off	1= On	/		
#6.88	E88(available) /	0= Off	1= On	/		
#6.89	E89 enabling /	0= Off	1= On	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#6.90	E90(available) /	0= Off	1= On	/		

CONDUCTIVITY PROBE MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#7.01	Clean water loading repetitions	0	99	2 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#7.02	Maximum conductivity value (µs)	0	100	40 µs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

DRAIN PUMP MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#8.01	Drain pump ON in regeneration time	0	999	10 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#8.02	Drain pump OFF in regeneration time	0	999	3 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#8.03	Drain pump ON in alarm time	0	999	40 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

PROBE CALIBRATION MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#9.01	PT1000-1 tank 1 probe offset	-9.9	9.9	-2.6 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#9.02	PT1000-2 tank 2 probe offset	-9.9	9.9	-3.3 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#9.03	PT1000-3 air probe offset	-9.9	9.9	0.0 Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

OPERATOR PIN MENU								
USERS PIN MENU								
Index	Ref.	NAME (max 16)	Menu 3131	Menu 3211	Ref.	PASSWORD (max 6) ALLOWED CHARACTERS 1,2,3	Menu 3131	Menu 3211
1	#10.01	User 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.02	121211	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	#10.03	User 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.04	211132	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	#10.05	User 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.06	213312	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	#10.07	User 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.08	312132	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	#10.09	User 5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.10	213221	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	#10.11	User 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.12	132112	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	#10.13	User 7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.14	323122	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	#10.15	User 8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.16	121133	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	#10.17	User 9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.18	223312	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	#10.19	User 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.20	113123	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	#10.21	User 11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.22	131132	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	#10.23	User 12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.24	212131	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	#10.25	User 13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.26	311123	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	#10.27	User 14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.28	333221	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	#10.29	User 15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.30	133213	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	#10.31	User 16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.32	211321	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	#10.33	User 17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.34	331321	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18	#10.35	User 18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.36	122331	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	#10.37	User 19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.38	221121	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20	#10.39	User 20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#10.40	322231	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

MAINTENANCE MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#17.01	Maintenance enabling	0= Off 1= Cycles	2= Date	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#17.02	Cycles for maintenance Maintenance on DD/MM/YYYY	0	65535	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#17.03	Cycles since last maintenance	0	4294967295	ROn	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#17.04	Maintenance warning cycles done	0	4294967295	ROn	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#17.05	Maintenance warning cycles date	/	/	RO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

VALIDATION MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#18.01	Validation enabling	0= Off 1= Cycles	2= Date	Off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#18.02	Cycles for validation Validation on DD/MM/YYYY	0	65535	0 n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#18.03	Cycles since last validation	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#18.04	Validation warning cycles done	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#18.05	Validation warning cycles date	/	/	RO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

CYCLE COUNTER MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#19.01	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.02	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.03	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.04	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.05	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.06	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.07	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.08	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.09	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.10	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.11	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.12	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.13	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.14	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.15	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.16	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.17	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.18	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.19	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.20	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.21	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.22	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.23	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.24	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.25	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.26	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.27	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

CYCLE COUNTER MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#19.28	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.29	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.30	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.31	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.32	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.33	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.34	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.35	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.36	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.37	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.38	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.39	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.40	Program cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#19.99	Total Cycles /	0	4294967295	RO n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

PRINTING SETTINGS MENU						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#20.01	Model	0	20	TD010TMD TD012TMD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#20.02	Machine	0	20	WASHER DISINFECTOR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#20.03	Software Version	9	9	RO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#20.04	Serial Number	0	9	/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#20.05	Installation	0	20	/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

WATER LOADING SETTINGS MENU (PROGRAMS 1-20)								
Prog.	Ref.	COLD WATER (LITRES)	Ref.	HOT WATER (LITRES)	Ref.	DEMI WATER (LITRES)	Menu 3131	Menu 3211
1	#21.01	(0-999) def. 6	#21.02	(0-999) def. 6	#21.03	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	#21.04	(0-999) def. 6	#21.05	(0-999) def. 6	#21.06	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	#21.07	(0-999) def. 6	#21.08	(0-999) def. 6	#21.09	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	#21.10	(0-999) def. 6	#21.11	(0-999) def. 6	#21.12	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	#21.13	(0-999) def. 6	#21.14	(0-999) def. 6	#21.15	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	#21.16	(0-999) def. 6	#21.17	(0-999) def. 6	#21.18	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	#21.19	(0-999) def. 6	#21.20	(0-999) def. 6	#21.21	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	#21.22	(0-999) def. 6	#21.23	(0-999) def. 6	#21.24	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	#21.25	(0-999) def. 6	#21.26	(0-999) def. 6	#21.27	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	#21.28	(0-999) def. 6	#21.29	(0-999) def. 6	#21.30	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	#21.31	(0-999) def. 6	#21.32	(0-999) def. 6	#21.33	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	#21.34	(0-999) def. 6	#21.35	(0-999) def. 6	#21.36	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	#21.37	(0-999) def. 6	#21.38	(0-999) def. 6	#21.39	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	#21.40	(0-999) def. 6	#21.41	(0-999) def. 6	#21.42	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	#21.43	(0-999) def. 6	#21.44	(0-999) def. 6	#21.45	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	#21.46	(0-999) def. 6	#21.47	(0-999) def. 6	#21.48	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	#21.49	(0-999) def. 6	#21.50	(0-999) def. 6	#21.51	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18	#21.52	(0-999) def. 6	#21.53	(0-999) def. 6	#21.54	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	#21.55	(0-999) def. 6	#21.56	(0-999) def. 6	#21.57	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

WATER LOADING SETTINGS MENU (PROGRAMS 1-20)

Prog.	Ref.	COLD WATER (LITRES)	Ref.	HOT WATER (LITRES)	Ref.	DEMI WATER (LITRES)	Menu 3131	Menu 3211
20	#21.58	(0-999) def. 6	#21.59	(0-999) def. 6	#21.60	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

WATER LOADING SETTINGS MENU (PROGRAMS 21-40)

Prog.	Ref.	COLD WATER (LITRES)	Ref.	HOT WATER (LITRES)	Ref.	DEMI WATER (LITRES)	Menu 3131	Menu 3211
21	#22.01	(0-999) def. 6	#22.02	(0-999) def. 6	#22.03	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22	#22.04	(0-999) def. 6	#22.05	(0-999) def. 6	#22.06	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
23	#22.07	(0-999) def. 6	#22.08	(0-999) def. 6	#22.09	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
24	#22.10	(0-999) def. 6	#22.11	(0-999) def. 6	#22.12	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
25	#22.13	(0-999) def. 6	#22.14	(0-999) def. 6	#22.15	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
26	#22.16	(0-999) def. 6	#22.17	(0-999) def. 6	#22.18	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
27	#22.19	(0-999) def. 6	#22.20	(0-999) def. 6	#22.21	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
28	#22.22	(0-999) def. 6	#22.23	(0-999) def. 6	#22.24	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
29	#22.25	(0-999) def. 6	#22.26	(0-999) def. 6	#22.27	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
30	#22.28	(0-999) def. 6	#22.29	(0-999) def. 6	#22.30	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
31	#22.31	(0-999) def. 6	#22.32	(0-999) def. 6	#22.33	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
32	#22.34	(0-999) def. 6	#22.35	(0-999) def. 6	#22.36	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
33	#22.37	(0-999) def. 6	#22.38	(0-999) def. 6	#22.39	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
34	#22.40	(0-999) def. 6	#22.41	(0-999) def. 6	#22.42	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
35	#22.43	(0-999) def. 6	#22.44	(0-999) def. 6	#22.45	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
36	#22.46	(0-999) def. 6	#22.47	(0-999) def. 6	#22.48	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
37	#22.49	(0-999) def. 6	#22.50	(0-999) def. 6	#22.51	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
38	#22.52	(0-999) def. 6	#22.53	(0-999) def. 6	#22.54	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
39	#22.55	(0-999) def. 6	#22.56	(0-999) def. 6	#22.57	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
40	#22.58	(0-999) def. 6	#22.59	(0-999) def. 6	#22.60	(0-999) def. 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

CHEMICALS SETTINGS MENU (PROGRAMS 1-20)								
Prog.	Ref.	DETERGENT (ml)	Ref.	NEUTRALISER (ml)	Ref.	RINSE AID (ml) RINSE AID (ml)	Menu 3131	Menu 3211
1	#23.01	(0-999) def.36	#23.02	(0-999) def. 8	#23.03	(0-999) def. 3	☒	☒
2	#23.04	(0-999) def.36	#23.05	(0-999) def. 8	#23.06	(0-999) def. 3	☒	☒
3	#23.07	(0-999) def.48	#23.08	(0-999) def.24	#23.09	(0-999) def. 6	☒	☒
4	#23.10	(0-999) def. 0	#23.11	(0-999) def. 0	#23.12	(0-999) def. 0	☒	☒
5	#23.13	(0-999) def. 0	#23.14	(0-999) def. 0	#23.15	(0-999) def. 0	☒	☒
6	#23.16	(0-999) def.36	#23.17	(0-999) def. 8	#23.18	(0-999) def. 3	☒	☒
7	#23.19	(0-999) def.36	#23.20	(0-999) def. 8	#23.21	(0-999) def. 3	☒	☒
8	#23.22	(0-999) def.36	#23.23	(0-999) def. 8	#23.24	(0-999) def. 3	☒	☒
9	#23.25	(0-999) def.36	#23.26	(0-999) def. 8	#23.27	(0-999) def. 3	☒	☒
10	#23.28	(0-999) def.36	#23.29	(0-999) def. 8	#23.30	(0-999) def. 3	☒	☒
11	#23.31	(0-999) def.36	#23.32	(0-999) def. 8	#23.33	(0-999) def. 3	☒	☒
12	#23.34	(0-999) def.36	#23.35	(0-999) def. 8	#23.36	(0-999) def. 3	☒	☒
13	#23.37	(0-999) def.36	#23.38	(0-999) def. 8	#23.39	(0-999) def. 3	☒	☒
14	#23.40	(0-999) def.36	#23.41	(0-999) def. 8	#23.42	(0-999) def. 3	☒	☒
15	#23.43	(0-999) def.36	#23.44	(0-999) def. 8	#23.45	(0-999) def. 3	☒	☒
16	#23.46	(0-999) def.36	#23.47	(0-999) def. 8	#23.48	(0-999) def. 3	☒	☒
17	#23.49	(0-999) def.36	#23.50	(0-999) def. 8	#23.51	(0-999) def. 3	☒	☒
18	#23.52	(0-999) def.36	#23.53	(0-999) def. 8	#23.54	(0-999) def. 3	☒	☒
19	#23.55	(0-999) def.36	#23.56	(0-999) def. 8	#23.57	(0-999) def. 3	☒	☒
20	#23.58	(0-999) def.36	#23.59	(0-999) def. 8	#23.60	(0-999) def. 3	☒	☒

CHEMICALS SETTINGS MENU (PROGRAMS 21-40)								
Prog.	Ref.	DETERGENT (ml)	Ref.	NEUTRALISER (ml)	Ref.	RINSE AID (ml)	Menu 3131	Menu 3211
21	#24.01	(0-999) def.36	#24.02	(0-999) def. 8	#24.03	(0-999) def. 3	☒	☒
22	#24.04	(0-999) def.36	#24.05	(0-999) def. 8	#24.06	(0-999) def. 3	☒	☒
23	#24.07	(0-999) def.36	#24.08	(0-999) def. 8	#24.09	(0-999) def. 3	☒	☒
24	#24.10	(0-999) def.36	#24.11	(0-999) def. 8	#24.12	(0-999) def. 3	☒	☒
25	#24.13	(0-999) def.36	#24.14	(0-999) def. 8	#24.15	(0-999) def. 3	☒	☒
26	#24.16	(0-999) def.36	#24.17	(0-999) def. 8	#24.18	(0-999) def. 3	☒	☒
27	#24.19	(0-999) def.36	#24.20	(0-999) def. 8	#24.21	(0-999) def. 3	☒	☒
28	#24.22	(0-999) def.36	#24.23	(0-999) def. 8	#24.24	(0-999) def. 3	☒	☒
29	#24.25	(0-999) def.36	#24.26	(0-999) def. 8	#24.27	(0-999) def. 3	☒	☒
30	#24.28	(0-999) def.36	#24.29	(0-999) def. 8	#24.30	(0-999) def. 3	☒	☒
31	#24.31	(0-999) def.36	#24.32	(0-999) def. 8	#24.33	(0-999) def. 3	☒	☒
32	#24.34	(0-999) def.36	#24.35	(0-999) def. 8	#24.36	(0-999) def. 3	☒	☒
33	#24.37	(0-999) def.36	#24.38	(0-999) def. 8	#24.39	(0-999) def. 3	☒	☒
34	#24.40	(0-999) def.36	#24.41	(0-999) def. 8	#24.42	(0-999) def. 3	☒	☒
35	#24.43	(0-999) def.36	#24.44	(0-999) def. 8	#24.45	(0-999) def. 3	☒	☒
36	#24.46	(0-999) def.36	#24.47	(0-999) def. 8	#24.48	(0-999) def. 3	☒	☒
37	#24.49	(0-999) def.36	#24.50	(0-999) def. 8	#24.51	(0-999) def. 3	☒	☒
38	#24.52	(0-999) def.36	#24.53	(0-999) def. 8	#24.54	(0-999) def. 3	☒	☒
39	#24.55	(0-999) def.36	#24.56	(0-999) def. 8	#24.57	(0-999) def. 3	☒	☒
40	#24.58	(0-999) def.36	#24.59	(0-999) def. 8	#24.60	(0-999) def. 3	☒	☒

PROGRAM MENU: PREWASHING PHASE

Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#25.01	Cold water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#25.02	Hot water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#25.03	Demineralised water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#25.04	Prewashing time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

PROGRAM MENU: WASHING PHASE						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#26.01	Cold water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.02	Hot water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.03	Demineralised water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.04	Detergent enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.05	Neutraliser enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.06	Rinse aid enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.07	Water heating element enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.08	Detergent enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.09	Neutraliser enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.10	Rinse aid enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.11	Washing time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.12	Heating element activation delay time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#26.13	Target temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

PROGRAM MENU: RINSING PHASE						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#27.01	Cold water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.02	Hot water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.03	Demineralised water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.04	Detergent enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.05	Neutraliser enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.06	Rinse aid enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.07	Water heating element enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.08	Conductivity probe enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.09	Detergent enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.10	Neutraliser enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.11	Rinse aid enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.12	Rinsing time with neutraliser	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.13	Heating element activation delay time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.14	Target temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.15	Conductivity probe drain pump ON time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.16	Conductivity probe drain pump OFF time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#27.17	Rinsing time without neutraliser	0	255	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

PROGRAM MENU: DISINFECTION PHASE						
PROGRAM MENU: DISINFECTION PHASE						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#28.01	Cold water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.02	Hot water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#28.03	Demineralised water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.04	Detergent enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.05	Neutraliser enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.06	Rinse aid enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.07	Water heating element enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.08	A0 Priority	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.09	Detergent enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.10	Neutraliser enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.11	Rinse aid enabling temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.12	Disinfection time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.13	Heating element activation delay time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.14	Target temperature	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#28.15	A0 value	0	65000	NA n	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

PROGRAM MENU: DRYING PHASE						
Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#29.01	Air heating element enabling	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.02	Total phase time	0	9999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.03	Intermittence time	0	9999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.04	Phase end after tank cooling	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.05	Air heating element ON delay time	0	200	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.06	Air heating element OFF temperature	0	250	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.07	Air heating element ON temperature	0	250	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.08	Fan ON time	0	99.0	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.09	Fan OFF time	0	99	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.10	Air heating element ON time	0	9999	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.11	Drain pump ON time	0	9999	NA °C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#29.12	Cold water loading time	0	9999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

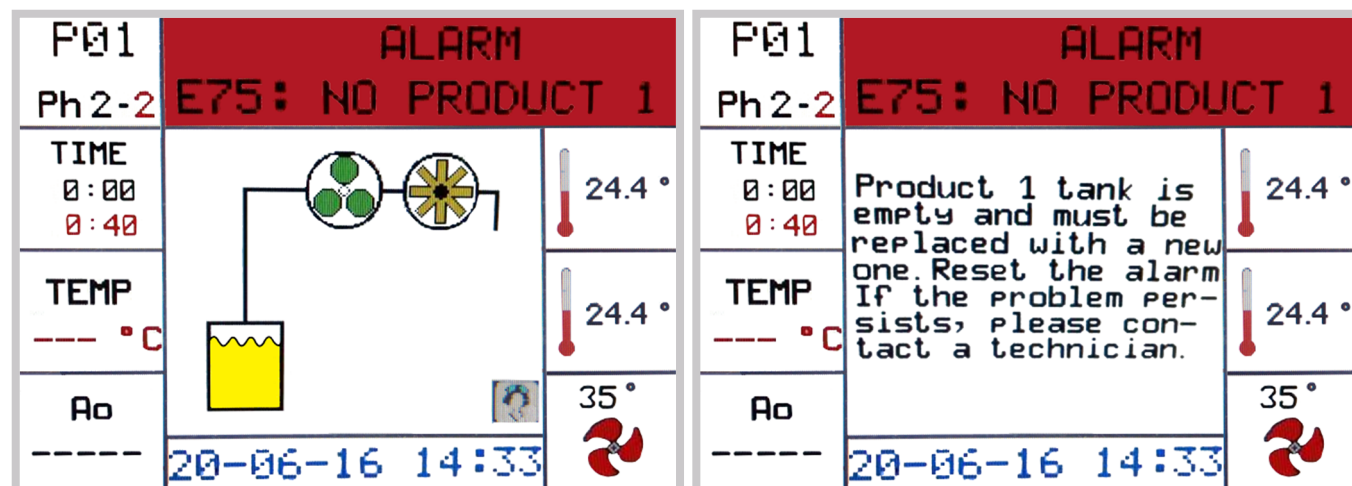
PROGRAM MENU: DRAIN PHASE

PROGRAM MENU: DRAIN PHASE

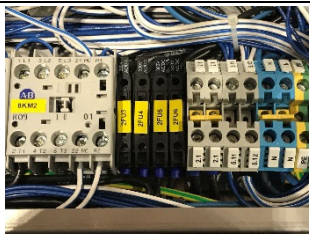



Ref.	Parameter Name	Min	Max	Default	Menu 3131	Menu 3211
#30.01	Cold water loading	0= Off	1= On	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#30.02	Drain pump ON time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#30.03	Drain pump OFF time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
#30.04	Cold water loading time	0	999	NA Sec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

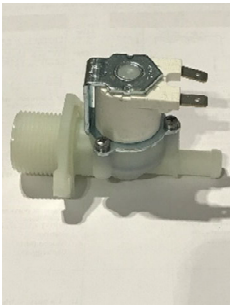

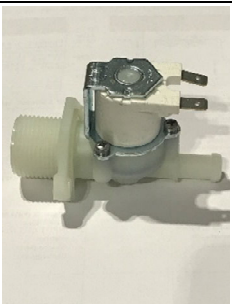

3. ALARM MESSAGES

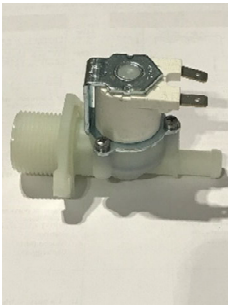

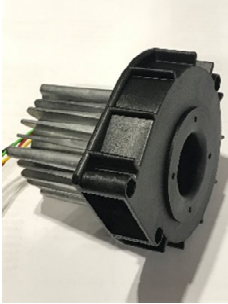
The machine displays all the alarm messages. Here below is an example of a typical alarm.



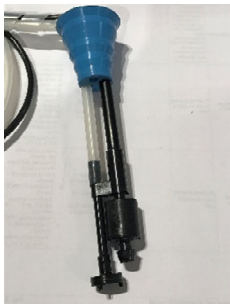











The image related to the alarm is initially displayed (for 5 seconds); then the alarm description is displayed (for 10 seconds). The image and the text are alternated until the alarm is cleared.

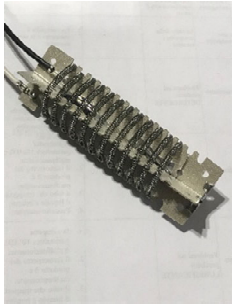



E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
1	Blackout	A blackout occurred during program execution and the program was stopped.		<ol style="list-style-type: none"> 1. Mains power cut 2. Interrupted fuse 3. ON-OFF switch 	<ol style="list-style-type: none"> 1. Restore the power supply and reset the alarm to resume operation. 2. Check the state of the 2FU6 fuse 3. Make sure it is in good working order and is positioned on symbol "I"
2	Door open	The loading door is open and/or unlocked.		<ol style="list-style-type: none"> 1. Door coupling not in position 2. INPUT CN5-6 is not activated. 3. Damaged door lock 	<ol style="list-style-type: none"> 1. Close the door completely and reset the alarm 2. Check microswitch 4S5. 3. Change door lock
7	No door lock	The door is not locked within the preset time.		<ol style="list-style-type: none"> 1. The door is locked, but INPUT CN5-7 is not activated 2. The door is not locked. 3. Error during cycle 	<ol style="list-style-type: none"> 1. Check microswitch 4S6, replace the door lock if needed; 2. Make sure the door hook is positioned correctly; 3. Make sure the door is positioned correctly.
9	No door unlock	The door is not unlocked within the preset time		<ol style="list-style-type: none"> 1. The hook remains in place when the door is unlocked. 2. The door is unlocked correctly, but the error persists 	<ol style="list-style-type: none"> 1. Check the position of the door. 2. Check OUTPUT CN12-1 and CN12-2. 3. Check INPUT CN5-7
11	Dirty water	Program interrupted due to impure water (control on only during rinsing phases and with demineralised water)		<ol style="list-style-type: none"> 1. After various rinsing attempts, the acceptable water conductivity value (P7.01) has not been reached 	<ol style="list-style-type: none"> 1. Make sure the mains water has a suitable conductivity value (< P7.02) 2. Make sure there are no residues of dirt on instruments





E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
20	NO COLD water	Cold water issues during a cycle	 	<ol style="list-style-type: none"> 1. The water does not enter the chamber after cycle start 2. The solenoid valve does not work. 3. 5SQ4 flowmeter malfunction or fault; 	<ol style="list-style-type: none"> 1. No mains water. The mains water valve is closed. Dirty solenoid valve filters. 2. Check OUTPUT CN9-4; Check 24 V DC voltage between 7.1 and 7.4; Replace solenoid valve 7YV1; 3. Check INPUT CN6-7 Check 12 V dc voltage between 5.11 and 5.12
21	NO HOT water	Hot water issues during a cycle	 	<ol style="list-style-type: none"> 1. The water does not enter the chamber after cycle start 2. The solenoid valve does not work. 3. 5SQ5 flowmeter malfunction or fault; 	<ol style="list-style-type: none"> 1. No mains water; The mains water valve is closed; Dirty solenoid valve filters; 2. Check OUTPUT CN9-6; Check 24 V DC voltage between 7.1 and 7.6 replace solenoid valve 7YV3; 3. Check INPUT CN6-8 Check 12 V dc voltage between 5.11 and 5.12







E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
22	NO DEMI water	Demineralised water issues during a cycle	 	<ol style="list-style-type: none"> 1. The water does not enter the chamber after cycle start; 2. The solenoid valve does not work; 3. 5SQ5 flowmeter malfunction or fault; 	<ol style="list-style-type: none"> 1. No mains water. The mains water valve is closed. Dirty solenoid valve filters. 2. Check OUTPUT CN9-6; Check 24 V DC voltage between 7.1 and 7.6; Replace solenoid valve 7YV3; 3. Check INPUT CN6-8 Check 12 V dc voltage between 5.11 and 5.12
24	Drying fan	The fan is not on during the drying phase		<ol style="list-style-type: none"> 1. 9MD1 fan fault. 	<ol style="list-style-type: none"> 1. Check the operation of the fan or if the wires are disconnected.
26	Printer's paper	The printer ran out of paper.		<ol style="list-style-type: none"> 1. The printer is jammed or there is no more paper; 	<ol style="list-style-type: none"> 1. Insert a new paper roll in the printer (P1.04 =0) or disable the printer if you don't have one.



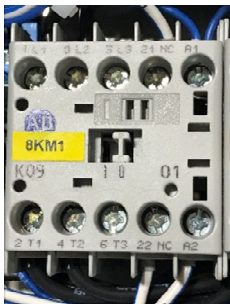


E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
30	Flow meter 1	DETERGENT issues	  	<ol style="list-style-type: none"> 10MD1 peristaltic pump fault; malfunction on the flowmeter of product 1; The pipe carrying the liquid is punctured; No more product; 	<ol style="list-style-type: none"> Check OUTPUT CN13-2 Check 24Vdc voltage between 10.1 and 10.2 Open flowmeter 5SQ2 and clean it. Check 12 V dc voltage between 5.11 and 5.12 Check pipes Replace tank
31	Flow meter 2	ACID product issues	  	<ol style="list-style-type: none"> 10MD2 peristaltic pump fault; malfunction on the flowmeter of product 2; The pipe carrying the liquid is punctured; No more product; 	<ol style="list-style-type: none"> Check OUTPUT CN13-3 Check 24 V dc voltage between 10.1 and 10.3 Open flowmeter 5SQ3 and clean it. Check 12 V dc voltage between 5.11 and 5.12 Check pipes Replace tank






E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
32	Flow meter 3	LUBRICANT product issues	  	<ol style="list-style-type: none"> 10MD3 peristaltic pump fault; malfunction on the flowmeter of product 3; The pipe carrying the liquid is punctured; No more product; 	<ol style="list-style-type: none"> Check OUTPUT CN13-4 Check 24 V dc voltage between 10.1 and 10.4 Open flowmeter 5SQ6 and clean it. Check 12 V dc voltage between 5.11 and 5.12 Check pipes Replace tank
34	Product timeout	The peristaltic pump is on for a time longer than the set parameter (P3.15)		<ol style="list-style-type: none"> The pipe of the chemical is crushed, which means the product passes through slowly; The chemical liquid is very thick. 	<ol style="list-style-type: none"> Check the dosing circuit for faults or clogging. Replace the tank or calibrate the chemicals
41	Drain timeout	The draining time is too long.	 	<ol style="list-style-type: none"> The drain pipe is clogged or crushed; drain pipe MS2 is not working; failure on pressure switch 4S1. 	<ol style="list-style-type: none"> Check the state of the drain pipe; check the drain piping of the building to make sure it is free; Activate OUTPUT CN9-2 manually and check: the correct operation of relay 7KA2 - 24 V dc voltage between 7.1 and 7.3 – 230 V ac voltage between 2.11 and N. Check if fuse 2FU6 is interrupted. Check INPUT CN5-3 Check 24 V dc voltage in normal operation, between 4.1 and 4.3



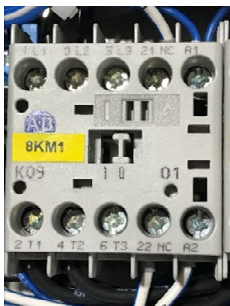
E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
43	Drying temperature	Temperature not reached (P2.08) during drying phase.	 	<ol style="list-style-type: none"> 1. Faulty EH3 heating element 2. PT1000 11ST2 temperature probe is not reading correctly 	<ol style="list-style-type: none"> 1. Check the correct absorption of the heating element 2. Temperature probe damaged or not in housing.
44	Max pre-wash T.	A temperature higher than the maximum one set has been detected during the pre-washing phase (P2.02)	 	<ol style="list-style-type: none"> 1. Temperature increase above setpoint. 2. Incorrect temperature values. 	<ol style="list-style-type: none"> 1. The water inlet temperature is higher than the parameter; The contactor of the heating elements of tank 8KM1 is stuck; 2. PT1000 11ST1 or 11ST3 temperature probe not in housing or faulty;

E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
45	Tank T. limit	During the washing phase, a temperature in the tank higher than the one set has been detected.	 	1. Temperature increase above setpoint.	1. The 8KM1 contactor of the tank heating element is stuck PT1000 11ST1 or 11ST3 temperature probe not in housing or faulty
46	Air probe T. limit	During the washing phase, a temperature higher than the maximum one set has been detected.	 	2. Temperature increase above setpoint.	2. The contactor of the 8KM2 air heating element is stuck PT1000 11ST2 temperature probe not in housing or faulty

E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
47	Phase temperature limit	During the washing phase, a temperature in the tank higher than the one set has been detected.	 	3. Temperature increase above setpoint.	3. The contactor of the 8KM1 tank heating element is stuck PT1000 11ST1 or 11ST3 temperature probe not in housing or faulty
50	Tank probe 1 failure	Value of temperature probe 11ST1 incorrect or non-existent		1. The working probe is disconnected or broken	2. Connect or replace the temperature probe.
51	Tank probe 2 failure	Value of temperature probe 11ST3 incorrect or non-existent		1. The control probe is disconnected or broken	2. Connect or replace the temperature probe.
52	Air probe failure	Value of temperature probe 11ST2 incorrect or non-existent		1. The temperature probe is disconnected or broken	2. Connect or replace the temperature probe.
53	Tank T. difference	The difference between the two tank temperature probes is higher than the maximum one set (P2.05)		1. Temperature probe 11ST1 or 11ST3 damaged or uncalibrated. 2. Clogged whirling arms 3. Overfull basket load	1. Replace, connect or calibrate the faulty probe 2. Manually clean the whirling arms (See Par. 7.4) 3. Position the tools adequately

E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
62	BUS cable	Communication between the micro cards (only if there are two circuit boards installed)		1. Cable from the two cards disconnected or damaged	1. Make sure the cable between the two micro cards is connected correctly, there is not oxidation in the contacts or any interruption.
66	No heat	Tank heating too slow or not working	  	1. Limescale on heating elements HE1 and HE2; 2. 8KM1 heating element contactor not active	1. If the limescale deposit is too thick, replace the heating element; 2. In manual mode, activate OUTPUT CN11-2 and make sure the contactor is operating correctly; Check 24 V dc voltage between 8.2 and 8.1
67	Steam condenser level	The water inside the steam condenser has reached the maximum level	 	1. Drain pipe crushed or clogged; 2. level probe 5SL2 faulty	1. Check the drain pipe for any bends preventing the water from passing 2. Check INPUT CN6-2 Check 24 V dc voltage between 5.1 and 5.2

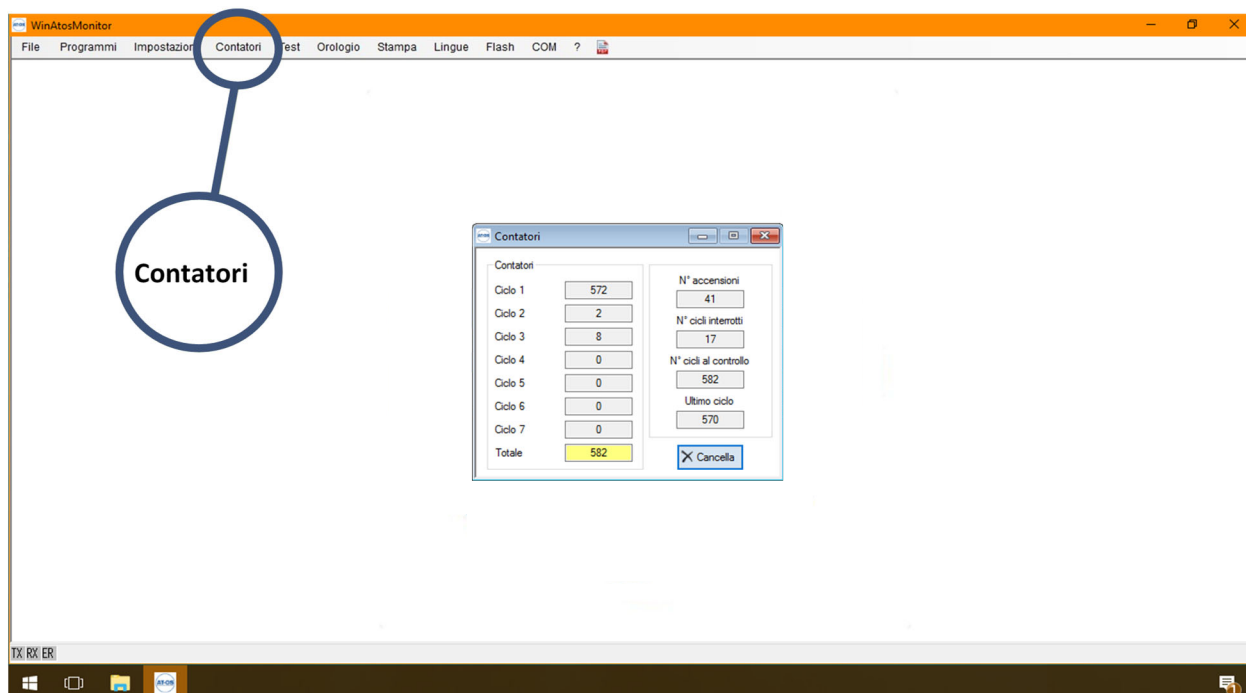
E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
70	Washing pump pressure	Pressure drop during washing	 	<ol style="list-style-type: none"> 1. Presence of foam; 2. Pressure switch 4S2 faulty 3. Not enough water in tank 4. Safety pressure switch 2SP1 uncalibrated 	<ol style="list-style-type: none"> 1. Check the calibration of the chemical detergents and, if needed, perform a calibration; make sure the water temperature does not react with the detergent used; If the decontamination procedure has been carried out, make sure the load has been adequately rinsed; 2. In manual mode, fill the tank with water using cold water solenoid valve OUTPUT CN9-4, start washing pump OUTPUT CN9-2 and check INPUT CN5-3 Check voltage between 4.1 and 4.3 3. In manual mode, fill the tank with water using the cold water solenoid valve. Leave the valve open until the level under the lower spray arm is reached. Make sure the drain pump turns on automatically. If it turns on before that, check the
71	HEPA filter	HEPA filter clogged		<ol style="list-style-type: none"> 1. HEPA filter dirty 2. Vacuum switch 4S4 faulty 	<ol style="list-style-type: none"> 1. Replace the HEPA filter 2. In manual mode, turn on fan 9MD1 and check INPUT CN12-3
75	Liquid product 1 is finished	No more liquid product 1.		<ol style="list-style-type: none"> 1. The machine has carried out a higher number of cycles than those set (P4.11) since launching product 2 signalled liquid reserve to the machine. 2. Level probe 6SL1 faulty 	<ol style="list-style-type: none"> 1. Replace the tank or, if there is still some product, edit the parameter. 2. In manual mode, check INPUT CN14-1 by simply lifting or lowering the nozzle. Check 24 V dc between 6.1 and 6.2.
76	Liquid product 2 is finished	No more liquid product 2.		<ol style="list-style-type: none"> 1. The machine has carried out a higher number of cycles than those set (P4.11) since launching product 2 signalled liquid reserve to the machine. 2. Level probe 6SL2 faulty 	<ol style="list-style-type: none"> 1. Replace the tank or, if there is still some product, edit the parameter. 2. In manual mode, check INPUT CN14-1 by simply lifting or lowering the nozzle. Check 24 V dc between 6.3 and 6.4.

E	TITLE	DESCRIPTION	Device	Possible causes	Solutions
77	Liquid product 3 is finished	No more liquid product 3.		1. The machine has carried out a higher number of cycles than those set (P4.11) since launching product 2 signalled liquid reserve to the machine. 2. Level probe 6SL3 faulty	1. Replace the tank or, if there is still some product, edit the parameter. 2. In manual mode, check INPUT CN14-1 by simply lifting or lowering the nozzle. Check 24 V dc between 6.5 and 6.6.
80	Spray arm blocked	During the washing phase, the washing spray arm rotates slowly or is blocked.		1. Spray arm blocked. 2. Sensor 5SQ1 faulty	1. Take down the spray arm and remove any clogging; Check the load to make sure it is positioned correctly and is not obstructing the rotation; 2. In manual mode with the door open, rotate the lower spray arm and make sure INPUT CN6-4 is activated. Check 24 V dc voltage coming from OUTPUT CN11.4 (wire 8.1 and 8.4)
89	No disinfection	The instruments are not disinfected because the minimum disinfection value was not reached.	 	1. One or more heating elements not working (HE1 – HE2) 2. Contactor 8KM1 faulty	1. If the limescale deposit is too thick, replace the heating element; 2. In manual mode, activate OUTPUT CN11-2 and make sure the contactor is operating correctly; Check 24 V dc voltage between 8.2 and 8.1

Warning	TITLE	DESCRIPTION	Action
1	Reload salt bowl	1. Remove the basket 2. Loosen the salt bowl cap 3. Fill the salt bowl 4. Tighten the salt bowl cap	Press RESET for 5 seconds.
2	MAINTENANCE request	Contact the Customer Service or the technician for periodical maintenance	Press RESET
3	VALIDATION request	Contact the Customer Service or the technician for periodical maintenance	Press RESET

4. CYCLE COUNTER:

When the computer is connected to the machine, it is possible to see how many and which programs the machine has run since its installation. The “Number of control cycles” indicates how many cycles the machine can perform before having to undergo periodical maintenance.



5. CHEMICALS CALIBRATION

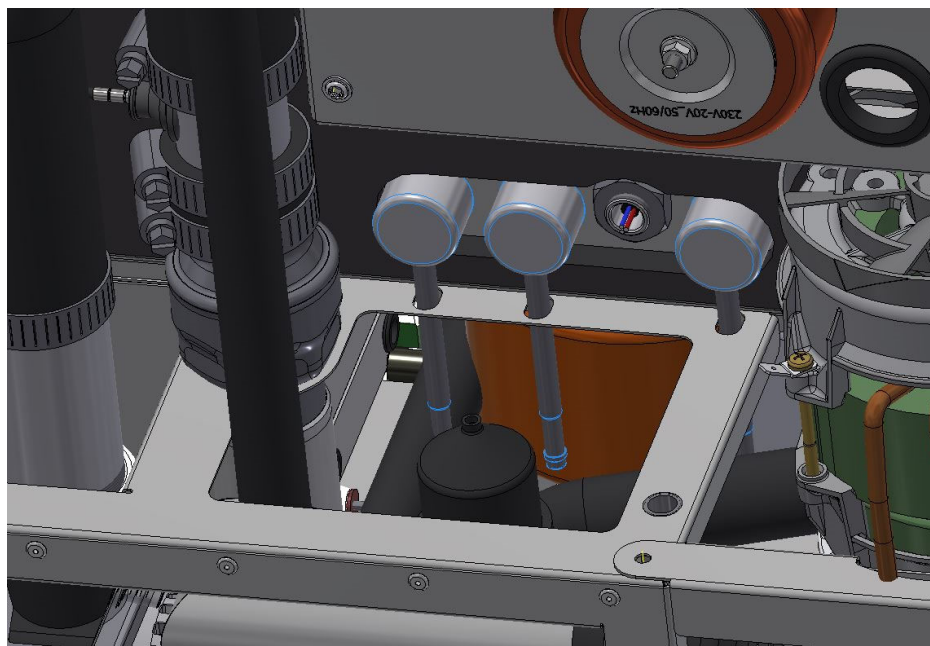


The number of hydraulic circuits for loading the chemicals varied based on the configuration for the machines requested by the customer.

Calibration of the chemical flow meter should only be performed if using liquid chemical disinfectants other than those recommended by the manufacturer. Here below is the step-by-step calibration process of the product flowmeters:

5.1 Preparation of chemicals for calibration:

1. Open the front panel;
2. Identify the nozzle corresponding to the chemical liquid concerned and remove the pipe;



- 3.
4. Take a 100ml beaker, place it above the peristaltic pump door and insert the silicone hose that comes from the flow meter into the beaker;
5. Insert the nozzle of the chemical product to be calibrated into the "Version H" liquid tank or make sure that you have produced enough of it to guarantee calibration;
6. Go to the programming menu (PRG key), keeping the key pressed for about 5 seconds, until you are prompted to enter the password.
7. Use keys 1 or 2 to search for the "chemicals calibration" program and select it with the START key;
8. Select the "hydraulic circuit filling" item from the menu;
9. Select the chemical to be calibrated by browsing with keys 1 and 2;
10. Press START to activate the pump and wait for the hydraulic circuit to fill up completely
11. Press RESET to stop the pump when the liquid comes out of the hose and goes into the beaker;
12. Drain the liquid from the beaker and proceed with calibration.



It is possible to use a graduated cylinder made specifically for this application.

The operation is very simple and allows you to perform the calibration quickly without having to remove the panels.

HOW TO DO: Insert the appropriate fitting inside the dedicated detergent fitting and perform the steps described above from point 4 onwards and wait for the product until reach the value of 100 ml.

This product can be found in the **Accessories catalog**.



5.2 Chemicals calibration:

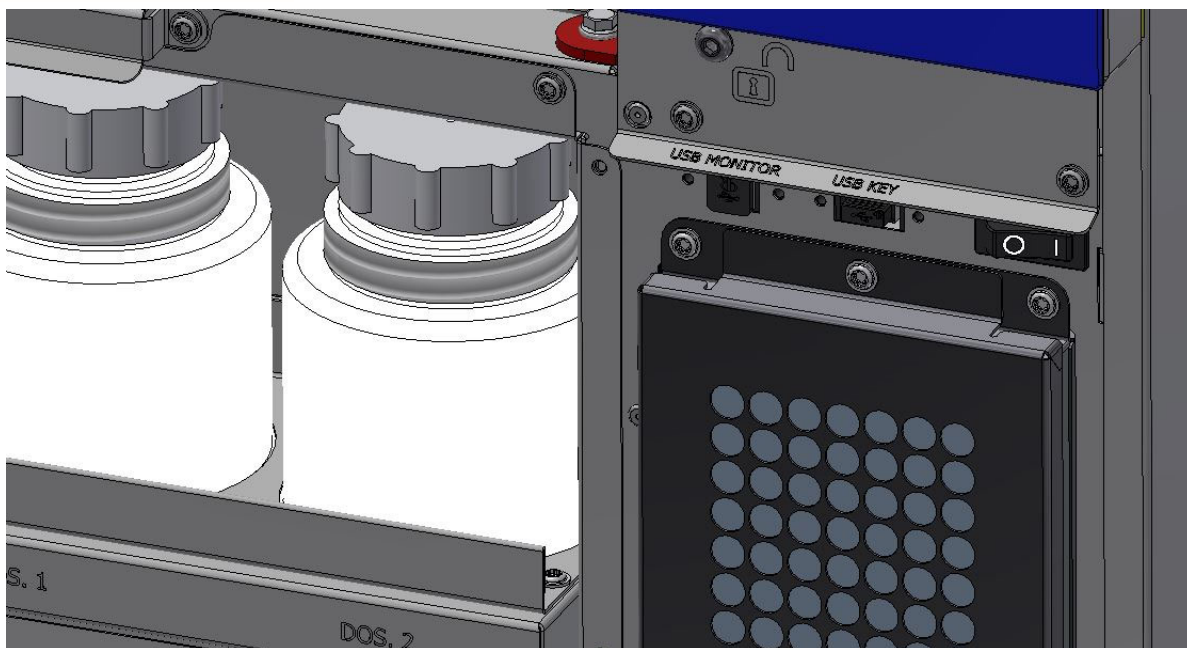


The following procedure must be carried out after completing the operations listed previously in paragraph “3.1 Preparation of chemicals for calibration”:

1. Press PRG to return to the menu;
2. Select "chemicals calibration" and press START;
3. Select the chemical to be calibrated, browsing with keys 1 and 2 and making sure that the silicone pipe is inside the beaker;
4. Press START to start pouring the liquid in the beaker;
5. Press RESET when the liquid reaches 100 ml inside the beaker to stop the liquid from being poured;
6. Press PRG to go back to the previous menu. This way, the calibration just carried out will be saved in the memory;
7. Now the calibration of the product concerned is complete.

6. MESSAGE MENU SETTINGS

There are two USB sockets for machine programming on the side of the machine. The USB socket on the left is used to connect a PC and to use the “Monitor WD2” program; the USB slot on the right is used to transfer precompiled programs from/to a USB flash drive.



The following folders must be created on the USB flash drive to make sure they are identified correctly by the device:

1. The following folders must be created on the USB flash drive to make sure they are identified correctly by the device:
2. CARTAR = The set of data is placed in this folder. The program must have a .TRT extension (the file can be downloaded from the machine to the USB flash drive and loaded from the USB flash drive to the machine)
3. CARTFWR = The firmware (the washing program of the standard instrument is inserted in this folder. The firmware must have a .mh0 extension (the file can only be loaded from the USB flash drive to the machine)
4. CARTMES = The file containing the messages is placed in this folder (shown at the top of the display). This file must have a .MSG extension (the file can be downloaded from the machine to the USB flash drive and loaded from the USB flash drive to the machine)
5. CARTALM = The file with the list of the latest alarms is placed in this folder by the machine (the file can only be downloaded from the machine in the USB file)
6. CARTREC = The file containing the list of the machine cycles performed, both successful ones and those interrupted due to an alarm.

After inserting the USB flash drive into the lower port, the display will show the following screen:

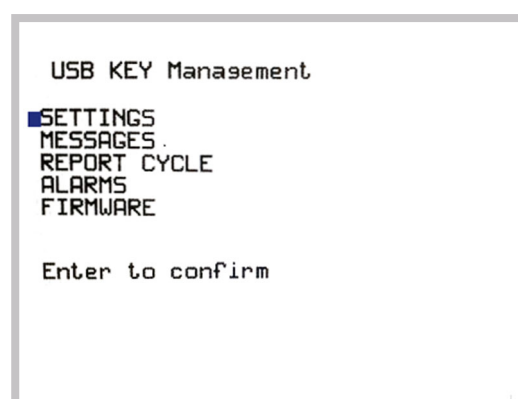
SETTINGS: section to upload/download the program files (calibration)

MESSAGES: section to upload/download the file messages (from the top of the screen)

REPORT CYCLE: section to download the log of machine cycles performed

ALARMS: section to download the list of the most recent alarms

FIRMWARE: section to upload a firmware file on AWD



Press buttons "1" or "2" to scroll down the menu. Press "3" to go to the highlighted menu. Press "RESET" to return to the previous menu.

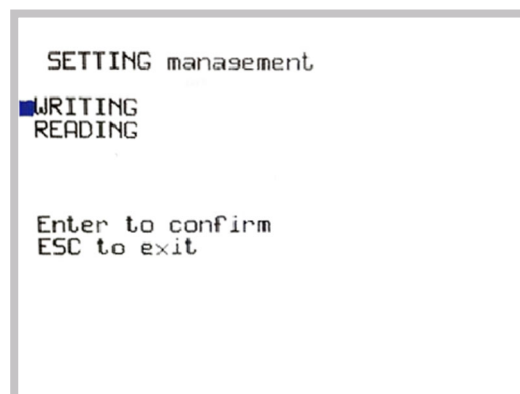
SETTINGS:

After going to the “Settings” menu, the user must choose between:

- WRITING: to download the program file from the machine to the USB flash drive;
- READING: to upload the program file from the USB flash drive to the machine;

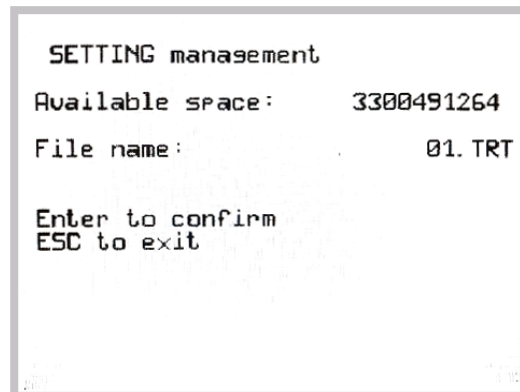
SETTING\WRITING:

After selecting “WRITING”, this display will show this screen, featuring the space available on the USB flash drive along with the name of the file used to save it on the flash drive. Press “1” to save the program file on the flash drive or press “RESET” to go back to the previous screen.



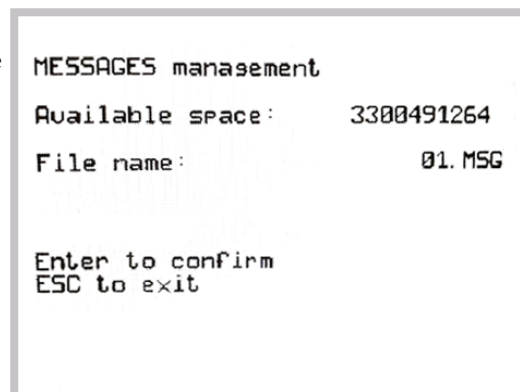
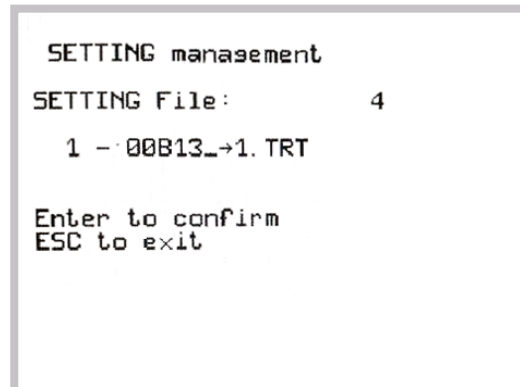
SETTINGS/READING:

After selecting “READING”, the file number in the “CARTTAR” folder will be shown on the display, along with the file name. Press “3” to scroll down and see the name of the other files. Once you have selected a file, press “1” to install the program on the machine. Press “RESET” to return to the previous menu.



MESSAGES/WRITING:

After selecting “WRITING”, the available space on the flash drive will be shown on the display, along with the name of the file used to save it on the flash drive. Press “1” to save the program file on the flash drive or press “RESET” to go back to the previous menu.



MESSAGES/READING:

After selecting "READING", the file number in the "CARTMES" folder will be shown on the display, along with the file name. Press "3" to scroll down and see the name of the other files. Once you have selected a file, press "1" to install the program on the machine. Press "RESET" to return to the previous menu.

MESSAGES management

MESSAGES File: 4

1 - PORTOG→1.MSG

Enter to confirm
ESC to exit

ALARMS:

After selecting the "Alarms" menu, the available space on the flash drive will be shown on the display, along with the name of the file used to save it on the flash drive. Press "1" to save the program file on the flash drive or press "RESET" to go back to the previous menu.

ALARM manasement

Available space: 3300491249

File name: 01.EAL

Enter to confirm
ESC to exit

FIRMWARE:

After selecting the "READING" menu, the file number in the "CARTFWR" folder will be shown on the display, along with the file name. Press "3" to scroll down and see the name of the other files. Once you have selected a file, press "1" to install the program on the machine. Press "RESET" to return to the previous menu.

FIRMWARE management

FIRMWARE File: 2

1 - FW0628→1.MH0

Enter to confirm 2
ESC to exit

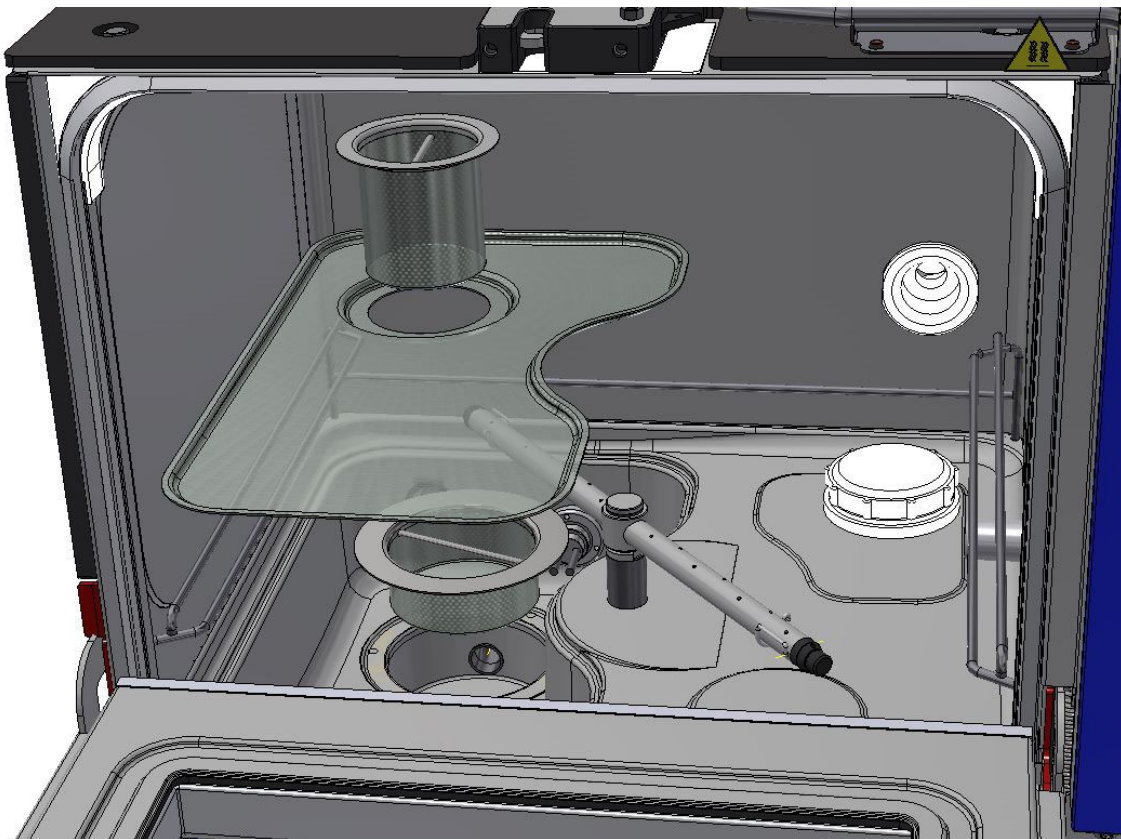
7. MAINTENANCE

7.1 Cleaning the outside of the appliance:

Clean the surface of the device **WITH PRODUCTS SUITABLE FOR STAINLESS STEEL**. Products other than these can irreparably damage non-replaceable parts of the device, making the machine completely unusable. If a suitable cleaning liquid product is not available, use a mixture of water (75%) and alcohol (25%). Cleaning should be done with a lint free cloth (that does not scratch), moistened with a suitable liquid. **DO NOT SOAK THE CLOTH** to prevent any excess liquid from penetrating into electrical areas dangerous for the operator. Clean the keyboard and the display with a mixture of water and alcohol or mild detergents. The washing tank is automatically cleaned. If required, in order to clean the washing chamber more thoroughly, run a rinse cycle without any instruments inside.

7.2 Cleaning the filters inside the tank:

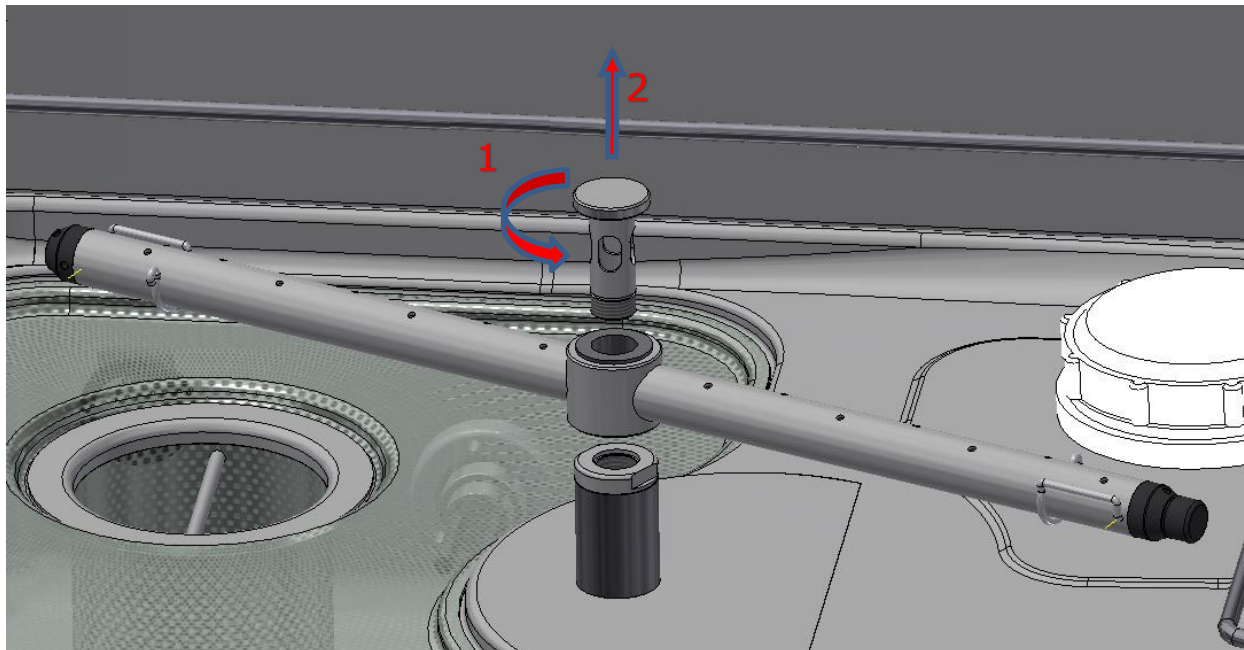
Clean the filters on the bottom of the tank **AT LEAST ONCE A WEEK** to prevent the drain from clogging, thus ensuring total machine efficiency. Use the personal protective equipment (PPE - gloves) to take the two filters from the knob and remove the dirt trapped inside.



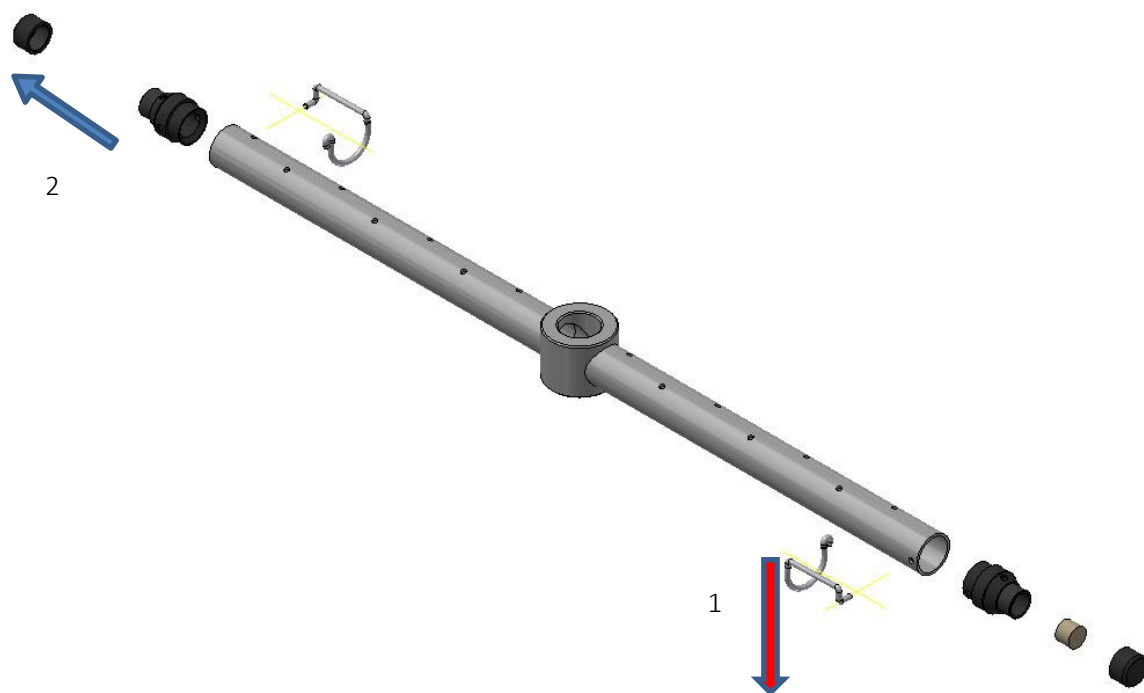
7.3 Washing the spray arms:

Periodically check that the holes of the spray arms are not clogged to prevent compromising washing. The check is visual. In addition, make sure that the spray arm is not blocked and is free to rotate easily. If the machine is equipped with the "spray arms monitoring" application (optional), a dedicated alarm will appear if the spray arm is blocked. Proceed as follows to clean the spray arm:

1. Unscrew the bushing (1) on top of the spray arm and pull it upwards (2).



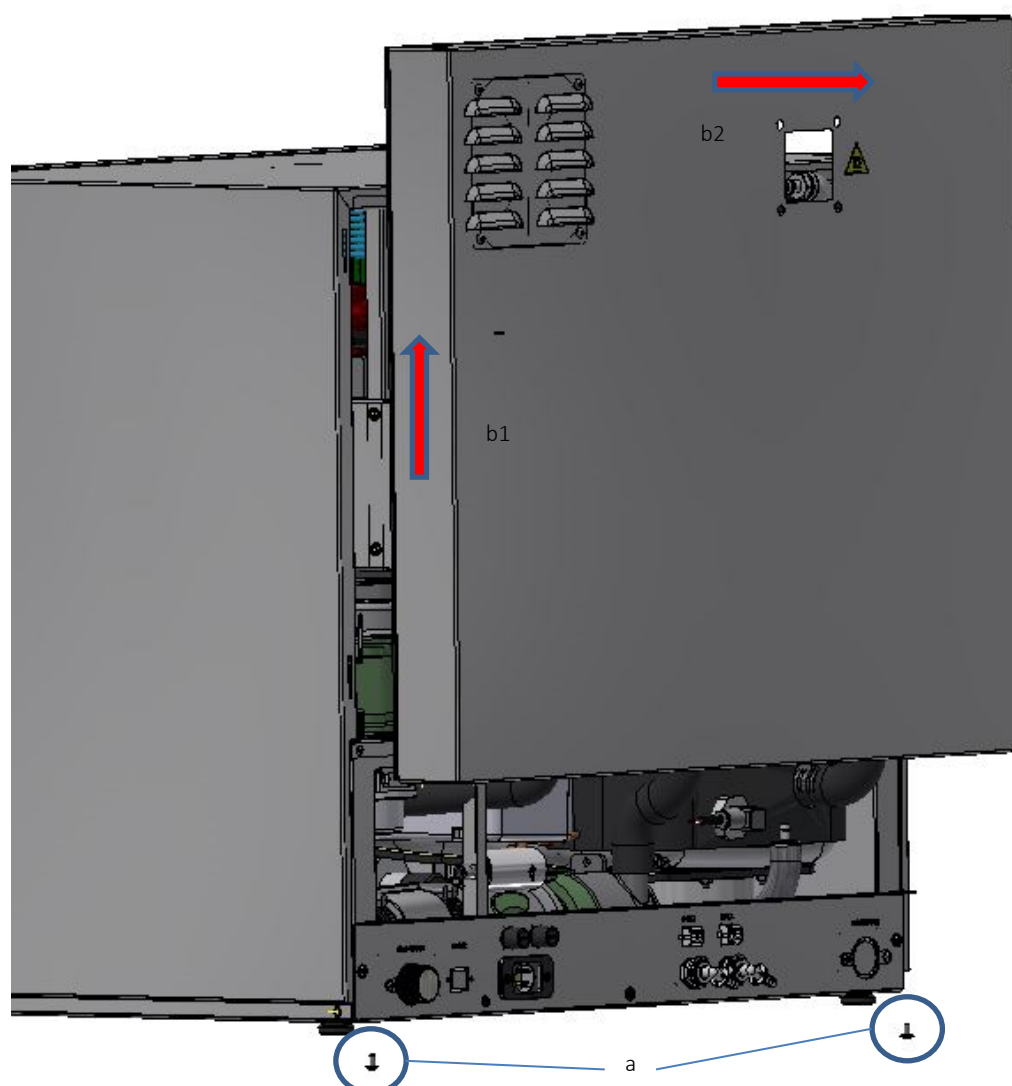
2. Push the spring (1) down and pull the cap outwards (2);



3. Check for dirt inside the spray arm that might prevent the correct flow of water;
4. Clean clogged holes with a water jet;
5. Once the cleaning operations have been completed, place the two caps back on both ends and screw the spray arm back on the trolley.

7.4 Taking down the panels:

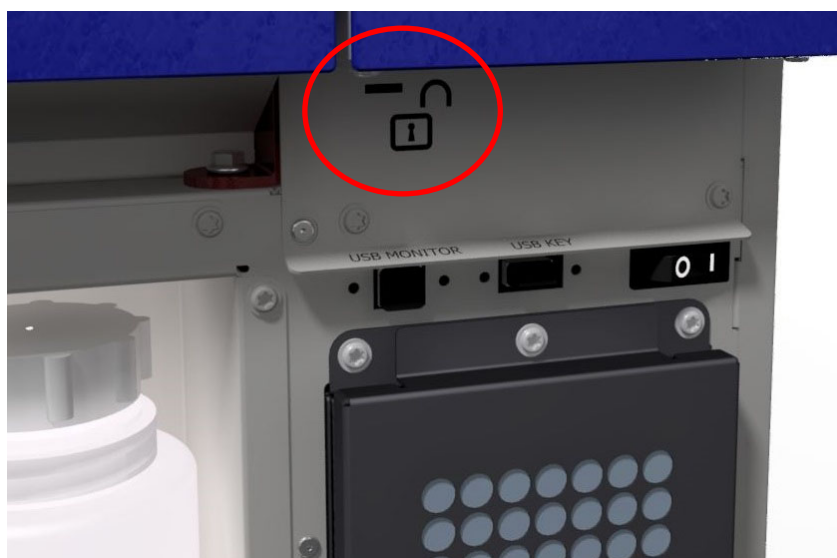
1. Cut off the power supply;
2. Disassemble the two rear screws (a) and remove the back panel by lifting it upwards (b1) and pulling it outwards (b2).



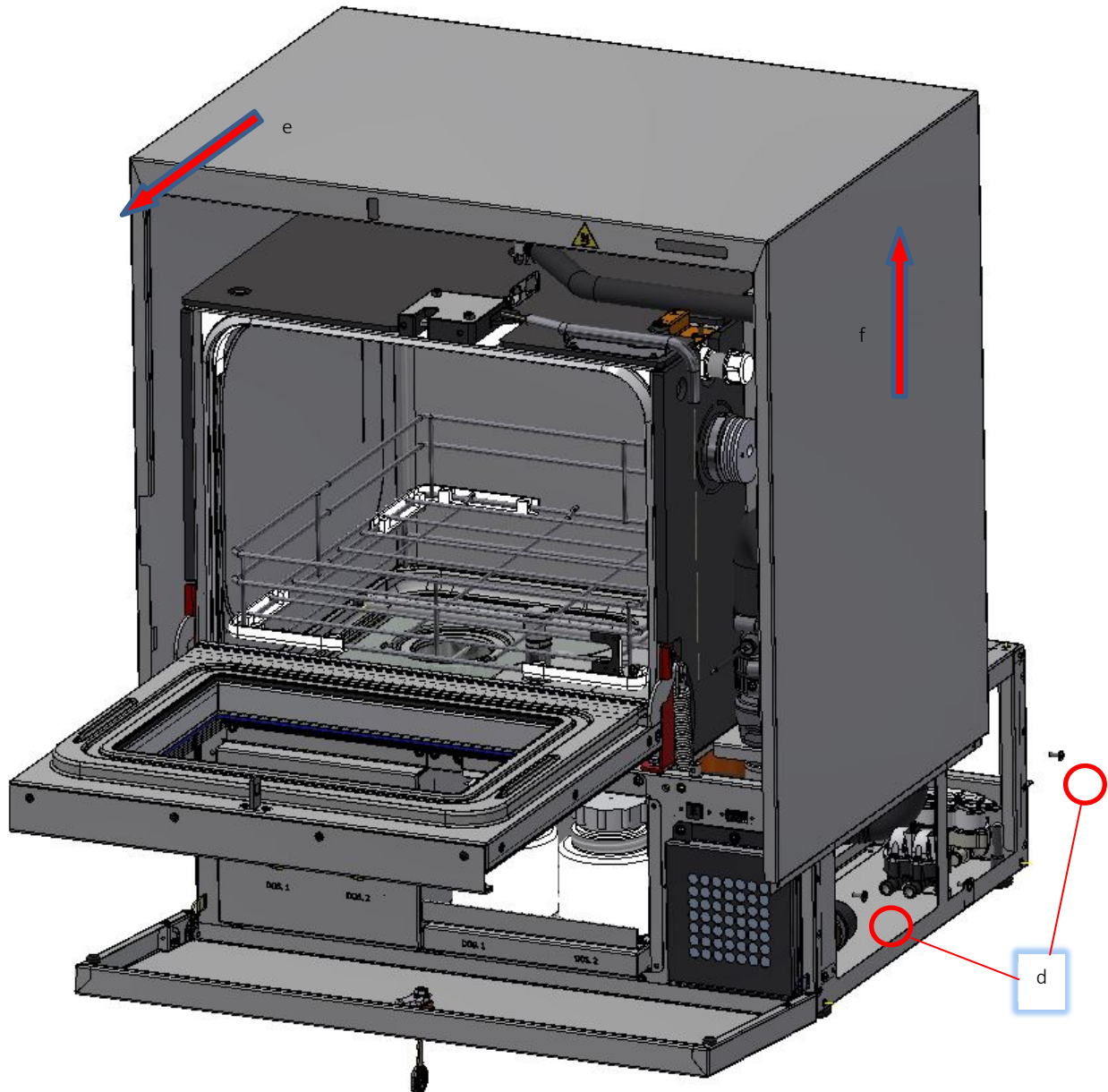
3. Open the lower door and the door
Remove the control panel by inserting the key supplied with the washer



in the appropriate slot



4. Remove the 4 screws located on the sides of the machine (d); move the panel (e) outwards by about 1 cm and lift it (f)



7.5 Periodical maintenance:



In order to avoid malfunctions or blocks, the machine **REQUIRES REGULAR PERIODIC MAINTENANCE**.

(*: ACTIONS REQUIRED ONLY IN CASE OF DEFECTIVE OPERATION OF THE MACHINE DURING TESTS)

Note: maintenance operations must be carried out according to the number of cycles or to the operation time



The machine requires regular periodic maintenance to prevent malfunctions or blockages. **Always refer to the user instructions**



If you are unable to use the machine even after routine/unscheduled maintenance, contact the TECNO-GAZ customer service by describing the fault, and specifying the machine model and serial number.



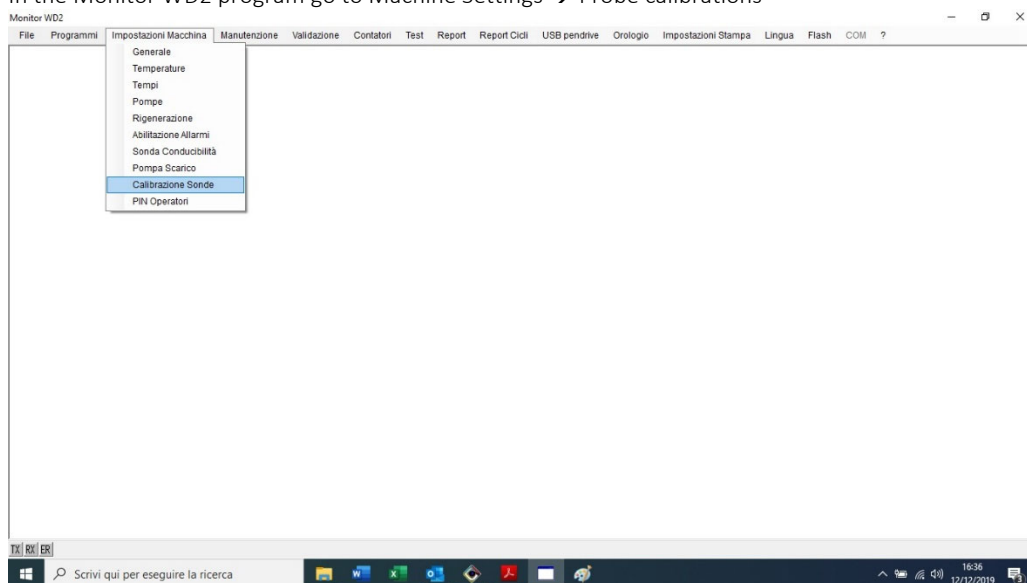
Only use suitable products to remove limescale. Do not use corrosive products that are incompatible with the materials constituting the machine.

PART	EVERY	CYCLES	MONTHS					ACTION	REQUIRED TIME
			6	12	18	24	30		
Tank spray arm	EVERY	2,000	X					Unscrew the spray arm inside the tank, unscrew the plugs on the ends of the spray arms and wash the inside, checking for any impurities that obstruct the holes. (Par. 7.4)	10'
Tank gasket	EVERY	2,000	X					Perform a visual inspection to check the integrity of the tank gasket and make sure there are no water leaks during the cycle.	10'
Power connection on the panel	EVERY	10,000					X	With the machine off from the main switch of the panel, check that the power cable connections are intact and that they do not show oxidation.	5'
Water loading solenoid valves	EVERY	4,000		X				Close the main water valve from the building's water supply. Take down all the water loading solenoid valves on the machine and clean the inside with water to remove impurities.	30'
Detergent suction nozzles	EVERY	4,000		X				Electrical: Check that the float is not blocked and that the INPUT works correctly. Hydraulic: check that there are no bends, clogging and/or leaks in the entire nozzle circuit.	15'
Detergent pipes	EVERY	2,000	X					Check that the pipes are firmly secured to the peristaltic pumps and that there are no leaks. Check the pipes for any clogging or bends	10'
Water filters	EVERY	4,000		X				Close the main water valve from the building's water supply. Take down the filters, open them and clean the inside with water to remove impurities (Par.7.3)	20'
HEPA filters	EVERY	2,000	X					Remove the HEPA filter and check that it is not dirty or clogged.	10'
Tank heating element	EVERY	4,000		X				Check the electrical consumption of the heating elements. Remove the heating elements and perform a visual inspection to check that there are no traces of limescale.	20'
Chemical pumps	EVERY	2,000	X					Check the inside of the pipe for any clogging that may affect its operation.	10'

8. TEMPERATURE TEST

Proceed as follows to carry out a temperature test:

1. Turn off the machine;
2. Remove the control panel by opening the front panel and unscrew the two screws (see 7.5);
3. Turn on the machine;
4. Unscrew the white cap from the inspection hole inside the chamber positioned on the left of the machine;
5. Insert the thermocouple calibrated according to regulations for the temperature test.
6. With the door closed, start the manual mode via Monitor WD2
 - a) Fill the tank with water (cold, demineralised or hot)
 - b) Stop the water once the working level is reached.
 - c) Start the washing pump and the tank heating element.
 - d) Wait for the tank temperature to reach a value above 90.5°C.
 - e) Turn off the heating element and leave the washing pump on.
 - f) In the Monitor WD2 program go to Machine Settings → Probe calibrations



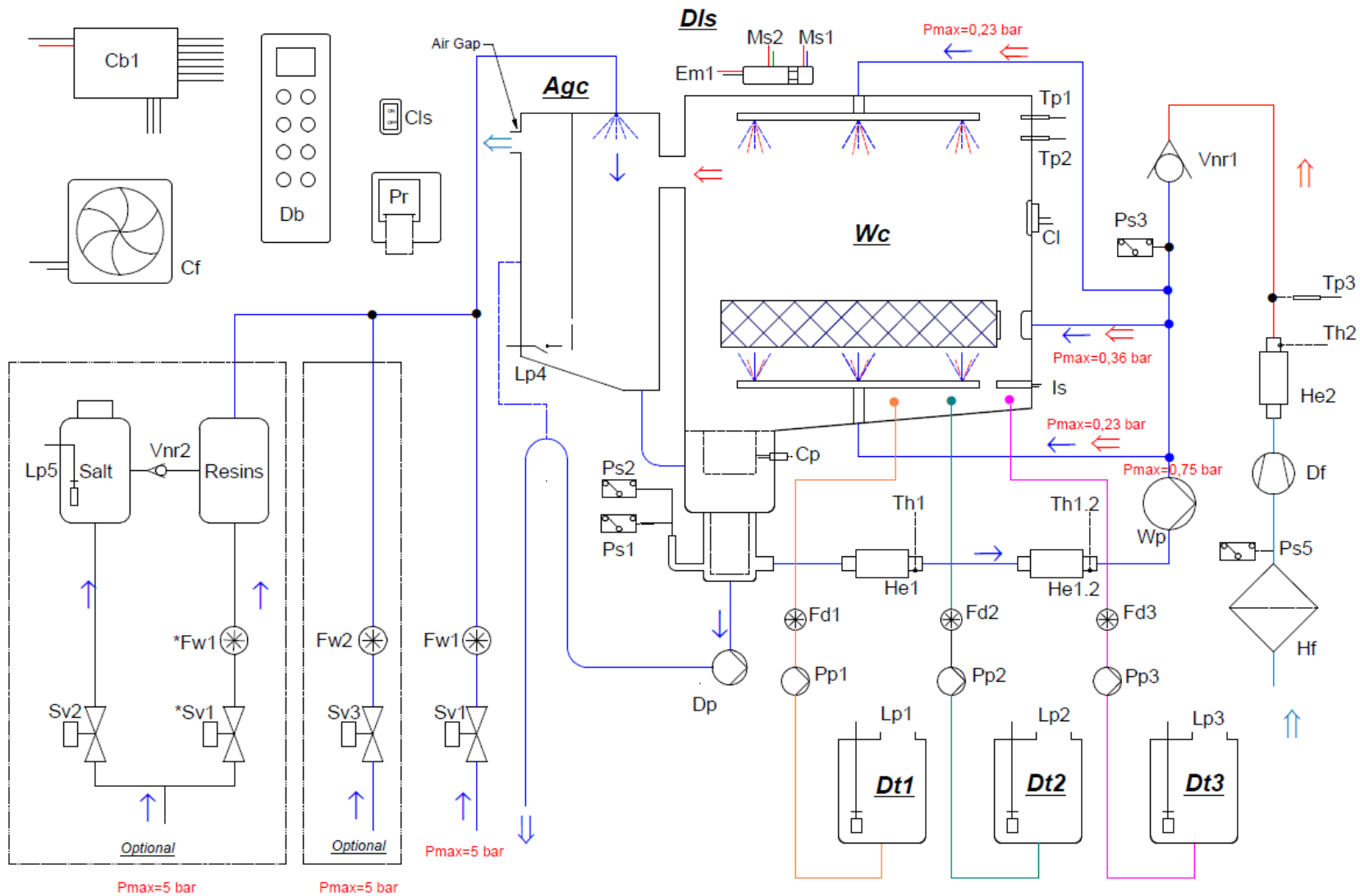
- g) After about 30 sec, enter the value read by the thermocouple in the empty box (a) by subtracting 1.5°C and press SET.

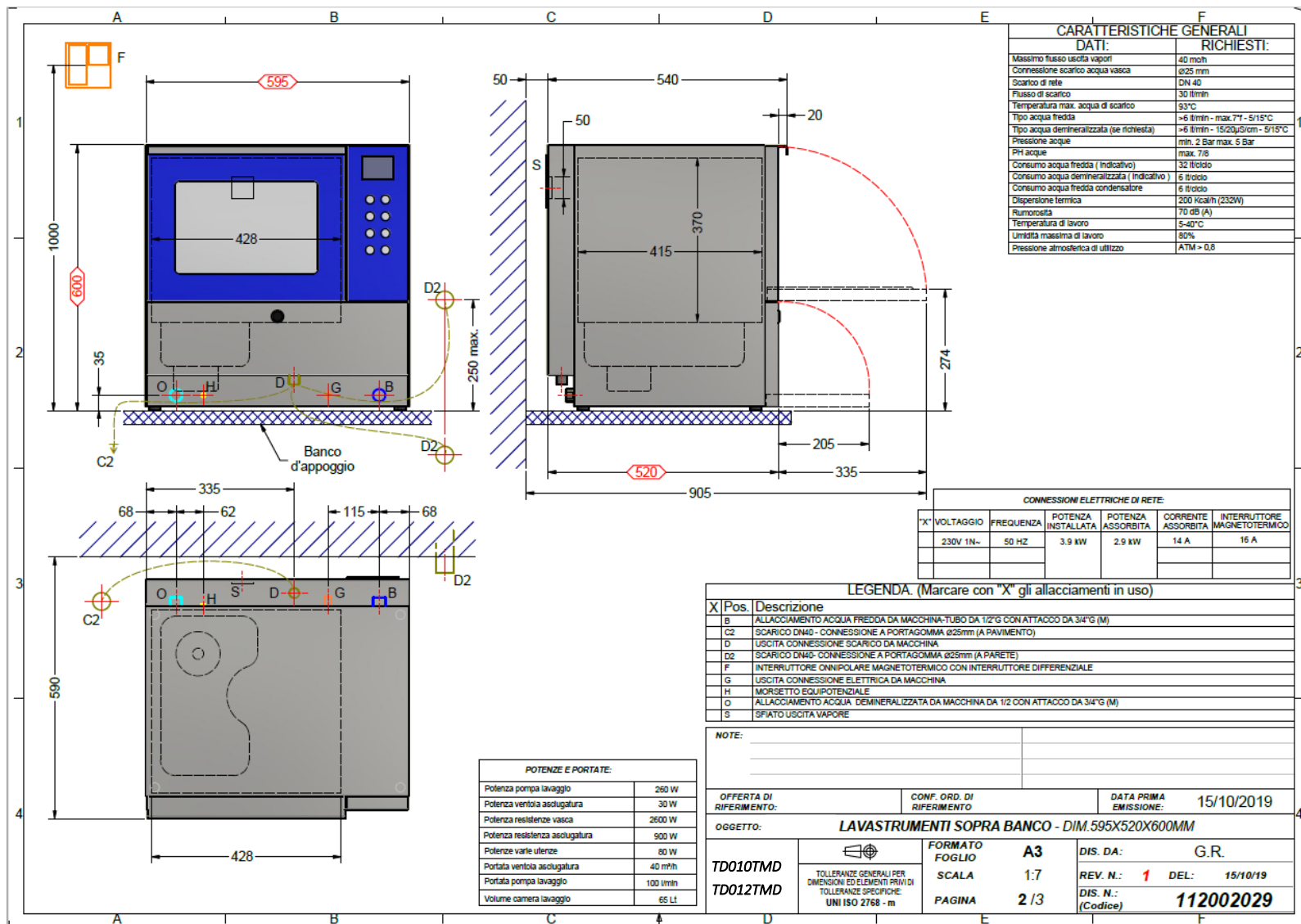


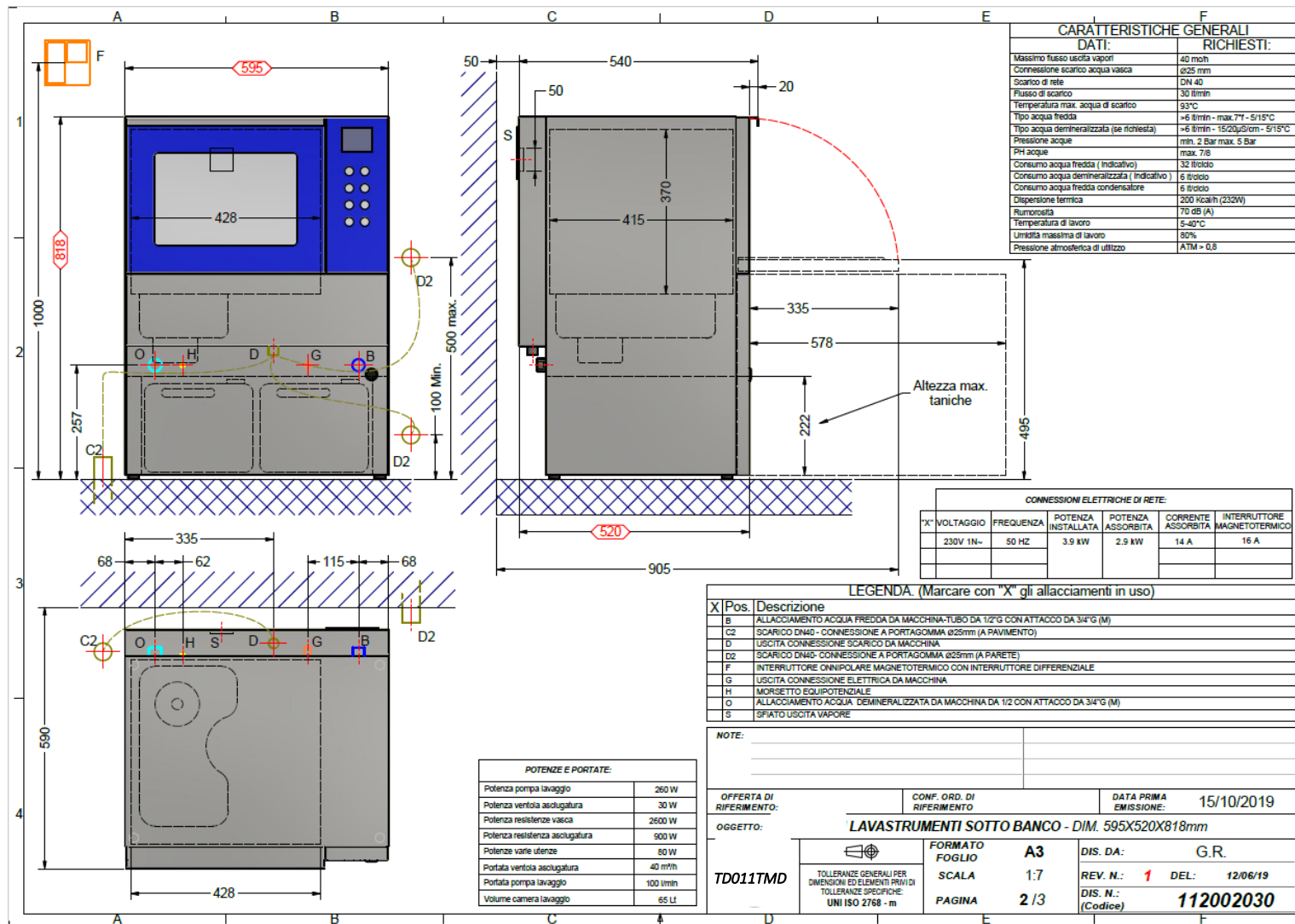
a

7. Check that the values of probes in tank 1 and tank 2 are the same with a difference of 0.5°C;
8. At the end of the test, remove the thermocouple from the inspection hole and screw the valve back on.
9. Place back the control panel of the machine;

DIAGRAMS







Drawing Table translations:

min	min
max	max
Banco d'appoggio	Support counter
CARATTERISTICHE GENERALI	GENERAL CHARACTERISTICS
Massimo flusso uscita vapori	Maximum vapour outlet flow
Connessione scarco acqua vasca	Tank water drain connection
Scarico di rete	Mains drain
Flusso di scarico	Drain flow
Temperatura max. acqua di scarico	Max drain water temperature
Tipo acqua fredda	Type of cold water
Tipo acqua demineralizzata (se richiesta)	Type of demineralised water (if required)
Pressione acqua	Water pressure
PH acque	Water pH
lt/ciclo	L/cycle
Consumo acqua fredda (indicativo)	Cold water consumption (approximately)
Consumo acqua demineralizzata (indicativo)	Demineralised water consumption (approximately)
Consumo acqua fredda condensatore	Condenser cold water consumption
Dispersione termica	Heat loss
Rumorosità	Noise
Temperatura di lavoro	Operating temperature
Umidità massima di lavoro	Maximum working humidity
Pressione atmosferica di utilizzo	Use atmospheric pressure
POTENZE E PORTATE:	POWER VALUES AND FLOWRATES:
Potenza pompa lavaggio	Washing pump power
Potenza ventola asciugatura	Drying fan power
Potenza resistenze vasca	Tank heating elements power
Potenza resistenza asciugatura	Drying heating element power
Potenza varie utenze	Power of various utilities
Portata ventola asciugatura	Drying fan flowrate
Portata pompa lavaggio	Washing pump flowrate
Volume camera lavaggio	Washing chamber volume
CONNESSIONI ELETTRICHE DI RETE	MAINS ELECTRICAL CONNECTIONS
VOLTAGGIO	VOLTAGE
FREQUENZA	FREQUENCY
POTENZA INSTALLATA	INSTALLED POWER
POTENZA ASSORBITA	ABSORBED POWER
CORRENTE ASSORBITA	ABSORBED CURRENT
INTERRUTTORE MAGNETOTERMICO	CIRCUIT BREAKER
LEGENDA. (Marcare con "X" gli allacciamenti in uso)	KEY. (Mark connections used with an "X")
Pos.	Pos.

Descrizione	Description
ALLACCIAMENTO ACQUA FREDDA DA MACCHINA-TUBO DA ½"G CON ATTACCO DA 3/4 (M)	COLD WATER CONNECTION FROM MACHINE- ½"G PIPE WITH 3/4 COUPLING (M)
SCARICO DN40 - CONNESSIONE A PORTAGOMMA Ø25mm (A PAVIMENTO)	DN40 DRAIN - HOSE-END FITTING CONNECTIONS Ø25mm (ON FLOOR)
USCITA CONNESSIONE SCARICO DA MACCHINA	DRAIN CONNECTION OUTLET FROM MACHINE
SCARICO DN40- CONNESSIONE A PORTAGOMMA Ø25mm (A PARETE)	DN40 DRAIN - HOSE-END FITTING CONNECTIONS Ø25mm (ON WALL)
INTERRUTTORE ONNIPOLARE MAGNETOTERMICO CON INTERRUTTORE DIFFERENZIALE	OMNIPOLAR CIRCUIT BREAKER WITH RESIDUAL CURRENT DEVICE
USCITA CONNESSIONE ELETTRICA DA MACCHINA	ELECTRICAL CONNECTION OUTLET FROM MACHINE
MORSETTO EQUIPOTENZIALE	EQUIPOTENTIAL TERMINAL
ALLACCIAVENTO ACQUA DEMINERALIZATA DA MACCHINA DA 1/2 CON ATTACCO DA ¾"-G (M)	1/2 DEMINERALISED WATER CONNECTION FROM MACHINE WITH ¾"-G (M) CONNECTION
SFIATO USCITA VAPORE	VAPOUR VENT