ISTOBAL

1 BAY COMPACT JET WASH

MOD. 4CA2000

ISTOBAL

ORIGINAL MANUAL

GUÍA DE USUARIO PARA LA UTILIZACIÓN DEL CENTRO DE LAVADO Y SU MANTENIMIENTO

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INDEX

PRESENTATION

The objective of this guide is to familiarise the users and supervisors of facilities with the basic operating features of the machine, the maintenance requirements and the conditions required to be able to operate and interact with the jet wash with maximum safety. Thus, the aforementioned personnel should read this guide in its entirety before performing any action on the jet wash.

If you have any doubts whatsoever, please contact the representative for your zone or ISTOBAL directly via istobal@istobal.com.

INFORMATION

» ISTOBAL reserves the right to make the modifications it considers opportune without prior notice, with no obligation to communicate such modifications and without thereby giving rise to the possibility of claims on the part of users whose facilities contain earlier versions to this edition.

» Read these instructions carefully and keep them in a safe place for future reference.

This user and maintenance guide is aimed at:

» **User.** Understood to mean the person who owns and runs the facility for business purposes.

» **Facility and/or maintenance supervisor**. The person who works directly with the equipment and/or performs periodic maintenance.

» **Repair and/or maintenance engineer.** A qualified person who performs technical interventions which require specialised labour.

» **Assembly and disassembly engineer.** A qualified person who assembles and disassembles the wash equipment.

Symbols used in the user guide:

INFORMATION	Contains important information.
WARNING	Failure to comply with the indications may lead to material damage.
DANGER	Failure to comply with the indications may lead to serious harm to persons.
DANGER	Danger of electric shocks.

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Terms used in the user guide:

»   Consumables: includes products which may be replaced periodically.

»   Chemical products: Consumables used in washing and drying the vehicle and which are applied by the machine via a dosing pump.

»   Cleaning products for the machine: Consumables used to clean fairings, car bodies, panels, etc.

»   Maintenance products: Consumables used to lubricate the different parts of the machine.

»   Spare: Part designed to replace another equivalent part on the jet wash.

⚠ **DANGER**

»   Any repair or action not described in this guide and not designed to be done by facility or maintenance supervisors shall of necessity be performed solely by specialist technical engineers trained by ISTOBAL.

»   Assembly, disassembly or a change in the location of the jet wash shall be performed solely by specialist technical engineers trained by ISTOBAL.

USING THE JET WASH

Intended use of the jet wash

This jet wash is designed exclusively for washing the outside of vehicles, as indicated in this guide. Any other use of the dryer will exempt the manufacturer of any responsibility.

Unintended use of the jet wash

The jet wash is not designed to wash persons or animals. Nor is it designed to wash engines or vehicle interiors.

The jet wash is not designed or built to be installed in potentially explosive environments.

AVAILABLE DOCUMENTATION

INFORMATION

» Prior to the first start-up of the jet wash, all personnel of the organisation, users and supervisors, shall be given training by the Official Technical Service, which will identify and clarify the obligations and risks involved in running the car wash facility.

» The equipment is supplied with a set of documents which together make up the Instruction Manual. The documents are:

» Civil work and installation book Ref. 35ZJ000.

» User guide Ref. 35ZH800.

» Quick start guide Ref. 35ZH900.

» Electrical diagrams and components Ref. 32TM100.

» Start-up checks Ref. 32UZ700.

» CE Certificate.

SAFETY RULES

APPLICABLE RULES OF A GENERAL NATURE

⚠ DANGER

> » Before any repair or maintenance work on the jet wash or any of its optional extras, disconnect the main power switch or the corresponding device, and work without current or compressed air.
>
> » Where your jet wash has a lance with no trigger, take extreme care when activating the program because the lance will start shooting water automatically after the countdown.
>
> » Removal of safety devices and unauthorized modification of the equipment will automatically render the guarantee null and absolve the manufacturer of any responsibility.
>
> » Take special care to avoid slipping when the bay is wet. The wash bay surface shall be non-slip.
>
> » Should the user, facility or maintenance supervisor or any person belonging to the organisation observe any situation of danger or potential danger either to persons or to the jet wash, they shall stop the machine immediately. The jet wash should work properly as long as the ambient temperature stays between 1 and 45ºC.
>
> » Do not under any circumstances point the lance or pistol directly at anyone, even when the machine is out of service, has no credits, etc.
>
> » Do not insert credits if the lance or pistol is not in its holder.

⚠ DANGER

> » Do not under any circumstances open an electricity box not provided with a power switch.

⚠ WARNING

> » Install the unit in a suitably ventilated area, and protected against freezing.
>
> » The main power must always be ON. Switch off only when there is a fault or for maintenance.
>
> » Tyres can be damaged if the distance from the nozzle to the tyre is under 20 centimetres; or if any one part of the tyre is subjected to a high pressure spray for more than 5 seconds; or when spraying directly where the rim meets the tyre.
>
> » Use of rotating and zero angle nozzles is not recommended.

ADDITIONAL SAFETY STANDARDS RELATIVE TO THE LAWS OF EACH COUNTRY

ℹ INFORMATION

» The safety standards described here shall be further adapted to meet the specific legal requirements of each country where the equipment is installed.

⚠ WARNING

» The wash facility must have the pre-treatment infrastructure required by standard UNE EN 858.1 and 858.2, as described in the civil works book ref.

» If there is a direct connection to the public drinking water supply, the laws relating to prevention of water returned to water networks, public or private, must be observed.

» Average use of the electricity supply must not vary ±10% from the nominal voltage, according to IEC standard 38, equivalent to UNE 21301.

» The legal regulations in force in each country shall be complied with in regard to both occupational safety and health, and environmental standards.

» The distributor shall ensure compliance with the safety regulations specific to countries where the equipment is installed and which are not covered by European Union regulations.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

The provision of PPE shall be the responsibility of the user, who shall ensure compliance in the use of such equipment both by the wash and maintenance supervisors and in general by personnel involved in running the business.

⚠ DANGER

» Always make proper use of safety footwear and fluorescent jackets while working on the facility. Always make use of chemical safety gloves and splash goggles when refilling chemical products or when machine cleaning or maintenance products are used.

» Where the jet wash operates in manual mode and/or under the close control of a maintenance supervisor, this person shall wear, in addition to the Personal Protective Equipment mentioned above, hearing protection, whenever the person is near the facility in question.

ENVIRONMENTAL SAFETY STANDARDS

> **INFORMATION**
>
> » The safety standards described here shall be further adapted to meet the specific legal requirements of each country where the equipment is installed.

> ⚠ **WARNING**
>
> » Residue generated by vehicle washing, and stored in settling and separating tanks, such as sludge, light hydrocarbons, etc., is to be treated as dangerous waste. This means that waste must be treated by a duly accredited waste management organisation.
>
> » All containers which have previously contained chemical products or products for cleaning or maintenance of the machine must be properly disposed of. Reuse of the containers is forbidden.
>
> » All parts resulting from the maintenance and repair of the jet wash shall be treated as dangerous waste.

GENERAL DESCRIPTION 4CA20

ISTOBAL Jet Wash is suitable for one-bay vehicle washing facilities with hot water.

The power supply of the jet wash should be single phase. The unit is supplied in an AISI-304 standard stainless steel cabinet. It has piezoelectric buttons for program selection and a display to indicate the time purchased and time remaining.
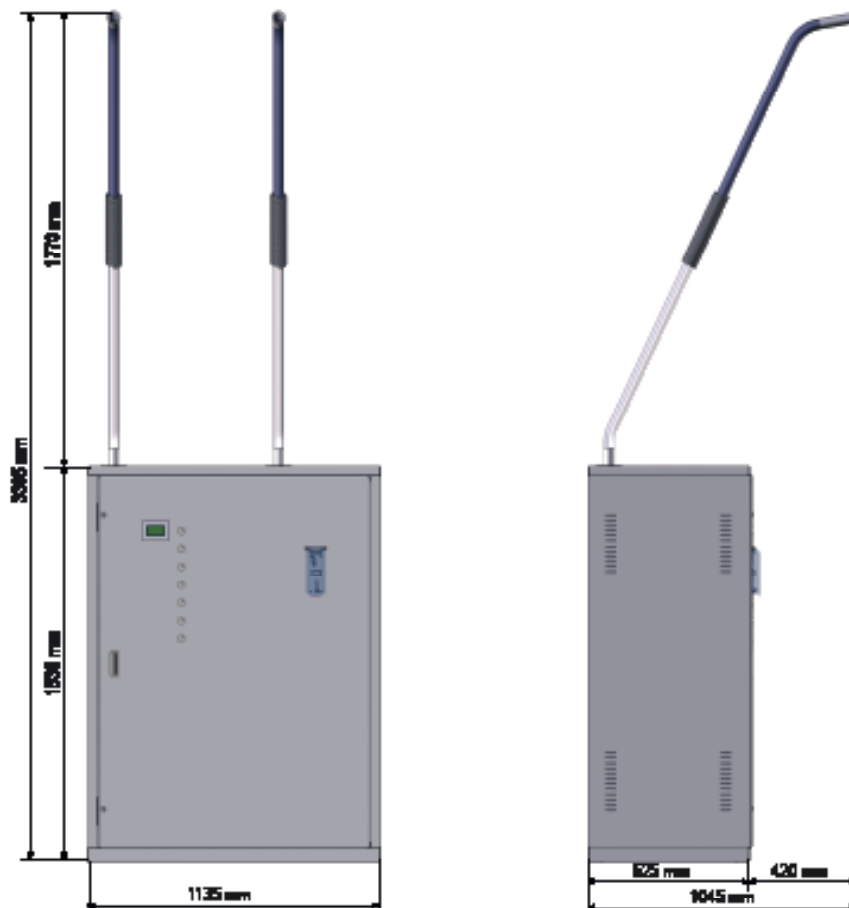
LOCATION

The jet wash is to be installed on a base or wash bay built according to the recommendations in the Civil Works plans ref. 35ZJ000. There must be a water supply with a stop valve (a 150 micron filter is recommended), a power supply, and a compressed air supply appropriate to the optional extras installed, as described in the civil works book.

The jet wash unit should be secured to the floor using the anchoring bolts supplied.

UNIT IDENTIFICATION

The data plate of the unit is situated on the door of the electrical cabinet.

DIMENSIONS

LOCATION OF MAIN ELEMENTS
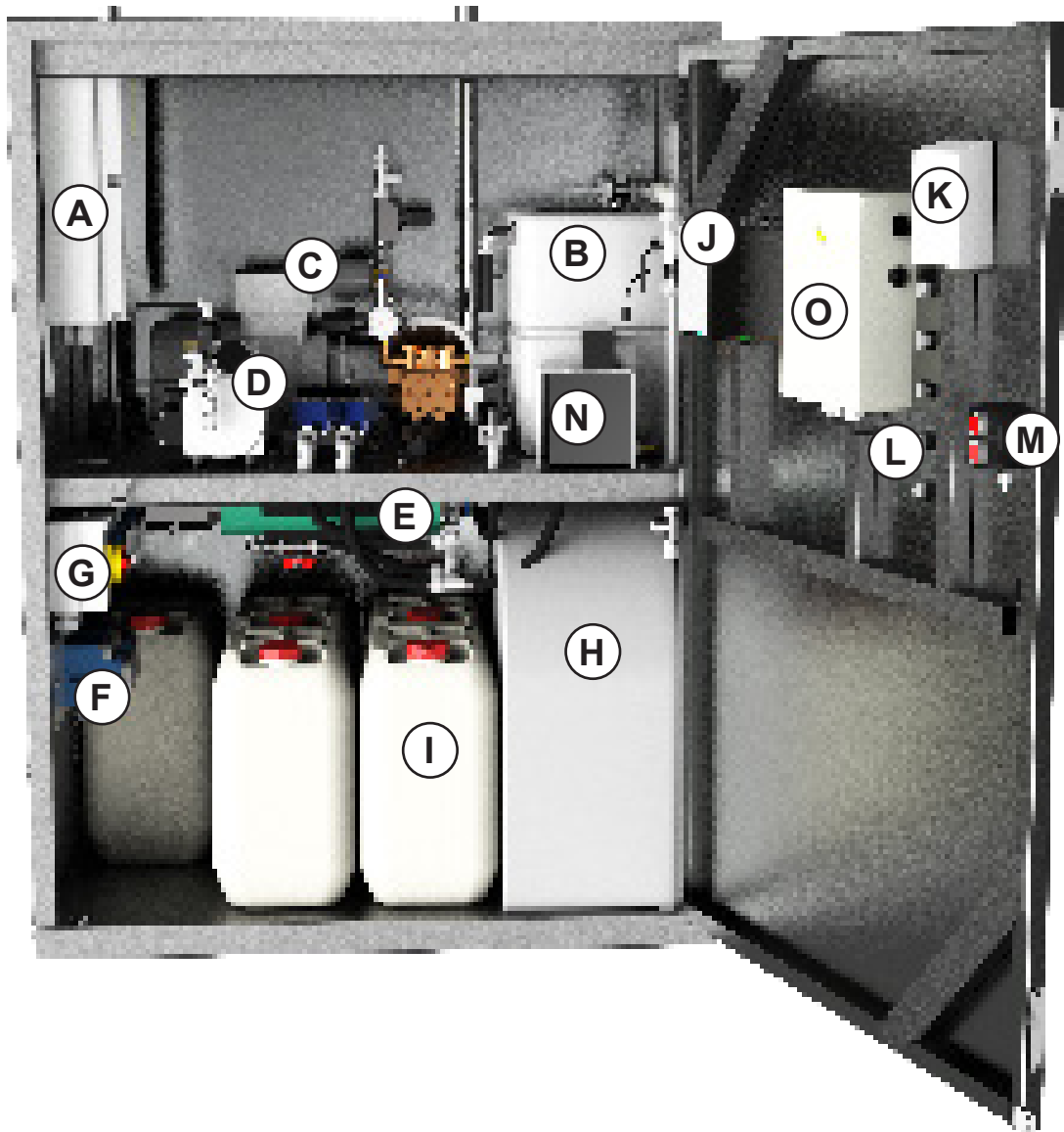
A	Control panel
B	Incoming water tank
C	Water pump
D	Foam maker pump or compressor
E	Hot water generator*
F	Peristaltic dosing pumps
G	Master switch
H	Water softener (or hot water generator 40L)*
I	Product tanks
J	Coin acceptor
K	Control board display
L	Push buttons
M	Buttons "K" and "P"
N	Cash box
O	Electrical cabinet

*A hot-water generator with a 2.5 L tank or a 40 L generator could be installed instead of the water softener. The water softener and the 40 L hot-water generator are incompatible due to the lack of room.

TECHNICAL SPECIFICATIONS

NOISE CONTROL

The level of sound pressure with equivalent weighing is less than 70 dB.

ELECTRICITY SUPPLY

ELECTRICITY CONSUMPTION		
OPTIONS	**KW.**	**AMPS 230V**
HIGH PRESSURE PUMPS PER BAY	2.2	9.64
	3	13.2
	4	17.1
HOT WATER ELECTRICAL GENERATOR (2.5 L)	4	26
HOT WATER ELECTRICAL GENERATOR (40 L)	6	26
HEATER 60 W	0.06	0.27

CONSUMPTION

CONSUMPTION OF PRODUCT

CONSUMPTION OF PRODUCT		
PRODUCT	**LITRES/HOUR**	**WORKING PRESSURE - DOSING PUMP BAR**
SHAMPOO	2.1	2.5
WAX		

SALT CONSUMPTION

| CONSUMPTION OF SALT														
HARDNESS ºHF	15	20	25	30	35	40	45	50	55	60	65	70	75	80
TREATED WATER (M³) BETWEEN REGENERATIONS	5.6	4.2	3.4	2.8	2.4	2.1	1.9	1.7	1.5	1.4	1.29	1.2	1.1	1.1
CONSUMPTION OF SALT (KG/M³)	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
If daily volume of softened water is 0.5 m³														
Salt consumption per month (kgs)	3.5	4.7	6	7	8.4	8.4	10.5	10.5	10.5	14	14	14	14	14
If daily volume of softened water is 1 m³														
Salt consumption per month (kgs)	7	8.4	10.5	14	14	14	21	21	21	21	21	21	21	21
If daily volume of softened water is 1.5 m³														
Salt consumption per month (kgs)	10.5	14	14	21	21	21	21	21	21	42	42	42	42	42
If daily volume of softened water is 2 m³														
Salt consumption per month (kgs)	14	14	21	21	21	21	42	42	42	42	42	42	42	42

START-UP

CONNECTION
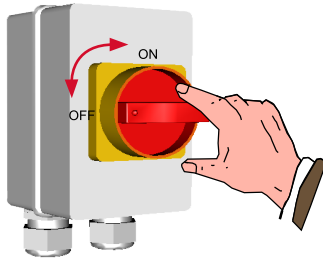
To turn on the machine, set the main switch to ON. The switch is on the door of the electrical cabinet and has a mechanism which makes it necessary to switch off before the door can be opened.

⚠ DANGER

> »   Take extra care when activating the main power switch on the machine.

VEHICLE ENTRY

The vehicle must enter slowly and move forward as centred up as possible in the bay so that boom arms and guns can move correctly around the vehicle.
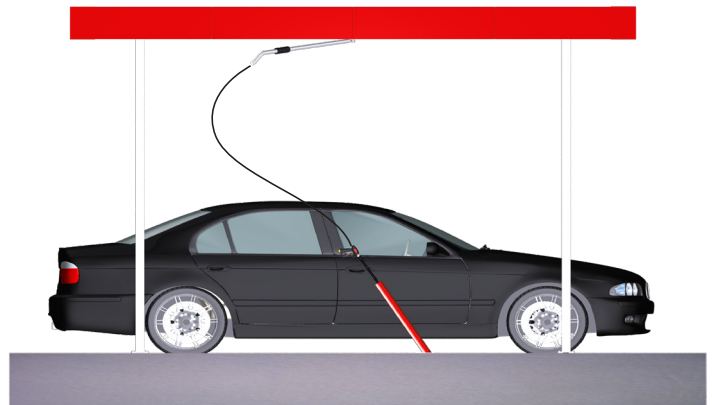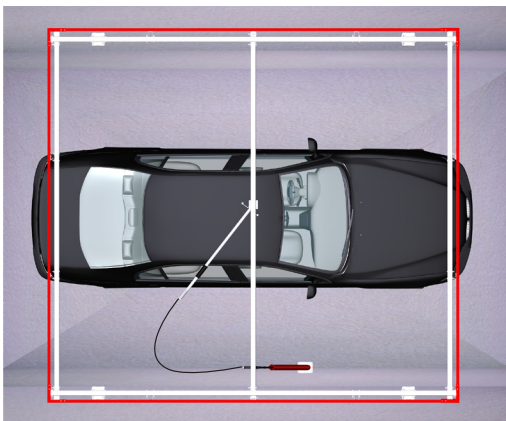
Please observe the following precautions before enabling the wash program:

1) Check that all vehicle doors, windows, sun-roofs and convertible folding roofs are properly closed.

2) Look the vehicle over to make sure there are no parts hanging loose.

3) Before starting the program on the self-service panel, hold the gun or lance with your hands

⚠ DANGER

> »   Take special care to avoid slipping when the bay is wet.
>
> »   During the wash, no persons or animals should stay inside the vehicle.
>
> »   If the facility is not near the staff responsible for running the business, a CCTV system is recommended.

BUY-TIME MODE PAYMENT SYSTEM

In Buy-time mode payment systems, each button corresponds to a wash program. The display shows the time available for the service when either coins or code (Codax system) is inserted.

COIN PAYMENT SYSTEM
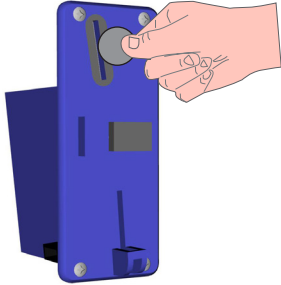
1   INSERT COINS

1) Insert the coins or tokens in the coin acceptor slot. The display shows the amount of time available and the credit entered.

- The system is not designed to return unused coins or tokens. It does however have a device that rejects coins when it detects a fault or a power failure.

- If no program has been activated within 30 seconds, the time available will start counting down and the message "PRESS A PROGRAM NOW" will be displayed.

2   SELECT WASH PROGRAM
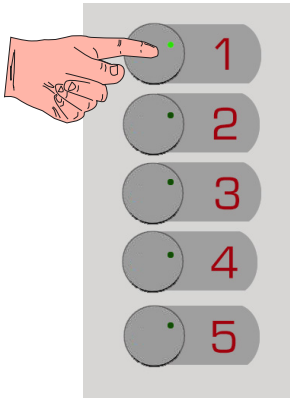
1) Take the gun or lance out of holder.

2) Press the corresponding program number using the program selection buttons; the wash bay will start working.

- During the wash, the display shows the program in progress and the time remaining for the wash.

- If more coins are inserted during the service, the wash time is increased.

3) Change the program by pressing the corresponding program button again.

- The display shows a warning when the time left is 10 seconds.

4) When the wash is finished, leave the gun or the lance in their corresponding holders.

3   STOP WASH

1) To stop the washing process, press STOP once.

- When STOP is pressed, the wash stops but the time continues to count down.

2) To resume the wash, press the button for the program you wish to activate again. The message 'TO CONTINUE, PRESS ANY BUTTON' will be shown on the display.

- The wash will continue until the time remaining runs out.

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NAYAX PAYMENT SYSTEM

The Codax system is payment method which uses codes. To enable the wash program, you must first acquire a code from the wash facility office.
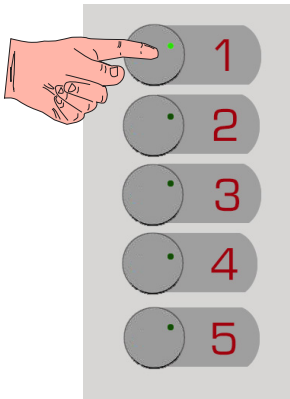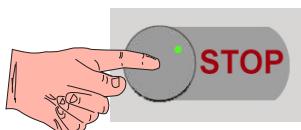
1   ENTER CODE
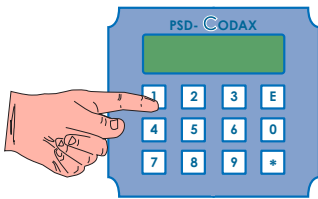
1) The code acquired is then entered using the Codax system number keys.

2) Validate the code with letter "E". The display shows the time available for the wash and the credit entered.

- If no program has been activated within 30 seconds, the time available will start counting down and the message "PRESS A PROGRAM NOW" will be displayed.

2   SELECT WASH PROGRAM

1) Take the gun or lance out of holder.

2) Press the corresponding program number using the program selection buttons; the wash bay will start working.

- During the wash, the display shows the program in progress and the time remaining for the wash.

3) Change the program by pressing the corresponding program button again.

- The display shows a warning when the time left is 10 seconds.

4) When the wash is finished, leave the gun or the lance in their corresponding holders.

3   STOP WASH

1) To stop the washing process, press STOP once.

- When STOP is pressed, the wash stops but the time continues to count down.

2) To resume the wash, press the button for the program you wish to activate again. The message 'TO CONTINUE, PRESS ANY BUTTON' will be shown on the display.

- The wash will continue until the time remaining runs out.

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RECOVERING CREDITS AFTER A POWER CUT

When a power cut occurs on the jet wash while a program is running, the credit available is stored on the control board memory. When power is resumed, two things can happen:

1) The jet wash is still in service. In this case, the credits stored become available again and stay until they are used up.

2) The jet wash is closed. In this case, the customer is given 1.5 minutes to consume the credits stored. If the jet wash is not used during this time, the service is cancelled automatically and the jet wash closes.

WASH PROGRAMS

Pre-set programs for a jet wash facility with Buy-time mode payment systems:

PROGRAM	FUNCTION	PRESSURE	PRODUCT	WATER TYPE	TEMPERAT.	DISTANCE FROM VEHICLE
5 PROGRAMS						
1	HOT SHAMPOO WASH	Low	Shampoo	Mains or softened	40º C	Approx. 5 cm
2	WASH WITH COLD WATER & SHAMPOO	High	Shampoo	Mains	Cold	Approx. 5 cm
3	HOT FOAM WITH BRUSH	Low	Color Fusion Active Foam	Mains or softened	40º C	--
4	RINSE	High	No chemical	Mains or softened	Cold	Approx. 30 cm
5	WAXING	Low	Wax	Mains or softened	40º C	Approx. 30 cm
6 PROGRAMS						
1	RIM CLEANER	Low	Shampoo	Mains	40º C	Approx. 30 cm
2	HOT SHAMPOO WASH	Low	Shampoo	Mains or softened	40º C	Approx. 5 cm
3	WASH WITH COLD WATER & SHAMPOO	High	Shampoo	Mains	Cold	Approx. 5 cm
4	HOT FOAM WITH BRUSH	Low	Color Fusion Active Foam	Mains or softened	40º C	--
5	RINSE	High	No chemical	Mains or softened	Cold	Approx. 30 cm
6	WAXING	Low	Wax	Mains or softened	40º C	Approx. 30 cm

Programs can be modified with IWManager or on a KTP400 touch-screen.

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MULTIPROGRAM MODE PAYMENT SYSTEM

With *Buy time* payment systems, the buttons are associated to pre-set program sequences, each sequence consisting of a number of programs. The display shows the amount of money when either coins or code (Codax system) is inserted.
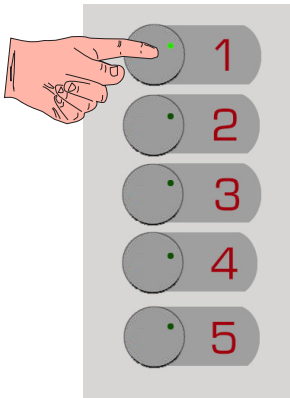
COIN PAYMENT SYSTEM

1   INSERT COINS
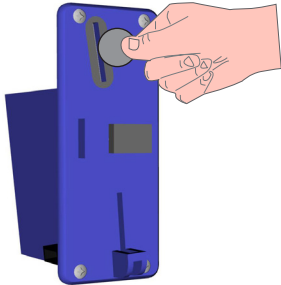
1) Keep inserting coins in the coin acceptor slot until the amount required for the desired wash sequence is shown. The display will show the amount of money inserted.

- The system is not designed to return unused coins or tokens. It does however have a device that rejects coins when it detects a fault or a power failure.

2   SELECT WASH PROGRAM

1) Take the gun or lance out of holder.

2) Press the corresponding program sequence using the program selection buttons; the wash bay will start working.

- During the wash, the display shows the program in progress and the time remaining for each program in the sequence.

- If the lance or the gun have to be changed for a brush or vice versa, the display will also indicate it.

3) When the wash is finished, leave the gun or the lance in their corresponding holders.

3   STOP WASH

1) To stop the washing process, press STOP once.

- When STOP is pressed, the wash stops but the time continues to count down.

2) To resume the wash, press STOP again. The message 'TO CONTINUE, PRESS THE STOP BUTTON' will be shown on the display.

- The wash will continue in the corresponding phase depending on the time elapsed.

NAYAX PAYMENT SYSTEM

The Codax system is payment method which uses codes. To activate a wash sequence, first acquire a code from the car-wash office.
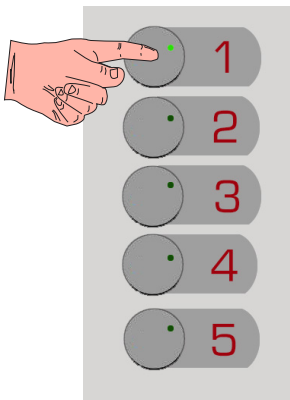
1   ENTER CODE
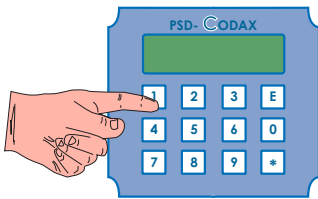
1) The code acquired is then entered using the Codax system number keys.

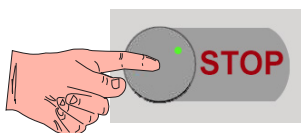2) Validate the code by pressing "E"; the jet wash automatically starts the selected wash sequence.

2   SELECT WASH SEQUENCE

1) Take the gun or lance out of holder.

2) Press the corresponding program sequence using the program selection buttons; the wash bay will start working.

   • During the wash, the display shows the program in progress and the time remaining for each program in the sequence.

   • If the lance or the gun have to be changed for a brush or vice versa, the display will also indicate it.

3) When the wash is finished, leave the gun or the lance in their corresponding holders.

3   STOP WASH

1) To stop the washing process, press STOP once.

   • When STOP is pressed, the wash stops but the time continues to count down.

2) To resume the wash, press STOP again. The message 'TO CONTINUE, PRESS THE STOP BUTTON' will be shown on the display.

   • The wash will continue in the corresponding phase depending on the time elapsed.

RECOVERING CREDITS AFTER A POWER CUT

When a power cut occurs on the jet wash while a program is running, the credits available are lost and there is no way to recover them.

WASH PROGRAMS

The jet wash has six pre-set wash sequences . These can all be modified using the IWManager program. Touch-screen KTP400 does not allow you to configure the wash sequences in Multiprogram mode.

Pre-set program sequences:

SEQUENCE	PROGRAMS	DEFINITION
1	P2(180 s) + P5(240 s)	180 seconds of shampoo wash with cold water at high pressure + 240 seconds of rinsing with cold water at high pressure.
2	P1(180 s) + P5(240 s)	180 seconds of shampoo wash with hot water at high pressure + 240 seconds of rinsing with cold water at high pressure.
3	P3 (240 s) + P5(240 s)	240 seconds of hot foam with brush + 240 seconds of rinsing with cold water at high pressure.
4	P2 (180 s) + P4(240 s) + P5(240s)	180 seconds of shampoo wash with cold water at high pressure + 240 seconds of cold foam with brush + 240 seconds of rinsing with cold water at high pressure.
5	P2 (180 s) + P4(240 s) + P5(240s) + P6(180 s)	180 seconds of shampoo wash with cold water at high pressure + 240 seconds of cold foam with brush + 240 seconds of rinsing with cold water at high pressure + 180 seconds of waxing with hot water at low pressure.
6	P1 (180 s) + P4(240 s) + P5(240s) + P6(180 s)	180 seconds of shampoo wash with hot water at low pressure + 240 seconds of cold foam with brush + 240 seconds of rinsing with cold water at high pressure + 180 seconds of waxing with hot water at low pressure.

IWMANAGER (OPTIONAL)

This allows you to control, monitor and configure the units connected to a CAN network using the computer program supplied.

A computer is needed for this with the following minimum requirements:

- PC Pentium 800, 64 Mb or higher.

- Operating System: Windows 98 or higher.

- Screen resolution 800x600.

For more information, consult User Guide Ref. 32VJ500A.

UNDERSTANDING THE BUTTONS

Read. Obtain the program data	Write. Save the data entered	Save. Create a CSV file with the data recorded	Delete. Erase the selected entry	Back. Return to the previous screen

CONSULTING THE COUNTERS

The IWManager system offers partial and total counters, tokens and tickets. Partial counters cannot be erased in this program.
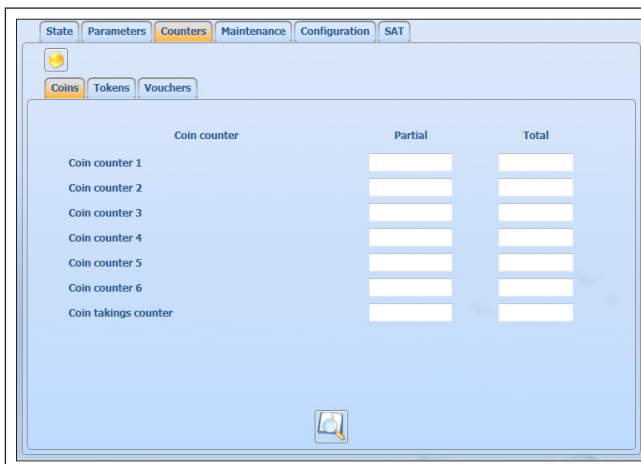
On the different tabs, you can consult the number of coins, tokens and tickets inserted as well as the total takings at the end of each list.
The amounts shown in each numbered coin counter field are for the coins configured in the section CONFIGURATION-MONEY.
Press to save a CSV file with the takings data shown.

ERRORS
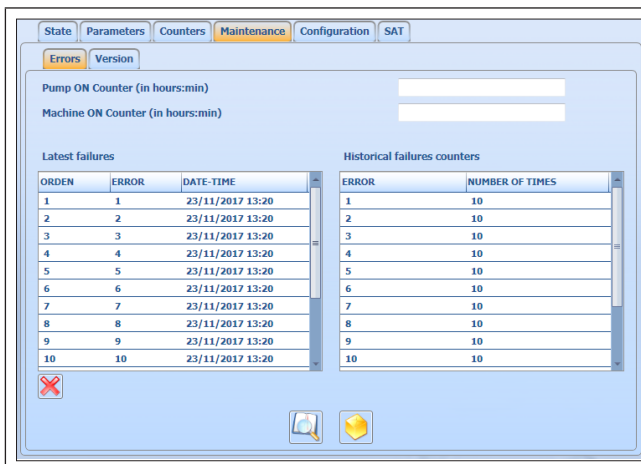
The errors screen shows two lists: one on the left with the last fifteen errors produced on the facility, and another on the right with a counter for the number of times each error has occurred. Also, above the lists, there are two counters: one for the amount of hours the pump has been in operation, and the other for the amount of hours the machine has been in operation.

Press to save a CSV file with the data shown.

CONFIGURATION

This screen is for configuring the parameters for money, control, program, sequence, timers and fluids.

MONEY

On the money screen you can assign the monetary value of each type of coin. Up to 6 different types of coin can be configured.
You can also configure the duration of the tickets and the minimum time in intervals of 10 centimes.
Press ✏ to save the data entered.

CONTROL

The control screen is for configuring the type of bay activation, the type of price rate activation and the bay opening times.
The types of bay activation are:
Permanently out of service.
Always in service.
As scheduled. This type obeys the schedules indicated on the timetable advertised.
The types of price rate activation are:
Normal rate: The washes have the prices normally used.
Manual mode: works without credits
In the example shown here, the jet wash will be in service as scheduled and in this case, the timetable is Monday to Sunday from 8:00 a 21:00. The 'lighting' parameter indicates when the jet wash will be illuminated.
Press ✏ to save the data entered.

PROGRAM CONFIGURATION

This screen is for configuring the elements involved in each program. First, select the program to be configured and then the functions which will be enabled on it. On the drop-down menu near the bottom, you can select the name of the program which will appear on the jet wash display.
The example shows Program 1, which will be hot water with high pressure and shampoo.
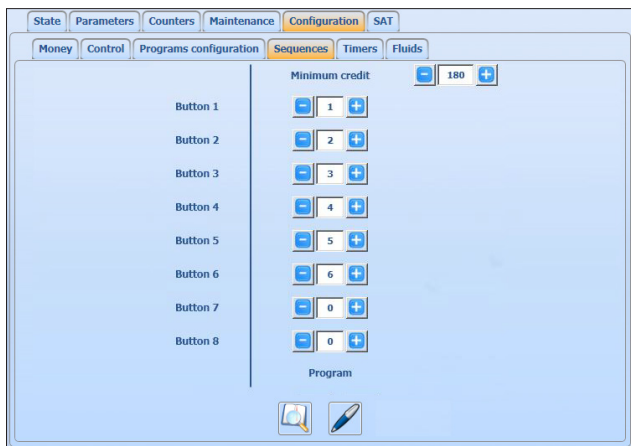Press ✏ to save the data entered.

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SEQUENCES (MULTI PROGRAMME)

This screen allows you to configure the wash sequences. Up to eight different sequences can be configured and shown on three screens. Press **4-6** to move on to the next group of sequences.
The first field is for configuring the price of the sequence. Then, the phases of the sequence are configured by entering the program involved in each phase and how long the program is used for.
The example shows Sequence 1, with a price of 5€ and which uses Program 1 for 240 seconds, program 2 for another 240 seconds and program 3 for 100 seconds.
Press to save the data entered.

SEQUENCES (BUY TIME)

This screen allows programmes to be assigned to their respective buttons.
The minimum credit field indicates the minimum time that needs to be bought for a program to start up.
Press to save the data entered.
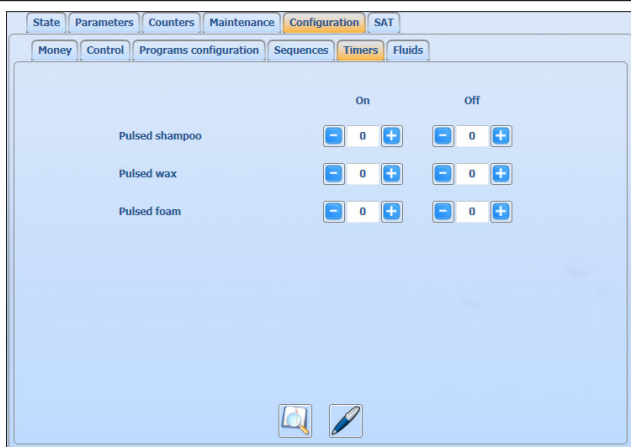
TIMERS

This screen is for configuring the dosing pump activation cycle i.e. how long the dosing pumps be enabled and disabled in the cycle.
Press to save the data entered.

| State | Parameters | Counters | Maintenance | Configuration | SAT |

| Money | Control | Programs configuration | Sequences | Timers | Fluids |

	Level (in ml)	Dose (in ml)	Threshold (in ml)	Size (in ml)
Wax		− 0 +	− 0 +	− 0 +
Shampoo		− 0 +	− 0 +	− 0 +
White		− 0 +	− 0 +	− 0 +
Pink		− 0 +	− 0 +	− 0 +
Blue		− 0 +	− 0 +	− 0 +

| Wax | Shampoo | White | Pink | Blue |

FLUIDS

This screen allows the products to be fully monitored.
The system automatically reads the level of product in the containers in accordance with the data stored on the jet wash board. .
The 'Level' field indicates the current level in the container in accordance with the reading on the control board and cannot be edited.
The 'Dosage' field is used to indicate the quantity dispensed in ml/min.
The 'Threshold' field is for indicating how low the product level is allowed to get before the system advises you by e-mail that the container will soon be empty.
The 'Size' field is for indicating the size of product container.
The product buttons enable their dosing pumps for one minute to allow readings to be taken. The readings are then indicated in the 'Dosage' field.

Press ✎ to save the changes.

# SIEMENS KTP400 TOUCH-SCREEN SCREEN

The touch-screen allows us to see the jet wash information, determine and modify parameters, configure programs, counters, etc.
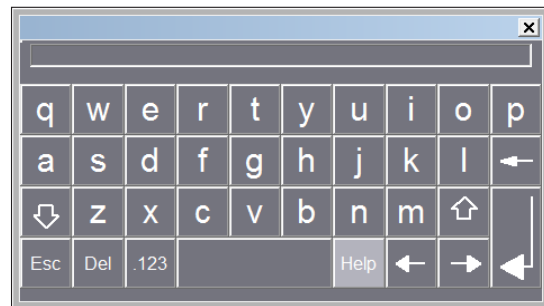
MAIN SCREEN

- Activation frost prevention by water loss
- Main menu activation
- Type of rate
- Bay status

KEYPADS

The keypads shown on the screen allow users to enter letters and numbers. The keypads will appear when a modifiable field is selected for editing. The keypad will be either numbers or letters depending on the data to be entered.
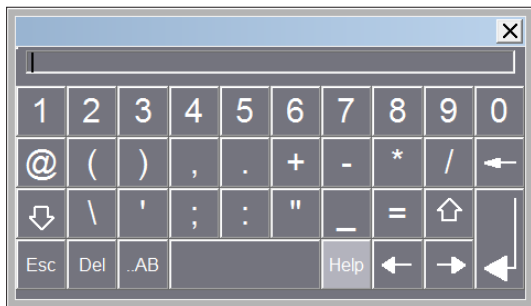
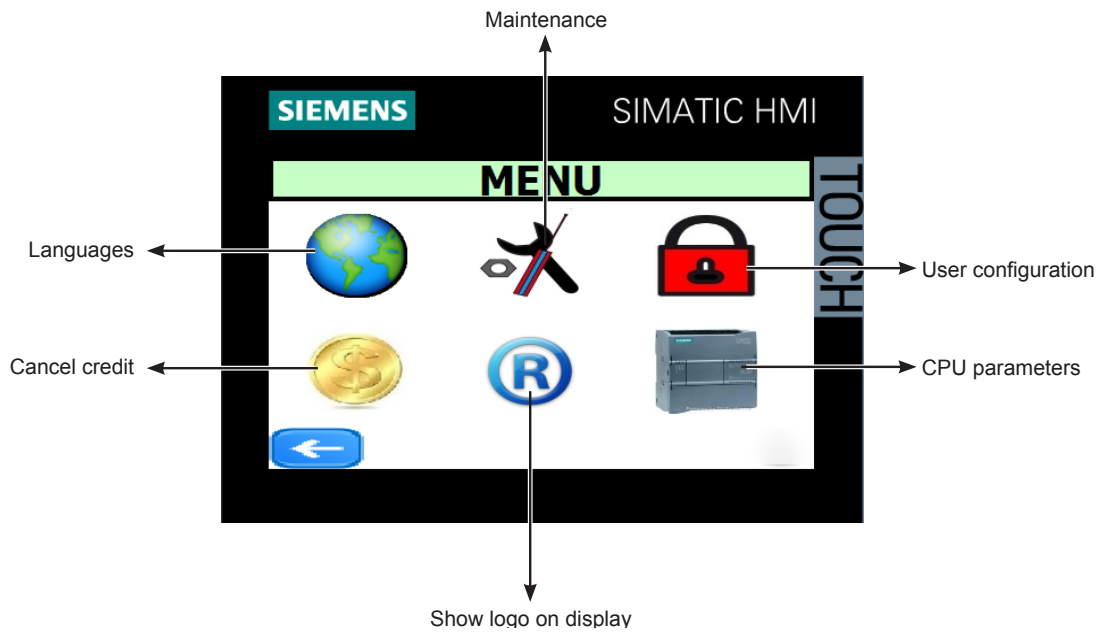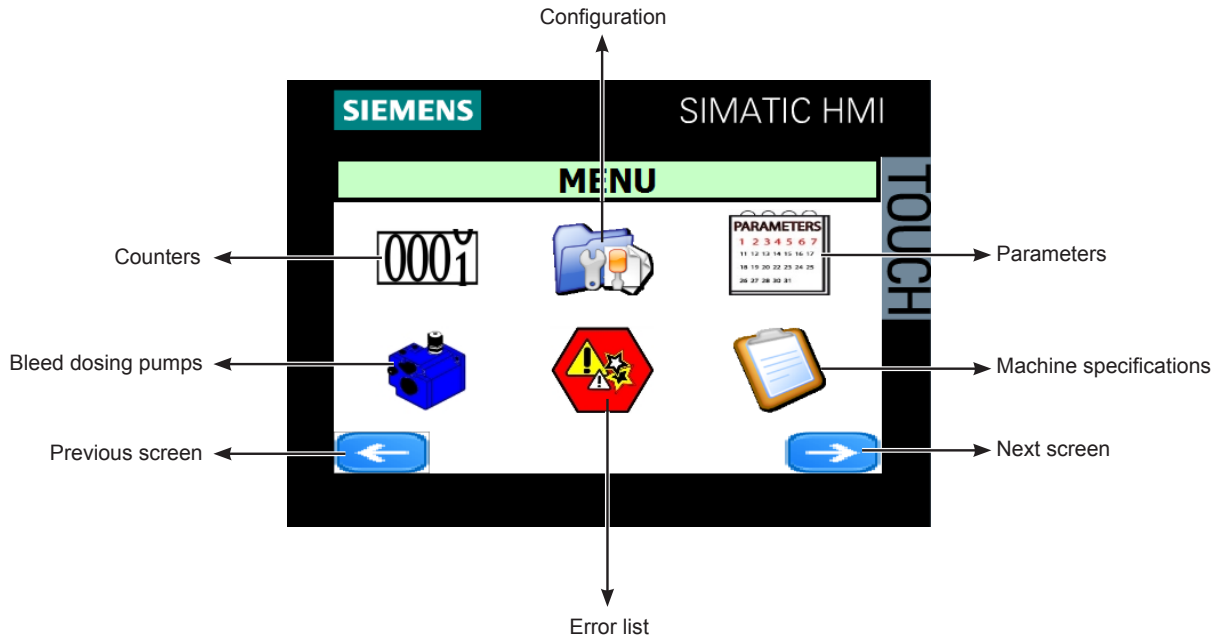**Number keypad**

Letter keypad

ACCESS CONTROL

There are three levels of access to menus and information:

- **"Administrator" Password.** Total control and unlimited access. Can create new operators, customers and administrators.

- **"Operator" Password.** Access to counters, view faults, view descriptions of errors, bleed dosing pumps, and view machine specifications. Access to configuration of parameters not allowed.

- **"Customer" Password.** Authorization to do all of the above, plus run tests, change the language, and configure programs and access levels.
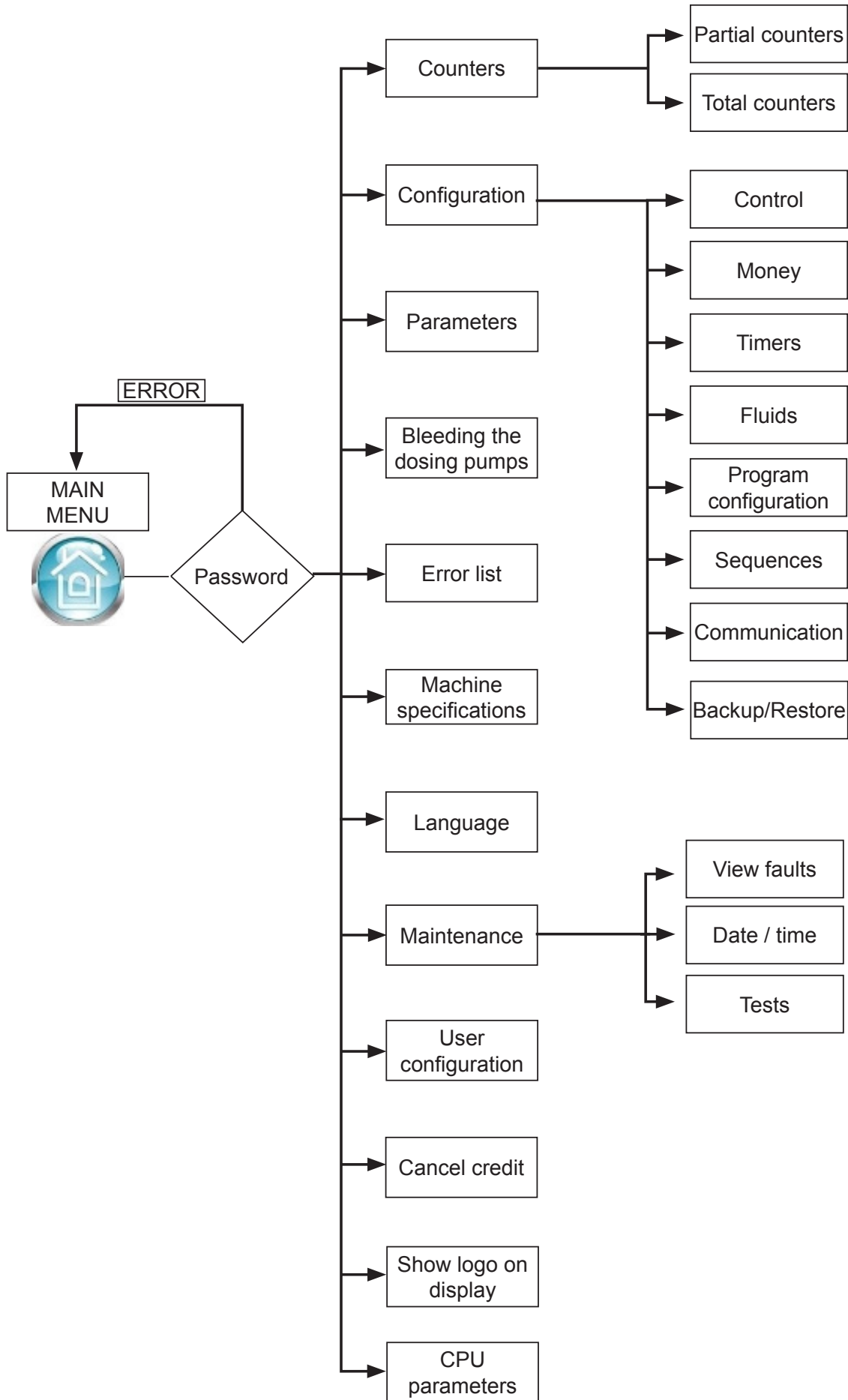
NOTE: Users will not be required to enter the password again unless they return to the main menu or attempt to enter a menu for which they have no authorization.
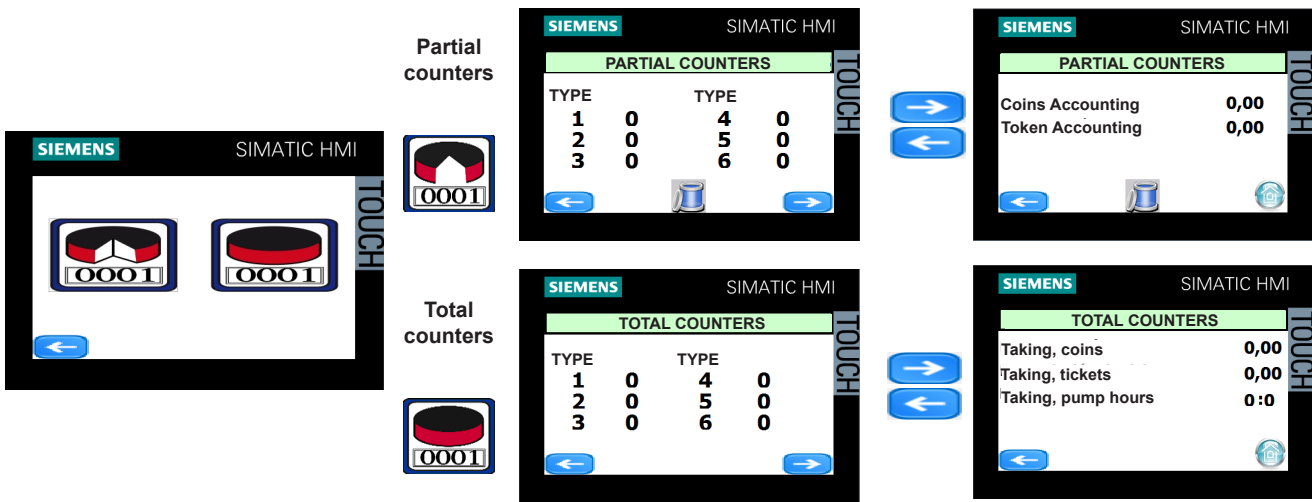
MAIN MENU

Configuration

Counters

Parameters

Bleed dosing pumps

Machine specifications

Previous screen

Next screen

Error list

Maintenance

Languages

User configuration

Cancel credit

CPU parameters

Show logo on display

"MAIN MENU" DIAGRAM

```
                                                      Counters ────────────▶ Partial counters
                                                                         └──▶ Total counters

                                                      Configuration ──────▶ Control
                                                                          ▶ Money
                                                      Parameters          ▶ Timers
                                                                          ▶ Fluids
                    ERROR                             Bleeding the        ▶ Program
                                                      dosing pumps          configuration
     ┌──────────┐                                                         ▶ Sequences
     │  MAIN    │◀────┐                               Error list          ▶ Communication
     │  MENU    │     │                                                   └▶ Backup/Restore
     └──────────┘     │
                 ◇ Password ─▶                        Machine
                                                      specifications

                                                      Language
                                                                             View faults
                                                      Maintenance ─────────▶ Date / time
                                                                             Tests
                                                      User
                                                      configuration

                                                      Cancel credit

                                                      Show logo on
                                                      display

                                                      CPU
                                                      parameters
```
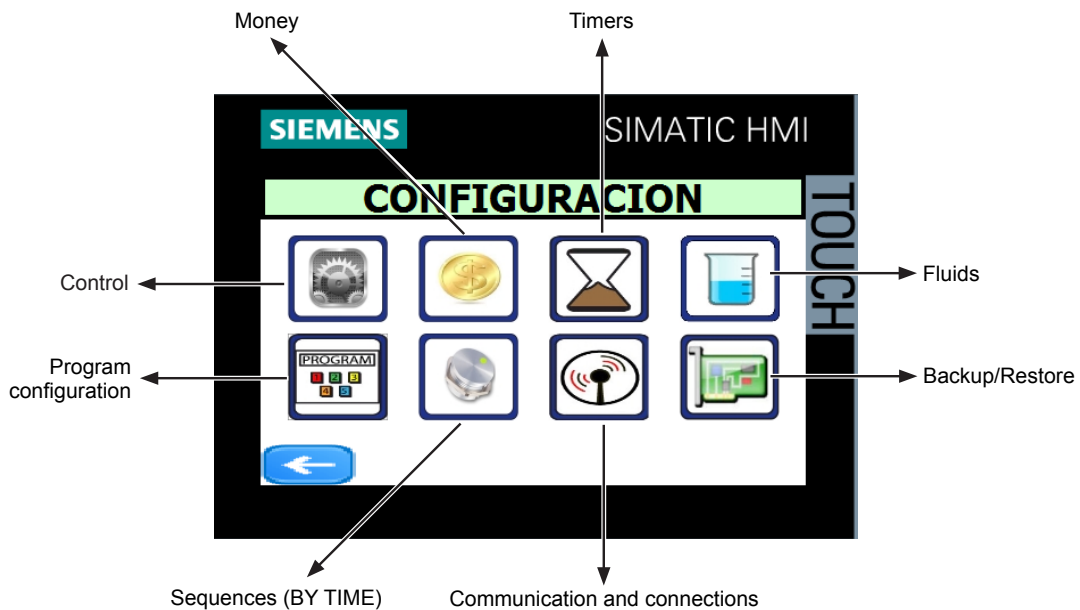
COUNTERS

Access "COUNTERS" from the main menu by pressing [0001].

To erase the partial counters of the bay, press [icon] on the partial counter takings screen of the relevant bay. Total counters cannot be erased. From the counter takings screen, time counters per program can be viewed pressing [icon].
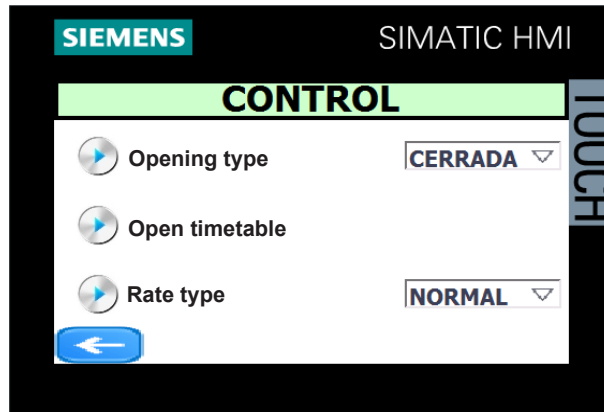

Partial counters

Total counters

CONFIGURATION

Access CONFIGURATION from the main menu by pressing [icon].

Money

Timers

Control

Fluids

Program configuration

Backup/Restore

Sequences (BY TIME)

Communication and connections

CONTROL

Access CONTROL from the configuration menu by pressing [icon].

Opening type	Bay status can be set here: Closed; out of service. Service; always in service. Opening hours; as scheduled. This type obeys the schedules indicated on the timetable advertised.
Open timetable	Sets the opening hours to be applied for each day of the week and in specific time bands.
Rate type	The rate applicable to the bay is set here: Standard: the washes have the prices normally used. Manual mode: works without credits.

When a program is selected, the rate active at that time is applied, and if a change is produced when the program is running, the payment systems are blocked until the credits are used up.

ISTOBAL

MONEY

Access MONEY from the configuration menu by pressing .
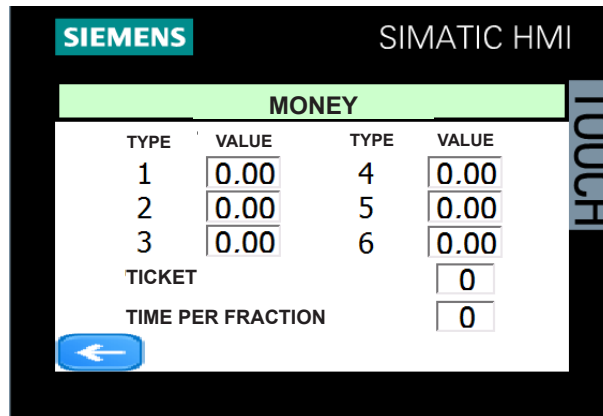
- **TYPE / Value;** You can assign a value to each coin or token type.

- **Ticket;** time can be set (seconds) for a ticket.

- **Time per fraction;** To set how many seconds we want 1 money unit to be equivalent to.

    Example:

    - Time per fraction = 50

    - 1 = 50 seconds.

If the number of time units associated to a coin or a token is modified, this value will become effective when the next coin or token of that type is inserted.

TIMERS

Access "**TIMERS**"from the configuration menu by pressing .
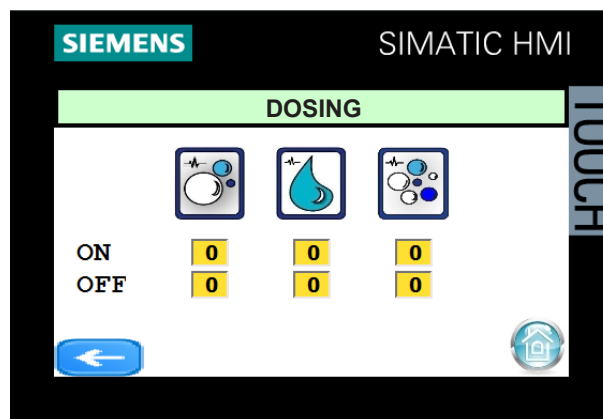
This screen is for configuring the dosing pump activation/deactivation cycle in seconds.

FLUIDS

Access FLUIDS from the configuration menu by pressing [icon].

To control the situation of the chemical product containers.
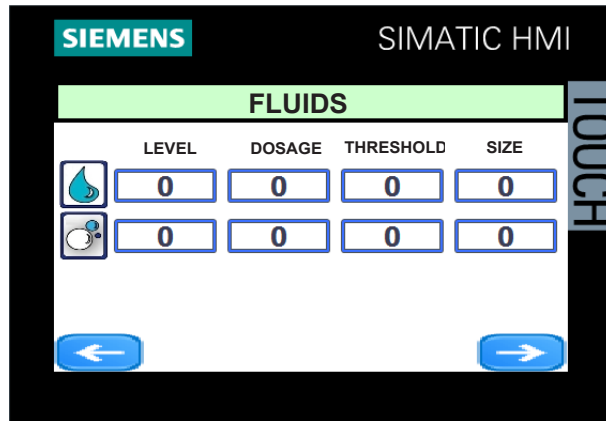
The system automatically reads the level of product in the containers in accordance with the data stored:
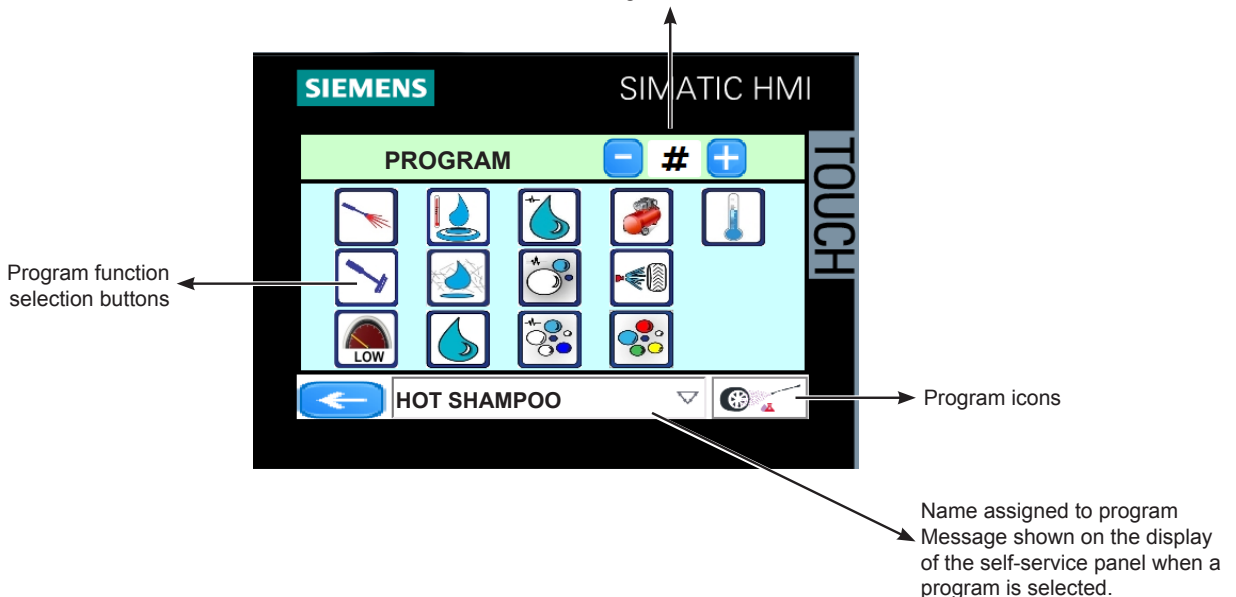
- **Level;** indicates the current level in the container in accordance with the reading on the control board and cannot be edited.

- **Dosage;** indicates the quantity dispensed in ml/min.

- **Threshold;** indicates how low the product level is allowed to get before the system sends an e-mail informing that the container will soon be empty.

- **Size;** indicates the size of product container.

The product buttons enable their dosing pumps for one minute to allow readings to be taken. The readings are then indicated in the 'Dosage' field.

NOTE: For the 'Product level X low' error message to disappear from the screen when filling up or replacing the tank, the LEVEL field must be updated by pressing on the icon of the produced refilled By doing this, the field will be updated with the value on the SIZE field.
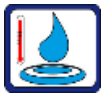

PROGRAM CONFIGURATION

Access "Programs" from the configuration menu by pressing [icon].

Program number

Program function selection buttons

Program icons

Name assigned to program
Message shown on the display of the self-service panel when a program is selected.

To configure a program and assign buttons with products and functions, the program must be configured as follows:

- Select the number of the program to configure with the [−] and [+] buttons.

- Choose the functions and products to be used in the program. The buttons that can be selected to set the program are described next:

Lance/gun	Hot water	Wax pressed	Compressor	Thermometer
Brush	**Osmosis water**	**Shampoo pressed**	**Wheel-wash**	
Low pressure	**Wax**	**Foam pressed**	**White foam / Triple foam**	

- Choose the name of the program on this drop-down menu:

Hot shampoo	Cold shampoo	Hot foam	Cold rinse	Hot wax	Cold triple foam
Cold wax	Cold foam	Hot triple foam	Wheel-wash	Engine wash	

- Select a program icon. The icon is shown on the TFT display when the wash program is activated.
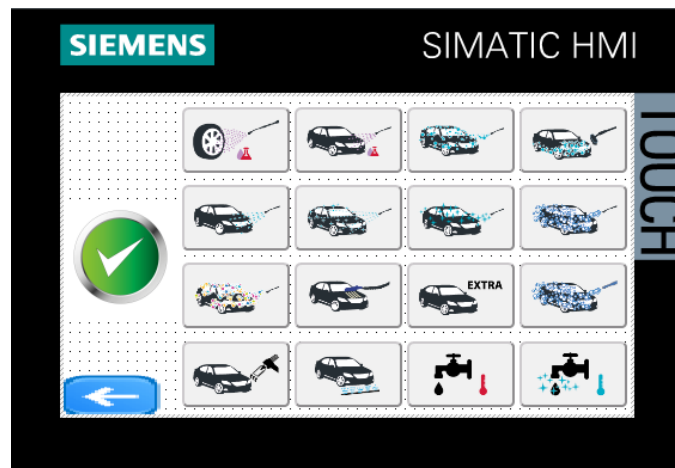
 A picture of a blue or red thermometer will also be displayed under each icon based on the 'Thermometer' function selected for the program.

SEQUENCES (BUY TIME)

Access SEQUENCES from the configuration menu by pressing [icon].

You can assign the buttons on the self-service panel with the corresponding program number.
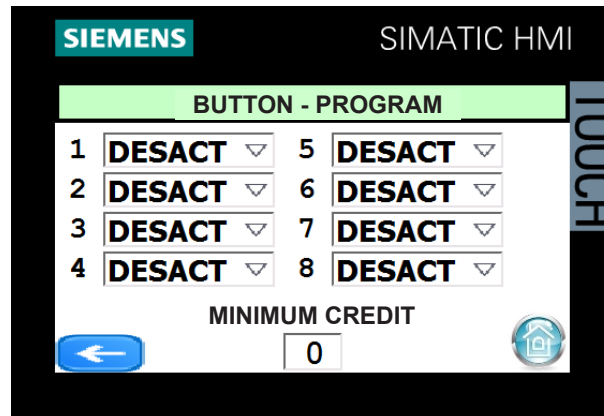
Minimum credit; To set the minimum credit that must be inserted for a sequence to start.

COMMUNICATION AND CONNECTIONS

⚠ **WARNING**

» The values in this section are to be configured and modified by the ISTOBAL Official Technical Service only.

Access COMMUNICATIONS from the configuration menu by pressing [icon].

IP configuration

Email service configuration

Enable remote connection

FTP protocol
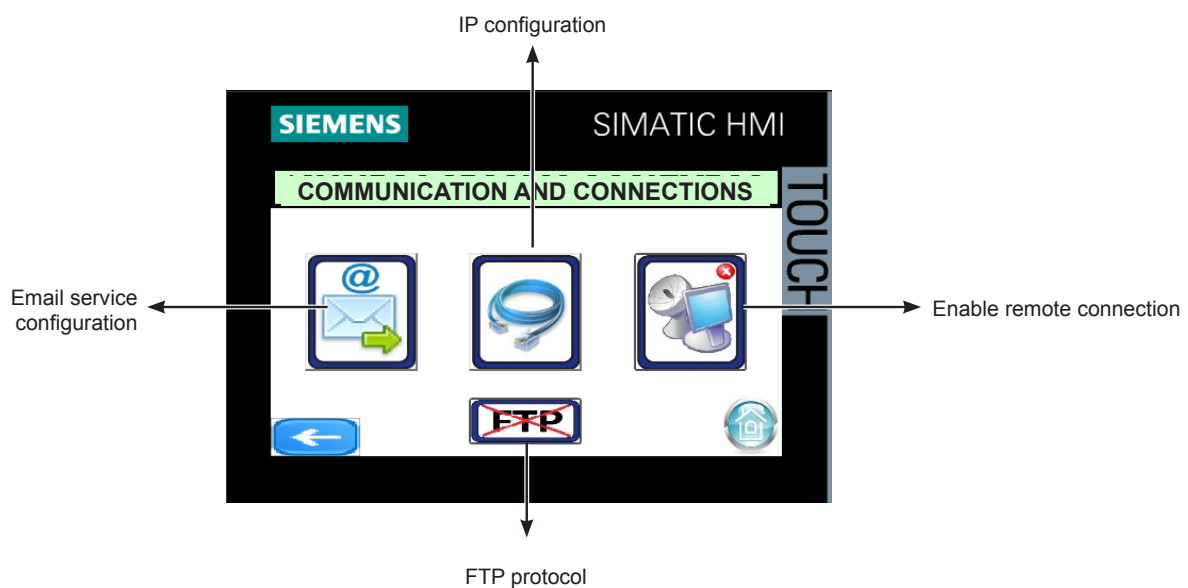
BACKUP / RESTORE

⚠ WARNING

» The values in this section are to be configured and modified by the ISTOBAL Official Technical Service only.

Access "BACKUP/ RESTORE" from the configuration menu by pressing .
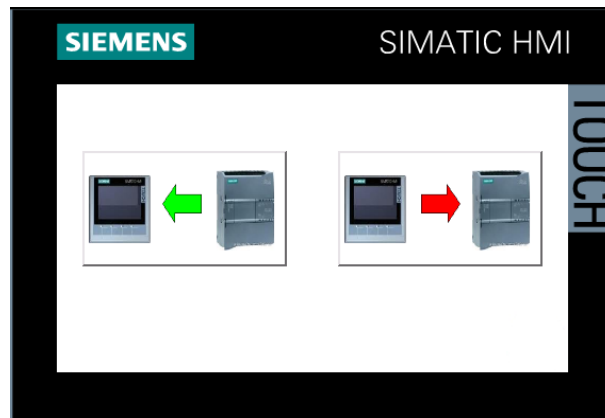
PARAMETERS

Access PARAMETERS from the main menu by pressing .
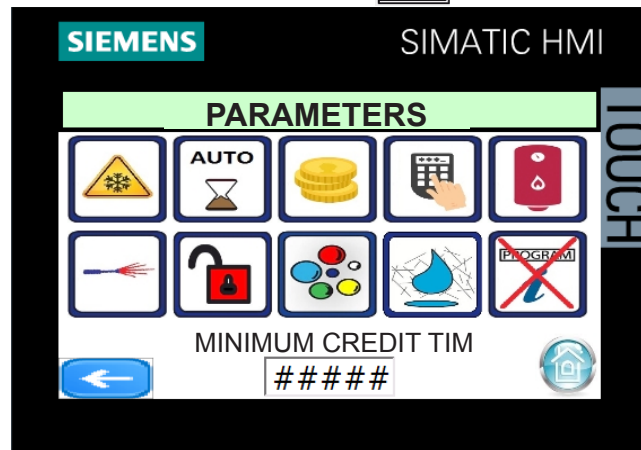
The parameters menu allows users to enable/disable optional extras, devices and operating modes.

 To enable/disable frost prevention via pipe-emptying.

 To set when credit starts being used. If the icon is on, the jet wash starts using credit instantly; if it is off, credit is not used until the program starts running.

 To enable/disable if the coin-operated payment system is installed.

 To enable/disable is the Codax system is installed.

 To enable/disable lance for pipe-emptying.

 To enable/disable if the anti-theft alarm is installed.

 To enable/disable triple foam.

 To enable/disable osmosis water.

 To enable/disable the hot water tank. Enable where the jet wash installation has a hot water generator with a 40 L hot water tank and disable if the generator has a 2.5 L tank.

 To enable/disable information messages when a program is changed on the TFT display.

BLEED DOSING PUMPS

Access BLEED DOSING PUMPS from the main menu by pressing .

To enable/disable the dosing pump selected for the automatic bleeding of the circuit.
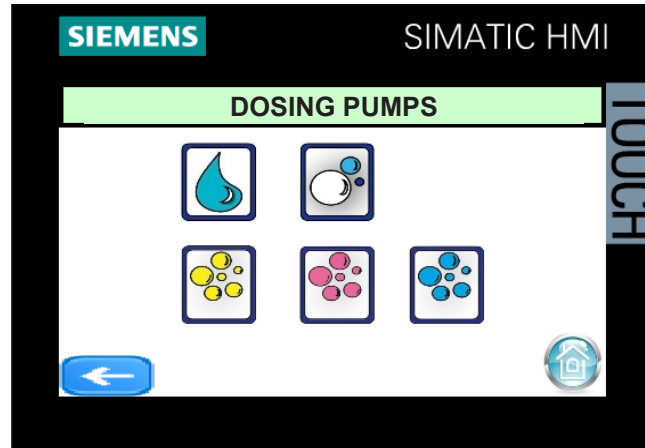
Water repellent wax	Shampoo	Active foam

Yellow foam	Pink foam pink	Blue foam

GENERAL ERRORS

Access GENERAL ERRORS from the main menu by pressing .

You can view all the possible errors that can be seen on the touch-screen.
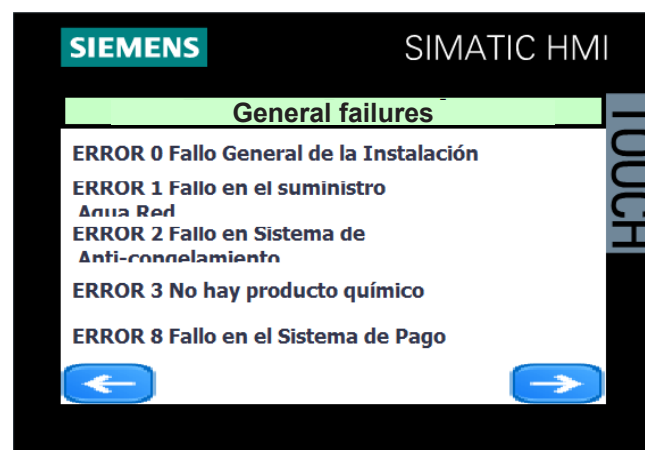
MACHINE SPECIFICATIONS

Access MACHINE SPECIFICATIONS from the main menu by pressing [icon] .

Information is given on this screen about the jet wash and the version of the jet wash board.
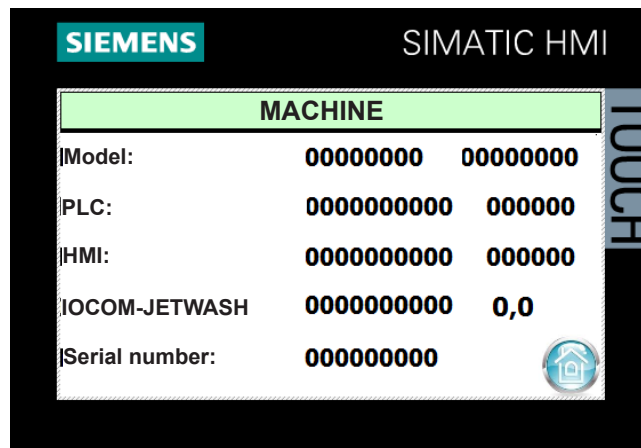
LANGUAGES

Access LANGUAGES from the main menu by pressing [icon] .

The language to be used on the touch-screen is set here.
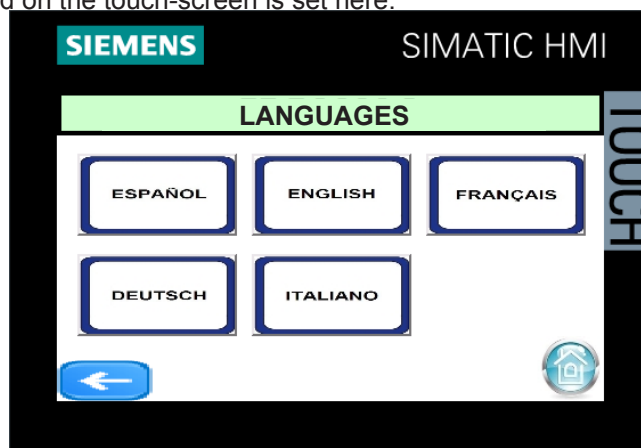
MAINTENANCE

Access MAINTENANCE from the main menu by pressing [icon] .
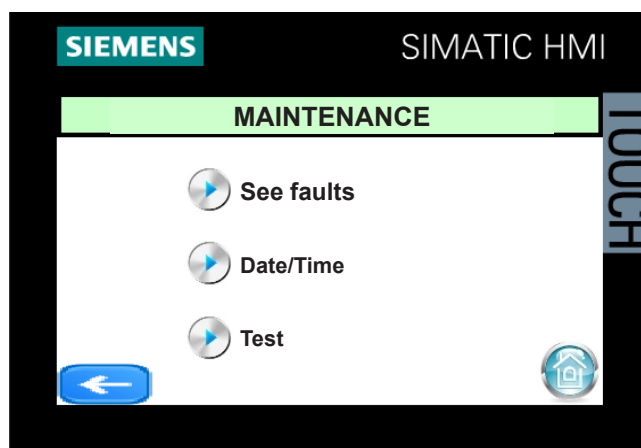
View faults
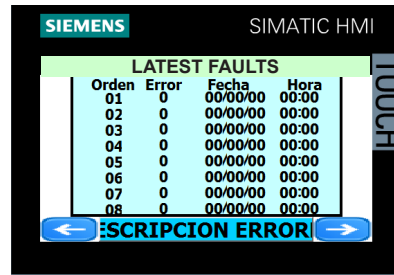
Last faults
You can view the last fifteen faults chronologically, with the time and date they occurred.
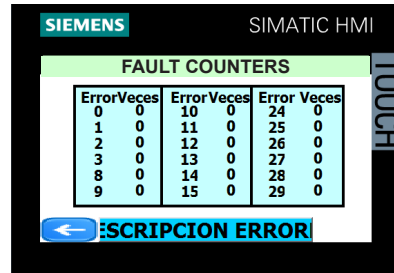
Fault counters
Faults are displayed by fault number, specifying the number of times they occurred.

Date / Time
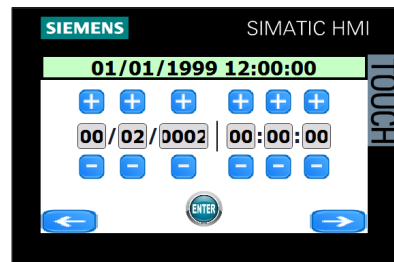
To set the touch-screen date and time. For this setting, use buttons ➕ and ➖ . To enter the current date and time. The format is dd/mm/yyyy hh:mm:ss. Once the new date and time have been entered, press ENTER.
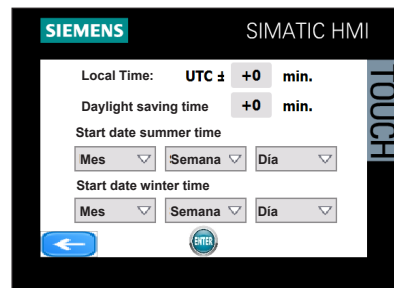
The time zone screen allows you to program the summer/winter timetable change and vice versa. To do so, enter the local and world timetable offset (for example, for UTC +1 = +60 min.). Next, enter the summer/winter timetable offset (+60 min.) and the days when summer/winter timetable changes are scheduled.

ISTOBAL
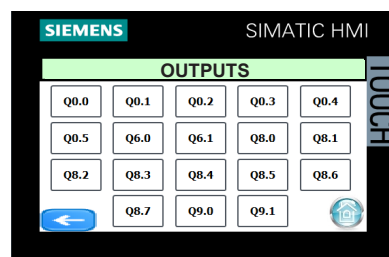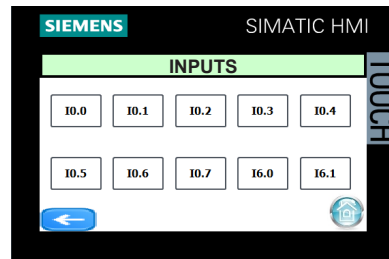
Test

This allows you to run operating tests on the following parts:

Inputs
I0.0=No water
I0.1=Pump overload bay 1
I0.2=Door open
I0.3=Maximum pressure
I0.4=Boiler thermostat
I0.5=Coin box open
I0.6=Thermostat 1
I0.7=Thermostat 2
I0.4=Send email

Outputs
Q0.0=Gun solenoid valve
Q0.1=Brush solenoid valve
Q0.2=Hot water solenoid valve
Q0.3=Water mains solenoid valve
Q0.4=By-pass
Q0.5=Frost prevention solenoid valve
Q8.0=Wax dosing pump
Q8.1=Shampoo dosing pump
Q8.2=Foam dispenser 1
Q8.3=Foam dispenser 2
Q8.4=Foam dispenser 3
Q8.5=Pump start
Q8.6=Boiler start
Q8.7=Compressor start
Q9.0=Heater start
Q9.1=External alarm signal

SIEMENS   SIMATIC HMI

INPUTS

| I0.0 | I0.1 | I0.2 | I0.3 | I0.4 |
| I0.5 | I0.6 | I0.7 | I6.0 | I6.1 |

TOUCH

SIEMENS   SIMATIC HMI

OUTPUTS

Q0.0	Q0.1	Q0.2	Q0.3	Q0.4
Q0.5	Q6.0	Q6.1	Q8.0	Q8.1
Q8.2	Q8.3	Q8.4	Q8.5	Q8.6
	Q8.7	Q9.0	Q9.1	

TOUCH

USER CONFIGURATION

Access USER CONFIGURATION from the main menu by pressing .
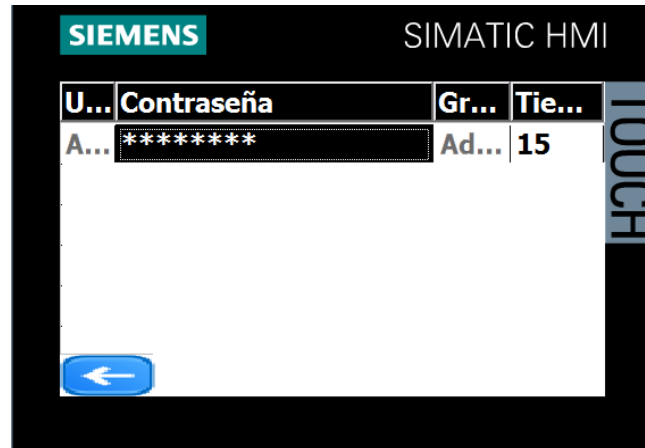
Position	Description	Procedure
A	User name	Press the user field twice and a keypad will pop up for entering the new user name.
B	Password field	Press the password field twice to activate the "change password" box.
C	Group ID	Select the group which the user belongs to.
D	Disconnection time	Indicates the amount of time allowed without activity before the user is disconnected.

For more information on control panel access rights, see section "Access control"

CANCEL CREDIT

Access CANCEL CREDIT from the main menu by pressing
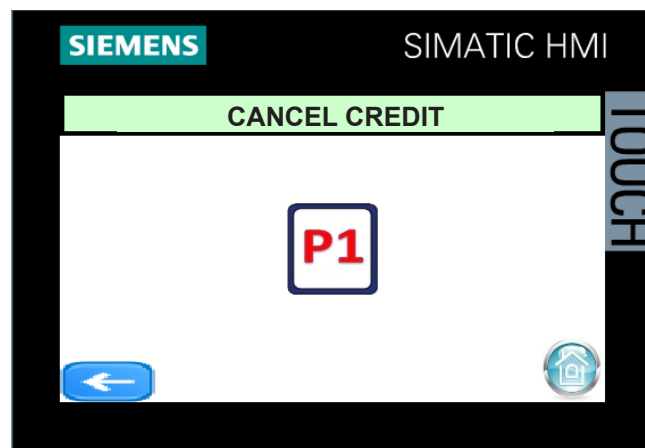
SHOW LOGO ON DISPLAY

Go to SHOW LOGO ON DISPLAY from the main menu by pressing (R) .
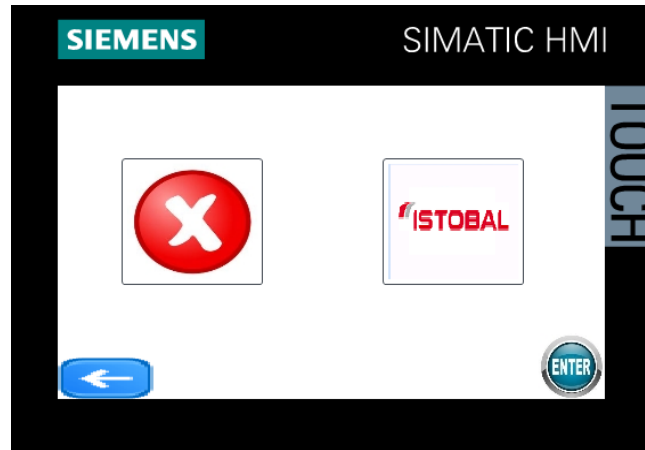
You will see the logo on the display of the control board. It can be enabled/disabled pressing (X).

CPU PARAMETERS

Access CPU PARAMETERS from the main menu by pressing   .
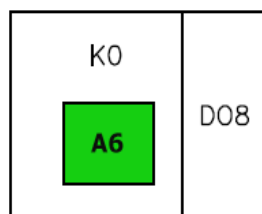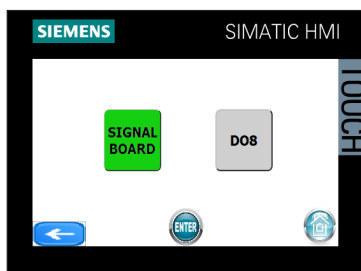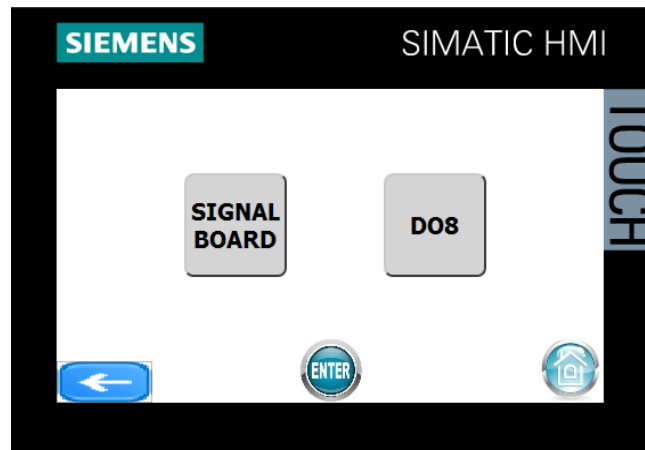
You can connect and disconnect the A6 digital module from the main power switching system on the cabinet inside the CPU.
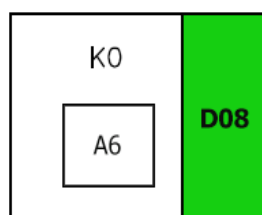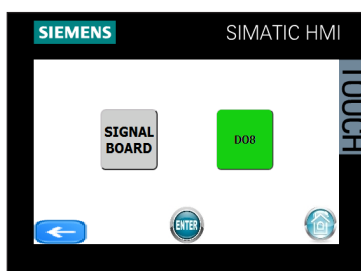
You can connect and disconnect the D08 digital module from the main power switching system on the cabinet.

After making the changes, press (ENTER) and restart the CPU.

FROST PREVENTION SYSTEM

BY WATER LOSS

When the temperature goes below that set on the safety thermostat (< 0º C), the solenoid valves of all the guns and brushes are opened, allowing a small water loss to prevent the circuit from freezing.

ALERT AND FAULT MESSAGES

⚠ DANGER

> » Before doing any work on the machine or any of its optional extras prior to resetting it or starting it up, switch off at the main power switch or the corresponding device, and work without current or compressed air.

⚡ DANGER

> » To check the state of the fuses, thermal relays and thermal magnetic relays, you should open the door of the main electricity box. After opening the door, disconnect the main switch, cordon off the zone to prevent access by any unauthorised person, and use the corresponding PPE. Failure to do so may cause serious injury or death.
>
> » Only maintenance supervisors specifically trained for this purpose by members of the Official Technical Service of the Istobal S.A. network may perform these operations.

INTERPRETING MESSAGES

MESSAGE	DESCRIPTION	CHECKS
*** OUT OF SERVICE ***	ERROR MESSAGES	Shows the error message and shuts down the jet wash. The coin acceptor locks and if it is in the middle of a service, this will stop and be lost.
*** WARNING ***	ALERT MESSAGES	When an alert situation is detected, the service can continue or a new one can start. The warning message is shown interspersed with the "insert coin" message (if there are no credits left). The coin acceptor does not lock, and if a service is running, the message appears after it finishes.

ERROR AND ALERT MESSAGES

ERROR MESSAGES

FAULT	POSSIBLE CAUSE	CHECKS
ERROR 0 General fault on facility	Bay overload fault	Check the thermal switches in the electrical cabinet..
ERROR 1 Mains water supply fault	No mains water	Check the general water supply.
ERROR 2 Scale preventer system fault	Pressure failure in frost-prevention circuit	Check frost-prevention equipment.
ERROR 3 No chemical product	No product	One of the product containers is empty.

ERROR 8 Payment system fault	Coin jammed on bay validator.	The coin validator locks and, if there is a service running, it is cancelled and the credit is saved for use when the fault disappears. When the coin is freed, the message disappears, and it is possible to start the service.
ERROR 9 Anti-theft signal activated	The self-service panel on the bay has been forced	The anti-theft alarm has gone off Check to see if the bay control panel has been forced
ERROR 11 Door open, password not entered	Jet wash door open	Make sure the jet wash door is closed
ERROR 12 Configuration fault	Configuration data has been lost	Loss of operating parameters To correct the error, check the programming of the control board.
ERROR 13 ETH communications fault	Defective cable or connection on Ethernet cable	Check Ethernet cable and connection Check Ethernet board and connection with control board
ERROR 14 CAN communications fault	Defective cable or connection on CAN cable or board	Check CAN cable and connection. Check CAN board and connection with control board
ERROR 15 Box open, password not entered	Coin box open	The system has detected that the cash box has been opened Check that it has not been forced open
ERROR 24 Product level WAX low	No product in wax tank	Replace or fill relevant tank
ERROR 25 Product level SHAMPOO low	No product in shampoo tank	Replace or fill relevant tank
ERROR 26 Product level WHITE/YELLOW FOAM low	No product in yellow foam tank	Replace or fill relevant tank
ERROR 27 Product level PINK FOAM low	No product in pink foam tank	Replace or fill relevant tank

ALERT MESSAGES

MESSAGE	DESCRIPTION	CHECKS
"TO START, ADD COINS OR GET TICKET FROM KIOSK".	AWAITING CREDITS	The coin acceptor is available, there are no errors, and it is waiting for coins to be inserted.
TO START, ADD COINS	AWAITING CREDITS	The coin acceptor is available, there are no errors, and it is waiting for coins to be inserted.
TO START, ADD MORE COIN	CREDITS INSUFFICIENT TO START SERVICE	The credits inserted are not enough for the service selected.
PLEASE PUT BRUSH AND LANCE BACK	CHANGE FROM BRUSH TO LANCE	This message appears 10 seconds before the change from brush to lance is required.
MANUAL	MANUAL WASH ACTIVE	The manual wash will be active for 3 minutes.

FAULTS ON HIGH PRESSURE PUMP AND SCALE PREVENTER

FAULT	DESCRIPTION	CHECKS
HIGH PRESSURE PUMP		
Loss of, or erratic, output pressure.	Worn nozzles	Replace worn parts.
	The pump is sucking in air	Check the water inlet and the supply pipes for water-tightness.
	Valves and seals worn.	Replace worn parts.
	Filter blocked	Clean high-pressure pump filter
Water present in crankcase oil.	Segments or oil retainers worn	Replace worn parts.
Water leaking out via crankcase and cylinder head.	Worn or broken pistons and seals	Replace the worn piston or seal.
WATER SOFTENER		
The softener is supplying hard water	Bypass valve open	Close the bypass valve.
	No salt in brine tank	Add salt to the brine tank and keep the salt level above the water line.

FLOW CHART FOR PROCEDURE IN THE EVENT OF A FAULT

```
                        ┌─────────────────┐
                        │      FAULT       │
                        └─────────────────┘
                                 │
                        ┌─────────────────┐
                        │ Identify and note down │
                        │     the fault    │
                        └─────────────────┘
                                 │
                        ┌─────────────────┐
                        │  Disconnect the  │
                        │ machine from power │
                        └─────────────────┘
                                 │
                        ┌─────────────────┐
                        │ Try to solve the fault. │
                        │  See fault message │
                        │      table       │
                        └─────────────────┘
                                 │
                        ┌─────────────────┐
                        │ Connect the machine. │
                        └─────────────────┘
                                 │
                               ◇ Fault
                    YES     disappears?    NO
                     │                      │
                     │            ┌───────────────────┐
                     │            │ Make a note of the │
                     │            │ fault, model and serial │
                     │            │ number of the machine │
                     │            └───────────────────┘
                     │                      │
              ┌───────────┐          ┌───────────────┐
              │    END     │          │  CALL THE     │
              └───────────┘          │  TECHNICAL    │
                                     └───────────────┘
```

ISTOBAL
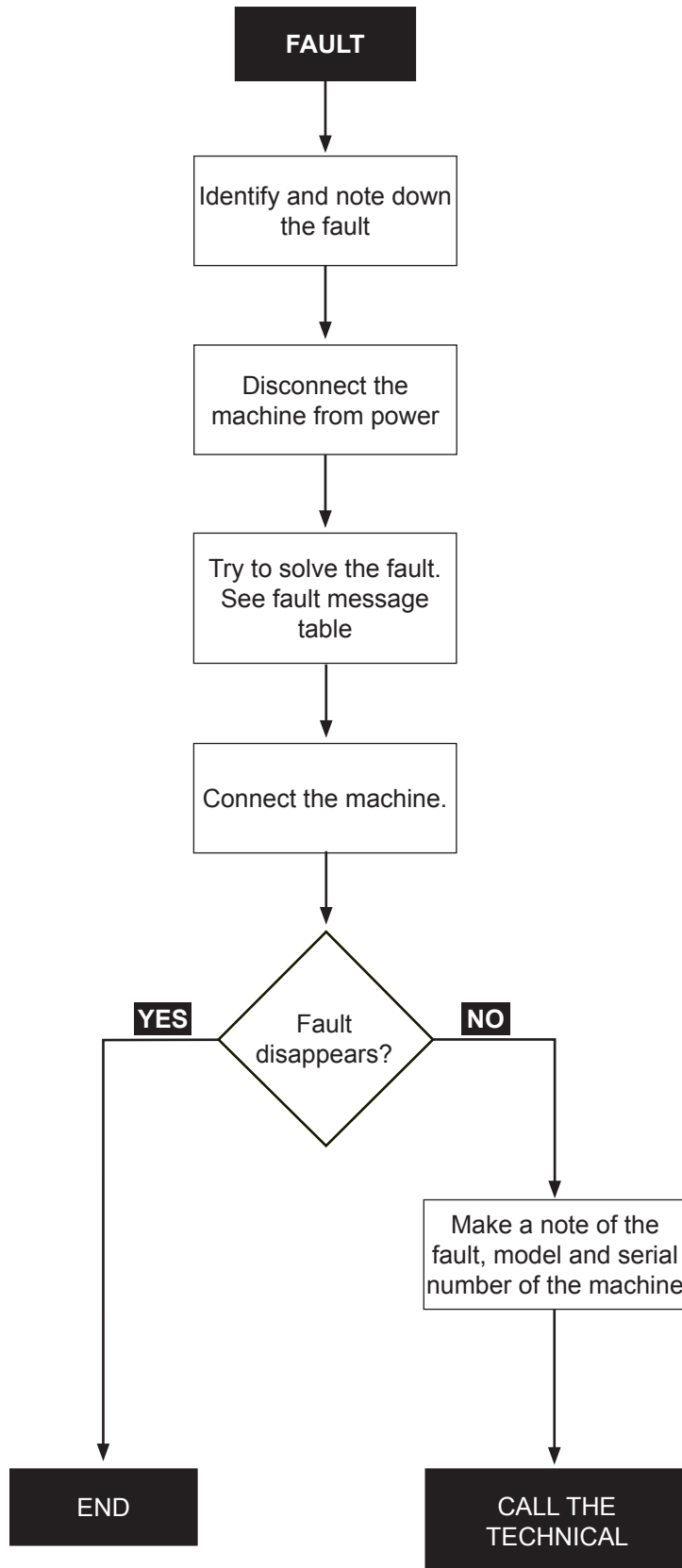
MAINTENANCE

Before any maintenance operation on the machine or any of its optionals, please observe the following precautions:

- Use appropriate Personal Protection Equipment as necessary.

- Switch off the power at the main switch.

- Cut off the air and water.

ⓘ INFORMATION

» Use only original spares.

⚠ DANGER

» Before any maintenance operation, please proceed with extreme care, and use the appropriate PPE.

» It is totally forbidden to climb on top of the equipment to perform any action, whether it is for maintenance or repairs.

⚠ DANGER

» When you have opened the door, switch off at the main power switch. Failure to do so may cause serious injury or death.

» Only maintenance supervisors specifically trained for this purpose by members of the Official Technical Service of the ISTOBAL network may perform these operations.

⚠ DANGER

» All maintenance tasks are to be performed with the electricity, water and air switched off. However, the tasks indicated in the table with the symbol ✓ should be performed with the electrical, hydraulic and pneumatic power on. Thus, proceed with extreme caution, cordon off the zone to prevent access by any unauthorised person, and use the corresponding PPE.

MAINTENANCE TABLE

POINTS FOR MAINTENANCE	DAILY	WEEKLY	QUARTERLY	SIX-MONTHLY	ANNUAL	⏻	RECOMMENDATIONS
Nozzle cleaning and disinfection			●				Cleaning and disinfection of all nozzles and pipes. As laid down by current regulations, car-wash facilities should be supervised by organisations competent in *Legionella* prevention and control, as per the terms set in the legislation of each country.
Emptying the tanks				●			Emptying of all the tanks in the facility including disposal-stage tanks. As laid down by current regulations, car-wash facilities should be supervised by organisations competent in *Legionella* prevention and control, as per the terms set in the legislation of each country.
Emptying and cleaning the tanks					●		Emptying and cleaning of all the tanks in the facility including disposal-stage tanks. As laid down by current regulations, car-wash facilities should be supervised by organisations competent in *Legionella* prevention and control, as per the terms set in the legislation of each country.
WASH BAY							
Bay cleaning	●					X	Clean the wash bays.
Water leaks on bays.	●					X	Check for leaks on the guns, lances or rotating arms of the wash bays as well as inside the jet wash cabinet.
Cleaning the outside		●				X	Clean the outer structure of the machine with water at low pressure (max. 2 bar/28 psi).
HIGH PRESSURE PUMPS							
Level and state of the oil in the pumps	●					X	Check the oil level in the pumps and fill when necessary with oil ISO68.
Check the outflow pressure of the pumps		●				✓	Check that the pressure on the output gauge is 80 bar. To regulate the pressure during pump operation, actuate the regulating valve and then check the pressure on the gauge.
HOT WATER GENERATORS							
On diesel oil generators, check the level of diesel in the tank	●					X	Check the level of diesel oil in the tank and fill it if necessary with heating oil type "C".
Check the diesel oil filter on the tank's inlet.		●				X	Check to see how dirty the filter is, and replace it if necessary.
Check the dosing pump of the scale preventer for boilers		●				✓	Check that there are no faults showing on the control panel viewer of the dosing pump and that it is dispensing the scale preventer properly.

ISTOBAL

POINTS FOR MAINTENANCE	DAILY	WEEKLY	QUARTERLY	SIX-MONTHLY	ANNUAL	⏻	RECOMMENDATIONS
Check the water temperature in the generator.		●				✓	Check the temperature with the temperature and pressure gauge on the generator's control panel.
Check the generator's outlet temperature.		●				✓	Check the temperature with the thermometer on the mixing valve.
METERING PRODUCT							
Chemical products.	●					X	Check the levels of chemical products.
Dosing pumps	●					X	Check that the dosing pumps are working properly.
WATER SOFTENER							
Salt level		●				X	Make sure the level of salt in the brine tank is above the water level.

⬛ INFORMATION

» For a list of maintenance points, see section "Elements installed".

» ISTOBAL recommends the use of original chemical products.

MAINTENANCE TABLE FOR TECHNICAL ENGINEERS

POINTS FOR MAINTENANCE	HOURS	RECOMMENDATIONS
Oil change (1st change)	50	Replace the oil in the pump's crankcase. The oil type to be used is ISO68.
Subsequent oil changes.	500	Replace the oil in the pump's crankcase. The oil type to be used is ISO68.
Check valves, seats and springs.	2000	Remove the caps from the cylinder head and check the state of the valves and seats and that there are no impurities in them.
Check high pressure gaskets.	3000	Check condition of high pressure gaskets.
Check the oil retainers	5000	Check condition of oil retainers.
Boiler and burner service.		The boiler, burner and safety devices should be cleaned and serviced annually. The combustion settings should also be checked at the same time.

CLEANING AND PROTECTION

One of the last stages of maintenance is the application of protective agents.

From the moment they are installed, all pieces of equipment are continuously exposed to oxidising agents and moisture in the air. It should be noted that the metal parts of the machine will also benefit from the use of a protective product as they are also affected by the adverse conditions in which they work.

In cold dry weather, corrosion rates are lower than in warm conditions, but in a marine climate -with heat and moisture- corrosion rates are much higher although considerable local variations might exist. Protection will largely depend on air corrosiveness and should be adjusted to each specific situation.

Some cleaning and preservation instructions are given next:

- **CLEANING:**

Products to be used: Aluminium and stainless steel cleaner "CLEAN MACHINERY".

Reference	Volume
5288301	1 L.
5288310	10 L.
5288320	20 L.

Cleaning frequencies will depend on dirt levels. A monthly cleaning is generally recommended.

The product is applied as follows:

1) Spray the recommended product directly on metal surfaces. The product must be applied as described in the technical data sheet and the product label.
2) Let the product work on the surface for two minutes and then wipe it with a cloth or a soft brush for the desired finish.

- **PROTECTION:**

Products to be used: ISTOBAL stainless steel protector 'CLEAN INOX'.

Reference	Volume
5305101	1 L.
5305110	10 L.
5305120	20 L.

The next table shows maintenance intervals for different air corrosiveness categories:

Air corrosiveness categories: (Classified as per ISO 12944)		Stainless steel protector Frequency
C1	Very low	Monthly
C2	Low	Monthly
C3	Average	Fortnightly
C4	High	Fortnightly
C5-I	Very high (industrial)	Weekly
C5-M	Very high (marine)	* Weekly

* Inhibitors may be needed to control the facility's air conditions. Humidity and temperature control is recommended, as well as adequate ventilation.

The product is applied as follows:

1) Spray the recommended product directly on metal surfaces. The product must be applied as described in the technical data sheet and the product label.
2) Let the product work on the surface for one minute and then wipe it with a cotton or cellulose cloth. For a more homogeneous and even finish, always apply and rub in the same direction.

SCREEN AND FAIRING CLEANING

The quality of car wash water can affect screens and fairings in jet wash areas, rollovers and tunnels. The presence of calcium and magnesium salts causes precipitation and subsequent adhesion to the parts in contact with water.

Follow directions for use for cleaning and removing limescale from screens and fairings:

Product to be used: Anti-limescale cleaner "CLEAN ANTICAL".

Reference	Volume
5287801	1 L.
5287810	10 L.
5287820	20 L.

The product is applied as follows:

1) The product is directly sprayed onto the surfaces which require cleaning. The product must be applied as described in the technical data sheet and the product label.

2) Let the product work and then rub for the desired finish.

3) Rinse with water.

⚠ WARNING

» Fairings may incorporate light signs protected with methacrylate in contact with water. To ensure optimum visibility, the outer side of this material should also be cleaned. Clean these items carefully so as not to alter their water tightness, otherwise the light signs could be damaged.

» ISTOBAL declines all responsibility for any damage caused by the use of cleaning products different to those indicated in these sections.

ℹ INFORMATION

» Use only original spares.

ISTOBAL

WATER QUALITY

For the equipment and its component parts to work satisfactorily, the water should meet a series of basic requirements in terms of quality.

The following table shows the maximum allowable limits set by ISTOBAL.

Maximum allowable values	
Parameter	Limit
Iron	<0.2 mg/L
Manganese	<0.05 mg/L
Ammonium	<4 mg/L
Chlorine	<0.25 mg/L
Turbidity	< 10 NTU
Silica	<50 mg/L
Sulphate	<250 mg/L
pH	6,5 - 9
Nitrates	<100 mg/L
Hardness	<50º HF
Conductivity	<2500 microsiemens
Chlorides	<250 mg/L
COT	<10 mg/L

For an adequate finish, use water with conductivity below 93 microsiemens (TDS<60 ppm) in the final rinse.

When the water is obtained from a non-public mains source, such as a well, the characteristics may be affected and thus a more exhaustive control is required, involving annual analyses.

When one or various parameters exceed the limits, you should contact ISTOBAL for a suitable pre-treatment system or systems.

⚠ WARNING

» ISTOBAL declines all responsibility for any damage caused by the use of water with parameters which exceed the maximums set.

⚠ DANGER

» In accordance with the regulations in force and health and hygiene criteria, it is mandatory for wash facilities to be inspected over a period stipulated by legislation, by an organisation duly authorised for the prevention and control of Legionella on such facilities. Contracting and maintaining this control is the responsibility of the user.

» All nozzles should be disinfected. If intermediate tanks are installed, they should be emptied, cleaned and disinfected if necessary. Cleaning and disinfection is also required in these cases:

  • After shutdown for more than one month.

  • After repairs or structural changes.

  • If so recommended by a general inspection.

  • When determined by the country's heath authority.

ELEMENTS INSTALLED

HIGH PRESSURE PUMPS

The output pressure of the high pressure pumps should be constant at 80 bars. The gauge (A) installed on the pump is for monitoring the output pressure of the pump.

Due to wear on the gun nozzles, a drop in pressure may be experienced. This can be corrected by the pressure regulating valve (B). Replace the nozzles when the wear becomes excessive.
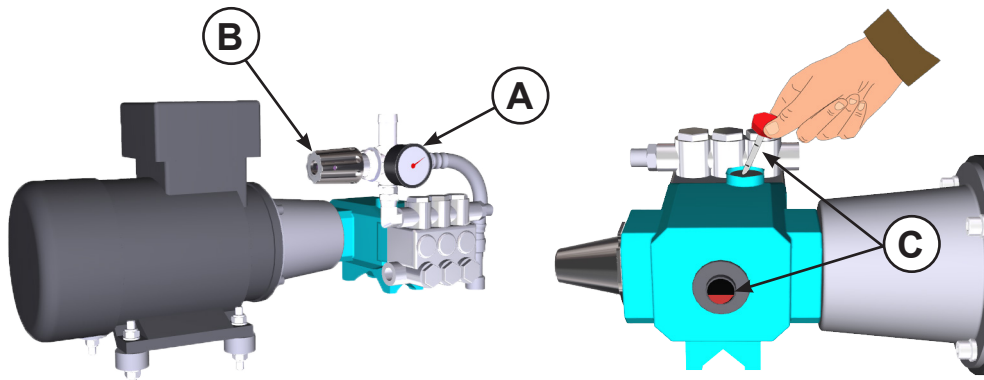
A	Pressure gauge
B	Pressure regulator
C	Oil level

Check the level of oil in the pump by using the dipstick or the sight hole on the back of the crankcase (C).

**MAINTENANCE POINTS**

Daily

• Check the oil level on the pump susing the dipstick or the sight hole on the back of the crankcase (A) and fill when necessary with oil ISO68. The first oil change should be after the first 50 hours of operation and every 500 hours after that.

Weekly

• Check that the pressure on the output gauge is as recommended (80 Bar). To regulate the pressure during pump operation, actuate the regulating valve and then check the pressure on the gauge.

• Due to wear on the gun nozzles, a drop in pressure may be experienced. This can be corrected by the pressure regulating valve (B). Replace the nozzles when the wear becomes excessive.

PRODUCT DOSING PUMPS

Product dosing pumps suck the product from the containers and dose it with the frequency, flow rate and pressure required by the jet wash.
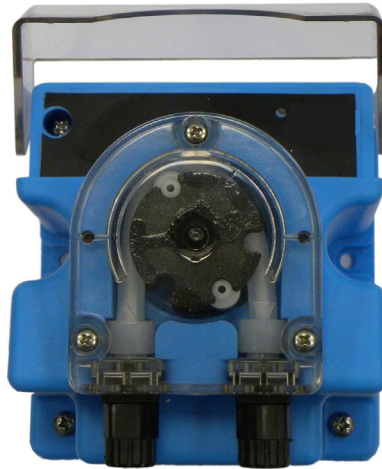
BLEEDING THE PRODUCT DOSING PUMPS

It is important not to let the product container get empty. Leave it at least 4 centimetres deep otherwise the dosing pump will need bleeding.

The Dosing pumps will need bleeding after a long period of inactivity or when the product container has run dry. To bleed the pump, enable a program which involves the dosing pump that you wish to bleed.

REGULATING THE DOSING PUMPS

The amount of product to be added is determined by the technical engineer when the machine is first started up. The technician takes into account the total dissolved salts (TDS) in the water, and the concentration of the chemical product used. If these factors change, it may be necessary to adjust the dosing pump by means of the corresponding parameter.

MAINTENANCE POINTS

Daily

- Check the level of the product to be dosed. It should be higher than 4 cm.

Monthly

- Check and clean pump materials in contact with aggressive chemicals.

After long periods of inactivity

- Clean the valves and remove any chemical deposits on them.

ELECTRIC HOT WATER GENERATOR 40 L.

OUTLET MIXING VALVE

The outlet temperature of the boiler is regulated by means of a mixing valve (A). To verify that the outlet temperature is between 40 and 60ºC, check the thermometer (B) during the operation of the generator and adjust the mixing valve (A) if necessary.

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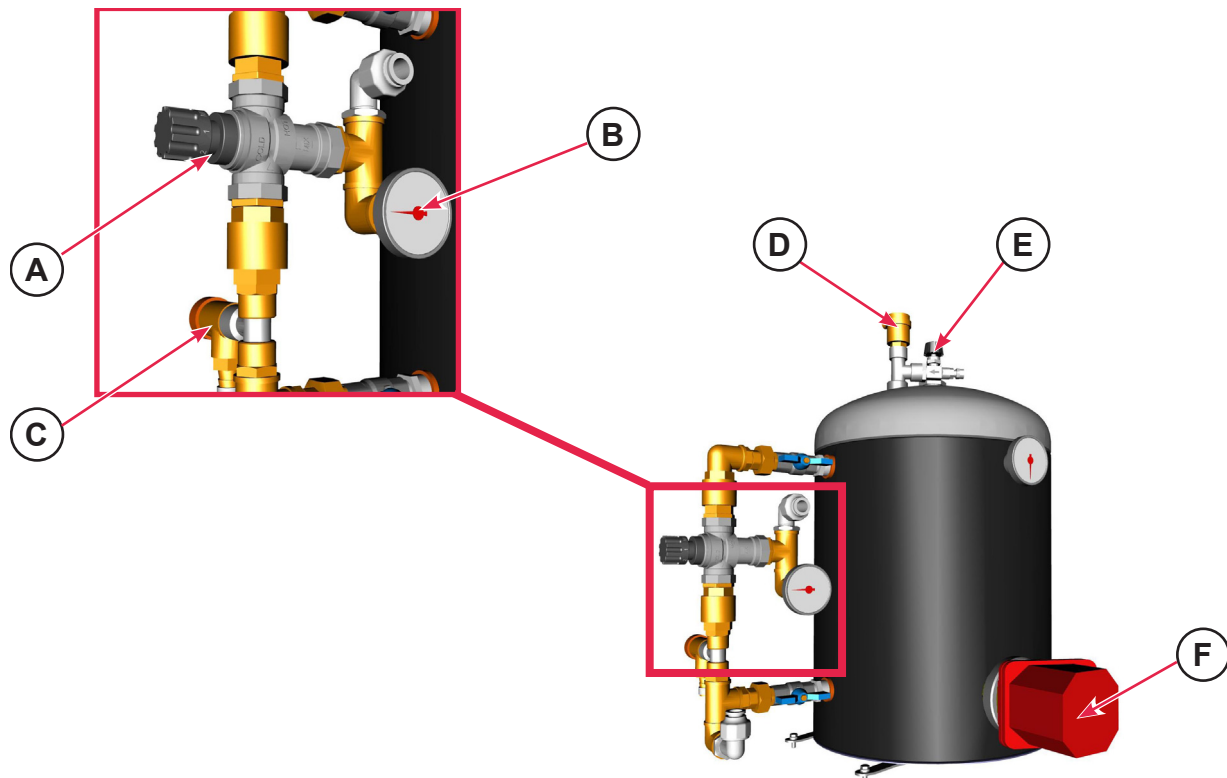
A	Mixing valve	To regulate the outlet temperature of the generator.
B	Thermometer	Indicates the outlet temperature of the water.
C	Safety valve, 3 bar	This safety valve controls the pressure of water entering the tank.
D	Automatic air vent	It purges the air present in the tank automatically.
E	Air regulating valve	For manual venting, if necessary.
F	Resistance	6kW heating element with thermostat

MAINTENANCE POINTS

Monthly

- Check the thermometer (B) to make sure the water at the outlet is between 40 and 60º. Regulate mixing valve (A) if necessary
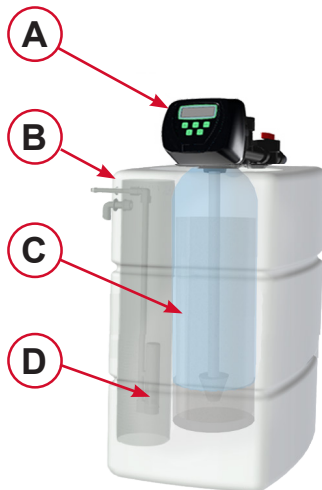
⚠ DANGER

» The water and ducts coming out from the generator are very hot and can cause severe burns.
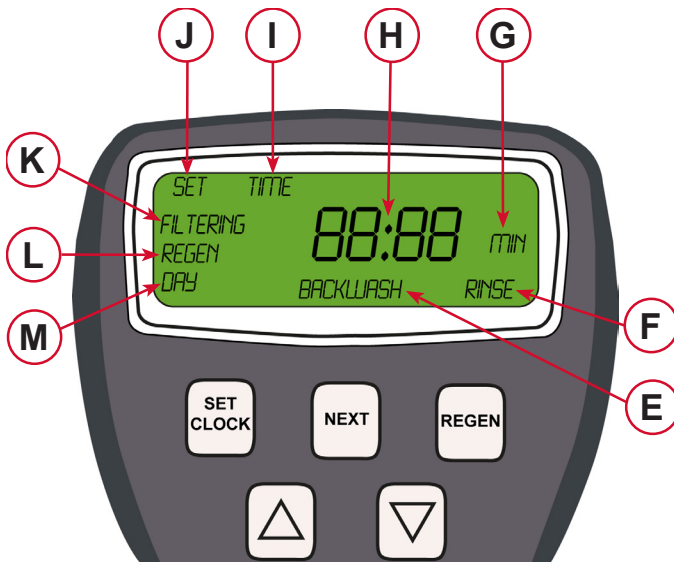
WATER SOFTENER

The softener is used to eliminate water hardness (calcium and magnesium). It consists of a bottle with ion exchange resins, a programmer (CLACK valve), and a salt tank for the resin regeneration.

A	CLACK valve
B	Brine tank
C	Bottle with cationic resin, 14 L
D	Brine suction pipe

CLACK VALVE

E	Backwash phase indicator
F	Rinse phase indicator
G	Minutes indicator
H	Digits display
I	Time indicator
J	Settings menu indicator
K	Softening phase indicator
L	Regeneration phase indicator
M	Backwash days indicator

Button	Description
SET CLOCK	Push button for the following functions: • Time programming. • Exit and save changes during programming mode.
NEXT	Push button to go to next setting during programming mode.
▽ △	Push buttons to move around menu and set programming parameters.
REGEN	Push button for the following functions: • If pressed for 3 seconds during the water softening phase, a regeneration will start. • If pressed during the regeneration phase, you are allowed to move on to the next phase. • If pressed during the programming mode, you can go back to the previous parameter.

During the softening phase, the actual time will be shown on the display. Press NEXT to view instantaneous flow rate (L/min) and water volume (m3) still to be reached for next regeneration.

SETTING THE TIME

1)   Press [SET CLOCK] to view the hour digits (blinking). Set it using the buttons [△] [▽].

2)   Next, press [SET CLOCK] to view the minute digits (blinking). Set it using the buttons [△] [▽].

3)   Press [SET CLOCK] again to confirm the time. The set time will appear on the main menu.

For more information on the programming of the CLACK valve, contact ISTOBAL Technical Service.

⚠ WARNING

» The performance of the softener depends on the hardness of the water. It is very important to respect the recommended cycles of regeneration as well as checking the level of salt in the brine tank to ensure the correct dissolution.

» After a power cut, check the valve's programming. The time might need to be set.

MAINTENANCE POINTS

Weekly

- Check that the time is the current time. Regeneration will take place at 2:00 a.m. or at the set time.

- Check whether salt is consumed during the regenerations; if that is not the case, contact ISTOBAL Technical Service.

- Check the salt level in the brine tank. The salt level shall never be under the water line on the tank. For adequate equipment operation and throughput, we recommend compacted salt in tablets, 25 kg - ref.2052700, special for water treatment.

Fortnightly

- Use the water test to determine the hardness of the softened water.

Every 4-8 years

- Change the resin once it is no longer suitable.