World Health Organization

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Anexă

Anexa 5

Achiziție Dispozitiv de spălare și dezinfectare automată a instrumentelor chirurgicale 100 l

Lista cerințelor și specificațiilor

Dispozitiv de spălare și dezinfectare automată a instrumentelor chirurgicale 100 litri					
NUME, CATEGORIA ȘI CODIFICARE					
Parametrii			**Specificație minimă așteptată**	**Caietul de sarcini propus (de completat de ofertant)**	**Documentul de referință / broșura / pagina în care informațiile furnizate pot fi verificate de către comisia de evaluare**
1	Nume generic	Dispozitiv de spălare și dezinfectare automată a instrumentelor chirurgicale 100 litri		**MODEL: DS500 SCL Soft Touch Producător: Steelco S.p.a. Țara: Italia**	
CARACTERISTICI TEHNICE și CARACTERISTICI FIZICE					
2	CAPACITATE	Volumul camerei de spălare (convențional 100l), dreptunghiular, cu încărcare frontală	min. 90l-120l max.	DA 171L	pag. 16 din Brosura washer disinfectors
		versiune independentă sau de masă	opțional	DA	pag. 17 din Brosura washer disinfectors
		versiune cu o singură ușă cu deschidere manuală	da	DA	pag. 17 din Brosura washer disinfectors
		Cameră de spălare din oțel inoxidabil AISI 316L sau AISI 304L (lustruit, oglindă)	opțional	DA AISI 316 L	pag 2 din Data Sheet DS 500 SC - DS 500 SCL
		Față din oțel inoxidabil AISI 304L, capace laterale	da	DA	pag 2 din Data Sheet DS 500 SC - DS 500 SCL
		țevile și fitingurile sunt fabricate din oțel inoxidabil AISI 316L sau AISI 304L	da	DA	pag 2 din Data Sheet DS 500 SC - DS 500 SCL
		Ușile pot fi realizate din oțel inoxidabil, oțel inoxidabil cu geam din sticlă sau complet din sticlă călită în două straturi	opțional	DA va fi cu sticlă în ramă din oțel inoxidabil AISI 316L	pag 2 din Data Sheet DS 500 SC - DS 500 SCL

3	CADRU, CORP, CAMERA DE SPALA	Temperatura de uscare min. 125 de grade	da	DA maximul setabil este de 150 de grade	pag. 60 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCDL
		Min. 2 pompe dozatoare de detergent și dezinfectant	da	DA 2 pompe	pag 2 din Data Sheet DS 500 SC - DS 500 SCL
		Roți mobile pentru o mișcare convenabilă	da	Nu Stationar	
		Cărucior de încărcare/descărcare	da	Nu necesită caurcior are dimensiuni mici nestadartdizate pentru STU	
		Pompa de apa, integrată	da	DA daca este conectata la sistema de demiralizarea de la producator	
		minim 2 prize de intrare apă	da	DA 3 prize de apă - caldă, rece si demiralizată	pag. 5 din Data Sheet DS 500 SC - DS 500 SCL
		Spațiu de stocare integrat pentru dezinfectant și detergent	da	DA	pag. 17 din Brosura washer disinfectors
		Dacă apare o pană de curent, ușa poate fi deschisă manual. Este prevăzut un dispozitiv de blocare a ușii e pentru a preveni contaminarea încrucișată	da	DA	pag. 29 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
4	CICLU	proces automat de spălare și dezinfectare, controlat de microprocesor	da	DA	pag. 2 din Data Sheet DS 500 SC - DS 500 SCL
		minim 5 programe prestabilite din fabrică	≥ 5 programe	DA 20	pag. 2 din Data Sheet DS 500 SC - DS 500 SCL
		minim10 programe care pot fi programate de utilizator	≥ 15 programe în total	DA 20 - 40 programe in total	pag. 47 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
		Interval de temperatură 15-95 ºC	da	DA pina la 93 °C setabil pin la 99°C	pag. 3 din Data Sheet DS 500 SC - DS 500 SCL pag. 47 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
		Ciclurile minime furnizate de mașina de spălare și dezinfectare trebuie să includă: prespălare, curățare, clătire intermediară, dezinfecție termică/clătire finală, uscare.	da	DA	pag. 34 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
		mașinile de spălare și dezinfectare ar trebui să aibă un ciclu validat	da	DA	

		Ecranul va afișa: indicația ciclului, mesaj text, temperatura apei, timpul rămas, numărul programului	da	DA	pag. 31 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
5	SIGURANȚĂ	Protecție împotriva temperaturii excesive	da	DA	
		Alarme: pană de curent, eșec ciclului de dezinfecție	da	DA	pag. 31 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD - *16. ALARMS and EVENTS LIST*
		Sistem intern de condensare a aburului, care reduce cantitatea de abur în timpul uscării și previne scurgerea aburului	da	DA	pag. 2 din Data Sheet DS 500 SC - DS 500 SCL
		Iluminarea interioara a camerei	da	DA	pag. 4 din Data Sheet DS 500 SC - DS 500 SCL
		Buton de oprire de siguranță, oprește automat toată activitatea unității atunci când este apăsat.	da	DA	Este prezent butonul ON/OFF
		Răcitor pentru sistemul de drenaj, cu funcția de reducere a temperaturii apei de scurgere ≤ 90 ° C	da	DA	pag. 4 din Data Sheet DS 500 SC - DS 500 SCL
		Ușa trebuie să fie izolată termic pentru a preveni ca temperatura suprafeței să prezinte un potențial pericol pentru operatori	da	DA	pag. 3 din Data Sheet DS 500 SC - DS 500 SCL
		Controlul nivelului apei prin senzor de nivel și protecție la supraplin	da	DA	pag. 2 din Data Sheet DS 500 SC - DS 500 SCL
		Filtru HEPA Clasa H14, încorporat, destinat sistemului de uscare forțată cu aer.	da	DA	pag. 26 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
		Sistem „deschis” pentru utilizarea detergenților și dezinfectanților, mașinile de spălare și dezinfectare trebuie să fie deschise pentru a utiliza diferiți detergenți și chimicale, nu doar de la un singur producător	da	DA	pag. 4 din Data Sheet DS 500 SC - DS 500 SCL
		Loc special integrat pentru chimicale și detergenți	da	DA	pag. 17 din Brosura washer disinfectors
		pompe de dozare integrate din oțel inoxidabil pentru produse chimice.	da	DA este mai avansat, sint pompă peristaltica astfel incit n are un contact direct cu dezinfectatul, find necesar schimbarea dor dubului care se foloseste la pompare	pag. 6 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD

6	Cerințe pentru detergenți, aditivi și compatibilitate cu alți aditivi chimici	Și detergenții și aditivii utilizați ar trebui să fie compatibili cu alte substanțe chimice utilizate în aceeași etapă a procesului, cât și, în măsura în care este posibil, cu cele utilizate în etapele precedente și ulterioare, pentru a minimiza efectul negativ la intercalare. Agenții de curățare utilizați în mașinile de spălare și dezinfectare ar trebui să fie: lichizi (pentru a facilita distribuirea precisă); neabraziv; spumare redusă; supus ușor la clătire; biodegradabili. Detergenții nu trebuie să conțină: agenți de colorare artificiali; înălbitori optici; parfumuri; halogenuri la o concentrație în utilizare mai mare de 120 mg/L; săpunuri grase, glicerină sau lanolină; reziduu toxic.	da	DA find un sistem de tip deschis ramine la preferinta utilizatorului tipul de dezinfectat unica necesitate este necesara sa fie de tip lighită.	
7	PREPARAREA APEI ȘI CALITATEA	Duritate totală: < 3 °d (< 0,5 mmol CaO/L) Conținut total de sare: < 500 mg/l Conținut de clor: < 100 mg/l Valoare pH: 5-8	compatibil cu mașina de spălat	DA	pag. 11 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
		încălzire electrică integrată a apei	da	DA	pag. 2 din Data Sheet DS 500 SC - DS 500 SCL
CARACTERISTICI ELECTRICE					
8	CARACTERISTICI ELECTRICE	380 V, 50 Hz, 3 faza sau 220 V monofazat	da	DA	pag. 5 din Data Sheet DS 500 SC - DS 500 SCL
CERINȚE DE UTILITATE					
9	electronice	Panou cu ecran multicolor minim4" cu butoane sau opțiune de ecran tactil	da	DA	pag. 3 din Data Sheet DS 500 SC - DS 500 SCL
		Niveluri de acces la meniul de service prin parole/ coduri de acces. Toate parolele/codurile de acces vor fi puse la dispoziția personalului tehnic la momentul predării-primirii dispozitivului	da	DA	pag. 1-2 din Data Sheet DS 500 SC - DS 500 SCL
		Testul de diagnosticare permite verificarea sistemului	da	DA	
		Senzor de nivel pentru controlul detergenților și dezinfectanților	da	DA	pag. 22, 51 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
		Conexiune RS232 pentru acțiuni tehnice	da	DA	pag. 2 din Data Sheet DS 500 SC - DS 500 SCL
		mașinile de dezinfectare sunt controlate de un dispozitiv logic programabil electronic (PLC) care acoperă performanța ciclului, controlul parametrilor și verificarea siguranței procesului	da	DA	pag. 2 din Data Sheet DS 500 SC - DS 500 SCL

		Memorie internă pentru stocarea a minim 500 de cicluri	da	DA 200	pag. 55 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD
ACCESORII, CONSUMABILE, PIESE DE SCHIMB, ALTE COMPONENTE					
10	Accesorii/ piese de schimb	Kit de întreținere pentru min. 2 ani	min. 2 ani	DA 2 ani inclus	
		Raft multifuncțional cu 2 niveluri minim. Folosit pentru a ține tăvile de instrumente încărcate în timpul procesării de spălare	1	DA inclus C895 2 level	
		Trebuie să includă un detergent și un dezinfectant pentru minim 100 de cicluri de spălare, inclusiv cicluri de testare.	da	DA inclus	
		Hârtie de imprimantă 10 buc	min. 10 buc.	DA inclus	
		Imprimantă de date integrată (hârtia utilizată pe imprimantă trebuie să aibă dimensiuni universale utilizate în alte unități)	1	DA inlcus	pag. 4 din Data Sheet DS 500 SC - DS 500 SCL
INSTRUIRE, INSTALARE SI UTILIZARE					
11	Transport	Furnizorul trebuie să includă transportul până la unitatea medicală finală	da	DA	
12	Instalare	Furnizorul trebuie să efectueze verificările de instalare, siguranță și funcționare înainte de predare. Trebuie asigurată instruirea utilizatorilor și a tehnicienilor.	da	DA	
		Supape de presiune pentru apă și pompe de evacuare a apei în canalizare, dacă este cazul	da	DA	
		Traseul de electricitate și canalizare a punctelor de racordare, va fi asigurat de beneficiar (confom recomandărilor producătorului)	va fi asigurat de beneficiar	DA	
GARANȚIE ȘI ÎNTREȚINERE					
13	Garanție și deservire completă (inclusiv piese de schimb)	minim 24 luni	da	DA	
DOCUMENTAȚIE					
14	Cerințe de documentare	Toate documentele justificative, manualele de operare, de service trebuie prezentate în limba de stat sau în limba engleză. Manualul de utilizare/Instructiunile de utilizare trebuie prezentate în limba engleză și în limba de stat.	da	DA	
SIGURANȚĂ ȘI STANDARDE					

15	Standarde pentru producător	toate certificatele valabile enumerate mai jos: 1. Certificat de conofmritate CE conform directivei 93/42 EEC sau a Regulamentului 745 2. Declarația de conformitate CE conform directivei 93/42 EEC sau a Regulamentului 745 3. ISO 13485 și sau 9001 4. EN ISO 15883 5. EN ISO 15223 6. EN ISO 14001	toate certificatele trebuie prezentate în copii cu ștampila de confirmare	DA	pag. 1 din Data Sheet DS 500 SC - DS 500 SCL pag. 7 din Instructions manul/Operating manual WD DS 500, CL/ CDL/ SCL/ SCD si Certificate atasate

DS 500 SC – DS 500 SCL

Surgical instruments washer disinfectors

The DS 500 SCL and DS 500 SC are under counter washer disinfectors designed for the cleaning and the **thermal disinfection** of surgical instruments, dental instruments and laboratory glassware.

This unit has 2 injection connections for washing allowing the use of upper, lower and dual injection wash carts with up to 4 loading levels.

The upper level has telescopic bearing rails enabling the use of specific upper wash carts. The drop-down door provides a loading platform for lower and dual injection wash carts for a convenient loading and unloading job.

DS 500 SC is available only in stainless steel door version (with LED display). DS 500 SC electronic programmable microprocessor is capable of storing up to 10 washing programs: 5 standard pre-programmed cycles and 5 additional customizable cycles (password protected) so customers can configure dedicated programs for their independent needs.

DS 500 SCL is available in stainless steel door version (with LCD display) and can be optionally configured as full glass door version (with soft touch display). DS 500 SCL electronic programmable microprocessor is capable of storing up to 40 washing programs: 20 standard pre-programmed cycles and 20 additional customizable cycles (password protected). The user can customize any parameter of the wash cycle.

General description

Dimensions

External WxDxH:
600mm x 630mm x 850mm
23.62” x 24.80” x 33.46”

Chamber WxDxH:
555mm x 500mm x 670mm
21.85” x 19.68” x 26.38”

Door passage WxH:
540mm x 540mm
21.26” x 21.26”

Standard compliant

Steelco DS 500 SC and SCL range of washer disinfector is designed to comply with the European EN ISO 15883 and is a medical devices CE classified (Community Rule 93/42/CEE). UL Listed (SCL range).

Water consumption

12 l (3.1 gal.) per chamber fill

Heat loss

280 kcal/h (1’111 Btu/h)

Sound level

Washing: 52,9 dB

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Standard features DS 500 SC

Water softener (this configuration defines the DS 500 SCD and DS 500 SCDL version)

- Softens incoming hot and cold water
- Programmable automatic regeneration with salt bag and alarm for low level of salt

Hinged dropdown door

- Stainless steel door frame, stainless steel AISI 316L (DIN 1.4404) washing chamber side, stainless steel AISI 304 external side.
- The door acts as a loading platform for lower and dual injection wash carts for a convenient loading and unloading job
- Fully insulated to reduce heat loss and noise

Fully extendable load bearing arms

- The upper level has fully extendable telescopic bearing rails enabling the use of specific upper wash carts

Washing system

- Two rotary spray arms, one at the bottom and one at the top of the chamber
- Spray arms made of AISI 316L stainless steel (DIN 1.4404)
- Easy disassembling washing arms for cleaning and maintenance
- Up to three more washing arms in the available wash carts

Direct injection system

- Up to two wash chamber connections for injection washing basket

Circulation pump

- Pump flow rate 270 l/min (30,64 gal.US/min)
- Pump power 550 W

Filter system

- Three stage filtration system helps protect recirculation and drain pumps from debris
- Filters can be easily removed for cleaning
- Water filtration on inlet water solenoid valves

Steam condenser

- Removes steam vapors at a set temperature programmable from: 0-93 °C (32 °F- 200 °F)

Chemical dosing

- Two peristaltic pumps provide precise addition of liquid chemical agents
- Vacuum switch for checking chemical presence

Electric heater

- 5.1 kW electric heating elements providing heating up to 93°C (200°F)
- Electric thermostat
- Two independent PT1000 temperature probes

Latent heat drying enhanced by heating elements

- Chamber drying by electrical heating elements located in the sump

Microprocessor Control System

- Possibility of up to 10 storable programs 5 standard programs, 5 user definable programs

System control panel

- Digit pressure function buttons
- 3 characters monochrome LED display

System monitoring

- Audible and visual alarms provide quality control for each wash cycle
- Pressure sensors to control chamber water level and to prevent water overflow
- RS 232 port for printer connection to monitor and validate washing cycle

Drain pump

- Independently operated drain pump (70 W power) for an efficient pumping out wastewater

Standard features DS 500 SCL model, stainless steel door version only

Microprocessor control system

- Possibility of up to 40 storable programs 20 standard programs, 20 user definable programs
- Password protected programming

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System control panel

- Digit pressure function buttons
- 32 Character LCD display
- USB port for historical cycle data, machine parameters and washing programs download. Allows easy software upgrades

Standard features DS 500 SCL model, full glass door version only

Hinged dropdown door

- Stainless steel door frame, stainless steel AISI 316L (DIN 1.4404) washing chamber side, high visibility HST tempered full glass door external side
- The door acts as a loading platform for lower and dual injection wash carts for a convenient loading and unloading job

System control panel

- Soft touch control system on glass panel
- Graphic color LCD display
- USB port for historical cycle data, machine parameters and washing programs download. Allows easy software upgrades

Programming and cycle operation

The user can create customized programs to meet specific needs. Listed are various phases that can be programmed and repeated into various combinations.

- **Pre-Wash** – User can define the number of pre-washes, length of pre-washes and select water type
- **Wash** – User can define the length of the wash cycle, detergent dosing and dosing temperature, temperature of the water and select between cold, hot and DI water or mix two sources
- **Chamber flush during drain** – User can define flush time execution during the draining of the chamber
- **Neutralization** – User can select the length of the rinse, the presence and the amount of neutralizer, temperature of the water and select between cold, hot and DI water or mix two sources
- **Thermal disinfection** – User can define the length of the DI rinse, temperature of the water up to 93°C (200°F) presence and amount of rinse aid

Safety features

Door locking

- Prevents interference with wash cycle once the machine is in operation

Drop down door

- Eliminates the safety hazard associated with guillotine type doors
- Counterbalanced for safe operation

Construction

Washing chamber

- Constructed using AISI 316L BA Ra < 0.8 µm (Ra < 30 µin)
- Designed and constructed with smooth edges and corners removing areas where dirt can accumulate and allow bacterial growth

Exterior

- AISI 304 Scotch Brite finish Ra < 1.2 µm (Ra < 40 µin)

Components

- Constructed using high quality stainless steel and other materials which are resistant against the effects of aggressive detergents

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Insulation

- High performance melamine insulation guards against heat loss and reduces noise level

Option features

8000 W

- Extra heating elements in the wash chamber
- Raises total power to 8 kW to reduce cycle time through shorter heating time in the wash chamber
- Only available for 3 phases electrical connection

Light inside the chamber

Device main switch

ON-OFF control panel switch

Drain cooling system, controlled with solenoid valve

- Wastewater is cooled down to 60°C (140°F)

Built-in pressure booster pump for demineralized water

- Allow the machine connection to non-pressure demineralized water tank supply

Boiler 18Lt for demineralized water pre-heating

- Pre-heats DI water to a programmed temperature 0-93°C (32-200°F). Active when washing chamber heating elements are off
- Water is pushed by DI water pressure (no pump)
- Requires 600mm (23.62”) height stand or fully dedicated side cabinet (machine is built as a single 900mm (35.43”) wide unit

Additional dosing pump

- Up to two extra peristaltic pumps for chemical dosing to meet specific wash requirements (fourth dosing pump must be placed externally)
- Fourth peristaltic pump for chemical dosing can be added into an accessory side cabinet

Flowmeters

- For additional chemical dosing control

Analogic pressure transducer

- To monitor water pressure values in the washing circuit
- Not available for SC and SCD models

Conductivity sensor

- Accurate measuring of the conductivity value during the final rinse
- Requires side cabinet

Pressure switch on washing circuit

- Not available for SC and SCD models

Printer

- For validating washing phases with detailed information
- External ST1 (integrated power socket available as option). Printer can be integrated on the front panel of an accessory side cabinet (ST2 printer)

Kit gateway for Ethernet connection

- For compatibility with traceability software SteelcoData Live or Pro

Independent monitoring system

Stainless steel stand

- Different configurations available

Water demineralization system for DI water supply

- Equipped with priming, pressure relief valve and conductivity system
- Additional cabinet is needed
- 25 Lt resins refill bag available

Floor anchoring brackets

- Anchors washer to floor

Racks and carts

A large variety of basket trays, injector racks, net baskets for: surgical instruments, MIS instruments, anaesthesia instruments, ophthalmology instruments, OP rubber shoes, containers, baby bottles…

Chemical products

A large selection of cleaning chemicals is available

Validation support documentation and services

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Installation Qualification (IQ), Operational Qualification (OQ) and Performance Qualification (PQ) testing available upon request

Required utilities

For connection details please refer to installation drawing of the selected model/version.

Hot water, Cold Water, DI Water

Drain Connection

Electrical requirements

Electricity DS 500 SC (3.05kW)

- 230V/~/50Hz, 208V/3~+N/60Hz, 220V/~/60Hz

Electricity DS 500 SCL (5.60kW - 8.0kW)

- 400V/3~+N/50Hz, 208V/3~+N/60Hz, 480V/3~+N/60Hz

Other electrical connections are available to match electrical requirements of installation site

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Steelco

Miele Group Member

Instructions manual
Operating manual

WASHER DISINFECTOR

DS 500 CL
DS 500 CDL
DS 500 SCL
DS 500 SCDL

Serial N°:

CE 0051

Via Balegante, 27
31039 Riese Pio X (TV)
ITALY

Manufactur:

STEELCO S.p.A.
Via Balegante, 27
31039 Riese Pio X (TV)
ITALY

CONTENTS

Thank you for purchasing this appliance.

The installation, maintenance and operating instructions given in the following pages have been prepared to ensure the long life and good performance of the appliance.

Following the instructions carefully.

The appliance was designed and constructed using the latest technological innovations available.
Please take good care of it.

Your satisfaction is our best reward.

WARNING	**NON OBSERVANCE, EVEN IN PART, OF THE RULES INDICATED IN THIS MANUAL WILL CAUSE THE PRODUCT GUARANTEE TO BECOME INVALID AND RELIEVES THE MANUFACTURER OF ANY RESPONSIBILITY.**

1. GENERAL RULES

1.1 Limits of manufacturer's liability

The manufacturer shall not be held liable for failures or problems which arise due to tampering and/or incorrect applications and/or improper use of the machine.
The purchaser must comply with all the instructions set forth in the user's manual, and he must in particular:

- Always work within the allowable limits for the use of the machine;
- Always carry out constant and diligent maintenance;
- Allow use of the machine by persons with proper skills and abilities for their role and purpose who have been properly trained and instructed;
- Use only manufacturer original spare parts.

Any modifications, adaptation or the like which may be made to machines which are subsequently placed on the market do not oblige the manufacturer to intervene on previously supplied machines, nor to consider the machine and the related user's manual lacking and inadequate.

The installation, maintenance and operating instructions given in the following pages have been prepared to ensure the long life and outstanding performance of the appliance.

For some special demanding programming or maintenance operations, this manual serves as a memorandum of the main operations to be carried out.
Education on these topics can be obtained by attending training course held by the manufacturer.

The instructions in this manual do not replace but rather are in addition to employer requirements to adhere to current legislation on standards of prevention and safety.

The machine is guaranteed for 15 months as from the time of shipment.

1.2 Manual validity, contents and conservation

- This manual reflects the state of the art at the moment of manufacture and delivery of the appliance and is valid for its entire life cycle.
- The manufacturer is at clients' disposal for further information or to receive suggestions for making the manual more compliant with the needs for which it was prepared.
- The translation of the contents into the client's language has been carefully prepared.
- In order to prevent possible accidents to persons or property due to in correct translation of the instructions, the client must:
  - Not perform operations or manoeuvres with the machine if there are any doubts or uncertainties about the operation to be performed;
  - Ask technical service for clarification of the instruction.
- If lost, ask for a new copy from the manufacturer.

It is important to keep this instruction manual with the machine for future reference.
If the machine is sold or transferred, the manual must be handed over to the new owners or user in order for them to become acquainted with its functioning and the relative warnings.

Read the warnings carefully before installing and using the machine.

This is a translation of the Italian text, which prevails in case of doubts.

1.3 Regulations

The purpose of the warnings is to safeguard the user in compliance with following Regulations and “Technical Product Standards”:

EUROPE:

- 93/42/EEC and s.m.i. (Medical Devices Directive);
- 2014/35/UE (Low Voltage Directive);
- 2014/30/UE (Electromagnetic compatibility directive);
- EN 61010-1 (Safety);
- EN 61010-2-040 (Safety);
- 2011/65/CE (RoHS II);
- 2012/19/CE (RAEE);
- 2006/42/EC (Machine Directive)

and recognized international standards:

- IEC 61000 (Electromagnetic compatibility);
- ISO 14971 (Medical devices risk analysis);
- IEC 61326-1 (Electromagnetic compatibility);
- ISO 15883-1 (Cleaning efficacy);
- ISO 15883-2 (Cleaning efficacy);
- ISO/TS 15883-5 (Cleaning efficacy);
- IEC 60529 (IP Grade).

2. SAFETY INFORMATION

Compliance with safety standards allow the operator to work productively and calmly, without the danger of harming himself or others.

Before starting work, the worker must be completely familiar with the functions and proper operation of the machine. He must know the precise function of all command and control devices of the machine.

2.1 Intended use, improper use

INTENDED USE:

Use is permitted of this machine only and exclusively for the washing and thermal disinfection of medical instruments, trays and objects normally used in medical studios, hospital wards, assisted living centres, like:

- **Scissors**
- **Clogs**
- **Glass works**
- **Laboratory instruments**

IMPROPER USE:

The improper use of this device is any use other than that for which the machine is intended.

The machine is indeed for indoor use only.

	**WARNING**
	Any use other than the one intended is forbidden.
	Improper use of this unit may be hazardous to the operator and may seriously damage the machine itself.
	If the appliance is used in a manner not specified by the manufacturer, protection of the appliance may be compromised.

Advisory note: under ISO 17664:2004, it is the instrument manufacturer's responsibility to provide instructions for the processing of their instruments including how instruments should be prepared prior to use, cleaned, disinfected, dried, inspected, maintained, tested packaged, sterilized and stored. If medical devices have been used in any way such as being exposed to blood or compromised tissues, such devices must be terminally processed in accordance with the instrument manufacturer's guidelines, observing international and local standards as well as good hospital practices before each use with human patients. Washer disinfectors are part of the process for reprocessing reusable medical devices.
This washer disinfector device is not intended to be used for terminal disinfection or sterilization.

2.2 Important warnings and suggestions

For proper use of the machine, and in order to safeguard employed staff, carefully comply with the following general and specific standards.

THE OPERATOR MUST:

- **Carefully adhere to the provisions and instructions** provided by the employer, managers and supervisors for individual and group safety.
- **Use safety devices appropriately and with care**, as well as group and individual safety gear provided by the employer.
- **Immediately inform the employer,** the manager and the supervisor of deficiencies in the aforementioned devices and means, as well as any hazardous conditions which he may become aware of, taking action directly in urgent cases within their scope of responsibilities and abilities to eliminate or reduce the deficiencies or hazards.

THE OPERATOR MUST NEVER:

- **Remove or modify, without authorization, the safety devices**, nor those for signalling and measuring, nor the individual and group safety gear.
- **Undertake on his own initiative operations or manoeuvres which are not his responsibility** which may compromise safety.
- **Insert foreign objects into the electrical parts.**
  Do not insert foreign bodies into the covers of the electrical motors or into the moving parts of the machine.
- **Provide power to the machine by tampering with the main switch and the safety devices.**

2.3 Safety recommendations

- If the new machine appears to be damaged, contact the retailer before starting it.
- Any modification of electrical and hydraulic systems necessary to install the machine must be carried out by qualified, authorised persons only.
- This machine must be operated only by trained persons;
- The machine must be used for treatment and thermo disinfection of instruments for medical use and for laboratory glasses.
- Any use other than that for which the machine was intended is forbidden.
- The user is forbidden to carry out any work or repairs on the machine
- Technical Assistance for this washer disinfector should be carried out by qualified and authorised operators only.
- The equipment should be installed by authorised persons only.
- Do not install the equipment in rooms where there is the risk of explosion.(ATEX)
- Do not expose the equipment to intense cold.
- The electrical safety of this washer disinfector is only guaranteed if it is connected to an efficient earth system.
- Take great care when handling detergents and additives: avoid contact, wear gloves and act in compliance with the safety recommendations indicated by the manufacturer of the chemical products.
- Do not inhale the fumes produced by chemical products.

WARNING:
The chemical products are an irritant for the eyes, in case of contact rinse thoroughly with plenty of water and consult a doctor.
If these products come into contact with the skin, rinse with plenty of water.

- The water in the tank is not drinking water.
- Do not lean on the door and do not use it as a step.
- The machine reaches a temperature of 93°C during the work cycle: take great care to avoid burns.
- Do not wash the machine using high-pressure jets of water.
- Disconnect the machine from the electrical supply before carrying out maintenance work.
- The acoustic pressure of the machine is below 70 dB(A).
- The operator has always to verify before starting of the cycle the presence of the filters water in the sump and their correct positioning.

2.4 Recommendations to ensure high quality performance

- **The user must oversee the machine during the cycle.**
- **The injection tube for washing water must always be connected to the appropriated basket.**
- **When the machine is running do not interrupt the cycle since this jeopardises disinfection.**
- **Check periodically using chemical indicators to ensure correct disinfection.**
- **Use recommended detergents and chemical additives only.**
  The use of other products may damage the machine.
  During the manipulation of treated objects, it is required the use of appropriated PPE to prevent contact with infected material and the risk of contamination.
- **Do not introduce dirty instruments of substances that must not be discharged in sewage system (in accordance with current legislation) but must be disposed in specific way.**
- **Recommending chemical additives does not make the manufacturer responsible for any damage to the materials and objects treated.**
- **Check that type of chemical product is suitable for the specific washing program used.**
- **Follow the manufacturer's indications when using chemical products and use them for the foreseen use only.**
- **The machine was designed for use with water and chemical additives.**
  Do not use organic or other types of solvent as this may result in the risk of explosion or the rapid deterioration of certain machine parts.
- **Residues of solvents or acids, particularly "hydrochloric acid", can damage steel.**
  Contact should be avoided.
- **Use original components only.**
- **Do never use soap powder.**
- **Do never use foaming detergent.**
- **The machine is to be used only with the baskets and or components included by the manufacturer.**
- **Components which are not approved by the manufacturer may compromise the results achieved as well as user safety.**
- **Wet location.**
- **Mains supply voltage fluctuations: +/- 10%.**
- **Overvoltage category: II.**
- **Pollution degree 2.**
- **IP20.**
- **Protection degree against impacts: IK06.**
- **Environment lighting degree: 215lux max 1500lux.**
- **Do never use chemical products based on chlorides (bleaches, sodium hypochlorite, hydrochloric acid and so on).**
- **These kinds of chemical detergents irreparably damage the machine and jeopardise the integrity of materials and objects treated.**

The taps of the water feeding must be always turned off, as the safety and diagnosis system will be deactivated, in the following situations:

- **if the machine is left unused;**
- **if the machine is disconnected from the electrical connection.**

The manufacturer declines all responsibility for personal injury or material damage resulting from the non-observance of the above rules.

The non-observance of these rules produces the total and prompt cancellation of the guarantee.

2.4.1 Inlet water quality

The quality of the water used in all stages of cleaning is important for good results.

The water used in each stage must be compatible with:

- The material of which the washer disinfector is made.
- The chemicals used in the process.
- Process requirements for the various stages of the process.

The main factors for good inlet water quality in relation to the washing efficacy are:

HARDNESS	The high hardness of the water generates a detergent inactivation, reducing its efficacy. It also causes limescale deposits in the machine, jeopardizing the clean of the instruments and the machine, especially on hot parts (ex. heating elements).
IONIC CONTAMINANTS	A high concentration of ionic contaminants may cause corrosion of steel, manganese or copper instruments.
MICROBIAL CONTAMINANTS	Microbial contaminants can increase the microbial contamination of the instruments at the end of the wash.

The manufacturer therefore recommends that:

- water used in the pre-rinsing and washing phases should be of drinkable quality in accordance with the "Guidelines for drinking water quality 3rd edition" published by WHO.
- demi water is used for the rinsing phase.
  A typical specification for demi water is:

Ion concentration H+	4.5…7 pH
Conductivity	< 30 µs.cm^{-1}
TDS	< 40 mg/l
Maximum hardness (CaCO3)	< 10 mg/l
Chlorine	< 10 mg/l
Heavy metals	< 10 mg/l
Phosphates	< 0.2 mg/l come P_2O_5
Silicates	< 0.2 mg/l come SiO_2
Endotoxins	< 0.25 EU/ml
Colony-forming unit (CFU)	< 100 per 100 ml (*)

(*) for rinsing after disinfection phase, the maximum limit changes to 0.

Further advice should also be obtained from the manufacturers of chemical and medical equipment.
Where local standards are stricter than provided recommendations, they should be followed.
Note: that it is the user's responsibility to supply the machine with suitable water.

2.5 Residual risks

The appliance includes a series of fixed guards to prevent access to hazardous internal parts or zones.

It is however considered that the **WASHER DISINFECTOR** includes some residual risks.
Hereunder for each phase or significant work intervention are useful measures to be taken:

PHASE	BASKET LOADING
RISK	**Contusions and cuts to the upper limbs,** due to accidental contact with due to falling or striking against tools, objects and instruments, mainly while loading and handling the basket.
MEASURE	Assign staff that is instructed and equipped with work equipment (e.g. basket with protections, transport carts) and appropriate clothing and individual protection gear (e.g. shirts and protective gloves).

PHASE	OBTAINING DETERGENTS/CHEMICAL ADDITIVES
RISK	**Contact with body parts with chemical washing products.**
MEASURE	Assign staff that is instructed and equipped with appropriate clothing and individual protection gear. Wear clothing, gloves and goggles and act in compliance with the safety recommendations indicated by the manufacturer of the chemical products.
FIRST AID MEASURE	• Immediately take off/remove clothing which has been contaminated or soaked by the product. • If the substances come into contact with the skin, wash off affected skin areas immediately and rinse with water.
RISK	**Inhalation of vapours of chemical wash products.**
MEASURE	Assign staff that is instructed and equipped with appropriate clothing and individual protection gear. Comply with the safety instructions provided by the manufacturer of the chemical products and if there are none, wear a mask for the protection of the respiratory airways.
RISK	**Accidental release of chemical wash product**.
MEASURE	Do not flush concentrate into drains, surface or ground waters. Collect spillage with adsorbent material (e.g. sand, earth, vermiculite, diatomaceous earth). Flush away minor amounts with plenty of water.
	**IN CASE OF CONTACT WITH BODY OR RELEASE OF CHEMICAL PRODUCT LOOK ALWAYS AT THE SAFETY MEASURES INDICATED IN THE CHEMICAL TECHNICAL DATASHEET.**

PHASE	MAINTENANCE OF INTERNAL EQUIPMENT
RISK	**Burns of body parts by hot parts of the appliance.**
MEASURE	Allow maintenance to be performed only by trained personnel, equipped with appropriate clothing and individual protection gear. Wear suitable clothing and protective gloves.

PHASE	EMISSION OF HAZARDOUS GAS
RISK	**Inhalation of vapours of hazardous gas.**
MEASURE	With a correct installation, concurring with the manufacturer prescription, using the authorized chemical product and concurring with the rules in force in your country, the machine don't generate hazardous gas. However the machine is supplied with vapours discharge, that have to be connected concurring with the instruction in chapter 3.

	WARNING
	In case of door with automatic locking/unlocking mechanism, pay attention to not touch the machine and not put your hands over the machine when the door opens to let out the steam. The steam is hot.

2.6 Safety signal used

To inform personnel operating on the machines of obligations of behaviour and residual risks, adequate safety signals (as set forth by 92/58 EEC) are applied to the machine and near the work place.

GENERIC SAFETY SIGNALS:
In particular, labels with signals of obligation, prohibition and danger contained in this manual and pertinent to this machine and most commonly used are:

Electrical risk

Warning!
See annex documentation

Caution hot surface

INDIVIDUAL SAFETY WEAR:
The evaluation of risks for the health and safety of workers carried out in the workplace and on any equipment used, as well as the evaluation of residual risks as indicated, allow the employer to evaluate the need to adopt the individual protection gear which is most suitable and appropriate to be provided to workers.
Considering the type of machine, it is felt that the individual protection gear should be provided to staff.

2.7 Training

Instructions for use of the machine will be provided by the STEELCO INSTALLATION TECHNICIAN during the start-up phase to MACHINE OPERATORS and MAINTENANCE TECHNICIANS for their areas of responsibility, who will be thus instructed and trained.
It will be the duty of the EMPLOYER to check that the degree of staff training is suitable for assigned duties.

2.7.1 Staff qualification

Depending on the difficulty of certain installation operations, and of the operation and maintenance of the system, professional profiles are identified as follows:

IS ***INSTALLATION and REPAIR TECHNICIAN:***

Specialized installation and maintenance staff capable of carrying out all machine positioning and installation operations, connection of various systems and machine start-up at the client's place of business, as well as all routine and special maintenance operations.
This operator is responsible for training staff for machine operation and for testing the machine.

AS ***RESPONSIBLE AUTHORITY FOR THE MACHINE IN THE WORKPLACE:***

Specialized staff assigned to the verification of safety devices and procedures for proper use of the machine in complete absence or hazards.

The *responsible authority* is personally responsible for training courses for staff assigned to machine operation and maintenance.
He must ensure that staff assigned to operation have acquired all information required for use and routine maintenance of the machine, registering attendance and documenting comprehension tests.

The *responsible authority* must have a perfect understanding of all command, control and safety devices of the machine.
He must inform all personnel assigned to machine operation and maintenance of the instructions concerning *safety standards*, the *actions to be avoided* and the *first aid interventions* connected with use of the machine and the chemical wash agents it contains.

The *responsible authority* must be aware of all correct procedures for carrying out in absolute absence of danger all operation and maintenance of the machine, as well as all procedures for disposal of any residual pollutants and manufacturing wastes.
He must always be present during extraordinary or routine maintenance and give his *approval to proceed* to staff assigned to operation or to personnel assigned to routine or special maintenance.

The *responsible authority* will be responsible for operation of all command, control and safety devices in the machines of the system.
He shall carry out scheduled verification of those devices in order to ensure their continued operation over time.

AC ***MACHINE OPERATOR:***

Skilled personnel assigned to machine operation.
The *machine operator* must be perfectly aware of all the machine's command and control devices.
Only after approval by the *safety supervisor, the machine operator* must be capable of using the assigned commands to do the following:

- Commissioning and start-up of the machine;
- Loading and unloading of material to be washed in the baskets;
- Operation of the machine in the various possible working modes, such as the start of various programmed wash cycles.
- Programming and setting data from the operator panel, adjustment of single control devices during working phases, starting or resetting of work functions.
- In addition, the *machine operator* must, by making use of all required individual protection gear and following adequate safety measures, be capable of performing some routine maintenance such as cleaning inside the machine, cleaning clogged filters, and disposing of pollutant waste materials produced during working.

2.8 Indication of sound level

The value shown refers to the measurement obtained on a machine of the same type as that covered herein and measured with an instrument at a height of 1.5 m at a distance of 1 m from the machine.

AVERAGE SOUND PRESSURE LEVEL: < 70 dB (A)

2.9 Transport and storage

Environment conditions:

- Temperature range -5 ... +50 °C;
- Relative Humidity range Max 80% (5 ÷ 31°C); 80…50% (31…40°C);
- Ventilation: Air exchange not required (required only if chemical tanks are installed).

2.10 Table of symbols

Symbols installed on the machine:

	Electrical risk
	Warning - hot surface
	Manufacturer
	Manufacturing date
	Attention! See the enclosed documentation for important warnings, such as warnings and precautions.
	See instruction for use
	Protective conductor terminal
	CE mark issued by the notified body: 0051 identifies IMQ Indicated on the serial number label
	WEEE waste disposal
MD	Medical device indication
COD	It indicates the final product code of the medical device. It is reported in the serial number label. The “COD” corresponds to the article code in the system (AS 400) and in the sales invoice. This code can be variable depending on the model/specifications required by the customers. The machine model requested by the customer is in line with the model reported inside the technical documentation “DT-8051520DSXX2A” and in the DD-8051520DSXX2A medical device description document.

REP	Authorized Local Representative.
#	It indicates the model number of the product. It is reported on the serial number label.
UDI	It indicates the unique device identifier of the product. It is reported on the serial number label.

3. INSTALLATION (FOR THE INSTALLER ONLY)

3.1 Activity prior to installation

PREPARATION OF INSTALLATION SITE:
Arrangements for connections to the electrical and plumbing systems must be provided by the client prior to machine installation.
Connections must be compliant with current directives in the country of installation and they must comply with the instructions contained in the documentation (provided on request) prior to machine installation.

ENVIRONMENT CONDITIONS:

- Temperature range +5…+40°C;
- Relative Humidity range Max 80% (5 ÷ 31°C); 80…50% (31…40°C).
- Maximum altitude: 2.000 m SLM (for higher altitudes are available special versions of the device).

3.2 Positioning

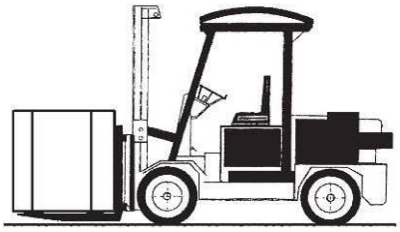
3.2.1 Movement, unpacking and placing

The machine is delivered to the client fully packed, resting on a wood base and completely protected by cardboard covering.

LIFTING AND MOVEMENT:
Movement of the machine is provided using transport and lifting equipment and must be observed the following indications:

- The lifting capability of the forklift must be greater than the total weight of the machine to be moved.
- The machine must be kept as close as possible to the ground during movement;
- Stack up: not allowed;
- Rotation: do not turn upside down.

The forklift operator must perform movement only when there are no persons or objects in the movement area.



UNPACKING AND PLACING:
Near the place of installation, unpack the machine.
Carefully follow these steps:
All the packaging materials can be recycled.

- Open the packaging carefully.
- Do not overturn the machine as this may cause irreparable damage.
- Cut the strap or open the box and remove the expanded polystyrene corner guards.
- Remove the box followed by the nylon bag.

CAUTION:
the bag represents a serious hazard for children and should be disposed of immediately.

- Place the machine on the work surface and level it by adjusting the feet.
- The machine must be placed horizontally with a maximum inclination of 1÷2°.
- Do not position the machine on surface which could cause a fire or fume hazard.

3.2.2 Maximum floor load

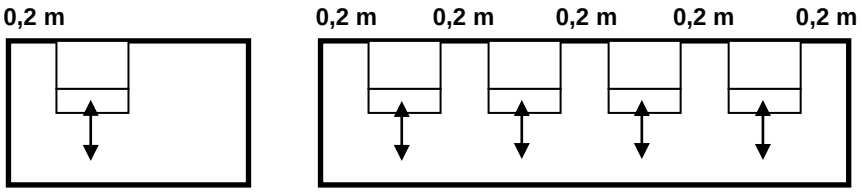
For the installation of the machine, the floor must be able to sustain a minimum load of:

- **150 daN/m^2**

3.2.3 Positioning of the machine

In normal conditions, the minimum dimensions are suggested for the use of the machine in a single installation or with the coil nearby.
For different installation ask for the distributors.

Minimum room ceiling height: MACHINE HEIGHT (in m) + 0,3 m



3.3 Water connection (for the installer only)

To perform proper installation, account of following regulations:

- The machine has been connected to the water distribution network following the in force rules;
- Use only the tubes supplied with the machine;
- Do not cut short the rubber tubes supplied with the machine;
- Make sure that mains water pressure is between 100 kPa (1 bar g) and 800 kPa (8 bar g);
- ;If it is below 100 kPa (1 bar) dynamic pressure, you will need to install a pressure increase pump. If the pressure is higher than 800 kPa (8 bar) a pressure reducer must be installed.
- For machines equipped with steam condenser or water softener, the minimum pressure of water must be increased to 200 kPa (2 bar g) to ensure the correct functioning in terms of performance.
- If the average hardness of the water is higher than 7 °f, decalcified water must be used;
- For connection use cocks with an attachment of ¾", located in an easily accessible location as near as possible to the machine;
- Make sure that the general feeding tube is sufficient for the flow rate required from the machine and equipped with a general closing valve.

ATTENTION

For the specifications for water connections, refer to the plant installation.

During the machine installation, the installer must take the following step:

1. Identify the tubes supplied with the machine and make sure they are free from damages;
2. Identify the correspondence of the connection of flexible tubes to the water supply taps arranged in site, according to the references of the following chart.

CONNECTION	COLOUR
HOT WATER	RED
COLD WATER	BLUE
DEMI WATER	WHITE

3. Screw and tighten up the pipe sleeve to the connection arranged in site.
4. Remove any debris in the pipes or in the taps. To perform this operation, open the tap and let the water flow in a pail.
5. Check the water temperature according to the specifications of the installation diagram.
6. Identify the correspondence of the connection of flexible tubes to the solenoid valve water supply of the machine.
7. Screw and tighten up the pipe sleeve to the connection arranged in site.
8. Open gradually the water supply taps and check the connections seal.
9. Terminated the connection, in case of water leaks repeat the procedure.

ATTENTION

The threaded connections can be easily damaged, therefore before to apply the maximum clamping, screw manually the locking sleeve for some threads.

Information:

- The back syphonage prevention system is already installed inside the machine concurring with IEC 61770;
- If it isn't available the double connection to hot and cold water, the two supply pipes must be connected together;
- **The manufacturer declines all responsibility for damage or injury caused by noncompliance of the rules relating the supply installations.**
- **If you don't comply with the conditions above, the deriving damages will not warranty.**
- **In case of lack of demineralized and warm water set the parameter 3.37 and 3.38 to 1.**

ATTENTION

When the machine is not in operation, always close the supply cocks.

3.4 Electrical connection

Connection of the machine to the electrical mains must be made by qualified, skilled personnel.

- Power supply cable: It is compulsory for the retailer - installer to adapt the insulation class of the power supply cable to suit the working environment in compliance with Current Technical Regulations.
- The machines are normally equipped with a three-phase 220/230/240 vac - 60hz power supply and three-phase with neutral 380/400/415 vac - 60hz power supply.
  For the specific voltage, please refer to the label on the machine.
- Make sure that the mains voltage reading corresponds to the voltage indicated on the machine plate.
- Check that the power supply voltage does not differ by more than 10% from its nominal value.
- The frequency of the power supply voltage must not differ by more than 1% of its value.
- Connection of the machine to the mains must be provided with an earth connection and an equipotential circuit as set forth by current standards.
- Make sure that the electrical systems are efficiently earthed.

- The earth conductor is to be connected to the earth terminal identified by the standard symbol.

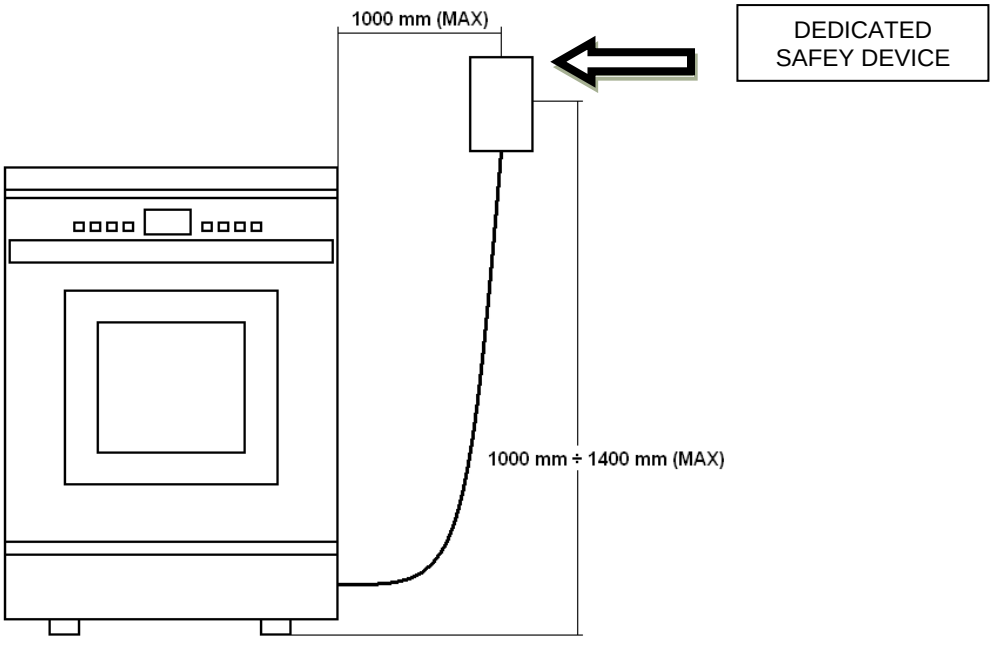
- The machine is equipped with a terminal identified by the relative symbol for equipotential connections between appliances (see rules for electrical plants).

- Connect the machine and the relative dedicated safety device (not supplied) by using a power cable compatible with the electrical characteristics of the machine.
- In case of prolonged unused of the machine is recommended that you execute the disconnection procedure of the electrical connection by placing the dedicated safety device in "OFF" state.
- The upstream electrical power line must be dimensioned and protected in accordance with current local regulations.

The dedicated safety device must be positioned in an accessible place, free and not covered from other machines or anything that could obstruct the switch control.

- The dedicated safety device must be provided with quality markings and must be indicated as an electrical shut-off device for the machine.
- Near the dedicated safety device a sign must be placed which reads:

EXAMPLE OF DEDICATED SAFETY DEVICE POSITIONING



3.5 Fuse

The fuses are used to protect the electrical circuits of machine from possible failure as overload or short circuits.
If a fuse takes action, the downstream connections and their function are no longer available.
The fuses must respect the characteristics (size, dimensions and tripping characteristic) indicated in the wiring diagram.

3.5.1 Replacement of fuse

ATTENTION

The replacement of fuse must be done from authorized operators only.
Before making the replacement procedure of fuse, establish and remove the cause of the fault.
If necessary, contact our technical assistance service.

Replacement procedure of fuse:

- Log off the machine in safety condition by dedicated safety device.
- Access to the electrical panel.
- Identify the fuse subjects to replacement, based on the wiring diagram.
- Remove the related fuse from electrical panel.
- Replace failure fuse with another fuse with same characteristics. The correct value of fuses is shown in the wiring diagram.

If at the reactivation of electrical devices the new fuse intervenes, repeat the diagnosis and replacement procedure as described previously.

ATTENTION

Use only fuses with the amperage and characteristics indicated in the wiring diagram.
The use of fuses other than those specified in the wiring diagram, void the warranty and can cause the risk of damage the machine.

3.6 Chemical products connections

The dosing system of chemical products is composed of:

- Dosing pump for chemical products.
- Presence sensor chemical product.
- The system can be equipped with meter quantity of dispensed product.

Further dosing pumps and accessories can be ordered as optional.
Each pump is combined with a corresponding type of chemical, according with the references on the table below.

PRODUCT	NOTE
DOS 1 ALCALINE or NEUTRAL or ENZYMATIC DETERGENT	
DOS 2 NEUTRALIZER	
DOS 3 LUBRICANT or RINSE AID	

ATTENTION

In order to guarantee the right treatment of the objects, we suggest the use of specific products. In the case of necessity, ask for advises to the seller or the producer.

3.6.1 Presence sensor of chemical product

Each dosing pump is combined with a sensor that confirms the presence of chemical product inside the container. If the product is scarce, the electronic control system of the machine sends a message on video of lack of product.

3.6.2 Meter quantity of chemical product

Each dosing pump can be combined with a volumetric sensor for the quantity measurement of dispensed product. The electronic control system manages the value of required minimum quantity and, if necessary, stops the cycle.

3.6.3 Replacement of chemical product container

To replace the chemical product container, perform the following procedure:

- Take the new product container.
- Switch off the machine.
- Open the compartment and remove the chemical product container.
- Replace the chemical product container removing the level sensor from the empty tank and put into the new one.
- Close the topper of the chemical product container and place it in the area for the storage of chemical substances.
- Close the technical compartment and switch on the machine.

ATTENTION

The used chemical product can be dangerous if touched or inhaled. Before the use, read carefully the safety information supplied by the manufacturer of the chemical product and the label on the package.

During the operations of replacement of chemical product container, use the appropriate tools for individual protection (chemical protective gloves, face masks for breathing, etc.).

The access to the technical compartment, where are located the chemical product containers, is permitted only with keys and to the authorized personal.

3.6.4 Warning

- For the maximum amount of product which can be used for washing cycle, follow the instructions for the product you are using.
- The quantity of supplied can be adjusted by following the directions given in chapter 12 – Chemical calibration.
- To ensure the efficiency of the chemical dosing system it is recommended to perform the calibration procedure every 6 months.
- To ensure the efficiency of the dispenser pumps for chemical products it is important to service them regularly as described in chapter 18.
- Use liquid chemical products only machine cannot function with powder detergent.
- For the dispose of the chemical detergent and his tank follow the instruction indicated on the technical and safety data sheet provided by the manufacturer.
- Check that type of chemical product is suitable for the specific washing program used.
- Do not place the chemical tank on the machine.

ATTENTION

Before undertaking any sort of special maintenance or movement of machine, empty tanks and chemical dosing circuit from the chemical. It is advised to execute a treatment cycle without chemical.

This procedure must be carried out in order to prevent contact of the chemical product with body parts and machine components that can be damaged.

3.6.5 Information

- The machine has been validated in accordance with the provisions of Standard UNI EN ISO 15883.
- The type test was carried out using the most widely known chemical products on the market, concerning the type of chemical products, the concentrations and the cycle parameters used you can ask the Manufacturer for details.

3.7 Connecting the discharge pipe

- The discharge pipe connection should be checked carefully.
- Use a discharge pipe suitable for organic and chemical materials and hot liquids.
- The machine is equipped with a drain pipe with a diameter indicated on the installation plant.

CAUTION:

Iif the discharge pipe is clogged take great care when processing the water and avoid contact with hands, eyes, etc. In the case of contact rinse the parts concerned with plenty of water.

CONNECTING DRAIN PIPE:

The drain pipe is connected to the sewer network in the following manner:

- Identify the drain pipe and relative fittings and assemble them. Make sure the seal gasket is installed correctly.
- Identify the drain manifold and connect the hose via the union and ring nut. Tighten the ring nut firmly.
- Insert the drain hose and clamp it in place.
- Insert the other end of the hose into the drain unit, fitting it properly and locking it in position.

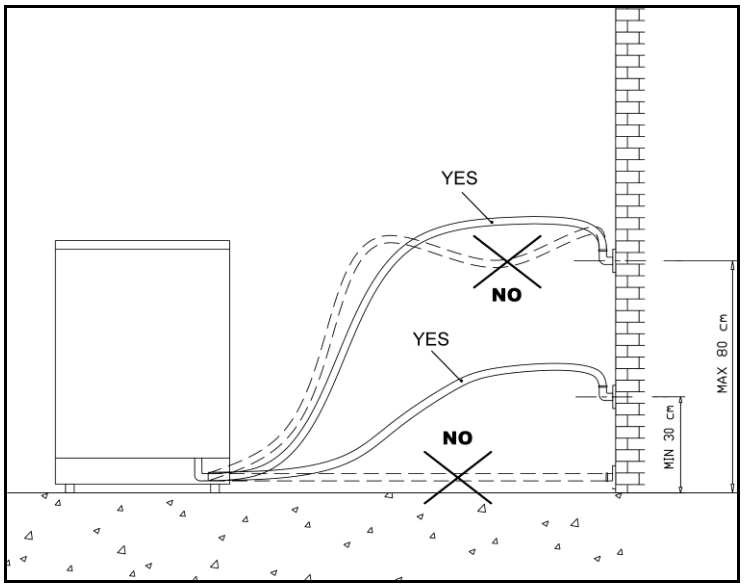
IT IS NECESSARY TO FOLLOW THESE INSTRUCTIONS FOR DRAIN CONNECTION

- Drain pipe must be connected by using a clamp.
- Drain pipe must not present angles or irregular curving in its course.
- Drain point must be placed at the same height of the machine drain point or on the floor.

Follow carefully these instructions as a wrong drain connection can cause the block of machine.

- The diameter of main drain must be as indicated on the installation plant.
- Avoid drain pipe extension.

ATTENZIONE
Drain must be done following International rules. **The manufacturer cannot be held responsible if an inaccurate use of machine causes pollution.**
If the discharge pipe is clogged take great care when processing the water and avoid contact with hands, eyes, etc. In the case of contact, rinse the parts concerned with plenty of water.
When the machine is connected to an exhaust ventilation system, the drain pipe should be positioned externally of the building, protected from any animal access, and make sure that it not causes any hazard.



3.8 Water softener built-in (DS 500 SCDL – DS 500 CDL)

The water softener built-in function is to reduce the anti-limescale quantity contained into the inlet water.
If the machine is connected with hard water, the result is a rapid degeneration with lost in functions and performances.
Regeneration must be done in order to maintain active ionic resins.

For machines equipped with water softener, when installed, water hardness value (French degrees -°f) must be introduced by entering into programming (PRG switch 5 seconds), at parameter **P7.26** and introduce one of the following values:

WATER HARDNESS (°f)	PARAMETER SETTING	CYCLES
0-10	Value 10	NO REGENERATION
11-15	Value 15	Regeneration every 30 cycles
16-20	Value 20	Regeneration every 25 cycles
21-25	Value 25	Regeneration every 21 cycles
26-30	Value 30	Regeneration every 18 cycles
31-35	Value 35	Regeneration every 15 cycles
36-40	Value 40	Regeneration every 12 cycles
41-45	Value 45	Regeneration every 9 cycles
46-50	Value 50	Regeneration every 6 cycles
51-55	Value 55	Regeneration every 3 cycles
56-60	Value 60	REG. present at each cycle (it is recommended for authorized people only).

The machine advises that it needs a regeneration with a writing on display "**salt loading**".

Actions:

- Open the door.
- Unscrew the plastic cap of salt box.
- Spill 0,5 kg of common salt inside the box by using the appropriate funnel.

WARNING: During this operation, pay attention not to let fall sail outside box.

- Closed the plastic cap.

After having introduced the basket, start with a normal washing cycle.
Machine automatically regenerates..

WARNING:
Washing cycle made after "salt inlet" will be longer and it seems that machine does not work.
During this phase, "regeneration" will appear on the display.

3.9 Drying air filtration (Optional)

The machines are standard equipped with an air filter of class 5 following rules EN 779.
The filter's replacement is suggested after 100 working hours.

The machine can be equipped also with a further absolute filter "HEPA H14" following rules EN 1822.
The filter's replacement is suggested after 300 working hours.

3.10 Ambient ventilation requirements

During the normal operation, the machine warms up itself dispersing heat and hot air increasing the humidity value; in the drying phase, these events increase. Therefore, in order to guarantee a comfortable environment with good temperature and humidity for the operator, it is necessary to prepare an air conditioning or air circulation system capable to balance the emissions reported in the installation plan.
The machines with drying system are equipped with an exhaust which can be connected to an external extraction system.

A detail of the machine connections is shown on the installation plant and electrical wiring.

4. CHECKS PRIOR TO START-UP

4.1 Introduction

The preliminary adjustments and controls are performed by a skilled technician, who has been specifically trained for this purpose.

4.2 Checks of safety systems

Indicative list of adjustments and checks of safety systems and devices to be carried out:

- Check the mains supply voltage;
- Check the efficiency of the emergency and machine shutdown devices (circuit breaker);
- Check the efficiency of the door opening safety micro switch;
- Check the operation of machine controls, especially the **START** and **STOP** commands.

4.3 General controls

Indicative list of general adjustments and checks to be made:

- Check proper execution of general supplies of the machine (electrical and plumbing);
- Ensure that the **MACHINE OPERATOR** is trained for its use;
- Check that the motors installed on the machine rotate in the correct direction (only for machines equipped with tri-phase power supply motors).

5. USING THE MACHINE (FOR THE USER)

5.1 Checks

Check the quantity of chemical additives present and top-up if necessary, as described below:

- Obtain appropriate individual protection gear (gloves for protection from chemical substances, breathing protection masks, goggles etc.) and the new detergent container.
- Turn off the machine.
- Follow the instruction on sections 3.6.

ATTENTION:
The chemical product which is used may be hazardous if touched or inhaled.
Prior to use, carefully read the safety information provided by the detergent supplier and the label applied to the package.

5.2 Opening and closing the door

- The door is constructed in high-resistance tempered glass, and a special test (HST) during manufacture certifies its integrity and sturdiness.
- Heat loss is contained by means of the use of a special material with a low dispersion coefficient.
- In spite of this, special care is advised during use due to the danger of burns.

	ATTENTION
	• **During normal use, be careful not to hit the glass brusquely as it may break.**
	• **Insert the basket with care into the washing chamber to avoid the risk of glass break.**
	• **Place the instruments into the basket. They have not to stick out from basket not to damage the glass door.**
	• **Before opening the door check that the opening area is free from obstacles.**

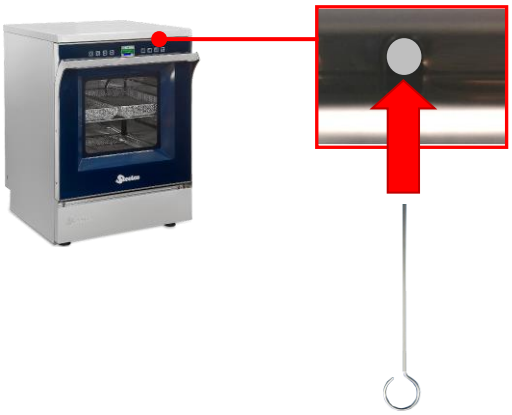
The machine is fitted with an electric door lock to prevent it being opened when the machine is running.
To open the door during washing, it is necessary to interrupt the cycle, keeping in mind that:

1. The material contained in the machine may be very hot.
2. Afterwards it is necessary to repeat the complete washing cycle.

5.2.1 Door unlocking

In case of power fail or malfunctioning of door lock, it is possible to unlock and open the door by following the procedure:

1. Identify the hole between the door and the cover panel (see the picture).
2. Insert the dedicated instrument.
3. Keep pushing the dedicated instrument. In this moment the door is unlocked and it is possible to open it.
4. To close the door, keep pushing the dedicate instrument as described at point 3.



	**ATTENTION**
	After performing the procedure described previously, remember that: • **The items inside the machine could be very hot and contaminated.** • **The entire treatment cycle must be repeated.**

5.3 Switching on

Turn on the machine following the procedure:

- Activate the dedicated safety device.
- The control panel automatically starts.
- Check that alarm messages are present. In negative case remove it.

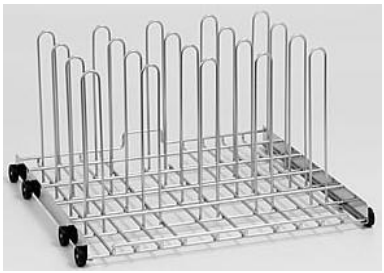
5.4 Preparation

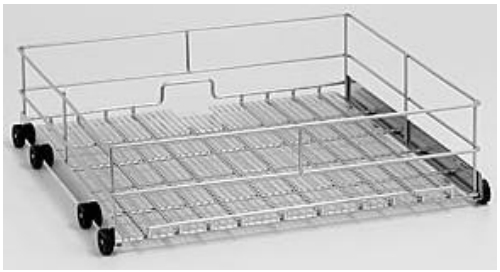
- Place the items to be washed inside the machine and position them carefully on the holder and in the rack.
- Items should not overlap.
- Receptacles should be positioned so that liquids can flow out easily.
- Tall or heavy items should be placed towards the middle of the basket if possible, to facilitate the washing.
- Make sure that nothing is blocking the arms and that they turn freely.
- Place the load uniformly in the basket.
- Check the patency of hollow instruments prior to their treatment in the machine.

	CAUTION
	• **The maximum load for each cycle is 20 Kg. (basket included).** • **Never use the machine without basket!!!!**

	CAUTION
	Prior to place the instruments in the washer disinfector, remove materials like composite, cement and amalgam by following proper protocol a waste management.

Below there are some examples of the basket:





	WARNING
	• **Do never empty any solid waste into the machine (excrement, toilet paper etc.). This will block the outlet system with pump and destroy the machine.** • **The treatment cycle has to be activated only if the basket is present into the machine or if it is used a basket equipped with an injection system.** • **No observance, even in part, of the rule here indicated, can cause dangerous leakage of water from the door.**

6. CONTROL PANEL AND SYMBOLS USED

The control panel with liquid crystal display is illustrated in the diagram.
This panel makes the machine easy to be used as it indicates the stage of the cycle in progress, the maximum temperature reached during disinfection and fault messages.

6.1 Control panel

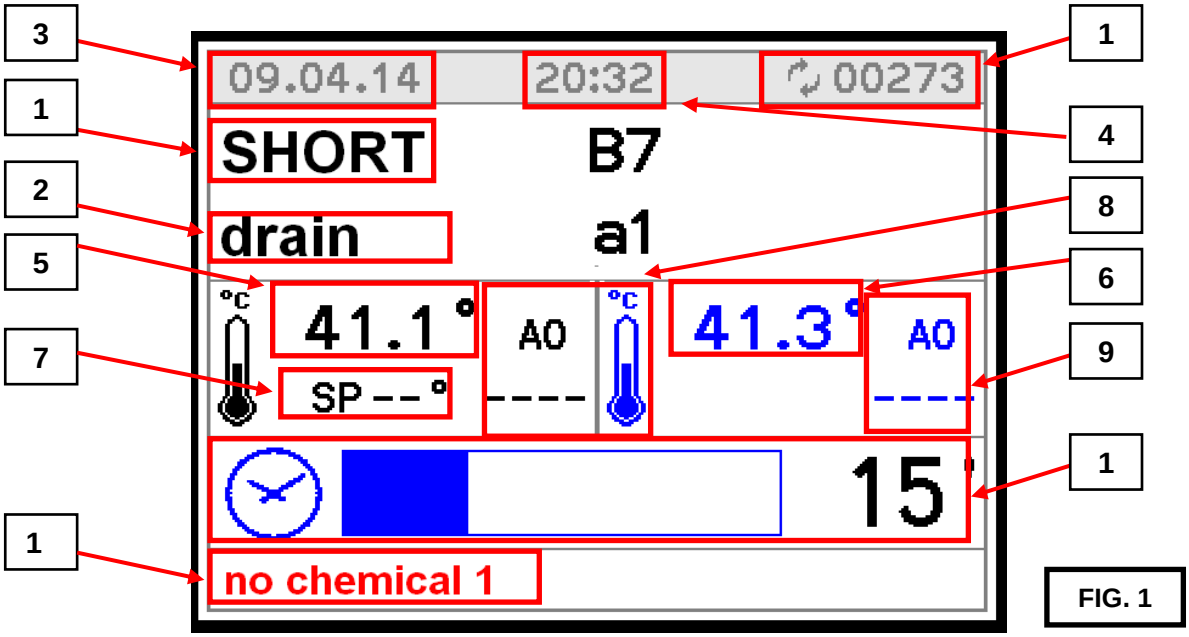


FIG. 1

DISPLAY LCD

Display the following information:

- The program selected **(1).**
- The phase **(2).**
- The date and time **(3 and 4).**
- The control temperature **(5)** and recording temperature **(6).**
- The temperature of set-point for the current phase **(7).**
- The A0 value for control temperature **(8)** and for the recording temperature **(9).**
- The remaining time **(10).**
- Any failure of the machine **(11).**
- The number of washing cycle performed by the machine (12). During the cycle the symbol rotates.

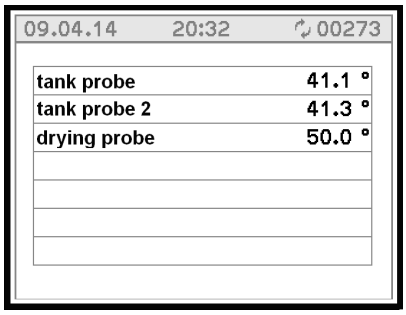
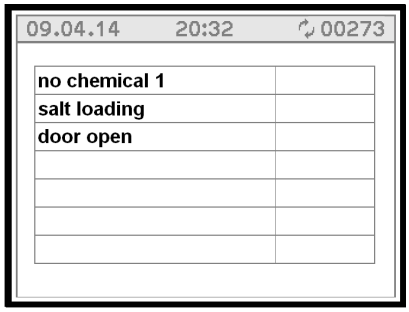
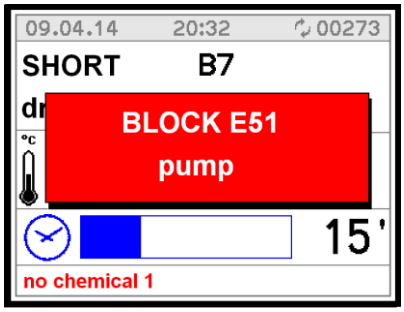
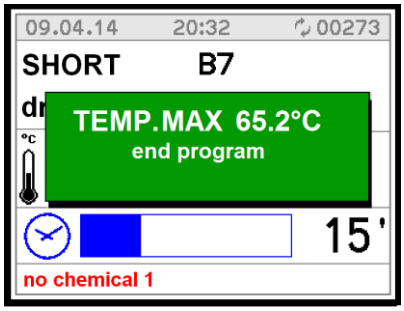
Initially, while the machine is in the stand-by status, it displays the type of program selected, the temperatures, date and time.
By pressing one of the program switch (**P1**, **P2** or **P3**), the display shows the program selected on the top and at the bottom in red: "press start" or "door open" or any other warnings.
By pressing the switch **P+** it is possible to scroll all the programs available.

LED

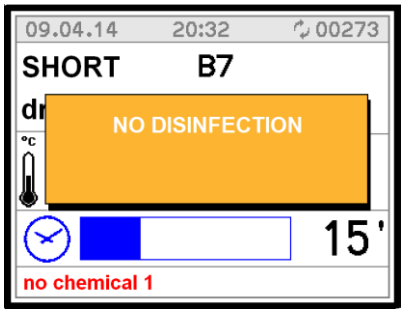
The keys of the glass displays are touch-sensitive and backlit.

BUZZER

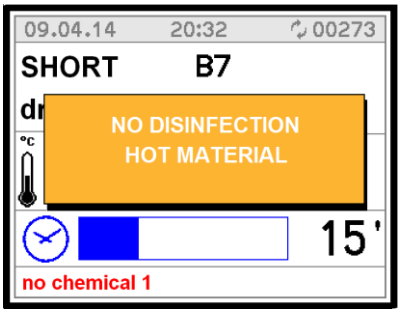
The buzzer sounds each time a key is pressed and intermittently in the case of a machine Shutdown, according to the setting of parameters **P1.12.**

PIC. 2	
	During the cycle, by pressing the switch **PRG** it is possible to display the screen that shows the various temperatures of the device and the values associated to the transducers (pressure, conductivity) (**Pic. 2**).
PIC. 3	
	By pressing it twice it is possible to display the screen with the list of alarms and warnings appears during the cycle (**Pic.3**).
PIC. 4	
	In case of block, a window appears which indicates the identification code for the alarm and a brief description as shown in **Pic.4**.
In case of failure, which does not lead to a block, (lack of chemical) a message is shown at the bottom of the screen (**Pic.1** point 11) or by pressing the **PRG** switch twice as shown in **Pic.3**.	
PIC. 5	
	At the end of the cycle, a special window appears as shown in **Pic.5**.

PIC. 6



Pic.6.A



Pic.6.B

In case of stop of the cycle, a window appears with a message that warns of the disinfection lack (**Pic.6**).

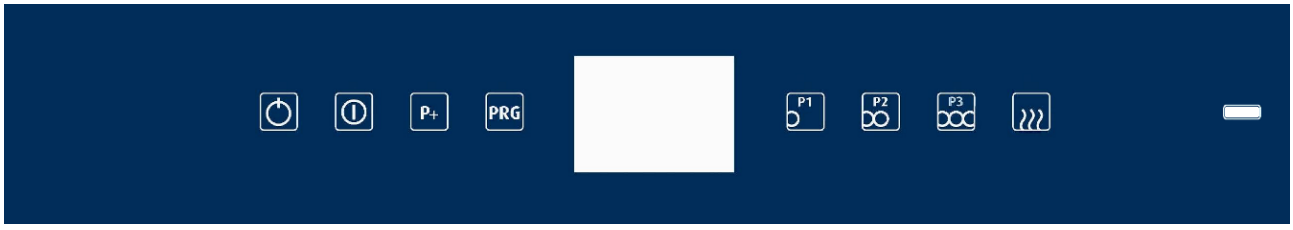
It is displayed the **Pic.6.A** if it is not reached the temperature of 65°C, otherwise it is displayed the **Pic.6.B**.

6.2 Buttons

There are 8 touch-sensitive keys with the following functions:

BUTTON		DESCRIPTION
P1		Select "**SHORT**" cycle.
P2		Select "**STANDARD**" cycle.
P3		Select "**INTENSIVE**" cycle.
PRG		Keep pressed for five seconds during Wait or Shutdown to display the Menu.
P+		By pushing this button, you select other programs; Each pressure corresponds to a new program.
START		After having selected the program to be run by pressing this button the cycle is started.
STOP		This switch interrupts the cycle in progress, the card interrupts the process, displays a message indicating that disinfection did not take place, keeps the door locked and if necessary, indicates a high temperature inside the chamber. Pressing START the machine resumes the cycle from where it was stopped, while pressing STOP again, the machine returns in a stand-by mode and the door is unlocked.
DRYING		Pressing this button after having selected a program and before starting it, it is possible to disable the forced air drying step.
USB		On the control panel board there is an USB port that allows the machine programming and data saving.

THE ACCESS TO THE PROGRAMMING MODE IS RESTRICTED ONLY TO AUTHORIZED AND SKILLED TECHNICIANS WHICH ARE SUPPLIED WITH THE PASSWORD.



7. WASHING PROGRAMMES

7.1 Pre-programmed cycles

The machine has three main washing programs according to the necessity:

SHORT PROGRAMME	**P1**	Suitable for lightly soiled items.
STANDARD PROGRAMME	**P2**	Suitable for moderately soiled items.
INTENSIVE PROGRAMME	**P3**	Suitable for heavily soiled items.

The machine has several washing programs; it is possible to select remaining programs by pushing **P+**.
The programs available to the user are as follows:

	PHASE													
PROGRAM	**PREWASHING**	**WASHING**									**RINSING**		**THERMODIS.**	**DRYING**
	Water - Tempo	**Water Temp.-Time Chemical**	**Water Temp.-Time Chemical**	**Water Temp.-Time Chemical**	**Water Temp.-Time Chemical**	**Water Temp.-Time Chemical**	**Water Temp.-Time Chemical**	**Water Temp.-Time Chemical**	**Water Temp.-Time Chemical**	**Water Temp.-Time Chemical**	**Water Temp.-Time**	**Water Temp.-Time**	**Water Temp.-Time Chemical**	**Temper. Time**
BabyBott.S	COLD - 120 s	WARM 60 °C - 180 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 120 s							DEMI 60 s		DEMI 90 °C - 180 s DOS3 - 0,5 ‰	120°C 720 s
BabyBott.I	COLD - 120 s	WARM 65 °C - 360 s DOS1 - 3 ‰	WARM 120 s DOS2 - 3 ‰	-- 60 °C - 120 s							DEMI 60 s		DEMI 90 °C - 180 s DOS3 - 0,5 ‰	120°C 1320 s
BGA90x3 St		DEMI 90 °C - 180 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s									DEMI 75 °C - 180 s DOS3 - 0,5 ‰	120°C 1920 s
BGA90x10 I		DEMI 90 °C - 600 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s							DEMI 60 s		DEMI 75 °C - 180 s DOS3 - 0,5 ‰	120°C 720 s
BLOOD Th.	COLD - 120 s	WARM 60 °C - 180 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s							DEMI 60 s		DEMI 90 °C - 180 s DOS3 - 0,5 ‰	120°C 720 s
BL.Th.Int	COLD - 120 s	WARM 65 °C - 360 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s							WARM 60 s	DEMI 60 s	DEMI 90 °C - 600 s DOS3 - 0,5 ‰	120°C 720 s
SHORT		WARM 50 °C - 180 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s									DEMI 90 °C - 60 s DOS3 - 0,5 ‰	120°C 720 s
STANDARD	COLD - 120 s	WARM 60 °C - 180 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	WARM 30 s DOS2 - 3 ‰									DEMI 90 °C - 60 s DOS3 - 0,5 ‰	120°C 1320 s
INTENSIVE	COLD - 120 s	WARM 65 °C - 360 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s							DEMI 60 s		DEMI 90 °C - 60 s DOS3 - 0,5 ‰	120°C 1320 s
MICROBIOL		DEMI 60 °C - 180 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s							DEMI 60 s		DEMI 75 °C - 120 s	120°C 720 s
MICROB.int		DEMI 90 °C - 600 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s							WARM 60 s	DEMI 60 s	DEMI 75 °C - 180 s	120°C 720 s
Veget.Oil	COLD - 120 s	DEMI 90 °C - 60 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s							WARM 60 s	DEMI 60 s	DEMI 75 °C - 180 s	120°C 720 s
Miner.Oil		WARM 75 °C - 120 s DOS1 - 3 ‰ DOS4 - 3 ‰	DEMI 5 s DOS1 - 3 ‰ DOS4 - 3 ‰	-- 90 °C - 600 s DOS3 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s			WARM 30 s	DEMI 60 s	DEMI 75 °C - 180 s	120°C 720 s
SPECIAL		WARM 80 °C - 120 s DOS1 - 3 ‰ DOS4 - 3 ‰	DEMI 90 °C - 180 s DOS1 - 3 ‰ DOS4 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s				WARM 60 s	DEMI 60 s	DEMI 75 °C - 30 s	120°C 720 s
PetrolFuel		DEMI 5 s DOS1 - 3 ‰ DOS4 - 3 ‰	-- 90 °C - 600 s DOS3 - 3 ‰	DEMI 5 s DOS1 - 3 ‰ DOS4 - 3 ‰	-- 90 °C - 600 s DOS3 - 3 ‰	DEMI 5 s DOS1 - 3 ‰ DOS4 - 3 ‰	-- 90 °C - 600 s DOS3 - 3 ‰	WARM 60 °C - 90 s DOS2 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s	WARM 60 s		DEMI 75 °C - 180 s	120°C 720 s
STANDARD75	COLD - 120 s	WARM 75 °C - 120 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s								DEMI 60 s	DEMI 75 °C - 180 s	120°C 720 s
CHEM. DISI		WARM 60 °C - 120 s DOS1 - 3 ‰	WARM 30 s DOS2 - 3 ‰	-- 60 °C - 60 s	WARM 30 s	WARM 60°C - 300 s DOS4 - 3 ‰							DEMI 60 °C - 60 s	120°C 720 s
ENZYMATIC	COLD - 120 s	WARM 35 °C - 180 s	-- 60 °C - 360 s DOS1 - 3 ‰	DEMI 60 °C - 60 s									DEMI 70 °C - 180 s DOS4 - 0,5 ‰	120°C 720 s
DRYING														120°C 720 s
PREWASH	COLD - 120 s													

DOSING PUMP	CHEMICAL PRODUCT
DOS. 1	ALCALINE or NEUTRAL or ENZYMATIC DETERGENT
DOS. 2	NEUTRALIZER
DOS. 3	LUBRICANT or RINSE AID

7.2 Phase parameters

7.2.1 Drain phase

- Cold water time for rinsing (sec)
- Functioning time of tank pump (sec.)
- Drain cooling choice (yes/no)

7.2.2 Prewashing phase

- Water type 1
- Water type 2
- Water total litres
- Chemical type 1
- Dosing quantity of product 1
- Chemical type 2
- Dosing quantity of product 2
- Phase time (sec.)

7.2.3 Treatment phase

- Water type 1
- Water type 2
- Water total litres
- Chemical type 1
- Dosing quantity of product 1
- Min, temperature for filling up of 1st chemical
- Chemical type 2
- Dosing quantity of product 2
- Min. temperature for filling up of 2nd chemical
- Phase time (sec)
- Phase temperature set point

7.2.4 Drying phase

- Fan starting type at low speed (sec)
- Fan starting time at high speed (sec.)
- Phase temperature set point

7.3 Start washing program

To start the washing program, follow the procedure:

- Open the door, insert the basket and close the door.
- Select the washing program (with automatic recognition active it is automatically read)) and press the START button to confirm.
- Insert the operator code by using the keyboard (if P1.02=1).
- Press the START button to start the washing cycle.

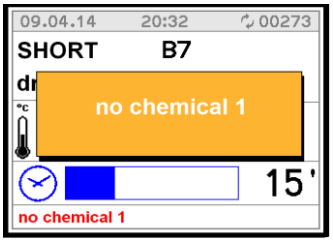
WARNING

In case of door with automatic locking/unlocking mechanism, pay attention to not touch the machine and not put your hands over the machine when the door opens to let out the steam. The steam is hot.

8. MACHINE STATUS

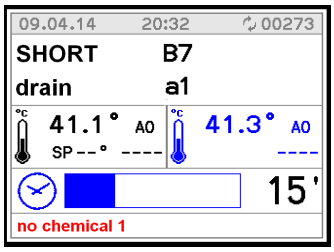
8.1 Wait

The machine is ready to start a cycle.
The diagnostics are active. If necessary, the display indicates that the door is open or gives warning messages:
no detergent, no limescale remover, memory full (historic data) or high temperature inside chamber.



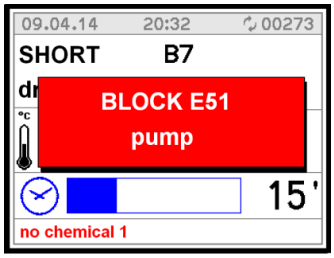
8.2 Cycle

Cycle mode is entered by pressing the Start key, this command is only accepted if the machine is in wait mode and the door is closed.
The cycle carries out the foreseen stages.
The diagnostics and regulators are active.
The user interface gives information concerning the stage in progress.



8.3 Shutdown

The diagnostics have detected a fault that causes the machine shutdown, the cycle is suspended and the door remains locked.
The fault is indicated on the display and the user interface is ready for the door release sequence and the Reset procedure to restore the machine to Wait (see reset procedure).



9. SPECIAL FEATURES

9.1 Power failure

When tension is restored after a power failure during Preparing, Wait or Shutdown, the card returns to the previous program.
When tension is restored following a power failure with a cycle in progress, the card shuts down the machine (power failure), indicates that the cycle has been interrupted and waits for the reset procedure to be carried out. (according to parameter P3.04).

9.2 Reset procedure

In the event of a Shutdown or when the stop key is pressed with a cycle in progress, the door remains locked.
To open the door, the door release sequence must be carried out from the keyboard as follows:

1. Press the **STOP** and **START** switch together and keep pressed for 5".
2. LCD display indicates switch procedure.
3. Press **P2** program switch followed by **P1** program switch.
4. The machine is reset and returns to standby.

N.B.:
If the machine shutdown persists due to a fault in one of its components (e.g.: faulty probe, unsuitable levels, etc.), the door is released and the machine remains inactive.
Seek technical assistance.

10. WORK PROCEDURES

10.1 Introduction

The machine was constructed only for washing and thermal disinfection of orthodontic instruments, trays and objects normally used in orthodontic studios, hospital wards, assisted living centres, and so forth.
It is therefore subject to constant contact to aggressive detergents and with contaminated instruments.
For this reason, it is necessary to provide some useful instructions for the operators who will be using it.

10.2 Instructions to personnel

The machine operator, in normal operating conditions, is not subject to risks if he works safely by using suitable means of protection.

In order to work safely the operator must:

- Carefully comply with the instructions set forth in this manual.
- Use safety devices appropriately and with care, as well as group and individual safety gear provided in the workplace.
- Personally, take action, or inform appropriate persons in the event of deficiencies in the aforementioned devices and means, as well as any hazardous conditions which he may become aware of, taking action directly in urgent cases within their scope of responsibilities and abilities to eliminate or reduce the deficiencies or hazards.

The maintenance technicians, in normal operating conditions, are not subject to risks if they work safely by using suitable means of protection.

In order to work safely the maintenance technician must:

- Carefully comply with the instructions set forth in this manual.
- Use safety devices appropriately and with care, as well as group and individual safety gear provided in the workplace.
- Use special care in making repairs or replacing mechanical parts (e.g. drain pump, etc.) on malfunctioning machines which have not completed the thermal disinfection cycle.

10.3 Decontamination procedures

When making repairs or replacing mechanical parts (e.g. drain pump, heating element, etc.) on malfunctioning machines that have not completed the thermal disinfection cycle, before undertaking any sort of maintenance on the internal parts of the machine, the disinfection procedure must be carried out in order to eliminate any pathogenic residues and protect operators who come into contact with the machine from the risk of infection.

The decontamination procedure must be performed by the system operator, who must be equipped with all provided individual protection gear.

MACHINE STATUS:
The machine must not be electrically powered and the dedicated safety device must be in the OFF position.
The person performing the task this operation.

SAFETY SYSTEMS TO BE ADOPTED:
The operation must be carried out in compliance with standards governing the use of disinfectant substances used (see technical information for the product being used, provided by the manufacturer), in compliance with standards concerning contact with parts of the machine which may be contaminated by pathogenic materials and with use of individual protection gear.

MODE OF INTERVENTION:
If possible, dry run a cycle for thermal disinfection of the washing chamber.
Open the washing chamber door and spray evenly with a suitable disinfectant.
Cover all internal parts as well as any basket and the instruments it may contain.
Wait for the amount of time required for disinfection (see technical information for the disinfectant product).

When performing maintenance on parts of the machine which have not been reached by the disinfectant, take appropriate precautions and use suitable safety gear.

11. MENU

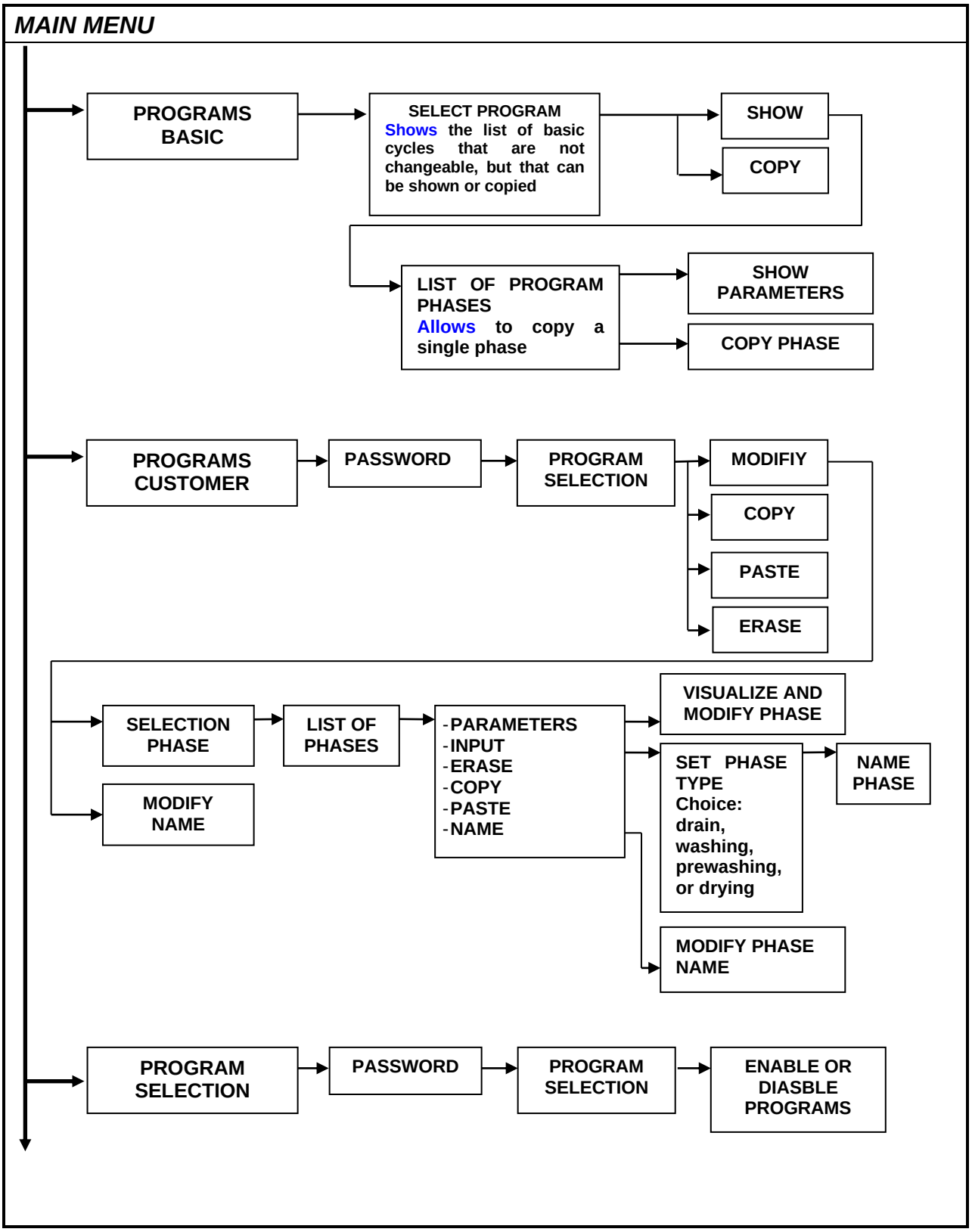
11.1 Menu plan

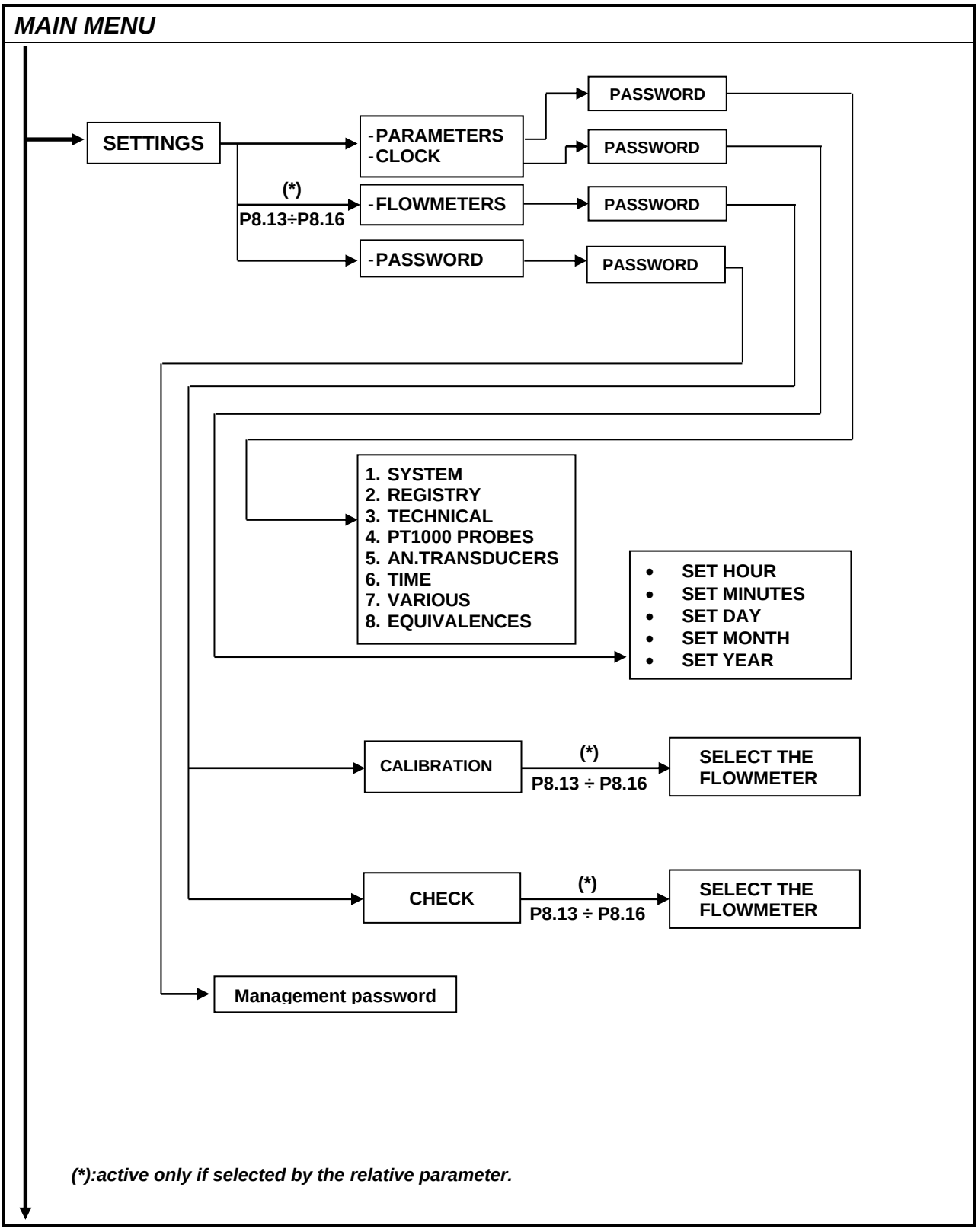
To enter the menu, keep the **PRG** key pressed for 5 seconds

- Press **P1** and **P2** program switches to scroll through the menu:
- Press **START** to confirm selection, press **STOP** to exit the menu and return to Wait or Shutdown mode.

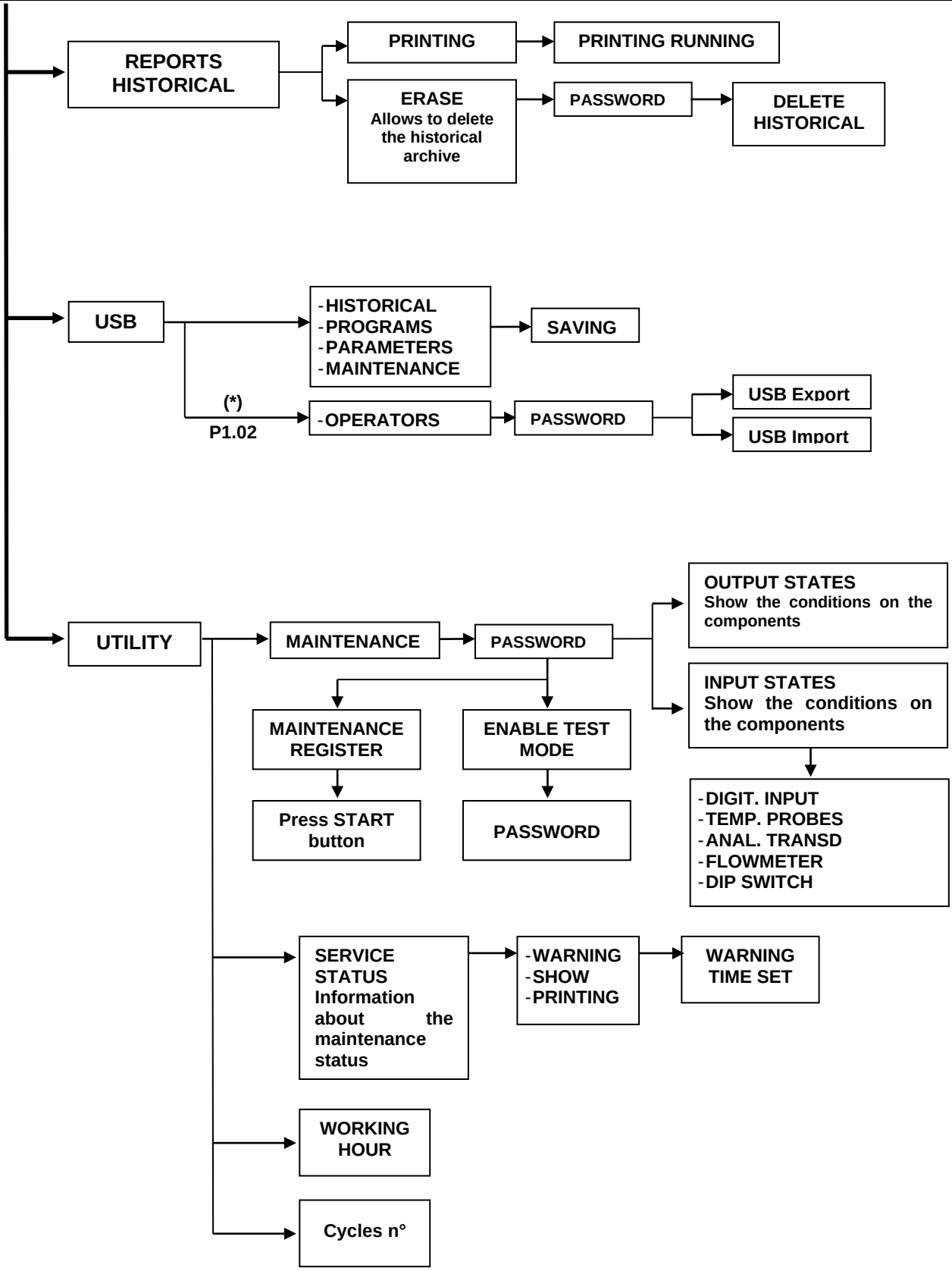
MAIN MENU

PROGRAM BASIC	**Allows the pre-set programs view and copy**
PROGRAM CUSTOMER	**Allows the set of new customized programs**
PROGRAM SELECTION	**Allows the activation ad deactivation of the memorized programs**
SETTINGS	**Allows access to all programs**
REPORTS HISTORICAL	**Allows the printing of the historical data**
USB	**Allows the saving of parameters, programs, historical and maintenance**
UTILITY	**Allows the access to the input and output command**


MAIN MENU
PROGRAMS BASIC
SELECT PROGRAM
Shows the list of basic cycles that are not changeable, but that can be shown or copied
SHOW
COPY
LIST OF PROGRAM PHASES
Allows to copy a single phase
SHOW PARAMETERS
COPY PHASE
PROGRAMS CUSTOMER
PASSWORD
PROGRAM SELECTION
MODIFIY
COPY
PASTE
ERASE
SELECTION PHASE
LIST OF PHASES
-PARAMETERS
-INPUT
-ERASE
-COPY
-PASTE
-NAME
VISUALIZE AND MODIFY PHASE
SET PHASE TYPE
Choice: drain, washing, prewashing, or drying
NAME PHASE
MODIFY NAME
MODIFY PHASE NAME
PROGRAM SELECTION
PASSWORD
PROGRAM SELECTION
ENABLE OR DIASBLE PROGRAMS


MAIN MENU
SETTINGS
-PARAMETERS
-CLOCK
PASSWORD
PASSWORD
(*)
P8.13÷P8.16
-FLOWMETERS
PASSWORD
-PASSWORD
PASSWORD
1. SYSTEM
2. REGISTRY
3. TECHNICAL
4. PT1000 PROBES
5. AN.TRANSDUCERS
6. TIME
7. VARIOUS
8. EQUIVALENCES
SET HOUR
SET MINUTES
SET DAY
SET MONTH
SET YEAR
CALIBRATION
(*)
P8.13 ÷ P8.16
SELECT THE FLOWMETER
CHECK
(*)
P8.13 ÷ P8.16
SELECT THE FLOWMETER
Management password
(*):active only if selected by the relative parameter.

MAIN MENU



(*): active only if selected by the parameter relative.

11.2 Parameters settings

To set parameters, a password will be requested, which is inserted using **P1** 

and **P2** 

buttons.
If an incorrect password is entered the menu is closed immediately.

By pressing **P1** 

and **P2** 

buttons it is possible to scroll through parameters.

Press **START**  button to access at modify of parameter and use keys **P1** 

and **P2** 

to increase or decrease the various parameter values.

If no parameters are modified,, you can exit from the parameter setting with **STOP**  key.

WARNING:
IT IS ALLOWED TO ENTER INTO PLANNING MENU TO AUTHORISED TECHNICIAN, WITH PASSWORD ONLY.

THE PASSWORD MUST BE REQUESTED FROM THE MANUFACTURER.

11.3 Parameter list

SW version 8.01			Legend: sel=selection, s=seconds, char=character, num=number					
CATEG.	SEC.	PAR.	DESCRIPTION	UDM	MIN	MAX	MODEL CL CDL	MODEL SCL SCDL
SYSTEM								
MACHINE	1	1	User name (16 characters)	char	,	~	•	•
CYCLE	1	2	Operator identification (0=disabled, 1=addition of the keyboard password) 2=reading of the barcode))	sel	0	1	•	•
PRINT OUT	1	4	Graphic print out at the end of the cycle (0=no print out, 1=print graph, 2=table print out, 3=print only on USB)	num	0	3	•	•
PRINT OUT	1	5	Print out results of the cycle being carried out (events, consumption,...)	sel	YES - NO		•	•
PRINT OUT	1	6	Automatic print out on USB of the cycle results at the end of it if the graphic print out is set P1.04 >0	sel	0	1	•	•
KEYBOARD	1	7	Buzzer volume key tone loading side (0=buzzer switched off)	num	0	50	•	•
KEYBOARD	1	8	Buzzer volume end of cycle warning loading side (0=buzzer switched off)	num	0	50	•	•
KEYBOARD	1	9	Buzzer alarm volume loading side (0=buzzer switched off)	num	0	50	•	•
KEYBOARD	1	13	Show the A0 value on the display	sel	YES - NO		•	•
CYCLE	1	16	Enable warning for full historical cycle (0=no warning, 1=warning without cycle start block, 2=warning and block the cycle start). The warning will be reset if the historical cycle will be printed or on USB	num	0	2	•	•

SW version 8.01			Legend: sel=selection, s=seconds, char=character, num=number					
CATEG.	SEC.	PAR.	DESCRIPTION	UDM	MIN	MAX	MODEL	
							CL CDL	SCL SCDL
KEYBOARD	1	18	Maximum mistakes number on password input into the protected menu (0: function disabled)	num	0	100	•	•
SUPERVISOR	1	19	Connection to the supervsion sistem (steelco Data)	sel	0	1	•	•
SUPERVISOR	1	20	Machine IP address: field 1-4	num	0	255	•	•
SUPERVISOR	1	21	Gateway IP address: field 1-4	num	0	255	•	•
SUPERVISOR	1	22	IP Netmask: field 1-4	num	0	255	•	•
SUPERVISOR	1	23	Supervisor ID address: field 1-4	num	0	255	•	•
KEYBOARD	1	24	Miele menu setting (dosing setting of chemical products in %)	sel	0	1	•	•
REGISTRY								
MACHINE	2	1	Machine model (8 characters)	char	,	~	•	•
MACHINE	2	2	Machine matriculation number (5 characters)	char	0	9	•	•
MACHINE	2	3	Test day	num	1	31	•	•
MACHINE	2	3	Test month	num	1	12	•	•
MACHINE	2	3	Test year	num	10	99	•	•
KEYBOARD	2	4	Select language (Note: the available languages dipend on the specific machine settings)	sel	ENGLISH ITALIANO DEUTSCH FRANCAIS ESPAGNOL		•	•
MACHINE	2	5	Station number	num	0	99	•	•
MACHINE	2	6	Client/distributor (16 characters)	char	,	~	•	•
KEYBOARD	2	7	Select font group (0=European, 1=European + Japanese, 2=European + Cyrillic)	num	0	2	•	•
KEYBOARD	2	8	Unit of measurement (0=International, 1=American)	sel	0	1	•	•
TECHNICAL								
PT1000	3	2	Activate regulation probe (tub probe 2):(0=no, 1=on a separate regulation form, 2=on standard form)	sel	0	2	•	•
PRINT OUT	3	3	Printer on board (0=no, 1=on main board, 2=on both main and slave boards)	sel	0	1	•	•
CYCLE	3	4	Activate after cycle has been interrupted due to energy failure (when phase restarts, from the beginning of the cycle or from when cycle failed)	sel	INIT. STEP START. PROG. END CYCLE		•	•

SW version 8.01			Legend: sel=selection, s=seconds, char=character, num=number					
CATEG.	SEC.	PAR.	DESCRIPTION	UDM	MIN	MAX	MODEL CL CDL	MODEL SCL SCDL
CYCLE	**3**	**5**	Activate after cycle has been interrupted due to alarm (when phase restarts, from the beginning of the cycle or from when cycle failed)	sel	INIT. STEP START. PROG. END CYCLE		•	•
CHEMICALS	**3**	**6**	Set in case of lack of chemical additives (warning, alarm with machine block)	sel	WARNING ALARM		•	•
BOILER	**3**	**8**	Boiler on board (demineralised water heater)	sel	YES - NO		•	•
PUMPS	**3**	**13**	Washing arm pump pressure switch	sel	YES - NO		•	•
DRAIN	**3**	**18**	Cold water electrovalve for drainage cooling (0=absent, 1=on dedicated output)	sel	0	1	•	•
DRIER	**3**	**20**	Activate dryer (0=no, 1=normally selected, 2=normally not selected, 3=always activated)	num	0	3	•	•
PUMPS	**3**	**23**	Transducer (4-20 mA) to control impeller pump pressure.	sel	YES - NO		•	•
WATER	**3**	**25**	Analogue probe (4-20 mA) for conductivity	sel	YES - NO		•	•
DOORS	**3**	**29**	Solenoid door lock	sel	YES - NO		•	•
BOILER	**3**	**30**	Configuration of cold water on boiler (for 500)	sel	YES - NO		•	•
DOORS	**3**	**31**	Door safety switch for UL conformity	sel	YES - NO		•	•
SYSTEM	**3**	**35**	Enable of power reduction	sel	YES - NO		•	•
WATER	**3**	**37**	Absence of demineralised water (1=load cold water in its place)	sel	0	1	•	•
WATER	**3**	**38**	Absence of hot water (1= load cold water in its place)	sel	0	1	•	•
DOORS	**3**	**39**	Door with movable locking mechanism (optional). 0 = not present (standard door), > 0 with movable locking mechanism: 1 = disabled steam letting out, 2 = abled steam letting out at end cycle only after drying, 3 = abled steam letting out at every end cycle (also without final drying)	sel	0	3		•
CYCLE	**3**	**51**	Num. automatic repetitions of the cycle for cleaning test (0=no repetition)	num	0	100	•	•
DRYING PROCESS	**3**	**56**	% value modulating control low speed drying process (0=no modulating control fan 0/10V)	%	0	100	•	•
DRYING PROCESS	**3**	**57**	% value modulating control high speed drying process (0=no modulating control fan 0/10V)	%	0	100	•	•
STEAM COND.	**3**	**58**	Steam condenser presence for steam extraction (DS 500)	sel	0	1	•	•
PT1000 PROBE								
PT 1000	**4**	**1**	Offset calibration chamber probe 1 at a 0°C	°C	-9,9	9,9	•	•
PT 1000	**4**	**2**	Offset calibration chamber probe 1 at a 100°C	°C	-9,9	9,9	•	•
PT 1000	**4**	**3**	Offset calibration chamber probe 2 at a 0°C	°C	-9,9	9,9	•	•
PT 1000	**4**	**4**	Offset calibration chamber probe 2 at a 100°C	°C	-9,9	9,9	•	•

SW version 8.01			Legend: sel=selection, s=seconds, char=character, num=number					
CATEG.	SEC.	PAR.	DESCRIPTION	UDM	MIN	MAX	MODEL	
							CL CDL	SCL SCDL
PT 1000	4	5	Offset calibration dryer probe at a 0°C	°C	-9,9	9,9	•	
PT 1000	4	6	Offset calibration dryer probe at a 100°C	°C	-9,9	9,9	•	
PT 1000	4	7	Offset calibration boiler or tank 1 probe at 0°C	°C	-9,9	9,9	•	•
PT 1000	4	8	Offset calibration boiler or tank 1 probe at 100°C	°C	-9,9	9,9	•	•
AN. TRANSDUCERS								
PUMPS	5	1	Pressure scale lower limit	bar	-1	P5.02	•	•
PUMPS	5	2	Pressure scale upper limit	bar	P5.01	3	•	•
WATER	5	3	Conductivity scale lower limit	uS/cm	0	P5.04	•	•
WATER	5	4	Conductivity scale lower limit	uS/cm	P5.03	20000	•	•
TIME								
CHAMBER	6	1	Max time per 1°C increase in the chamber	s	0	999	•	•
BOILER	6	2	Max time per 1°C increase in the boiler or tank	s	0	999	•	•
DRAINING	6	3	Maximum drainage time	s	0	999	•	•
DRAINING	6	4	Maximum drainage time with rinsing water loaded	s	0	999	•	•
WATER	6	5	Maximum waiting time for cold water filling to level in the chamber	s	0	999	•	•
WATER	6	6	Maximum waiting time for hot water filling to level in the chamber	s	0	999	•	•
WATER	6	7	Max waiting time for demineralised water filling to level in the chamber	s	0	999	•	•
WATER	6	8	Max waiting time for cold+warm water filling	s	0	999	•	•
WATER	6	9	Max waiting time for cold+demi water filling	s	0	999	•	•
WATER	6	10	Max waiting time for warm+demi water filling	s	0	999	•	•
CHEMICALS	6	12	Maximum waiting time for chemical products flowmeter impulse	s	0	99,9	•	•
DOORS	6	13	Max time door lock opening	s	0	99,9	•	•
DOORS	6	14	Max time door lock closing	s	0	99,9	•	•
DOORS	6	15	Max time opening closing/door (automatic door)	s	0	99,9	•	•
PUMPS	6	17	Delay on pressure switch pump reading	s	0	99,9	•	•
MACHINE	6	18	Delay on overtemperature cut-out reading on on heating element feedback (0=control disabled)	s	0	99,9		•
DRIER	6	19	Delay in reading ventilator pressure switch (0= diagnostics deactivated)	s	0	99,9	•	
CHEMICALS	6	20	Chemical 1 loading time after a chemical lack alarm	s	0	999,9	•	•
CHEMICALS	6	21	Chemical 2 loading time after a chemical lack alarm	s	0	999,9	•	•

SW version 8.01			Legend: sel=selection, s=seconds, char=character, num=number					
CATEG.	SEC.	PAR.	DESCRIPTION	UDM	MIN	MAX	MODEL	
							CL CDL	SCL SCDL
CHEMICALS	6	22	Chemical 3 loading time after a chemical lack alarm	s	0	999,9	•	•
CHEMICALS	6	23	Chemical 4 loading time after a chemical lack alarm	s	0	999,9	•	•
BOILER	6	24	Time taken after cycle inactivity for switching off boiler or tank	h	0	24	•	•
DRAINING	6	25	Time taken for activating cooling drainage electrovalve	s	0	99,9	•	•
STEAM CONDENSOR	6	26	Steam condenser solenoid valve OFF time.	s	0	99,9	•	•
STEAM CONDENSOR	6	27	Steam condenser solenoid valve ON time.	s	0	99,9	•	•
PUMPS	6	28	Fractional pump OFF time	s	0	99,9	•	•
PUMPS	6	29	Fractional pump ON time	s	0	99,9	•	•
DRAINING	6	30	Draining cycle OFF time	s	0	99,9	•	•
DRAINING	6	31	Draining cycle ON time	s	0	99,9	•	•
DRIER	6	36	Ventilator OFF time during low dryer speed	s	0	99	•	
DRIER	6	37	Ventilator ON time during low dryer speed	s	0	9,9	•	
DRIER	6	38	Ventilator switch-off delay (post-ventilation)	s	0	999	•	
BOILER	6	39	Boiler or tank loading delay after full level activation	s	0	99	•	•
DOORS	6	40	Delay on door lock 1 opening after the limit switch activation	s	0	9,9	•	•
DOORS	6	41	Delay on door lock 1 closing after the limit switch activation	s	0	9,9	•	•
REGENERAT.	6	44	Pause time during regeneration	s	0	999	•	•
REGENERAT.	6	45	Water loading time for regeneration	s	0	999	•	•
REGENERAT.	6	46	Cold water loading time for regeneration rinsing	s	0	999	•	•
PRINT OUT	6	47	Sampling time for chamber temperature and pressure trends	s	5	99	•	•
DRAINING	6	51	Time ON surface heating element during the first stage of the resistive drying	s	1	15		•
DRAINING	6	52	Time ON surface heating element during the next stages of the resistive drying	s	1	15		•
DRAINING	6	53	Pause time for surface heating element during the resistive drying	s	0	999		•
DOORS	6	64	For door with movable locking mechanism (optional), automatic opening door time for steam letting out. 0 = opening without count time up to the limit for the max. door opening to allow the steam letting out.	s	0	999		•
VARIOUS								
DRAINING	7	1	Number of fractioned draining cycles	num	1	99	•	•
BOILER	7	2	Boiler or tank 1 stand-by temperature	°C	0	80	•	•
BOILER	7	3	Boiler or tank 1 cycle temperature	°C	0	80	•	•
CHAMBER	7	7	Min. quantity of water in the chamber	L	0	P7.08	•	•

SW version 8.01			Legend: sel=selection, s=seconds, char=character, num=number					
CATEG.	SEC.	PAR.	DESCRIPTION	UDM	MIN	MAX	MODEL	
							CL CDL	SCL SCDL
CHAMBER	7	8	Max. quantity of water in the chamber	L	P7.07	99	•	•
CHAMBER	7	11	Max. chamber probe temperature difference	°C	0	99	•	•
CHAMBER	7	12	Min. temperature for max. chamber temperature probes difference control	°C	0	95	•	•
DRIER.	7	13	Min temperature to be reached by dryer (ventilated)	°C	0	100	•	
PREWASH	7	14	Max. permitted temperature in pre-wash phase	°C	0	95	•	•
DRAINING	7	15	Min. temperature for drain cooling activation	°C	0	100	•	•
STEAM CONDENSOR	7	16	Min. temperature for steam condenser solenoid valve ON-OFF activation (in treatment phase)	°C	0	95	•	•
WATER	7	19	Max. conductivity of water in chamber	uS/cm	0	20000	•	•
CHEMICALS	7	21	Max. chemical flowmeter impulse excess after switching off dosing pump	num	0	99	•	•
CHAMBER	7	22	A0 temperature interval	°C	0	99	•	•
CHAMBER	7	23	A0 temperature reference	°C	0	99	•	•
CHAMBER	7	24	A0 lower temperature limit	°C	0	99	•	•
PRINT OUT	7	25	Horizontal Resolution graphics (pixel/hour)	num	240	1000	•	•
REGENERAT.	7	26	Regeneration [memor. val./displayed val./no. cycles completed after being carried out] 1/10/never, 2/15/30, 3/20/25, 4/25/21, 5/30/18, 6/35/15, 7/40/12, 8/45/9, 9/50/6, 10/55/3, 11/60/1	sel	1	11	•	•
REGENERAT.	7	27	Number of regenerations for salt load warning	num	1	18	•	•
KEYBOARD	7	28	Program selected in position 1 (P1 switch)	num	1	40	•	•
KEYBOARD	7	29	Program selected in position 2 (P2 switch)	num	1	40	•	•
KEYBOARD	7	30	Program selected in position 3 (P3 switch)	num	1	40	•	•
EQUIVALENCES								
CHEMICALS	8	5	Chemical product for dosing pump 1 (flowmeter)	IMP/mL	0	9,999	•	•
CHEMICALS	8	6	Chemical product for dosing pump 2 (flowmeter)	IMP/mL	0	9,999	•	•
CHEMICALS	8	7	Chemical product for dosing pump 2 (flowmeter)	IMP/mL	0	9,999	•	•
CHEMICALS	8	8	Chemical product for dosing pump 4 (flowmeter)	IMP/mL	0	9,999	•	•
CHEMICALS	8	9	Chemical product for dosing pump 1 (timed control)	SEC/mL	0	9,999	•	•
CHEMICALS	8	10	Chemical product for dosing pump 2 (timed control)	SEC/mL	0	9,999	•	•
CHEMICALS	8	11	Chemical product for dosing pump 3 (timed control)	SEC/mL	0	9,999	•	•
CHEMICALS	8	12	Chemical product for dosing pump 4 (timed control)	SEC/mL	0	9,999	•	•

SW version 8.01			Legend: sel=selection, s=seconds, char=character, num=number					
CATEG.	SEC.	PAR.	DESCRIPTION	UDM	MIN	MAX	MODEL CL CDL	MODEL SCL SCDL
CHEMICALS	**8**	**13**	Way of dosing for chemical product 1 (by impulse, timed)	sel	IMPULSES - TIME		•	•
CHEMICALS	**8**	**14**	Way of dosing for chemical product 2 (by impulse, timed)	sel	IMPULSES - TIME		•	•
CHEMICALS	**8**	**15**	Way of dosing for chemical product 3 (by impulse, timed)	sel	IMPULSES - TIME		•	•
CHEMICALS	**8**	**16**	Way of dosing for chemical product 4 (by impulse, timed)	sel	IMPULSES - TIME		•	•
CHEMICALS	**8**	**17**	Reference for automatic calibration of chemical flowmeter. If P2.08=YES, the value is once/10.	mL	1	999	•	•

11.4 Details of the electronic card

The electronic card was designed for the control of the type of machine described below.
Any use other than that specified above.
The electronic card was designed following the indications given in the standards below:

EN 60335	low voltage
EN 61000-6-3	emissions
EN 61000-6-1	immunity

11.5 Features of master card

SERIAL INTERFACE

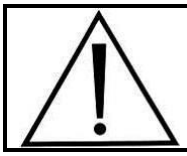
Com1:
Low voltage bus bar for two-way communications with the keyboard card.

Com2:
Asynchronous serial interface type RS 232 foreseen for connection to PC or printer.

11.6 Starting up and display of devices

It is possible to display the state of the devices.
Enter the menu: **UTILITY → MAINTENANCE → Insert 3rd level password → INPUT STATE**.
Push **P1** and **P2** buttons to scroll the list of input and push **START** button to enter.
Push **P1** and **P2** buttons to select the input to show.
Whether the entry is not active, the writing **OFF** appears, otherwise when active appears **ON**.
It is also possible to activate every device but the electrical resistance manually.

Enter the menu: **UTILITY → MAINTENANCE → Insert 3rd level password → OUTPUT STATE**.
Push **P1** and **P2** buttons to scroll the list of output and push **START** to select the contactor you want to activate.
Then push **P1** to activate it or **P2** to deactivate.
Nearby the display appears the contactor state.
Whether the contactor is not active, the writing **OFF** appears, otherwise when active appears **ON**.
If a contractor is not possible to activate you will see in the display **"FORBIDDEN"**.



WARNING

For input and output's specification see the wiring diagram.

11.7 Password management

The programmation access and the menu are protected by three password levels:

- **1st level:** *operator password* – allows the access to the program selection, historical and USB menu access (view and printing, not historical deletion).
- **2nd level:** *technician password* – allows the access to all menu but with limited modification possibility.
- **3rd level:** *manufacturer password* – allows the complete access to all menu and settings of the machine.

The password is made up of from four characters. Every character can be chosen between:

- Number digits: from "**0**" to "**9**";
- Uppercase alphabet: from "**A**" to "**Z**";
- Lowercase alphabet: from "**a**" to "**z**";
- Space " ";
- Minus sign "**-**";
- Full stop "**.**".

11.7.1 Password change

To set the password follow the procedure:

Enter the menu: **SETTING → PASSWORD → Insert 3rd level password (currently)**

Select the password that you want to change pressing the **START** button.

During the insertion, the four characters are displayed with four stars ********. The selected character to be changed is flashing.
Pressing **P1** and **P2** buttons it is possible to set the value of character while pressing the **START** button it is possible to confirm the selection and proceed with other characters.

To confirm the insertion of new password, press the **START** button.
It will be required to insert new password: if the inserted password coincides with the one, which has just been set, the **MODIFY - DONE -** message will be displayed, otherwise, in case of incorrect insertion, the **ERROR** message will display.

In case of **ERROR** or exit from menu by pressing the **STOP** button, the password will not be modified and remains valid the value in force.

ATTENTION

In case you forget the password, it is not possible to recover it.
Contact the manufacturer that will provide a temporary password. This password allows only the access to password menu to set the new password.

11.7.2 Warning about unauthorized access

The alarm "**WARNING PASSWORD**" warns about any attempt to access the menu by unauthorized personnel.

The number of password entries set by parameter **P1.18** (**P 1.18=0** the alarm function is disabled) will display every time it is exceed.

To reset the alarm, enter the password menu and insert the password.

12. CHEMICALS CALIBRATION

Chemical products have different viscosities, so it is recommended to calibrate the dosing system every time you change the type of chemical.
Depending on the machine configuration and the parameter set (**P8.13 ÷ P8.17**), the chemical dosing can be done by time or impulses (in this case **ONLY** if it presents the flowmeter, ordered as **OPTIONAL**).

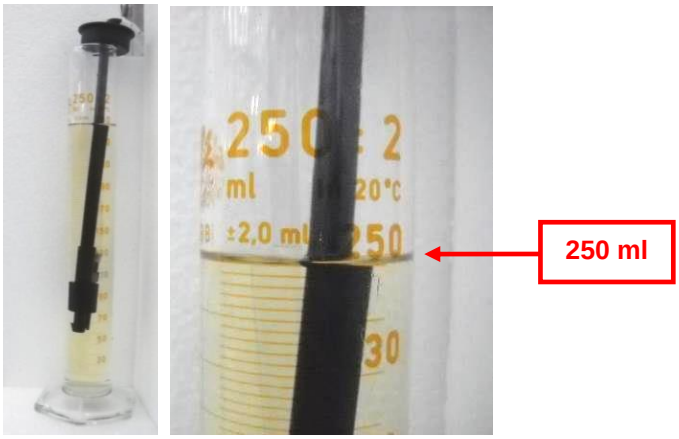
	ATTENTION
	There is a risk of contact to the chemical product, therefore obtain appropriate individual protection gear (gloves for protection from chemical substances, breathing protection masks, goggles etc.) during the execution of operations. **The chemical products are an irritant for the eyes, in case of contact rinse thoroughly with water and consult a doctor. If these products come into contact to the skin, rinse with plenty of water.**

12.1 Timed dosing

In order to do the chemicals calibration, it is necessary to control that the chemical products dosing system is completely filled.
For this calibration's procedure it is necessary to have the stopwatch.

12.1.1 Calibration

Insert the suction lance of the chemical to be calibrated into a ml-graduated cylinder and fill it with the chemical up to 250 ml.



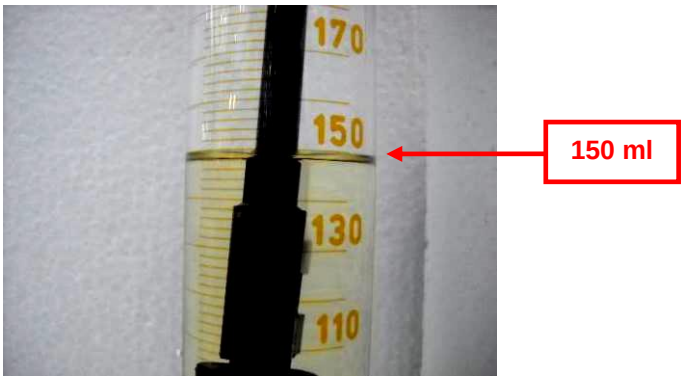
Chemical product

To start the calibration of dosing system it is necessary to activate manually the dosing device.

Enter the menu: **UTILITY → MAINTENANCE → Insert 3rd level password → OUTPUT STATE**
Push **P1** and **P2** buttons to scroll the list of devices and push **START** button to select the desired device.

After selecting the device to calibrate (see the input/output section 11.6) push **P1** button to activate the device and at same time activate the stopwatch to start measuring the time of dosing.

Push **P2** button to deactivate the device when the level of chemical product in ml-graduated cylinder have reached 100 ml and stop the stopwatch.



Chemical product

Calculate the value of calibration as the ratio between the time measured by the stopwatch and the amount of chemical product dosed in the cylinder (Ex. 45 sec / 100 ml = 0.45).
Insert the previously calculated value in the relative parameter corresponding to the doser on the section "EQUIVALENCE".

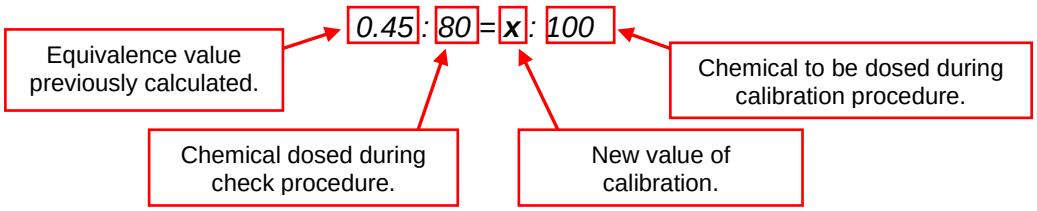
AFTER THE CHEMICAL CALIBRATION IT IS NECESSARY TO RUN A RINSING CYCLE WITHOUT INSTRUMENTS INSIDE THE CHAMBER.

12.1.2 Check

After the calibration it is necessary to control the calibration efficacy by the check procedure:

- Activate manually the dosing device and the stopwatch to start measuring the time.
- When the stopwatch reaches the dosing time measured in the previous calibration procedure deactivate the dosing device.
- Check that the level of product in the ml-graduated cylinder is 100 ml or the same dosed in the previous calibration procedure.
- If the level of the dosed product is correct the check procedure is finished and continue the chemical calibration for other dosing devices.
- If not calculate the new value of the equivalence taking into account the dosage values previously calculated and the amount of chemical dosed.

  Example:



- Insert the new value in the relative parameter of the doser on the section "EQUIVALENCE".
- Control the calibration consistency with a new check procedure.

12.2 Impulsed dosing

In order to set the flowmeters, it is necessary to control that the chemical products dosing system is completely filled.

12.2.1 Calibration

Enter the menu: **SETTINGS → FLOWMETERS → Insert 2nd level password → CALIBRATION**

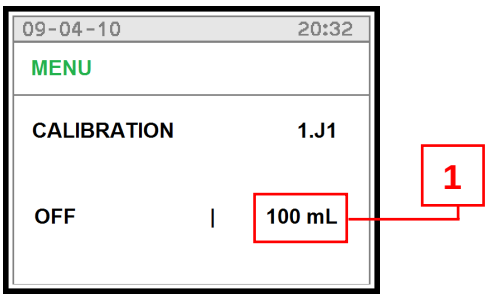
Select the flowmeter that you want to calibrate by using **P1** and **P2** buttons.

ATTENTION: If the flowmeter is not present, the system displays the message "**FORBIDDEN**".

Insert the suction lance of the chemical to be calibrated into a ml-graduated cylinder and fill it with the chemical up to 250 ml.

Chemical product

After selecting the flowmeter to be calibrated (see the input output section 11.6) push **START** to start the procedure and **CONFIRM** it.



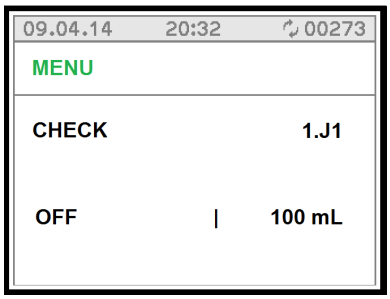
Press **START** when the level on the ml-graduated cylinder have reached the displayed quantity (1).
If you want to shut off the procedure press **STOP**.

Chemical product

12.2.2 Check

After the calibration it is necessary to control the calibration efficacy by the CHECK procedure.

Enter the menu: **SETTINGS → FLOWMETERS → Insert 2nd level password → CHECK**



Select the chemical flowmeter to check and press **START** to begin the calibration verification.
Once the dosing has been finished, the level of product in the ml-graduated cylinder should be the same of the one shown in the display.

Chemical product

Whether the levels do not correspond, a new calibration must be executed.
The quantity of product to execute the calibration can be changed by using 8.17 parameter.

AFTER THE CHEMICAL CALIBRATION IT IS NECESSARY TO RUN A RINSING CYCLE WITHOUT INSTRUMENTS INSIDE THE CHAMBER.

13. CLOCK

- The card has a real-time clock.
- Time readings are also used when recording historical data.

14. HISTORICAL DATA

During the working cycle, the machine memorizes on a card all the working data of the washing cycles that have been performed.

- The card is able to record the fields described below for up to a max. of 200 cycles in the permanent memory. The fields given in the example below are recorded for each cycle:

DATE	START TIME	PROGRAMME	MAX °C	HOLD>85°C	FAULTS
	12.00	Short	93°C	60 seconds	01
	13.05	Standard	94°C	180 seconds	01

- When 95% of the memory is full the dump memory message appears on the display. To clear the message, insert the USB key on the dedicated port and enter the menu. Select the USB menu and download from the machine the historical data.
- The various causes for machine shutdowns are indicated in the FAULTS section, identified by alarm code.

15. PC INTERFACE

The card has a communication channel RS 232 with Modbus protocol.
The channel can be used to access the historical data records file by setting the printer as follows:

- **baud rate: 9600 baud, X ON X OFF**
- **data bits: 8bits,**
- **parity: none.**

16. ALARMS and EVENTS LIST

16.1 Logical description of alarm interventions

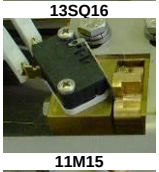
During machine operation, the operator is aided by **ALARMS** or **WARNINGS** which make use of visual signals on the operator display panel to advise him of any possible anomalies in progress and machine alarms which have intervened.

Intervention of an **ALARM** during operation of the system is signalled to the operator by a message on the operator panel.

The alarm which appears on the panel remains active until the cause of intervention is removed.
The intervention of an alarm stops the washing cycle currently in progress.

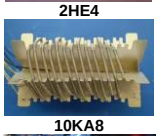
16.2 List of alarm messages

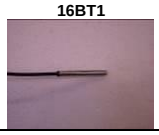
Possible alarms which may intervene during a work cycle are shown on the control panel display.
The message includes the number of the alarm that has intervened and its name.
A complete list of possible alarm messages follows.

ALARM TEXT		ALARM DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
1	**power fail**	Indicate a power failure at the restoration	**6VI1**	1- General power supply interrupted 2- The voltage supply is lower than the voltage needed	1- Power supply restoration 2- Control the voltage and current value
2	**open load. door**	The loading door is open or/and unlocked during a cycle	**13SQ23**  **13SQ16** 	1- Door sensor 13SQ23 stuck or defective 2- Sensor connection NOT OK	1- Check and eventually replace the defective sensor 2- Check input I23 and relative wire 13.23
4	**load.door fail.**	The loading door is open and locked (incongruity)	**13SQ23**  **13SQ16**  **11M15** 	1- Locking door micro switch 13SQ23 stuck or defective 2- Door sensor 13SQ23 stuck or defective 3- Micro switch connection NOT OK 4- Sensor connection NOT OK 5- Gear motor 11M15 stuck or defective 6- Gear motor connection NOT OK	1- Check and eventually replace the defective micro switch 2- Check and eventually replace the defective sensor 3- Check input I23 and relative wire 13.23 4- Check input I22 and relative wire 13.16 5- Check and eventually replace the defective gear motor 6- Check output O13 of board 6VI1 and relative wire 11.09
7	**unblock.door 1**	The loading door is not locked after the start of the cycle	**13SQ23**  **11M15** 	1- Time set by P6.14 too low 2- The door was open during the locking door process 3- Unlocking door micro switch 12B3 stuck or defective 4- Gear motor 11M15 stuck or defective 5- Micro switch connection NOT OK 6- Gear motor connection NOT OK	1- Increase the diagnostics time P6.14 2- Close door 3- Check and eventually replace the defective micro switch 4- Check and eventually replace the defective gear motor 5- Check input I22 and relative wire 13.16 6- Check output O13 of board 6VI1 and relative wire 11.09

ALARM TEXT		ALARM DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
9	**unlocking 1fail.**	The door locking opening of the loading side is not complete after the time set by P6.14	13SQ23  11M15 	1- Time set by P6.14 too low 2- Locking door micro switch 13SQ23 stuck or defective 3- Gear motor 11M15 stuck or defective 4- Micro switch connection NOT OK 5- Gear motor connection NOT OK	1- Increase the diagnostics time P6.14 2- Check and eventually replace the defective micro switch 3- Check and eventually replace the defective gear motor 4- Check input I22 and relative wire 13.16 5- Check output O13 of board 6VI1 and relative wire 11.09
11	**no cold water**	The cold water filling is not complete after the time set by P6.05	9YV5  12SP17 	1- Water supply interrupted 2- Water filling solenoid valve 9YV5 defective or not connected 3- Time set by P6.05 too low 4- Pressure switch 12SP17 defective 5- Solenoid valve connection NOT OK 6- Pressure switch connection NOT OK	1- Verify if the water tap is open and if there is no interruption on the loading pipe 2- Check and eventually replace the defective solenoid valve 3- Increase the diagnostics time P6.05 4- Check and eventually replace the defective pressure switch 5- Check output O5 of board 6VI1 and relative wire 9.5 6- Check input I18 and relative wire 12.17
12	**no hot water**	The hot water filling is not complete after the time set by P6.06	10YV27  12SP17 	1- Water supply interrupted 2- Water filling solenoid valve 10YV27 defective or not connected 3- Time set by P6.06 too low 4- Pressure switch 12SP17 defective 5- Solenoid valve connection NOT OK 6- Pressure switch connection NOT OK	1- Verify if the water tap is open and if there is no interruption on the loading pipe 2- Check and eventually replace the defective solenoid valve 3- Increase the diagnostics time P6.06 4- Check and eventually replace the defective pressure switch 5- Check output O9 of board 6VI1 and relative wire 10.25 6- Check input I18 and relative wire 12.17
13	**no demin. water**	The demineralised water filling is not complete after the time set by P6.07	9YV6  12SP17 	1- Water supply interrupted 2- Water filling solenoid valve 9YV6 defective or not connected 3- Time set by P6.07 too low 4- Pressure switch 12SP17 defective 5- Solenoid valve connection NOT OK 6- Pressure switch connection NOT OK	1- Verify if the water tap is open and if there is no interruption on the loading pipe 2- Check and eventually replace the defective solenoid valve 3- Increase the diagnostics time P6.07 4- Check and eventually replace the defective pressure switch 5- Check output O6 of board 6VI1 and relative wire 9.6 6- Check input I18 and relative wire 12.17
14	**no c.+hot water**	The level of the cold+hot water filling has not been reached after the time set by P6.08 (level control)	9YV5  10YV27  12SP17 	1- Water supply interrupted 2- Water filling solenoid valve 9YV5 or 10YV27 defective or not connected 3- Time set by P6.08 too low 4- Pressure switch 12SP17 defective 5- Solenoid valve connection NOT OK 6- Pressure switch connection NOT OK	1- Verify if the water tap is open and if there is no interruption on the loading pipe 2- Check and eventually replace the defective solenoid valve 3- Increase the diagnostics time P6.08 4- Check and eventually replace the defective pressure switch 5- Check output O5 or O9 of board 6VI1 and relative wire 9.5 or 10.25 6- Check input I18 and relative wire 12.17

ALARM TEXT		ALARM DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
15	**no c.+demi water**	The level of the cold+demi water filling has not been reached after the time set by P6.09 (level control)	10YV27  9YV6  12SP17 	1- Water supply interrupted 2- Water filling solenoid valve 10YV27 or 9YV6 defective or not connected 3- Time set by P6.09 too low 4- Pressure switch 12SP17 defective 5- Solenoid valve connection NOT OK 6- Pressure switch connection NOT OK	1- Verify if the water tap is open and if there is no interruption on the loading pipe 2- Check and eventually replace the defective solenoid valve 3- Increase the diagnostics time P6.09 4- Check and eventually replace the defective pressure switch 5- Check output O6 or O5 of board 6VI1 and relative wire 9.6 or 9.5 6- Check input I18 and relative wire 12.17
16	**no h.+demi water**	The level of the hot+demi water filling has not been reached after the time set by P6.10 (level control)	10YV27  9YV6  12SP17 	1- Water supply interrupted 2- Water filling solenoid valve 10YV27 or 9YV6 defective or not connected 3- Time set by P6.10 too low 4- Pressure switch 12SP17 defective 5- Solenoid valve connection NOT OK 6- Pressure switch connection NOT OK	1- Verify if the water tap is open and if there is no interruption on the loading pipe 2- Check and eventually replace the defective solenoid valve 3- Increase the diagnostics time P6.10 4- Check and eventually replace the defective pressure switch 5- Check output O6 or O9 of board 6VI1 and relative wire 9.6 or 10.25 6- Check input I18 and relative wire 12.17
17	**no chemical 1**	The chemical product associated to dosing pump 1 is used-up (if it is set as an alarm by P3.06) Diagnostics with dosing pump enabled: Pressure switch state with pressure switch presence; Lack of new impulse from **P6.12** in case of flowmeter dosing or time dosing with flowmeter redundancy.	10M9 	1- Chemical product used-up 2- Dosing pump 10M9 defective 3- Pressure switch connection NOT OK	1- Replace the chemical tank 2- Check and eventually replace the defective dosing pump 3- Check output O11 and relative wire 10.9
18	**no chemical 2**	The chemical product associated to dosing pump 2 is used-up (if it is set as an alarm by P3.06) Diagnostics with dosing pump enabled: Pressure switch state with pressure switch presence; Lack of new impulse from **P6.12** in case of flowmeter dosing or time dosing with flowmeter redundancy.	11M8 	1- Chemical product used-up 2- Dosing pump 11M8 defective 3- Pressure switch connection NOT OK	1- Replace the chemical tank 2- Check and eventually replace the defective dosing pump 3- Check output O12 and relative wire 11.8
19	**no chemical 4**	The chemical product associated to dosing pump 4 (soda) is used-up (if it is set as an alarm by P3.06). Diagnostics based on (with dosing pump enabled:): pressure switch activated with time dosing (reading delay 1.5 s); Lack of new impulse from P6.12 in case of		4-	4-

ALARM TEXT		ALARM DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
		flowmeter dosing or time dosing with flowmeter redundancy.			
20	**no chemical 3**	The chemical product associated to dosing pump 3 is used-up (if it is set as an alarm by P3.06) Diagnostics with dosing pump enabled: Pressure switch state with pressure switch presence; Lack of new impulse from **P6.12** in case of flowmeter dosing or time dosing with flowmeter redundancy.	**11M26** 	1- Chemical product used-up 2- Dosing pump 11M26 defective 3- Pressure switch connection NOT OK	1- Replace the chemical tank 2- Check and eventually replace the defective dosing pump 3- Check output O14 and relative wire 11.26
23	**drain problem**	After a set time from the drain pneumatic valve activation, the water level on the tank is still active (tank not empty). The timeout is referred to: a) P6.03 simple drain b) P6.04 drain with rinse water intake	10M1 12SP17 	1- Drain obstructed 2- Tank level pressure switch 12SP17 defective 3- Drain pump 10M1 defective 4- Drain pump connection NOT OK 5- Pressure switch connection NOT OK 6- Time set by P6.03 or P6.04 too low	1- Remove the obstruction 2- Check and eventually replace the defective pressure switch 3- Check and eventually replace the defective pump 4- Check output O10 and relative wire 10.11 5- Check input I18 and relative wire 12.17 6- Increase P6.03 or P6.04
24	**fan**	Pressure switch open with fan switched on at the maximum speed; Pressure switch closed with fan switched off	3M31 15SP40 	With drying enable: 1- Drying pressure switch 15SP40 defective 2- Fan 3M31 defective 3- Air filter obstructed 4- Fan connection NOT OK 5- Pressure switch connection NOT OK With drying disabled: 6- Drying pressure switch 15SP40 defective 7- Fan connection NOT OK	1- Check and eventually replace the defective pressure switch 2- Check and eventually replace the defective fan 3- Check and eventually replace the defective filter 4- Check output O4 of board 6VI1 and relative wire 9.27 5- Check input I40 of board 6VI1 and relative wire 15.40 6- Check and eventually replace the defective pressure switch 7- Check output O4 of board 6VI1 and relative wire 9.27
25	**drying min°C**	The air temperature has never reached the minimum temperature set by P7.13 during the drying phase	**18BT1**  **2HE4**  **10KA8** 	1- Probe 18BT1 defective 2- Probe connection NOT OK 3- Heating element 2EH4 defective 4- Air heating element contactor 10KA8 defective 5- Heating element connection NOT OK 6- Time set by P7.13 too high	1- Check and eventually replace the defective probe 2- Check input I35-I36 3- Check and eventually replace the defective heating element 4- Check and eventually replace the defective contactor 5- Check output O8 of board 6VI1 and relative wire 10.8 6- Decrease P7.13
26	**prewash max°C**	The tank temperature is over the maximum allowed temperature during a prewashing phase	**16BT1 – 17BT1** 	1- Prewashing limit temperature (P7.14) incorrect 2- Program phases error (prewashing phase execute immediately after a high temperature phase) 3- Probe 16BT1 – 17BT1 defective 4- Probe off set 16BT1 – 17BT1 incorrect	1- Set P7.14 2- Correct working program 3- Check and eventually replace the defective probe 4- Set the probe offset

ALARM TEXT		ALARM DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
27	**tank probe lim°C**	The tank temperature is over 102°C (= max limit 95°C + emergency 7°C)	**16BT1 – 17BT1** 	1- Probe 16BT1 – 17BT1defective 2- Probe off set 16BT1 – 17BT1incorrect 3- Probe connection NOT OK 4- Tank heating element contactor stuck	1- Check and eventually replace the defective probe 2- Set the probe offset 3- Check input I29-I30 and I32-I33 4- Check and eventually replace the defective contactor
28	**dryingprobelim°C**	The air temperature is over 162°C (= max limit 150°C + emergency 12°C)	**18BT1** 	1- Probe 18BT1 defective 2- Heating element connection NOT OK 3- Air heating element contactor stuck 4- Contactor connection NOT OK 5- Probe off set 18BT1 incorrect	1- Check and eventually replace the defective probe 2- Check input I35-I36 3- Check and eventually replace the defective contactor 4- Check output O8 of board 6VI1 and relative wire 10.8 5- Set the probe by P4.05
29	**boilerprobelim°C**	The boiler temperature is over 100°C (= max limit 80°C + emergency 20°C)	**21BT1** 	1- Probe 21BT1 defective 2- Heating element connection NOT OK 3- Boiler heating element contactor 19KM11 stuck 4- Contactor connection NOT OK 5- Probe off set incorrect	1- Check and eventually replace the defective probe 2- Check input I19-I20 of board 6VI3 3- Check and eventually replace the defective contactor 19KM11 4- Check output O11 of board 6VI3 and relative wire 19.11 5- Set the probe by P4.07
30	**tank probe**	Tank temperature probe failure (working probe)	**16BT1** 	1- Probe 16BT1 defective 2- Probe connection NOT OK	1- Replace the defective probe 2- Check input I29-I30 of board 6VI1
31	**tank probe 2**	Tank temperature probe failure (registration probe)	**17BT1** 	1- Probe 17BT1 defective 2- Probe connection NOT OK	1- Replace the defective probe 2- Check input I32-I33 of board 6VI1
32	**drying probe**	Air temperature probe failure	**18BT1** 	1- Probe 18BT1 defective 2- Probe connection NOT OK	1- Replace the defective probe 2- Check input I35-I36 of board 6VI1
33	**Boiler probe**	Boiler temperature probe failure	**21BT1** 	1- Probe 21BT1 defective 2- Probe connection NOT OK	1- Replace the defective probe 2- Check input I19-I20
34	**check temp.**	Only for the treatment phase if: a) The tank temperature is over P7.12 b) The registration probe is different from the working probe of a value over P7.11, c) Tank heating element off d) All the condition a,b,c) still exist form 30 s	**16BT1**  **17BT1** 	1- Incongruity parameter P.7.11 incorrect 2- Probes off set incorrect 3- Probe 16BT1 defective 4- Probe 17BT1 defective 5- Probes connection NOT OK	1- Set P7.11 2- Set the probe by P4.01 e P4.03 3- Replace the defective probe 4- Replace the defective probe 5- Check input I29-I30 and I32-I33 for board 6VI1
35	**Serial connect.1**	The communication between the main board and the control panel is interrupt (loading side)	**6VI1**	1- Loading side plug cable defective 2- Control panel- main board connection NOTOK 3- Main board 6VI1 defective 4- Loading side control panel defective	1- Replace the plug cable 2- Check the connection 3- Replace the defective board 4- Replace the defective control panel
37	**CAN serial**	Communication interruption on Can Bus serial connecting the master board to the slave board (if setting asks for use of slave board).		5-	5-

ALARM TEXT		ALARM DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
39	**no tank heating**	During the tank electrical heating the temperature is increased less than 1°C after the time set by P6.01	**16BT1**  **10KM3** 	1- Time set by P6.01 too low 2- Heating element contactor 10KM3 stuck 3- Contactor connection NOT OK 4- Probe 16BT1 defective 5- Probes connection NOT OK 6- Water filling solenoid valve defective	1- Increase P6.01 2- Check and eventually replace the defective contactor 3- Check output O7 and relative wire 10.10 4- Replace the defective probe 5- Check I29-I30 6- Replace the defective solenoid valve
41	**no boiler heating**	During the boiler electrical heating the temperature is increased less than 1°C after the time set by P6.02	**21BT1**  **19KM11** 	1- Time set by P6.02 too low 2- Heating element contactor 10KM1 stuck 3- Contactor connection NOT OK 4- Probe 31BT1 defective 5- Probes connection NOT OK 6- Water filling solenoid valve defective	1- Increase P6.02 2- Check and eventually replace the defective contactor 3- Check output O11 of board 6VI3 and relative wire 19.11 4- Replace the defective probe 5- Check I19-I20 6- Replace the defective solenoid valve
45	**Condenser pump**	The maximum level of the steam condenser is activated (even the minimum one): possible drain pump/steam condensate failure			1-
46	**pump**	Pump pressure switch closed with pump on, or open with pump off	**2M1**  **15SP41** 	Pump 2M1 on: 1- Water quantity not sufficient 2- High Chemical quantity 3- Pump 2M1 defective 4- Pressure switch 15SP41 defective 5- Pressure switch connection NOT OK 6- Pump connection NOT OK Pump 2M1 off: 7- Pump connector stuck 8- Contactor connection NOT OK 9- Pressure switch 15SP41 defective 10- Pressure switch connection NOT OK	2- Verify the cycle parameters and/or verify the drain valve leak 3- Verify the cycle parameters (chemical quantity + P8.17) 4- Check and eventually replace the defective pump 5- Check and eventually replace the defective pressure switch 6- Check input I41 and relative wire 15.41 7- Check output O15 and relative wire 11.12 8- Check and eventually replace the defective contactor 9- Check output O15 and relative wire 11.12 10- Check and eventually replace the defective pressure switch 11- Check input I41 and relative wire 15.41
47	**flowmeter fail.1**	The chemical 1 flowmeter signals an impulse number superior to value set by P7.21 with the dosing pump off	**10M9**  **J1** 	1- Dosing pump 1 10M9 defective 2- P7.21 incorrect 3- Flowmeter J1 defective 4- Flowmeter connection NOT OK	1- Replace the dosing pump 1 2- Check and control P7.21 3- Replace the defective flowmeter 4- Check input J1
48	**flowmeter fail.2**	The chemical 2 flowmeter signals an impulse number superior to value set by P7.21 with the dosing pump off	**11M8**  **J2**	1- Dosing pump 2 11M8 defective 2- P7.21 incorrect 3- Flowmeter J2 defective 4- Flowmeter connection NOT OK	1- Replace the dosing pump 2 2- Check and control P7.21 3- Replace the defective flowmeter 4- Check input J2

ALARM TEXT		ALARM DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
					
49	**flowmeter fail.4**	The chemical 4 flowmeter signal an (soda) impulse number superior to value set by P7.21 with the dosing pump off.		1-	1-
50	**flowmeter fail.3**	The chemical 3 flowmeter signals an impulse number superior to value set by P7.21 with the dosing pump off	**11M26**  **J3** 	2- Dosing pump 3 11M26 defective 3- P7.21 incorrect 4- Flowmeter J3 defective 5- Flowmeter connection NOT OK	2- Replace the dosing pump 3 3- Check and control P7.21 4- Replace the defective flowmeter 5- Check input J3
55	**conduc. probe**	Conductivity probe failure	Device 9FU1  Device 9A7 	1- Conductivity limit parameter not correct 2- Max. number of attempts parameter not correct 3- Conductivity transmitter 9A7 not calibrated 4- Conductivity transmitter 9A7 defective 5- Conductivity sensor defective or exhausted 9FU1	1- Fix parameter within treatment phase parameter 2- Fix parameter 3- Calibrate conductivity transmitter 9A7 4- Replace conductivity transmitter 9A7 5- Replace conductivity sensor 9FU1
56	**conductivity**	Conductivity value superior to the value set by P7.19	Device 9FU1  Device 9A7 	1- Conductivity limit parameter not correct 2- Max. number of attempts parameter not correct 3- Conductivity transmitter 9A7 not calibrated 4- Conductivity transmitter 9A7 defective 5- Conductivity sensor defective or exhausted 9FU1	1- Fix parameter within treatment phase parameter 2- Fix parameter 3- Calibrate conductivity transmitter 9A7 4- Replace conductivity transmitter 9A7 5- Replace conductivity sensor 9FU1
60	**Time**	During the treatment phase the thermal-regulating timeout expired (30min) (start to count the first time that the tank temperature reaches the setpoint temperature +0.5 °C	**/**	1- Excessive chimney suction 2- Wrong loading chemical temperature	1- Decrease the chimney suction 2- Check and set the chemical loading temperature
65	**Door limit switch**	For CV_EV machine it intervenes in the situation: when the motorization is open, the limit switch is not commutated in the sequence of state activated and deactivated within the maximum time set by P6.15. For BM machine door it intervenes in the following situations. The maximum opening of hot air exhaust has not been reached within the maximum time set by P6.15 (the extra limit switch is not commutated to the activated status within that time during the movement of the exhaust opening after the door unlocking). - The door locking and unlocking limit		3-	3-

ALARM TEXT		ALARM DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
		switches with arm motorization off are both activated or deactivated (discrepancy) from over 2 s. - The limit switch of complete open door and the grafted door microswitch are both activated (discrepancy). - A arm motorization in closing for repositioning the arm return has not been completed within the maximum time set by P6.15. A arm motorization in opening for repositioning the arm readjust has not been ended within the maximum time set by P6.13 (maximum unlocking time). A arm motorization off and with exhaust opening and arm repositioning ended, the extra switch microswitch is activated on the level with locked door or deactivated with door closed (grafted) and locked (delay time 2 s).			
67	**Alarm**	Machine wrong configuration.	**/**	1- The pin 19 is not closed.	1- Check pin 19.
100	**CAN serial**	Diagnostics activated if P1.19 is not set at 0. Interruption of Can bus communication between master board and Can/Ethernet gateway of supervisor interface (diagnostics detected in case of machine in standby status)			

WARNINGS LIST

WARNING TEXT	WARNING DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
press start	It is possible to start a cycle during a stand-by state. With a double door machine it is necessary to open and close the door once after the end of a cycle	**/**	/	/
no chemical 1	The chemical product associated to dosing pump 1 (detergent) is used-up (if it is set as a warning by P3.06) Diagnostics with dosing pump enabled: - Pressure switch state with pressure switch presence; Lack of a new impulse after the time set by P6.12 if a flowmeter is used	**13SP15** 	1- Chemical 1 used up 2- Level sensor 13SP15 chemical 1 dirty or blocked 3- Level sensor 13SP15 chemical 1 defective 4- Level sensor connection NOT OK	1- Replace the chemical tank 1 2- Clean the level sensor chemical 1 3- Replace the level sensor chemical 1 4- Check input I21 and relative wire 13.15

WARNING TEXT	WARNING DESCRIPTION	DEVICE	POSSIBLE CAUSES	SOLUTION
no chemical 2	The chemical product associated to dosing pump 2 (neutralising) is used-up (if it is set as a warning by P3.06) Diagnostics with dosing pump enabled: - Pressure switch state with pressure switch presence; Lack of a new impulse after the time set by P6.12 if a flowmeter is used	**12SP14** 	1- Chemical 2 used up 2- Level sensor 12SP14 chemical 2 dirty or blocked 3- Level sensor 12SP14 chemical 2 defective 4- Level sensor connection NOT OK	1- Replace the chemical tank 2 2- Clean the level sensor chemical 2 3- Replace the level sensor chemical 2 4- Check input I17 and relative wire 12.14
no chemical 3	The chemical product associated to dosing pump 3 (soda) is used-up (if it is set as a warning by P3.06) Diagnostics with dosing pump enabled: - Pressure switch state with pressure switch presence; Lack of a new impulse after the time set by P6.12 if a flowmeter is used	**12SP13** 	5- Chemical 3 used up 6- Level sensor 12SP13 chemical 3 dirty or blocked 7- Level sensor 12SP13 chemical 3 defective 8- Level sensor connection NOT OK	1- Replace the chemical tank 3 2- Clean the level sensor chemical 3 3- Replace the level sensor chemical 3 4- Check input I20 and relative wire 12.19
no chemical 4	The chemical product associated to dosing pump 4 (lubricating) is used-up (if it is set as a warning by P3.06) Diagnostics with dosing pump enabled: - Pressure switch state with pressure switch presence; Lack of a new impulse after the time set by P6.12 if a flowmeter is used	**12SP13** 	1- Chemical 4 used up 2- Level sensor 12SP13 chemical 4 dirty or blocked 3- Level sensor 12SP13 chemical 4 defective 4- Level sensor connection NOT OK	5- Replace the chemical tank 4 6- Clean the level sensor chemical 4 7- Replace the level sensor chemical 4 8- Check input I20 and relative wire 12.19
salt loading	Make a salt refill after the cycle number set by P7.27 (with P7.26 different form 10)	**/**	/	/
pressure probe	Failure of washing pump pressure measuring.	**/**	/	/
- open door -	Inform that one door is open	**/**	/	/
wait	Generic warn that inform to wait before to do a new action	**/**	/	/
OK	Cycle successful completed	**/**	/	/
NO DISINFECTION	The cycle has been interrupted		The cycle was interrupted before the thermal disinfection process end	Restart a cycle form the beginning
wait Supervisor	The unloading of the data cycle carried out and it is necessary to wait in order to start a new cycle			

HISTORICAL EVENTS

EVENT	DISPLAY MESSAGE	DESCRIPTION
FROM 1 TO 100	**SAME LIST OF ALARMS**	(SEE ALARMS LIST)
90	**OK**	CYCLE ENDS WITH SUCCESS
91	**NO DISINFECTION**	CYCLE HAS BEEN INTERRUPTED

17. USB PORT

On the control panel board there is an USB port that allows the machine programming and data saving.

17.1.1 Programming

It is sufficient to insert the USB key on the port and switch OFF and switch ON the control panel board using the ON/OFF button.
The display will ask about the new file installation allowing the selection between APPEND (add only the new parts) and OVERWRITE (delete the existing files and install the new one).

It is possible to program:

- Parameters
- Cycles
- Control panel FW
- Language file

17.1.2 Data saving

Insert the USB key on the dedicated port and enter the menu and select the USB menu; it is possible to download from the machine the following information and files:

- cycles
- parameters
- historical
- maintenance historical

Selected the information you want to download, press the START button.

The cycle and parameter files can be used to program another machine or as back-up of the machine.

17.1.3 Data saving during the cycle

To save the data at the end of every washing program, insert the USB key on the dedicated port and follow the procedure:

- Set the parameters P1.04 at 3 and P1.05 to YES.
- Start the washing program.
- At the end of the cycle the machine creates the file with the samples of temperature and pressure probes with the information of every washing program phases.

To every washing program are associated two files which contain the data structured as below.

The file *****G.TXT contains:

N.B.: the *****G.TXT will be saved in automatically at the end of the washing program.

```
****************************************
          ****************
End user          :  ****************
Model             :
Machine           :  13146
Work station      :      0
Software          :   7.00
Operator          :
----------------------------------------
B20 PREWASH       Record:          00015
........................................
START:             05/06/13     h: 16:10

n°      mm:ss     °C(1)     °C(2)      Bar

0001     0:00      35.2      35.1      ----
0002     0:05      35.2      35.1      ----
0003     0:10      35.2      35.1      ----
0004     0:15      35.2      35.1      ----
0005     0:20      35.2      35.1      ----
0006     0:25      35.1      35.0      ----

--------          WRITE OK      ---------
```

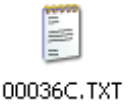
Information related to machine and operator.

Information related to washing program.

Number of samples.

Data value to sampled data.

Sampling time.



The file *****C.TXT contains:

N.B.: To save the *****C.TXT, insert the key in the dedicated port, enter the menu, select the USB menu and download from the machine the information of historical.

```
****************************************
          ****************
End user          :  ****************
Model             :
Machine           :  13146
Work station      :      0
Software          :   7.00
Operator          :
----------------------------------------
B20 PREWASH       Record:          00015
........................................
START:             05/06/13     h: 16:10

->  chemical load                 h: 16:10
     T1=  35.2°C  T2=  35.1°C

->  1: drain                      h: 16:11
     T1=  35.1°C  T2=  35.0°C

->  2: prewashing                 h: 16:16
     T1=  24.5°C  T2=  24.5°C

->  3: drain                      h: 16:17
     T1=  24.6°C  T2=  24.6°C

STOP:              05/06/13     h: 16:17
END CYCLE: OK
```

Information related to machine and operator.

Information related to washing program.

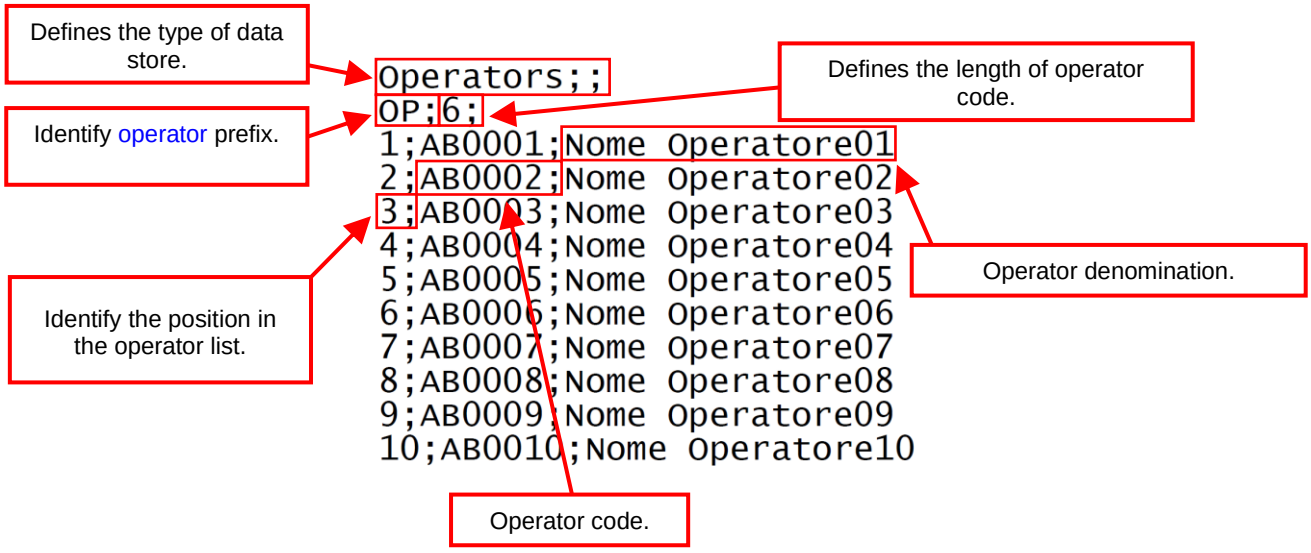
Information related to every washing program phase.

17.1.4 Operator archive management

It is possible to save the archive operators present inside of machine memory into a file following the procedure:

Insert the USB key into dedicated port.
Enter menu: **USB → OPERATOR → Insert 3rd level password → USB EXPORT → Press START button.**

The name of file is "**OPERATxxxxx.CSV**", where "**xxxxx**" stands for an optional generic denomination and it contains the data structured as below:



FIELD	FIXED CHARACTERISTICS
Type of data store	Nothing
Operator prefix	Length = 2 Allowable characters: 0…9 number digits, "A…Z" uppercase alphabet, "a..z" lowercase alphabet, " " space, "-"minus sign, "." full stop.
Lenght of operator code	From 1 to 8
Position in the operator list	Progressive order (Maximum number of operators = 60)
Operator code	Allowable characters: 0…9 number digits, "A…Z" uppercase alphabet, "a..z" lowercase alphabet, " " space, "-"minus sign, "." full stop.
Operator denomination	Length ≤ 16 (can be empty) Allowable characters: 0…9 number digits, "A…Z" uppercase alphabet, "a..z" lowercase alphabet, " " space, "-"minus sign, "." full stop.

It is possible to upload the archive operators by insert the USB key into dedicated port and enter the menu: **USB → OPERATOR → Insert 3rd level password → USB IMPORT → Press the START button.**

ATTENTION

- To modify the operator archive file, it is recommended use a text editor (ex. Notepad).
- If the file contains an operator with the field "**OPERATOR CODE**" null (no character), the file is considered valid up to the previous operator. All subsequent elements are ignored.
- If the file contains values that do not comply with the constraints described above, the file is considered incorrect. During the upload it is displayed the first line where the error is present.

18. MAINTENANCE

18.1 General recommendations on maintenance

The machine was constructed only for washing and thermal disinfection of orthodontic instruments, trays and objects normally used in orthodontic studios, hospital wards, assisted living centres, and so forth.
It is therefore subject to constant contact with aggressive detergents and with contaminated instruments.

For this reason, it is necessary to provide some useful instructions for the operators who will be performing maintenance on it.

The maintenance technicians, in normal operating conditions, are not subject to risks if they work safely using suitable means of protection.
In order to work safely the maintenance technician must:

- Carefully comply with the instructions set forth in this manual.
- Use safety devices appropriately and with care, as well as group and individual safety gear provided in the workplace.
- Use special care in making repairs or replacing mechanical parts (e.g. drain pump, etc.) on malfunctioning machines which have not completed the thermal disinfection cycle.

Maintenance operations for the machine described in this manual can be divided into "**Routine Maintenance**" and "**Special Maintenance**".

GENERAL GUIDELINES

MACHINE STATUS:
The machine must not be electrically powered and the dedicated safety device must be in the OFF position.
Person performing the task must ensure that there is no-one around the machine during this operation.

SAFETY SYSTEMS TO BE ADOPTED:
The operation must be carried out in compliance with standards governing the use of disinfectant substances used (see technical information for the product being used), in compliance with standards concerning contact with parts of the machine which may be contaminated by pathogenic materials and with use of individual protection gear.

18.1.1 Maintenance request

The machine displays the "**MAINTENANCE**" warning after a specified time or after a specified number of working hours according to parameter **P6.48**. This warning does not affect the normal use of machine.
The service technician must do the maintenance operations in the shortest possible time.

To clear the "**MAINTENANCE**" warning, follow the procedure:

1. Do the general maintenance of machine;
2. Enter the MENU':

   UTILITY → MAINTENANCE → Insert 3rd level passord → MAINTENANCE REGISTER → Press the START button.

18.2 Procedure for routine maintenance work

Routine maintenance includes all the operations aimed at keeping various parts of the machine clean and functional.
They must be performed on a regular basis (see table in paragraph 18.3) or when considered necessary due to incorrect performance of washing cycle.
Since these are simple cleaning operations, they are normally performed by the machine operator on his own liability.

18.3 Table of routine maintenance tasks

The following table shows the various routine maintenance tasks, their frequency, who is to perform them and the reference to the specific intervention form.
Each single task is more fully explained in the single reference forms.
Even if the water supply is relatively soft, the high temperature can cause the formation of residues which may create problems with the heating element, compromising the correct washing cycle and the reaching of the disinfection temperature.
For these reasons it is advisable to carry out regular cleaning as described below.

TABLE OF ROUTINE MAINTENANCE TASKS

Steelco Washer-Disinfector	Maintenance activity	Who?	DS500 (SCL, SCDL, CL, CDL)	every 1000 hrs or once a year (whatever comes first)*	First and Second maintenance (every…)		Time (min.)	
	Frequency	Operator/service		[months]	12	24		Activity
Chamber filters	every day	OP	x				5	Remove filter and clean
Washing arms	every week	OP	x				5	Check spray arm rotation. Open caps and clean interior. Check nozzle and clean if needed.
Washing arms	every	S	x	12	X	x	5	Check if bush is weared on the spray arms. In case replace the weared parts
Water solenoid valve	every	S	x	12	X	x	3	Check for potential leaks, if needed remove and clean the membrane seat.
Water solenoid valve filters	every	S	x	12	x	x	10	Check, clean and replace it if necessary.
Dryer pre-filter	every	S	x	12	x	x	10	Replace it.
Dryer HEPA filter	every	S	if present	12	x	x	5	Replace it.
Temperature probes	every	S	x	12	x	x	10	Clean the sensors and check the temperatures during the cycle using an external probe.
Chamber heating elements	every	S	x	12	x	x	2	Check seals and connection tightness. Elements absorption.
Door Gasket	every	S	x	12	x	x	15	Check door seal and replace it if necessary.
Chemical dosing pumps	every	S	x	12	x	x	5	Check the inner pipe condition and leak presence. If necessary, replace the inner pipe.
Connection pipes of dosing pump	every	S	x	12	x	x	4	Check for crashing, initial leakage or hardening and replace the pipe if necessary.
Chemical floats	every	S	x	12	x	x	4	Check and clean suction filter.
Circulation pump	every	S	x	12	x	x	5	Look for possible water leaks from the rotating arm seal.
Drain pump	every	S	x	12	x	x	3	Look for eventual leaks and if needed remove and clean closure area of membrane
Pressure switches	every	S	x	12	x	x	10	Empty the chamber. Disconnect the pipe to the pressure switch and blow compressed air into it.
Machine cleaning	every	S	x	12	x	x	10	Clean machine inside and outside. In manual mode, load some water, add some winegar to remove limescale deposits and start washing pump for few minutes. Then drain and rinse.

N.B.
Routine maintenance tasks must be performed at the intervals set forth in the table.
It is however advisable to carry out single cleaning tasks anytime you feel they may be necessary.

In case the machine requires the replacement of one or more components, please refer to the manufacturer's spare part list.	
⇨	**It is advisable to carry out a general check-up and to clean the appliance regularly, particularly if the supply water is very hard.**
⇨	**Particular attention should be paid to heating element and the probe of thermostats.**

WARNING

- Do not clean the machine outside with high pressure water.
- Please contact the retailer that supplies your cleaning products for details of recommended methods and products for sanitizing the machine regularly.
- The machine has a safety thermostat that shuts down the power supply to the heating elements in the event of overheating.
  Before turning the machine back on, you will need to eliminate the problem and wait for the temperature to drop back below operating levels.

To re-start the appliance the fault that caused overheating must be corrected.

Every 12 months

- Clean the diaphragms of solenoid valves and replace if necessary;
- Clean the thermostat probe.

Change the membrane pipe inside dosing pump.

Even if the supply water is soft, the high working temperatures may cause limescale to build-up.
Apart from damaging the resistors, limescale can also clog the nozzles in which case the correct tank temperature for thermodisinfection may not be reached.

WARNING

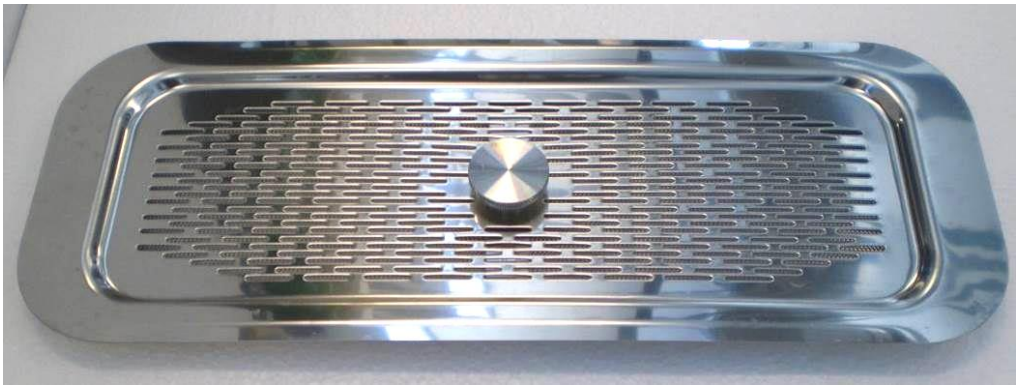
IT IS NECESSARY TO MAKE A MAINTENANCE AT REGULAR INTERVALS, THIS MEANS EVERY 3 MONTHS, IN ORDER TO GUARANTEE THE PERFECT FUNCTIONING OF PUMPS DOSING

CLEANING OF WASH CHAMBER DRAIN FILTERS		
M1	Worker: **Ac**	Frequency of Intervention: **every day**

METHOD OF INTERVENTION: clean the washing chamber drain filters in the following manner:

- Open the washing chamber door and extract the basket.
- Extract the drain water filtering assembly from the chamber.

- Unscrew the threaded pin and remove the cover of the drain water filter basket.



- Clean the drain water filter basket. Remove residues deposited during various washing cycles.
- Remove and clean any deposits and incrustations from the washing chamber drain.

- Replace the clean filter on the washing chamber drain.
- Put the cover for the drain water filter back in place. Lock it in position with the threaded pin.
- Put the drain water filter group back in the washing chamber.

CLEANING OF WASH CHAMBER THERMOSTAT PROBE		
M2	Worker: **Is**	Frequency of Intervention: **6 months**
METHOD OF INTERVENTION: clean the washing chamber thermostat probe in the following manner:		
• Open the washing chamber door and extract the basket. • Check the washing chamber thermostat probe and clean it of any deposits or lime incrustations using a damp cloth and an appropriate detergent.		
Take care not to damage or move the probe.		

CLEANING OF WASH ROTORS		
M3	Worker: **Ac**	Frequency of Intervention: **every week**
METHOD OF INTERVENTION: clean the washing rotors as follows:		
• Open the washing chamber door and extract the basket. • Unscrew the fastening pin of the two rotors and extract them from the chamber.		

Lower washing rotor

Upper washing rotor

- Unscrew the closure plug of the rear part of the nozzle and remove it.

- Carefully clean and remove any incrustations from the washing rotor nozzles using appropriate detergents.
- Put the plugs back in place at the ends of the washing arms.
  Make sure the gasket is properly positioned and in good condition.
  Replace it if necessary.
- Put the rotors back on the machine.
- Lock them in place with the previously removed fastening pin.

CLEANING OF UPPER WASHING ROTOR IN THE ECO-DRY VERSION (OPTIONAL)

M3	Worker: **Ac**	Frequency of Intervention: **check every day – clean every week**

METHOD OF INTERVENTION: check and clean the upper washing rotor as follows:

Check every day the rotor to verify that there are no impurities.

- Remove the baskets.
- Visual check the rotor and nozzles that there are no impurities and obstructions.
- Check the free rotation.

Upper washing rotor

For the cleaning remove the upper rotor as follows:

- Remove the baskets.
- The upper rotor is fixed to the machine with a plug-in connection.
- Unplug downwards the rotor.
- Rinse the rotor under running water.
- Check that the rotor seat is not damaged. In case please contact the Technical Support Centre of reference.
- After the cleaning operations plug-in the rotor.
- After the assembly check the free rotation.

CLEANING AND CHECKING WASHING CHAMBER INSTRUMENTATION

	Worker: **Ac**	Frequency of Intervention: **Once a week or when it is necessary**

METHOD OF INTERVENTION:

Carry out an empty washing cycle with a basket present so as to carry out the disinfection process inside the washing chamber. This will guarantee a complete disinfection of the washing chamber, the basket and the hydraulic circuits.

In case it is not possible to carry out an empty washing cycle, it is advisable to proceed with the disinfection of the machine as described below:

- Open the access door to the chamber and check that no equipment, trays, or instruments have been left on the washing basket.
- Inside the washing chamber, evenly spray a disinfectant that is both compatible to be used on stainless steel surfaces and which contains the following active ingredients:
  - quaternary ammonium salts
    or
  - chlorhexidine digluconate – ammonium chloride – isopropyl or ethyl alcohol
- All internal parts must be treated by this operation.

The approved STEELCO product for cleaning and disinfection of the chamber is called "STEELCO Surface Cleaner Disinfectant".

	ATTENTION
	**As regards the contact time and the methods of use of the disinfectant used, please comply with the instructions given on the technical data sheet of the product itself.**
	Always check the compatibility of the chemical product with the materials it will be used on; this information can be found on the technical data sheet of the chemical product used.
	The application of the disinfectant inside the chamber must be carried out when the surfaces are cold in order to avoid harmful fumes coming from the product being inhaled.
	It is advisable to contact your cleaning products dealer to obtain detailed instructions relating to the periodic disinfection of the machine.

CLEANING THE EXTERNAL BODY OF THE MACHINE		
	Worker: **Ac**	Frequency of Intervention: **every day**
METHOD OF CLEANING OUTER BODY		
Use a damp cloth to clean the outer body of the machine. Use only neutral detergents. Do not use abrasive detergents or solvents and/or thinners of any kind.		
METHOD OF CLEANING MARKING LABEL		
Use a damp cloth to clean the marking label surface. Use only water or isopropyl alcohol. Do not use abrasive detergents or solvents and/or thinners of any kind.		
METHOD OF CLEANING CONTROL PANEL		
Clean the control panel using only a soft cloth dampened with a product for the cleaning of plastic materials.		

LIMESCALE REMOVAL TREATMENT		
	Worker: **Ac**	Frequency of Intervention: **whenever necessary**
METHOD OF INTERVENTION:		

Use a descaling agent (we recommend vinegar) during an empty washing cycle with cold water (this is usually carried out every week unless the quality of the water requires a daily treatment in order to prevent the build-up of limescale and the blockage of the water jets).
As regards the quantity of the product to use, please comply with the instructions given on the technical data sheet of the product itself. In case vinegar is used, use 0.5 litres.
The descaling product must be poured into a container of the same size, positioned on an empty loading basket.
Use a washing program with water at room temperature, without activating the drying cycle.

ATTENTION

Even if the feed water only contains a small amount of limescale, high temperatures can generate the formation of limescale residues. This, as well as problems that could be caused to the heating element, may cause the blockage of the nozzles, jeopardising the correct washing process and preventing the ideal disinfection temperature in the tank to be reached.

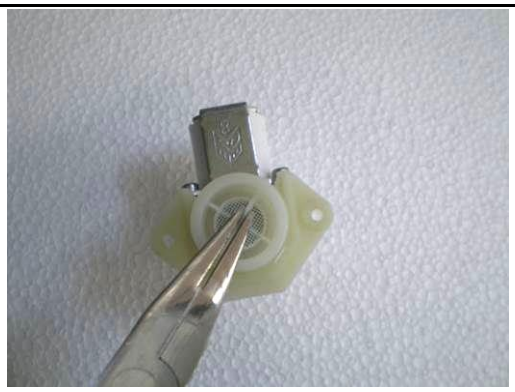
18.4 Procedure for special maintenance work

All special maintenance work is to be performed only by qualified, skilled personnel.

A table is shown below which includes possible special maintenance work that may be required.
If your machine should require special maintenance, please contact your retailer/distributor.

18.5 Table of special maintenance tasks

See scheduled maintenance form table.

<table>
<tr><th colspan="3">CLEANING OF COLD EATER INLET FILTERS</th></tr>
<tr><td>M4</td><td>Worker: Is</td><td>Frequency of Intervention: 6 months or when necessary</td></tr>
<tr><td colspan="3">METHOD OF INTERVENTION: clean (or replace) the water solenoid filter as described below:</td></tr>
<tr><td colspan="3">• Close the water supply tap.
• Loosen and completely unscrew the water supply pipe.
• Remove the filter located inside the water supply pipe fitting and clean it, removing any incrustation or deposits by immersing it in a container of water, or in appropriate lime removal products if required.</td></tr>
<tr><td colspan="3">  
   </td></tr>
</table>

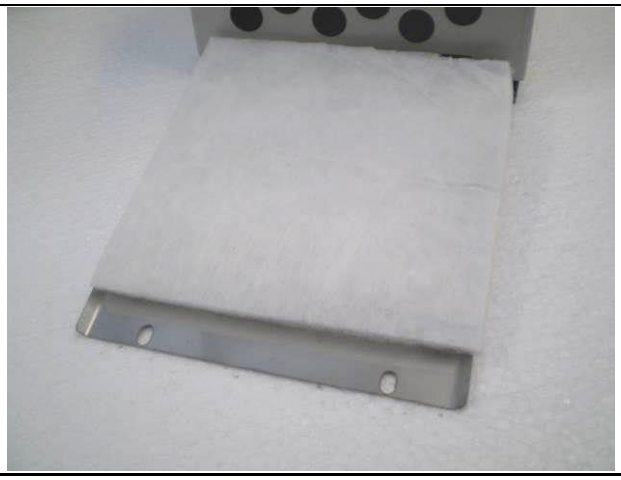
CLEANING OF DRYING SYSTEM PRE-FILTER (IF PRESENT)

M5	Worker: **Is**	Frequency of Intervention: **100 hours**

METHOD OF INTERVENTION: clean (or replace) the drying system filter as described below:

- Remove the two screws from the drying system filter protective front panel and remove it from the machine.

- Extract the pre-filter and clean it of any dust. If the filter is no longer usable, replace it with another pre-filter of the same type.



- Carefully put the clean (or new) pre-filter back in place. Use the screws to fasten the previously removed protective front panel.

CLEANING OF DRYING HEPA FILTER (IF PRESENT)		
M5	Worker: **Is**	Frequency of Intervention: **300 hours**

METHOD OF INTERVENTION: clean (or replace) the drying system filter as described below:

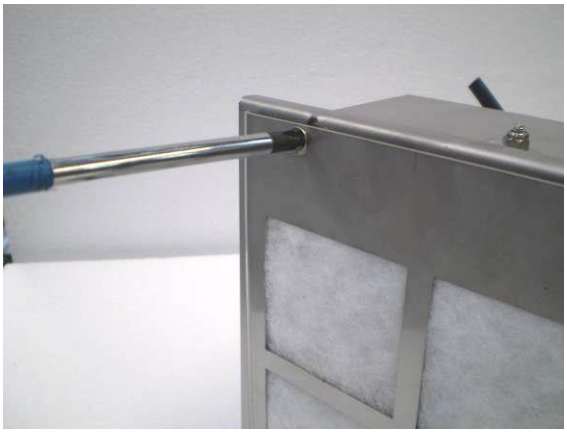
- Remove the two screws from the drying system filter protective front panel and remove it from the machine.



- Extract the pre-filter and than the HEPA filter: replace it with another filter of the same type.



- Carefully put the pre-filter back in place. Use the screws to fasten the previously removed protective front panel.

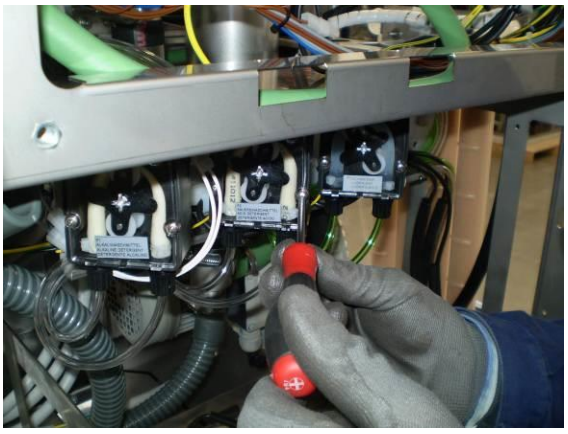
REPLACEMENT THE MEMBRANE PIPE OF DISPENSING PUMP

M6	Worker: **Is**	Frequency of Intervention: **from 3 to 6 months**

METHOD OF INTERVENTION: replace the membrane pipe of dispensing pump for chemical products as described below:

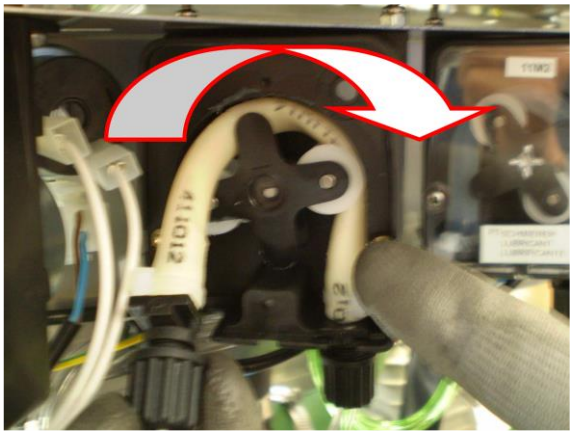
1. Remove the closure panel of the machine by removing the screws.

2. Access the chemical product pump. Use a tool to remove the protective mask of the rotor.



3. Extract the membrane pipe from the dispensing pump.

4. Turn the rotor manually, clockwise, until the membrane pipe is fully extracted from the dispensing pump.



ATTENTION: the rotor of dispensing pump turns ONLY clockwise !!!

5. Place the membrane pipe in vertical position to help the flow of chemical product from membrane tube to chemical circuit. Do this operation to prevent leakage of chemical product during replacement.

6. Loosen the tube clamps and disconnect the product supply tubes from the membrane pipe attachments.

7. Replace the membrane pipe with another of the same type. (see the spare part list).

8. Replace the membrane pipe into dispensing pump, manually operating the rotor.  **ATTENTION: the rotor of dispensing pump turns ONLY clockwise !!!**	**9.** Replace the protective mask of the rotor. 

CLEANING OF DISPENSING PUMP FOR CHEMICAL PRODUCTS		
M6	Worker: **Is**	Frequency of Intervention: **from 3 to 6 months**
METHOD OF INTERVENTION: clean the pump for the dispensing of chemical products as described below:		
• Remove the closure panel of the machine by removing the screws. • Access the chemical product pump. Use a tool to remove the protective mask of the rotor. • Loosen the tube clamps and disconnect the product supply tubes from the membrane tube attachments. • Turn the rotor manually, clockwise, until the membrane tube is fully extracted from the dispensing pump. • Apply an even layer of silicon grease to the membrane tube you have just removed before re-installing it on the dispensing pump, following the previously described operations in reverse order.		

CLEANING OF SAFETY SIGNALS SURFACES		
	Worker: **Is**	Frequency of Intervention: **1 year**
METHOD OF INTERVENTION:		
Clean the safety signals surfaces with water or isopropyl alcohol, using a cloth.		

⇨	**WARNING** In order to remove the scale, suitable products can be used, yet pay attention that they are not highly corrosive.
⇨	**ASSISTANCE** Should your machine not work properly even after ordinary maintenance has been carried out, contact the Technical Support Centre of reference, describing the fault and giving the machine model and serial numbers.

19. PROBLEMS – CAUSES – SOLUTIONS

19.1 Introduction

This chapter includes possible problems which may occur during machine operation, along with their cause and solution. All components, if not identified by specific figures, are referred to by the attached assembly drawings.
Should the inconveniences continue or take place frequently even after having carried out all the instructions stated in this chapter, please contact the Technical Support Centre of reference.

19.2 Problems - Causes - Solutions

I. MACHINE WILL NOT START:

C. Circuit breaker de-activated.

S. Place it in the "ON" working position.

C. Machine start switch de-activated.

S. Press the start button.

I. UPON GIVING START-UP COMMAND, WASHING CYCLE DOES NOT START:

C. The door is not correctly closed or locked.

S. Check door closure. Check that the door micro-switch is properly activated.

C. Micro-switch failure.

S. Check operation and replace if necessary.

C. No detergent in tank.

S. Turn the machine off and fill the tank.

I. MACHINE DOES NOT REACH SET TEMPERATURE FOR THE SELECTED WASHING CYCLE:

C. The thermostat probe of the washing chamber is dirty or covered with lime.

S. Clean the thermostat probe of the washing chamber, performing the routine maintenance described in chapter 18 (Form M2) of this manual.

I. MACHINE DOES NOT PROPERLY RUN WASHING CYCLE:

C. The nozzles of the washing rotors are clogged in deposits or lime.

S. Clean the rotors by carrying out the routine maintenance set forth in chapter 18 (Form M3) of this manual.

C. Water required for proper washing does not arrive.

S. Ensure that the water is supplied at the correct pressure and that there are no obstructions.

C. The correct amount of water required for correct washing cycle does not arrive.

S. Completely close the tap for connection to the plumbing system located upstream from the machine and clean the filter as described in chapter 18 (form M1) of this manual.

I. DETERGENT FILLING PHASE DOES NOT OCCUR CORRECTLY:

C. Chemical dispensing pump not very efficient.

S. Perform the routine maintenance set forth in chapter 18 (Form M6) of this manual.

C. Chemical dispensing pump failed.

S. Contact the Technical Support Centre of reference and ask for the assistance of an **authorized workshop technician** for the repair or replacement of the pump.

I. MACHINE DOES NOT PERFORM DRYING PHASE:

C. Air filter of drying system is dirty or clogged.

S. Clean the filter by carrying out the routine maintenance set forth in chapter 18 (Form M5) of this manual.

C. The fan of the drying system does not work.

S. Check the electrical connections of the drying system.

S. Contact the Technical Support Centre of reference and ask for the assistance of an **authorized workshop technician** for the repair or replacement of the motor.

20. DECOMMISSIONING

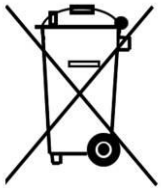
20.1 Instructions for disassembly of the machine

For demolition and subsequent disposal of your machine, proceed as follows:

- Disconnect the machine from the electrical power and water supply, and from the drain. With the machine disconnected, check that the water circuit is not pressurized.
- Contact the organization responsible for reporting and certifying machine demolition, in accordance with the laws in the country where the machine is installed.
- Carry out draining, storage and subsequent disposal of substances such as oils and grease which may be in the lubrication tanks in accordance with the law.
- When disassembling the machine, make sure to divide the materials it is made of according to their chemical makeup (iron, aluminium, bronze, plastic, etc.).
- Ensure that the floor where the machine or any parts of it are placed is made of washable materials, non-absorbent, and provided with adequate drainage to protect against accidental oil leaks or rust.
  These drains must carry any leakage to watertight collection containers.
- Cover the machine or parts of it with insulating covers to prevent rain or humidity from damaging the structure through oxidation or rust.

Following the legal requirements where the machine is installed and used, dispose of all materials and substances resulting from its disassembly.

20.2 Machine disposal



- For the dispose of the equipment get through to the manufacturer or distributor.
- Do not dispose of this equipment as miscellaneous solid municipal waste but arrange to have it collected separately.
- The re-use or correct recycling of the electronic and electrical equipment (EEE) is important in order to protect the environment and the well-being of humans.
- In accordance with European Directive WEEE 2012/19/EC, special collection points are available to which to deliver waste electrical and electronic equipment and the equipment can also be handed over to a distributor at the moment of purchasing a new equivalent type.
- The public administration and producers of electrical and electronic equipment are involved in facilitating the processes of the re-use and recovery of waste electrical and electronic equipment through the organisation of collection activities and the use of appropriate planning arrangements.
- Unauthorized disposal of waste electrical and electronic equipment is punishable by law with the appropriate penalties.

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CERTIFICATO N.
CERTIFICATE N. **1050.2021**

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VIA DEL LAVORO 12 - 31039 RIESE PIO X (TV) Italy

VIA DEL LAVORO 3 - 31039 RIESE PIO X (TV) Italy

VIA DEL LAVORO 9/A - 31039 RIESE PIO X (TV) Italy

VIA DEL LAVORO 6-8 - 31039 RIESE PIO X (TV) Italy

E' CONFORME ALLA NORMA / *IS IN COMPLIANCE WITH THE STANDARD*

ISO 45001:2018

PER LE SEGUENTI ATTIVITA' / *FOR THE FOLLOWING ACTIVITIES*

Vedere l'Allegato per l'attività (n°1 pagina)
View the Annex for the activity (n° 1 page)

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Management Systems Division - Flavio Ornago

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MS N° 0005MS

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IAF: 19, 18, 29

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ALLEGATO CERTIFICATO N. **1050.2021**
ANNEX CERTIFICATE N.

Attività:
Activities:

Progettazione, produzione, installazione ed assistenza di lavastrumenti e lavacarrelli a termodisinfezione, lavastrumenti per decontaminazione, sterilizzatori a vapore e/o a bassa temperatura, lavapadelle, lavastrumenti ad ultrasuoni ed apparecchi per il lavaggio, disinfezione e sterilizzazione chimica degli endoscopi termolabili. Progettazione, produzione, installazione ed assistenza di apparecchi per il lavaggio e disinfezione di vetreria, strumenti, carrelli, contenitori e parti di macchine speciali per il settore farmaceutico. Progettazione e commercializzazione di soluzioni disinfettanti per dispositivi medici invasivi e non invasivi. Commercializzazione di lavastrumenti per decontaminazione, sterilizzatori a vapore e relativi accessori. Commercializzazione di arredi e attrezzature/accessori a supporto dei processi di lavaggio, disinfezione, sterilizzazione e stoccaggio di attrezzature e strumenti. Processi: lavorazioni meccaniche, saldatura lamiere, assemblaggio, collaudo, imballaggio e spedizione di prodotti finiti.

Design, manufacturing, installation and service of washer disinfectors and trolley washers, washers for decontamination, steam and/or low temperature sterilizers, bedpan washers, ultrasonic washers and washers for the disinfection and the chemical sterilization of the thermolabile endoscopes. Design, manufacturing, installation and service of equipment for the washing and disinfection of glassware, instruments, trolleys, carboys and parts of special machines for the pharmaceutical industry. Commercialization of decontamination washers, steam sterilizers and their accessories. Commercialization of furniture/accessories to support washing, disinfection and sterilization processes as well as for the storage of instruments and tools. Processes: mechanical works, welding of metal sheets, assembly, testing, packaging and shipping of finished products.

Design, Produktion, Installation und Wartung von Reinigungsdesinfektionsautomaten und Wagenwaschanlagen zur Thermodesinfektion, Dekontaminationsgeraeten, Dampf- und / oder Niedertemperatur-Sterilisatoren, Steckbeckenspueler, Ultraschallreinigungsgeräten und Geräten zum Waschen, Desinfizieren und chemischen Sterilisieren von thermolabilen Endoskopen. Entwurf Herstellung Installation und Wartung von Anlagen zum Waschen und Desinfizieren von Glaswaren, Instrumenten, Wagen, Containern und Teilen von Spezialmaschinen für die pharmazeutische Industrie. Design und Marketing von Desinfektionslösungen für invasive und nicht-invasive Medizinprodukte. Vermarktung von Dekontaminationsgeräten, Dampfsterilisatoren und dazugehörigem Zubehör. Verkauf von Möbeln und Geräten / Zubehör zur Unterstützung der Reinigungsprozesse, Desinfektion, Sterilisation und Lagerung von Geräten und Werkzeugen.

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has implemented and maintains a

Occupational Health and Safety Management System

for the following scope: **Design, manufacturing, installation and service of washer disinfectors and trolley washers, washers for decontamination, steam and/or low temperature sterilizers, bedpan washers, ultrasonic washers and washers for the disinfection and the chemical sterilization of the thermolabile endoscopes. Design, manufacturing, installation and service of equipment for the washing and disinfection of glassware, instruments, trolleys, carboys and parts of special machines for the pharmaceutical industry. Commercialization of decontamination washers, steam sterilizers and their accessories. Commercialization of furniture/accessories to support washing, disinfection and sterilization processes as well as for the storage of instruments and tools. Processes: mechanical works, welding of metal sheets, assembly, testing, packaging and shipping of finished products.**

which fulfils the requirements of the following standard:

ISO 45001:2018

Issued on: **2023/07/25**
Expires on: **2024/08/22**

Registration Number: **IT – 134569-1050.2021**

Alex Stoichitoiu
President of IQNET

Mario Romersi
President of CISQ

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Vedere gli Allegati per gli altri Siti (n° 3 allegati)
Vedere gli Allegati per gli altri Siti (n° 3 annexes)

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PER LE SEGUENTI ATTIVITA' / *FOR THE FOLLOWING ACTIVITIES*

Progettazione, produzione, installazione e assistenza di sistemi di lavaggio, disinfezione e sterilizzazione in ambito medico sanitario, farmaceutico e per i laboratori di ricerca mediate i processi di lavorazioni meccaniche, saldatura lamiere, assemblaggio, collaudo, imballaggio e spedizione di prodotti finiti. Commercializzazione di apparecchiature, strumenti ed accessori per i processi di lavaggio, disinfezione e sterilizzazione

Design, production, installation and service of cleaning, disinfection and sterilisation systems for healthcare, pharmaceutical and research laboratories through the processes of machining, sheet metal welding, assembly, testing, packaging and shipping of the finished products.. Marketing of equipment, instruments and accessories for washing, disinfection and sterilisation processes Marketing of equipment, instruments and accessories for washing, disinfection and sterilisation processes.

Certificazione rilasciata in conformità al Regolamento Tecnico ACCREDIA RT-09

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IAF: 19,18,29

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Design, production, installation and service of cleaning, disinfection and sterilisation systems for healthcare, pharmaceutical and research laboratories through the processes of machining, sheet metal welding, assembly, testing, packaging and shipping of the finished products. Marketing of equipment, instruments and accessories for washing, disinfection and sterilisation processes

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPLICITARE LE ATTIVITA' SVOLTE PRESSO IL SINGOLO SITO/UNITA' OPERATIVA NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE RILASCIATA A: STEELCO SPA
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VIA DEL LAVORO 9A - 31039 RIESE PIO X (TV) Italy

Attività:
Activities:

Produzione di sistemi di lavaggio, disinfezione e sterilizzazione in ambito medico sanitario, farmaceutico e per i laboratori di ricerca

Production of cleaning, disinfection and sterilisation systems for healthcare, pharmaceutical and research laboratories

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPLICITARE LE ATTIVITA' SVOLTE PRESSO IL SINGOLO SITO/UNITA' OPERATIVA NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE RILASCIATA A: STEELCO SPA
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Attività:
Activities:

Produzione di sistemi di lavaggio, disinfezione e sterilizzazione in ambito medico sanitario, farmaceutico e per i laboratori di ricerca. Magazzino prodotto finito

Production of cleaning, disinfection and sterilisation systems for healthcare, pharmaceutical and research laboratories. Warehouse for finished products

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPLICITARE LE ATTIVITA' SVOLTE PRESSO IL SINGOLO SITO/UNITA' OPERATIVA NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE RILASCIATA A: STEELCO SPA
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IAF: 19

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has implemented and maintains a
Environmental Management System

for the following scope:
Design, production, installation and service of cleaning, disinfection and sterilisation systems for healthcare, pharmaceutical and research laboratories through the processes of machining, sheet metal welding, assembly, testing, packaging and shipping of the finished products.. Marketing of equipment, instruments and accessories for washing, disinfection and sterilisation processes Marketing of equipment, instruments and accessories for washing, disinfection and sterilisation processes.

which fulfils the requirements of the following standard:

ISO 14001:2015

Issued on: **2023/07/21**
Expires on: **2026/10/10**

Registration Number: **IT – 112291-9191.SEE3**

Alex Stoichitoiu
President of IQNET

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President of CISQ

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DICHIARAZIONE DI CONFORMITÁ
DECLARATION OF CONFORMITY
DÉCLARATION DE CONFORMITÉ
KONFORMITÄTS-ERKLÄRUNG
DECLARACIÓN DE CONFORMIDAD

Il sottoscritto, come legale rappresentante della azienda sotto indicata, dichiara che il prodotto:
The undersigned, officer of the under-written company, hereby declares that the product:
Le représentant juridique soussigné de l'usine sous indiquée, il déclare que le produit:
Der Unterzeichner, Handlungsbevollmächtigter des oben genannten unter hingewiesen, erklärt hiermit, daß die Produkt:
El firmante, como representante legal de la empresa indicada, declara que el producto:

Nome/Modello:
Name/Type:
Nom/Modèle:
Name/Model:
Nombre/Modelo:
DS 500 CL

N° di Serie/Lotto:
Serial/Lot N.:
N° de Série/Lot :
Serial N./ Reihe-Zahl:
N° de Serie/Lote:
XXXXXXX

è stato progettato e costruito in conformità alle seguenti norme:
is designed and manufactured in compliance with the following standards:
a été conçu et construit conformément aux normes suivantes:
ist unter folgenden Normen konform entworfen und hergestellt:
ha sido diseñado y construido en conformidad con las normas:

EN 61010-1:2010 + A1:2019

EN 61010-2-040:2015

EN 61326-1:2013

EN ISO 14971:2019

EN ISO 15883-1:2009 + A1:2014

EN ISO 15883-2:2009

CEN ISO/TS 15883-5:2005

RIESE PIO X, ……27/07/2022……

Direttore Generale
Managing Director
Director Général
Geschäftsführer
Gerente

Fabio Zardini
Steelco S.p.A.

STEELCO S.p.A.
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CERTIFICATO N.
CERTIFICATE N. 9124.IST2

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

STEELCO SPA

VIA BALEGANTE 27 - 31039 RIESE PIO X (TV)

UNITA' OPERATIVE / *OPERATIVE UNITS*

Vedere gli Allegati per le Unità Operative (n° 5 pagine)
View the Annexes for the Operative Units (n° 5 pages)

E' CONFORME ALLA NORMA / *IS IN COMPLIANCE WITH THE STANDARD*

ISO 13485:2016

PER LE SEGUENTI ATTIVITA' / *FOR THE FOLLOWING ACTIVITIES*

Progettazione, produzione, immissione in commercio, installazione, assistenza e commercializzazione di lavastrumenti e lavacarrelli a termodisinfezione, lavastrumenti per decontaminazione, sterilizzatori a bassa temperatura, lavapadelle, lavastrumenti ad ultrasuoni per dispositivi medici ed apparecchi per il lavaggio, disinfezione e sterilizzazione chimica degli endoscopi termolabili e relativi accessori. Gestione della progettazione e della produzione, immissione in commercio di sterilizzatrici a vapore, autoclavi a vapore per disinfezione di dispositivi medici quali materassi e cuscini ospedalieri e relativi accessori. Gestione della progettazione e della produzione, immissione in commercio e commercializzazione di soluzioni disinfettanti per dispositivi medici invasivi e non invasivi

Design, manufacture, installation, placing on the market, service and trading of washer disinfectors for instruments and trolleys, instruments decontamination units, low temperature sterilizers, bedpan washers, instruments washers by ultrasounds for medical devices and equipment for the chemical washing, disinfection and sterilization of thermolable endoscopes and related accessories. Design and manufacture management, placing on the market of steam sterilizers units, steam disinfectors of medical devices, such as hospital mattresses and pillows and related accessories. Design and manufacture management, placing on the market and trading of disinfectant solutions for invasive and noninvasive medical devices

Ulteriori informazioni riguardanti l'applicabilità dei requisiti ISO 13485:2016 possono essere ottenute consultando l'organizzazione
Further clarifications regarding the applicability of ISO 13485:2016 requirements may be obtained by consulting the organization

IL PRESENTE CERTIFICATO E' SOGGETTO AL RISPETTO DEL
REGOLAMENTO PER LA CERTIFICAZIONE DEI SISTEMI DI GESTIONE
THE USE AND THE VALIDITY OF THE CERTIFICATE SHALL SATISFY THE REQUIREMENTS OF THE RULES FOR CERTIFICATION OF MANAGEMENT SYSTEMS

DATE:	PRIMA CERTIFICAZIONE *FIRST CERTIFICATION*	EMISSIONE CORRENTE *CURRENT ISSUE*	SCADENZA *EXPIRY*
	2006-05-05	2021-08-30	2024-04-22

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Management Systems Division - Flavio Ornago

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO

SGQ N° 005 A

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

La validità del certificato è subordinata a sorveglianza annuale e riesame completo del Sistema di Gestione con periodicità triennale
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ERTIFICATO N.
CERTIFICATE N. 9120.IST1

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

STEELCO SPA

VIA BALEGANTE 27 - 31039 RIESE PIO X (TV)

UNITA' OPERATIVE / *OPERATIVE UNITS*

Vedere gli Allegati per le Unità Operative (n° 5 pagine)
View the Annexes for the Operative Units (n° 5 pages)

E' CONFORME ALLA NORMA / *IS IN COMPLIANCE WITH THE STANDARD*

ISO 9001:2015

PER LE SEGUENTI ATTIVITA' / *FOR THE FOLLOWING ACTIVITIES*

Progettazione, produzione, installazione e assistenza di lavastrumenti e lavacarrelli a termodisinfezione, lavastrumenti per decontaminazione, sterilizzatori a vapore e/o a bassa temperatura, lavastrumenti ad ultrasuoni, passacarrelli e relativi accessori per i settori laboratorio e stabulario. Progettazione, produzione, installazione ed assistenza di apparecchi e relativi accessori di apparecchi per il lavaggio e disinfezione di vetreria, strumenti, carrelli, contenitori e parti di macchine speciali per il settore farmaceutico. Commercializzazione di lavastrumenti per decontaminazione, sterilizzatori a vapore e relativi accessori. Commercializzazione di arredi ed attrezzature/accessori a supporto dei processi di lavaggio, disinfezione, sterilizzazione e stoccaggio di attrezzature e strumenti

Design, manufacture, installation and service of washer disinfectors for instruments and trolleys, instruments decontamination units, steam sterilizers units and/or low temperature sterilizers, instruments washers by ultrasounds, passthrough cabinets and related accessories for laboratory and life science industries. Design, manufacture, installation and service of washing and disinfecting equipment as washer disinfectors for instruments and trolleys, containers and special machine parts for pharmaceutical industry. Sale of instruments decontamination units, steam sterilizers units and related accessories. Sale of furniture and equipment/accessories for washing, disinfection, sterilization and storage processes for tools and instruments

Ulteriori informazioni riguardanti l'applicabilità dei requisiti ISO 9001:2015 possono essere ottenute consultando l'organizzazione
Further clarifications regarding the applicability of ISO 9001:2015 requirements may be obtained by consulting the organization

IL PRESENTE CERTIFICATO E' SOGGETTO AL RISPETTO DEL
REGOLAMENTO PER LA CERTIFICAZIONE DEI SISTEMI DI GESTIONE
THE USE AND THE VALIDITY OF THE CERTIFICATE SHALL SATISFY THE REQUIREMENTS OF THE RULES FOR CERTIFICATION OF MANAGEMENT SYSTEMS

DATE:	PRIMA CERTIFICAZIONE FIRST CERTIFICATION	EMISSIONE CORRENTE *CURRENT ISSUE*	SCADENZA *EXPIRY*
	2006-05-05	2021-03-25	2024-04-22

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Signatory of EA, IAF and ILAC Mutual Recognition Agreements

IAF: 19, 18, 29

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The validity of the certificate is submitted to annual audit and a reassessment of the entire management System within three years

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ALLEGATO N. **9120.IST1-1**
ANNEX N.

STEELCO SPA

VIA BALEGANTE 27 - 31039 RIESE PIO X (TV)

Attività:
Activities:

Progettazione, produzione, installazione, assistenza e commercializzazione di lavastrumenti e lavacarrelli a termodisinfezione, lavastrumenti per decontaminazione, sterilizzatori a bassa temperatura, lavastrumenti ad ultrasuoni e relativi accessori per i settori laboratorio e stabulario. Progettazione, produzione di sterilizzatrici a vapore (secondo procedura di OBL con fornitore esterno)
Design, manufacture, installation, service and trading of washer disinfectors for instruments and trolleys, instruments decontamination units, low temperature sterilizers, instruments washers by ultrasounds and related accessories for laboratory and life science industries. Design, manufacture of steam sterilizers units (according to procedure of OBL with external supplier)

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPLICITARE LE ATTIVITA' SVOLTE PRESSO IL SINGOLO SITO/UNITA' OPERATIVA NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE RILASCIATA A STEELCO SPA

THE AIM OF PRESENT ANNEX IS TO EXPLAIN THE ACTIVITIES PERFORMED IN EACH SITE/OPERATIVE UNIT OF THE MANAGEMENT SYSTEM CERTIFICATION ISSUED TO STEELCO SPA

PER LA VALIDITA' RIFERIRSI AL CERTIFICATO N. 9120.IST1
FOR THE VALIDITY PLEASE REFER TO CSQ CERTIFICATE N. 9120.IST1

DATE:	PRIMA CERTIFICAZIONE *FIRST CERTIFICATION*	EMISSIONE CORRENTE *CURRENT ISSUE*	SCADENZA *EXPIRY*
	2006-05-05	2021-03-25	2024-04-22

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L'ENTE ITALIANO DI ACCREDITAMENTO

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Il presente documento integra il certificato n. 9120.IST1
This document is a part of certificate n. 9120.IST1

IAF: 19, 18, 29

La validità del certificato è subordinata a sorveglianza annuale e riesame completo del Sistema di Gestione con periodicità triennale
The validity of the certificate is submitted to annual audit and a reassessment of the entire management System within three years

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ALLEGATO N. **9120.IST1-2**
ANNEX N.

STEELCO SPA

VIA DEL LAVORO 12 - 31039 RIESE PIO X (TV)

Attività:
Activities:

Produzione (lavorazioni meccaniche e conservazione materie prime)
Manufacture (mechanical processing and storing raw materials)

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPLICITARE LE ATTIVITA' SVOLTE PRESSO IL SINGOLO SITO/UNITA' OPERATIVA NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE RILASCIATA A STEELCO SPA

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FOR THE VALIDITY PLEASE REFER TO CSQ CERTIFICATE N. 9120.IST1

DATE:	PRIMA CERTIFICAZIONE *FIRST CERTIFICATION*	EMISSIONE CORRENTE *CURRENT ISSUE*	SCADENZA *EXPIRY*
	2006-05-05	2021-03-25	2024-04-22

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Il presente documento integra il certificato n. 9120.IST1
This document is a part of certificate n. 9120.IST1

IAF: 18

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ALLEGATO N. **9120.IST1-3**
ANNEX N.

STEELCO SPA

VIA DEL LAVORO 10 - 31039 RIESE PIO X (TV)

Attività:
Activities:

Progettazione, produzione, installazione ed assistenza di apparecchi e relativi accessori per il lavaggio e disinfezione di vetreria, strumenti, carrelli, contenitori e parti di macchine speciali per il settore farmaceutico
Design, manufacture, installation and service of equipment and related accessories for washing and disinfecting instruments and trolleys, containers and special machine parts for pharmaceutical industry

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPLICITARE LE ATTIVITA' SVOLTE PRESSO IL SINGOLO SITO/UNITA' OPERATIVA NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE RILASCIATA A STEELCO SPA
THE AIM OF PRESENT ANNEX IS TO EXPLAIN THE ACTIVITIES PERFORMED IN EACH SITE/OPERATIVE UNIT OF THE MANAGEMENT SYSTEM CERTIFICATION ISSUED TO STEELCO SPA

PER LA VALIDITA' RIFERIRSI AL CERTIFICATO N. 9120.IST1
FOR THE VALIDITY PLEASE REFER TO CSQ CERTIFICATE N. 9120.IST1

DATE:	PRIMA CERTIFICAZIONE *FIRST CERTIFICATION*	EMISSIONE CORRENTE *CURRENT ISSUE*	SCADENZA *EXPIRY*
	2006-05-05	2021-03-25	2024-04-22

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This document is a part of certificate n. 9120.IST1

IAF: 19, 18

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ALLEGATO N. **9120.IST1-4**
ANNEX N.

STEELCO SPA

VIA DEL LAVORO 3 - 31039 RIESE PIO X (TV)

Attività:
Activities:

Progettazione, produzione, installazione ed assistenza di lavastrumenti e lavacarrelli a termodisinfezione, lavastrumenti per decontaminazione, apparecchi per il lavaggio/disinfezione e relativi accessori
Design, manufacture, installation and service of washer disinfectors for instruments and trolleys, instruments decontamination units, washing/disinfection devices and related accessories

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPLICITARE LE ATTIVITA' SVOLTE PRESSO IL SINGOLO SITO/UNITA' OPERATIVA NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE RILASCIATA A STEELCO SPA
THE AIM OF PRESENT ANNEX IS TO EXPLAIN THE ACTIVITIES PERFORMED IN EACH SITE/OPERATIVE UNIT OF THE MANAGEMENT SYSTEM CERTIFICATION ISSUED TO STEELCO SPA

PER LA VALIDITA' RIFERIRSI AL CERTIFICATO N. 9120.IST1
FOR THE VALIDITY PLEASE REFER TO CSQ CERTIFICATE N. 9120.IST1

DATE:	PRIMA CERTIFICAZIONE *FIRST CERTIFICATION* 2006-05-05	EMISSIONE CORRENTE *CURRENT ISSUE* 2021-03-25	SCADENZA *EXPIRY* 2024-04-22

IMQ S.p.A. - VIA QUINTILIANO, 43 - 20138 MILANO ITALY
Management Systems Division - Flavio Ornago

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L'ENTE ITALIANO DI ACCREDITAMENTO

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IAF: 19

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ALLEGATO N. **9120.IST1-5**
ANNEX N.

STEELCO SPA

VIA DEL LAVORO 9/A - 31039 RIESE PIO X (TV)

Attività:
Activities:

Progettazione e produzione di passacarrelli, accessori e componenti delle lavastrumenti o sterilizzatrici quali i sistemi di trasporto automatici
Design and manufacture of passthrough cabinets, accessories and components of instrument washers or sterilizers as the automatic transport systems

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPLICITARE LE ATTIVITA' SVOLTE PRESSO IL SINGOLO SITO/UNITA' OPERATIVA NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE RILASCIATA A STEELCO SPA

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PER LA VALIDITA' RIFERIRSI AL CERTIFICATO N. 9120.IST1
FOR THE VALIDITY PLEASE REFER TO CSQ CERTIFICATE N. 9120.IST1

DATE:	PRIMA CERTIFICAZIONE *FIRST CERTIFICATION*	EMISSIONE CORRENTE *CURRENT ISSUE*	SCADENZA *EXPIRY*
	2006-05-05	2021-03-25	2024-04-22

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This document is a part of certificate n. 9120.IST1

IAF: 19, 18

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THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

CISQ/IMQ *has issued an IQNet recognized certificate that the organization:*

STEELCO SPA

VIA BALEGANTE 27 - 31039 RIESE PIO X (TV)
VIA DEL LAVORO 12 - 31039 RIESE PIO X (TV)
VIA DEL LAVORO 10 - 31039 RIESE PIO X (TV)
VIA DEL LAVORO 3 - 31039 RIESE PIO X (TV)
VIA DEL LAVORO 9/A - 31039 RIESE PIO X (TV)

has implemented and maintains a
Quality Management System
for the following scope:

Design, manufacture, installation and service of washer disinfectors for instruments and trolleys, instruments decontamination units, steam sterilizers units and/or low temperature sterilizers, instruments washers by ultrasounds, passthrough cabinets and related accessories for laboratory and life science industries. Design, manufacture, installation and service of washing and disinfecting equipment as washer disinfectors for instruments and trolleys, containers and special machine parts for pharmaceutical industry. Sale of instruments decontamination units, steam sterilizers units and related accessories. Sale of furniture and equipment/accessories for washing, disinfection, sterilization and storage processes for tools and instruments

Further clarifications regarding the applicability of ISO 9001:2015 requirements may be obtained by consulting the organization

which fulfills the requirements of the following standard:

ISO 9001:2015

Issued on: **2021 - 03 - 25**
Expires on: ***2024 - 04 - 22***

This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document

Registration Number: IT - 52077

Alex Stoichitoiu
President of IQNET

Ing. Mario Romersi
President of CISQ

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FCAV *Brazil* FONDONORMA *Venezuela* ICONTEC *Colombia* Inspecta Sertifiointi Oy *Finland* INTECO *Costa Rica*
IRAM *Argentina* JQA *Japan* KFQ *Korea* MIRTEC *Greece* MSZT *Hungary* Nemko AS *Norway* NSAI *Ireland*
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