

Lio 2C

type: T.TOP 03



cafe

instant



INSTALLATION AND MAINTENANCE MANUAL
Translation of the original instructions

MAN1960005 rel. 00 dated 19.05.2014

**preliminary
safety
information**

before using the machine, carefully read this information that helps you behave properly and guarantee a safe use;
the following pages use the symbols listed here below, whose meaning is of attention:



GENERAL;

if the text is highlit by this symbol, it is recommended to pay special attention to the performance of the procedures described; if not carefully performed on safe conditions, they can be source of general danger;



HIGH VOLTAGE;

if not properly performed, the actions marked by this symbol may expose to accidental contacts with electric voltage;



DANGEROUS TEMPERATURE;

if not properly performed, the actions marked by this symbol may expose to accidental contacts with high-temperature parts;



MOVING MEMBERS;

if not properly carried out, the actions marked by this symbol may expose to accidental contacts with moving members;

the same symbols are placed inside the vending machine to indicate the parts on which to act with the utmost caution;



SERVICE KEY IN USE;

the symbol recommends the utmost attention during the actions described; the use of the service key intended to activate all machine functions when the door is open is only reserved to the technical operators who know the operation of the vending machine, who are aware of potential risks and who make sure they are operating on totally safe conditions;

the use of the service key shall be strictly limited to the time necessary to perform the actions requiring the use thereof; users shall be informed of the prohibition on using and approaching the vending machine;



WEIGHT:

the symbol reminds the user to consider the machine weight carefully for handling and placing it definitively.



WATER SUPPLY;

it marks the parts duly requiring caution in case of leakage, if connected with the hydraulic network;

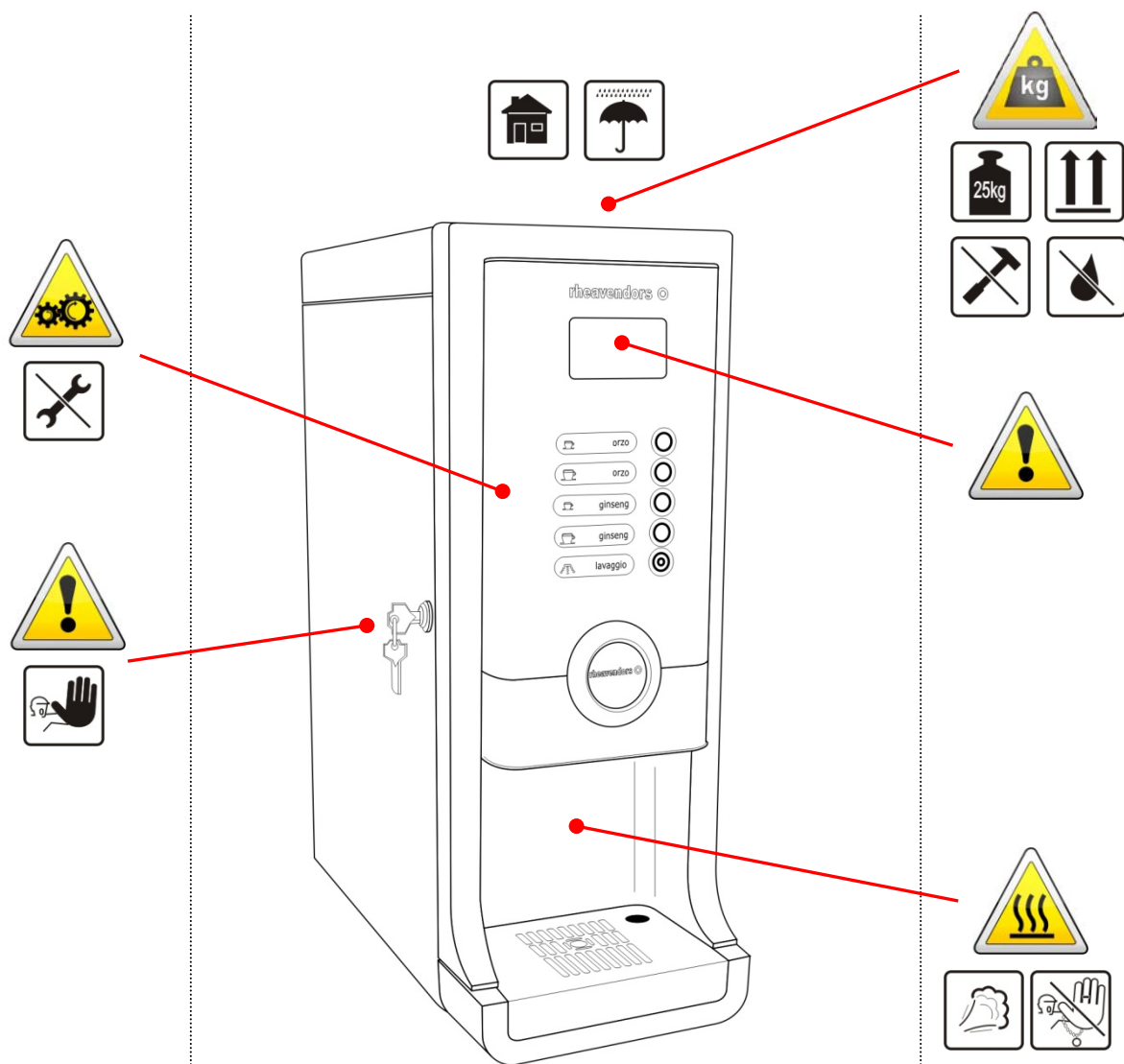


SUPPORT SURFACE;

it reminds the user to install the machine on a support surface, the max. inclination of which is 2°;

safety rules for using the vending machine

- *** pay special attention to the chapters and notes highlighted by the symbols of alert; strictly observe the rules concerning, in particular, the operators' and users' safety;
- *** the vending machine may be used by children who are at least 8 years old and by people having reduced physical, sensory or mental capacities or not having all necessary experience and knowledge, provided that they are under supervision or after they have received all necessary instructions for using the machine on safe conditions and for understanding the dangers related thereto; children must be supervised and prevented from playing with the vending machine;
cleaning and servicing shall not be carried out by children;
- *** if you should find out a water leak or the presence of smoke, immediately detach the vending machine from the electric and hydraulic network, never try to restore its operation and apply to skilled technicians;
- *** the machine shall be installed according to national rules; pay special attention to the rules about the machines directly connected with the hydraulic network;
- *** room (during storage and operation):
temperature: 5 °C ÷ 35 °C
relative humidity: max 80 %
- *** the inclination of the vending machine support surface shall not exceed 2°;
- *** if the hydraulic connection tube is not supplied with the machine or in case of replacement, the connection must be carried out only with:
 - new tube;
 - of type-approved material for food use;
 - compliant with "IEC 61770 Electric appliances connected to the water mains";
 - it can support the working pressure;
- *** the user is not allowed to access the maintaining and servicing area that shall be properly signalled;
- *** never remove protections, never override safety devices and never modify the machine or its components;
- *** tools necessary to act with this vending machine:
 - a pair of scissors for electricians, a Phillips PH2 cross screwdriver for 4/6 mm self-threading screws, a set of wrenches up to 13 mm, a set of Allen wrenches from 2 to 8 mm;
 - it may be of use to procure some expendables, such as disposable paper, single-use gloves, clean cloths, cups and a bucket for the collection of waste water;
- *** never wash the machine by using water jets;
- *** for cleaning at regular intervals refer to chapter 12;



the symbol means that it is forbidden to dispose of the equipment as urban waste and compulsory to provide for separate collection in order to prevent any potential effect on the environment and human health; strictly follow the provisions of the European Parliament's 2002/96/EC Directive;



residual risks



a residual risk is understood as a potential danger that can not be eliminated and it persists despite all precautions in use since it is related to the intrinsic features of the product and it also includes non-identifiable risks;

the actions and behaviours listed here below are intended to reduce residual risks and you shall always adopt them when interacting with the machine;



wear clothes that can properly avoid any accident (never wear rings, chains, clothes with laces or excessively long sleeves, ...);



carefully evaluate the treatment of residues from installation (wood, plastics, ...) and utilisation (product powder, bags, ...);



never repair or carry out any technical action if you have not been properly trained;



signal that a technical action is in progress on the machine (barriers against approach, signs, ...), carry it out quickly without leaving the station;



install the machine in a sheltered, illuminated, ventilated and noiseless environment; keep it clean and never place tools or any other object on it; never install it outdoors or, anyway, never expose it to atmospheric agents;



make sure it can be neither reached by water sprays or vapours nor hit by objects that might damage it;



carefully consider the machine weight and stability during the installation and in the final working position;



supply the machine within voltage, temperature, pressure and hydraulic limits, ... as it is detailed on the following pages and provide for an effective earthing;



even if detached from supply, the machine may contain hot pressurised water at a high temperature;



never detach hydraulic and electric supplies when they are active;

general guarantee conditions

	these conditions regulate Rheavendors Industries S.p.A.'s obligations with reference to guarantee and repair; any other term or condition, either verbal or written, is not applicable, including those in the purchaser's purchase orders, if not explicitly accepted and signed by Rheavendors Industries S.p.A.; if the guarantee terms here below should be held not to be valid and/or lawful in the Country where the product is sold, they will not be effective whereas all the other clauses will remain valid and applicable;
1st	the mechanical and electronic components of the machine are guaranteed for twelve months, starting from the sales date certified by the fiscal receipt;
2nd	the guarantee shall be understood as the free replacement or repair of any part of the machine that – at the manufacturer's unquestionable discretion – should prove to be originally defective due to manufacturing defects; the cost of sending the manufacturer machines, defective pieces and spare parts will be totally charged to the user's account; the manufacturer reserves the right to use new or reconditioned components for repair; if replaced, original components will be guaranteed for 12 months; the parts replaced under guarantee will become the property of Rheavendors Services S.p.A. (request for "Form PO 19.01/2b" Materials under guarantee – Authorisation to return);
3rd	in case of irreparable failure or if a failure of the same origin is repeated, the manufacturer may – at its unquestionable discretion – replace the machine with another one, the model of which is either the same or an equivalent one; the guarantee of the new machine will be extended up to the original term of guarantee of the replaced machine;
4th	all the parts that should prove to be defective due to negligence or carelessness (non-observance of the instructions for the operation of the machine), incorrect installation or maintenance by unauthorised personnel, transport damage or any circumstance – anyway – not due to the manufacturing defects of the machine are not covered by guarantee; the installation and connection with supply plants as well as the maintenance operations mentioned by the installation manual are also excluded from any performance under guarantee; the guarantee will not cover payment systems either; whether installed on the machine or supplied as an accessory, they are subject to their manufacturer's guarantee whereas Rheavendors Industries S.p.A. will just act as a broker; all changes made to the machine and not agreed with the manufacturer in writing will involve the immediate termination of the guarantee period and anyway fall under the Customer's total responsibility;
5th	the guarantee is excluded in all cases of improper use of the machine;
6th	Rheavendors Industries S.p.A. will disclaim all responsibility for any damage that may be directly or indirectly caused to people, animals or things as a result of: improper use of the vending machine; incorrect installation; improper energy or water supply; serious maintenance deficiency; actions or changes not explicitly authorised; use of non original spare parts; in case of failure, Rheavendors Industries S.p.A. is obliged neither to compensate any economic damage due a forced stop of the machine nor to extend the guarantee period;
7th	if the machine should be transferred to a centre designated by the manufacturer for overhaul or repair, the relative transportation risks and costs will be charged to the user's account. The freight charges of machines, defective pieces and spare parts are always understood as charged to the user's account;

declaration of conformity

Rheavendors Industries S.p.A. declares that this drink vending machine has been designed and manufactured in compliance with the following directives and safety standards:

Directives:

2004/108/EC; 2006/42/EC; 97/23/EC; 2011/65/EC (RoHS); 2002/96/EC (RAEE);

Regulations:

1907/2006/EC (REACH); 1935/2004/EC;

Standards:

SAFETY:

EN 60335-1: 2012

EN 60335-2-75: 2004 + A1: 2005 + A11: 2006 + A2: 2008 + A12: 2010;

EMC:

EN 55014-1: 2006 + A1: 2009 + A2: 2011;

EN 55014-2: 1997 + A1: 2001 + A2: 2008;

EN 61000-3-2: 2006 + A1: 2009 + A2: 2009;

EN 61000-3-3: 2008;

EMF:

EN 62233: 2008;

manufacturer

Rhea Vendors Group S.p.A.

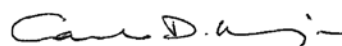
Via Valleggio, 2/bis – 22100 Como – (CO) - Italia

factory

Rheavendors Industries S.p.A.

Via Garavaglia, 58 - 21042 Caronno Pertusella – (VA) – Italy

CEO & Legal Representative



(C. D. Majer)

marking

conformity	quality
	

ISO 9001 certification



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in the listed chapters, the manual describes a

Lio 2C

vending machine in its hardware and software components for a complete and fully-aware use of all machine functions; due to the large variety of available options and the constant technical update of our vending machines, some special device or function might be indicated and described not in the manner you expect; in this case, do not hesitate to contact us;

telephone: 0039 02 966 551
fax: 0039 02 96 55 086
e mail: rheavendors@rheavendors.com



ATTENTION: this label applied next to the serial number label inside the vending machine points out that the instructions supplied by this manual must be carefully read before the installation and operation of the vending machine;



please, print this manual only if necessary; environmental protection is our common interest;

00	19.05.2014	first issue;	A4
rel.	date	description	
this document is made available electronically on site www.rheavendors.com			

01. legend

01.01. abbreviations and pictograms

- I = dispensing cycle of drinks based on instant products;
- A = machines with internal water tank;
- R = machines with external water supply;
- ✕ = mixer for mixing the instant product with water;
- VSF = worm screw pitch in the product canister;
- § = product shaker for instant canisters;
-  = water supply pressure range of the vending machine;

02. introduction

02.01. copyright information

© Rheavendors Industries S.p.A.; all rights reserved;
this document contains some confidential information of Rheavendors Industries S.p.A.'s exclusive property; the content of this document can be neither disclosed in favour of third parties, nor copied or reproduced in any form whatsoever, either fully or partially, without Rheavendors Industries S.p.A.'s prior authorisation in writing; the utilisation, reproduction or disclosure of the technical information in this document can be protected by Rheavendors Industries S.p.A. according to the Law;

this manual is intended for the owner of the vending machine; it is an integral part of the machine and it shall be kept with it;

the information supplied by this manual are intended to achieve the best performances of the vending machine within the scope of application established by the Manufacturer; Rheavendors Industries S.p.A. reserves the right to improve future production without serving any prior notice and without assuming any obligation to update the products on the market; the manufacturer will disclaim all responsibility for any inaccuracy due to misprints;

02.02. contacts

Rheavendors Services S.p.A. is at disposal for any kind of support and information on this vending machine;

telephone: + 39 02 966 551
fax: +39 02 96 55 086
e mail: rheavendors@rheavendors.com

for any reference about our partners all over the world please visit site : www.rheavendors.com

02.03. serial number labels

to be able to identify the vending machine rapidly and univocally as well as to get the best support, please specify the data of the serial number label;

code : D12345A67890 (example)
s/n: 1234 56 7890

silvery serial number labels are applied inside and outside the case of the machine;



03. technical data

03.01. dimensions

height: 510 mm
height with upper cover open: 870 mm
width: 210 mm
depth: 450 mm

03.02. mass



**values and indications for standard machine
anyway refer to serial number label data**

14,6 kg

see 02.03.

03.03. supply

water - connection by means of a solenoid valve with 3/8" gas male face: from 0.1 MPa to 0.8 MPa;
- supply by a submersible pump: 24 V dc, 1.2 A max.;
- connection from internal tank; 2.2 litres capacity;

energy - 230 V ac, 50/60 Hz; single-phase and ground; 1.400 W
- cable of the following type: H05VV-F 3G 1 mm² 300/500 V;

03.04. sound pressure

A-weighted sound pressure level; less than 70 dB(A);

03.05. keyboard

five selection buttons;

03.06. display

two sixteen-character lines; graphic; three color; 64 x 128 pixel resolution;

03.07. dispensing cpt.

open; useful height: 110 mm

03.08. drip tray

drip tray beneath the cup surface: capacity 200 ml

03.09. dispenser

a fixed dispensing place;

03.10. safety

water overflow sensor;
water inlet solenoid valve with anti-flood sensor;;

energy a main switch, a door switch;
two 6.3x32 mm fuses; 230 V ac; 12 A delayed

heat manually resettable sensors: 88°C

software time limits for water dispensing cycles;;

03.11. pump

two rotary pumps; 24 V dc

03.12. product motors

two; 95 r.p.m. 24 V dc

03.13. mixing bowls

two;

03.14. mixer motors

two; 15.000 r.p.m. 24 V dc

03.15. boiler

not pressurised (open-top boiler); 1,3 litres, 1300 W

03.16. product canisters

max. two, according to the machine configuration; single (55 mm) or double (110 mm) width; dispensing worm screws 9 mm or 18 mm in pitch; with mixer gear and product shaker, if arranged by the configuration and with standard or shorter product slide outlet (see 05.16.);

product canister capacity			
width 55 mm capacity 1.7 litres		width 110 mm capacity 3.5 litres	
barley	0,33 kg	barley	0,76 kg
ginseng	0,35 kg	ginseng	0,80 kg

03.17. miscellaneous

machine parameters programmable by means of a flash key or selection keyboard; data collection by means of a flash key (see 09.05.);

03.18. notes

the water and energy supply tolerance limits that can ensure a good and proper operation of the **Lio 2C** machine are:

water:

- total hardness:
- recommended conductivity:

from 10 °f to 25 °f (*)
400 µS @ 20 °C

(*) if harder, please use anti-limestone filters;

energy:

- nominal voltage:

+10 % /- 15 %

room (during storage and operation):

- temperature:
- relative humidity:

5 °C ÷ 35 °C
max 80 %

electric consumption:

- power (vending phase):

da 61 Wh a 400 Wh



the complete data according to the EVA-EMP Energy Measurement Protocol, are made available upon request (see 02.02.);

the power supply cable supplied with the vending machine shall not be altered under any circumstance; in case of loss or damage replace it by using an original component only;

make sure that the electric installation can deliver the power suitable for the machine (see 03.03.);
a good ground connection is not only a legal obligation for the protection of users and operators, but it can also provide for correct power supply;

04. configurations

04.01.

Lio 2C configurations are numerous; they are coded by means of some categories exemplified here below in the abbreviation of the machine:

a. product canisters

number of instant products

Lio 2C I2

b. water supply

- external, by means of the inlet solenoid valve:
- internal, from the internal tank to the vending machine:

Lio 2C I2 R

Lio 2C I2 A

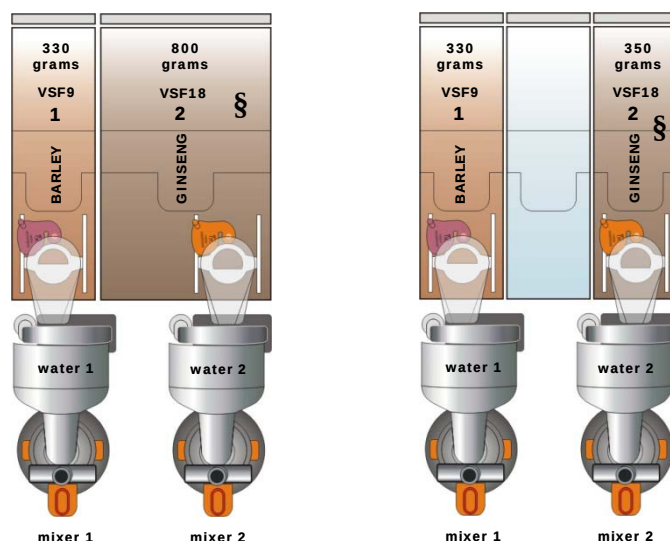
c. numbering

product canisters, mixing bowls and mixers are numbered in progression, from the left to the right, as it is shown later on; this numbering is used in the chapter on how to programme (see 09.) drinks;

04.02. examples of configurations

Lio 2C I2 R

Lio 2C I2 A



keyboard selections:

1. short barley
2. long barley
3. short ginseng
4. long ginseng
5. cleaning

04.03. accessories

to complete and supplement the vending machines of the **Lio 2C** range, Rheavendors Industries S.p.A. has got a series of accessories manufactured for these machines, such as cabinets, autonomous water supply kits, ... ;

Rheavendors Services S.p.A. is at disposal for any kind of support and information on special configurations (see 02.02.);

05. presentation

05.01. general information

the Rhea **Lio 2C** vending machine is a machine explicitly designed for being easily used by all users since no specific competence is required in preparing drinks;

the function consists in dispensing drinks by mixing food products and water at a proper temperature; the correct operation of the vending machine occurs in closed rooms in normal environmental conditions and at a room temperature between 5 °C and 35°C, the relative humidity below 80%;

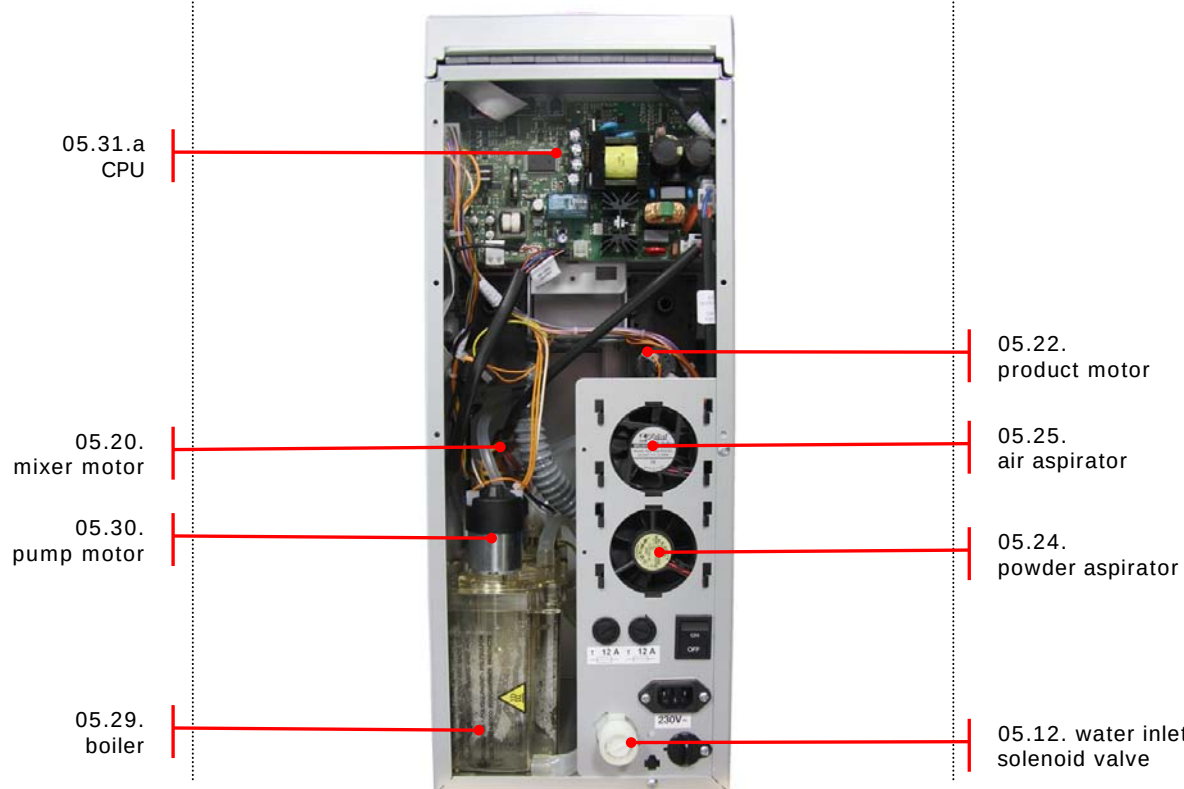


use only specific ingredients for vending machines;

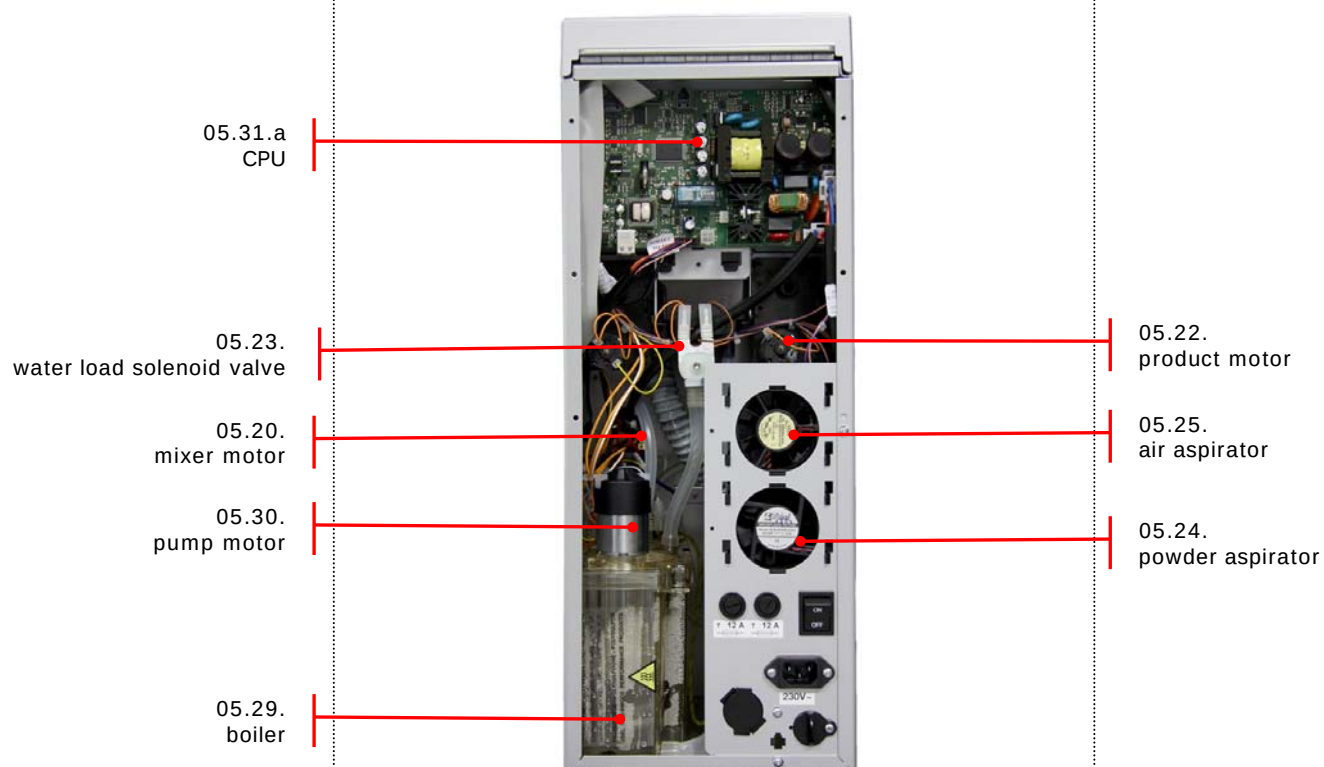
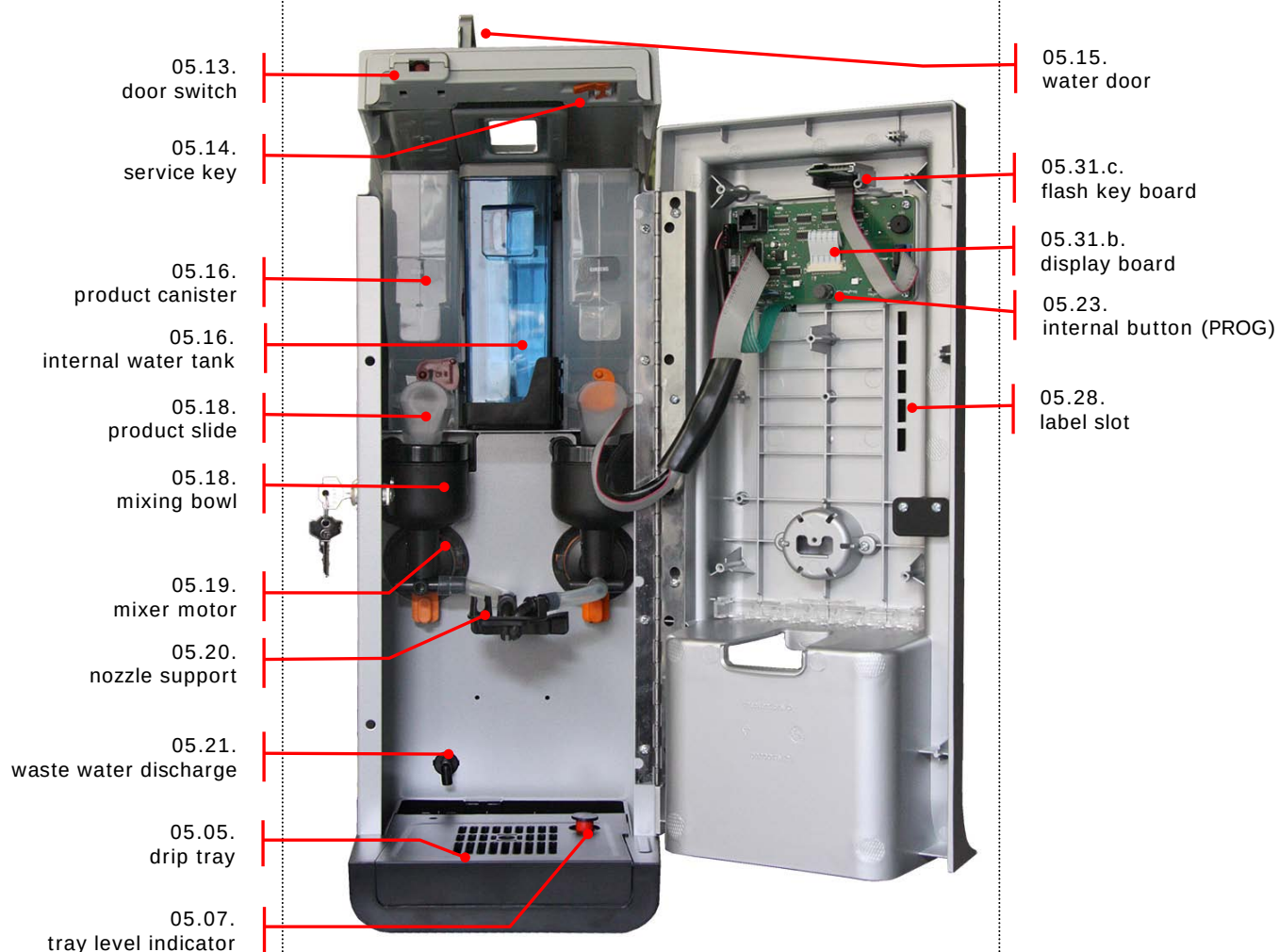
dispense by briefly pressing a key of the selection keyboard; make sure that the cup has been properly positioned at the dispensing station, if necessary by using the flap support for caps;



water supply from the net (R)



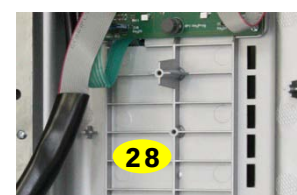
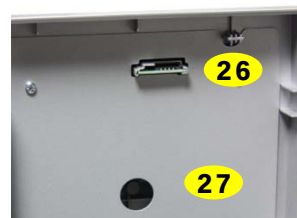
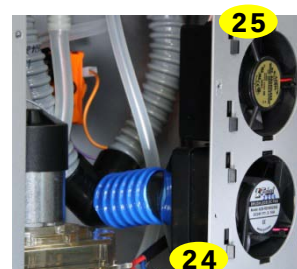
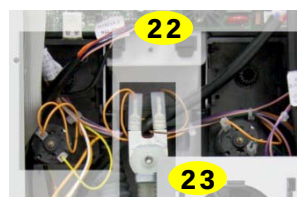
water supply from the tank (A)



- 05.02. display the display messages inform users and operators about the operation state of the vending machine;
- 05.03. selection keyboard after having closed the door, press the buttons to dispense; keys will assume various functions in the programming mode (see 09.) and enable the user to modify the machine parameters; keys are numbered progressively from the top: 1, 2, ...;
- 05.04. door lock the door is closed by means of a lock; the key is mapped and numbered for identification;
- 05.05. dispenser the **Lio 2C** vending machine has got a fixed drink dispenser on the cup support surface;
- 05.06. drip tray it collects possible residual drops from the dispenser and, if necessary, the waste water in excess from the boiler; it is slid at the bottom of the machine case, in the front, and it is composed by a covering drawer and a grilled cover that can be washed by running water;
- 05.07. tray level indicator it indicates with a red float signal when the water content inside the tray has reached the limit and it must be emptied;
- 05.08. fuses installed on the mains power supply to protect the machine (see 03.09.); fuses must be necessarily replaced by specialised technical personnel only;
- 05.09. power on switch to power on and off the machine;
- 05.10. electric connection a three-terminal socket is arranged at the back of the case for the connection of the mains cable;
- 05.11. water drain plug from where to let the silicone tube from the boiler come out for emptying ; it is secured to the rear panel by means of a screw;
- 05.12. water inlet solenoid valve the water inlet solenoid valve on R machines only has got an anti-flood safety device intended to stop the water inlet in case of failures; to its electrical pins can be connected in parallel an any submersible pump (see 03.03.);
- 05.13. door switch to power off the machine when the door is open;
- 
- attention**
some parts remain anyway network-connected
act extremely carefully:
- 05.14. service key use the service key to supply the vending machine if it is necessary to activate the machine when the door is open; the key is housed in the cover;
- 05.15. water door in A machines, a door on the vending machine cover will enable you to access to the internal water tank and fill it in; an internal water tank is complete with a float signalling by means of a red strip if you have filled it in excess;



05.16. product canisters	instant product canisters dispense their content in the underlying mixing bowls; an internal worm screw driven by the product motor will push the instant product to the product slide; they can be equipped with a wheel and a product shaker for constant dispensing; the outlet, the dimension of which can be either standard or smaller, has got a closing baffle; to protect the products, containers are closed by a cover;
05.17. internal tank water	a water tank is intended for supply in the versions not connected with the water network; it is complete with a float signalling by means of a red strip if you have filled it in excess;
05.18. mixing bowls	the mixing bowls of the mixer will accommodate the instant products you have poured to mix them with water; the fan of mixer motor will act at the bottom and the drink outflow to the dispenser occurs by means of a silicone tube; mixing bowls and outlet tubes can be washed with lukewarm running water;
05.19. nozzle support	a fixed support on the cup station is intended to house the two dispensers from the mixer bowl;
05.20. mixer motors	the motors of mixers help you mix instant products with water by means of the rotation of the fan mounted on their axis; the rotation speed can be adjusted (see 09.01.a.) to the features of the various products;
05.21. boiler waste water drain	it conveys the water in excess in the boiler to the drip tray;
05.22. product motors	they are intended to rotate the worm screws inside instant product canisters to pour the product quantity necessary for selection in the mixing bowls;
05.23. water load solenoid valve	in A machines, the water load solenoid valve shall channel the internal tank water to the underlying boiler;
05.24. powder aspirator	an aspirator will eject suspended product residuals from the vending machine; the aspirator is connected with a drawer beneath product slides to intercept the residual impalpable powder coming from selections; the action time of the aspirator is programmable by means of a software parameter (see 09.01.c.); aspirated air is ejected through the slots of the rear panel;
05.25. air aspirator	to aspirate the air from the internal environment of the machine to avoid any condensate;
05.26. flash key housing	programming flash keys are arranged in the carter inside the door (see 09.05.);
05.27. internal button (PROG)	the button giving access to the machine programming mode is arranged inside the door;
05.28. label slot	product labels are arranged inside the door panel, beneath the orange carter; insert the labels into the pockets by observing the machine configuration (see 10.01.);



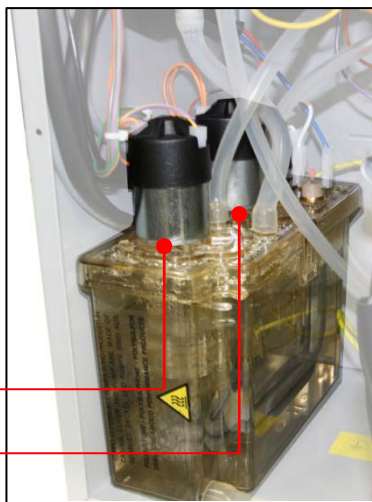
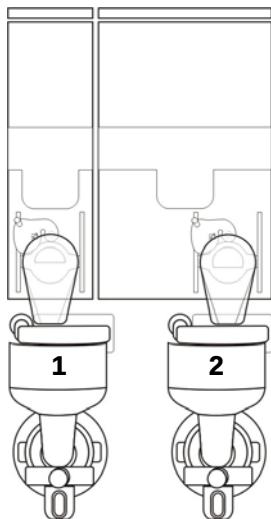
05.29. boiler

boiler with all active elements (heating element, thermal protections, temperature sensor, pumps) fastened to the cover;



attention

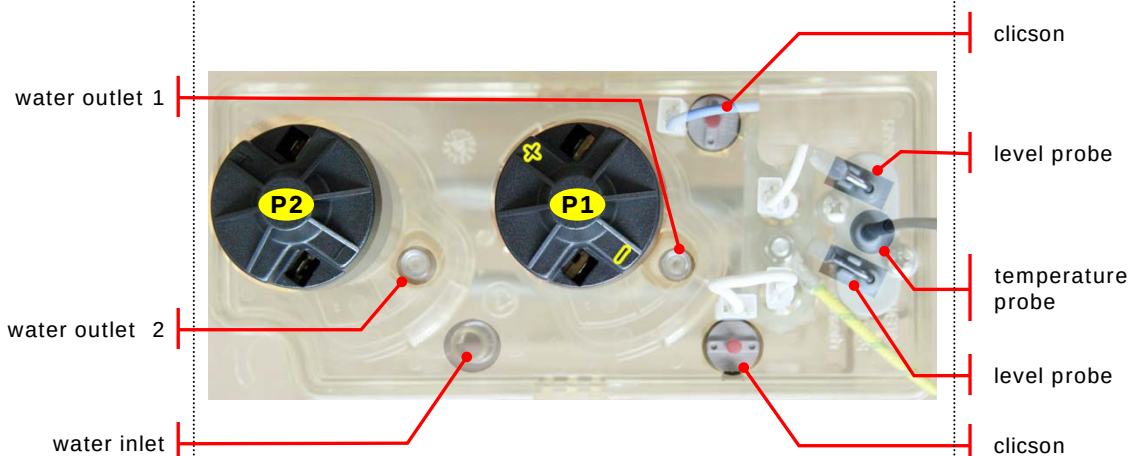
these components may be very hot even if the machine is off;



05.30. boiler pumps

two pumps with turbines immersed in the boiler water; water is conveyed in two tubes feeding mixing bowls; (attention to the polarisation of motors; see 03.11.);

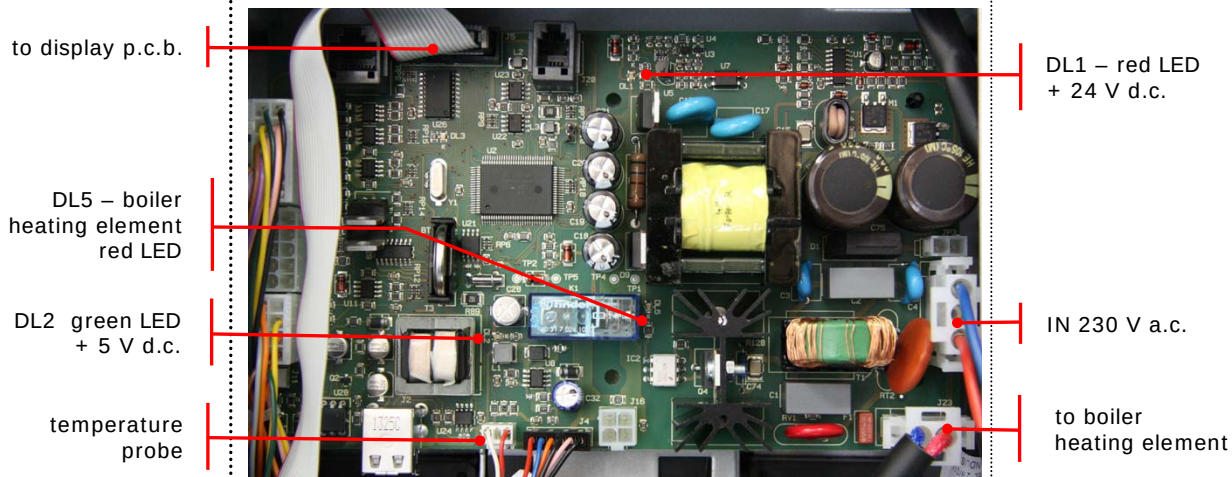
the water quantity of instant selections is established by the time set in the "water N" parameter (see 09.01.a.);



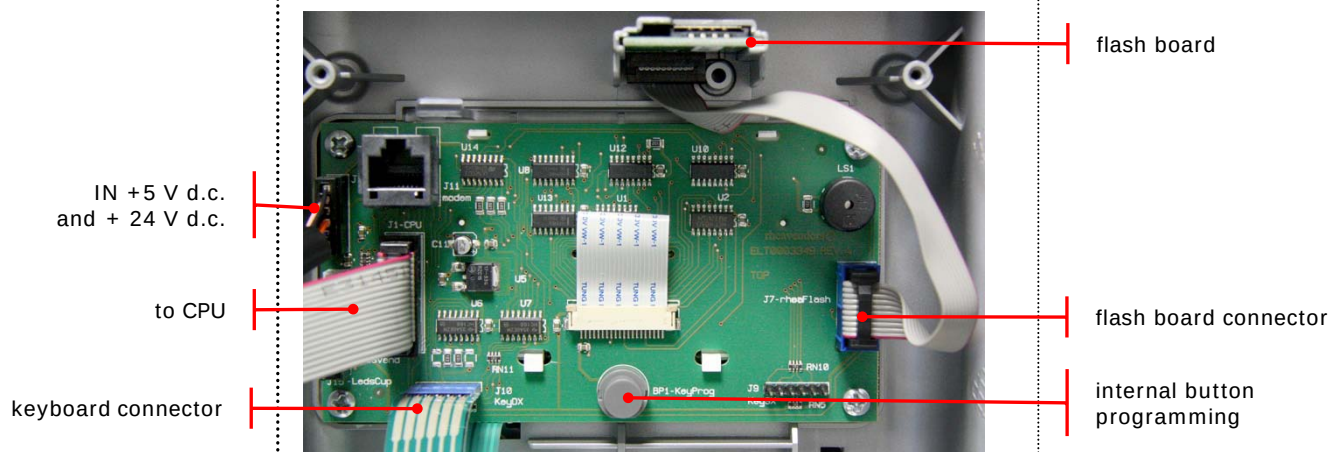
pump	name sw	outlet
P1	water 1	mixing bowl 1
P2	water 2	mixing bowl 2

05.31. electronics

- 05.31.a. CPU the CPU board is intended to govern the machine operations; it is the place of location of machine programs and it is secured to the frame by means of four board supports; the display cable will transmit the signal exchange with the keyboard and the display arranged in the door (see 05.02. and 05.03.); the temperature probe cable is separated from the machine wiring to avoid hampering the removal of the probe;



- 05.31. b. display p.c.b. the display board secured inside the door will accommodate the signals of the selection keyboard and display the messages; a flat cable will connect it with the CPU;



- 05.31.c. flash board arranged inside the door, it enables the user to insert the flash key to programme the machine (see 09.05.);

05.32. software

the software installed in **Lio 2C** can be subdivided into two different chapters called:

- master:
it is the software determining the machine cycles, the links between the functions, the order of execution of operations; this software can not be modified by the operator, but it can be replaced in the CPU by means of a flash key written at works or by means of rheAction (see 09.05. and 05.32.);
- configuration:
it is the software determining the times and the succession of dispensing drinks, the display modes, ...; variables may be modified by the operator either manually aboard the machine or by means of rheAction (see 09.05. and 05.32.) to adapt the machine behaviour to the final users' needs (product quantities and mixtures, warning messages ...) (see 09.);

if it is necessary to update one of the software programmes above on the machine, the flash key may be of great use; the key can contain either software or both of them and provide for a rapid and safe transfer;

please note that the flash key used for these software handlings must have been previously initialised (with RheAction for example);

in general, the transfer procedure is:

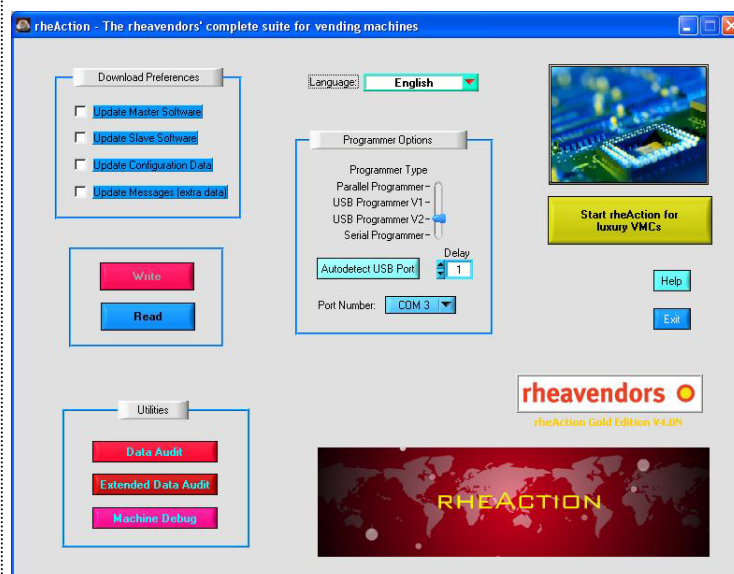
- power off the machine;
- insert the flash key into the connector (see 05.26.);
- power on the machine by means of the service key (see 05.14.);
- wait for the message on the machine display;
- answer the messages on the display;
- power off the machine and remove the flash key;

please note: if the flash key should contain a master software, the transfer will certainly occur from the key to the machine, whereas it will be necessary to follow the steps described by 09.05 in case of a configuration software;



05.33. rheAction

a system called rheAction is intended to complete and supplement the programming executable in the machine; it is composed by a software and hardware, installable in a pc, capable of storing, modifying and writing the configuration data of Rhea machines; Rheavendors Services S.p.A. is at disposal for any kind of support and information on the RheAction system (see 02.02.);



06. preliminary actions

06.01. handling



the vending machine may be transported, handled and positioned by skilled and trained personnel only; while handling, never overturn the machine; observe the orientation arrows on the package;

attention

handle the machine carefully to prevent the authorised personnel from being injured; considering the weight and overall dimensions of the vending machine, it is recommended to use a truck at low speed;



06.02. unpacking



- approach the packed vending machine to its work position;
- cut the two plastic belts;
- lift the external package;
- extract the protection bag up;
- lift the vending machine and arrange it on the work surface;

attention

the materials composing the package shall never be left within the reach of people from outside, in particular of children, because they represent a potential source of danger; only specialised companies may be charged to provide for the disposal of package components;



06.03. positioning



the vending machine shall be arranged for work in a sheltered room by using a support suitable for the weight of the machine (see 03.02.); its distance from the walls shall provide for good air circulation and easy access;

any inclination of the surface shall not exceed 2°;

it is recommended to arrange an easily cleanable impermeable protection beneath the vending machine to collect any accidental product fall;



06.04. preparation

when the machine is in its final working position:

- cut the clamp securing the door key to the drip tray grilled cover;
- insert the door key into the lock (see 05.03.), rotate it and open the door;
- remove the envelope of documents and labels;
- take the power supply cable and the water union (only in R machines); the water union can be used for water connection with the network;
- lift the machine cover and remove the guards intended to fasten product containers for transport;

**07.
connections**

07.01. water



make sure that the water used to supply the vending machine has all proper features for human consumption;

make sure that there is no sign of impurity and check the degree of hardness; if necessary, contact an analysis lab;

if necessary, use a softening filter and replace the cartridge at regular intervals, in observance of the manufacturer's instructions, to preserve the machine components;

make sure that the network pressure is the one preset for the machine (see 03.03.); use a pump or a reducer in case of non-compliance; it is recommended to install a tap to detach the machine from the network; connection shall occur by means of:

- new tube;
- of type-approved material for food use;
- compliant with "IEC 61770 Electric appliances connected to the water mains";
- it can support the working pressure;

if the tube is not supplied with the machine or in case of replacement use tubes featured as above only;

if the machine is supplied by an internal water tank, make sure that the tank is properly positioned in its seat and fill it;

for the drinkability features of "waters intended for human consumption" refer to the following Internet address:

[http://eur-lex.europa.eu/
directive 98/83/EC of 03/11/1998](http://eur-lex.europa.eu/directive_98/83/EC_of_03/11/1998)

07.02. energy



observe the rules on connections with the electric network, in particular on grounding; connect the machine permanently without using any reduction, adaptor, multiple socket or extension; use the network connection cable supplied with the vending machine only; it is recommended to install a switch detaching the machine from the network;

it is recommended to install a differential current device operating below 30 mA, detaching the machine from the mains and promptly tripping in case of improper electric input in order to considerably reduce the risks arising out of any short-circuit;

attention

check the power plant capacity to supply the power required by the machine (see 03.03) and the observance of the rules in force; strictly refer to the data of the serial number label (see 02.03.)

insert the cable into the connection socket (see 05.07.); then, connect the plug with the socket and supply the vending machine;

for a correct and safe configuration of the electric power supply installation refer to the following Internet address, if necessary:

[http://eur-lex.europa.eu/
directive 2006/95/EC of 12/12/2006](http://eur-lex.europa.eu/directive_2006/95/EC_of_12/12/2006)

08. first power on

08.01. introduction

after having unpacked the vending machine, arranged it firmly in the work place and connected, or supplied it (machine "A", see 01.01., fill in the water tank through the door on the vending machine cover, see 05.14.), hydraulically and electrically, carry out some actions to operate it;

08.02. activity

power on the main switch of the machine (see 05.10.);

at the end of the assembly and final inspection, the water used for tests is discharged from the machine; at the time of the first power on, it fills in the whole water circuits; the machine will constantly load water the machine will continuously load water to fill in the boiler properly;



attention

in A machines, the boiler and the tank have quite a similar capacity; it will be therefore necessary to fill in the water tank a second time;

during this phase, the display will show :

water will start heating in the boiler to reach the temperature value you have set up (see 09.01.d.); during this phase, the display will show the message:

at the end of this phase, the display will show the stand-by message:

08.03. washing

transportation, storage and installation conditions can not provide for immediate utilisation of the vending machine and it is recommended to perform a complete wash cycle before using the vending machine;



attention

arrange a cup beneath the nozzles; the machine will dispense a pre-fixed water quantity for each wash cycle;

press "5" to enable the wash cycle of the water circuit (boiler, tubes, mixing bowls, ...);

repeat the operation for some times to rinse the whole water circuit of the machine; during the wash cycles, the display shows:

power off the main switch at the back of the machine;

prepare a chlorine-based anti-bacterial sanitising solution by observing the instructions supplied with the product; open the door, lift the cover, remove and immerse the following into the solution the product canisters you have disassembled, the trays of mixers, their fans and the silicone tubes intended to dispense products; the time necessary to sanitise is specified by the anti-bacterial product package; at the end, remove all the parts you have sanitised from the solution, dry them carefully by using clean cloths and reassemble them into the machine; rotate the baffles of the product slides of instant canisters to close them and load the canisters with reference to the machine configuration and to the canister labels; close the canisters with their upper covers; rotate the baffles of the product slides to open them;

to clean and treat food products properly, refer to the content of the following Internet address:

<http://eur-lex.europa.eu/regulation/2004/852/EC> of 29/04/2004

lower down the cover and close the door by means of the lock key;

power on the main switch of the machine; at the end of the phase intended to heat water in the boiler, the vending machine is ready to dispense on a free basis and the display will show the stand-by message:

REFILLING WATER
WAIT

WAIT
TEMPERATURE

LIO 2C

CLEANING
SEL. 5

CLEANING
SEL. N

LIO 2C

09. programming



access the programming mode

the vending machine is programmed by means of parameters considered standard for the specific configuration required; values forming the composition of recipes – written in the board memories – enable the user to dispense drinks without requiring the installer to set up special programmes; to modify these parameters to adapt the drinks you have produced, refer to the following; at the end of the chapter (see 09.06.), a summary table may help the user trace back all the programming items;
to access the programming mode, open the front door of the machine and use the service key in the safety switch;

attention

the vending machine is supplied and running to all effects in this mode of operation; act extremely carefully;

quit the programming mode

press the “PROG” key (see 05.23.);
the display shows alternatively the messages:

- “1” to access the programming mode of machine variables;
- “2” to display the drink quantities you have dispensed;
- “4” to dispense water to wash the water circuits;
- “5” to schedule maintenance operations;

after having programmed, press “1” and then the key “PROG” to go back to the usual operation of the vending machine and to store all changes you have made; the display will show:

09.01. “PROG”

press the key “PROG”, press “1”; the buttons of the selection keyboard will assume the following functions:

key 1	to scroll the items forward
key 2	to scroll the variables of items forward
key 3	to scroll the variables of items backward
key 4	to increase the value of the variable on the screen
key 5	to decrease the value of the variable on the screen

the items are (scroll by means of key “1”):

09.01.a. key 1

contains the variable composing selection 1;

...

key 4

contains the variables composing selection 4;

key 5

this key is programmed by default to enable the machine to dispense water in both mixing bowls to wash the two water circuits and it can be also set for a drink selection;

09.01.b. temperatures

to set up boiler water temperatures;

09.01.c. miscellaneous

to programme different options;

09.01.d. diagnostics

to display some machine parameters;

09.01.e. sales audit

to display the quantity of dispensing cycles you have performed;

09.01.f. clock

to set up the machine clock;

1= PROGRAMMING
2= DATA

4= CLEAN
5= MAINTENANCE

END PROGRAMMING
wait

1= PROG.

PROGRAMMING
BUTTON N

PROGRAMMING
TEMPERATURE

PROGRAMMING
MISCELLANEOUS

DIAGNOSTICS

SALES AUDIT

PROGRAMMING
CLOCK

09.01.g. out of service	to record any failure that may have occurred;
09.01.h. product qty	to check and enable product dispensing cycles;
09.01.i. maintenance	it contains the maintenance control parameters of the machine;
09.01.l. tuning motors	to regulate the speed of the boiler pumps and of the product motors;
09.01.m. flux product	to programme the product quantities dispensed within the time unit;
09.01.n. product audit	to audit the product quantities dispensed;
09.01.o. ID machine	it contains the machine identification parameters;
09.01.a. button from 1 to 5	press key "2" when the display shows "button n" to scroll the variables composing the function of that key; the display shows: and pressing "4" and "5", the display shows: - if you press "2" when "FUNCTIONING", the key will perform the function you have programmed (dispensing cycle of a drink); see paragraph "functioning"; - if you press "2" when "INHIBITED", the key will be inhibited and it will perform no function;
"functioning"	use key "2" to scroll the following items: choose the "extended" option to display all variables and the "reduced" option to display only the parameters, the values of which are other than zero (use keys "4" and "5" to change the option); press "2" to display: press keys "4" and "5" to change the rotation time of the N product motor, thus changing the product quantity you have dispensed; if time is zero, no product N will be dispensed; if the time you have programmed is other than zero, the N product motor will be activated at the expiry of the delay time you have programmed; the rotation time of the product motor can be briefly interrupted one or two times during the dispensing cycle (0 = no break); to determine the pump power on time (and then the water quantity it will deliver); water will be dispensed in the mixing bowls at the expiry of the delay time you have programmed; the water flow in mixing bowls can be regulated between low, medium, high by pressing keys "4" and "5" ;

REGISTRATION
OUT OF SERVICE

PROGRAMMING
PRODUCT QTY

PROGRAMMING
MAINTENANCE

PROGRAMMING
PRODUCT MOTORS

PROGRAMMING
FLUX PRODUCT

PRODUCT AUDIT

PROGRAMMING
ID MACHINE

FUNCTIONING

INHIBITED

programming:
TOTAL

programming:
PARTIAL

PRODUCT N
0= inhib. 0.0

start delay
PRODUCT N 0.0

breaks number
0-1-2 00

WATER N time
0= inhib. 0.0

start delay
WATER N 0.0

water flow : N
medium

	the rotation time of the mixer fan can be changed by pressing keys "4" and "5"; if time is equal to zero, the mixer will not rotate;	MIXER N 0= inhib. 0.0
	if the rotation time is other than zero, the mixer fan will be rotated at the expiry of this delay time;	start delay MIXER N 0.0
	the mixer rotation speed can be regulated between low, medium, high by pressing keys "4" and "5";	MIXER speed N medium
	the time programmed here delays the drink ready message to enable the cup to collect all residual drops of the selection and prevent them from falling into the drip tray;	FINAL DELAY
	press "4" and "5" to choose the drink name to display during the dispensing cycle; options are listed here below: - "standard" , the display will show "drink N under preparation"; - "list of names" of drinks made available in the machine memory; the display will show " <i>drink name</i> under preparation"; - "custom" : the display will show the user's customised names; it is necessary to create a configuration file with RheAction (see 05.000.) and load it on the machine by means of a flash key see 09.0000.);	selection name N ----- n:00
09.01.b. temperature	press key "2" to display: use keys "4" and "5" to increase or decrease the boiler water temperature;	TEMPERATURE boiler NN
09.01.c. miscellaneous	the "miscellaneous" item includes some options (press keys "4" and "5" to modify the values of these options): - machine code A and B: you can number the machine to distinguish it from others similar (data collection); - message number: press keys "4" and "5" to choose the messages to display on the screen when the machine is in standby mode; - fan time: to determine for how many minutes after the latest dispensing cycle the powder suction fan will remain active; - beep time: beep time active at the end of each machine function; - language: to display the messages in one of the four languages made available; - display colour; to select the display aspect you wish; - to enable the summer time function (from the last Sunday in March to last Sunday in October, the set time is automatically increased by one);	machine code A NN machine code B NN message number N fan time min. NN Beep time 0.0 language : english display color 00 Summer Time 1= yes N

09.01.d. diagnostics

press key "2" to access diagnostics and to enable the machine to display (keys "4" and "5") the standby message and the boiler water temperature, alternatively;

press "2" once again to display the voltage value intended to supply devices at 24 V dc;

ENABLE DISPLAY
TEMPERA. 1=YES N

VOLTAGE
volt 00.0

09.01.e. sales audit

this menu is intended to gather the quantities of the selections made by the machine: names are assigned according to the EVA-DTS standard:

- VA 102
quantity of total vends (parameter not resettable);
- VA 104
quantity of the vends made after the reset;
- VA 202
quantity of total tests (parameter not resettable);
- LA 1*1
selections sold;

TOTAL SELECTIONS
NN

PART. SELECTIONS
NN

TOTAL TESTS
00

TOTAL SEL. N
00

09.01.f. clock

this chapter is intended to determine:

- current time;
- current day;
- current month;
- current year;
- day of the week;

HOUR:
00:00

DAY:
00

MONTH:
00

YEAR:
00

day of week:
(ex.) Tuesday

- for each day of the week you can establish a time band during which the machine will accept no selection and reduce the water temperature of the boiler;

SWITCHING ON:
xxxxx 00:00

SWITCHING OFF
xxxxx 00:00

- to count the energy consumption of the machine;

Kilowatt hours:
0.0

- to set to the desired temperature value of the water during the time band (the machine does not accept selections and reduces the water temperature; see the previous page "switching on, switching off");

TEMPERATURE
energy save 00

- the machine will perform a wash cycle at the time you have specified provided that it has performed at least five dispensing cycles after the last cycle;

CLEANING:
00:00

09.01.g. out of service to display the recording of the twenty errors last occurred in the machine; press key "2" to scroll the records and key "4" to reset the recording (see 11.);

n. N off NN
hh:mm dd-mm-yyyy

09.01.h. product qty each product motor can be assigned a time credit in seconds that will be decreased at each dispensing cycle of that product; after having used up the credit, the machine will answer <<selection not available>> whenever a request is made for that product; this control is disabled at the beginning and the machine has got no constraint; to programme the credit time of a product motor, set the variable by pressing key "4" and "5"; after having reached the time quantity you wish, press key "PROG"; the value will be copied between parentheses on the left of the display; programmable products from 1 to 6;

product qty N
[0.0] 170.0

quit the programming mode as usual;

please note that the first warning threshold can be programmed; if exceeded, the display will show an alarm message without interfering with the operation of the machine;

prod. N warning
threshold: 17.0

after having used up the time credit, the operator may decide whether to inhibit or not the dispensing cycle of the selections, including that product;

enable stop prod. N
1=stop 0

09.01.i maintenance you can set up some counters to trigger an alarm after a programmable number of events (press "4" and "5" to set up and PROG to store):

- dispensing cycles before having to replace the cartridge of the external filter, if any; as soon as 500 dispensing cycles are left, the display will show "change water filter" and as soon as the decounter has reached 0, it will display "out of service water filter", thus inhibiting the operation of the machine;

water filter cnt
[00] 00

09.01.l. tuning motors with respect to the setup in 09.01.a:

- the rotation speed of the boiler pumps can be changed (keys "4" and "5") by +/- 30 %; the change concerns all the activations of the pumps for all selections;

tuning pump N
percent +00 %

- the rotation time of every single product motor can be changed (key "4" and "5") by +/- 30%; the change concerns all the activations of the product motors for all selections;

tuning motor N
percent +00 %

09.01.m. product flux the quantity in product grams dispensed for each operation second of the motor can be set up for each container (keys "4" and "5");

product N
gr./sec. 0.0

09.01.n. product audit to display the partial and total product quantity dispensed; the partial audit of each counter is reset by displaying it and holding key 4 down for some seconds;

dispensed qty N
Part. Gr. 00

dispensed qty N
Tot. Gr. 00

09.01.o. ID machine identification codes to detect the EVA DTS data

- machine number;
- location number;
- machine configuration;
- address for connection with the DDCMP protocol;
- 0 to enable the EVA DTS acquisition; 1 for the audit via telemetry (option); 2 to disable the acquisition;

codice ID 101	00
codice ID 104	00
codice ID 106	00
indirizzo VIDTS	00
Data Audit 0=EvaD 1=TLM 2=off	00

09.02. "data"

choose the option "data" to enable the display to show the data of the dispensing cycles you have performed in succession, just as in 09.01.g.;

09.03. "clean"

choose this option and press "1" or "2" to enable the vending machine to dispense a pre-fixed water quantity to wash the corresponding circuit (see 08.03.);

CLEANING 1 – 2

09.04. "maintenance"

to carry out the same functions as those described by point 09.01.i.;

09.05. data support

the values of the variables composing the machine programming (configuration) can be transferred to an external support, i.e. the flash key; to transfer the machine parameters to the key:



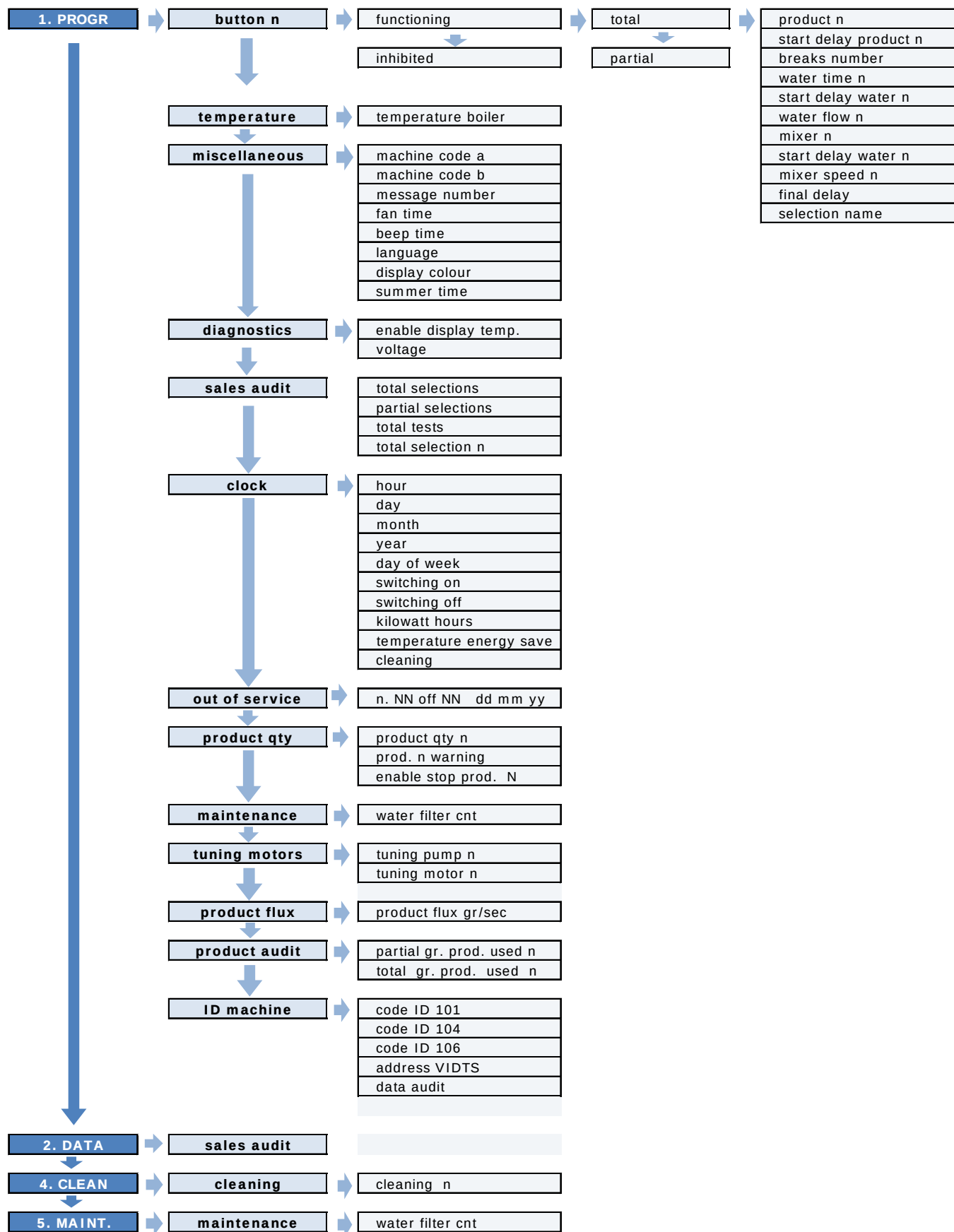
- power off the machine;
- open the door;
- insert the flash key into the apposite connector (see 05.16.);
- power on the machine by means of the service key (see 05.14.);
- the display shows:

1 from key to VMC
2 from VMA to key

END PROGRAMMING
wait

- press "2"
- and wait for the display to show:
- power off the machine and remove the flash key;

now, the flash key contains all the parameters typical of the machine from which they have been fetched; if you wish to programme another vending machine with these data, the previous procedure can be repeated by pressing key "1" instead of "2": the information will be transferred from the flash key to the vending machine; both procedures will not alter the data contained in the supports from which they have been fetched;

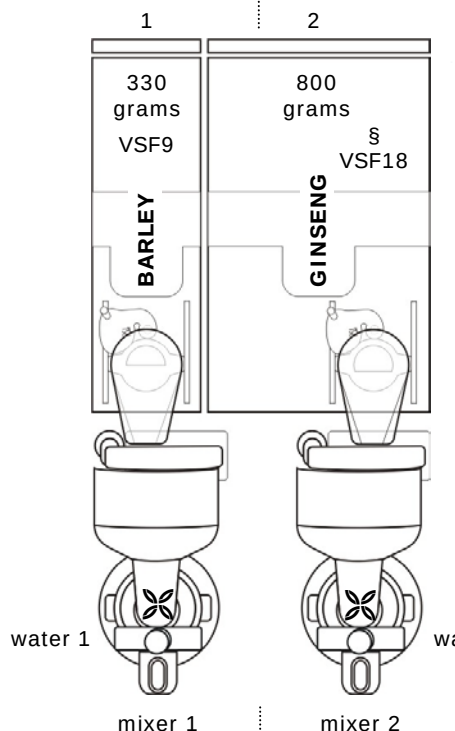


10. parameters

the following tables are intended to supply some information on the programmable parameters of the **Lio 2C** software; if not otherwise specified, the numeric time values of devices are understood in tenths of a second (e.g. 27 corresponds to 2 seconds and 7 tenths);

10.01. configuration

the generic parameters intended to dispense the drinks with the different possible products are supplied here below, just by way of example; these values enable the operator to program the selections of reference and they can be used to obtain some functional dispensing cycles even if it may be necessary to make some slight changes to appeal to the users;



	prod. 1	water 1	mixer 1	delay prod. 1	delay water 1	delay mixer 1	flux water 1	vel. mixer 1
short barley	22	35	50	0,7		0,2	low	high
long barley	36	60	75	10		0,2	medium	high
short ginseng	23	35	55	0,7		0,2	low	high
short ginseng	41	60	80	0,7		0,2	medium	high

10.02. limits

the table is intended to list the minimum and maximum values you can assign to programmable variables;

	m.u.	from	to	
product	sec.	0	20	0 = no product;
product start delay	sec.	0	20	0 = no delay;
number of product pauses	n.	0	2	0 = no pause;
water time	sec.	0	20	0 = no water;
water start delay	sec.	0	20	0 = no delay;
water flow	→	→	→	low, medium, high
mixer	sec.	0	20	0 = no mixer;
mixer start delay	sec.	0	20	0 = no delay;
mixer speed	→	→	→	low, medium, high
temperature boiler	°C	0	95	
product decounter	sec.	0	6.000	0 = no limit;
machine code A e B	n.	0	65.535	
message number	n.	0	7	
fan delay	min.	0	180	
beep time	sec.	0	1,5	
tuning pump	→	→	→	+/- 30%
tuning motor	→	→	→	+/- 30%

11. solution of problems



any event that may occur during the operation of a machine may totally or partially compromise its functionality;

to help the operator restore the normal functionality of the vending machine, the display shows an error code as an abbreviation that identifies the malfunction and helps the operator find the faulty device;

attention

while performing the actions necessary to restore the machine functions, act with the utmost caution and strictly observe the safety instructions for operators and users;

the following table sums up error codes, the machine area involved and a technical comment;

OFF 5

EAROM

those integrated in the CPU board fail to operate properly;

OFF 6

water supply

OFF 6 A boiler

boiler filling time too long; the water supply might be totally lacking, its pressure might be not enough or some obstacle might slow down the regular water flow (filter grilled cover, load pipes either choked or clogged); the water inlet solenoid valve safety has tripped;

OFF 6 B boiler

the boiler circuit has been refilled with water, but no drink has been dispensed; the supply circuit might have a leakage;

OFF 14

water inlet

OFF 14 A boiler

if water is not reloaded after six dispensing cycles, error 14 is triggered; even a water inlet pressure value other than the pre-set one, may cause this error, thus filling in the boiler in excess and providing for a number of dispensing cycles higher than the pre-set one; if selections are dispensed with a limited water quantity, the error is more likely to occur;

OFF 17

keyboards

OFF 17 A selection

a button appears as if it were constantly pressed;

OFF 24

power supply unit

OFF 24 A 24 V dc

the actual 24 V dc voltage value is higher than the tolerated one;

OFF 24 B 24 V dc

the measured 24 V dc voltage value is below the admitted threshold or totally absent, e.g. because a fuse has tripped; find out and remove the causes that have produced this error before powering on the machine again;

OFF 33

instant products water

OFF 33 A temperature

the boiler water temperature is higher than the programmed value;

OFF 33 B temperature

the temperature probe is interrupted or its electric connector is detached;

OFF 33 C boiler probe

the temperature fails to achieve the programmed value within the admitted time limit;

**12.
maintenance**

the **Lio 2C** vending machine requires no special maintenance procedure to do its job; however, if you provide for careful and frequent cleaning, this may help the machine keep its performance constant, prevent failures and ensure the high quality of dispensed drinks; the frequency of cleaning operations largely depends upon the number of dispensing cycles and the hardness of water in use (use a softener system) and it shall be adjusted to the working conditions of the vending machine;

the actions described are intended to prevent the bacterial growth in the machine areas directly in contact with foodstuffs and to keep the parts conveying drink-composing products clean; after having disassembled the parts of the machine listed here below, use plenty of lukewarm water to remove any residue that might build up;

the support of a bacterialstatic or bactericidal solution may strengthen a deep cleaning action, provided it is compatible with human health and the supply of foodstuffs; reassemble all the parts you have cleaned after having dried them by means of a clean piece of cloth;

refer to the content of the Internet address:

http://ec.europa.eu/food/food/biosafety/hygienelegislation/index_en.htm

this site is intended to supply the European Parliament recommendations for properly and safely processing foodstuffs;

consult also the 2004/852/EC European Community regulation

[http://eur-lex.europa.eu//
regulation 2004/852/EC of 29/04/2004](http://eur-lex.europa.eu//regulation/2004/852/EC)

before accessing the machine for each maintenance operation, it is recommended to warn the users by means of boards properly positioned that it is forbidden to approach the vending machine and to use it;

attention

never wash the machine by using water jets;

**wash hands thoroughly with water and soap before
handling the machine and the products;**

only use potable water;

**all components must only be cleaned with warm running
water;**





attention

before starting any cleaning operation, properly signal that it is forbidden for any unauthorised operator to approach the machine;

while carrying out works, never move away from the machine and leave it unattended;

wash your hands carefully with water and soap before handling the machine and its products;

use drinkable running water only;

before starting any operation, power off the machine by pressing the main switch and detach the mains supply cable;

insert the key into the lock, turn it clockwise, open the door, remove the key, put it in a safe place and lift the machine cover;

the operations listed here below guarantee good sanitary and efficient conditions of the machine and provide for constant dispensing cycles;

the a.m. time intervals shall be considered of reference; this means that they shall be any way evaluated and adapted to the actual working conditions of the specific machine; special dispensing frequencies, characteristic environmental conditions, specific local needs may recommend to vary the a.m. time intervals;



	<u>daily</u>	<u>weekly</u>	<u>monthly</u>	
drip tray	●			see 12.01.01.
product slides	●			see 12.01.02.
machine outside	●			see 12.01.03.
mixer and aspiration		■		see 12.02.01.
cup station		■		see 12.02.02.
dispensing system			▼	see 12.03.01.
product canisters			▼	see 12.03.02.
machine inside			▼	see 12.03.03.
aspirators			▼	see 12.03.04.

active principles

concerning the substances that can considerably reduce the bacterial charge, tartaric acid, peracetic acid, in specific preparations certified for human use, may be counted among some of the numerous active principles used to sanitise the parts in direct contact with foodstuffs; their regular and constant use in the dilutions properly specified by the producer can considerably cut down the natural bacterial charges existing on every surface; it is recommended not only to sanitise, but also to cleanse the machine (which supports the action of sanitising substances) by alternating active principles;

any way refer to the instructions supplied by the producer so as to apply these active principles as efficaciously as possible (temperature of the cleaning or sanitising solution, contact time, application procedure, ...);

12.01. daily

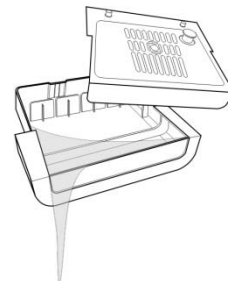
daily cleaning operations are intended to remove from the machine any residue resulting from normal drink dispensing cycles; the removal of these traces can ensure the operation continuity and uniformity of the vending machine;



the time required by daily cleaning is about ten minutes;

12.01.01 drip tray

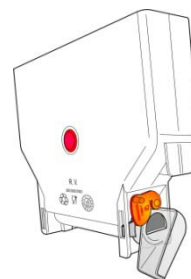
extract the drip tray by pulling it; raise and remove the support surface; empty the tray; wash the two components with abundant drinkable running water; dry them carefully;



insert the key into the lock, turn it clockwise, open the door, remove the key, put it in a safe place and lift the machine cover;

12.01.02. product slides

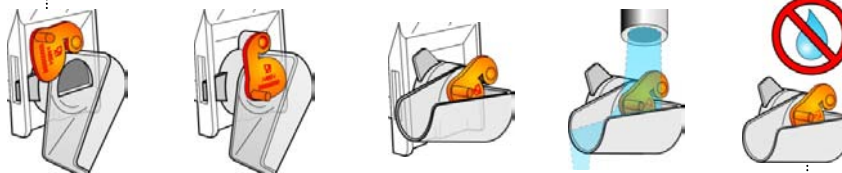
rotate the baffles of product slides to close them; keep hold of the product canisters with one hand; rotate the slides to release their two side tongues and disassemble them from the product canisters; extract the ground coffee funnel by firmly holding and pulling it;



wash them with plenty of drinkable running water;

dry them carefully

if still wet, product slides retain the instant product, thus causing clogging and malfunctioning;



remount the slides on the product canisters by rotating them counterclockwise until you hear a fastening "click"; put the baffles into an open position;

close the door by means of the lock key and place it in a safe place;

12.01.03. machine outside



use a non-abrasive piece of cloth after having dampened it with lukewarm water; only if necessary, use a neutral, non-foamy, detergent;

attention

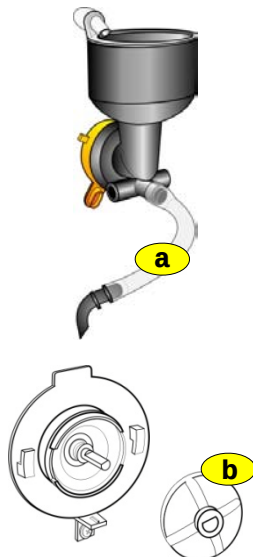
use neutral detergent products only; never use abrasive cloths, steel sponges, aggressive or foamy detergents and other solvents, hot water and acids;

pay special attention when cleaning the cup station and remove any trace of residues;



12.02. weekly

12.02.01 mixer and aspiration



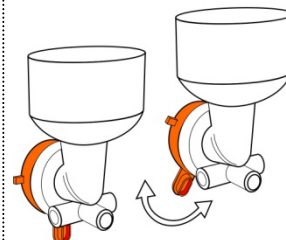
12.02.02. cup station

clean weekly to remove any trace of instant products that might be left inside the surfaces of mixing bowls and clean the parts that accommodate the cup during the dispensing cycles;

the time necessary for weekly cleaning is about fifteen minutes (consider the variable time necessary for the action of the sanitising solution);

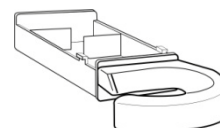


push the rear bush of the orange ring nut clockwise; pull the mixing bowl and the upper ring by uncoupling it from the water outlet tube; these components oppose "soft" resistance due to the action of sealing gaskets;



extract dispensing tube (a) of the mixing bowl from the nozzle support;

pull the dust extraction drawer by overcoming the slight resistance of the positioning block;



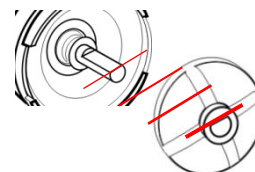
extract the fan (b) from the mixer motor shaft by pulling it outside the machine;

immerse these components into the sanitising solution and wait for the time specified by the producer;
wash and rinse the components with plenty of drinkable running water and dry them carefully;

re-assemble the components in the reverse order of disassembly;

attention

the mixer fan shall be installed with the four grooves directed to the operator;



the hole, i.e. the seat of the mixer motor shaft, is shaped;

make sure that the components are well-aligned to each other, that the extraction drawer is in its working position, that the upper ring is well inserted into the water outlet tube and that the orange ring nut of the tray body has been pushed counterclockwise until you hear a fastening "click";

attention

act with extreme caution;

carry out some wash cycles for the water circuits of the machine (see 08.03.); remove the service key and put it into its seat, close the door;

in addition to the instructions supplied by 12.01.3, it is also recommended to clean the internal part of the cup station and the nozzle support carefully;

12.03. monthly

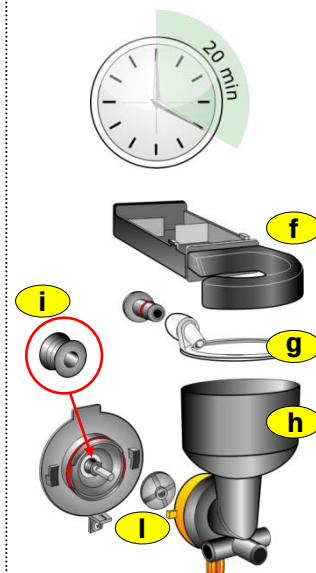
12.03.01. dispensing system

besides fulfilling the tasks already specified by chapter 12.01. weekly, it is also recommended to act in the following districts:

disassemble all components of the dispensing system:

- extraction drawer (f)
- water dispensing ring (g)
- mixing bowl (h)
- mixer (l)
- dispensing tubes (m)
- product dispensing nozzle holder (n)

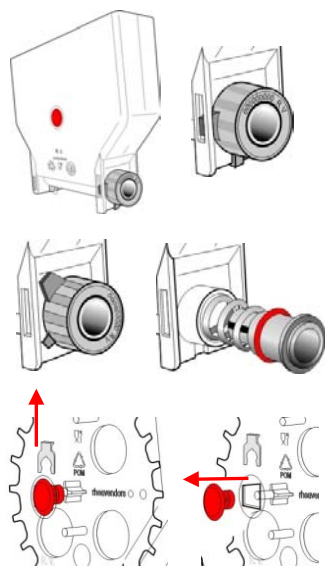
extract the mixer fan just by pulling it; check the wear state of the w ring (i) sheathing the mixer motor shaft; wash the assembly of disassembled parts with plenty of lukewarm water;



12.03.02. product canisters

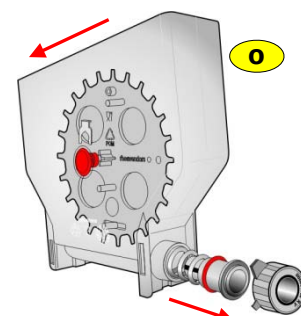
remove the product canisters (o) by lifting them in the front and by pulling them; remove the cover and empty the product residue;

turn the baffles of product slides into a close-position; remove them from the canisters and wash them with plenty of lukewarm water, as it is described by chapter 12.01. weekly;



at the back of the product canister turn the black ring nut clockwise and remove it; extract the worm screw by pulling the black bush; to facilitate disassembly, push the stirring wheel in the correct direction;

lift the two fastening clips (one for each side) from the inside of the product canister and remove the two red plugs from the outside; remove the stirring wheel; wash the disassembled parts with plenty of lukewarm water;



12.03.03. machine inside

as already required, remove all the components of the dispensing system (mixing bowls, outlet pipes, ...);

while washing the components you have disassembled, aspirate every single product residue from the inside of the machine; use a piece of clean and soft cloth, slightly dampened with a sanitising solution, to remove any residual trace;

the lower support surface of the drip tray, the support surface of product canisters and the inner part of the cup station must be carefully cleaned with special attention to avoid the build-up of any residual substance;

re-assemble the components in the reverse order of disassembly;

12.03.04 environmental and powder aspirators

carefully check that the rotors of the two aspirators on the rear panel of the vending machine can freely rotate without any hindrance or stoppage; make sure that the corrugated tube for connection between the powder aspirator and the extraction drawer is clean and free of any product deposit;

12.04. yearly

mixer gasket

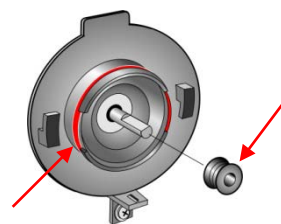
replace the gasket at the base of the mixing bowl of the mixer; remove the mixer motor fan by pulling it; replace the gasket of the mixer motor shaft ;

silicone tubes

make sure that the water transport tubes are intact and that they have kept their transparency, replace them, if necessary;

boiler

empty the boiler (see 13.08.); detach the silicone tubes and the electric wiring; extract the whole boiler body and separate the cover and the tray; wash it to remove any trace of residue or limestone; dry carefully and re-assemble the components;



12.05. out of order

temporary

if the vending machine should be inactive for a long period, please act as follows:

- set the boiler water temperature to zero (see 09.01.b.);
- detach the water and energy supply;
- empty the boiler;
- empty the drip tray;
- empty and clean the product canisters;
- clean the internal and external surfaces by using a wet piece of cloth;
- cover the machine by means of a cloth;
- store it in a sheltered place, at a temperature not below 5 °C, at a relative humidity not above 80%;

definitive

if you should definitively set the vending machine out of commission and provide for the disposal of some parts thereof, after having carried out the operations above, disassemble the vending machine by separating every single component and subdividing the parts according to the nature of materials; the applied symbol means that the components of the vending machine shall be not processed as home rubbish, but delivered to the collection points capable of recycling electric and electronic equipment; refer to the 2002/96/EC Directive and to the relative rules;



the complete text of the European directive about this specific subject-matter is made available on the Internet site:

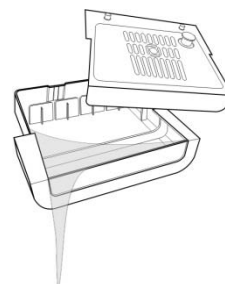
<http://eur-lex.europa.eu/directive/2002/96/EC> of 27/01/2003

13.

how to do to:

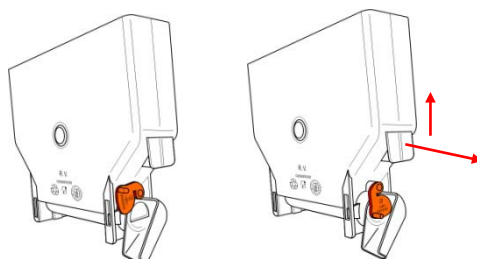
13.01. empty the drip tray

the drip tray is arranged in its work seat and retained by the notches in the structure; pull to remove it;



13.02. remove the instant canister

rotate the closure of the dispensing chute and pull the canister by lifting it slightly; to reassemble it, insert the rear bush into the motor gear and the lower pin into the horizontal surface hole; product chutes are detached from the canisters if turned counterclockwise;

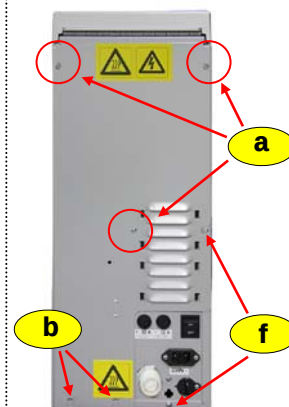


13.03. access the rear part

unscrew the three fastening screws (a) of the metal panel; to remove it, lift it and release it from the lower hooks (b); all internal components of the machine can be now accessed; to remove the boiler, unscrew the screws (f) and extract the panel with electric connections

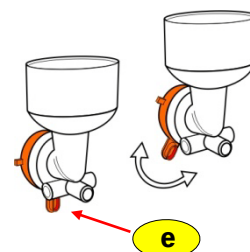


attention
make sure that the power supply cable has been detached from the mains before



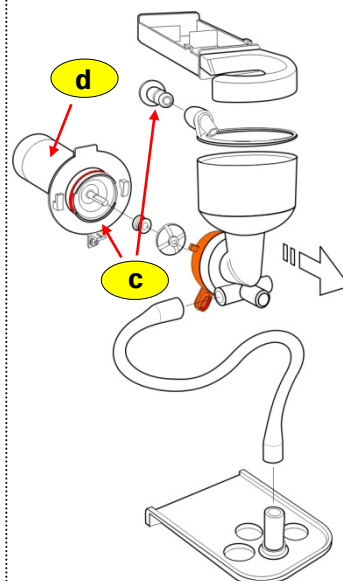
13.04. replace the o-ring of mixing bowls

remove the silicone tubes intended to dispense the product; turn the orange ring nut clockwise; pull the mixing bowl body and extract the mixer fan; you can now access the w-ring of the motor shaft; the water inlet gaskets of the mixing bowl and the mixing bowl gaskets (c);



13.05. replace the mixer motor

remove the silicone tubes intended to dispense the product; turn the orange ring nut clockwise (e) and pull the mixing bowl body; unscrew the crosshead screw and extract the motor; the power supply wires can be removed without any tool;



13.06. replace the product motor

remove the product canister; access the rear part of the machine; extract the two small electric cables from the motor, hold the body, push it to the bottom to release it from the bayonet connection of the structure; the power supply wires can be removed without any tool (observe the polarities);

13.07. determine water and product times

the times specified by table 10.01. can be referred to as the times functional for the machine and the products to be dispensed; however, they can be adapted to the capacity of the user's cups (by changing "time water N") and its tastes (by changing "product N"); please, never forget to make sure that the dispensing time of the instant product is always lower than the one of corresponding water;

13.08. remove water



to discharge water from the circuits of the machine:

- detach the water supply (in machines A, remove the water tank), disassemble the rear panel;

attention

the boiler might contain hot water;

- remove the screw intended to secure the water drain plug (see 05.11.), extract the outlet hose of the boiler and convey it into a bucket; wait for water to flow out of the boiler completely;
- re-insert the water drain plug into the tube and remount it onto the machine by means of the fastening screw;
- remount the rear panel of the machine;

13.09. programme delays

(if accepted) dispensing starts as soon as the user presses a selection key; the order in which instant products are poured into the cup depends upon the values of delays (e.g. the one, the delay value of which is zero, will be dispensed before the one, the value of which is 40, dispensed four seconds after the user has pressed the selection key); pay special attention when programming the delays in dispensing a product and the water diluting it in the mixing bowl; except for the instant coffee product, for which just the opposite is applicable, it is recommended to dispense water before the product to enable the latter to drop on the water film already present in the mixing bowl for a better mix;

13.10. regulate the speed of mixers

the rotation speed of the motors of product mixers can be adjusted between 15,000 r.p.m. and 5,000 r.p.m.; the drink quality of instant products depends a lot upon the action of the fans of mixers: instant chocolate generally requires a long mixing time at the maximum speed for dissolution in water whereas instant tea shall not be mixed to get a drink quality without any bubble on the surface;

13.11. choose the quantity of break numbers

if instant products can be hardly dissolved in water, it may be of use to stop the product dispensing cycle from the product canister for a short time; the water flowing into the mixing bowl will have the time necessary to remove any product build-up;

13.12. time tests

to check the rotation time of a product motor and a mixer fan or the activation time of a solenoid valve during the programming phase, when the display shows "PRODUCT N" or "WATER N time" or "MIXER N", press the "PROG" key: the device will be activated for the programmed time;

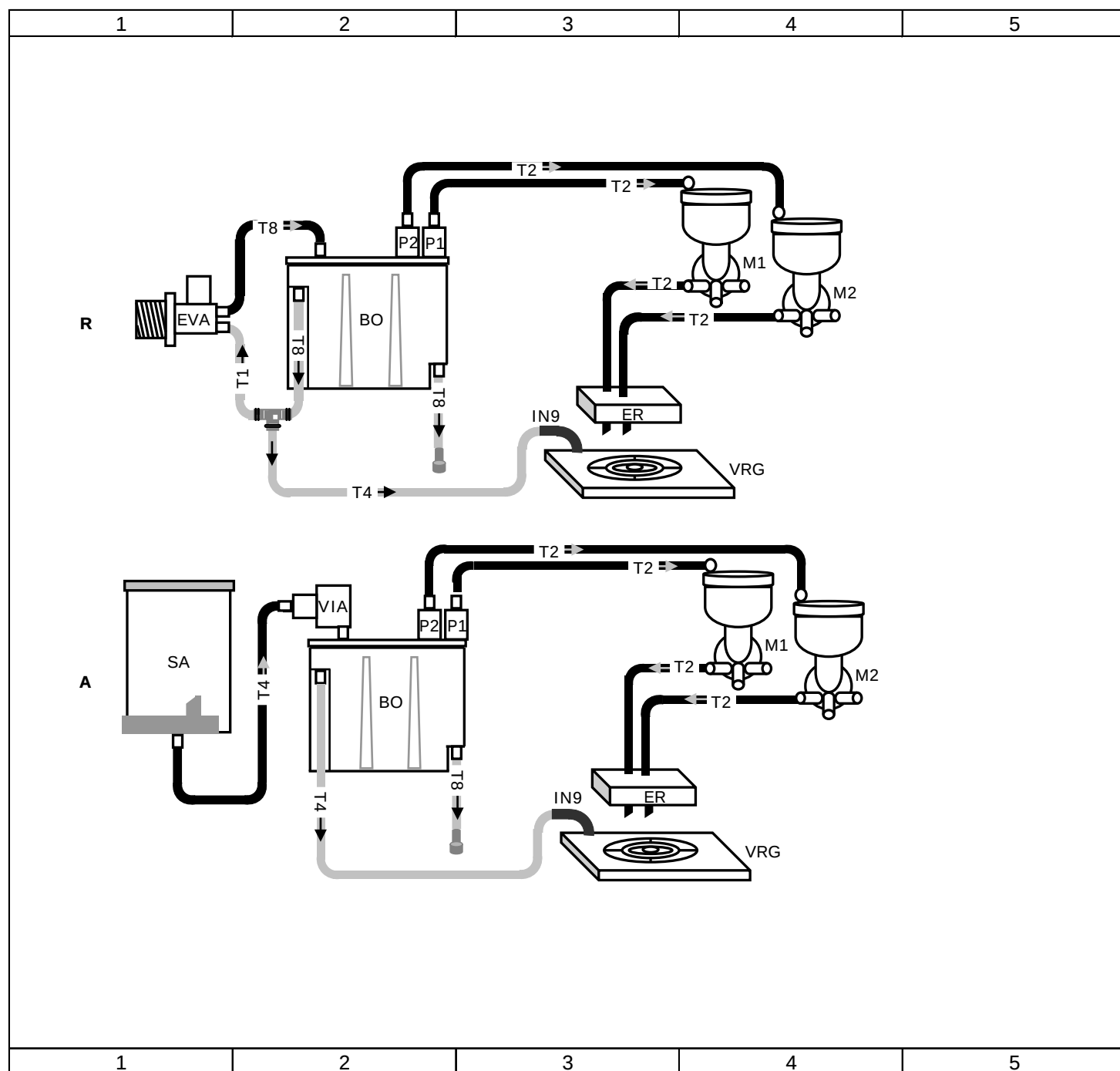
13.13. determine the suction fan time

to remove the residual powder of instant products from inside the machine, it is recommended to use the value in minutes you have already programmed (three); if you should use particularly volatile products, increase the time to five (and more) minutes;

13.14. return some material under guarantee

if you should return any material under guarantee that is either defective or not in compliance with your requirements, fill in the form "MOD. PO 19.01/2B Materials under guarantee – Authorisation to return" and send it to the fax number above to apply for authorisation; only after having received the authorisation form signed and numbered, you are permitted to send the goods at your expenses to the address specified by the form;

14. hydraulic diagram



L E G E N D	column	symbol	name	column	symbol	name	column	symbol	name
	1	EVA	water inlet solenoid valve	2	P2	boiler pump 2	3	IN9	90° joint
	1	VIA	water load solenoid valve	4	M1	mixer 1	/	T1	silicone hose 05/08T
	1	SA	water internal tank	4	M2	mixer 2	/	T2	silicone hose 06/09T
	2	BO	boiler	3	ER	nozzle support	/	T4	silicone hose 07/11T
	2	P1	boiler pump 1	3	VRG	drip tray	/	T8	silicone hose 10/14T