

Grandezza

type: HORECA



instant



INSTALLATION AND MAINTENANCE MANUAL
Translation of the original instructions

MAN1260014 rel. 01 dated 30.09.2020

**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 highlighted 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 PARTS;

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;



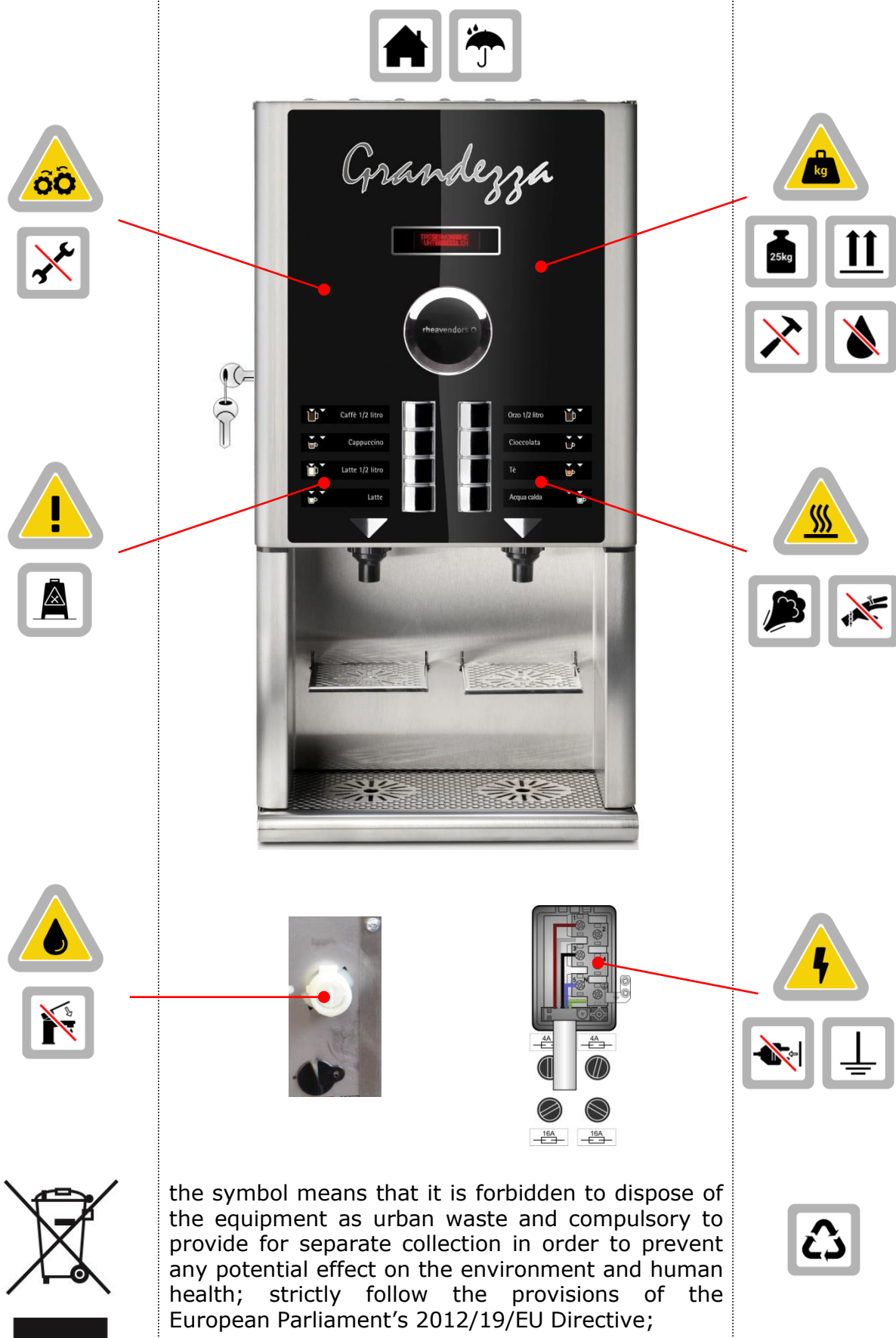
SUPPORT SURFACE;

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 and 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 supervised or instructed on how to use the machine safely and they have well understood 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;
- *** ambient (during storage and operation):
temperature: 5 °C ÷ 35 °C
relative humidity: maximum 80%
- *** the inclination of the support surface of the vending machine 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:
 - a new tube;
 - whose material is type-approved for food use;
 - compliant with "IEC 61770 Electric appliances connected to the water mains";
 - capable of supporting the operating 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 cloth, cups and a bucket for waste water collection;
- *** never wash the machine by using water jets; the vending machine is not suitable for installation in areas where it can be reached by water jets;
- *** for cleaning at regular intervals refer to chapter 12.;

safety rules for using the vending machine



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 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:

2014/30/EU; 2014/35/EU; 2006/42/EC; 2012/19/EU; 2011/65/EU; (EU) 2015/863;

Regulations:

1907/2006/EC; 1935/2004/EC;

Standards:

SAFETY:

EN 60335-1:2012 + A11:2014 + A13:2017;
EN 60335-2-75:2004 + A1:2005 + A11:2006 + A2:2008 + A12:2010;

EMC:

EN 55014-1:2017;
EN 55014-2:2015;
EN 61000-3-2:2014;
EN 61000-3-3:2013;

EMF:

EN 62233: 2008;

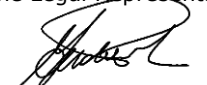
manufacturer

Rheavendors Industries S.p.A.
Via Valleggio, 2/bis - 22100 Como - (CO) - Italy

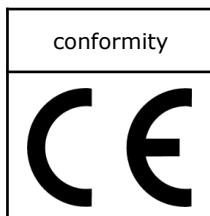
factory

Rheavendors Industries S.p.A.
Via Garavaglia, 58 - 21042 Caronno Pertusella - (VA) - Italy

The Legal Representative


(Andrea Pozzolini)

marking



ISO 9001 certification



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in the listed chapters, the manual describes a

Grandezza

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;

01	30.09.2020	general update;	
00	30.05.2014	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;
- 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;
-  = hot water dispenser;
-  = water supply pressure range of the vending machine;

02. introduction

02.01. copyright information

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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

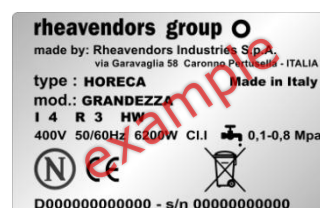
for any reference about our partners all over the world please visit site: www.rheavendors.com

02.03. serial number label

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 cabinet of the machine;



**03.
technical data**

03.01. dimensions	height: width: depth: depth with open door:	824 mm 403 mm 483 mm 810 mm	
03.02. mass		49 kg	
03.03. supply	water	- connection to the net by means of a solenoid valve with 3/8" gas male face: - supply by a submersible pump:	from 0.1 MPa to 0.8 MPa 24 V dc; 1.2 A max
	energy	<u>important note</u> the machine is not equipped with the power supply cable; - 400 V *3N ~ 50 Hz (three-phase connection + N): - 230 V ~ 50/60 Hz (single-phase connection; one heating element): - 230 V ~ 50/60 Hz (single-phase connection; two heating elements):	6,200 W 3,200 W 6,200 W
		<u>values and indications for standard machine; anyway refer to serial number label data;</u>	see 02.03.
	03.04. sound pressure	A-weighted sound pressure level:	less than 70 dB(A)
	03.05. keyboard	eight selection buttons;	
	03.06. display	two sixteen-character lines;	255 mm
03.07. dispensing cpt.	open; folding cup support (useful height 100 mm):	capacity 750 ml	
03.08. drip tray	drip tray beneath the cup surface:		
03.09. dispenser	two fixed dispensing places; <u>note</u> if properly programmed, the machine can dispense simultaneously two selections;		
03.10. safety	water	overflow sensor; water inlet solenoid valve with anti-flood sensor:	24 V dc
	energy	two switches (door and rear panel); two 6.3x32 mm fuses: one 6.3x32 mm fuse: one 6.3x32 mm fuse: two 6.3x32 mm fuses:	230 V ac; 4 A delayed 230 V ac; 6.3 A delayed 230 V ac; 2 A delayed 230 V ac; 16 A rapid
	heat	manually resettable sensors;	92 °C
	software	time limits for water dispensing cycles;	
03.11. water pumps	four rotary pumps:	24 V dc	
03.12. product motors	max four, according to the machine configuration:	95 r.p.m.; 24 V dc	
03.13. mixing bowls	three;		
03.14. mixer motors	three:	15.000 r.p.m.; 24 V dc	
03.15. boiler	not pressurized (open-top boiler): with two independent heating elements:	10 litres; 6,100 W 230 V ac; 3,000 W 230 V ac; 3,100 W	



03.16. product canisters

max. four, 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 stirrer, if arranged by the configuration and with standard or shorter product slide outlet (see 05.14.);

- canisters capacity:

CANISTERS height 265 mm			
width 55 mm		width 110 mm	
capacity 2.4 litres		capacity 5.1 litres	
coffee	0.53 kg	milk	1.30 kg
		chocolate	3.20 kg

03.17. static relays

two supply the boiler heating elements;

03.18. miscellaneous

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

03.19. notes

the water and energy supply tolerance limits that can ensure a good and proper operation of the **Grandezza** 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
maximum 80 %

electric consumption:

- power (vending phase):
- power (stand-by):

460 Wh
124 Wh/h

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

attention

the vending machine is not equipped with a power supply cable;
use cables of a H05VV-F having a proper section and
widely suitable for the required power;

only the electrician which installs the machine shall ensure that the power supply cord comply with the provisions of the rules and that it is perfectly suitable for the power requirements of the machine;

the power supply cable shall not be altered under any circumstance; in case of loss or damage, only authorised and qualified personnel may replace it to prevent any hazard;

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.

Grandezza configurations are coded by means of some categories shown by the machine abbreviation and exemplified here below:

a. product canisters

number of the instant products:

I4

b. water supply

external, by means of the inlet solenoid valve:

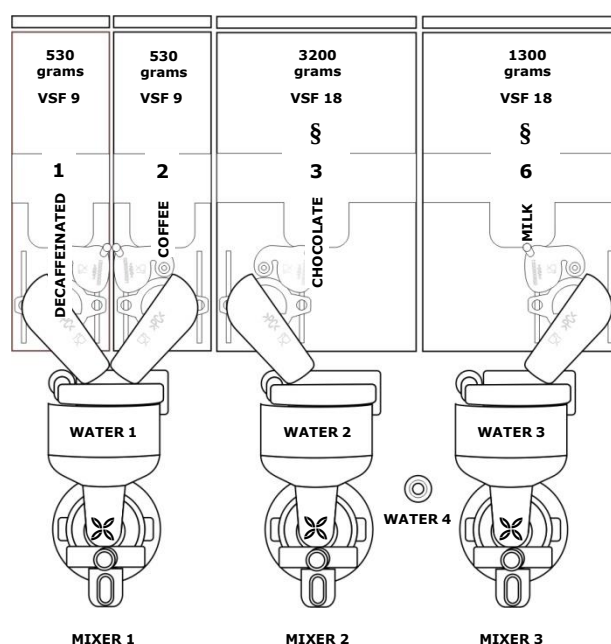
I4 R

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. configuration

V.M. **Grandezza** I4 R



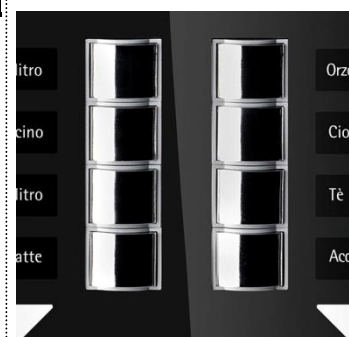
product canisters

decaffeinated P1
coffee P2
chocolate P3
milk P6

keyboard selection			
1	short coffee	5	cappuccino
2	long coffee	6	chocolate
3	coffee with milk	7	milk
4	decaffeinated with milk	8	hot water

being equipped with two separate dispensers, the machine can deliver two selections simultaneously provided that:

- the two involved keys are programmed as "functioning",
- belong to the different columns (left and right) of the keyboard
- and the outlet pipes are properly placed into the dispensers and compatible with the compositions of the selections;



04.03. accessories

to complete and supplement **Grandezza** vending machines, Rheavendors Industries S.p.A. has got a series of accessories manufactured for these machines, such as cabinets, autonomous water supply kits, anti-limestone filters, ...;

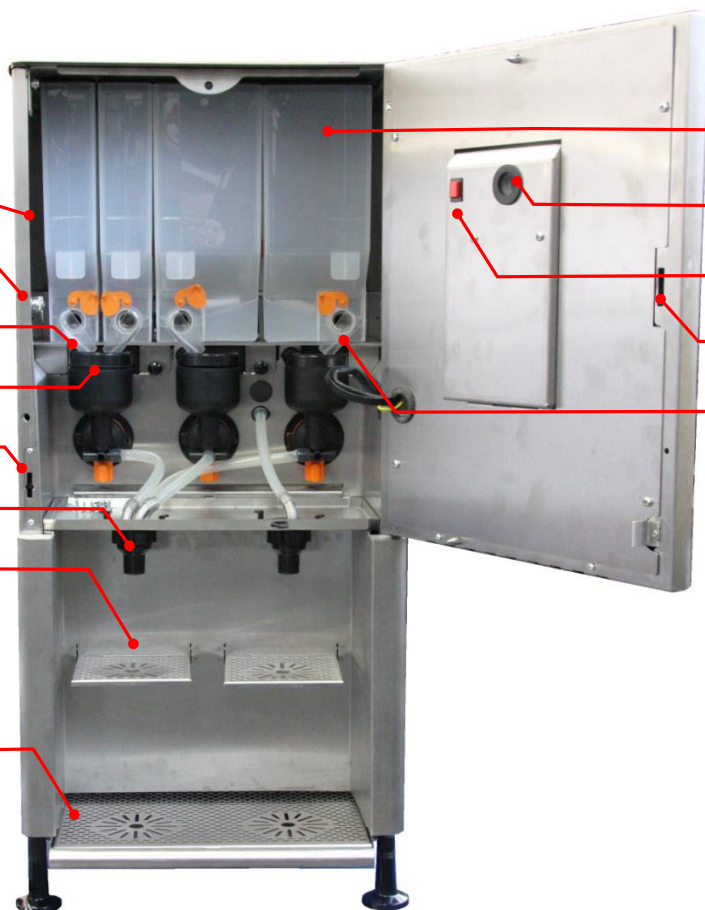
Rheavendors Services S.p.A. is at disposal for any kind of support and information on special configurations (see 02.02.);

**05.
presentation**

- 05.11. service key
- 05.05. door lock
- 05.14. product slide
- 05.15. mixing bowl
- 05.11. door switch
- 05.04. dispenser
- 05.01. folding cup support

- 05.06. drip tray

- 05.14. product canister
- 05.12. internal button PROG
- 05.13. manual washing button
- 05.05. door lock
- 05.14. closing baffle



- 05.23.a. static relays for the boiler heating elements

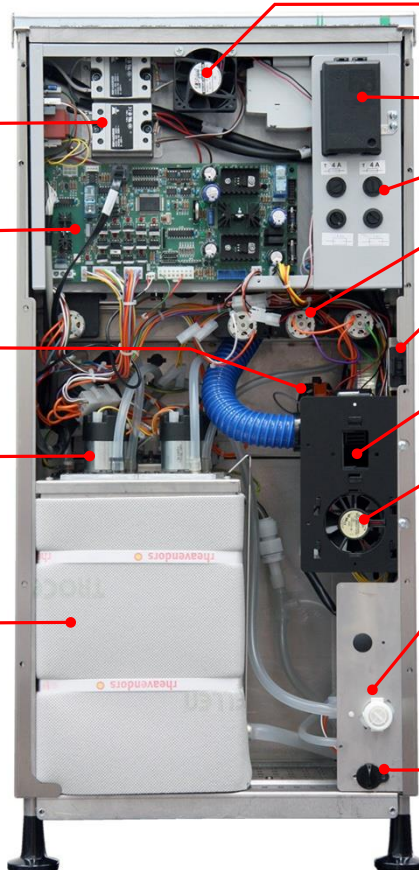
- 05.23. CPU

- 05.17. mixer motor

- 05.22. pump motor

- 05.21. boiler

- 05.20. air aspirator
- 05.09. electric connection
- 05.10. fuses
- 05.18. product motor
- 05.11. rear panel switch
- 05.19. powder aspirator
- 05.20. air aspirator
- 05.08. water inlet solenoid valve
- 05.07. water drain plug



13.06. noise filters in the machine with three-phase connection



05.01. general information



the Rhea **Grandezza** 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 (see 05.02); make sure that the cup has been properly positioned at the dispensing station, if necessary by using the flap support for cups;

05.02. 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, ... and from the left;

05.03. display

the display messages inform users and operators about the operation state of the vending machine;

05.04. dispensers

the **Grandezza** vending machine has got two fixed drink dispenser on the cup support surface to which are fastened the silicone tubes that come from the mixers;

05.05. door lock

the door is closed by means of a lock; the key is mapped and numbered for identification;

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. water drain plug

from which to let the silicone tube from the boiler come out and empty the boiler; moreover, a drain fitting (a) is arranged at the back where to connect a tube to empty liquid residues in a collection bucket;

05.08. water inlet solenoid valve

the water inlet solenoid valve 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.);

05.09. electric connection

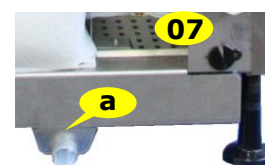
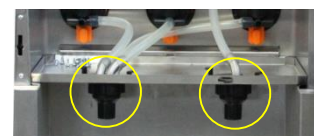
a terminal board is arranged at the back of the cabinet for connection of the power supply cable; protected by a plastic cover, it contains the terminals to which connect the wires (see 07.02.);

05.10. fuses

installed on the mains power supply to protect the machine; fuses must be necessarily replaced by specialized technical personnel only;

please note that:

- 4 A delayed to protect the whole machine;
- 16 A rapid to protect the boiler heater elements;



05.11 . door switch



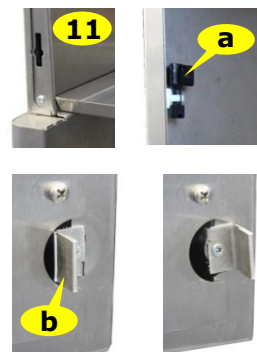
to power off the machine when the door is open;

attention

some parts remain anyway network-connected;
act extremely carefully;

use a service key (a) to supply the vending machine if it is necessary to activate the machine when the door is open; the key is inserted into a housing inside the cabinet; a rotating small square is also arranged inside the door; if rotated in position (b), it inhibits the power-on of the machine even when the door is closed;

please note that the rear panel must be in position to ensure that the machine is powered;



05.12. internal button (PROG)

the button giving access to the machine programming mode is arranged inside the door under a protective black rubber membrane;

05.13. manual wash button

the manual wash button is arranged inside the door; use the service key (a) to activate the machine when the door is open; press the wash button to remove the product residues from the hydraulic circuits;



05.14. product canisters

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 stirrer for constant dispensing; the outlet, the dimension of which can be either standard or smaller, has got a closing baffle; canisters are closed by a cover to protect products;

05.15. mixing bowls

the mixing bowls of the mixers will accommodate the instant products you have poured to mix them with water; the fan of mixer motors 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;

05.16. nozzles support

a fixed support on the cup station accommodates the two dispensers coming from the mixing trays and the tube for direct hot water;



05.17. mixer motors

the motors of mixers help to 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 soluble products;

05.18. product motors

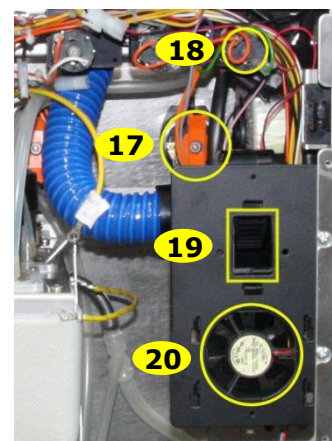
they are intended to rotate the worm screws inside instant product canisters to pour the product quantity necessary for selection in the mixing bowls;

05.19. 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; aspirated air is ejected through the slots of the rear panel;

05.20. air aspirator

to aspirate the air from the internal environment of the machine to avoid any condensate;



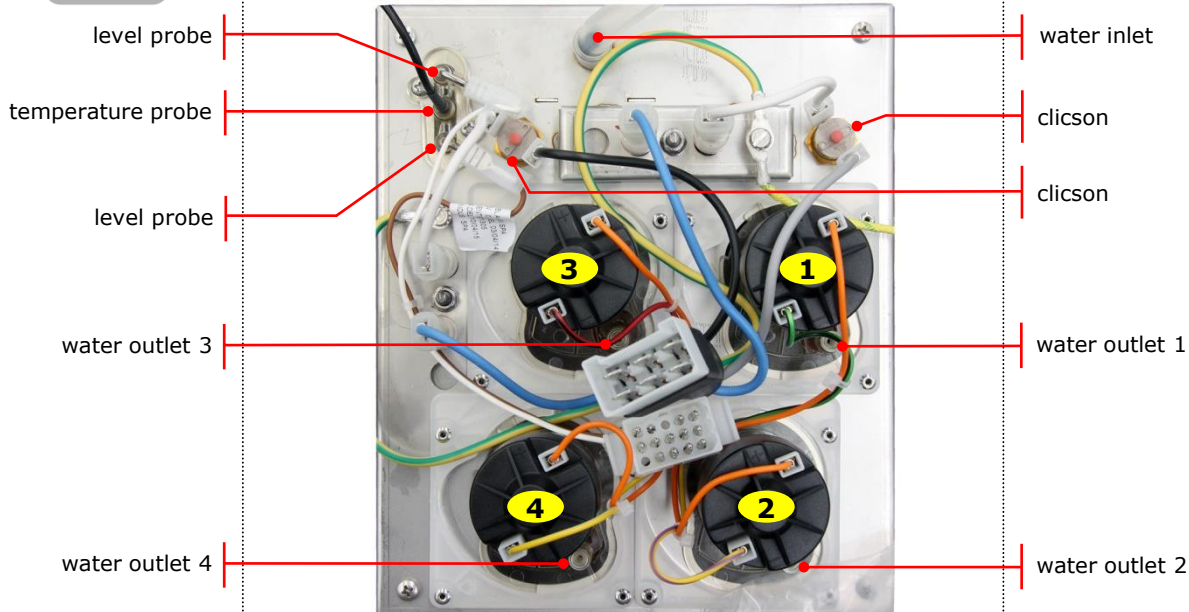
05.21. boiler



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;

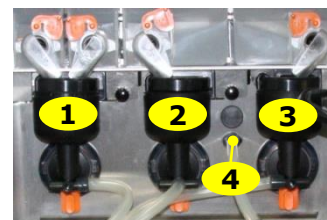


05.22. boiler pumps

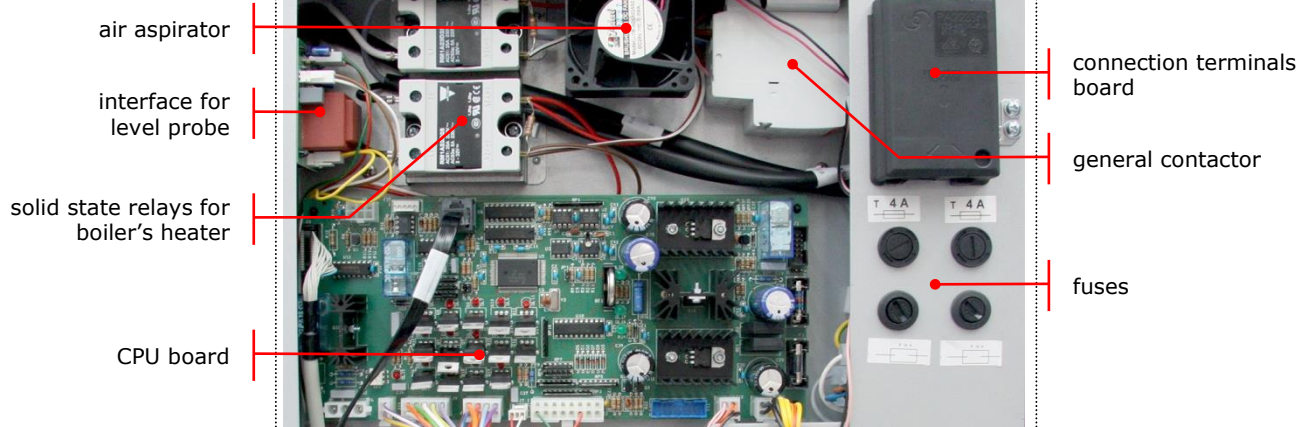
pumps with turbine immersed in the boiler water; water is conveyed in tubes feeding the mixing bowls and direct water outlet; attention to the polarisation of motors (see 03.11.);

the water quantity of 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
P3	water 3	mixing bowl 3
P4	water 4	hot water

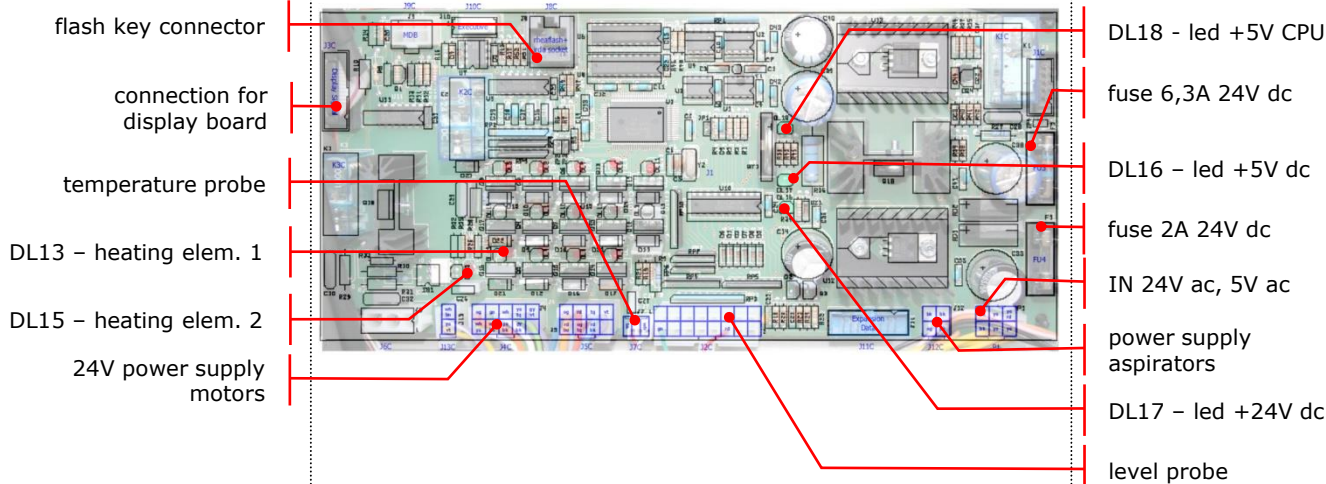


05.23. electronics



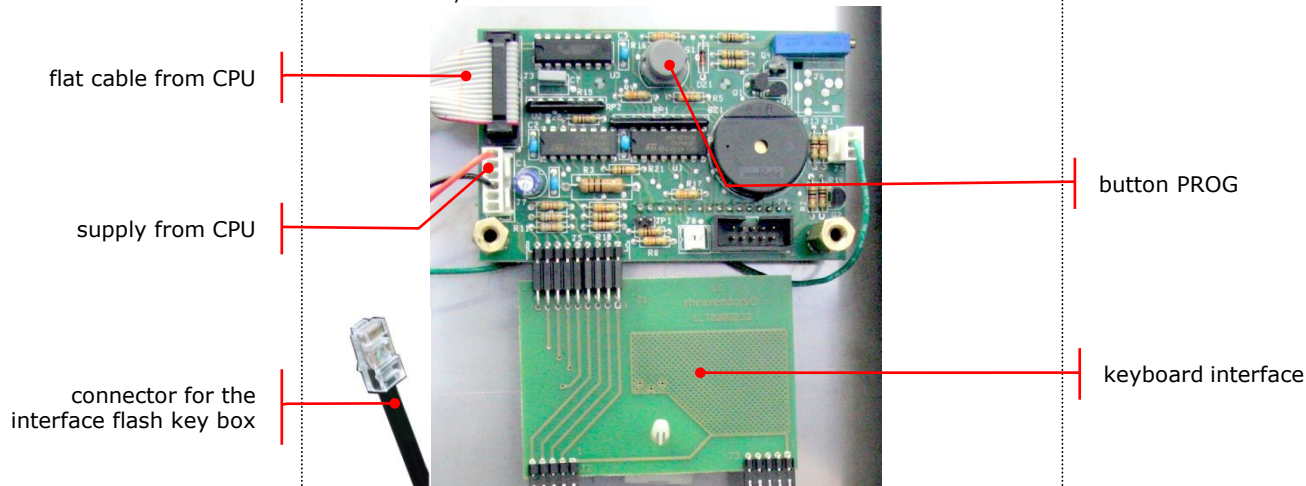
05.23.a. CPU

the CPU board is intended to govern the machine operation; it is the place of location of machine programs and it is secured to the frame by means of four board supports; the serial data cable can provide for signal exchange with the keyboard, the display and with the flash key connector; the temperature probe cable is separated from the machine wiring to avoid hampering the removal of the probe; the boiler heating elements led turns on whenever the boiler heating elements are activated; the two fuses protect the + 5 V and + 24 V board power supply;



05.23.b. display board

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; the internal programming button is installed on the printed circuit of this board;



05.24. software

the software installed in **Grandezza** 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 09.07. and 05.23.b.);
- configuration: it is the software determining the times and the succession of dispensing drinks, the display modes, ...; the variables can be modified by the operator both manually on the machine and by means of rheAction (see 09.07. and 05.29.) to adjust the end users' needs to the behaviour of the machine (product quantities and mixtures, warning messages; see 09.);

05.25. 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;
- remove the drip tray;
- extract the protection bag up;
- lift the vending machine and arrange it on the work surface;
- the keys of the door lock are in a bag on the support 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;



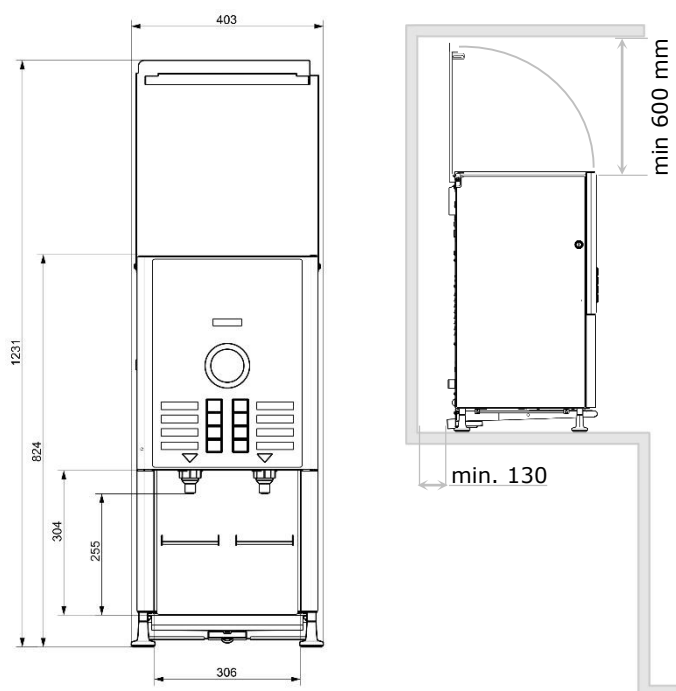
06.03. positioning



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:

- insert the door key into the lock (see 05.05.), rotate it and open the door;
- remove the envelope of documents;
- the water junction can be used for water connection with the network;
- insert from the front the drip tray;
- insert the selection labels; in the inner part of the door, under the protective plate fixed with five screws, there are the slots in which to insert the labels;



**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;

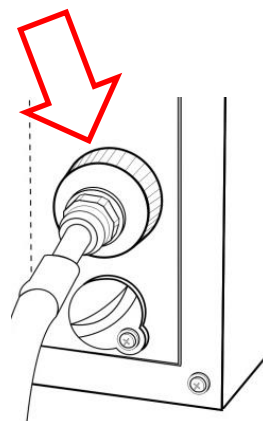
make sure that the network pressure is the one preset for the machine (see 03.03.); use a pump or a reducer in case of non-compliance; it is recommended to install a tap to detach the machine from the network; connection shall occur by means of:

- 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;

the drinkability features of "waters meant for human consumption" can be found in the web site:

<http://eur-lex.europa.eu/>
searching for the Directive
98/83/EC dated 03/11/1998 (CELEX number: 31998L0083)
and amendments





the vending machine is not equipped with a power supply cable; use cables of a H05VV-F having a proper section; make sure that the mains voltage is the same as the one on the serial number label;

check beforehand whether the power supply plant can supply the power required by the machine and make sure this is in compliance with the rules in force, in particular for earthing;

connect the machine permanently without using reductions, adapters, multiple sockets or extensions; it may be recommended to install a switch detaching the machine from the mains; it is recommended to install a differential current device operating at less than 30 mA, detaching the machine from the mains and promptly tripping in case of improper electric input to considerably decrease the risks from any short-circuit;

the vending machine can be supplied in one of the following manners:

- 1° three-phase + N 400 V ac 50 Hz
- 2° single-phase + N 230 V ac 50/60 Hz
- 3° single-phase + N 230 V ac 50/60 Hz

- 1° three-phase connection

400 V ac 50 Hz - 15.25 A 6,200 W
cable: 5 x 2.5 mm²

R-phase wire = terminal 1;
S-phase wire = terminal 2;
T-phase wire = terminal 3;
N wire = terminal 5;
ground wire = terminal ⚡

never connect terminal 4

- 2° single-phase connection

230 V ac 50/60 Hz - 26.5 A 6,200 W
cable: 3 x 4 mm²

if a three-phase line should not be made available, the machine can be also connected with a 230 V ac single-phase line, after having made sure that the line is properly dimensioned;

connect terminals 1, 2, 3 with each other by means of the two overlapping foils supplied;

R-phase wire = terminal 1;
N wire = terminal 5;
ground wire = terminal ⚡

never connect terminal 4

- 3° single-phase connection

230 V ac 50/60 Hz - 13.5 A 3,200 W
cable: 3 x 1.5 mm²

if the 230 V ac line should not be dimensioned to bear a 6,200 W load, you can reduce the absorbed power to 3,200 W by connecting only one of the two heating elements;

connect terminals 1, 2 by means of an overlapping foils supplied;

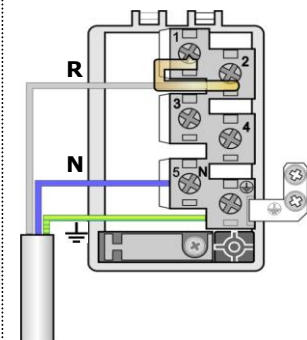
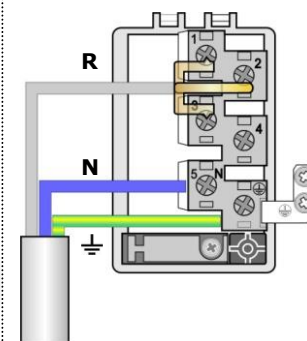
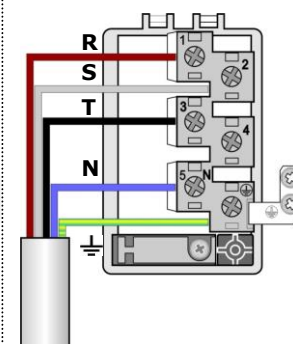
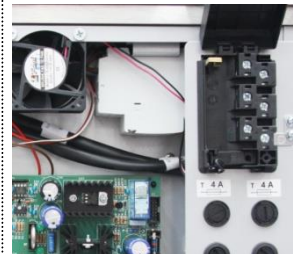
R-phase wire = terminal 1;
N wire = terminal 5;
ground wire = terminal ⚡

never connect terminal 4

note with the latter connection, the performances of the machine are in relation to the lower power used (3,200 W instead of 6,200 W);

attention

carefully close the black protection cover of the board at the end of the connection;



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 hydraulically and electrically, carry out some actions to operate it;

wash hands thoroughly with water and soap before handling the machine and the products; only use potable water to clean the components;



08.02. activity

power on the main switch of the line (see 03.03.);

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 to fill in the boiler properly and display:

water will start heating in the boiler to reach the temperature value you have set up;

at the end of this phase, the display will show the messages:

rheavendors
group B 1c

HORECA
v 2.5 25-05-10

switching on
please wait

refilling water
wait

wait
temperature

put the
jug

08.03. washing

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

open the door and insert the service key into the door switch (see 05.11.);

attention

the vending machine is supplied and running to all effects; act extremely carefully;

press the programming button "PROG" (see 05.12.);

the display shows the messages:

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

press "4" to enable the wash cycle of the water circuit (boiler, tubes, mixing bowls, ...); the display shows:

keys "1" "2" "3" will dispense water into the three mixing bowls; repeat the operation for some times to rinse the whole water circuit of the machine; during the wash cycles, the display shows:

to execute a wash cycle, alternatively to the above, you can press the red button (see 05.13.); a predetermined amount of water will be delivered in a single burst from the three mixers;

1=PROGR
3=FREE

2=DATA 4=WASH
5=MANUT.

cleaning
sel. 1-2-3

cleaning N



put the
jug

08.04. products loading

lift the upper cover of the machine, remove the transparent lid from the products canisters and fill them with the soluble products referring to the labels, put in place the transparent lid and make sure that the colored baffles are in open position (see 05.14.);

power off the vending machine by means of the service key; put it into its support (see 05.11); close the door; after a few seconds the machine will be ready and the display will show:



09. programming



access the programming mode

quit 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 programs; to modify these parameters to adapt the drinks you have produced, refer to the following; at the end of the chapter (see 09.07.), a summary table may help the user trace back all the programming items;

to access the different ways of programming, open the front door of the machine and use the service key in the door switch;

attention

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

press the "PROG" key (a);

the display shows alternatively the messages:

- "1" to access the programming mode of machine variables;
- "2" to display the drink quantities you have dispensed;
- "3" to dispense on a free basis;
- "4" to dispense water to wash the water circuits;
- "5" to access the maintenance program;

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:

press the key "PROG" (a), press "1" the buttons of the selection keyboard will assume the following functions:



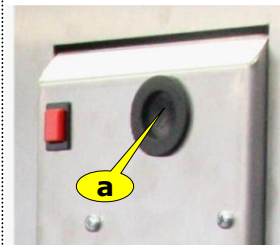
key 1	to scroll the items forward
key 6	to scroll the items backward

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 display
key 5	to decrease the value of the variable on the display

please take a note that in the next pages the software functions are represented in icons with:

- blue background for all active functions;
- light blue background for the functions not used in this particular configuration of the machine (e.g.: payment system routines as MDB, coins, ...);



1=PROGR	3=FREE
2=DATA	4=WASH
5=MANUT.	

put the
jug

PROGRAMMING -----
- CLOCK -----

PROGRAMMING -----
- MDB -----

09.01. "progr."

	the items are (scroll by means of key "1"):	
09.01.a. key 1	contains the variable composing selection 1;	PROGRAMMING ----- - BUTTON N-----
key 8	contains the variables composing selection 8;	
09.01.b. prices	option not to be considered;	PROGRAMMING ----- - PRICES -----
09.01.c. coins	option not to be considered;	PROGRAMMING ----- - COINS -----
09.01.d. temperatures	to set up the boiler water temperatures;	PROGRAMMING ----- - TEMPERATURE -----
09.01.e. miscellaneous	to programme different options;	PROGRAMMING ----- - MISCELLANEOUS --
09.01.f. diagnostics	to display some machine parameters;	DIAGNOSTICS ----- -----
09.01.g. sales audit	to display the quantity of dispensing cycles you have performed	SALES AUDIT----- -----
09.01.h. MDB	option not to be considered;	PROGRAMMING ----- - MDB -----
09.01.i. clock	to set up the machine clock;	PROGRAMMING ----- - CLOCK -----
09.01.l. out of service	to record any failure that may have occurred;	REGISTRATION OUT OF SERVICE
09.01.m. product qty	to check and enable product dispensing cycles;	PROGRAMMING PRODUCT QTY
09.01.n. maintenance	it contains the maintenance control parameters of the machine;	PROGRAMMING ----- - MAINTENANCE --
09.01.o. id. machine	it contains the machine identification parameters;	PROGRAMMING ----- - ID MACHINE -----
09.01.a. buttons from 1 to 8	press key "2" when the display shows "key n" to scroll the variables composing the function of that key (by pressing keys "4" and "5"); - 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; - if you press "2" when "PRESELECTION", the key you have pressed before the real selection will fulfil the function of the items listed in the "preselection" paragraph (scroll by pressing key "4" and "5"); - if you press "2" when "ENABLED fountain", the key will fulfil the function for which it is programmed (dispensing of one drink) continuously as long as you hold the selection key down;	FUNCTIONING INHIBITED ----- PRESELECTION ----- FUNCTIONING fountain

"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);

programming:
TOTAL

programming:
PARTIAL

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; you can carry out a "time test" on the set-point; (see 13.11.);

PRODUCT N
0= inhib. 0.0

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 delay time is increased or decreased by pressing keys "4" and "5";

start delay
PRODUCT N 0.0

the rotation time of the product motor can be briefly interrupted one or two times during the dispensing cycle (0 = no break); (see also 13.12.);

breaks number
0-1-2 00

to determine the activation time of the pump and then the water quantity it will deliver; you can carry out a "time test" on the set-point; (see 13.11.);

WATER N time
0= inhib. 0.0

water will be dispensed in the mixing bowls at the expiry of the delay time you have programmed;

start delay
WATER N 0.0

the water flow in mixing bowls can be regulated among low, medium, high by pressing keys "4" and "5";

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; you can carry out a "time test" on the set-point; (see 13.11.);

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

"pre-selection" several pre-selection messages are made available according to the various machine releases; here below explanations of some of them;

"decaffeinated/barley" instant coffee can be replaced with decaffeinated or barley by means of pre-selection; variables are listed here below:

- message appearing on the display during the dispensing cycle;
- barley product canister (keys "4" and "5");
- mixing bowl and mixing water (keys "4" and "5");
- price change with respect to the standard espresso drink; (keys "4" and "5");
- keys for which preselection has effect (scroll by means of key "2" and select enable or disable by means of key "4" and "5"); this instruction is repeated in any preselection to enable the effect in the key or not (*);

preselection
BARLEY

canister
BARLEY n:N

ev-mixer
BARLEY n:N

BARLEY price
0=+ 1=- 00

enable presel.
button N: YES (*)

"no cup" - option not to be considered;

preselection
NO CUP

"jug" - to establish that a dispensing cycle is repeated the number of times you have set up in "JUG" before, to produce a greater product volume;

preselection
JUG

"extra milk" - to choose the milk canister;

- to determine by how many seconds to change the rotation time of the product motor you have set up in the configuration; to enable see (*);

PRODUCT
MILK n:N

extra milk
quantity + 0.0

"extra sugar" - to choose the sugar canister;

- to determine by how many seconds to change the rotation time of the product motor you have set up in the configuration; to enable see (*);

canister
SUGAR n:N

extra sugar
quantity + 0.0

"pre-selection 9-16 PRESEL" this is a special option that allows you to use 14 selection keys, not only 8; to do this, just set one key, and only one, (for example the "8" key) with this option in order to set other seven selections; use keys "4" and "5" to choose the button to be assigned to this function; please find below a diagram of example:

BUTTON 1	selection "1"	BUTTON 5	selection "5"
BUTTON 9	selection "8"+"1"	BUTTON 13	selection "8"+"5"
BUTTON 2	selection "2"	BUTTON 6	selection "6"
BUTTON 10	selection "8"+"2"	BUTTON 14	selection "8"+"6"
BUTTON 3	selection "3"	BUTTON 7	selection "7"
BUTTON 11	selection "8"+"3"	BUTTON 15	selection "8"+"7"
BUTTON 4	selection "4"	BUTTON 8	"PRESELECTION"
BUTTON 12	selection "8"+"4"		

to program the virtual keys from "9" to "15", follow the normal procedure to programming a key selection as in "functioning" paragraph; during choice, pressing (in this example) key "8" and then key "1", we will obtain the virtual selection "9" as programmed in its parameters set;

	to repeat the selection by N times automatically and produce drinks of remarkable volume (jug);	JUG number 00
	press keys "4" and "5" to choose the drink name to display during the dispensing cycle; options are listed here below:	selection name N ----- n:00
	- "standard" , the display will show "drink N under preparation";	
	- "list of names" of drinks made available in the machine memory; the display will show "drink name under preparation";	
	- "custom" : the display will show the user's customised names; it is necessary to create a configuration file with rheAction (see 05.25.);	
09.01.b. prices	option not to be considered;	PROGRAMMING ----- - PRICES -----
09.01.c. coins	option not to be considered;	PROGRAMMING ----- - COINS -----
09.01.d. temperature	press key "2" to display:	PROGRAMMING ----- - TEMPERATURE -----
	use keys "4" and "5" to change the pressure boiler temperature;	TEMPERATURE boiler 00
	press keys "4" and "5" to set the temperature value below which the vending machine switches into the temperature wait mode;	minimum temperat. boiler 00
09.01.e. miscellaneous	the "miscellaneous" item includes some options (press keys "4" and "5" to modify the values of these options):	PROGRAMMING ----- - MISCELLANEOUS --
	machine code A and B: you can number the machine to distinguish it from others similar (data collection);	machine code A 00 machine code B 00
	message number: press keys "4" and "5" to choose the messages to display on the screen when the machine is in standby mode;	message number 0
	option not to be considered;	coin-mech type PAR. SING. VEND.
	access code: to access the programming mode only after having typed a password you can choose by pressing keys "4" and "5"; carefully note down the combination you have chosen;	access code 00
	fan time: to determine for how many minutes after the latest dispensing cycle the powder suction fan will remain active;	fan time min. 00
	beep time: beep time active at the end of each machine function;	beep time 0.0
	option not to be considered;	decimal number: 0
	language: to display the messages in one of the three languages made available;	language: english
09.01.f. diagnostics	press key "2" to access diagnostics:	DIAGNOSTICS ----- -----
	enable the machine to display (keys "4" and "5") the standby messages and the boiler water temperature, alternatively;	ENABLE DISPLAY TEMPERA. 1=YES N
	press "2" once again to display the voltage value intended to supply devices at 24 V dc;	VOLTAGE volt: 00.0
	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; (see also 13.10.);	tuning pump + 00%

09.01.g. 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 101 total amount of receipts (parameter not resettable); - VA 202 quantity of total tests (parameter not resettable); - LA 1*1 selections sold;	SALES AUDIT ----- ----- TOTAL SELECTIONS 000 PART. SELECTIONS 000 TOTAL MONEY 000 TOTAL TESTS 00 TOTAL SEL. (1-16) 00
09.01.h. MDB	option not to be considered;	PROGRAMMATION- - MDB -----
09.01.i. clock	press keys "4" and "5" to programme the power on and off time of the vending machine, if these parameters are set, the vending machine can operate and dispense drinks during this time interval only; during the remaining time intervals, the vending machine stops dispensing the drinks and it informs the customer that the service will start at hh:mm again; - automatic daily wash cycle; - current time; - current day; - current month; - current year; 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 (to set the temperature level, see below "temperature energy save");	PROGRAMMING ----- - CLOCK ----- SWITCHING ON: 00:00 SWITCHING OFF 00:00 CLEANING: 00:00 HOUR: 00:00 DAY: 00 MONTH: 00 YEAR: 00 SWITCH ON (F1-F3) 00:00 SWITCH OFF (F1-F3) 00:00
09.01.l. 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.);	REGISTRATION OUT OF SERVICE n. 1 off 00 nn:nn nn-nn-nnnn

09.01.m. 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 "product n. canister refill" 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 keys "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;

quit the programming mode as usual;

please note that the first warning threshold can be programmed; if exceeded, the display will show the alarm message "product n. canister refill" without interfering with the operation of the machine;

this parameter can be used to inhibit a selection which includes a product whose time credit has reached zero; with the value set to 1, the machine does not perform the dispensing cycle and the display shows:

an operator, which can not access the programming mode because, for example, does not know the password, once the containers loaded with the appropriate products may can set all the values products counters at their original values; to do this, he has only to keep pressed button "PROG" for about 10-15 seconds until the display shows:

PROGRAMMING
PRODUCT QTY

product qty N
[0.0] 170.0

product qty N
[170.0] 170.0

prod. N warning
threshod: 17.0

abil stop prod N
1=STOP N

I N H I B I T

SET PRODUCT
=====OK=====

09.01.n. maintenance

with the same logic of "product quantity", allows to count the number of selections made by the machine in order to replace, at appropriate intervals, the cartridge of the water filter (if this has been installed);

dec H2O filter
[0000] 0000

09.01.o. ID machine

identification codes for data acquisition in EVA DTS:

- machine number;

- location number;

- machine configuration;

- address for the connection with the DDCMP protocol;

- when you need to transfer the data from the machine to an external collecting system, it is possible to choose the transmission baud rate (transfer speed) among 1200, 2400 or 9600 bit/sec.;

using keys "4" and "5", choose the appropriate transmission speed:

0 = 2,400 baud;
1 = 9,600 baud;
2 = 1,200 baud;

please note that when the machine is performing a data transmission, the selections are inhibited and the display shows:

code ID 101
NN

code ID 104
NN

code ID 106
NN

address VIDTS
NN

DDCMP Baud x00
0=24 1=96 2=12 N

DATA AUDIT
please wait

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. "free" to dispense selections on a free basis; the selections made in this mode are counted separately (see 09.01.g.);

09.04. "wash" choose this option and press "1", "2" or "3" to enable the vending machine to dispense a pre-fixed water quantity to wash the corresponding circuit (see 08.03.); the display shows:

cleaning
sel. 1-2-3

cleaning N

09.05. "maintenance" same function as described in "09.01.n.";

09.06. data support the values of the variables composing the machine programming (configuration) can be transferred to an external support, i.e. the flash key that must be inserted in the flash key box (optional) previously connected to the CPU by means of the cable available next to the display board (see 05.23.b.);



to transfer the machine parameters to the key:

- power off the machine;
- open the door;
- insert the flash key into the apposite connector;
- power on the machine by means of the service key;

- the display shows:

- press key "2"
- and wait for the display shows:

- power off the machine and remove the flash key;

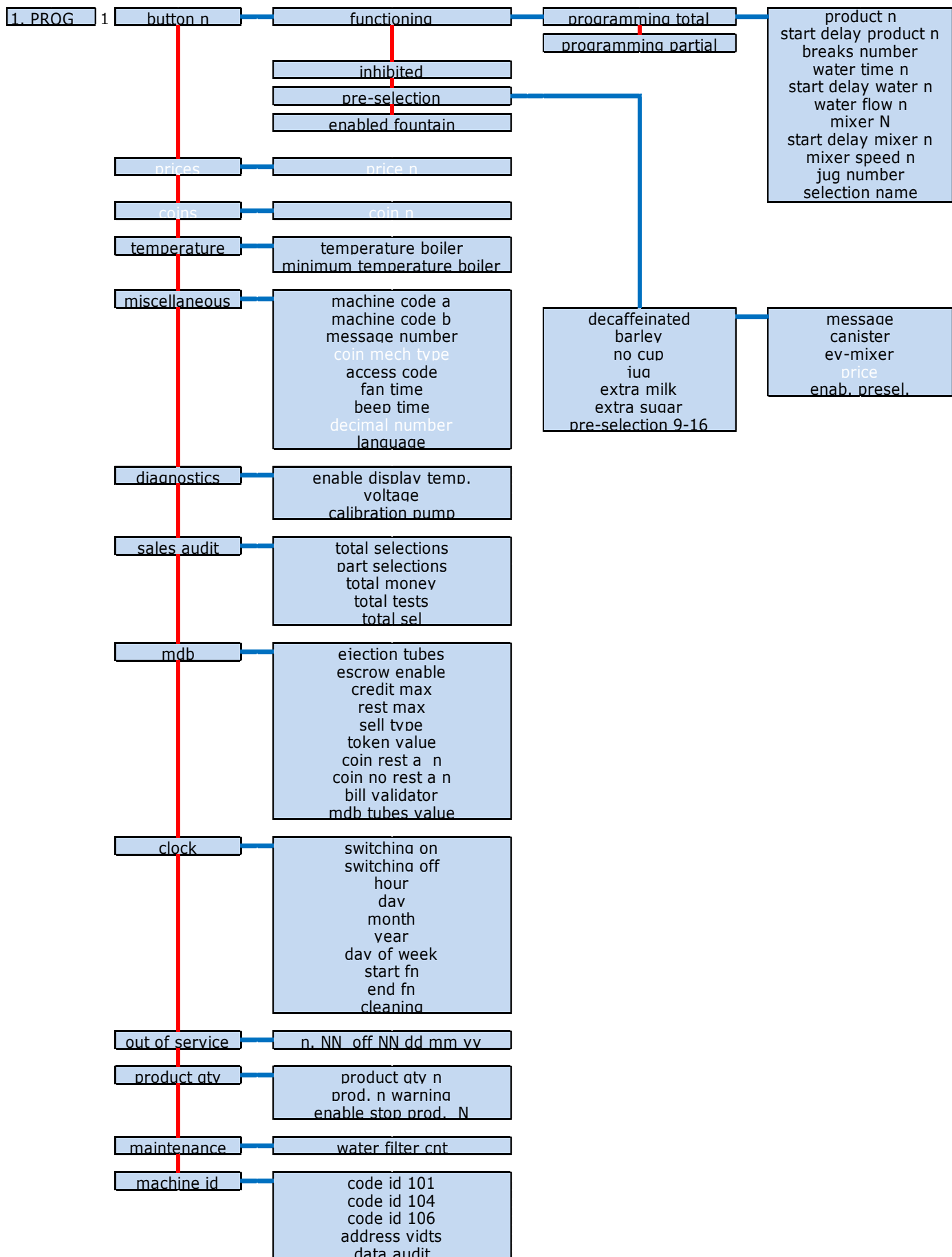


1 from key a VMC
2 from VMA a key

END PROGRAMMING
wait

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 key "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;



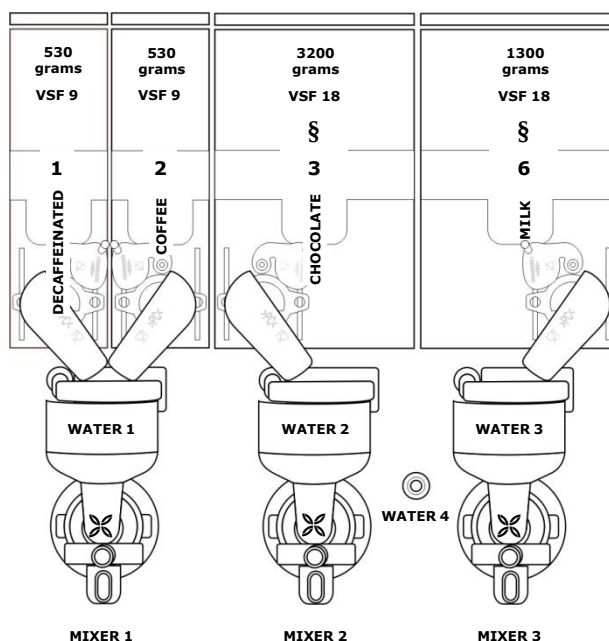


10. parameters

the following tables are intended to supply some information on the programmable parameters of the **Grandezza** 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



product canisters

decaffeinated P1
coffee P2
chocolate P3
milk P6

				Delay	Pause
1 Coffee short	Product	2	7	3	2
	Water	1	38	-	2
	Mixer	1	45	-	-

				Delay	Pause
2 Coffee long	Product	2	7	3	2
	Water	1	78	-	2
	Mixer	1	80	5	4

				Delay	Pause
3 Coffee with milk	Product	2	8	5	1
	Water	1	33	-	2
	Mixer	1	45	-	-
	Product	6	19	3	2
	Water	3	48	-	2
	Mixer	3	70	-	-

				Delay	Pause
4 Decaffeinated with milk	Product	1	8	5	
	Water	1	33		2
	Mixer	1	58		
	Product	6	24	10	1
	Water	3	50		2
	Mixer	3	75		

				Delay	Pause
5 Cappuccino	Product	2	8	65	
	Water	1	33	55	2
	Mixer	1	45	55	
	Product	6	18	3	2
	Water	3	45		2
	Mixer	3	70		

				Delay	Pause
6 Chocolate	Product	3	28	3	2
	Water	2	75		2
	Mixer	2	90		

				Delay	Pause
7 Milk	Product	6	18	3	2
	Water	3	80		2
	Mixer	3	92		

				Delay	Pause
8 Hot water					
	Water	4	43		2
	Mixer				

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
product start delay	sec.	0	20
number of product pauses	n.	0	2
water time	sec.	0	20
water start delay	sec.	0	20
water flow	→	→	→
mixer	sec.	0	20
mixer start delay	sec.	0	20
mixer speed	→	→	→

temperature boiler	°C	0	92
--------------------	----	---	----

product counter	sec.	0	6.000
machine code A e B	n.	0	65.535
fan delay	min.	0	180
beep time	sec.	0	1,5
tuning pump	→	→	→
tuning motor	→	→	→

0 = no product;
0 = no delay;
0 = no pause;
0 = no water;
0 = no delay;
low, medium, high
0 = no mixer;
0 = no delay;
low, medium, high

0 = no limit;

+/- 30%
+/- 30%

10.04. tolerances



due to the industrial standard average tolerances of various machine components like spirals, motors, gears, millstones, etc. and to variable parameters like environment temperature, relative humidity and ageing acting on products, dosages can fluctuate over time and from one machine to another; this aspect has to be carefully considered especially in view of operations like cloning the configuration of recipes, changing components and products, telemetry or other mathematic depending calculations of weights;

**11.
solution of problems**

some malfunctions produce an error message shown by the display; some general information are supplied here below for these messages;
also see technical information no. 138 → error messages

<u>error</u>	<u>actions/comments</u>	<u>cause</u>
OFF 5	EAROM of the CPU board failed; replace the CPU board (see 05.23.a.);	no data storage
OFF 6A	water inlet solenoid valve in safety status or non operating; the internal filter net clogged; water not supplied by the network, water supply flow rate not adequate; supply water circuit throttled or clogged; it may physiologically occur at the first power on when the boiler that is completely empty will require more time than usual to fill;	filling time for the boiler too long
OFF 6B	there is a control connecting water reloads with the drinks you have dispensed; if some water reloads occur without dispensing any drink, this will produce the 6B error; make sure there is no leakage in the water circuit (see 05.08.);	water reloads without dispensing any drink
OFF 10	the values written in the EAROM are not compatible with the operation of the machine or deleted; reload them; replace the CPU board CPU	loss of programming data
OFF 14A	there is a control causing the machine to reload water after a well-defined number of dispensing cycles; otherwise, error 14 is produced; make sure that the water supply from the outside is correct (see 03.03. and 05.08.) and that the water circuit of the machine is orderly (tubes, gaskets, ...);	no water reload
OFF 16	the programming keyboard inside the machine has a short-circuited key or it has been pressed too long; if pressed too long, the manual release button of cups turrets may cause this error; (see 05.23.b.);	programming keyboard
OFF 17	a key of the selection keyboard is not operating (short-circuited); it may also occur if an operator should operate it for too long while programming the machine (keys 4 and 5 to increase and decrease the quantities; see 05.02. and 09.01.a.);	selection keyboard out of order
OFF 24A	the 24 V dc power supply should exceed the limit value; replace the CPU board (see 05.23.a.);	24 V dc power supply excessive
OFF 24B	after al long inactivity, if this error happens, could be enough to switch off and switch on the machine; if the power failure persists, pay attention to the cause: a 24 V actuator could be faulty (mixer or product motor, water inlet electrovalve, ...); check the alternate power supply at the board input; the voltage regulator might be faulty; replace the CPU board, (see 05.23.a.);	24 V dc power supply inadequate or lacking
OFF 33A	the boiler temperature has exceeded the one you have programmed (see 09.01.d.); replace the temperature probe; the device of the CPU board is not working according to control; replace the CPU board;	water temperature high
OFF 33B	temperature safety devices tripped (clicons, thermofuses, ...); restore or replace them; heating element not supplied or not operating; check the connections and continuity of the heating element; if necessary, replace it;	water temperature low
OFF 33C	temperature probe interrupted; connector to the board, wiring; make sure that the cable between the probe and the CPU board is not interrupted or replace the probe	temperature probe
OFF 77	the "clock" function is not properly performed; the buffer battery might be low; after having restored the function, carefully check the clock-related machine functions: happy hour, time bands, ... that might have been compromised by the lack of time references;	CPU

**12.
maintenance**

the **Grandezza** 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's recommendations for handling foodstuffs properly and safely; also visit: <http://eur-lex.europa.eu/>

searching for the regulation
2004/852/EC dated 29/04/2004 (CELEX number: 32004R0852)

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;

the drip tray, the mixers and the soluble canisters can be cleaned in a dish washer using a short washer cycle with a temperature not exceeding the 50° C;



12.01. daily

power off the machine; carefully check the stability and efficiency of the internal connections of the mains supply;

drip tray

extract the drip tray (a), remove the upper grilled cover and wash with plenty of water; open the door and clean the drip tray housing and the nozzle holder spout inside the machine (d);



product slides

turn the baffles of product slides (b) into a close-position, remove them from the canisters and wash them with plenty of lukewarm water (product slides are plug-in secured);



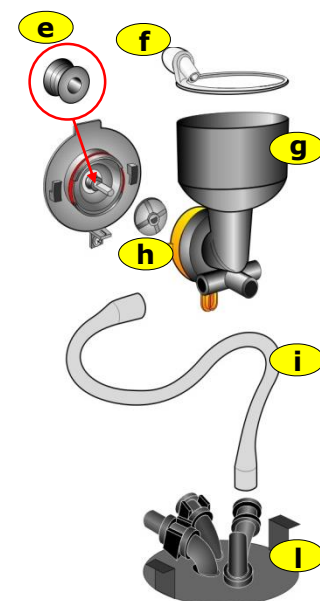
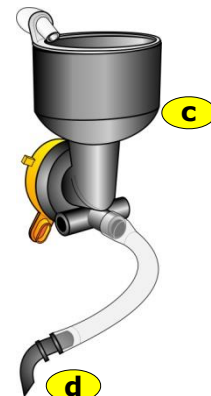
dispensing system

disassemble all components of the dispensing system:

- water dispensing ring (f)
- mixing bowl (g)
- mixer (h)
- dispensing tubes (i)
- product dispensing nozzle holder (l)

turn the fixing levers of mixing bowls clockwise (c), remove the product nozzles from the holder by releasing them, pull the mixing bowl and the dust extraction ring; extract the mixer fan just by pulling it; check the wear state of the w ring (e) sheathing the mixer motor shaft;

wash the assembly of disassembled parts with plenty of lukewarm water;



inner side of the machine

remove all residues from the internal surfaces of the machine and the door, above all in the proximity of the cup station and clean with a piece of wet cloth;

dry the parts carefully and re-mount them on the machine;

when the door is open, power on the main switch again;

use the service key;



attention

act extremely carefully, the vending machine is supplied and running to all effects; the mobile will be handled;

carry out some wash cycles for the water circuits of the machine (see 08.04.);

remove the service key, put it into its housing, close the door;

external body

clean outside the machine by using a piece of non-abrasive cloth, dampened with lukewarm water; use a neutral, non-foamy detergent, only if necessary;

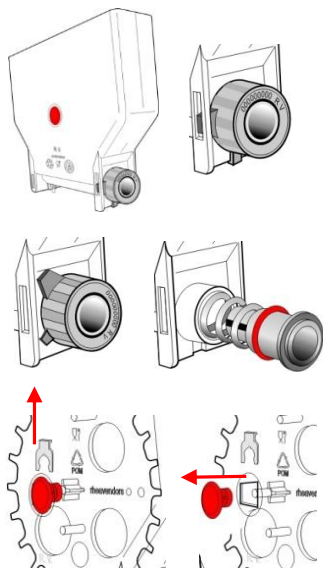
attention

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



12.02. weekly

products canister

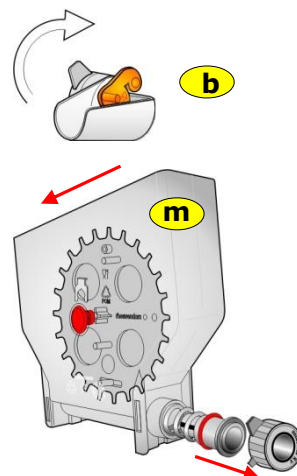


remove the product canisters (m) by lifting them in the front and by pulling them; remove the cover and empty the product residue;

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;



extraction drawers

disassemble the mixing bowls; pull out the extraction drawers (p); wash them with plenty of lukewarm water;

dry the parts carefully and re-mount them on the machine;

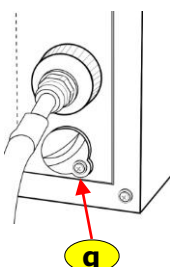


environmental and powder aspirators

carefully make sure that the rotors of the two aspirators (n) on the rear panel of the vending machine can freely rotate without encountering any obstacle; make sure that the corrugated tube for connection between the dust aspirator and the extraction drawer is clean and free of any product deposit;



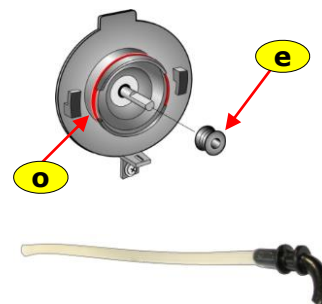
12.03. twice a year



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

empty the boiler by means of a drain pipe (q); extract it from the machine, remove the cover and wash the tank by removing any solid residue that may have built up at the bottom; remove any calcareous deposit from active elements: temperature probe, heating element, level probes, the shafts of rotary pumps, ...;

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



12.05. out of order

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

temporary

- set the boiler water temperature to zero (see 09.01.d.);
- detach the water and energy supply;
- empty the liquid waste 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 2012/19/EU Directive and to the relative rules;

the complete text of the European Directive concerning the specific topic can be consulted at the web site:

<http://eur-lex.europa.eu/>
searching for the directive
2012/19/EU (CELEX number:32012L0019)

13.

how to do to:

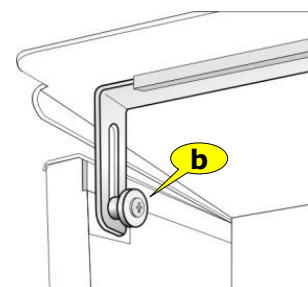
13.01. empty the drip tray

the drip tray is arranged in its work seat and retained by notches in the structure; to extract it, just pull it; lift the cup grilled cover (a) to empty the content thereof;



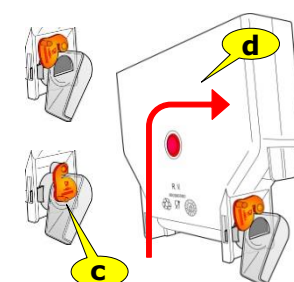
13.02. remove the product canisters

when the door is open, slightly raise the upper panel of the vending machine until it stops and act on the lock bush (b); rotate the closure of the dispensing chute (c) and pull the canister (d) by raising it slightly; remove the cover and load the product; to reassemble it, re-insert the rear bush into the motor gear (e) and the lower pin into the hole of the horizontal surface;



13.03. remove water

arrange a bucket beneath the support surface of the machine; remove the plug intended to close the boiler drain tube and wait for the water outlet;

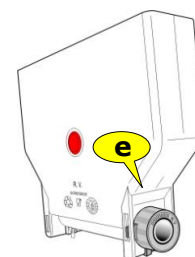


13.04. replace the o-ring of mixing bowl

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

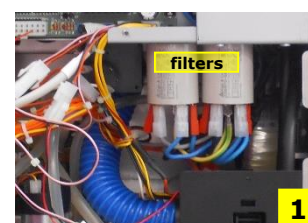
13.05. replace the mixer motor

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



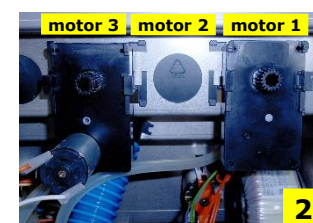
13.06. replace the product motor

remove the product canister; access the rear part of the machine; another two noise filters in front of the product motors "1" and "2", which are installed after rotation by 180° (see picture "1" and "2") for reasons of overall dimensions, have been inserted into the machine with three-phase connection only; in this case, it is therefore necessary first to remove the filter by extracting the small electric cables from the filter and unscrewing it clockwise; extract the two small electric cables from the motor, hold the body, push it downwards 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

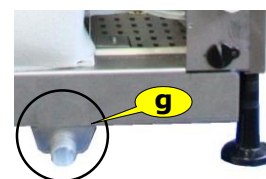
the times specified by table 10.01. can be referred to as the times functional for the machine and the products to be dispensed; however, they can be adapted to the capacity of the user's cups (by changing "time water N") and its tastes (by changing "product N"); please, never forget to make sure that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



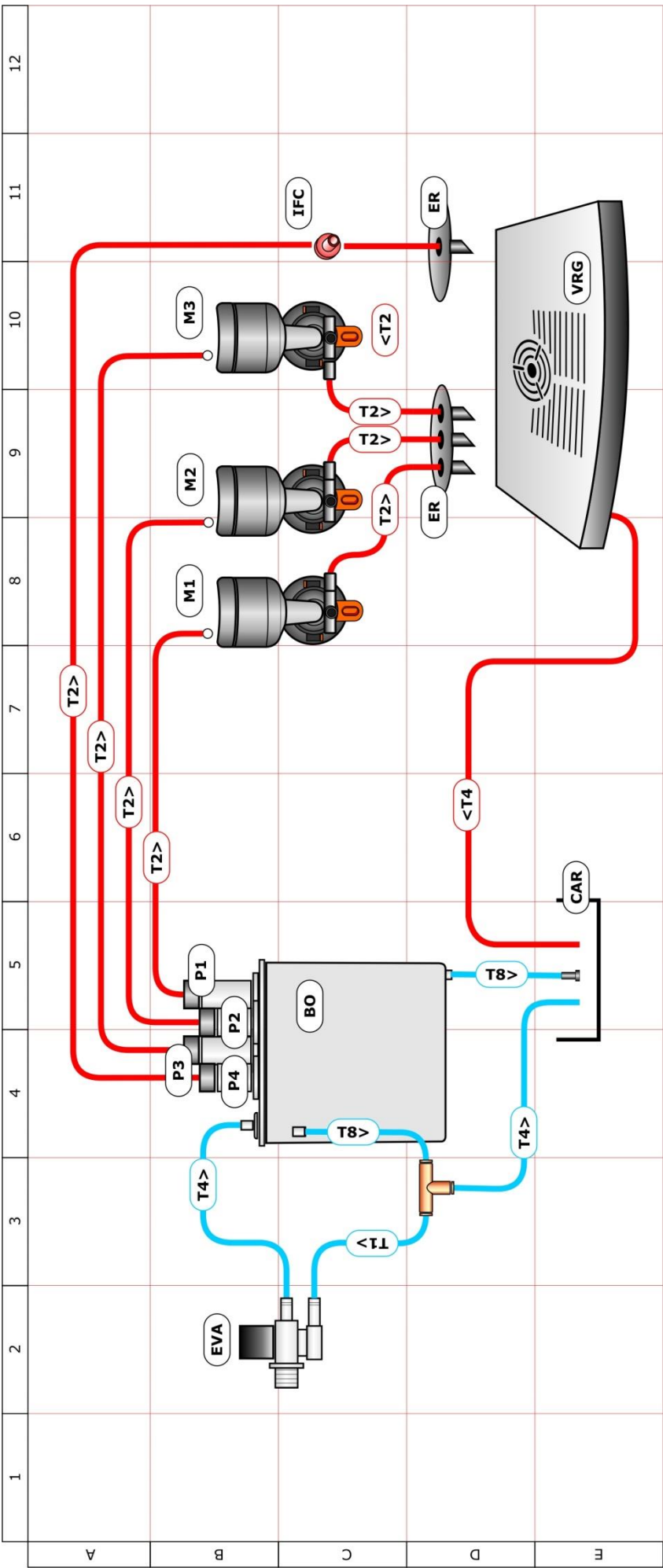
13.08. programme delays

(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;

13.09. 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;
13.10. tune the water flow for instant products	regulation is admitted for boiler pumps (see 05.21. and 05.22.) within the +/-30% maximum limits only when the programmed water flow is "average"; when it is "low", it can be only increased (max. by 30%) whereas - when it is "high" - the flow can be only reduced (max. 30%);
13.11. 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;
13.12. 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;
13.13. 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. daily wash cycle	refer to chapter 12.01. to make sure that the water circuits of the machine are cleaned;
13.15. insert the selection label	a panel arranged inside the door can be easily removed to position the selection label (f); then re-insert the panel and re-position it by securing it by means of its screws;
13.16. canister for waste water	the pre-arrangement at the back of the drip tray (g) can be used to convey waste water into a canister beneath the machine; use a tube that is adequately long for the purpose;
13.17. 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



colonna	sigla	denominazione	colonna	sigla	denominazione	colonna	sigla	denominazione	colonna	sigla	denominazione
L	2B	EVA	water inlet solenoid valve	8B	M1	mixer 1	5E	CAR			
E	4C	BO	boiler	9B	M2	mixer 2					
G	4B	P1	boiler pump 1	10B	M3	mixer 3					
N	4B	P2	boiler pump 2	9D	ER	nozzle support					
D	4B	P3	boiler pump 3	10E	VRG	drip tray					
A	4B	P4	hot water pump	11C	IFC	short insert					