



rhTT10

Installation and Maintenance Manual

Translation of the original instructions – Type: TT10



rhTT10

rhTT10 vho

Manual Code: MAN1300025 rel. 00

date: February 2026

00	26.02.2026	First issue
rel.	date	description
this document is made available electronically on the www.rheavendors.com site		



Please print this manual only if necessary, environmental protection is our common interest.

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1. General information

1.1. Intended use



This machine is intended for professional use only, the correct operation of the machine occurs indoors under normal environmental conditions and at a room temperature between 5 °C and 35 °C, the relative humidity below 80%.

The machine is intended to dispense prepared drinks only, by mixing food products with water (espresso coffee by infusion) and with fresh milk; use food products declared by the manufacturer suitable in open canisters, any other use is improper and it may cause accidents. Dispensed drinks shall be consumed immediately and in no case preserved for later consumption; however, it is recommended to use products specific for this machines only.



Never use the machine for purposes other than its intended use; it is absolutely forbidden to make any technical change.

All the instructions on how to maintain, clean and sanitise the machine shall be strictly observed and followed by the operator who shall pay great attention to treatment, preservation and replacement of the products as scheduled and make sure that they perfectly comply with the standards for preserving and dispensing foodstuffs.



Due to the large variety of available options and the constant technical update of our machines, some special device or function might be indicated and described not in the manner you expect.

1.2. Copyright information

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.

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.

1.3. Storage of the manual

This user manual forms an integral part of the machine and it shall be kept intact and at the user's disposal for the whole life cycle of the machine.



This manual is intended for the installer and the maintenance technician, it shall be kept carefully and accompany the machine at each property transfer during its life.

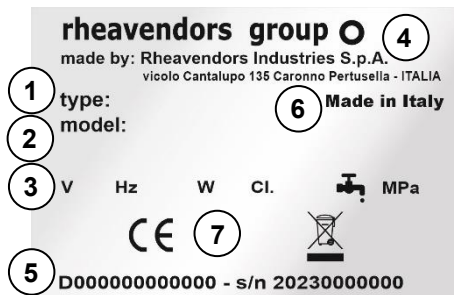
For a better storage handle it carefully, with clean hands and never place it on dirty surfaces. No part shall be removed, torn or arbitrarily modified, the manual is to be filed in an environment protected against humidity and heat and in the proximity of the machine of reference.



A copy of this manual and the complete manual may be requested from the contact details of the following point.

1.4. Serial number label

Silver serial number labels are applied inside and outside the cabinet of the machine, they supply the following information:



1	Type of the machine
2	Model of the machine and configuration
3	Rating plate with power supply voltage and hydraulic supply
4	Manufacturer
5	Machine code - production date and serial number
6	Country of manufacture
7	Certifications

For a quick identification of the machine and for the best support please supply the data on the serial number label and make them known.



Rheavendors Industries S.p.A. is ready to supply support and information on this machine;

telephone: +39 02 966551

e mail: rheavendors@rheavendors.com

for the references of our partners all over the world visit the site: www.rheavendors.com

1.5. Conformity mark



DECLARATION OF CONFORMITY

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

DIRECTIVES : 2014/30/EU, 2006/42/EC, 2012/19/EU, 2011/65/EC, (EU)2015/863, 2014/53/EU*

REGULATIONS : 1907/2006/EC, 1935/2004/EC

MANUFACTURER : Rheavendors Industries S.p.A. - Via Valleggio, 14 - 22100 Como (CO) – Italy

(*) The machine could be equipped with radio modules approved by Rheavendors Industries S.p.A.; on the label, some letters identify the type of radio technologies (as shown below)

w	r	m	L
Wi-Fi	RFID	GSM module	LTE module

The radio parameters are:

Wi-Fi : 2402-2480 MHz, max power 20 dBm

RFID : 13.56MHz, radiated H-field (maximum field strength) H-field @ 10m =-31.5 dBμA/m

GSM module : 33 dBm 900 MHz; 30 dBm 1800 MHz.

LTE module : LTE-FDD: B1/ B3/B7/B20: Class 3 (23 dBm ±2 dB)

WCDMA: B1/B8: Class 3 (24 dBm +1/-3 dB)

GSM: B8 (900 MHz) Class 4 (33 dBm ±2 dB) and B3 (1800MHz) Class 1 (30 dBm ±2 dB)

2. General safety instructions

2.1. Symbols of danger

Before using the machine, carefully read this information that helps you behave properly and guarantees 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 live parts.



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 performed, the actions marked by this symbol may expose to accidental contacts with moving parts.



CRUSHING

If not properly carried out, the actions marked by this symbol may expose to a risk of crushing.

The same symbols are placed inside the 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 activating all machine functions when the door is open is only reserved to the technical operators who know the operation of the machine, who are aware of its 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 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°.

2.2. Safety standards for maintenance



The machine shall be installed according to the laws in force in the Country of operation; pay special attention to the rules about the machines directly connected with the hydraulic network.

Pay special attention to the chapters and notes highlighted by the symbols of alert and strictly observe the rules concerning the technicians', operators', and users' safety.

The 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 machine.

Should you find out a water leak, the presence of smoke, ... immediately detach the machine from the electric and hydraulic network, never try to restore its operation and apply to skilled technicians.

The inclination of the support surface of the machine shall not exceed 2°.

The normal operation conditions of the machine shall be:

Temperature: 5 °C ÷ 35 °C and maximum relative humidity: 80 %.

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 set of mobile joints (old ones shall never be reused), whose material is type-approved for food use according to the laws in force in the Country of operation and capable of supporting the operating pressure of the hydraulic network, in compliance with IEC/EN 61770.

The user is forbidden to approach the machine during maintenance and service operations.

The area where to carry out maintenance and service operations shall be properly signalled.

Never remove protections, never override safety devices and never modify the machine or its components.

The machine is not suitable for installation in environments where you use water jets for cleaning (e.g. large kitchens, canteens) or steam jets or sparks (e.g. machine shops).

For cleaning at regular intervals refer to the chapter about maintenance.

2.3. Residual risks



A residual risk is understood as a potential danger that cannot be eliminated and 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 and well-ventilated 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, vapours or sparks 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 water limits and provide for an effective earthing.



Even if detached from supplies, the machine may contain pressurised hot water at a high temperature.



Never detach hydraulic and electric supplies when they are active and/or the machine is in use.

3. 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.

The mechanical and electronic components of the machine are guaranteed for twelve months, starting from the sales date certified by the fiscal receipt.

The guarantee shall be understood as the 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 Rheavendors Industries S.p.A.'s property (request "Form Materials under guarantee – Authorisation to return").

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.

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; moreover, 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.

The guarantee is excluded in all cases of improper use of the machine.

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 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 to a forced stop of the machine nor to extend the guarantee period.

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.

4. Technical data of the machine

DIMENSIONS	rhTT10 1,2 kg	rhTT10 2kg vho	rhTT10 3kg vho
Height:	660 mm.	740 mm.	790 mm.
Width:	375 mm.	375 mm.	375 mm.
Depth:	580 mm.	580 mm.	580 mm.
Depth with open door:	762 mm.	762 mm.	762 mm.

NET WEIGHT			
rhTT10	±50 kg	±50 kg	±50 kg

SUPPLIES			
Hydraulic:	water inlet with 3/4" Male Gas-fittings		
Hydraulic pressure range:	0.1 – 1.0 MPa		
Hydraulic flow rate:	>2 l/min.		
Electrical voltage	220-240 Vac, 50-60 Hz or 120 Vac, 60 Hz single-phase and ground		
Power	from 1,800 W to 2,860 W		
Cable of type	H05VV-F 3G 1.5 mm ² (230 V); SJTO 3x16AWG (120 V)		

values and indications for the standard machine
anyway refer to the data supplied by the serial number label

SOUND PRESSURE	
A-weighted sound pressure level:	less than 70 dB (A) measured at 1 meter from the surface of the machine and at a height of 1.6 meters from the floor

WATER AND ENERGY SUPPLY TOLERANCES / ENVIROMENT TOLERANCES	
total water hardness:	from 10 °f to 25 °f
water conductivity:	400 µS @ 20 °C
nominal electric voltage:	+10 % / -15 %
temperature:	from 5 °C to 32 °C
relative humidity:	maximum 80 %

MACHINE SAFETY DEVICES	
Hydraulic	Water solenoid valve with pressure regulator
Electric door	Door interlock microswitch
Electric fuses 6.3x32mm	12 A delayed /16A fast – 230 Vac/120 Vac
Thermal Klixon on heating devices	Safety thermostat manually resettable

VARIFLEX ESPRESSO COFFEE BREWER

Ø45 mm.

Ground capacity

8 ÷ 14 g

Motor

30 W – 24 Vdc

HEATING ELEMENT

Pressure boiler

1,600 W (120V) - 2,000 W (230V)

Thermoblock (max)

1,300 W (120V) - 2,000 W (230V)

WATER PUMP

Rotary pump

24 Vdc

PRODUCT MOTORS

Motor

24 Vdc

MIXER MOTORS

Motor

24 Vdc

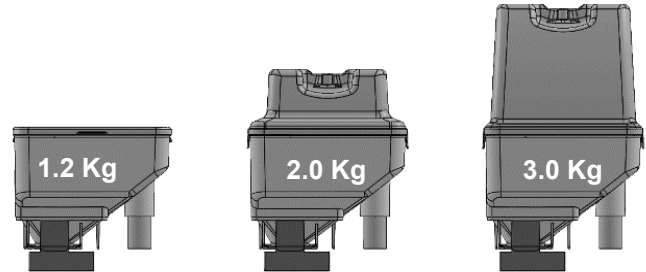
4.1. Product canisters capacity

In according to the machine configuration, product canisters with mixer gear and product shaker, if arranged by the configuration and with standard or shorter product chute outlet:

- instant canister capacity:

Height:	instant canisters 199 mm	
Width:	55 mm	112 mm
Volume:	1.5 litres	3.2 litres

- coffee beans canister (or hopper) capacity



The tests carried out by Rheavendors use instant products and coffee beans suitable for these machines purposes.



Rheavendors Industries S.p.A. is ready to supply support and information to carry out operation tests by using products having different characteristics.



Machines and components have been tested with standard products; if you plan to use specific non-conventional products our customer service is available for preventive testing that may also affect the choice of some machine components.

USE SPECIFIC PRODUCTS FOR MACHINES ONLY.

The functionality and reliability of the machine might be influenced by external factors not complying with the standard operation conditions of equipment.

4.2. Tolerance values

Because of the standard industrial average tolerance values of various components of the machine, such as spirals, motors, gears, millstones, etc., and because of variable parameters, such as ambient temperature, relative humidity and ageing, that may act on products, dosage may vary all over the time and from one machine to the other one; this aspect must be carefully considered, above all in view of operations, such as the cloning of the configuration of recipes, the change of components and products, telemetry and other mathematical calculations depending upon weights.

4.3. Configurations

Possible configurations are numerous and they are coded by categories exemplified here below in the abbreviation of the machine:

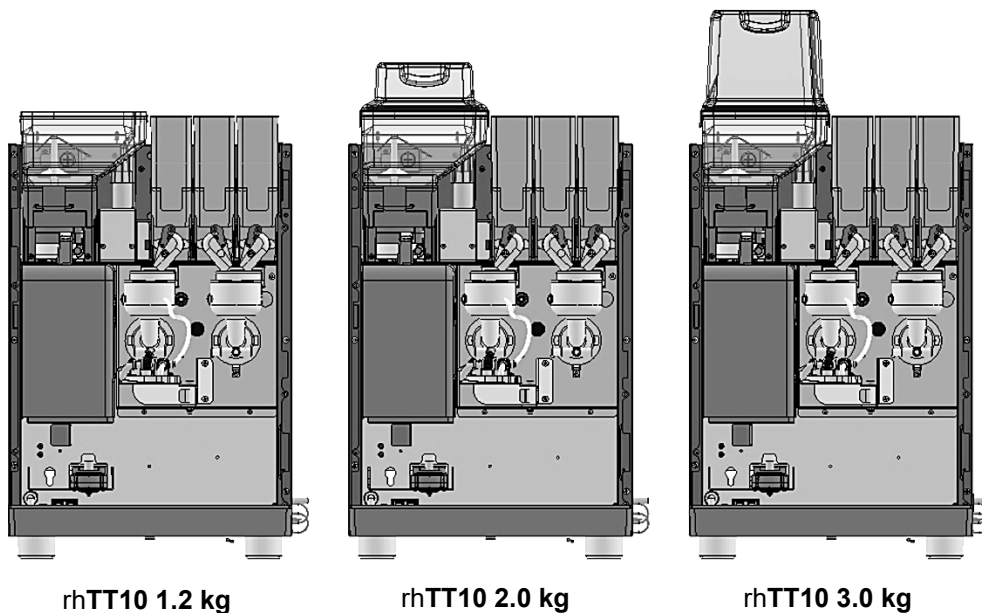
espresso	instant products and coffee beans	E
product canisters	number of instant products and coffee beans	E3
water supply	external, by means of the inlet solenoid valve	E3 R
mixer number	mixer number	E3 R2



The product canisters, mixing bowls and mixers are numbered progressively from the left to the right, this numbering is used for programming drinks.

Configuration examples:

Various possible configurations examples for coffee beans canisters are represented here below, the operation principles are any way universal and applicable to all machines:



4.4. Accessories



To complete and supplement the machines of the range, Rheavendors has got a series of accessories manufactured for these machines, such as cabinets, autonomous water supply kits, anti-limestone filters, connection with machines dispensing cold drinks and water modules.

Rheavendors Industries S.p.A. is at disposal for any kind of support and information on special configurations.

5. Installation

5.1. Receipt

Upon receipt of the machine make sure that it has not been damaged during transport.

If you should find out any damage, immediately make a complaint to the carrier: the package shall be intact, it shall show no sign of alteration, dent, impact, deformation, breakage, wetted area or sign that may indicate that the package has been exposed to rain, frost or heat.



Never connect the machine hydraulically and/or electrically if the package has been damaged during transport and /or in case of missing visible parts.

5.2. Handling

The machine shall be transported, handled and positioned by skilled and trained personnel; **never overturn the machine while transporting it and never forget to observe the orientation arrows on the package**; never lift the machine with ropes, never drag it, never lay down the machine for transport and avoid any shock.



Two operators provided with personal protective equipment (safety shoes, gloves ...) are required for handling; the machines weigh abt. 50 kg.

Handle the machine carefully to prevent any accident to the personnel in charge.



For handling use a lift truck or a manual transpallet for supporting its weight and handling it at a lower speed to avoid dangerous overturning or swaying motions.

The manufacturing company is not liable for any damage caused by the total or partial non-observance of the a.m. warnings.

5.3. Unpacking

Put the packed machine close to its working position, remove the machine from its package, lift the machine and arrange it on the working surface.

Use the key placed in the dispensing compartment to open the door of the machine and remove the adhesive tape and the polystyrene from the internal components (product canisters...).



The materials forming the package shall be left out of the reach of unauthorised personnel, in particular of children, since they represent a potential source of danger.



The disposal of package components may be carried out by specialised companies only.

5.4. Positioning

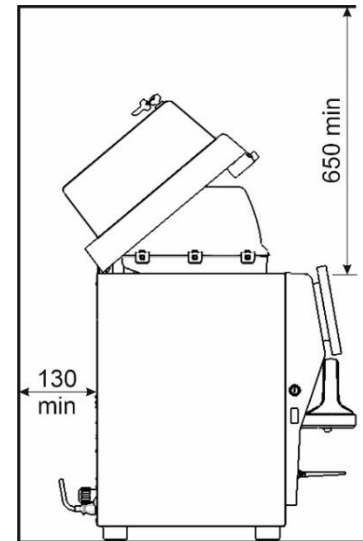
When installed in its workplace, the machine shall be positioned in a room protected against atmospheric agents: it is not suitable for installation outdoors.

It shall be installed in dry rooms at a temperature between 5 °C and 35 °C and it can't be installed in environments where you use water jets for cleaning (e.g. large kitchens, canteens) or steam jets or sparks (e.g. machine shops).

The switch, the socket and the relative plug shall be easily accessible, make sure that the wall socket is suitable for the type and length of the machine cable.

Use the cable supplied with the machine for connection with the electric network, the machine shall be placed close to a wall so that the rear panel and the external perimeter are min. 130 mm far from the walls for regular ventilation.

The machine shall in no case be covered with cloths or structures.



Make sure that the floor can support the weight of the machine, that the machine is placed on a levelled surface by adjusting its feet so that the inclination of the cabinet will not exceed 2° and that the machine is perfectly stable.

5.5. Electric connection

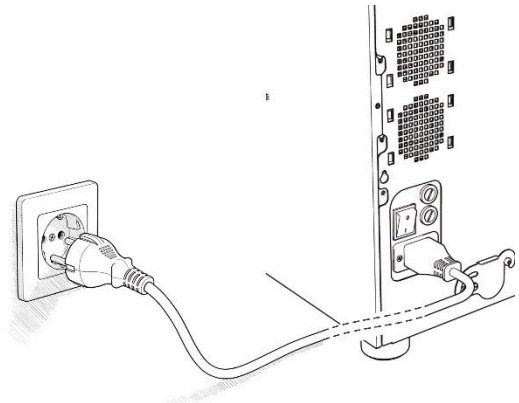
The machine is arranged for electric operation at a single-phase voltage of 220-240 Vac or 120 Vac and it is protected by fuses.



Make sure beforehand that the power supply installation can supply the power required by the machine and strictly refer to the rating plate of the machine on the serial number label.



Observe the laws on connections with the electric network in force in the Country of operation, make sure that the power supply cable is neither crashed, nor bent, damaged by any sharp edge or subject to any mechanical load.



The electric safety of the machine is ensured only when it is properly connected with an effective earthing system; professionally qualified personnel shall check this fundamental safety requirement, the intactness of the machine and its compliance with the standards at least once a year.



It is mandatory to install a residual current device operating at less than 30 mA to detaching the machine from the mains and promptly tripping in case of improper electric input to considerably decrease the risks from any short-circuit. Connect the machine without using reductions, adapters, multiple sockets or extensions; use the cable supplied with the machine for connection with the network only.

If damaged, the power supply cable shall be replaced by the manufacturer or its customer care service or, anyway, by a person similarly qualified so as to prevent any risk by using only cables of the type: H05VV-F 3G 1.5 mm² in cross-section (230 V) or SJTO 3x16AWG (120 V).

5.6. Hydraulic connection

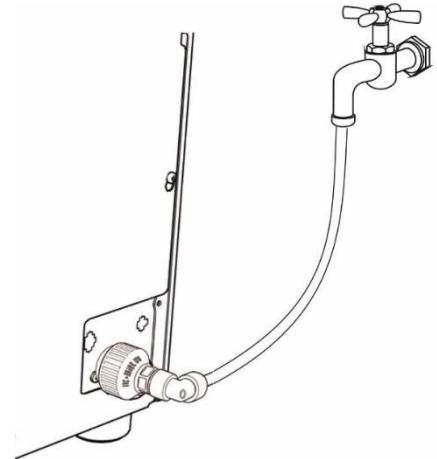


Observe the laws on connections with the hydraulic network in force in the Country of operation.

The water used to supply the machine must have all the features suitable for human consumption, let water come out of the hydraulic network until it is clear and free from any trace of dirt.

Make sure that the pressure and the flow rate of the network is the one required for the machine and use a pump or a reducer in case of non-compliance; it is recommended to install a tap detaching the machine from the hydraulic network.

The connection shall be carried out by means of a new tube only, type-approved for food use.



5.7. Water quality

The machine shall be supplied with treated or non-treated water, for drinking purposes and suitable for the preparation of food and drinks or for any other home use, supplied through a distribution network and they shall include neither micro-organisms and parasites nor other substances, whose quantities or concentrations may represent a potential danger for human health.

In this regard, the water features shall observe the laws in force in the Country of operation of the machine.

Hardness tolerance: from 10°F to 25°F

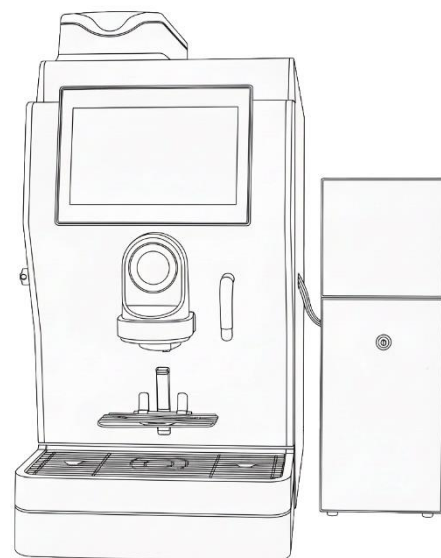
Water recommended conductivity: 400 µS @ 20°C

5.8. Cooling unit connection

Place the fridge on the right of the machine.

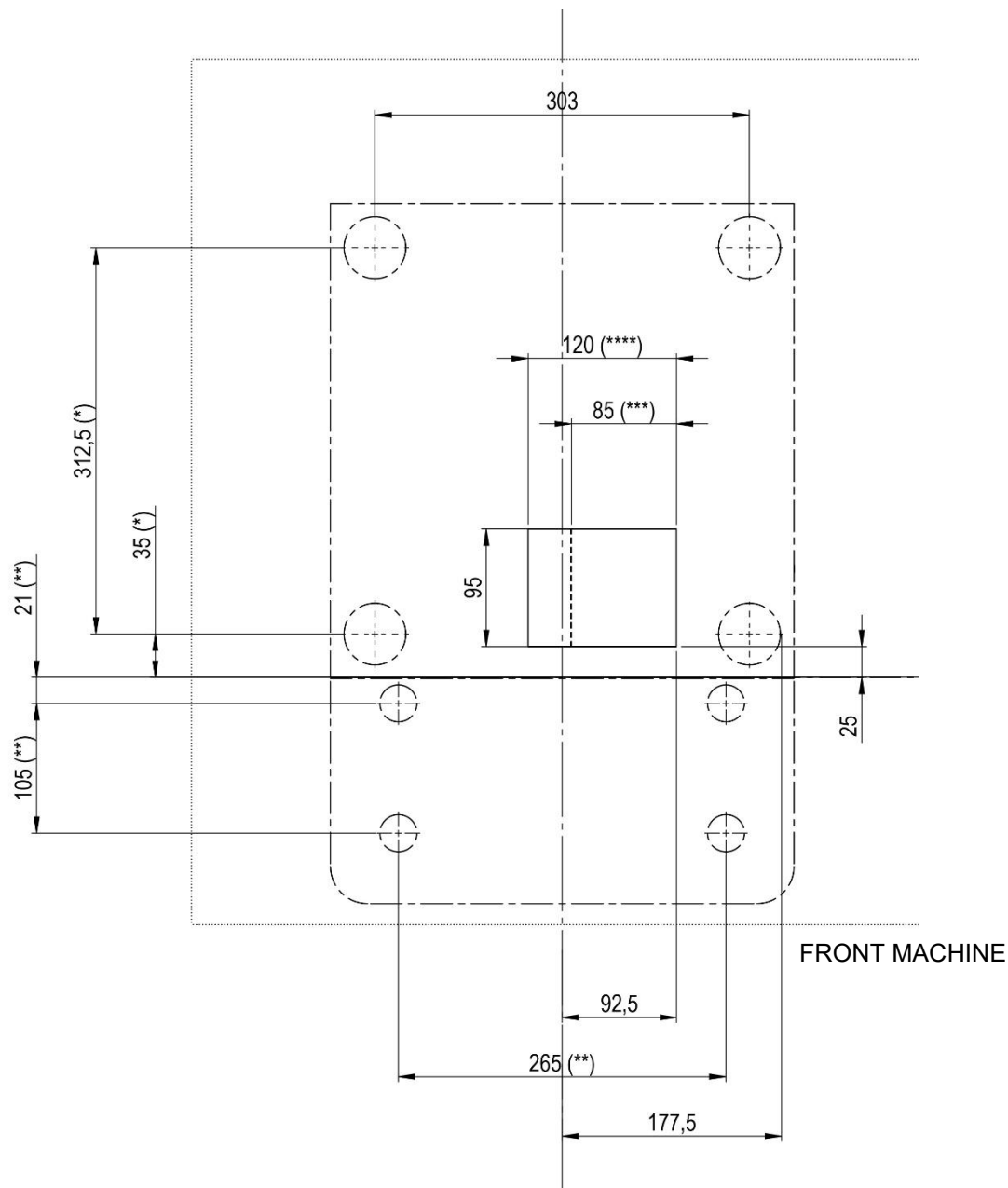
Pass the milk tube coming from the machine through the hole and put it into the milk container.

Connect the fridge to the power supply.



5.9. Discarding liquid and solid residues under the work surface

5.9.1. Drilling template (view from above)

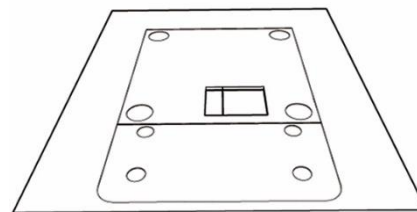


(*) machine feet

(**) drip tray feet

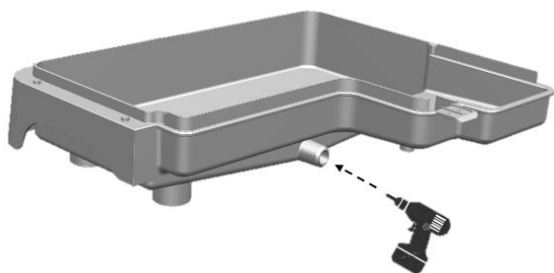
(***) hole size for grounds doses

(****) hole size for grounds doses + drip tray drain

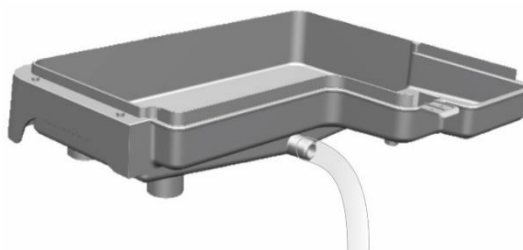


5.9.2. Direct discharge drip tray

Drill the drip tray with 10 mm drill bit



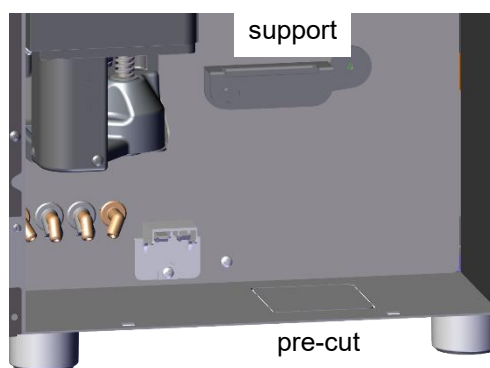
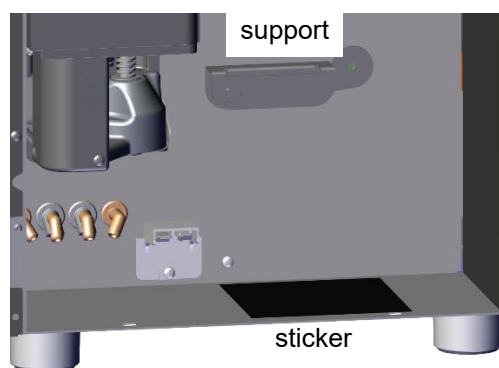
Connect the drain pipe



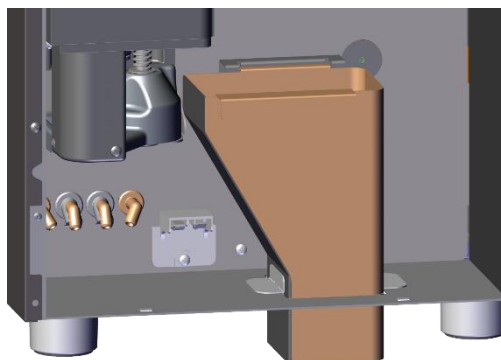
Pass the drain pipe through the hole and put it into the below external waste tank

5.9.3. Grounds conveyor chute

Remove the sticker and the pre-cut cover metal sheet of the drain hole



Insert the conveyor into the hole and fix it to its support



6. Description of the machine

The machine is a machine designed for being used by all users since requiring no specific competence; to obtain the drink press the key you wish for a short time.

Front door panel (example)



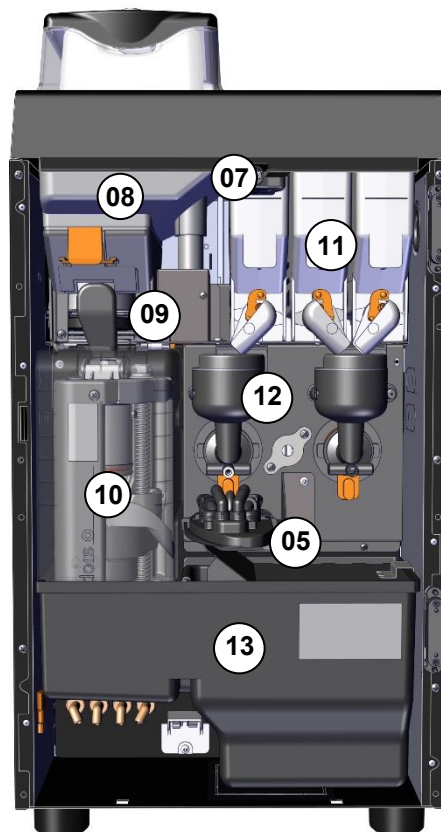
Front door panel (example)



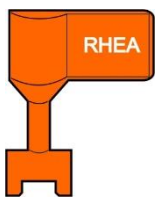
Rear view of the machine



Inner view of the machine (example)



- 01 - Door lock:** the door is closed by means of a lock; the key is mapped and numbered for identification.
- 02 - Touch screen:** the central touch screen gathers all the functions necessary for communication with users; the selection keyboard of products, the programming keyboard and the multimedia messages for information for information are combined in this component.
- 03 - Dispenser:** the machine has got a fixed drink dispenser on the cup support surface.
- 04 - Side hot water nozzle:** the machine includes a nozzle dedicated to hot water, positioned on the right side of the dispensing compartment, separated from the standard one in the nozzles holder; it is controlled by a dedicated solenoid valve.
- 05 - Nozzles holder:** a fixed support on the cup station is intended to accommodate the dispensing tubes coming from the coffee brewer, the bowls of mixers and the milk circuit.
- 06 - Drip tray:** it collects any residual drop from the dispenser and, if necessary, the waste water in excess from the three-way solenoid valve and from the milker solenoid valves; it is slide-inserted at the bottom of the machine cabinet, in the front, and it is composed by a drawer and a grilled cover that can be washed by running water; an electric contact is intended to control the filling level.
- 07 - Door switch:** it powers off the machine when the door is open.

**Service key:**

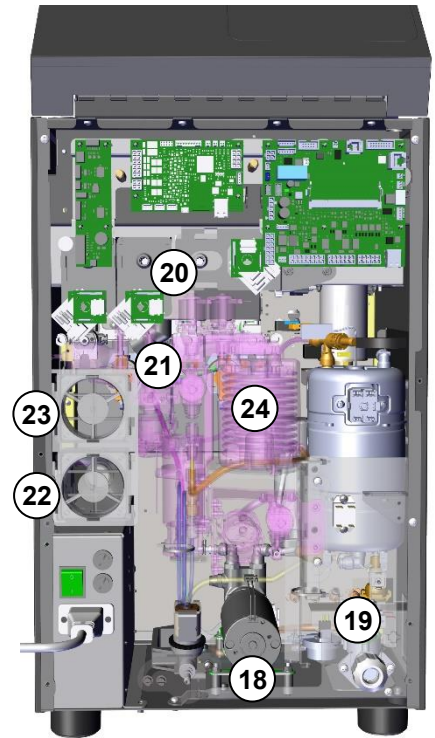
use the service key to supply the machine if it is necessary to activate the machine when the door is open.

Attention some parts remain live any way: act with the utmost caution

the key is inside the documentation of the machine and its use is reserved to the properly trained technical personnel only.

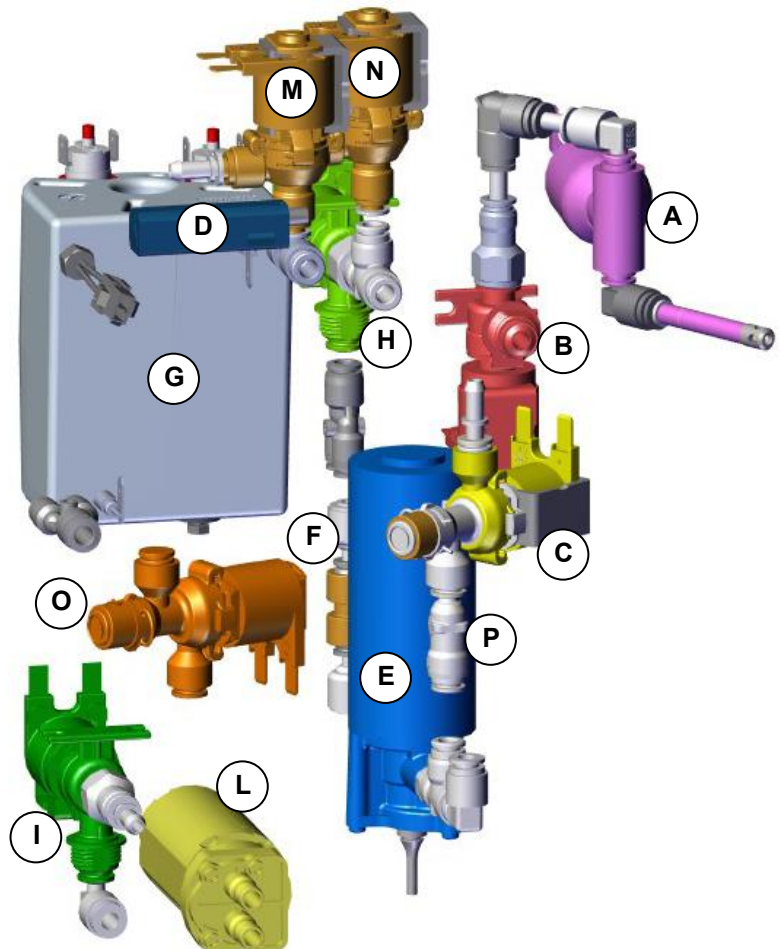
- 08 - Coffee beans canister:** the coffee beans canister (hopper) has got a closing blade for insertion before lifting it; the presence of the coffee beans canister is controlled by a micro switch; canisters are closed by a cover to protect products. There are three different types of coffee beans canisters, in order to give more capacity to the machine: 1.2 kg – 2.0 kg – 3.0 kg.
- 09 - Grinder:** it grinds coffee beans in the canister to pour it in the coffee brewer chamber; the grinding degree can be manually adjusted by means of the knurled white knob (clockwise=open, counterclockwise=close) standing out of the grinder body; the ground quantity is determined by a software parameter that establishes the grinder work time.
- 10 - Coffee brewer:** after receiving the coffee dose from the grinder and compressing it, percolation occurs in the coffee brewer by using the water from the pump; the used dose is conveyed to the chute and the drawer at the base of the machine; the brewer structure is kept at the correct temperature by a hot air heating system that can be programmed via software.
- 11 - Product canisters:** instant product canisters dispense their content into the underlying mixing bowls; an internal worm screw - driven by the product motor - will push the instant foodstuff to the product chute; they can be equipped with a wheel and a shaker for constant dispensing; the outlet, of a standard or smaller size, has got a closing baffle.
- 12 - Mixing bowls:** the mixing bowls of mixers are intended to receive instant products for mixing them with water; the fan of mixer motors acts at the bottom thereof and the drink flows into the dispenser through a silicone tube; the mixing bowls and outlet tubes can be washed with lukewarm running water.
- 13 - Grounds container:** it collects abt. forty ground doses, after having used them in the coffee brewer; a software option shows a warning message as soon as the tray is full.
- 14 - Fuses:** installed on the mains power supply to protect the machine; fuses must be necessarily replaced by specialised technical personnel only.
- 15 - Power on switch:** to power on and off the machine.
- 16 - Electric connection:** a three-terminal socket is arranged at the back of the cabinet for the connection of the mains cable.
- 17 - Water inlet solenoid valve:** the water inlet solenoid valve is provided with a pressure reducer.

- 18 - Rotary pump:** a rotary pump directs the water to the solenoid valves and the three ways for the espresso circuit.
- 19 - Volumetric counter:** it supplies the CPU the water quantity running through the coffee brewer to establish its volume.
- 20 - Product motors:** they are intended to rotate the worm screws inside instant product canisters to pour the product quantity necessary for selection into the mixing bowls.
- 21 - Mixer motors:** the mixer motors favour the mixing of instant products with water by rotating the fan mounted on their axis; the rotation speed rate is adjustable for adaptation to the features of the various products.
- 22 - Powder aspirator:** an aspirator ejects the product residues in suspension from the inside of the machine; the aspirator is connected with a drawer beneath the product chutes so as to remove the residual very fine powder resulting from selections; the working time of the aspirator can be programmed by means of a software parameter.
- 23 - Air aspirator:** to aspirate the air from the internal environment of the machine to avoid any condensate.



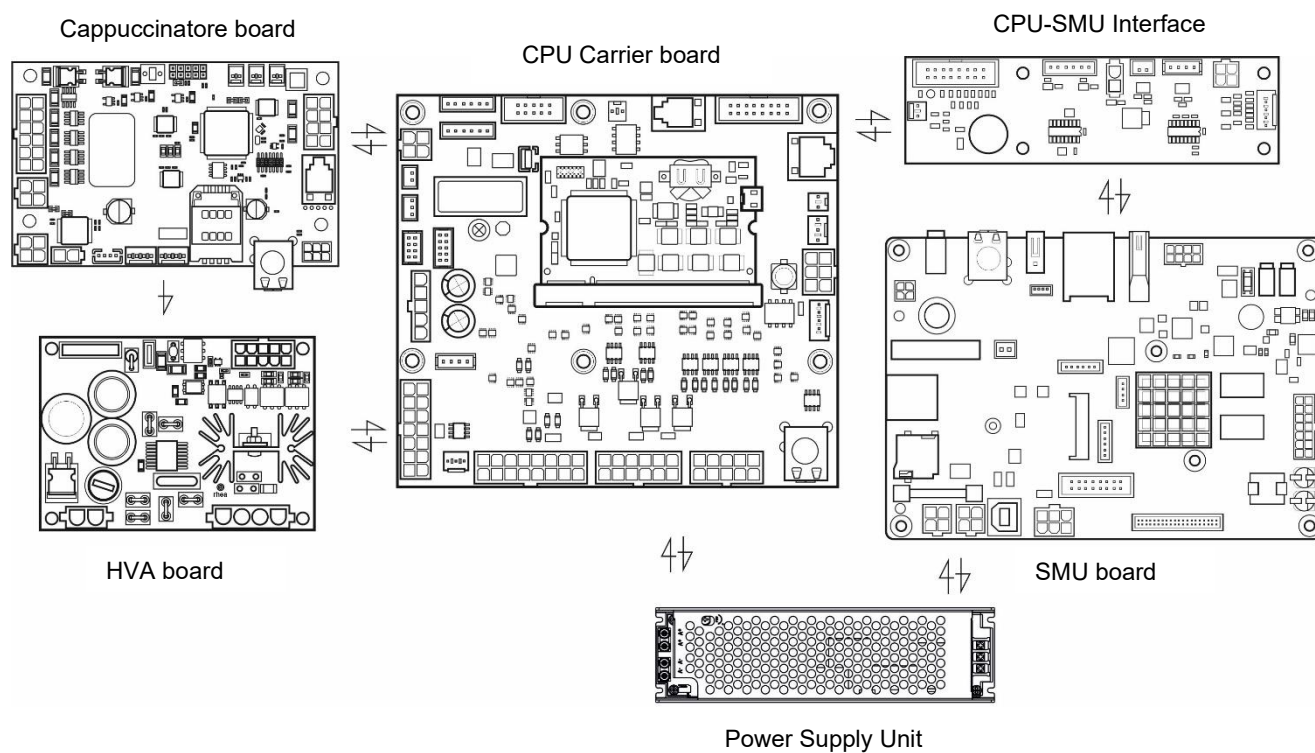
24 - Fresh milker circuit components:

- A= conductivity sensor
- B= milk solenoid valve
- C= water/air solenoid valve
- D= air proportional valve
- E= milk pump
- F= restrictor
- G= thermoblock
- H= cold milk solenoid valve
- I= waste suction solenoid valve
- L= waste suction pump
- M= hot emptying solenoid valve
- N= cold emptying solenoid valve
- O= hot/cold flushing solenoid valve
- P= non-return valve

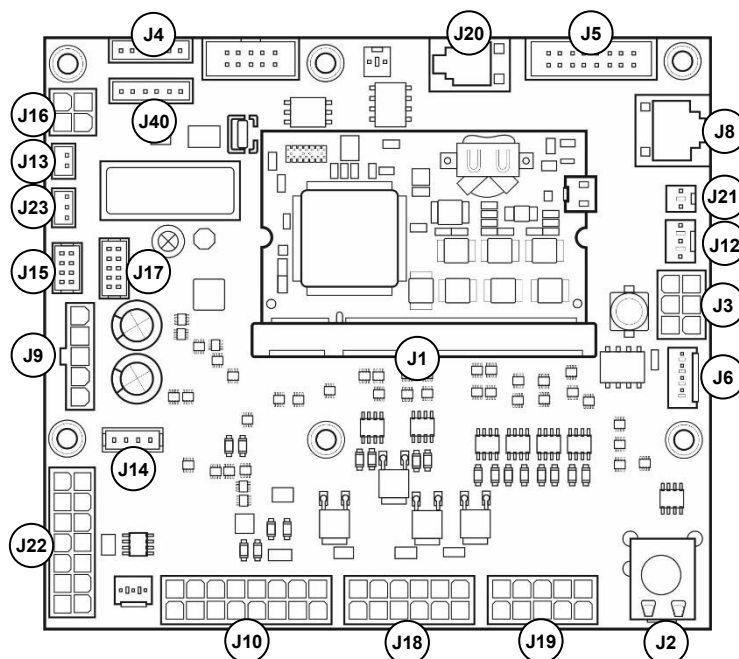


7. Electronics

7.1.Connection diagram



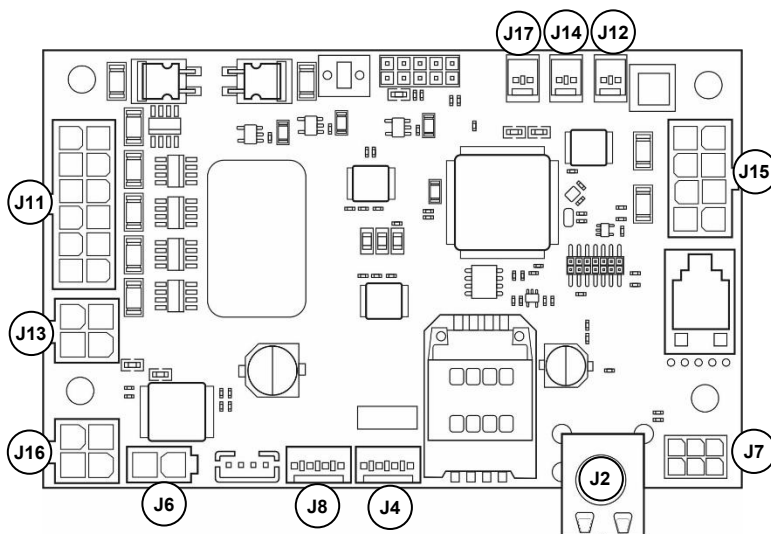
7.2.Carrier board



J_	CARRIER BOARD - Connectors description		
J1	SOM Board connection	J14	npn - Boiler/Pump SSR
J2	Double USB-A socket vs J2 Cappuccinatore Board	J15	GPIO-spare
J3	MDB connector	J16	Power supply 24 Vdc vs J13 Cappuccinatore Board
J4	Power supply 5/24 Vdc CPU-SMU Interface - OUT	J17	I/O-spare
J5	Signals CPU-SMU Interface	J18	Solenoid valves/pumps/mixers
J6	Executive connector	J19	Product motors
J8	Rheaflash black box	J20	RFID connector or vs J4 HVA board
J9	Power supply 24 Vdc - IN	J21	NTC Brewer temperature
J10	IN/OUT signals (driptray, fans, etc.)	J22	IN/OUT signals coffee brewer
J12	NTC Boiler temperature	J23	Freevend key
J13	npn - Grinder 24 Vdc	J40	Power supply 5 Vdc Air Proportional Valve

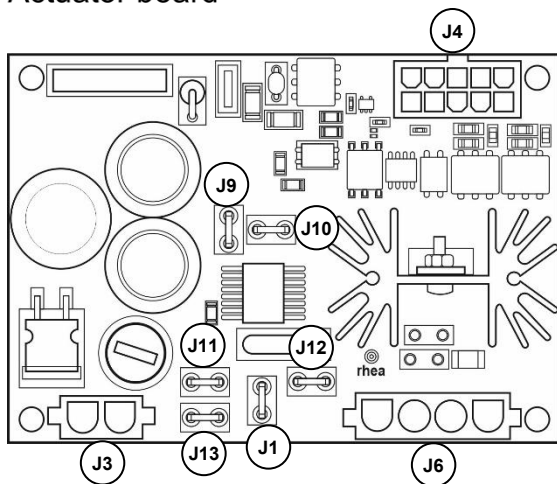
7.3. Cappuccinatore Board

The Cappuccinatore board exchanges logic commands with the Carrier board by means of a double USB connector.



J2	Double USB-A socket for J2 Carrier board	J12	Milk temperature probe
J4	Temperature sensor	J13	Power supply 24Vdc vs J16 Carrier board
J6	OUTPUT Milk Pump	J14	Fridge temperature probe
J7	OUTPUT Thermoblock / INPUT zc	J15	Device outlet 24 Vdc (air prop. Valve)
J8	Conductivity sensor	J16	Power supply 24Vdc vs HVA
J11	OUTPUT Milker Device	J17	Thermoblock temperature probe

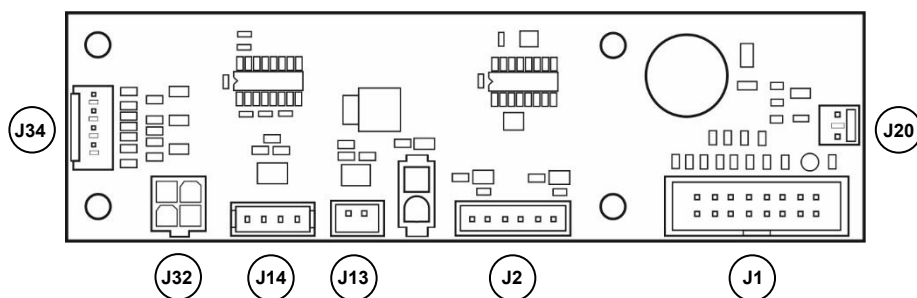
7.4. Hight Voltage Actuator board



J1-J12	IN line/neutral	J3	GRINDER control
J9-J10	OUT neutral	J4	IN/OUT signals
J11-J13	OUT line	J6	Thermoblock control

7.5.CPU-SMU Interface

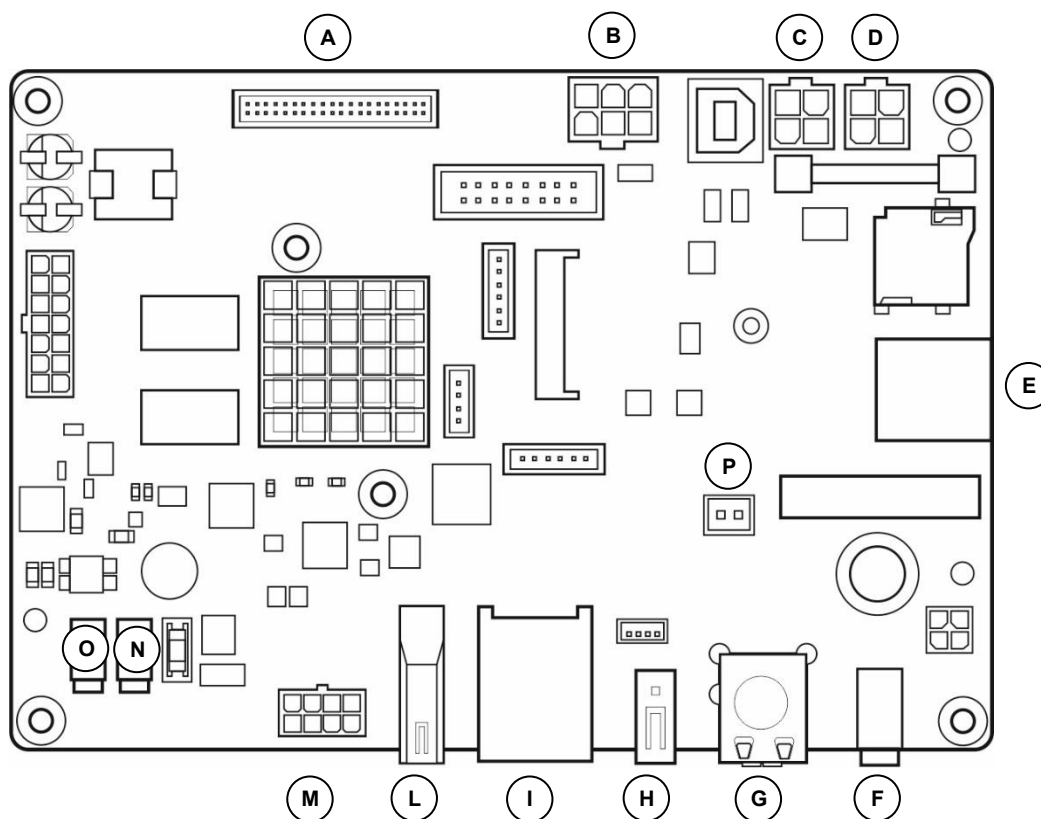
The CPU-SMU board interface, housed on the rear of the machine, controls the operation of the machine and the exchange of information with the other boards.



J1	IN/OUT signals vs Carrier board (J5)	J20	Prog. Button (CN51)
J2	Power supply 24 Vdc Carrier board (J4)	J32	rs-232
J13	Led LOGO (J1)	J34	Cup presence
J14	Led fixed		

7.6.SMU Board (CPU)

The SMU board, housed inside the door, controls the operation of the machine and the exchange of information with the other boards.



A	IN/OUT signals 10" display touch-screen	H	USB-A socket
B	MDB connector	I	Ethernet LAN socket
C	Can-Bus connector	L	HDMI socket
D	Can-Bus connector	M	RS232 modem signals
E	Slot for SIM card	N	Power supply 24 Vdc 10" display touch-screen
F	Jack audio 3,5 mm	O	Power supply 24 Vdc from PSU
G	Double USB-A socket	P	Prog. Button

8. Water and milk heating elements

8.1. Pressured boiler

A rotary pump conveys the water to the solenoid valve for instant products and to the three ways for the espresso.

The pressure boiler is complete with a temperature probe, a safety thermostat manually resettable and a pressure relief valve .

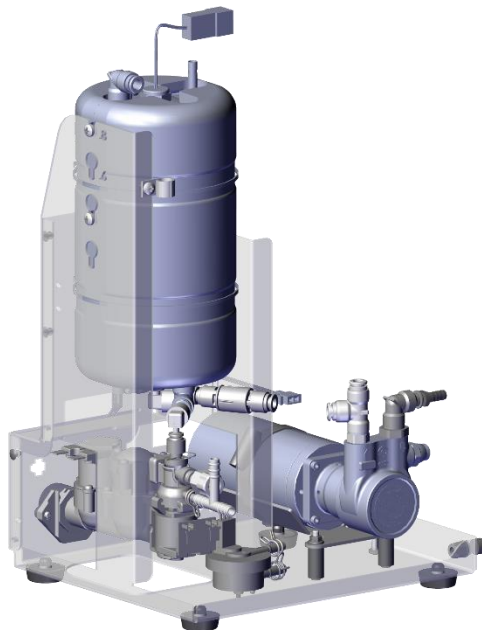
A solid state relay arranged inside the machine behind the supply bock can directly supply the pressure boiler heating element so as not to overload the power supply board.



Attention

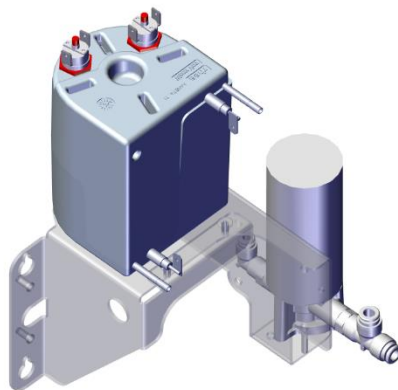
These components may be very hot even if the machine is off.

The water heating system occurs through an electric heating element.



8.2. Thermoblock

A pump conveys the milk to the thermoblock for heating.

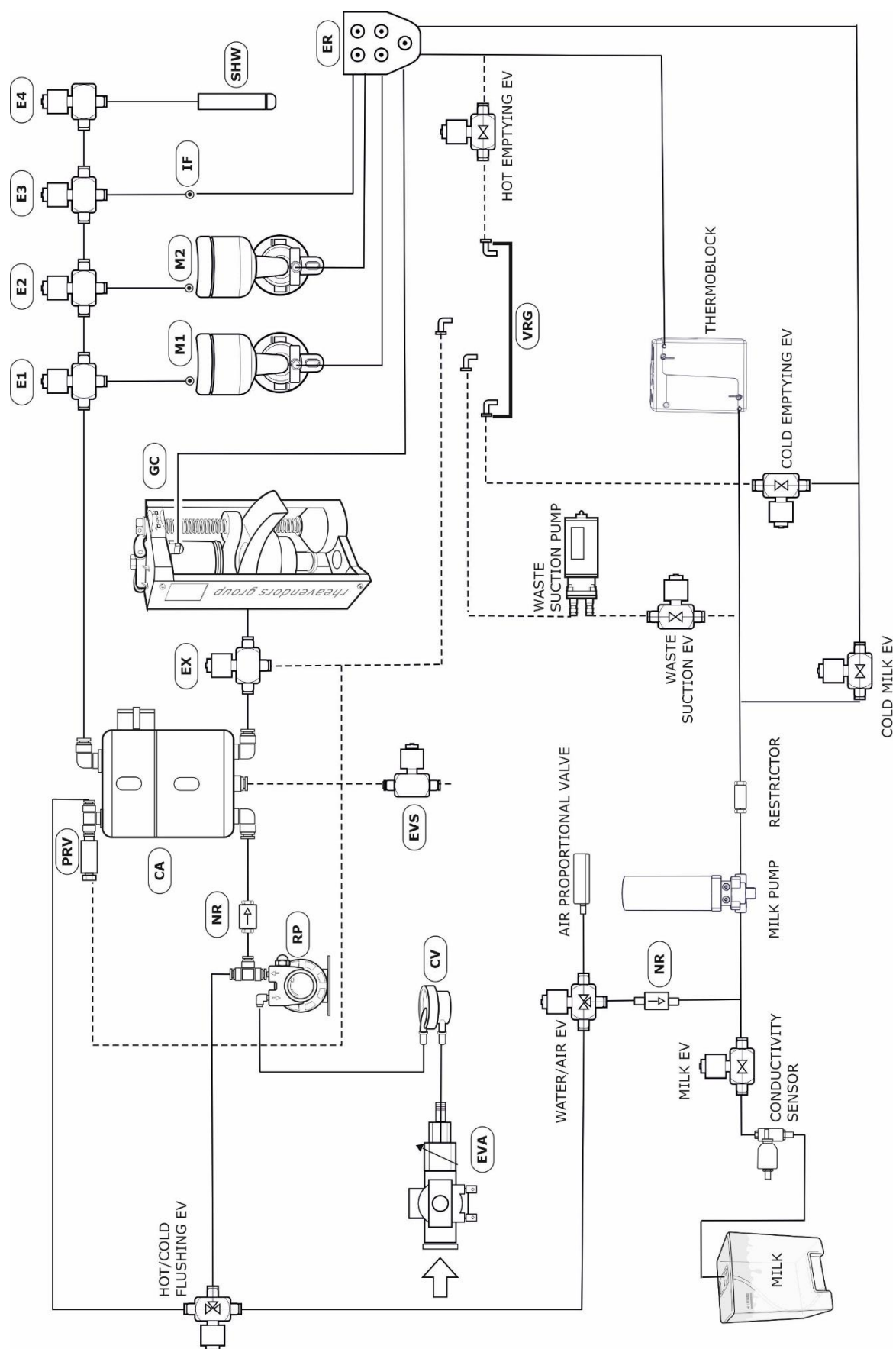


9. Hydraulic diagrams

The hydraulic diagrams of the machine are supplied here below

The following table describes the meaning of the symbols mentioned by the diagrams

symbol	description
EVA	Water inlet solenoid valve
CV	Volumetric counter
RP	Rotary pump
BP	By-pass
NR	Non-return valve
CA	Pressure boiler
EX	Three-way solenoid valve
E1	Solenoid valve instant 1
E2	Solenoid valve instant 2
E3	Solenoid valve instant 3
E4	Solenoid valve instant 4
EVR	Recirculation solenoid valve
PRV	Pressure relief valve
GC	Coffee brewer
M1.. M2	Mixer 1 ... Mixer 2
IF	Direct hot water
ER	Dispenser
VRG	Drip tray
SHW	Side Hot Water



10. First installation of the machine



After unpacking the machine, placing it firmly at the workstation as well as providing for its water and energy connection, carry out some actions for its functionality.

Wash your hands carefully with water and soap before handling the machine and the products; use drinkable water only to clean the parts thereof.



Please remember that all the actions described below shall be carried out by personnel having a practical knowledge and experience of the machine, as regards safety and hygiene.

10.1. Cleaning and sanitising the machine and its parts in contact with foodstuffs

During the first installation of the machine and at least every week, according to the use and quality of inlet water, to ensure the hygiene of dispensed products, carefully sanitise powder deposit drawers, mixers and instant drink dispensing conduit as well as dispensing tubes and nozzles; sugar chute, dispensing compartment.



All components must be cleaned with lukewarm running water only (drinkable, maximum 50 °C). The mixers and the instant canisters can be washed in a dishwasher by setting a short clean cycle and a temperature below 50°C.

Use sanitising products also to clean the surfaces not directly in contact with the foodstuffs, pay attention not to clean the machine by means of water jets.

Some parts of the machine may be damaged by aggressive detergents.

The manufacturer disclaims all responsibility for any damage caused by the non-observance of the above or by the use of aggressive or toxic chemical agents.

10.2. Cleaning and sanitising internal components



Prepare a chlorine-based anti-bacterial sanitising solution by observing the instructions supplied with the product; after disassembling and removing, put the product canisters, the mixing bowls of mixers, their fans and the silicone tubes for dispensing products into the solution; 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 chutes of instant canisters to close them and fill the canisters with the products by making reference to the machine configuration and to the canister labels; fill in the coffee hopper with coffee beans; close the canisters and the coffee hopper with their upper covers; rotate the baffles of the product chutes to open them.

To clean and treat foodstuffs properly, refer to the web site:

<http://eur-lex.europa.eu/> searching for the regulation 2004/852/EC

dated 29/04/2004 (CELEX number: 32004R0852)

In the end, lower down the cover and close the door by means of the lock key and place it in a safe place.

10.3. Start up

As soon as the machine is powered on for the first time, all circuits must be filled in before any other action, and the machine performs a diagnostic cycle for loading water and properly placing the coffee brewer; some warning messages appear on the display for the progress of these phases.



- * Machine will restart, the water in the pressure boiler starts heating to achieve the temperature set-point and then it will be fully functional.



For more details, please refer to the specific **“Software User Manual”**.



attention

after installation, it's necessary to do a milk sanitary clean cycle as described by point 12.4

11. Machine setup mode

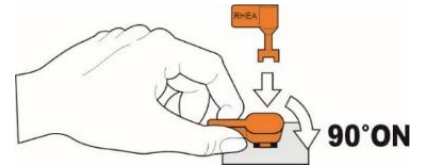
11.1. Setup mode

How to access it:

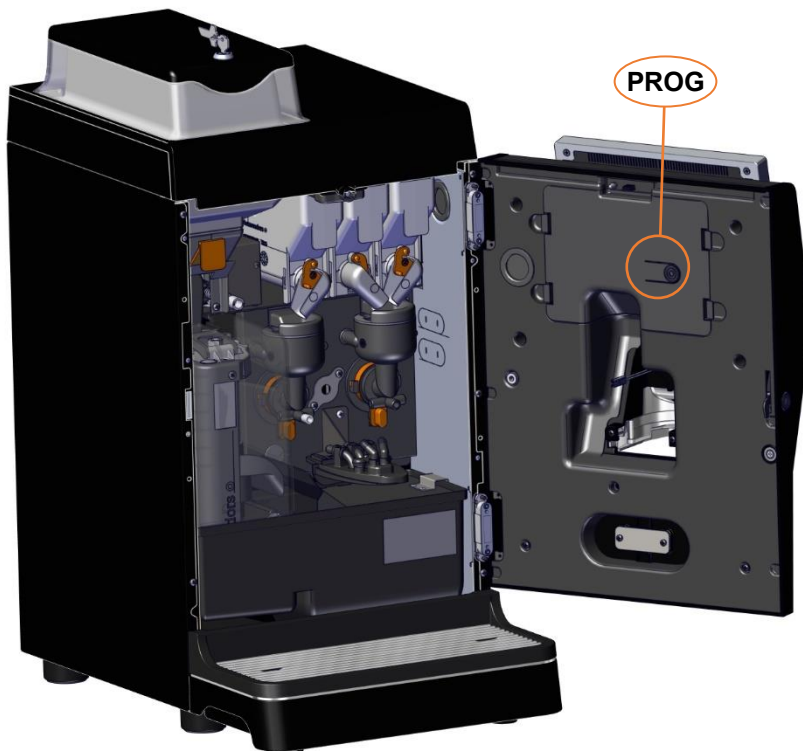
This menu gives access to all the machine programming functions; each function allows configuring specific machine parameters or performing specific procedures.



Open the door, lift the cover, power on the main switch of the machine; **insert and rotate the service key into the door switch.**



- open the machine door and press the **PROG** button.
- the machine exits the dispensing mode.
- the setup screen is displayed.



12. Cleaning/rinsing



"Programming menu" > **CLEANING/RINSING**

12.1. First rinsing procedure

At the end of assembly and final inspection, the water used for testing is discharged from the machine; as soon as the machine is powered on for the first time, all circuits must be filled in before any other action; after all hydraulic circuits of the machine have been filled, the water flow stops automatically.



Transportation and installation conditions are such that the machine cannot be immediately used. It is necessary to carry out a complete clean cycle before using the machine, the machine will dispense a pre-fixed water quantity for each clean cycle.

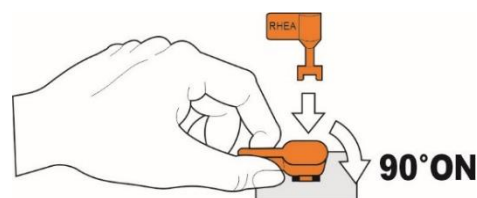


Open the door, lift the cover, power on the main switch of the machine; **insert and rotate the service key into the door switch.**



Attention

The machine is supplied and operating to all effects; the mobile parts of the coffee brewer will be handled; act with extreme caution.



Press the programming button to access the setup mode

This procedure allows you to rinse all the components of the machine's hydraulic system.

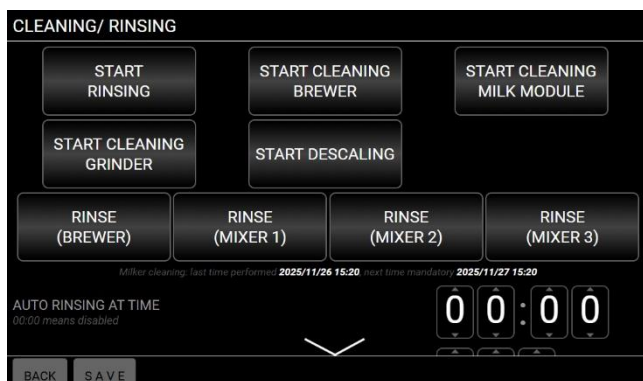


Prepare more cups as water is dispensed multiple times, place a cup beneath the nozzles; the machine will dispense a pre-fixed water quantity for each rinse cycle.

Introduction

This page allows performing the machine cleaning procedures. It also gives information on the latest and next cleaning cycle.

Page overview



Element	Values	Description
START RINSING		"Rinse the hydraulic circuit"
START CLEANING BREWER		"Clean the coffee brewer"
START CLEANING MILK MODULE		"Clean the milker"
RINSE (BREWER) RINSE (MIXER [n])		See "Rinse the circuit components separately"
AUTO RINSING AT TIME	00:00-23:59	Set time for the automatic rinsing of the hydraulic circuit. See "Automatic rinsing"

12.2. Rinse the hydraulic circuit



"Programming menu" > **CLEANING/RINSING**

Rinse the whole circuit

This procedure allows rinsing all the components of the machine hydraulic system, such as the coffee brewer and all the mixing bowls.

1. Prepare more cups as water is dispensed multiple times.
2. Tap **START RINSING**, then tap **YES**: the rinsing cycle starts. When finished, the **CLEANING/RINSING** page is displayed.

Rinse the circuit components separately

This procedure allows choosing which component of the circuit to rinse.

1. Prepare more cups as water is dispensed multiple times.
2. Do what follows:

To rinse...	Then tap...
the coffee brewer	RINSE (BREWER)
the first mixing bowl	RINSE (MIXER 1)
the second mixing bowl	RINSE (MIXER 2)

3. Tap **YES**: the rinsing cycle starts. When finished, the **CLEANING/RINSING** page is displayed.

Automatic rinsing

The automatic rinsing time can be set in the **AUTO RINSING AT TIME** field.

A 10-second countdown warns that the rinsing is about to start.



Hot water drains through all nozzles.

Note: The automatic rinsing graphics can be customized in the RheaMedia2 software.

12.3. Clean the coffee brewer



"Programming menu" > **CLEANING/RINSING**

Procedure:

1. Prepare more cups as water is dispensed multiple times.
2. To start the procedure, tap **START CLEANING BREWER**, then **YES**.
3. Tap **MANUAL** or **AUTOMATIC**, depending on how the procedure has to be performed: some water is dispensed through the brewer nozzle. Then the brewer opens.



Note: If **AUTOMATIC** is selected, some steps are automatically confirmed.

4. Insert a cleaning tablet into the brewer, then tap **CONTINUE**: the brewer closes and the tablet starts to dissolve.



Note: It takes two 19-minute cycles for the tablet to be dissolved. The espresso pump opens about every twenty seconds.

5. When the tablet has dissolved, the first rinsing cycle of the brewer starts: the water flows through the brewer every ten seconds for three times.
6. Wait for the rinsing cycle to finish. Then tap **YES** to repeat the cycle or **NO** to continue: the brewer opens.
7. Clean the filter with a brush.
8. To start the second rinsing cycle of the brewer, tap **CONTINUE**: the water flows through the brewer every ten seconds for six times.
9. Wait for the rinsing cycle to finish. Then tap **YES** to repeat the cycle or **NO** to continue.
10. To make a coffee, tap **HAVE A COFFEE**: a coffee starts to be delivered. Alternatively, to end the procedure, tap **SKIP COFFEE**: some water is dispensed through each nozzle.
11. When finished, tap **CLOSE**: the **CLEANING/RINSING** page is displayed.

12.4. Clean the milker circuit



"Programming menu" > **CLEANING/RINSING**

Procedure:

1. Place a container of at least 1.5 litres under the nozzle as water is dispensed multiple times.
2. Put two cleaning tabs (rh Milk System Cleaner) into a sanitiser container.
3. Put the milk tube into the sanitiser container. Make sure that the tube will properly reach the bottom of the container.
4. Press "**START CLEANING MILKER**". Step will appear on machine's screen.
5. When finished, the **CLEANING/RINSING** page is displayed

attention

the sanitiser container is very hot during and after the sanitising process;

13. Machine loading

13.1. Loading instant products and coffee beans (when the machine is off).



To load instant products, it is recommended to extract each canister.

To load coffee beans, close the baffle before extracting the canister.



Lift the covers of each canister and pour the product according to the content of the machine configuration, make sure that there is no lump and avoid compressing the product.

Never fill any quantity in excess to avoid ageing, check the capacity of each canister on the basis of technical data.

13.2. Fill milk

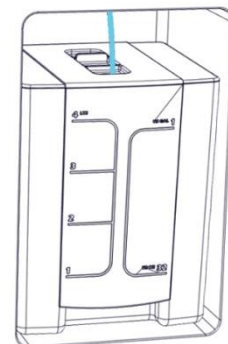


Considering the nature of the food product in use, it is recommended to pay great attention to treatment, preservation and replacement of the milk canister, as required.

The operator shall specifically and exclusively ensure that the milk used is perfectly complying with the standards for preserving and dispensing foodstuffs, as mentioned by the producer.

Open the door of cooling unit and extract the milk canister. Remove the lid of the milk canister. Fill the milk canister with fresh milk and replace the milk container lid.

Insert the suction tube into the milk canister and make sure that it is properly positioned, that there is no choking and that it is not placed behind the container when the milk container is put back into the refrigerating compartment.



14. Calibrations

14.1. Milk pump calibration



"Programming menu" > **MILKER** > *follow the steps on the screen*

1. Tap **START CALIBRATION**.
2. Tare a cup on a scale, then place it under the nozzle to collect the milk that is dispensed and tap **CONTINUE**
3. Weigh the dispensed milk
4. Enter the quantity in grams of the dispensed milk and press **CONTINUE**

14.2. Grinder calibration



"Programming menu" > **ESPRESSO CALIBRATION** > *follow the steps on the screen*

3. Set the grinder opening position manually.
4. In **GRINDER**, tap **START CALIBRATION**.
5. Remove the brewer
6. Tare a cup on scale, then place it under the nozzle. Tap **CONTINUE**: ground coffee is dispensed for a predefined grinding time.
7. Weight the cup and insert the weight value and tap **CONTINUE**
8. Reinstall the brewer, then tap **CONTINUE**: a pre-defined amount of coffee is ground to calculate impulses/grams value. When finished, the "Espresso calibration page" populates with the calibration factor value and the Variflex impulses/grams factor value.

14.3. Instant calibration



"Programming menu" > **INSTANT CALIBRATION** > *follow the steps on the screen*

1. Tare a cup on a scale, then place it under the nozzle.
2. Next to the relevant **MOTOR**, tap **CALIBRATE**: a window opens, while the product is dispensed for 10 seconds.
3. Weigh the product.
4. In the relevant field of the window, enter the value and tap **CONTINUE**: the gr/sec value populates.



For more details, please refer to the specific "**Software User Manual**".

15. Milk selection setting



"Programming menu" > SELECTION > SELECTION nr. > MILKER

SELECTION 60 - XXX

OVERVIEW	ESPRESSO	MILKER	PRODUCTS	WATERS	MIXERS
MILK TYPE	MILK ...				
MILK SEQUENCE	AFTER BEFORE				
TEMPERATURE	HOT COLD				
FOAM	NO 1 2 3 4 MAX				
FINE TUNING	-5 -4 -3 -2 -1 0 1 2 3 4 5				
FOAM DURATION	0 0 0 0 sec				
FLAT MILK DURATION	0 0 0 0 sec				
BACK			SAVE		
TEST SELECTION					

MILK TYPE: MILK

MILK SEQUENCE: AFTER – BEFORE instant products

TEMPERATURE HOT milk – COLD milk

FOAM NO – 1 – 2 – 3 – 4 – MAX

NO= NO FOAM = flat milk (*)

1-2-3-4-MAX: set the amount of level foam (**)
 increase the level of foam from 1= little to MAX= extremely thick foam

FINE TUNING: to further refine the level of foam set above

(*) it enable FLAT MILK DURATION parameter only

(**) it enable FOAM DURATION and FLAT MILK DURATION parameters

FOAM DURATION: seconds of frothy milk dispensing

FLAT MILK DURATION: seconds of flat milk dispensing



16. Milker descaling

Every 15 days or 3,000 milk deliveries



"Programming menu" > CLEANING/RINSING > START MILKER DESCALING

1. Put 100 ml of "rh Green Descaler" in the sanitizing container "rhea Clean-Mix" bottle.
2. Put the milk tube into the sanitizing container. Make sure that the tube will properly reach the bottom of the container.
3. Place a jug under the nozzles.
4. Press **"START MILKER DESCALING"** and follow the steps on the display.
5. The master machine enables a function intended to fill the canister with the sanitizer with 300 ml of hot water from the boiler.
6. The descaling cycle starts.
7. At the end of the descaling cycle, the rinsing cycle starts.
8. The master machine enables a function intended to fill the canister with 400 ml of hot water only for two times to rinse the circuit.
9. At the end of the rinsing cycle, the initial screen page will appear again.

At the end of the milker descaling, perform the milker cleaning cycle as at paragraph 12.4.

17. Programming

The machine is programmed with parameters considered standard for the specific configuration required.

The values forming the composition of recipes – written in the board memories – enable the user to dispense drinks without requiring the installer to programme special parameters; to modify these parameters for adaptation of the drinks you have produced, refer to the **"Software User Manual"**.



The machine is equipped with an automatic cleaning/rinsing system for the coffee brewer and an automatic rinsing system for the mixers and the relative water circuit.

If the machine is not used for some time (weekends, etc.) even for less than two days, it is recommended to enable the automatic cleaning and rinsing functions available in the software manual before using the machine.



Rheavendors Industries S.p.A. is ready to supply support and information on this machine;

telephone: +39 02 966551

e mail: rheavendors@rheavendors.com

for the references of our partners all over the world visit the site www.rheavendors.com.

18. Maintenance

The time interval of cleaning operations largely depends upon the number of dispensing cycles and the hardness of water in use (use a softening system) and it must be adjusted to the working conditions of the machine.



The actions described herein are intended to prevent 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 should build up.

The support of a bacteriostatic or bactericidal solution may strengthen a deep cleaning and rinsing 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 piece of clean cloth.

Before accessing the machine for each maintenance operation, it is recommended to inform the users by means of warning signs - properly positioned - that it is forbidden to use and approach the machine.



Attention: never wash the machine by means of water jets, wash your hands carefully with water and soap before handling the machine and its products, use drinkable water only, all components must be washed with lukewarm running water only (maximum 50 °C).

The mixers and the instant canisters can be washed in a dishwasher by setting a short wash cycle and a temperature below 50 °C.

Also use the Service Book of the machine.

Power off the machine, disconnect the supply cable; check the supply cable and carefully make sure that there is no signs of wear; check the stability and efficiency of internal connections of the mains supply carefully.

18.1. Daily

- **Drip tray**

Extract the drip tray, remove the upper grilled cover and wash with plenty of water; open the door and clean the drip tray housing inside the machine.

- **Grounds container**

Extract and empty the grounds container and wash it thoroughly with lukewarm water.

- **Milk dispensing nozzle**

Before carrying out the milk sanitary cycle, remove the milk dispensing nozzle wash it thoroughly with lukewarm water.

- **Intake Milk nozzle**

Before carrying out the milk sanitary cycle, remove the intake milk nozzle from the tube and wash it thoroughly with lukewarm water.

- **Milk sanitary clean cycle**

Carry out the sanitary clean cycle, following the procedure described in 12.4 carefully. We suggest at the end of the working day.

18.2. Weekly

- **External structure and touchscreen**

Use a non-abrasive cloth, dampened with lukewarm water; use a neutral, non-foamy detergent, only if necessary.



Attention:

use neutral detergents only; never use abrasive cloths, steel brushes, aggressive or foamy detergents and other solvents, boiling water and acid; above all, never use alcoholic solutions. Cleaning products shall be atomised on a cloth and not directly on the surface of the machine.

To clean the touch screen, it is recommended to use a mild detergent only, thinned according to the manufacturer's instructions, specific for these components (pc monitor and alike); pay attention not to scratch, not to leave any residual drop of the liquid detergent, not to spray the detergent directly onto the monitor; in any case, avoid dripping.

- **Drip tray**

Extract the drip tray, remove the upper grilled cover and wash with plenty of water; open the door and clean the drip tray housing inside the machine.

- **Product chutes**

Remove them from the product canisters, clean them with plenty of lukewarm water (product chutes are plugged in).

- **Product dispensing system**

Turn the levers intended to fasten the mixing bowls clockwise, remove the dispensing nozzles, pull the mixing bowls and the upper ring; remove the aspiration drawer too; clean the assembly of disassembled parts with plenty of lukewarm water.

- **Milk dispensing nozzle**

The milk dispensing is sanitized during the sanitary clean cycle.

Weekly, extract the tube and remove it from its working position, immerse it into the sanitising solution for a time long enough for a deep clean.

Rinse it by using plenty of drinkable water, dry it carefully and reassemble it by placing it into the hole of the nozzles holder.

- **Machine walls and bottom**

Remove any trace of residue from the internal surfaces of the machine and clean with a damp cloth.

- **Internal door wall**

Remove any trace of residue from the internal surfaces of the door, above all in the proximity of the cup station.

18.3. Monthly

- **Environmental aspirator and powder aspirator**

Carefully make sure that the rotors of the two aspirators 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.

- **Product canisters**

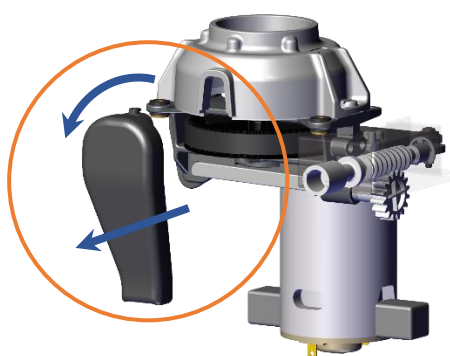
Rotate the closing baffles, remove the canisters from the machine, clean them outside, clean the support surface carefully to remove any trace of product.

- **Coffee beans canister**

Remove the coffee beans canister, make sure that coffee chute is free of any scale and that the millstones are intact and free of any residue.

- **Coffee brewer**

The whole coffee brewer can be cleaned and washed with running water since it has no component that may be damaged.



Remove the conveyor of the ground product simply by rotating slightly it.



To extract the coffee brewer, release the carter by pressing on each side and pulling it to the outside.



Remove the coffee dispensing tube from the nozzles holder and then

remove the coffee brewer by pulling the orange release button and lifting it slightly.

18.4. Yearly

- **Dispensing system**

Replace the gasket at the bottom of the mixing bowl of the mixer; extract the mixer motor fan by pulling it and replace the gasket of the mixer motor shaft.

- **Product canisters**

Disassemble the product canisters on the machine; empty them, disassemble them in their basic components and clean them carefully.

- **Powder aspirator drawer**

Extract the powder aspirator drawer and the tube and clean them with plenty of lukewarm water.

- **Silicone hoses**

Make sure that the water conveying tubes are intact; replace them in case of need.

- **Coffee brewer**

Replace the three sealing rings of the compression chamber and the lower piston guide.

Replace the upper and lower filters.

Check the state of the compression chamber.



The frequency of these operations depends upon the number of dispensing cycles and the hardness of water in use.

Their regular and accurate execution prevents failures and malfunctions, it allows constant dispensing cycles and lengthens the life cycle of the machine.



The use of a softening filter, whose cartridge is regularly replaced, prevents the build-up of limestone.



The prescriptions reported in this manual must be integrated by the HACCP procedure of the company using the coffee machine.

18.5. Cleaning and maintenance internal milker

The machine dispenses milk; the nature of this foodstuff requires special attention when the machine using it is cleaned and sanitised for hygiene purposes; it may be of use to refer to the general principles listed in the European Community regulation:

2004/852/EC of 29/04/2004 (CELEX nr.: 32004R0852)

<http://eur-lex.europa.eu/>

to the Codex Alimentarius and to the correct practices for processing the foodstuffs, as they are described in the HACCP procedures, the observance of which is reserved to the machine operator only.



As already pointed out, the operator shall ensure that the milk in use and the components of the machine comply with the provisions of the rules above and that they are perfectly suitable for human consumption; refer to the content of the Internet address:

<http://ec.europa.eu/food/food/biosafety/>

[hygienelegislation/index_en.htm](http://ec.europa.eu/food/food/biosafety/hygienelegislation/index_en.htm)

19. Uninstallation (water circuit emptying)



"Programming menu" > MAINTENANCE > INSTALLATION

Procedure:

1. In **UNINSTALLATION**, tap **START UNINSTALLATION**.
2. Check that the drip tray is empty, then tap **YES-CONTINUE**.
3. Remove the coffee grounds, then tap **CONTINUE**.
4. Disconnect the water supply, insert a tube into the drain valve of the pressure boiler and put it close to a bucket.
5. Tap **START UNINSTALLATION**: the water circuit starts to empty. When finished, the boiler water temperature is set to zero and the value in **FIRST INSTALLATION** is automatically set to **YES** to make the machine water circuit fill up the next time it is turned on.
6. Remove the tube.
7. Switch off the machine.

20. Solution of problems

Some events occurring during the operation of a machine may partially or totally compromise operativity.

To help the operator restore the normal functionality of the machine, the display shows an error code, summed up by an abbreviation, pointing at the compromised function and providing support for the compromised function or device.



Attention

While carrying out the operations necessary to restore the machine functions, act with the utmost care and strictly observe the safety rules for operators and users.



For more details, refer to the specific **“Software User Manual”** and to the **“Service Book”** of the machine.

Off code	Context	Description	Solution
2	Connection error	• OFF 2E: Executive Connection error • OFF 2M: MDB Connection error	Check the connection between the machine and the payment system. Otherwise, change the payment system configurations.
3	Waste water	The drip tray is full	Empty the drip tray and lay it back properly
5	EAROM	An error in the program memory has been detected • OFF 5: EAROM write operation error • OFF 5A: EAROM bank 1 write operation error • OFF 5B: EAROM bank 2 write operation error	Replace the CPU card
7	Espresso circuit	An error in the Brewer/Espresso unit has been detected • OFF 7A: Infusion too large. Possible failure of volumetric counter. • OFF 7C: Error in the brewer position during Infusion • OFF 7D: Infusion too large. Possible failure of volumetric counter. • OFF 7E: No water flow is detected during recipes	Check the volumetric counter status
8	Coffee brewer	Brewer motor failure. It should move freely Along dispensing cycle • OFF 8 A/B/C/G/H/I/L/P/Q/R: Incorrect movement of the brewer during delivery phase • OFF 8 a/b/c/d/e/f/s: Incorrect movement of the brewer during initial check	Check the components of the gear engine: engine, pulleys, belt Check the encoder board, the CPU board and the wirings Check coffee grounds and hydraulic seals. Clear brewer

9	Coffee beans	The volumetric coffee doser is faulty • OFF 9: Shortage of coffee beans	Refill the canister(s) with coffee beans
14	Water inlet	• OFF 14A: Too many continuous selections without water refill	Check the water level detection system
16	Programming keyboard	A malfunction has been detected in the selection panel / switch / mechanism	Verify that the PROG button is functioning
17	Keyboard/ Sugar +/- keys	A malfunction has been detected in the selection panel / switch / mechanism. • OFF 17A: Keyboard	Verify that the selection is functioning
24	Power supply	A problem in the power supply unit has been detected. • OFF 24A/24B: One or more of the power supplies are indicating an under or over voltage situation.	Replace the power supply board of the machine.
31	Espresso coffee water	Temperature sensor is defective, disconnected or reading is out of range. • OFF 31A/B/C: Water temperature. A (high) B (low) C (sensor)	Check the machine heating elements and connections.
32	Coffee brewer	Temperature sensor is defective, disconnected or reading is out of range. • OFF 32A/B/C: Brewer temperature. A (high) B (low) C (sensor)	Check the machine heating elements and connections.
41	Water Filter	Water filter is worn out.	Replace the water filter.
44	Products decounter	A canister is empty. No product can be dispensed.	Refill the canister(s).
80	Milker	Issues related to milker • OFF 80B: stand-by thermoblock temperature not settled within a certain time • OFF 80E: thermoblock temperature sensor is defective, disconnected or reading is out of range • OFF 80F: flushing water is missing • OFF 80G: low solution conductivity detected during sanitization procedure (low detergent concentration) • OFF 80H: high solution conductivity detected during sanitization procedure (high detergent concentration) • OFF 80I: high milk conductivity detected during recipe dispensing	

21. Suspension of the service (temporary inactivity)

If the machine should remain off for more than one week, for any reason, it is necessary to:

- Empty the grinder completely by dispensing espresso coffee till an empty signal is sent out.
- Remove the product canisters from the machine and the product chutes from the canisters, clean them with plenty of lukewarm water (product chutes are plugged in).
- Turn the levers intended to fasten the mixing bowls clockwise, remove the dispensing nozzles, pull the mixing bowls and the upper ring; remove the chutes; clean the assembly of disassembled parts with plenty of lukewarm water.
- Remove any trace of residue from the internal surfaces of the machine and clean with a damp cloth.
- Remove any trace of residue from the internal surfaces of the door, above all in the proximity of the cup station.
- Empty the grounds container and the drip tray and clean and clean them with lukewarm running water.
- Empty the hydraulic circuit completely (see the uninstallation procedures).



Before setting the machine at work again, carry out the cleaning and sanitising operations described above.

22. Out of service

22.1. Temporary out of service

- Carry out the uninstallation cycle.
- Disconnect the water and power supply.
- Empty and clean the drip tray.
- Remove the grounds container.
- Empty and clean the product canisters.
- Use a wet cloth to clean internal and external surfaces.
- Use a cloth to cover the machine
- Store it in a sheltered place at a temperature not below 5 °C, relative humidity not above 80%.

22.2. Definitive out of service



Should you put the machine out of service definitively and provide for the disposal of the components thereof, after carrying out the operations above, disassemble the machine by subdividing the parts according to the nature of the materials; the symbol applied means that the components of the machine shall not be treated as household waste, but delivered to the dump sites suitable for recycling electric and electronic equipment.



Refer to Directive 2012/19/EU and to the provisions thereof; the complete text of the Directive is available at the following address <https://eur-lex.europa.eu/homepage.html>

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