

NESCAFÉ®

FTP 30 E - FTS 30 E

FTP 60 E - FTS 60 E

FTP 60 EE - FTS 60 EE

model version 3.0

Beverage Systems

Technical Manual

type: T.TOP 05N

Installation and maintenance manual

Translation of the original instructions in Italian language

Only for Nestlé Professional® trained
& approved Technicians



00	05.12.2023	First issue	Full
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 vending machine occurs indoors under normal environmental conditions and at a room temperature between 5 °C and 35 °C, the relative humidity below 80%.

The vending machine is intended to dispense prepared drinks only, by mixing food products with water (espresso coffee by infusion) to use food products declared by the manufacturer suitable for vending 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 vending 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 vending 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.

1.2. *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 vending machine at each property transfer during its life.

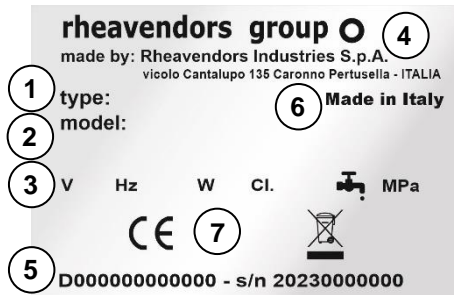
For a better storage handle it carefully, with clean hands and never place it on dirty surfaces. No part shall be removed, torn or arbitrarily modified, the manual is to be filed in an environment protected against humidity and heat and in the proximity of the machine of reference.



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

1.3. Serial number label

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



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

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



Rheavendors Services S.p.A. is ready to supply support and information on this vending 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

1.4. Conformity mark



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 regulations:

DIRECTIVES: 2014/30/EU, 2014/35/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)

The radio parameters are:

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

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 vending machine to indicate the parts on which to act with the utmost caution.



NON-IONIZING RADIATION (versions with induction heating)

people with a cardiac pacemaker or similar medical devices shall not be in the proximity of the machine when it is dispensing a drink and it is free of any external metal protection; if case of doubt, to avoid any danger, consult a physician before using this vending machine.



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 vending 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 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°.

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 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.

Should you find out a water leak, 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 inclination of the support surface of the vending machine shall not exceed 2°.

The normal operation conditions of the vending 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 vending 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 vending 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 vending 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 Services 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 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 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 vending machine

DIMENSIONS

	FTP / FTS 30	FTP / FTS 60
Height	640 mm	668 mm
Width	318 mm	422 mm
Depth	544 mm	568 mm
Depth with front door opened	770 mm	880 mm

NET WEIGHT

FTP 30 E	29.7 kg
FTS 30 E	29.8 kg
FTP 60 E	36.6 kg
FTS 60 E	36.6 kg
FTS 60 EE	37.9 kg

SUPPLIES

Hydraulic	water inlet with 3/4" Male Gas-fittings
Hydraulic pressure range	from 0.1 to 1 MPa
Electric (Varitherm)	3,000 W, 220-240 V ac, 50/60 Hz single-phase and ground
Cable of type	H05VV-F 3G 1.5 mm ²

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

SOUND PRESSURE

A-weighted equivalent continuous sound level:	less than 70 dB (A) measured at 1 meter from the surface of the machines and at a height of 1.6 meters from the floor
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WATER AND ENERGY SUPPLY TOLERANCES / ENVIRONMENT TOLERANCES

Water total hardness	from 10°f to 25°f
Water recommended conductivity	400 µS @ 20°C
Nominal voltage	+10% / -15%
Temperature	from 5°C to 35°C
Relative humidity	maximum 80%

MACHINE SAFETY DEVICES

Hydraulic	Water solenoid valve with antiflood sensor
Electric door	Door interlock microswitch
Electric fuses 6.3x32mm	16A fast – 230 V ac
Thermal Klixon on heating devices	Safety thermostat manually resettable
Vibration pump	Thermal protector equipped

HEATING ELEMENT

Instantaneous water heater through a magnetic induction system 2,900 W

GRINDER

Conical millstones. Motor 230 V dc

ESPRESSO COFFEE BREWER

Ø45 mm, variable-volume brewing chamber ground capacity 8 ÷ 14 gr

Ø36 mm, variable-volume brewing chamber ground capacity 6 ÷ 9 gr

Motor 24 V dc; 30 W

WATER PUMP

Vibration pump limited by bypass 230 V ac; 1.1 MPa

PRODUCT MOTORS

In 30, max two 24 V dc

In 60, max four 24 V dc

MIXER MOTORS

In 30, one 24 V dc

In 60, max two 24 V dc

4.1. Product canister

In 30 max. two instant, in 60 max. four instant, according to the machine configuration; single (55 mm) and double (110 mm) width; dispensing worm screws 9 mm or 18 mm in pitch; with mixer gear and product shaker, if arranged by the configuration and with standard or shorter product chute outlet:

- instant canister capacity:

STANDARD CANISTERS height 190 mm				TALL CANISTERS height 265 mm			
width 55 mm capacity 1.7 litres		width 110 mm capacity 3.5 litres		width 55 mm capacity 2.4 litres		width 110 mm capacity 5.1 litres	
coffee	0.33 kg			coffee	0.53 kg		
milk	0.38 kg	milk	0.80 kg	milk	0.60 kg	milk	1.30 kg
chocolate	0.94 kg	chocolate	2.20 kg	chocolate	1.50 kg	chocolate	3.20 kg
tea	0.98 kg			tea	2.00 kg		
sugar	1.20 kg			sugar	2.00 kg		

- coffee beans canister (or hopper) capacity, according to the type of coffee in use, up to:
in 30: 0.8 kg, in 60 single: 2.0 kg, in 60 double 0.8 kg each, in 60 single MVH: 1.5 kg.

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



Rheavendors Services 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 VENDING MACHINES ONLY APPROVED BY NESTLÉ.

The functionality and reliability of the machine might be influenced by external factors not complying with the standard operation conditions of vending 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
two espresso	instant products and two different coffee beans	EE
product canisters	number of instant products and coffee beans	E4
water supply	external, by means of the inlet solenoid valve	E3 R
mixer number	mixer number	E3 R2

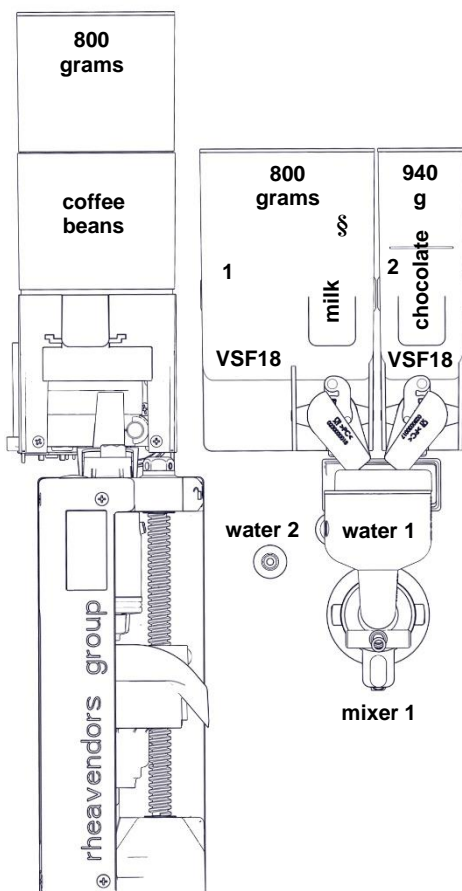


The product canisters, mixing bowls and mixers are numbered progressively from the left to the right, this numbering is used for programming drinks.

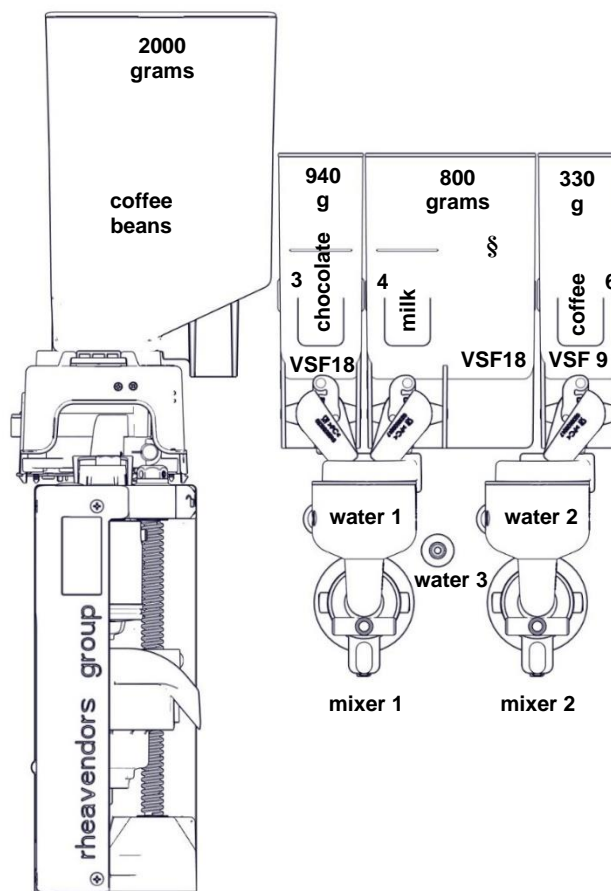
Configuration examples:

Four possible configurations examples are represented here below, the operation principles are any way universal and applicable to all machines:

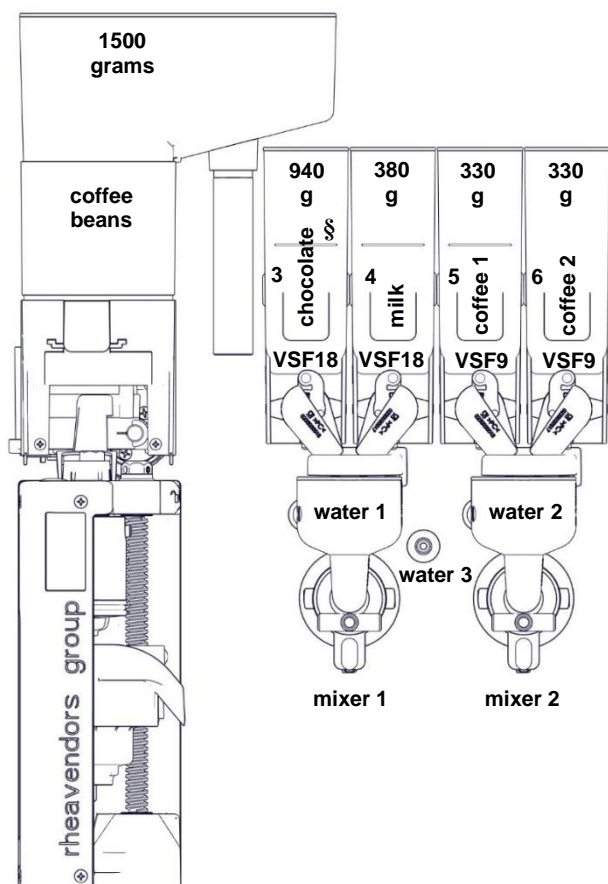
V.M. FTP/FTS 30 E3 R1



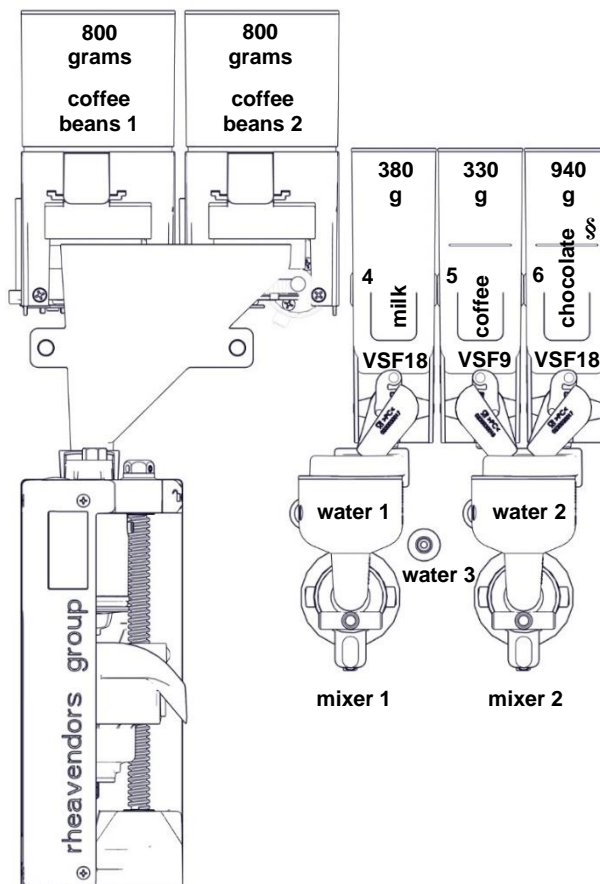
V.M. FTP/FTS 60 E4 R2



V.M. FTP/FTS 60 E5 R2 MVH



V.M. FTP/FTS 60 EE5 R2



4.4. Accessories



To complete and supplement the vending 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 the **modul on ...**

Rheavendors Services 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 vending 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 vending 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 vending 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 vending machine with ropes, never drag it, never lay down the vending machine for transport and avoid any shock.



Two operators provided with personal protective equipment (accident-prevention shoes, gloves ...) are required for handling; the vending machines weigh abt. 30kg÷38kg.

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

Use the key placed in the dispensing compartment to open the door of the vending 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

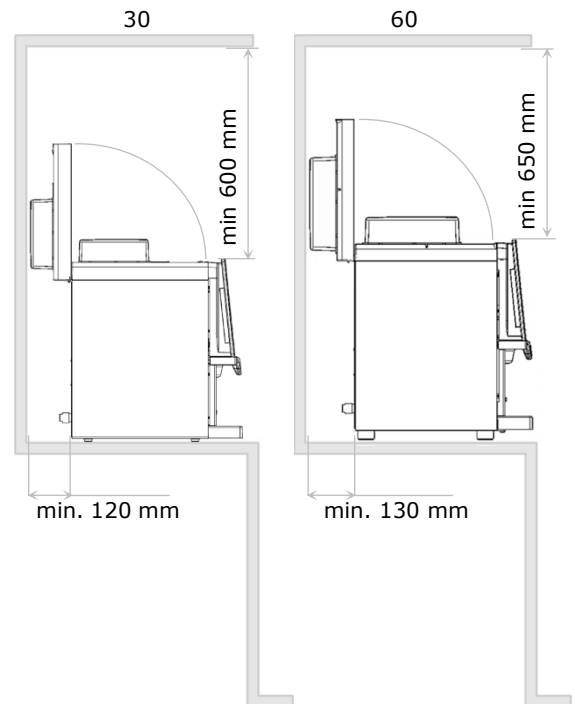
When installed in its workplace, the vending machine shall be positioned in a room protected against atmospheric agents: it is not suitable for installation outdoors.

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 vending machine cable.

Use the cable supplied with the vending 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 vending 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 vending machine is perfectly stable.

5.5. Electric connection

The machine is arranged for electric operation at a single-phase voltage of 220-240 V ac and it is protected by 16A fast 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 vending 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 vending 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 vending 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.

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

Make sure that the pressure 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.



The water inlet solenoid valve is provided with an antiflood device mechanically locking the water inlet because of a malfunction of the solenoid valve or the components intended to control the water level in hydraulic circuit.

To restore normal operation, act as follows:

- power off the machine;
- discharge water from the overflow tube;
- close the tap of the hydraulic network outside the machine;
- loosen the joint securing the supply tube of the solenoid valve to discharge the residual network pressure and tighten it again;
- open the tap and power on the machine.

5.7. Water quality

The vending 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 vending machine.

Hardness tolerance: from 10°F to 25°F

Water recommended conductivity: 400 µS @ 20°C

6. Description of the vending machine

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

This manual is intended to describe the **NESCAFÉ FTP 30 E**, **FTS 30 E**, **FTP 60 E** and **FTS 60 E & EE** vending machines.

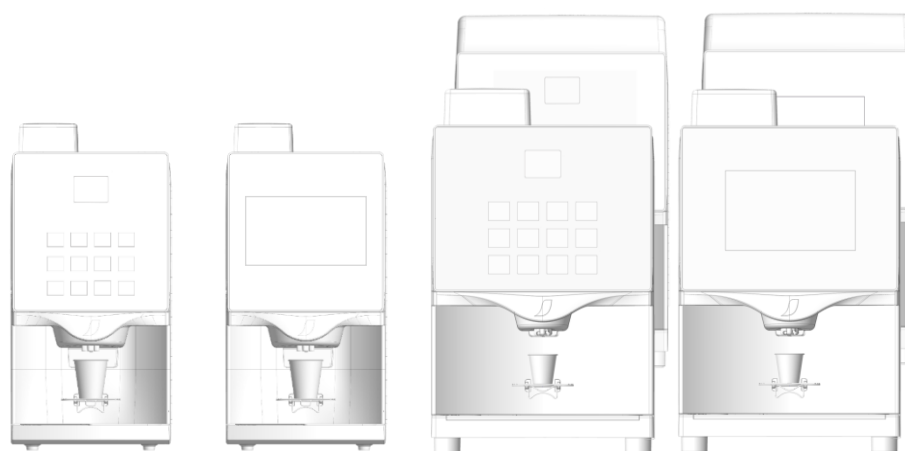
By using the same basic components, the machines differ from each other in components and in the features specified later on; the descriptions supplied by this document are shared by all versions, if not otherwise specified by the text or by the icons typical of every single model.

FTP = capacitive keyboard.

FTS = touch screen.

If only **FTP** and/or **FTS** is indicated in this manual, reference is made to both the 30 and the 60 versions.

If only **30** and/or **60** is indicated in this manual, reference is made to both the FTP and the FTS versions.

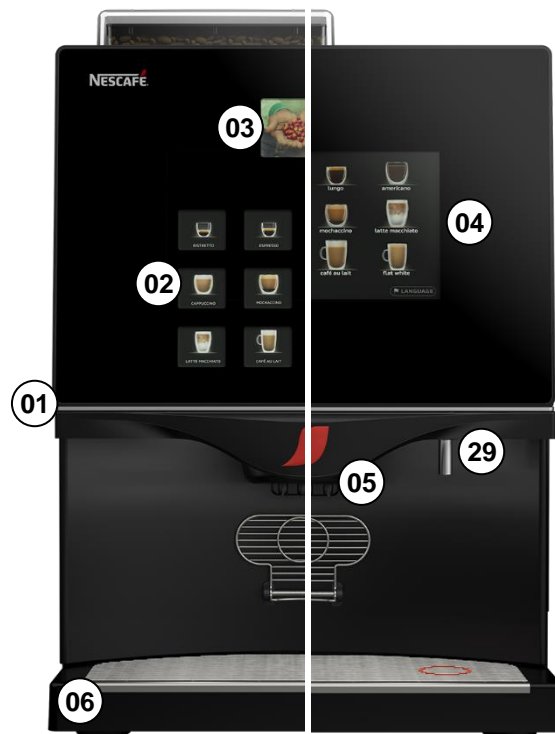


	FTP 30 E	FTS 30 E	FTP 60 E	FTS 60 E
keyboard	capacitive	central touch screen	capacitive	central touch screen
service and information messages	3.5" multicolor TFT display	10.1" touch screen	3.5" multicolor TFT display	10.1" touch screen
direct selections	12	up to 48 (12 x 4 screen)	12	up to 48 (12 x 4 screen)
virtual keys	13-48		13-48	
V+ Variflex	✓	✓	✓	✓
V+ Varitherm	✓	✓	✓	✓
V+ Varigrind	✓	✓	✓	✓
coffee beans canister (kg)	0.8	0.8	2.0 / (**) 1.5	2.0
coffee beans product sensor	-	-	✓	✓
max. no. coffee grounds doses	40	40	65	65
tall instant canisters (*)	-	-	optional	optional
more visible hopper MVH (**)	-	-	optional	optional
double grinder (EE)	-	-	-	optional
height (mm)	640	640	668 / (*) 672	668 / (*) 672
width (mm)	318	318	422 / (*) 422	422 / (*) 422
depth (mm)	544	544	568 / (*) 568	568 / (*) 568
mass (kg)	29.7	29.8	36.6	36.6
max. no. instant canisters	2	2	4	4
max. no. mixing bowls	1	1	2	2
electrical supply	220-240V ac - 50-60Hz	220-240V ac - 50-60Hz	220-240V ac - 50-60Hz	220-240V ac - 50-60Hz
power	3,000 W	3,000 W	3,000 W	3,000 W
water supply	plumbed	plumbed	plumbed	plumbed

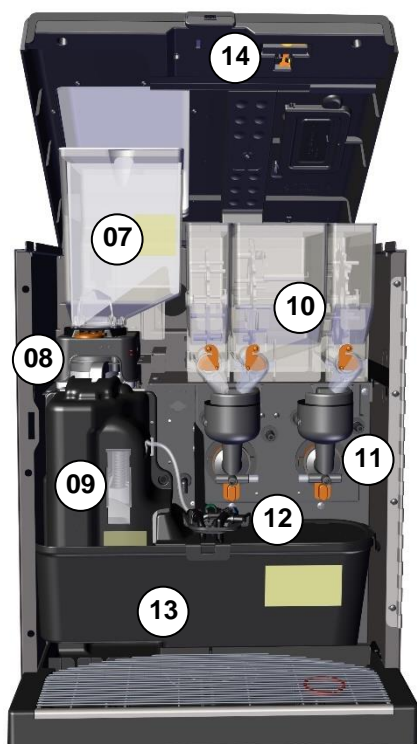
Front door panel FTP/FTS 30 E



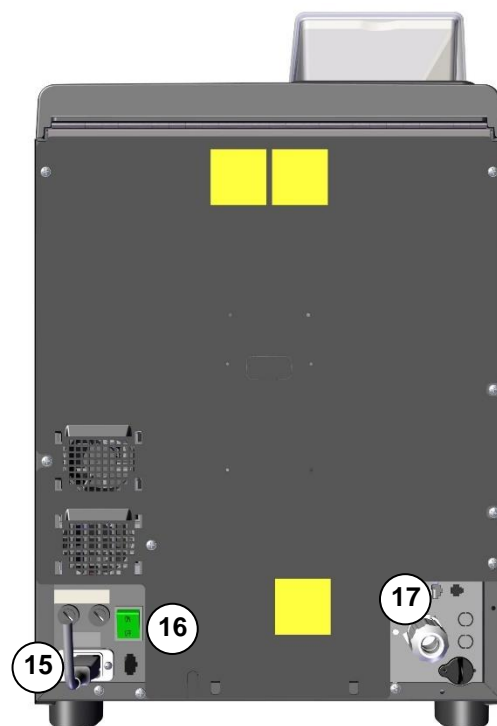
Front door panel FTP/FTS 60 E



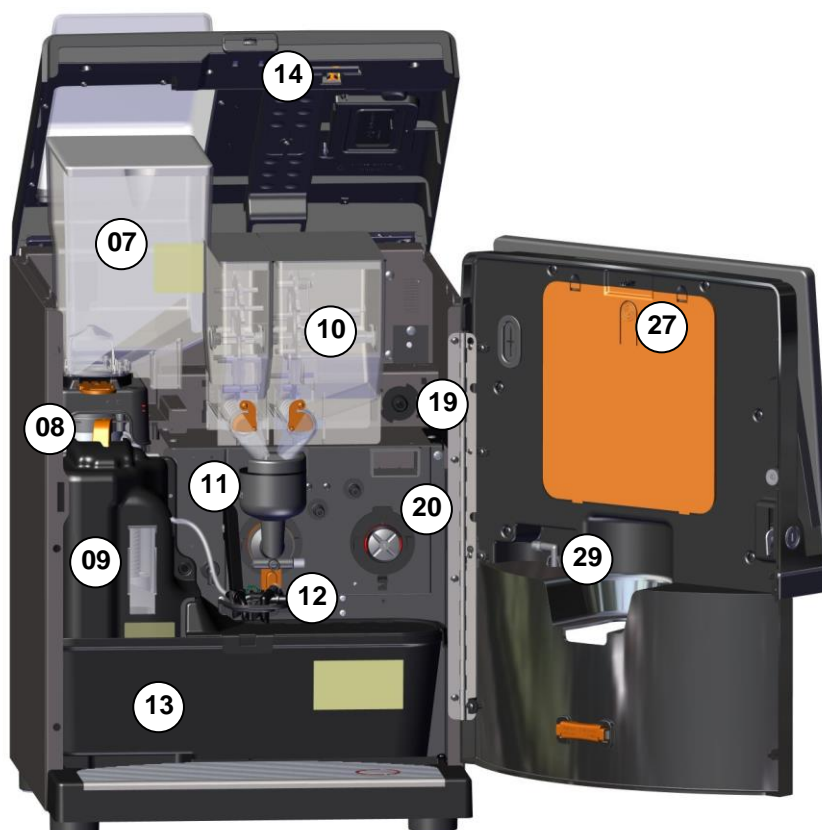
Inner view of the machine (example)



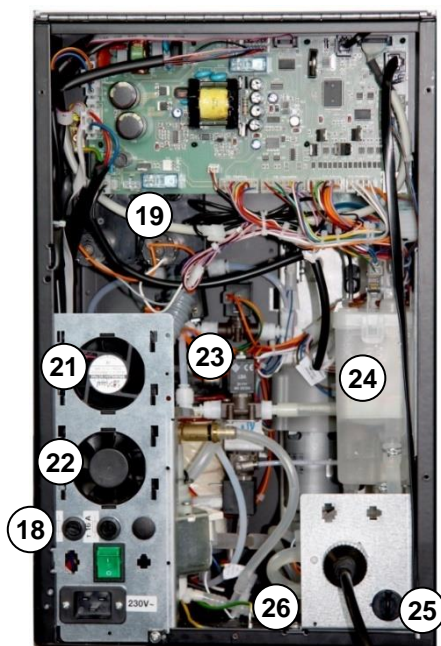
Rear view of the machine (example)



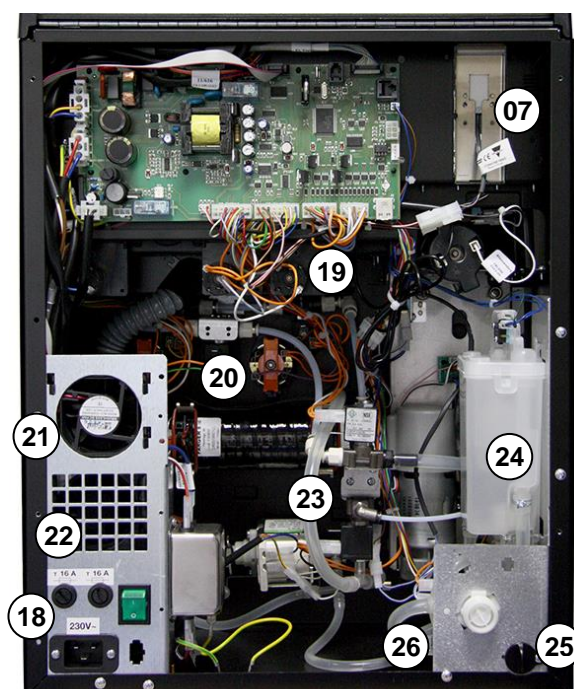
Inner view of the machine (example)



Rear Inner FTP/FTS 30 E (example)

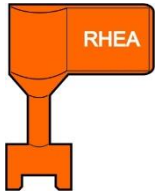


Rear Inner FTP/FTS 60 E (example)



- 01 - Door lock:** the door is closed by means of a lock; the key is mapped and numbered for identification.
- 02 - Selection keyboard:** in FTP, after closing the door, press the buttons to dispense; the button will turn on during the dispensing cycle; keys assume various functions in the programming mode and enable the user to modify the machine parameters; keys are progressively numbered from the top: 1, 2, and from the left.
- 03 - Display:** in FTP, messages inform users or operators about the operation status of the vending machine.
- 04 - Touch screen:** in FTS, 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.
- 05 - Dispenser:** the vending machine has got a fixed drink dispenser on the cup support surface.
- 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; 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 - Coffee beans canister:** the coffee beans canister (hopper) has got a closing blade for insertion (pull in "30", insert to the bottom in "60") 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.
Only in "60", a product sensor intended to check the quantity of coffee beans in the canister is arranged behind the coffee beans canister. If the product is lacking, it signals it through the vending machine display.
- 08 - Motorized grinder:** it grinds coffee beans in the canister to pour it in the coffee brewer chamber; the amount of grounded coffee is determined by programmable software parameter that establish the duration of the grinding; this parameter can also be programmed in quantity to characterize each selection.
- 09 - 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.
The coffee brewer presence is controlled by a micro switch that can inhibit the selections including coffee beans, if it is not present.
An air heater keeps the coffee brewer at the correct temperature preserving the drink quality even after a long vending machine pause; the heater is supported by a safety cover intended not only to maintain the temperature, but also to protect the operator against moving parts.
The variable coffee brewer motor is intended to regulate the chamber closing and compressing phases in order to compress ground coffee for its percolation; its action is controlled by an encoder that informs the CPU on the brewer position.
- 10 - 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.
- 11 - 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.
- 12 - 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 one of direct hot water; for an easier and quicker identification of the positions of the components, the connections of the mixers are of a different colour, similar to the one of the rings at the end of the corresponding outlet tubes.
- 13 - Grounds container:** it collects abt. forty ground doses in "30" and abt. sixty-five ground doses in "60" after having used them in the coffee brewer; a software option shows a warning message as soon as the tray is full; in "60", it is complete with a cover intended to prevent humidity from spreading inside the machine as far as possible.

14 - Door switch: it powers off the machine when the door is open.



Service key:

Use the service key to supply the vending 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 vending machine and its use is reserved to the properly trained technical personnel only.

15 - Electric connection: a three-terminal socket is arranged at the back of the cabinet for the connection of the mains cable.

16 - Power on switch: to power on and off the machine.

17 - 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; a submersible pump or the **modul** on water can be connected in parallel with its electric terminals.

18 - Fuses: installed on the mains power supply to protect the machine; fuses must be necessarily replaced by specialised technical personnel only.

19 - 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.

20 - 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.

21 - Powder aspirator: an aspirator ejects the product residues in suspension from the inside of the vending 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; the aspirated air is ejected through the slots of the rear panel.

22 - Cooling fan: it provides for air circulation inside the vending machine to maintain the operation temperatures suitable for electronic components.

23 - Solenoid valves: directly managed by the CPU board of the machine, the solenoid valves are intended to dispense hot water directly into the mixing bowls or to recirculate water inside a pre-heating internal circuit.

24 - Air break: it accumulates water for conveyance to the water heater; the level is controlled by a float; if above the established level, it flows back to the safety device of the inlet solenoid valve, thus preventing additional water from coming in.

25 - Water drain plug: from where to let the silicone tube from the air break come out for emptying;

26 - Volumetric counter: it supplies the CPU the water quantity running through the coffee brewer to establish its volume.

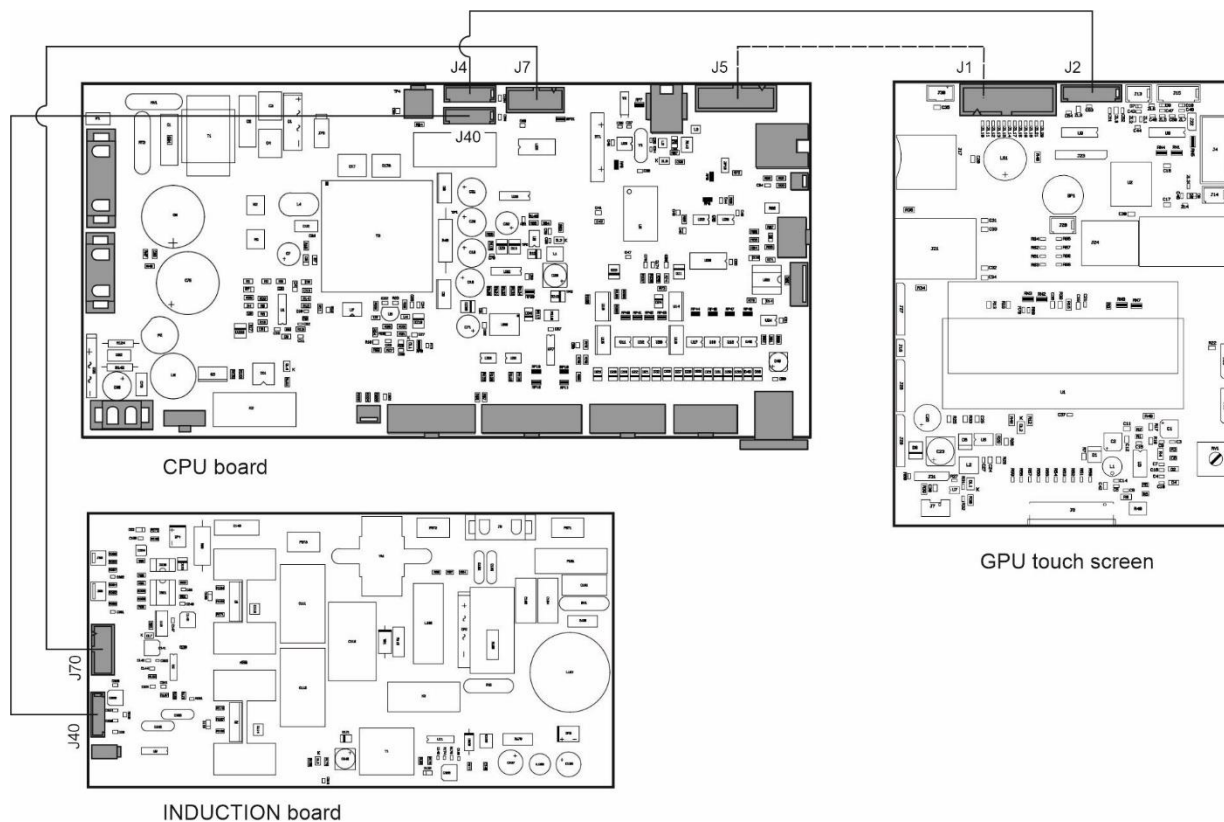
27 - Internal button (PROG): the button giving access to the machine programming mode (PROG) is arranged on the orange protection carter inside the door.

28 - Label pockets: in FTP, product labels are arranged inside the door panel, beneath the orange carter; insert the labels into the pockets by observing the machine configuration.

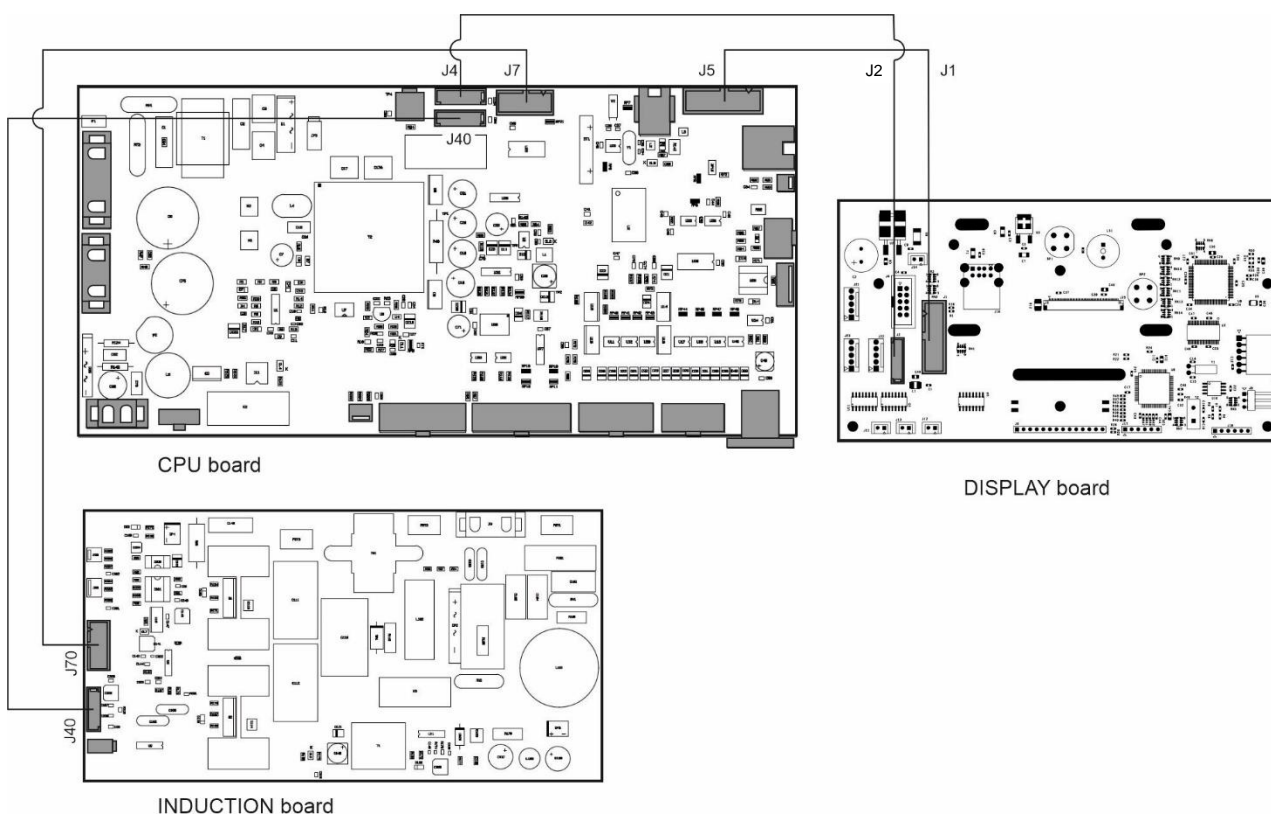
29 - Side hot water nozzle (optional): there is a version that includes a nozzle dedicated to hot water, positioned on the right side of the dispensing compartment, separated from the standard one in the nozzles holder; it is controlled by a dedicated solenoid valve.

7. Electronics

7.1. Connection diagram for FTS machines

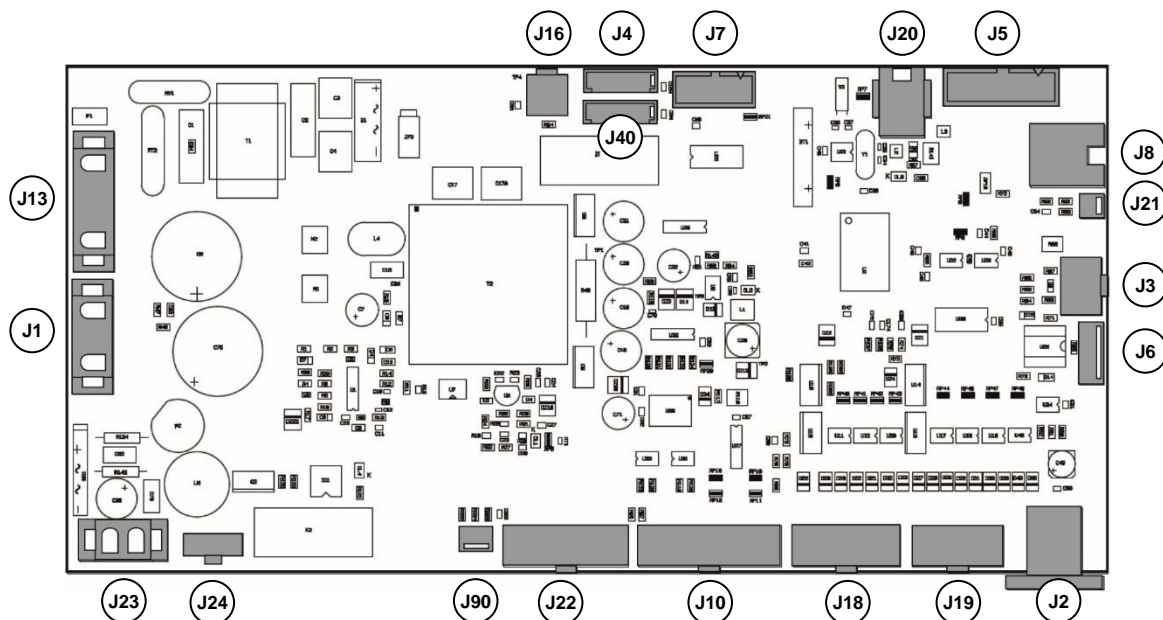


7.2. Connection diagram for FTP machines



7.3.CPU

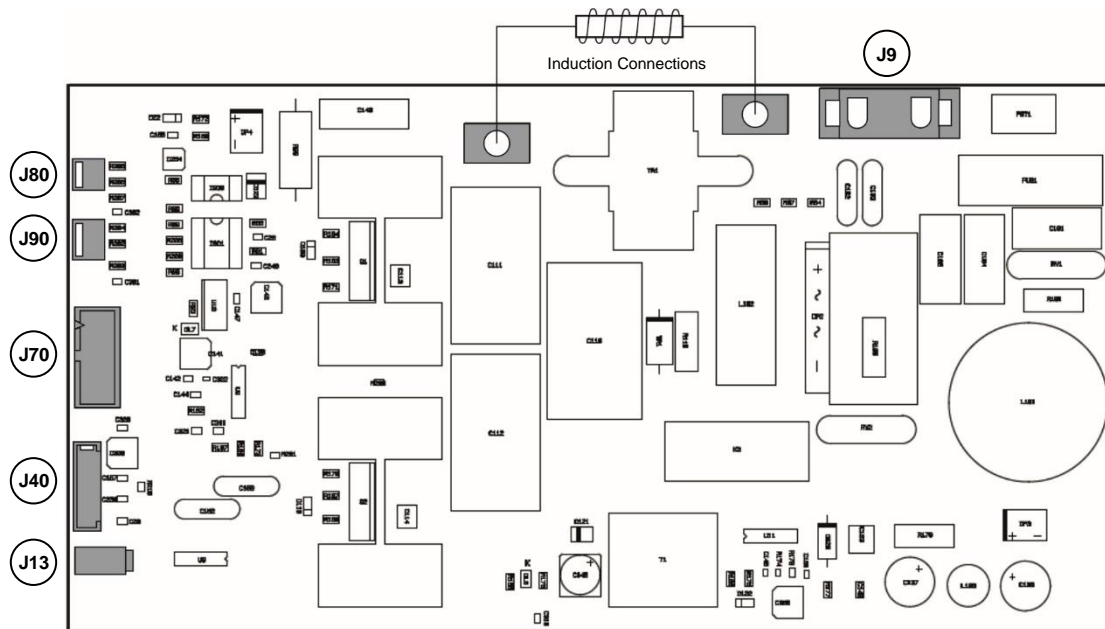
The CPU board, housed on the rear of the machine and secured to the frame by means of support turrets, governs the machine operation and it is intended to operate the machine devices.



J1	Power supply IN 230 V ac	J18	Solenoid valves / mixers
J2	Double USB-A socket (RS485)	J19	Product motors
J3	MDB connector	J16	Power supply 24 V dc
J4	Power supply 5/24Vdc CPU-GPU/Display	J20	RFID connector
J5	Signals CPU-GPU/Display	J21	Coffee brewer temperature probe
J6	Executive connector	J22	IN/OUT signals coffee brewer
J7	Induction board Signals	J23	Grinder motor 230 V ac
J8	Various signals	J24	Grinder relays
J10	IN/OUT various signals and aspirator motors	J40	Power supply 5/24Vdc Induction board
J13	Vibration pump connector 230 V ac	J90	Air-break water temperature probe
J16	Power supply 24 V dc		

7.4. Induction board

The induction board, placed on the right side of the machine and under the logic control of the CPU, is used to properly supply the transducer of the magnetic induction system, thus heating the dispensing water flowing in a coil; the power supplied by the board is constantly measured and adjusted for the best performance level.



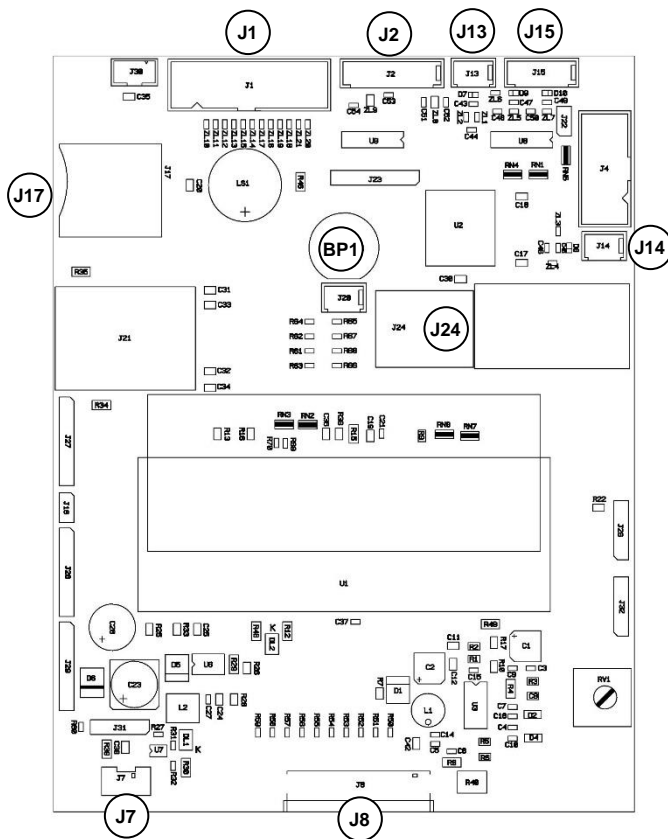
J9	Power supply 230 V ac	J70	IN/OUT signals CPU (J7)
J13	Aspirator motors	J80	MOSFET temperature probe
J40	Power supply 24Vdc Induction board	J90	Induction temperature probe

7.5. Display / GPU board

The display / GPU board - secured inside the door - receives the signals from the selection keyboard and it displays the messages; a flat cable is intended to connect it with the CPU for signal exchange.

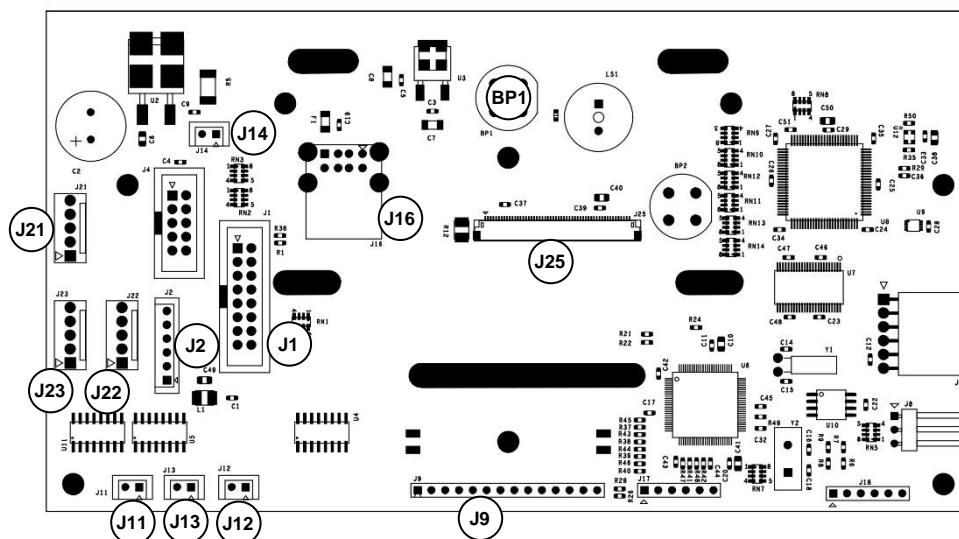
The internal programming button is installed on the printed circuit of this board, which is also providing for the illumination of the keyboard.

7.5.1. 10.1" touch screen in FTS



J1	Input signal 5 V dc to CPU (J5)	J15	Cup station lighting
J2	Input power supply 24 V dc to CPU (J4)	J17	SD Card socket
J7	Connector controller touch screen	J24	Double USB-A socket (RS485)
J8	To the display 10.1"		
J13	Door lighting		
J14	Door lighting	BP1	PROG button

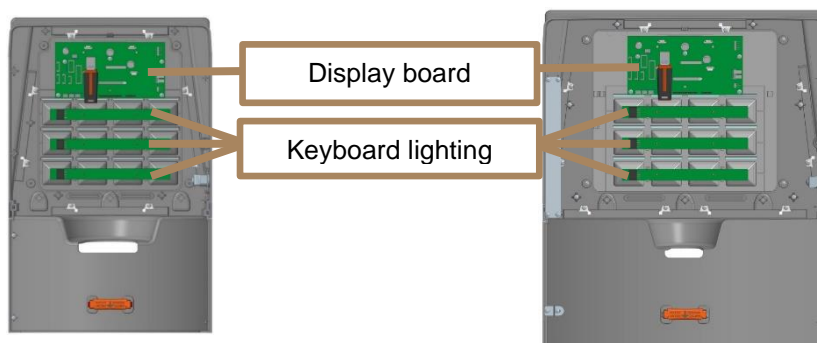
7.5.2. 3.5" TFT in FTP



J1	Input 5 V dc to CPU (J5)	J14	Door lighting
J2	Input power supply 24 V dc to CPU (J4)	J16	Double USB-A socket (RS485)
J7	Connector controller touch screen	J21	Lighting of selection keys
J9	Keyboard connector	J22	Lighting of selection keys
J11	Cup station lighting	J23	Lighting of selection keys
J12	Door lighting	J25	To the display TFT 3.5"
J13	Cup station lighting	BP1	"PROG" button

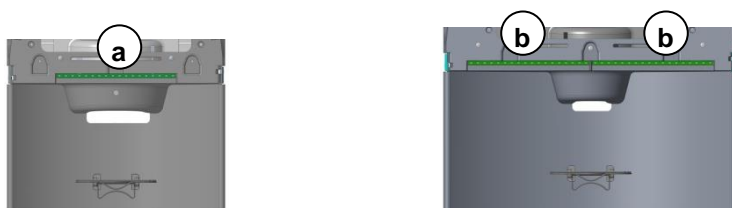
7.6. Keyboard lighting in FTP

These boards provide for lighting the selection keys of drinks; they are supplied by the display board from which they receive the commands necessary to power on the leds.



7.7. Cup station lighting

The cup station is lit up by led modules, one in 30 ("a") and two in 60 ("b"), mounted inside.



8. Water heating

The Varitherm device is an instantaneous water heater through a magnetic induction system, protected and controlled by a safety thermostat manually resettable and by a temperature probe.

A vibration pump with by-pass conveys water to the magnetic inductor, the recirculation solenoid valve, the instant solenoid valves and the three-way valve for espresso.

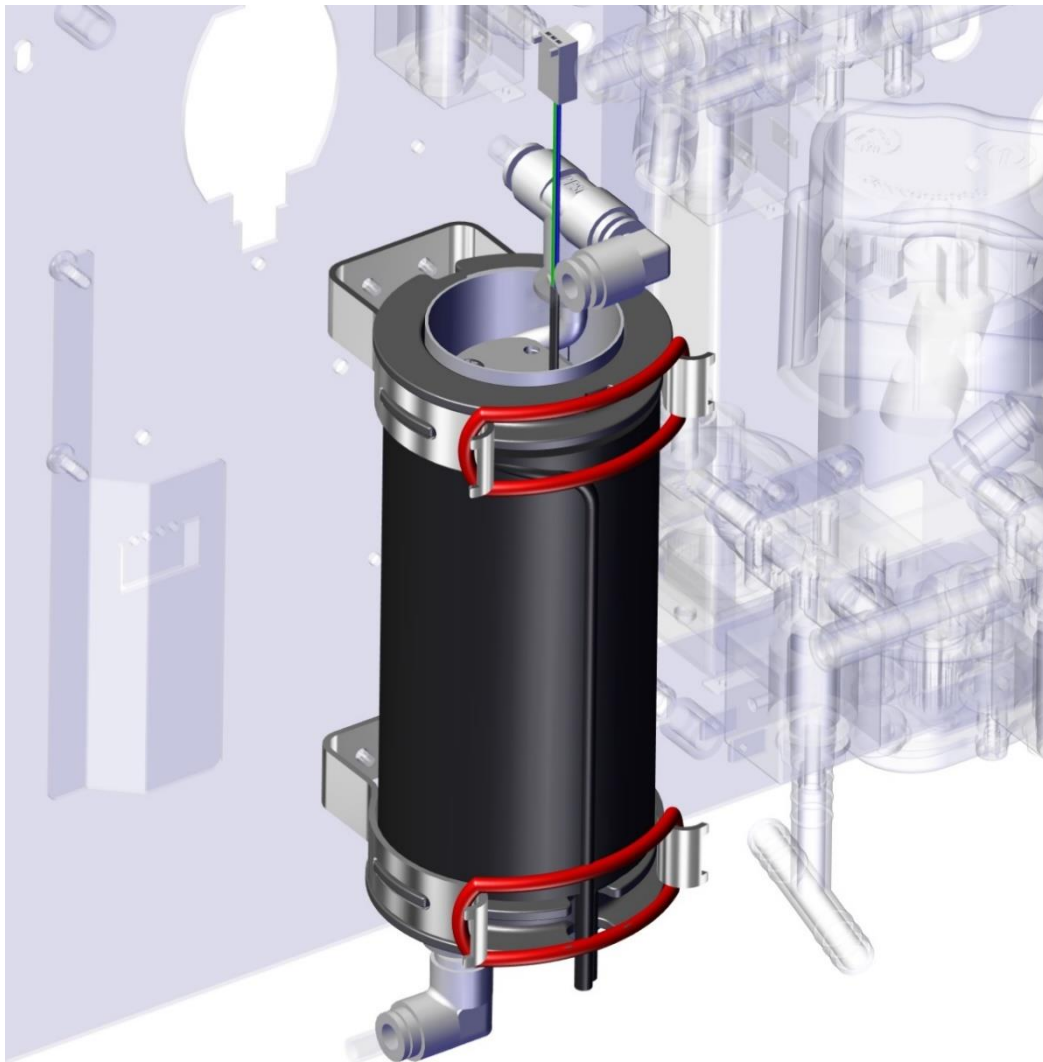


The water heating system is a variable magnetic field generator.



Attention

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



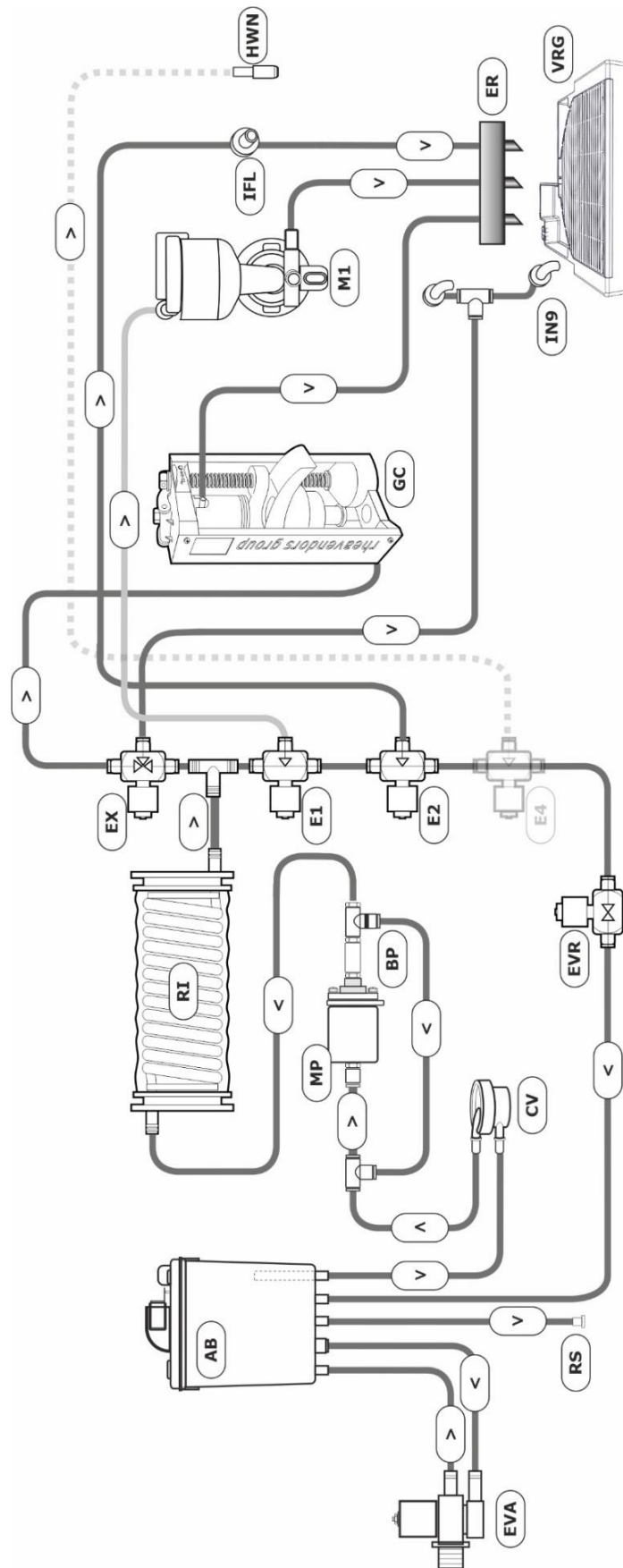
9. Hydraulic diagrams

The hydraulic diagrams of the vending machines are supplied here below.

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

symbol	description
EVA	Water inlet solenoid valve
AB	Air break
CV	Volumetric counter
MP	Vibration pump
BP	By-pass
RS	Drain tap
RI	Varitherm® induction water heater
EX	Three-way solenoid valve
E1... E3	Solenoid valve instant 1, ... Solenoid valve instant 3
E4	Solenoid valve side hot water 4
EVR	Recirculation solenoid valve
GC	Coffee brewer
M1, M2	Mixer 1, Mixer 2
IFL	Long insert for direct hot water
IN9	90° joint
ER	Dispenser nozzles holder
VRG	Drip tray
HWN	Side Hot Water nozzle

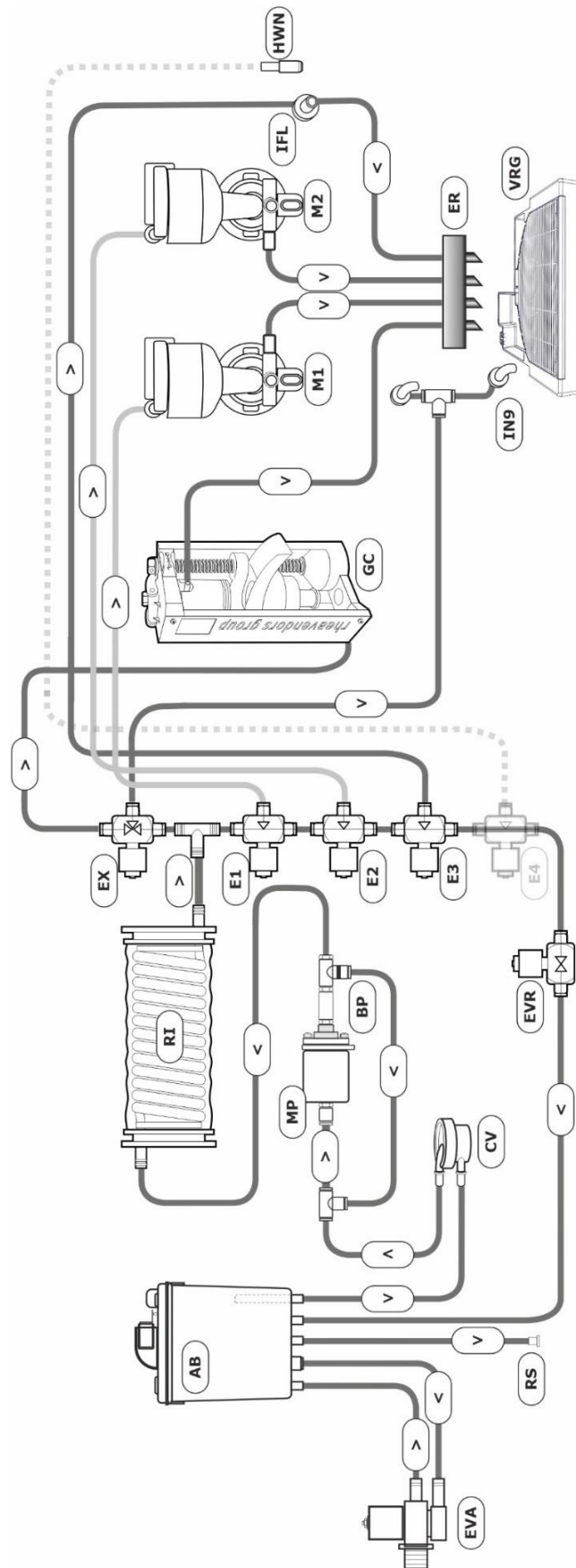
9.1. Hydraulic diagram FTP 30 E / FTS 30 E



side hot water (optional)

virtual tube
the mixing bowl is directly connected
with the solenoid valve

9.2. Hydraulic diagram FTP 60 E / FTS 60 E



side hot water (optional)

virtual tube
the mixing bowl is directly connected
with the solenoid valve

10. First installation of the machine



After unpacking the vending 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 vending machine and its parts in contact with foodstuffs*

During the first installation of the vending 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; insert to the bottom in "30", pull in "60" the blade intended to open the coffee hopper.

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 vending 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.

In FTP:



*

In FTS



*

* Vending Machine (VM) will restart and then it will be fully functional.

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

10.4. First rinsing

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 vending machine cannot be immediately used. It is necessary to carry out a complete clean cycle before using the vending machine, the machine will dispense a pre-fixed water quantity for each clean cycle.

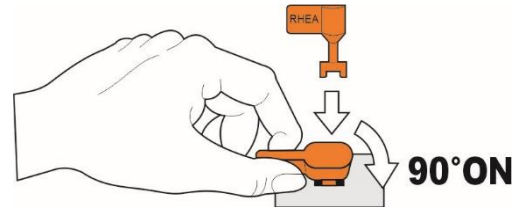


Open the door, lift the cover, power on the main switch of the machine; **insert and rotate the service key into the door switch.**



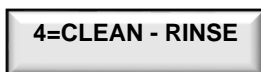
Attention

The vending 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, the display shows the menu;

in FTP press "4=CLEAN - RINSE",



in FTS press "Cleaning/Rinsing",

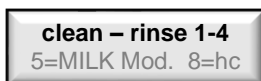


to enable the rinse cycle of the water circuit (heater, tubes, coffee brewer, mixing bowls, ...).

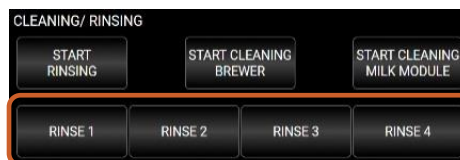
Follow the instructions on the display; make sure that the drip tray is empty and that the machine is hydraulically connected.



Place a cup beneath the nozzles; the machine will dispense a pre-fixed water quantity for each rinse cycle.



in FTP



in FTS

Press "RINSE 1 - 2 - 3" keys in sequence to activate the rinse cycle of the corresponding hydraulic circuit (coffee brewer and mixing bowls);

the vending machine will clean as described here below:

key "1", through the coffee brewer;

keys "2" and "3", through the mixing bowls for instant products;

key "4", this vending machine carries out no rinsing.

Repeat the operation more times so as to rinse the whole water circuit of the machine completely; during the rinse cycles, the display will show the circuit that is being cleaned.



After the initial rinse cycle, power off the vending machine by means of the service key and also power off the main switch at the back of the machine.

11. First installation procedure

Use this procedure to fill the water circuit on next power on.

To perform the first installation,

in FTP, press “1= PROGRAMMING”, scroll by means of key “2” to “MISCELLANEOUS”, press “1” and scroll by means of key “2” to “FIRST INSTALLATION”



in FTS, enter the programming menu -> section "MAINTENANCE" -> tab "INSTALLATION" -> option "FIRST INSTALLATION" and set to "YES".



First installation procedure starts. Varigrind is set to standard position (280°).



Wait the end of the procedure. “FIRST INSTALLATION”, the parameters are automatically set to one (to avoid the repetition of the procedure).



The vending machine will restart and then it will be fully functional.



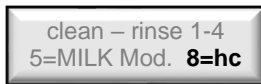
11.1. Coffee brewer clean/rinse cycle



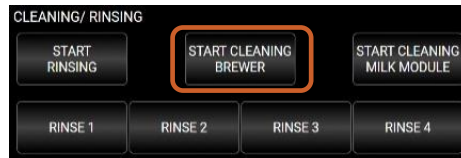
Attention

the vending machine is supplied and running to all effects, the mobile parts of the coffee brewer will be handled. act extremely carefully.

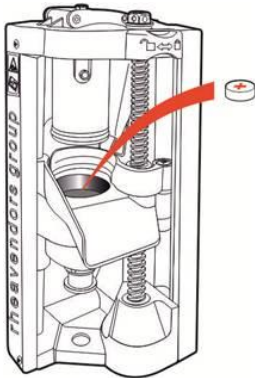
After placing a cup under the product nozzles, in FTP press 8=hc, in FTS press "START CLEANING BREWER" and choose to perform "AUTOMATIC" cleaning.



in FTP



in FTS



For a few seconds the machine will dispense only water through the coffee brewer, the brewing chamber will move up and down and then will open; the display will show to put a tab (*) in the coffee brewer chamber and press and confirm by the display.

Attention: the chamber closes while keeping the tab brewing.

The time counter for dissolving the tab begins to decrease up to 0 min. (about ninety seconds dissolving time and about twenty seconds cleaning time, for 2 cycles).

(*) the characteristics of the tablets can be communicated by Nestlé Professional®.

Follow the display instructions and wait for the clean cycle to automatically come to an end, then, the chamber is emptied and a three-rinsing cycle starts, (about ten seconds and then a "splash" occurs through the coffee brewer nozzle).



Abt. 100 cc. water will be dispensed for each one of the three rinse cycles press the key on the display to repeat on iteration of the last cycle or press any other key other keys to skip and go forward. to allow filter cleaning by a brush, the brewer chamber will move down; clean and remove any residues by means of a food-grade soft brush and follow instructions to continue.

It starts a six-rinsing cycle; (about ten seconds and then a "splash" through brewer nozzle, for six times).



Attention

Abt. 100 cc. water will be dispensed for each one of the six rinse cycles; follow the display instructions to repeat on iteration of the last cycle or to skip and go forward;

The machine will dispense a coffee and also rinse the mixing bowls; for this reason, make sure that you have at least a couple of cups to be placed beneath the product nozzles, the display shows the number of the corresponding circuit cleaning.

If you wish to override the coffee dispensing cycle, press "SKIP COFFEE".



If this cycle should be interrupted (sudden power failure, ...), the procedure will restart from the initial step of this clean cycle as soon as operation is restored.

After the clean/rinse cycle, power off the vending machine by means of the service key also power off the main switch at the back of the machine.

12. Vending machine loading

12.1. 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. Programming

The vending 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 programming manual “**Software User Manual**”.



The vending 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 vending 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 vending machine.



Rheavendors Services S.p.A. is ready to supply support and information on this vending 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

14. 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 vending 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 bacterialstatic 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 vending 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.

Empty the grounds container daily and wash it thoroughly with lukewarm water.

Also use the Service Book of the vending machine.

14.1. Weekly

Power off the machine, 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.

- **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 vending 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 chutes and clean the assembly of disassembled parts with plenty of lukewarm water.

- **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.

14.2. 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**

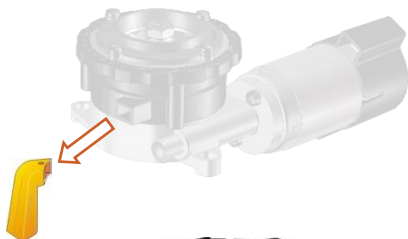
Rotate the closing baffles, remove the canisters from the machine, clean them outside, clean the support surface carefully to remove any trace of product.

- **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 orange conveyor of the ground product simply by pulling 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.

14.3. 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.

- **Air break**

Empty and clean the air break tank; carefully check the micro switch functionality operated by the floater rod and make sure that it can freely slide without any hindrance.

- **Coffee brewer**

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

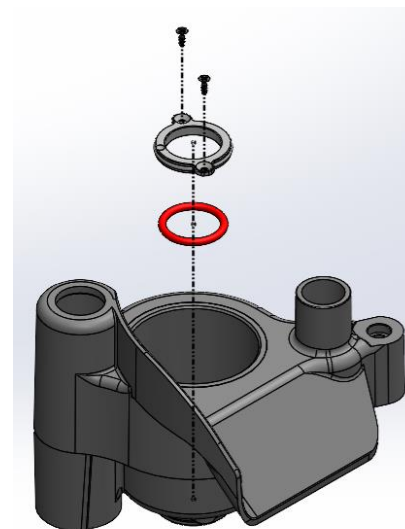
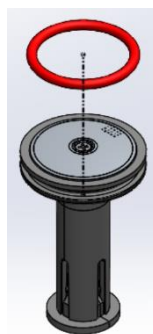
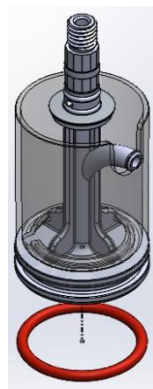
Replace the upper and lower filters.

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 vending/coffee machine.

15. 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 vending 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 programming manual "Software User Manual" and to the "Service Book" of the machine.

OFF CODE	CONTEST	DESCRIPTION
<u>OFF 2</u>	<u>payment system</u>	
OFF 2 E OFF 2 M OFF 2 P	executive MDB parallel	No communication between the payment system and the CPU of the vending machine; it might be caused by improper power supply, false programming or malfunctioning of the payment system.
<u>OFF 3</u>	<u>drip tray</u>	The sensor controlling the liquid level in the drip tray has tripped because the liquid waste level has reached the maximum allowed value; empty the drip tray and put it back; make sure that it is properly positioned.
<u>OFF 5</u>	<u>EAROM</u>	Those built in the CPU board fail to operate properly; replace the CPU board.
<u>OFF 6</u>	<u>water supply</u>	No Water - Water supply problem.
OFF 6 C	air break	Air break filling time too long; the water supply might be totally lacking, its pressure might be not enough or some obstacle might slow down the regular water flow (filter grilled cover, load pipes either choked or clogged); the safety device of the water inlet solenoid valve has tripped; check the functionality of the microswitch.
OFF 6 D	air break	The air break circuit has been refilled with water, but no drink has been dispensed; the supply circuit might have a leakage; check the functionality of the microswitch.
OFF 6 G	hydraulic circuit	During the first installation phase, water inlet error in the machine; after having opened the water inlet solenoid valve and activated the pump, the volumetric counter shall send the CPU a sequence of pulses to give evidence that water is flowing; if this does not occur, error 6G is triggered; check the functionality of the volumetric counter.
<u>OFF 7</u>	<u>espresso circuit</u>	
OFF 7 A	vibration pump	The power-on time of the hydraulic circuit pump has exceeded the limit; the water flow has encountered more resistance than usual and the pulses produced by the volumetric counter have required a time interval deemed to be too long for a dispensing cycle within proper limits; check the functionality of the volumetric counter, pump and pipes; also check the grinding quantity and degree of the coffee beans poured into the coffee brewer chamber.
OFF 7 C	brewing chamber	During the brew phase, the chamber has moved down, beyond the safety position, because of pressure; check the grinding quantity and degree of the coffee beans poured into the coffee brewer chamber.
OFF 7 D	volumetric counter	The volumetric counter can not detect pulses within three seconds. check the functionality of the volumetric counter.

OFF 7 R	recirculation	Error in the water recirculation phase. check the functionality of the volumetric counter.
OFF 8	<u>coffee brewer</u> <u>during reset or start-up cycle</u> (small letters)	Check the functionality of the coffee brewer, it must move freely; check the components of the gear motor: motor, pulleys, belt; check the encoder board, the CPU board and the wirings.
OFF 8 a	brewer motor	Brewer motor either not working or not connected; the encoder pulses are not detected by the CPU.
OFF 8 b	no brewer	The brewer is not present, the control microswitch is not pressed or not working; make sure that the brewer is properly installed and that the microswitch is properly working.
OFF 8 c	chamber up	While the brewing chamber of the brewer is moving up, the current consumption limit is reached too early.
OFF 8 d	chamber up	Time out exceeded while the chamber is moving up; motor disconnected or not working.
OFF 8 e	chamber in a stand-by position	While the brewing chamber is moving to the stand-by position, the current required by the motor is higher than admitted.
OFF 8 f	chamber in a stand-by position	Time out exceeded while the chamber is positioning.
	<u>during the dispensing cycle</u> (capital letters)	Check the functionality of the coffee brewer, it must move freely; check the components of the gear motor: motor, pulleys, belt; check the encoder board, the CPU board and the wirings.
OFF 8 A	chamber not positioned for coffee intake	While the brewing chamber is moving to reach the position for ground coffee intake, an obstacle is detected, preventing the motor from working.
OFF 8 B	no brewer	The brewer is not present, the control microswitch is not pressed or not working; make sure that the brewer is properly installed or that the microswitch is properly working.
OFF 8 C	cycle start	While the brewing chamber is moving to reach its brewing position, an obstacle is detected, preventing the motor from working.
OFF 8 D	under compression, improper absorption	Time out exceeded while the chamber is moving up; motor disconnected or not working.
OFF 8 E	descent phase	While the brewing chamber is moving down, the current required by the motor is higher than admitted.
OFF 8 F	descent phase	Time out exceeded while the chamber is moving down.
OFF 8 G	initial position	Time out exceeded while the chamber is moving up.
OFF 8 H	compression phase	Time out exceeded while the chamber is compressing for brewing.
OFF 8 I	compression phase	The current consumption limit is detected before the chamber has reached its brewing position; too much coffee ground in the brewing chamber; this check is carried out only if the coffee brewer has been calibrated.
OFF 8 L	wrong position for dose decompression	While brewing, the chamber is not moving as expected.
OFF 8 M	wrong position for dose discharge	Motor not connected, encoder not working, excessive motor effort.
OFF 8 N	upper position not reached during ascent	Motor not connected, encoder not working, excessive motor effort.

OFF 8 P	lower position not reached during descent	After brewing, the brewing chamber fails to reach the lower position.
OFF 8 Q	maximum upper position not reached	After grounds have been ejected, the brewing chamber fails to reach the upper position.
OFF 8 R	stand-by position not reached	Stand-by position not reached.
OFF 8 S	dose decompression phase	Dose not decompressed.
OFF 9	<u>coffee beans</u>	The maximum grinding time has been exceeded; as soon as the grinding phase has been completed, the brewing chamber of the coffee brewer is moved up, to the upper piston, to compress ground coffee; if the motor fails to encounter the expected resistance during this phase, this means that the ground coffee quantity is less than required or completely lacking; in the machine with two coffee beans canister: 9A the right one is lacking, 9B the left one is lacking; canister blade closed; wear, millstones excessively closed.
OFF 10	<u>EAROM</u>	Stored data are not consistent (reading or writing error) and the overall operation of the vending machine may be otherwise than expected.
OFF 14	<u>water inlet</u>	
OFF 14 B	hydraulic circuit	If water is not refilled after six dispensing cycles, error 14 is triggered; even a water inlet pressure value other than the pre-set one, may cause this error; thus filling in the water circuit in excess and providing for a number of dispensing cycles higher than the pre-set one; if selections are dispensed with a limited water quantity, the error is more likely to occur.
OFF 17	<u>keyboards</u>	
OFF 17 A	selection	A button appears as if it were constantly pressed.
OFF 24	<u>power supply unit</u>	
OFF 24 A	24 V dc	The actual 24 V dc voltage value is higher than the tolerated one.
OFF 24 B	24 V dc	The measured 24 V dc voltage value is below the admitted threshold or totally absent, e.g. because a fuse has tripped; find out and remove the causes that have produced this error before powering on the machine again.
OFF 31	<u>espresso coffee water</u>	
OFF 31 A	temperature	The water temperature is higher than the programmed value.
OFF 31 B	temperature	Water fails to achieve the temperature setpoint.
OFF 31 C	temperature probe	The temperature probe is interrupted or its electric connector is detached;
OFF 31 D	time	The temperature fails to achieve the programmed value within the admitted time limit.
OFF 31 H	transducer	The induction transducer is not supplied; a klixon has tripped, no current is supplied by the board, wiring disconnected or out of service.
OFF 31 V	induction heatsink	Induction heatsink temperature too high or temperature probe faulty.
OFF 32	<u>coffee brewer heater</u>	
OFF 32 A	temperature	The coffee brewer temperature is higher than the set-up value.
OFF 32 B	temperature	The coffee brewer temperature is lower than the programmed one.
OFF 32 C	temperature	The temperature probe of the coffee brewer is faulty.

OFF 42	<u>coffee brewer counter</u>	it signals that the coffee brewer has dispensed such a number of espresso cups that it must be serviced;
OFF 43	<u>grounds counter</u>	the number of used coffee doses in the grounds container has achieved the maximum limit.
OFF 44	<u>products counter</u>	It counts the products delivered and the machine stops when the configured number is reached.
OFF 77	<u>CPU</u>	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 reference.
OFF 80	<u>MDB change giver</u>	
OFF 80 4	tubes	A tube sensor is not properly working.
OFF 80 6	validator	Validator not inserted or disconnected.
OFF 80 7	tube	A coin tube is not properly working.
OFF 80 8	memory	ROM with reading/writing error.
OFF 80 C	coin	Coin locked along the acceptance path.
OFF 80 D	coin	Attempt at fraud and coin removal.

16. Uninstallation

Use this procedure to empty the water circuit of the vending machine (VM).

To perform the uninstallation,

in FTP:

press "1= PROGRAMMING", scroll by means of key "2" to "MISCELLANEOUS", press "1" and scroll by means of key "2" to "UNINSTALLATION"; press "10=START"



IN FTS:

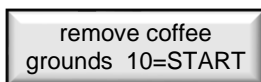
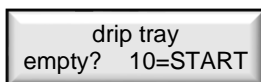
enter the programming menu -> section "MAINTENANCE" -> tab "INSTALLATION" -> option "START UNINSTALLATION".



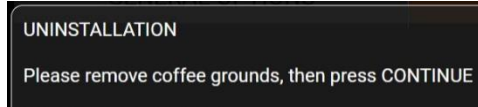
Check the water level in drip tray to avoid OFF error during the procedure or water leaking.

As required by display messages, make sure that the drip tray and the grounds container are empty.

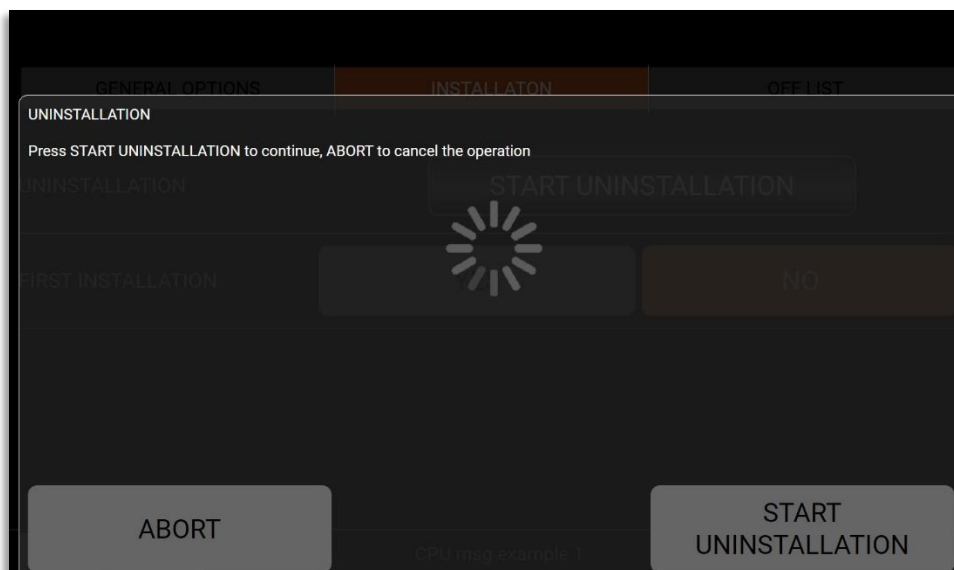
in FTP press "10"



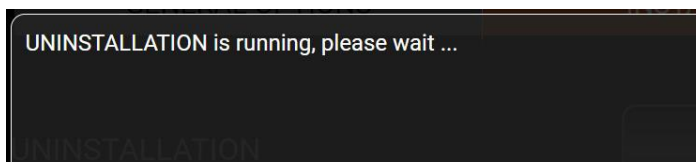
in FTS "CONTINUE"



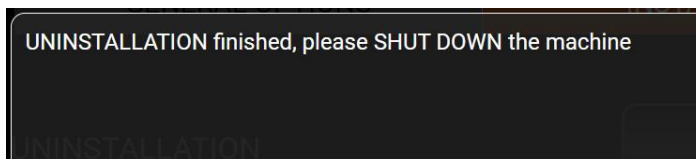
Tap "START UNINSTALLATION" to start emptying the water circuit or "ABORT" to stop the procedure.



The uninstallation procedure starts; water is dispensed from all nozzles in order to empty the water circuit.



Shut down the Vending Machine at the end of the uninstall cycle. The VM will automatically execute the first installation during next VM reboot to fill the water circuit.



The uninstallation procedure does not delete any previously set settings.

17. 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 vending 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.

18. Out of service

18.1. *Temporary out of service*

- Carry out the uninstallation cycle.
- Disconnect the water and power supply.
- Empty and clean the drip tray.
- Remove and clean 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%.

18.2. *Definitive out of service*



Should you put the vending machine out of service definitively and provide for the disposal of the components thereof, after carrying out the operations above, disassemble the vending machine by subdividing the parts according to the nature of the materials; the symbol applied means that the components of the vending 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>

Service address:



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