



espresso coffee machines

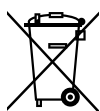
INSTALLATION INSTRUCTION MANUAL

S2



WEEE

Disposal of the equipment by the users within the European Community (WEEE) in compliance with the article 13 of the legislative decree issued on 25 July 2005, nr 151 "Implementation of the directives 2002/95/CE, 2002/96/CE e 2003/108/CE, concerning the decrease in the usage of dangerous substances in the electrical and electronic equipment and the disposal of waste"



The symbol of the crossed waste bin indicated on the equipment or on the packaging means that the product at the end of its lifetime must be disposed of separately from all the other waste.

The separate collection of this equipment coming at the end of its lifetime is organized and run by the importer/distributor. The user who should have to dispose of such equipment should get in touch with the importer/ distributor and follow the procedure they have adopted for the separate disposal of the equipment coming at the end of its lifetime. The proper separate disposal of disused equipment so that it can be recycled and treated according what is environmentally compatible contributes to avoid possible negative effects on the Environment and on Health and allows the reutilization and/or the recycling of the materials the equipment is composed of.

The improper disposal by the user causes the enforcement of the administrative sanctions according to current regulations.

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1. GENERAL DESCRIPTION OF THE MACHINE

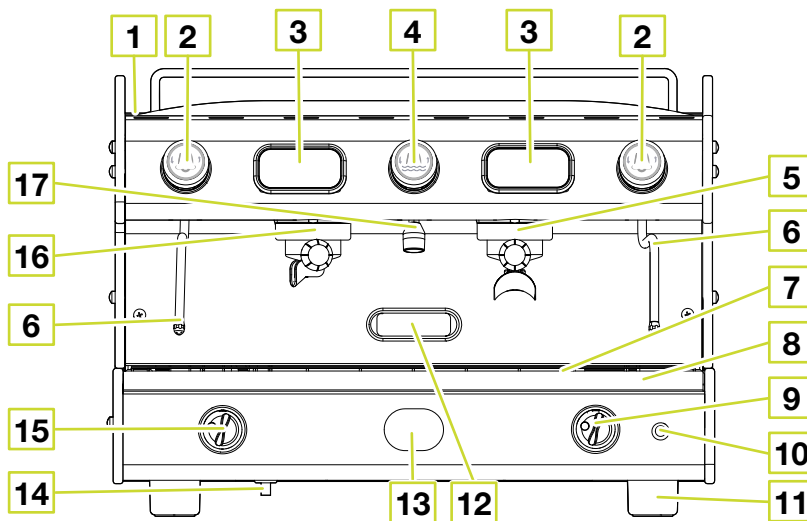
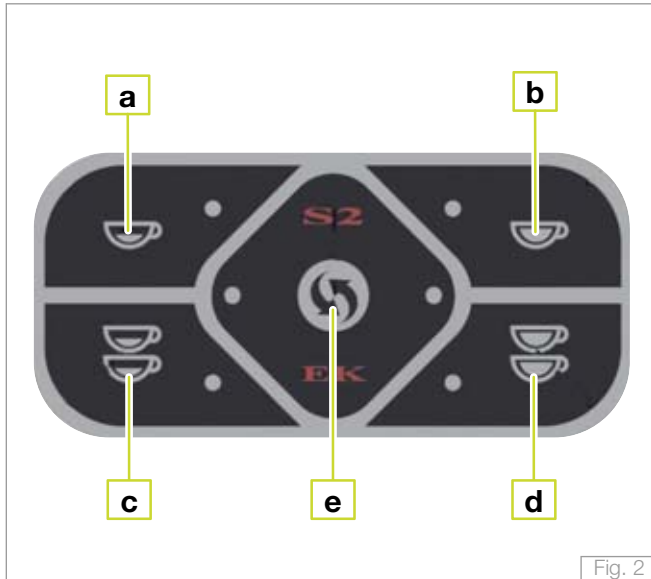


Fig. 1

LEGEND

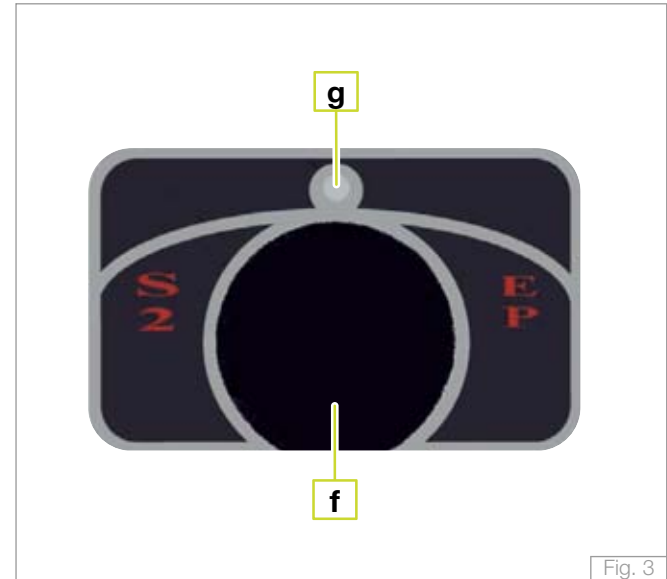
- | | | |
|------------------------------|---------------------------------------|--|
| 1. Top cup grid | 7. Drip tray grid | 13. Gauge |
| 2. Steam delivery knob | 8. Water drip tray | 14. Piezoelectric lighter for gas (optional) |
| 3. Touchpad | 9. Main on/off switch | 15. Control knob for gas delivery (optional) |
| 4. Hot water dispensing knob | 10. Electric cup warmer button | 16. 1-cup filter holder |
| 5. 2-cup filter holder | 11. Adjustable foot | 17. Hot water output |
| 6. Steam wand | 12. Opening for gas burner inspection | |

1.1 DESCRIPTION OF DELIVERY COFFEE TOUCHPAD



LEGEND

- a. 1 short coffee preset delivery button
- b. 1 long coffee preset delivery button
- c. 2 short coffees preset delivery button
- d. 2 long coffees preset delivery button
- e. Continuous delivery key



LEGEND

- f. Delivery button
- g. LED

2. GENERAL ADVICE FOR THE INSTALLER

Read carefully the instructions and warnings contained in this manual and in the “USE AND MAINTENANCE MANUAL” since they provide important indications concerning the installation of the appliance.

Attention!

This appliance may only be used for its intended purpose.
Any other use is therefore considered as improper and unreasonable.
The manufacturer cannot be held liable for any damage caused by improper, incorrect or unreasonable use.

Attention!

Make sure that the customer has previously installed the systems according to the instructions indicated in the “USE AND MAINTENANCE MANUAL” provided with the appliance.

Attention!

Make sure that the power rating of the system arranged by the customer corresponds to the highest rating indicated on the rating plate of the equipment.

Danger!

The appliance is supplied without a plug. It is supposed to be directly connected to the electric mains and therefore, it is necessary to fit the single-pole switch with contact opening of 3 mm or more beforehand, according to the regulations in force.



Danger!

If it becomes necessary to replace the machine's power supply cable, utilise only these types: CET ELETTRIC H07rn-f 5 x 2.5 mm (400v) for 2/3 group versions, 5 x 4 mm (400v) for 4 group versions - CET ELETTRIC SINGLE PHASE 3 x 2.5 mm (220v) 2 group versions, 3 x 4 mm (220v) for 3/4 group versions. replacing the cable must be carried out by qualified personnel. The electrical safety of the appliance is fully achieved only after it has been correctly connected to an earthing system as required by the laws in force.



Danger!

The appliance must be supplied exclusively with cold drinking water. Maximum mains pressure (static pressure) must not be higher than 0.6 Mpa.



Danger!

If in doubt, concerning the above mentioned requirements (about the system previously installed by the customer), please have them checked by qualified staff.



Danger!

The electrical safety of the appliance is fully achieved only after it has been correctly connected to an earthing system as required by the laws in force.



Attention!

Installation must be carried out by qualified personnel according to current laws and to the manufacturer's instructions. Incorrect installation may cause damage to people, animals or property for which the manufacturer cannot be held liable.

**Attention!**

The appliance must be installed on a flat bearing surface, the stability of which needs to be checked.

**Attention!**

The appliance must be installed where use and maintenance are restricted to trained staff.

The electrical power system, water supply system and drainage system must prearranged by the customer in an ideal position to permit the correct installation. The installer cannot modify existing systems that have been arranged by the customer. refer to the chapter “Pre-installation arrangements organised by the customer” in the “USER AND MAINTENANCE MANUAL” attached to each machine.

3. REMOVING THE PACKAGING

After unpacking the machine, please check its integrity; in case of doubt, do not use it and consult the manufacturer. Packaging materials must not be left within children's reach since they are potentially dangerous.



Attention!

The appliance weight is more than 30 kg and therefore, it cannot be moved by a single person alone.



Take note!

Dispose of the packaging as per the norms in force of the country in which the machine is used.

3.1 STANDARD OUTFIT OF THE MACHINE

LEGEND

- A. 1 set of filter holders with relative spouts
- B. 1 complete set of hoses for connection to water mains
- C. 2 sets of filters
- D. 1 set of shower heads
- E. 1 wrench for shower head removal
- F. 1 brush
- G. 1 blind filter
- H. 1 manual coffee tamper
- I. 1 set group-head gasket

3.2 OPTIONAL ACCESSORIES (SUPPLIED ONLY ON REQUEST OF THE CUSTOMER)

LEGEND

- I. Water softener
- L. Water line impurity filter
- M. Pressure reducer
- N. Detergent

4. INSTALLATION

Place the machine on the support surface, lifting it up only from underneath. Adjust the feet so that the machine fits perfectly in a horizontal position and tilting slightly backwards. Before connecting the machine to the supply systems, ensure that the data on the nameplates correspond to the ratings where the machine is installed.

4.1 ELECTRIC INSTALLATION DIAGRAM

Take note of all warnings and advice in this manual when carrying out the electrical connection.

Furthermore, the power supply cable must be completely uncoiled to avoid dangerous overheating.

Check the voltage in the place of installation of the machine and then connect the power supply cable as shown in the figure below.

The cables of the machine are marked in the following way:

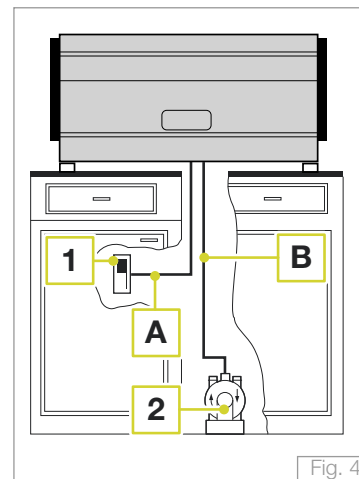
A - Power supply cable of the machine;

B - Motor pump cable (when not incorporated in the machine)

a) connect cable (**A**) directly to the single pole switch (1).

b) connect cable (**B**) directly to the motor pump (2).

Versions of the machine with the motor pump incorporated do not have the cable (**B**).



Legend:

1. Main switch (prepared by the customer);
2. Motor pump (if not built-in).



Attention!

Connect the yellow/green conductor lead of cable (B) to the earth terminal on the motor pump (when the motor pump is not incorporated in the machine).



Danger!

The light blue conductor lead of cable (**A**) is connected to the neutral phase of the electrical system.
Below the electric diagram for 3 ph machine.

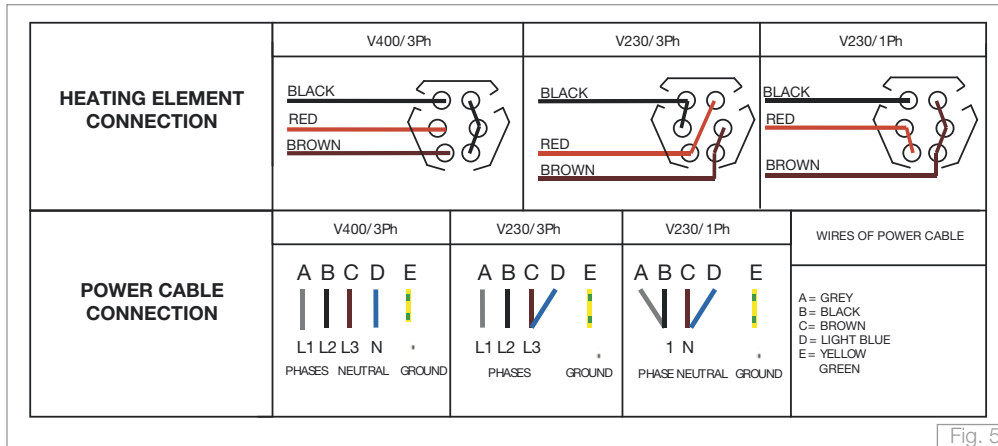


Fig. 5



Take note!

230V single-phase connections are only possible with rating plate data of 5000 W or lower.

4.2 WATER MAINS INSTALLATION DIAGRAM

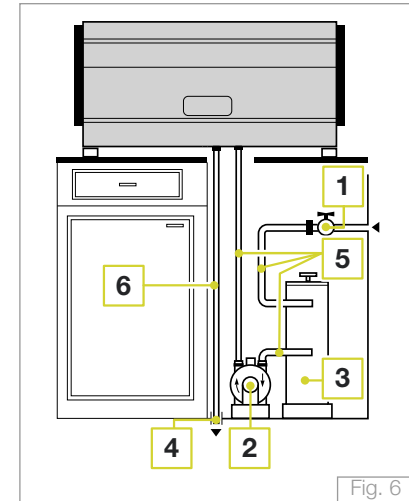


Attention!

The machine is supplied without water in the boiler to avoid exposure to temperatures less than 0°C that could cause irreparable damage.

Legend:

1. Water tap (previously installed by the customer)
2. Motor pump (provided with the machine - when not built in)
3. Water softener (optional)
4. Drain siphon (previously installed by the customer)
5. High-pressure (supplied)
6. Water drain pipe (provided with the machine).



Carry out the connections as shown in Fig. 6 and taking into account the following instructions:

- Always use the hoses supplied with the machine to make water mains connections; never use any other hose or pipes already fitted.
- Make sure that hoses are not kinked, squashed or twisted.
- Fasten the ring nuts of the hoses firmly but without exerting too much pressure.



Danger!

INSTALLATION OF THE WATER SOFTENER IS RECCOMENDED TO PRoLONG THE LIFE OF THE MACHINE.
Install the water softener according to the instructions and norms supplied by the manufacturer.
The water softener must be positioned where it is easily accessible so as to carry out the regeneration cycle when necessary and should be positioned near to the water drainage u-pipe.



Danger!

If a water softener is not a part of the water system, it is necessary to apply a filter to the inlet hose of the motor pump to avoid the entry of impurities that could damage the motor pump or the machine.



Attention!

The motor pump must be installed at a distance to avoid drips or spurts of water and also to avoid salt from dropping onto the motor pump when filling the water softener with salt.
Before connecting the hose coming from the motor pump or from the water-softener, in case of appliances with built-in pumps, place it in a bucket and turn on the water tap (1 - Fig. 6) for a couple of minutes in order to eliminate possible residues from the new hoses and in any case, until the water flows clear.

4.3 DRAINAGE SYSTEM

Assemble the push-fit drainage hose in the appropriate rubber holder of the collection basin of the machine and place the other end of the hose directly into the drainage u-pipe of the prearranged drainage system.
Check that the hose is not blocked or crushed along its length and it also has a sufficient incline to be able to drain without difficulty.



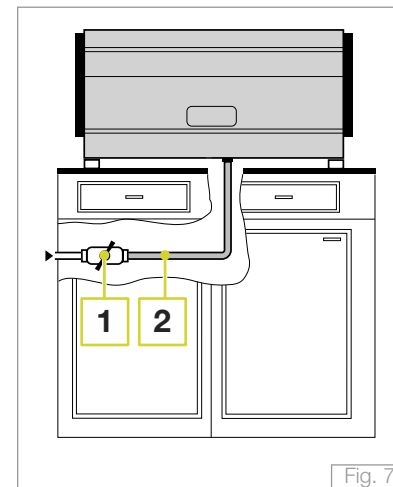
Danger!

Do not place the drainage hose in basins or buckets underneath the counter to avoid the possibility of creating receptacles of dirt with the consequent proliferation of bacteria.

4.4 GAS SYSTEM INSTALLATION DIAGRAM

Legend:

1. Gas Tap (previously installed by the customer).
2. Gas supply pipe.

**Take note!**

The appliance has been equipped by the manufacturer to operate with IPG (G30). Only use pipes that are suitable for the type of gas used and compliant with the laws in force to connect the appliance to the system.

**Attention!**

If the coffee machine is operated using IPG, make sure that the mains supply pressure is no more than 30 mbar, as higher pressure could damage the appliance.

GAS TABLE

NOZZLE GAS TYPE	Ø HOLE G30	Ø HOLE G20	Rated Consumption G30 gr / h	Rated Consumption G20 l / h	POWER RATING Watt	POWER RATING Kcal / h
Mod. 2 groups	57	95	11	15	160	1376
Mod. 3 groups	75	118	182	24	2500	2150



Take note!

The nozzle hole (Ø) is given in hundredths of a millimeter.
These values refer to the heating phase of the machine, i.e. when the gas pressure switch is fully open (with maximum flame).

In order to adapt the machine to a different type of gas, replace the nozzle as indicated below and follow the instructions indicated in the gas table.

Loosen the attachment screw **1** (Fig. 8) to replace the gas nozzle; then remove the connection towards the pressure switch in order to reach the gas nozzle.

Loosen the nozzle and replace it with a suitable one, according to the type of gas used. Place the connection in its previous position and tighten the screw **1** (Fig. 8) again.

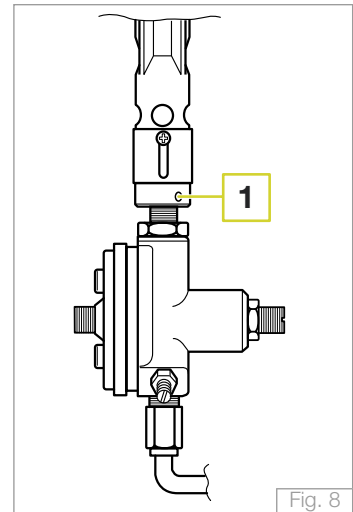


Fig. 8



Attention!

The appliance does not need an exhaust flue. For correct installation of the gas system, comply with the laws in force.

5. SWITCHING ON THE MACHINE

5.1 FILLING THE BOILER

- A. Open the water supply tap as arranged during the preparatory stages (see Fig. 6 on page 12 - Ref. 1).
- B. Verify that the water mains pressure (approx. 4 bar) is visualized on the water mains pressure gauge (12).

5.2 SWITCHING ON THE APPLIANCE

- A. Turn on the power supply switch that was prearranged during the system preparation (see Fig. 4 page 10 - Ref. 1), and then turn on the machine's main switch (9) on 1 position.
- B. The automatic refill system is activated until the boiler water level reaches the level specified by the manufacturer.

5.3 HEATING UP

Turn the main switch (9) of the coffee machine on 2nd position to start the heating up.

5.4 GROUP DOSE SETTING – EK MODEL

Hold down the free flow button on the first touchpad from the right (1st Group) for about 5 seconds, until the symbol begins to flash (the dose symbols stay lit) and all the symbols on the other touchpads switch off.

Within 30 seconds fasten a filter holder (5) containing a dose of ground coffee to the group; put a cup below the filter holder and press the button “1 short coffee” (a) on the corresponding touchpad. The symbol for the selected dose will remain lit to indicate that the dose is being set. The symbol flashes while all others are switched off.

When the coffee reaches the required dose, press the button “1 short coffee” (a) again to stop the coffee delivery and confirm the required dose. When the dose has been set, the relevant symbol will switch off to show that programming is complete. repeat this operation for the other buttons (b-c-d), also on the touchpad on the right.



Take note!

Carry out this procedure to program the remaining doses, using the 1-cup filter holder (13) or the 2-cup one (5), according to the type of dose to be programmed.



Take note!

To quit the programming function, press the free flow delivery button (e) for 5 seconds or, alternatively, wait 1 minute to quit the function automatically.



Danger!

By setting the doses on the first touchpad on the right, automatically the other groups will be acquiring the same doses; if you want to set a group with different doses, repeat the same dose setting procedure on the touchpad corresponding to the group you want to program differently.

5.5 OPERATING TEMPERATURE ADJUSTMENT FOR ELECTRIC HEATING SYSTEM

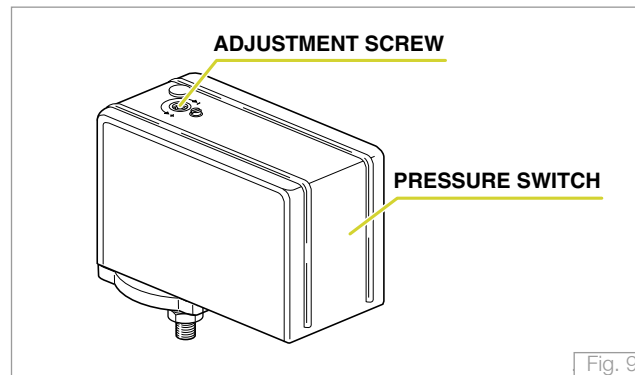
The electric heating system of the machine is already set by the manufacturer to work at a temperature of 120 °C in the boiler, corresponding to 1 bar boiler pressure. This pressure can be viewed on the pressure gauge (12) on the appliance. In order to increase or decrease the boiler pressure, it is necessary to operate on the electric pressure switch (Fig. 9) inside the appliance (on the right side) in the following way:

THREE-PHASE PRESSURE SWITCH:

- Turn the adjustment screw anti-clockwise to increase boiler pressure.
- Turn the adjustment screw clockwise to decrease it.

SINGLE-PHASE PRESSURE SWITCH:

- Turn the adjustment screw clockwise to increase boiler pressure.
- Turn the adjustment screw anti-clockwise to decrease it.



Danger!

Cut off power while operating on the pressure switch.



Take note!

Boiler pressure (at operating temperature) is normally modified exclusively in order to adapt the machine temperature to the particular type of coffee blend so as to obtain the best result in the cup.

5.6 INDIVIDUAL TEMPERATURE CONTROL - I.T.C. - (OPTIONAL)

This system makes it possible to set a different coffee brewing temperature for each delivery group.

The temperature of each group is independent from the temperature set in the boiler.

To vary the temperature on a group, use the corresponding regulator alongside the group itself, which can be reached through the opening in the top of the, upper cup grid (1 - Fig. 10). Turn the adjustment screw anticlockwise to decrease the temperature. Turn the adjustment screw clockwise to increase the temperature.

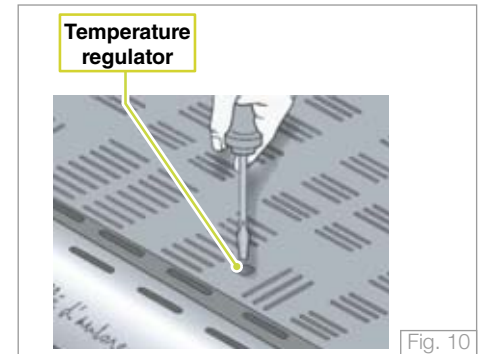


Fig. 10



Take note!

Every full turn of the adjustment screw corresponds to a change of approximately 2 °C. Changes must only be made to adapt the temperature of the delivery group to the coffee blend being used, so as to improve the result in the cup.

5.7 ELECTRIC CUP WARMER (OPTIONAL)

The appliances can also be equipped with an electric cup warmer (as optional) for an additional cup heating. To switch on the cup warmer, press the button (17). Press the same button to switch it off.

5.8 COFFEE COUNTER FUNCTION (OPTIONAL)

COUNTER function allows to record the number of cups of coffee that have been delivered by the machine.

Once the machine is switched on, the display shows for a few seconds the date and then the partial and total counters.


By pushing the “one short coffee” and “one long coffee” buttons, the counters are increased of one unit. By pushing the “two short coffee” and “two long coffee” buttons, the counters are increased of two units.



Take note!

The counters are increased only when the deliveries are equal to or longer than 7 seconds.

5.9 RESET

To reset the partial counter, push the  button and hold it for 3 seconds; the display will show:

5.10 MANUAL DELIVERY

It is possible to deactivate the manual button of all groups, to effectuate the correct accounting of the number of coffees delivered, by inserting a jumper in the connector M1 of the control board.



6. SETTING THE MOTOR PUMP PRESSURE

The proper working pressure ranges from 8 to 10 bar. This pressure can be viewed on the pressure gauge (12) on the appliance by switching on a delivery group.

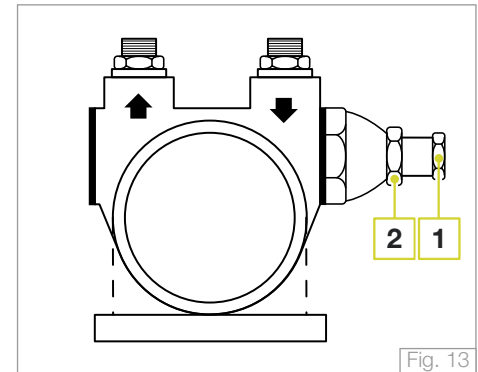
To adjust the pressure, turn the adjustment screw (1 - Fig. 13) of the motor pump, after loosening the lock nut (2 - Fig. 13).

Turn the screw (1 - Fig. 13) clockwise to increase pressure and turn it anticlockwise to decrease it: then fasten in place with the lock nut (2 - Fig. 13).



Take note!

On machines with built-in pump, the pump is already preset to a pressure of 9 bar by the manufacturer.



7. EK MODEL ALARMS OPERATION

LED CORRESPONDING TO THE COFFEE DOSE BUTTON DISPENSING, FLASHING AFTER 5-6 SECONDS:

This alarm is viewed when, during the delivery phase, there is a flow meter malfunction for the delivery group, or if the coffee has been too finely ground.

After checking the grinding fineness, if the problem continues, contact an authorised service centre.

ALL LEDS CORRESPONDING TO ALL DOSES ON ALL TOUCHPADS FLASHING:

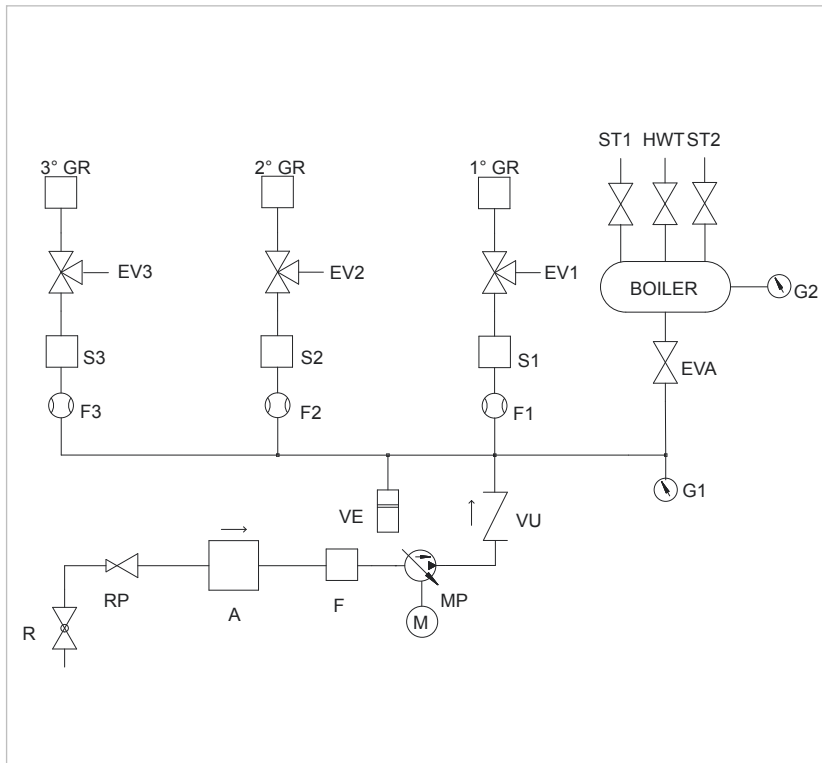
The automatic filling function for the boiler tank has been operating for more than 4 minutes (6 minutes for the 3 groups version), total machine block. To return to the standard operating phase, switch the machine off using the main on/of switch. If this problem is repeated frequently, contact an authorised Assistance centre.

8. EP MODEL ALARMS OPERATION

LEDS CORRESPONDING TO THE COFFEE BUTTONS FLASHING ALTERNATELY BETWEEN THEM

The automatic filling function for the boiler tank has been operating for more than 4 minutes (6 minutes for the 3 groups version), total machine block. To return to the standard operating phase, switch the machine off using the main on/of switch. If this problem is repeated frequently, contact an authorised Assistance centre.

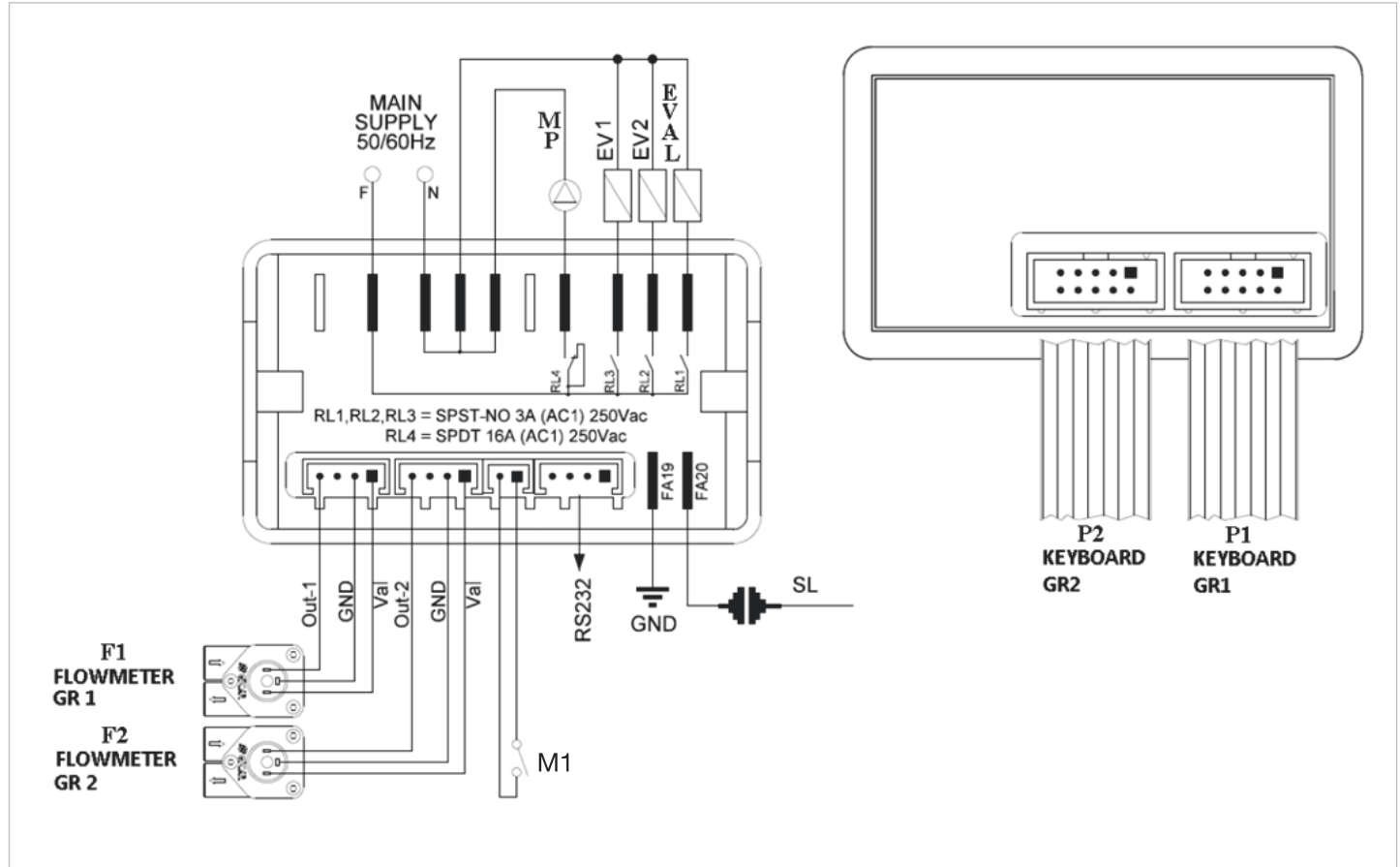
9. HYDRAULIC SYSTEM



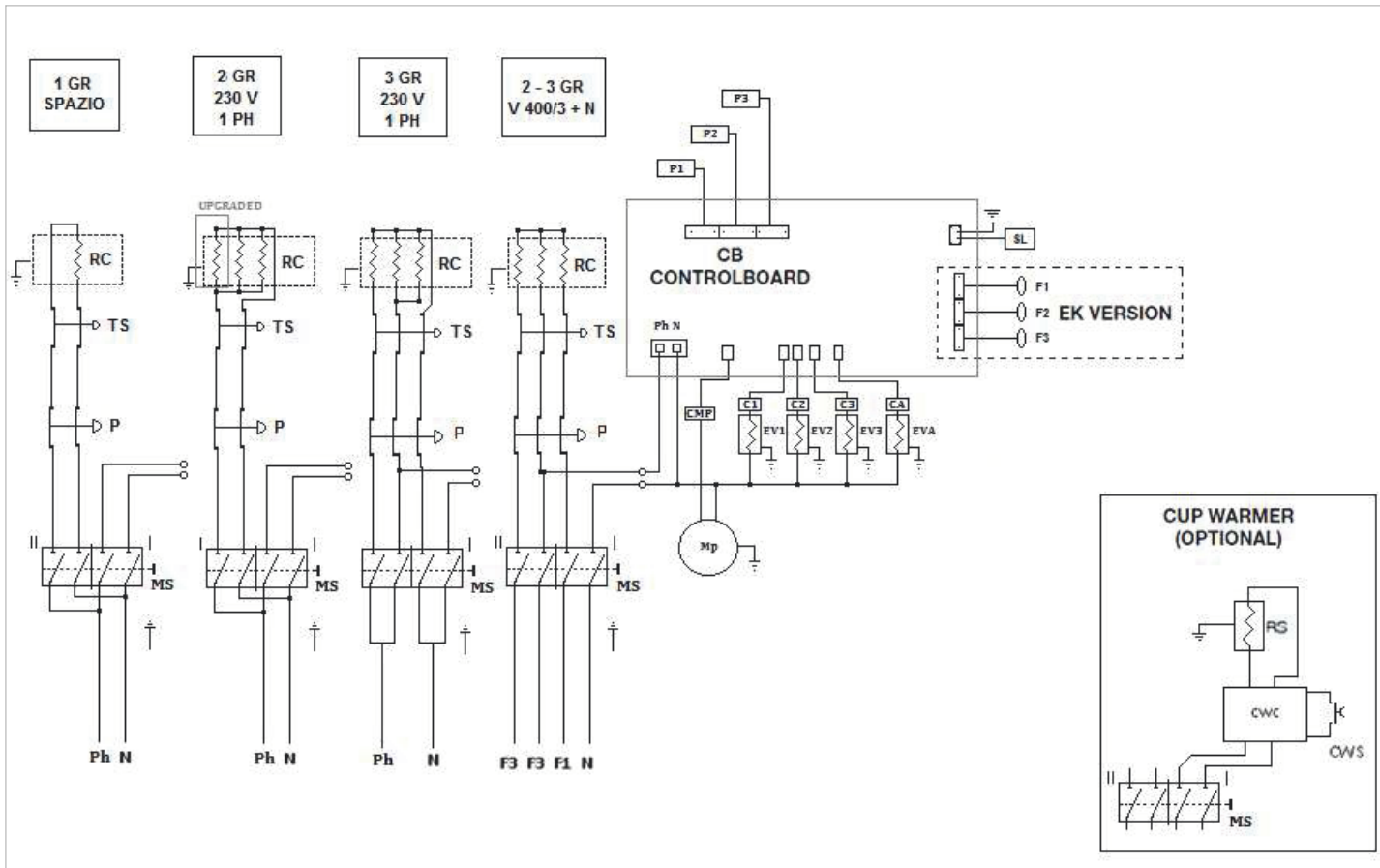
WATER LAYOUT DIAGRAM LEGEND

- R** = WATER NET SUPPLY TAP
- RP** = PRESSURE REDUCER (optional)
- A** = SOFTENER (optional)
- F** = WATER FILTER (optional)
- MP** = MOTORPUMP
- VU** = NO RETURN VALVE
- VE** = EXPANSION VALVE
- G1** = WATER MAIN/PUMP GAUGE
- EVA** = WATER REFILL SOLENOID VALVE
- G2** = BOILER GAUGE
- F1** = FLOWMETER 1ST GROUP FROM THE RIGHT
- F2** = FLOWMETER 2ND GROUP FROM THE RIGHT
- F3** = FLOWMETER 3RD GROUP FROM THE RIGHT
- S1** = HEATING EXCHANGER 1ST GROUP
- S2** = HEATING EXCHANGER 2ND GROUP
- S3** = HEATING EXCHANGER 3RD GROUP
- EV1** = 1ST GROUP SOLENOID VALVE
- EV2** = 2ND GROUP SOLENOID VALVE
- EV3** = 3RD GROUP SOLENOID VALVE
- ST1** = LEFT STEAM TAP
- ST2** = RIGHT STEAM TAP
- HWT** = HOT WATER TAP

10. DIAGRAMS FOR ELECTRONIC BOARD CONNECTIONS



11. ELECTRICAL DIAGRAM

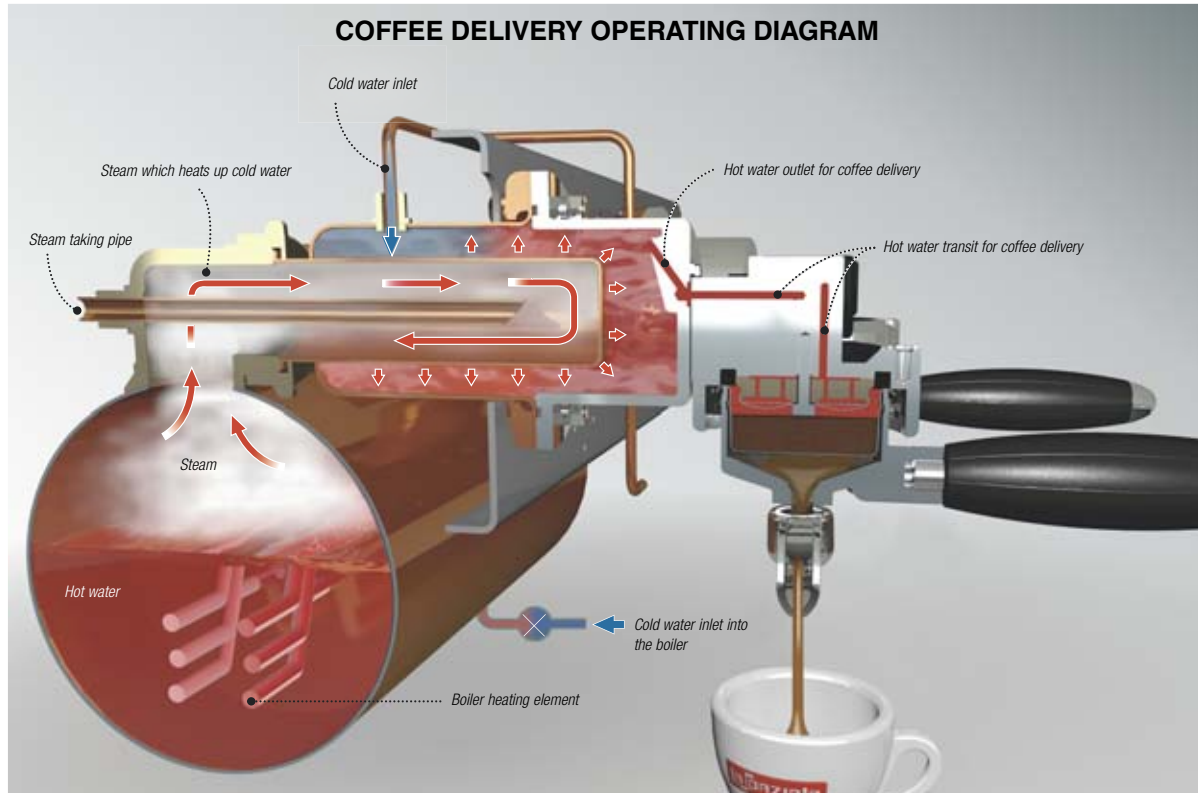


11.1 KEY DIAGRAM

CB	=	Control board power supply
MP	=	Motor pump
RS	=	Cup warmer heating element
RC	=	Boiler heating element
EVAL	=	Solenoid valve automatic water refill
EV1	=	Solenoid valve, 1 st group from the right
EV2	=	Solenoid valve, 2 nd group from the right
EV3	=	Solenoid valve, 3 rd group from the right
EVA	=	Solenoid valve for water refill system
P1	=	Touchpad, 1 st group from the right
P2	=	Touchpad, 2 nd group from the right
P3	=	Touchpad, 3 rd group from the right
SL	=	Control for water level in the boiler
F1	=	Flow meter for 1 st group from the right
F2	=	Flow meter for 2 nd group from the right
F3	=	Flow meter for 3 rd group from the right
MS	=	Main switch
TS	=	Safety thermostat with manual reset
C1	=	Control board relay controlling the solenoid valve, 1 st group
C2	=	Control board relay controlling the solenoid valve, 2 nd group
C3	=	Control board relay controlling the solenoid valve, 3 rd group
CA	=	Control board relay controlling the water refill solenoid valve
P	=	Heating element pressure switch
CWC	=	Cup warmer control board
CWS	=	Cup warmer button
M1	=	Connector to deactivate the manual buttons

All espresso coffee machines by LA SPAZIALE have been built with an heat exchange system between the boiler and the coffee delivery group.

A special patent, the only in the world, for the thermoregulation of the delivery group with steam circulation instead of water.



<http://www.laspaziale.com/index.php/en/video>

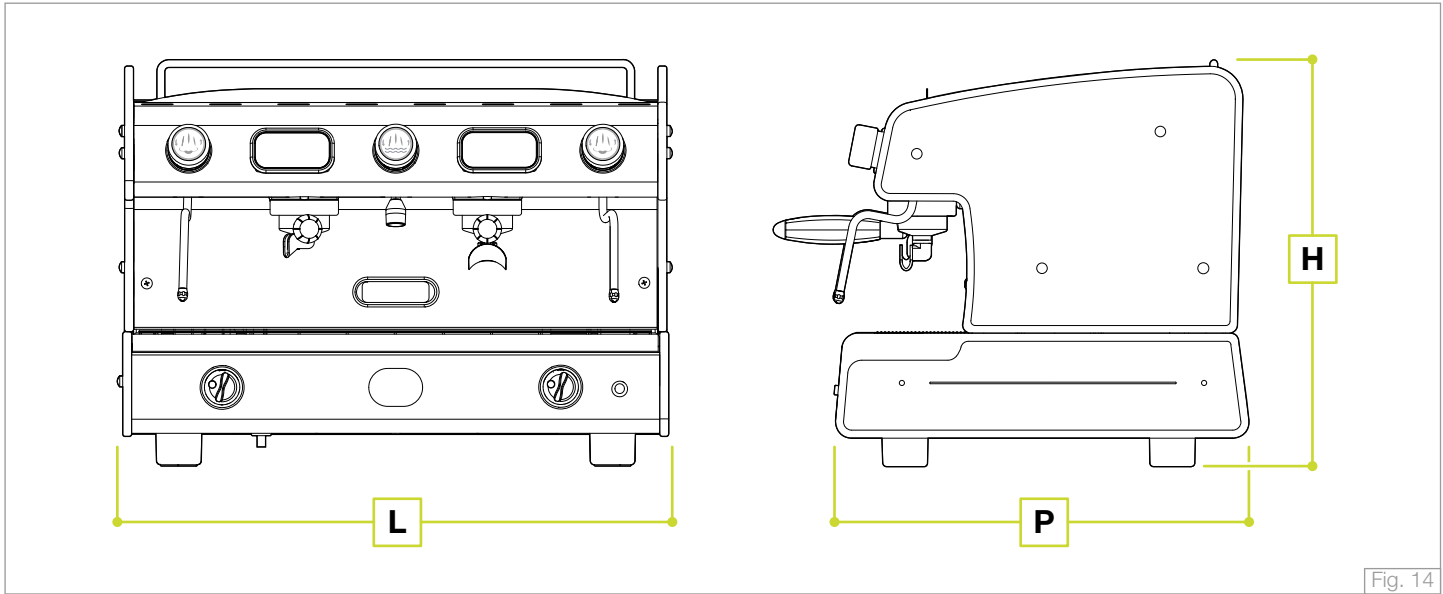


Fig. 14

DIMENSIONS AND WEIGHT				
S2	1 GR	2 GR	3 GR	SPAZIO
L	460	700	930	540
H	520	520	520	520
P	530	530	530	530
WEIGHT KGS	41	65	82	57

POWER SUPPLY RATING AND ABSORPTION				
S2	1 GR	2 GR	3 GR	SPAZIO
VOLT	220/240	220/240	220/240/400	220/240
HZ	50/60	50/60	50/60	50/60
W	2200	3900	4500	3000
W+	3000	-	6500	3800

The 'W+' symbol refers to the machine's power with upgraded heating element.



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La Spaziale S.p.A.

Via E. Duse, 8
40033 Casalecchio di Reno
Bologna - (Italy)

☎ +39 051 611.10.11

📠 +39 051 611.10.40

✉ info@laspaziale.com

🌐 www.laspaziale.com

