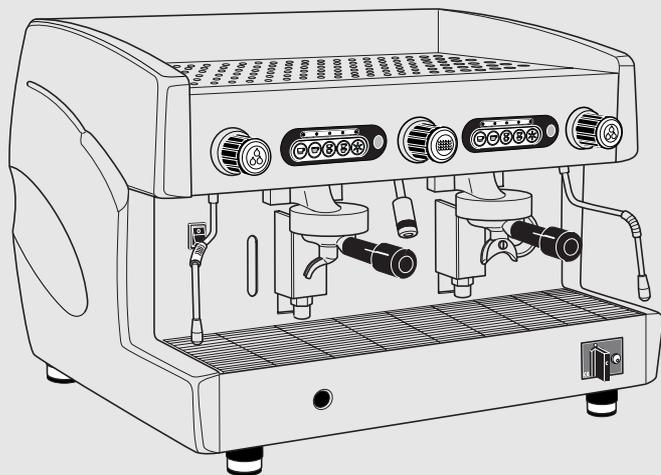
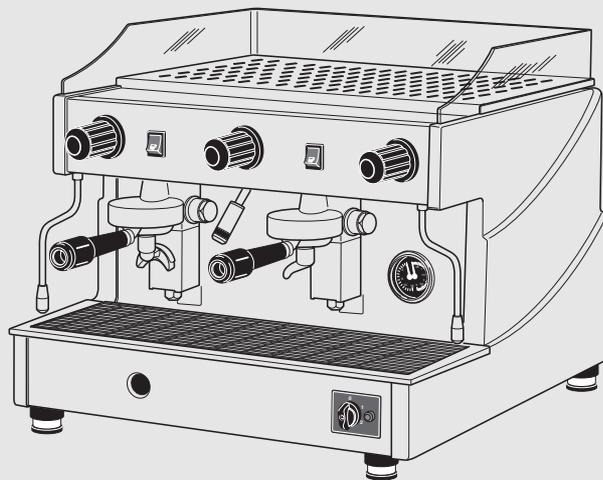




MACCHINE PER CAFFÈ ESPRESSO
MACHINES FOR ESPRESSO COFFEE



MOD. TWENTY



MOD. TEN

ISTRUZIONI PER L'USO E LA MANUTENZIONE MODELLI:
OPERATING AND MAINTENANCE INSTRUCTIONS MODELS:

LEV - PUL - ELE

DICHIARAZIONE DI CONFORMITÀ CE
DECLARATION OF CONFORMITY CE

Noi:

We:

Grimac s.r.l.
via Morazzo, 2
40069 - Zola Predosa (BO) ITALY

dichiariamo, sotto la nostra completa responsabilità, che i prodotti
declare, accepting full responsibility, that the product

macchine per caffè
Coffee machines

modelli
models

TEN PUL 2/3/4 LEV 2/3/4 ELE 2/3/4
TWENTY PUL 2/3/4 LEV 2/3/4 ELE 2/3/4

a cui la dichiarazione si riferisce, sono conformi alle seguenti norme:
to which this declaration relates conforms with the following standard:

CEI EN 60335 - 1 A55 : 1993
CEI EN 60335 - 2 - 15 : 1990
CEI EN 60335 - 1 A6 : 1989

ed ai requisiti delle seguenti direttive CEE
in accordance with the provisions of CEE

DIRETTIVA BASSA TENSIONE 73/23
con successivo emendamento 93/68
DIRETTIVA EMC 89/336
LOW VOLTAGE DIRECTIVE 73/23
with successive emendment 93/68
DIRECTIVE EMC 89/336

Zola Predosa, 15 January 2002

Il presidente ed amministratore delegato
The Manager and Managing Director
Sig. **GIANCARLO GARDOSI**



Dear Customer, *Grimac Srl* would like to thank you for the choice that you have made and guarantees that the product that you have purchased is top quality.

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SECTION 0 - INTRODUCTION



0.1 - OPENING REMARKS

These Operating Instructions are a guide to using and maintaining the **TEN** and **TWENTY** model machines manufactured by **Grimac srl**. Before USING OR WORKING ON THE MACHINE in any way, carefully read the whole of this manual.

The manual contains all the information, advice and warnings about using the coffee machine that are required to ensure long term reliability and maximum operating efficiency.

The **Grimac** coffee machines have been designed in such a way that it incorporates all the traditional features of a coffee machine in an Italian bar: component parts designed for professional use, reliability and operating autonomy, a copper lined water heater but above all it provides coffee of superlative quality. The **TEN** and **TWENTY** series machines have been designed for people who really know about coffee.

Follow all the advice contained in the manual carefully in order to ensure optimum machine efficiency and in order to ensure that it has a long working life. Remember that the Operating Instructions are an integral part of the product and must be kept carefully throughout the whole working life of the machine.

If the machine is passed onto another user or owner the Operating Instructions must go with it.

Should problems or faults arise, **GRIMAC srl** guarantees that you will be given every possible assistance from our after-sales service centres.

0.2 - SERVICING

DATE OF INSTALLATION..... SERIAL NUMBER.....

INSTALLED BY (NAME OF COMPANY)..... MODEL.....

TOWN OR CITY..... TELEPHONE NUMBER.....

SERVICE ENGINEER TO BE CONTACTED.....

SERVICED ON..... BY.....

HAVE THE COFFEE MACHINE SERVICED AT LEAST ONCE A YEAR BY QUALIFIED SERVICE ENGINEERS.

0.3 - SYMBOLS

The symbols below are used to draw the reader's attention to important points regarding personal safety, machine safety and certain operating conditions.

	GENERAL OPERATING NOTICES
	GENERAL WARNING DAMAGE MAY BE CAUSED TO THINGS OR TO THE COFFEE MACHINE
	WARNING! SOURCE OF DANGER TO PERSONS OR THE MACHINE
	WARNING! DANGER OF ELECTRIC SHOCK TO PERSONS OR ELECTRICAL DAMAGE TO THE COFFEE MACHINE.

0.4 - GENERAL SAFETY NOTICES

Any use of the **TEN** and **TWENTY** model machine that is not specified in this manual or any use of the product other than the use agreed upon at the time of purchase exonerates **GRIMAC srl** from any liability for any harm or injury to persons or damage to things or the machine.



THE ELECTRICAL SYSTEM MUST BE EARTHED.

- Never place hands or metal or other objects inside the machine when it is connected to the electric power supply.
- Always contact our after-sales service centre for any repair or maintenance task that is not described in this manual.
- Before working on the machine in any way, **ALWAYS** take out the plug from the mains power supply socket.
- Check the power cable regularly. A worn cable is a potential source of electrocution.
- Before using the machine to make coffee, make sure that you are perfectly familiar with the location and function of all the controls and the machine specifications contained in the **OPERATING INSTRUCTIONS**.

Certain safety regulations must be adhered to when using this machine.



0.5 - POSITION OF STICKERS

Stickers and plates displaying 'Notices' and 'Warnings' are located on the machine. Replace them if they become illegible.



0.6 - SAFETY PRECAUTIONS TO BE TAKEN WHEN WORKING ON THE MACHINE

- Switch off the machine and disconnect it from the electric power supply before carrying out routine maintenance, special maintenance and general cleaning operations.
- In order to ensure that the machine has a long working life, have any component parts replaced only by manufacturer approved parts by properly qualified service engineers.
- After carrying out any kind of maintenance, ensure that all parts of the machine are in proper working order.
- Repairs to the electrical system must be carried out only by properly qualified service engineers and only after the electric power supply has been disconnected and the plug has been removed from the supply socket.
- Never use running water on the machine whilst it is switched on or being cleaned.
- Never wash the machine with solvents, paint thinners, alcohol, etc. We recommend the use of warm water and neutral detergent in order not to damage the internal and external parts of the machine.



0.7 - PRACTICAL TIPS ON MAKING COFFEE

The **TEN** and **TWENTY** series coffee machines guarantee you a perfect cup of coffee because it uses the same professional standard component parts as coffee machines in Italian bars. Nevertheless, the user must ensure that the steps prescribed in Section 3, Paragraph 3.1 are strictly adhered to and in particular the user must ensure that the filter is filled with the correct amount of coffee.

0.8 - TECHNICAL SPECIFICATIONS

TWENTY MODEL

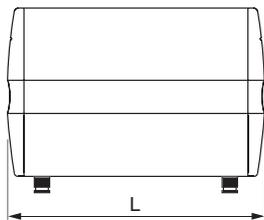
	Units n°	2	3	4
Width	mm	702	882	1092
Depth	mm	570	570	570
Height	mm	505	505	505
Capacity	litres	10	15	20
Supply voltage (volt)	V	115/230/400	115/230/400	115/230/400
Absorbed power, resistance	kW	3.3	4.5	4.5
Absorbed power, electric pump	kW	0.165	0.165	0.165
Absorbed power, solenoid valve	kW	0.018	0.027	0.036
Operating pressure, water heater	bar	0.9	0.9	0.9
Set pressure, safety valve	bar	1.9	1.9	1.9
Set pressure, heat exchanger safety valve	bar	12	12	12
Pressure, mains water supply(*)	bar	0÷4	0÷4	0÷4
Pressure, coffee dispensing	bar	9÷10	9÷10	9÷10

(*) Use of a pressure reducer is recommended for values higher than those given.

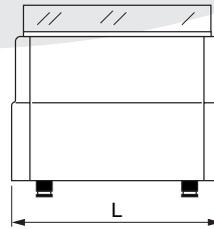
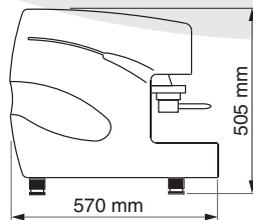
TEN MODEL

	Units n°	4	3	2
Width	mm	1038	828	658
Depth	mm	550	550	550
Height	mm	512	512	512
Capacity	litres	20	15	10
Supply voltage (volt)	V	115/230/400	115/230/400	115/230/400
Absorbed power, resistance	kW	4.5	4.5	3.3
Absorbed power, electric pump	kW	0.165	0.165	0.165
Absorbed power, solenoid valve	kW	0.036	0.027	0.018
Operating pressure, water heater	bar	0.9	0.9	0.9
Set pressure, safety valve	bar	1.9	1.9	1.9
Set pressure, heat exchanger safety valve	bar	12	12	12
Pressure, mains water supply(*)	bar	0÷4	0÷4	0÷4
Pressure, coffee dispensing	bar	9÷10	9÷10	9÷10

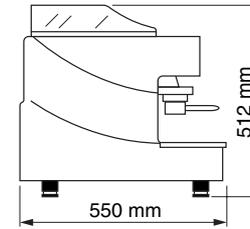
(*) Use of a pressure reducer is recommended for values higher than those given.



Twenty Model



Ten Model



SECTION 1 - TECHNICAL DATA



1.1 - BACKGROUND INFORMATION

This machine has been manufactured from component parts and materials that conform to the new standards now in force. Each part of the **Grimac** machine has therefore been carefully designed with particular attention being paid to the electrical system components and the elements that come into direct contact with the coffee being dispensed.



1.2 - TAKING DELIVERY AND UNPACKING

The **TEN** and **TWENTY** coffee machines are housed in a box that protects it from being jolted and broken.

Open the box and remove the moveable cardboard protection in order to be able to take hold of the bottom of the machine with both hands. Lift out slowly and carefully.

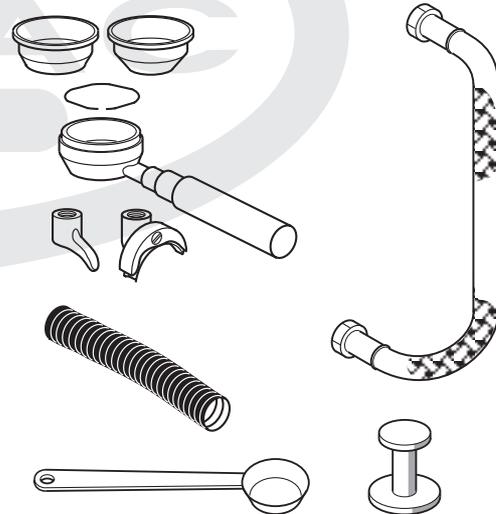
Rest the machine on a flat surface or table for the preliminary operations.

First, check that the machine is complete and undamaged.

Also check that underneath the coffee dispenser unit there is the box containing the accessories that come supplied with the machine. (See figure alongside).

Before connecting the coffee machine to the mains electric power supply, check that the mains voltage is compatible with the technical specifications.

ACCESSORIES SUPPLIED WITH THE MACHINE



THE ELECTRICAL SYSTEM MUST BE EARTHED.



1.3 - POSITIONING AND INSTALLATION

After checking that the machine is complete, locate it in the position in which it will be used. Ensure that the position is stable and safe and allows enough space for carrying out the different operations (fitting the filter holder, obtaining hot water and steam).

The following appliances must be installed, adjusted and connected to the mains water and electric power supplies by qualified people in strict compliance with the instructions contained in this manual.

To ensure that the machine works correctly and remains in proper working order, read this manual carefully, adhere to the standards which it sets out and refer to the diagrams it contains.



Place the machine on a flat surface that is out of the reach of children.

To prevent the machine's being knocked, do not locate it in places where there is a lot of movement to and from or in narrow corridors.



Connecting to mains power supply

Connect the power cable to the mains by means of a 24 amp fused switch as shown on the label on the cable.



Connecting to the mains water supply

- 1 - cold water must be supplied to the machine;
- 2 - check that mains water supply pressure is compatible with the technical specifications for the machine;
- 3 - connect the drain pipe to the tank underneath the drip tray and do not make tight bends;
- 4 - connect the 3/8" hose to the mains supply;
- 5 - ensure that there is an adequate inclination to enable water to drain away;
- 6 - if the mains supply water is to be treated with a water softener, follow the instructions set out on page 50.



1.4 - PRELIMINARY CHECKS

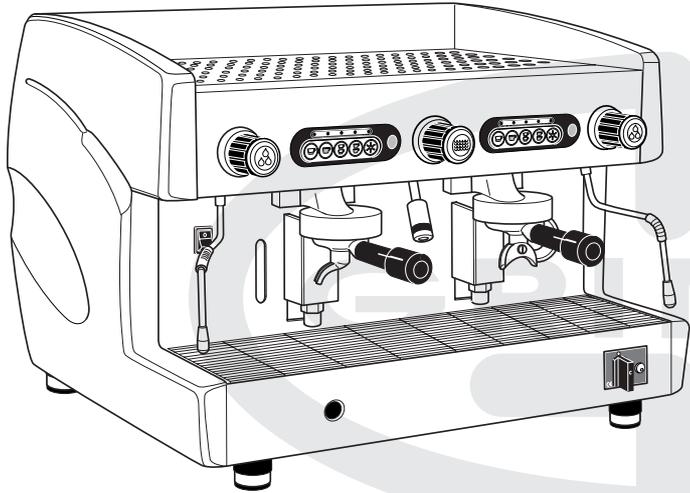
Check that:

- the electric plug has been inserted;
- the drain pipe is connected to the mains water supply;
- the drain pipe has been positioned in the manner specified in the instructions above.

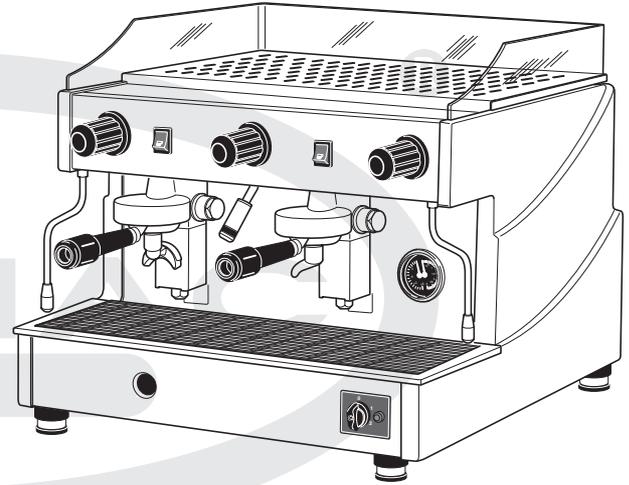


SECTION 2 - GENERAL DESCRIPTION

2.1 - GENERAL DESCRIPTION



TWENTY MODEL



TEN MODEL

In order to avoid problems and complications, the motor and the pump have already been installed inside the machine in an accessible position. When the product leaves the factory it has been fully tested and is ready to be rapidly installed. This allows space to be saved and ensures lower working noise levels.

SECTION 3 - USING THE MACHINE



3.1 - USING THE MACHINE

Place the main switch at position 1.

Turn the external water supply knob and turn on the steam tap, let the water flow into the water heater and check the level on the reading scale. The water level should come roughly half way up the MIN-MAX scale.

Place the resistance switch in the position 2.

Finally, shut off the steam tap.

The manometer will indicate that water heater pressure is between 0.9 - 1.2 bar.



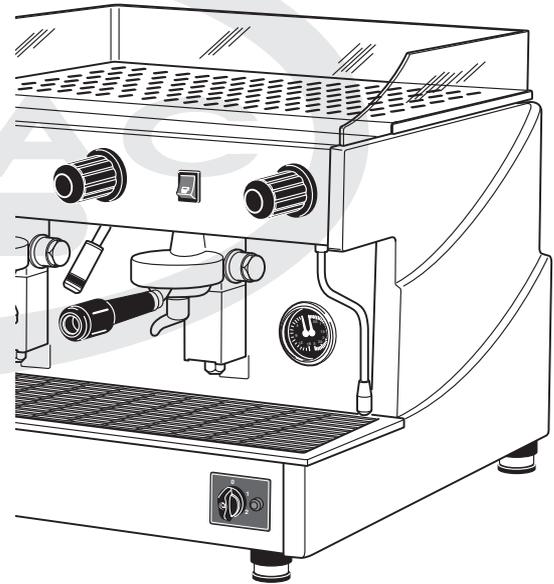
Be very careful when dispensing water and steam.
DANGER OF BURNS.

To dispense hot water, turn the central knob

marked with the symbol .

To dispense steam, turn either one of the side handles

marked with the symbol .



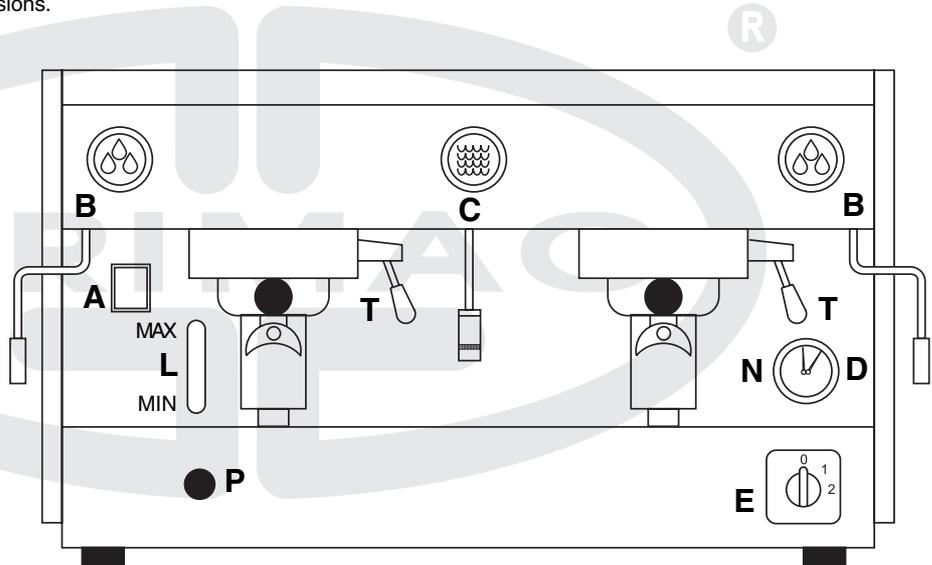


3.2 - MACHINE OPERATIONS AND OPERATING INSTRUCTIONS

LEV Model

Manual operations with lever operated coffee dispenser unit; thermostatically controlled heat exchanger in water heater maintains water at a constant temperature. Available in the 2, 3 and 4 unit versions.

- A - Cup heater switch (optional)
- B - Steam knob
- C - Hot water knob
- D - Water heater pressure gauge
- E - Main switch
- L - Boiler water level indicator
- N - Coffee dispensing pressure gauge
- P - Manually operated knob for supplying water
- T - Start/Stop coffee dispensing lever

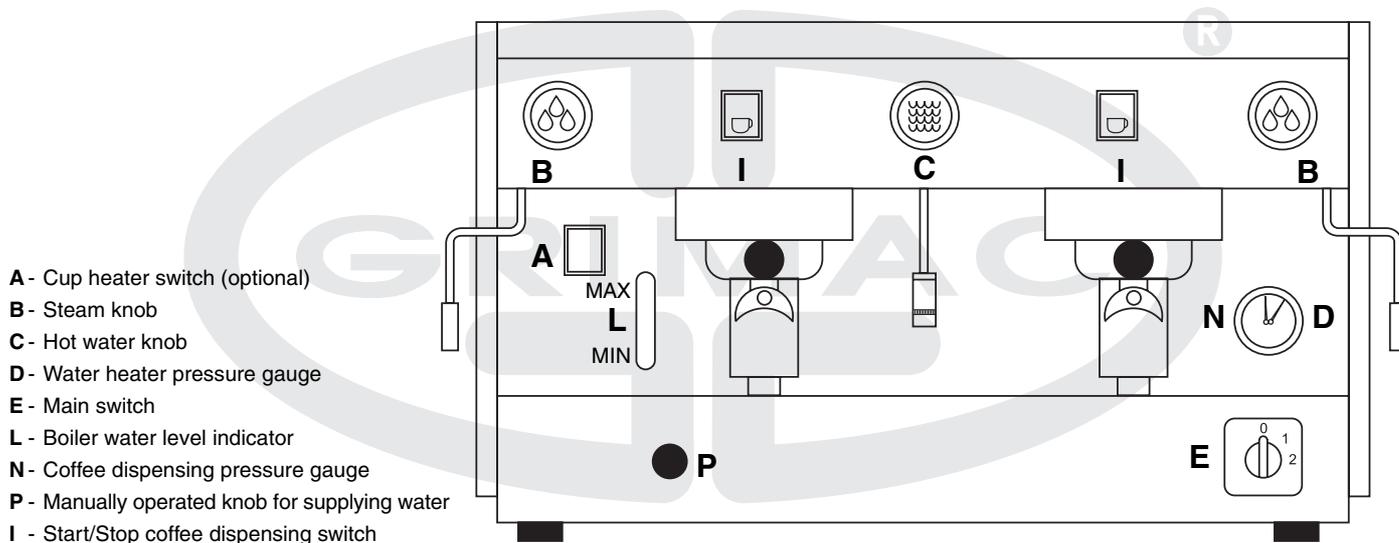


Put the required amount of coffee into the filter holder and fit it under the unit. Next, lower the lever (T) relative to the unit used to dispense the coffee. Similarly, you can stop dispensing the coffee by turning the lever (T) back up.

PUL Model

Semi-automatic continuous dispensing with solenoid valve.

The coffee dispenser unit is operated by a switch that meets approved standards and which dispenses the quantity in the upper part. Available in the 2, 3 and 4 unit versions.



Put the required amount of coffee into the filter holder and fit it under the unit. Next, press the push-button (I) relative to the unit used to dispense the coffee.

You can stop dispensing the coffee by pressing the push-button (I) again.

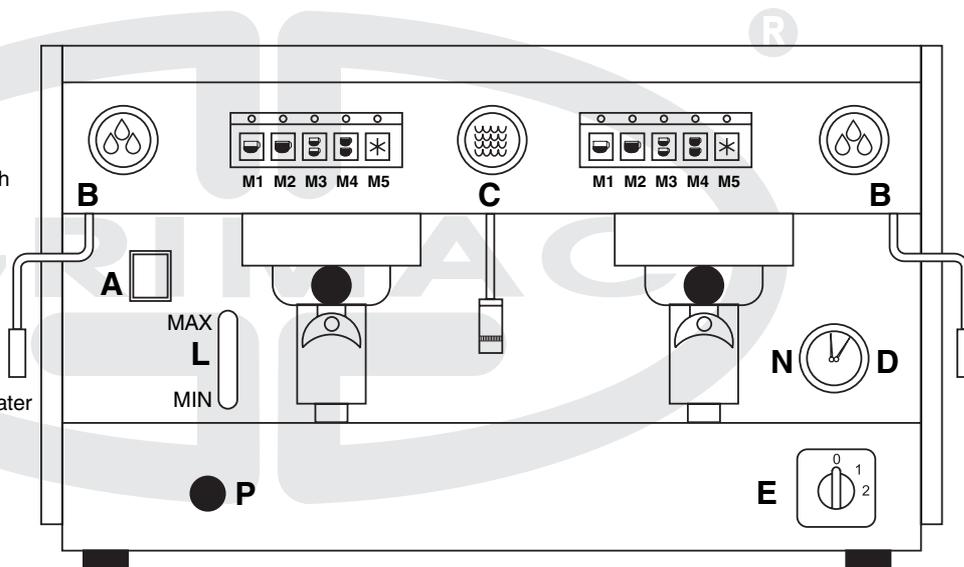
ELE Model (1st series) - Automatic monitoring of the level of the water in the water heater.

Electronic model with microprocessor managed control panel with pushbuttons that operate independently from one another. It enables varying amounts of coffee to be dispensed using different dosing patterns. The pushbuttons are identified by warning leds. The electric circuit complies with safety and operating emergency regulations and approved switch for each dispensing unit has been fitted to the front of the machine at the top.

The level of the water in the water heater is monitored automatically.

Available in the 2, 3 and 4 unit versions.

- A** - Emergency Start/Stop dispensing switch
- B** - Steam knob
- C** - Hot water knob
- D** - Water heater pressure gauge
- E** - Main switch
- L** - Boiler water level indicator
- N** - Coffee dispensing pressure gauge
- P** - Manually operated knob for supplying water
- M1** - Coffee dispenser button for a small cup of coffee
- M2** - for a big cup of coffee
- M3** - for two small cups of coffee
- M4** - for two big cups of coffee
- M5** - Programming



Put the required amount of coffee into the filter holder and fit it under the unit. Next, press the key corresponding to the desired delivery on the relative keyboard. If the wrong selection is made, press the key again to stop supply.

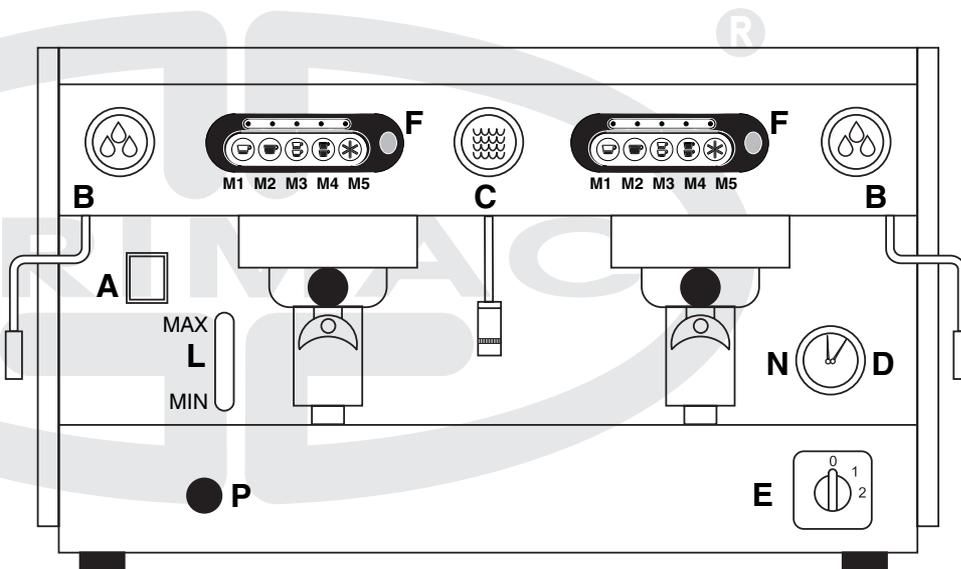
ELE Model (2nd series) - Automatic monitoring of the level of the water in the water heater.

Electronic model with microprocessor managed control panel with pushbuttons that operate independently from one another. It enables varying amounts of coffee to be dispensed using different dosing patterns. The pushbuttons are identified by warning leds. The electric circuit complies with safety and operating emergency regulations and approved switch for each dispensing unit has been fitted to the front of the machine at the top.

The level of the water in the water heater is monitored automatically.

Available in the 2, 3 and 4 unit versions.

- A** - Cup heater switch (optional)
- B** - Steam knob
- C** - Hot water knob
- D** - Water heater pressure gauge
- E** - Main switch
- F** - Emergency Start/Stop dispensing switch
- L** - Boiler water level indicator
- N** - Coffee dispensing pressure gauge
- P** - Manually operated knob for supplying water
- M1** - Coffee dispenser button for a small cup of coffee
- M2** - for a big cup of coffee
- M3** - for two small cups of coffee
- M4** - for two big cups of coffee
- M5** - Delivery Programming/Stop



Put the required amount of coffee into the filter holder and fit it under the unit. Next, press the key corresponding to the desired delivery on the relative keyboard. The LED turning on indicates the delivery mode selected.

Now press the F key to start delivery. Delivery stops when the F key is pressed again.

If the wrong selection is made, press the key **F** again to stop supply.

ELE Model automatic electronic dosing

This reliable, high quality product ensures that Grimac's new dosing system reduces assembly costs and the amount of space required.

The control panel controls both the coffee supply commands and the electronic controls. Each control panel is completely independent of the others.

If a control panel/control unit develops a fault, the others will continue to function as they are independent of one another.

The component parts used comply with European and American safety standards.



Programming doses:

Press M5 for 5 seconds. The leds will light up, allowing the operator to use the machine.

- Press the required selector button.
- When the selected dose has been reached, press the same pushbutton again (storage in memory OK).
- Repeat the procedure for the other pushbuttons in order to complete all 4 doses. To interrupt coffee dispensing, press the previously pressed pushbutton again.

For reasons of safety, no more than 3 litres or 4 minutes of continuous dispensing can be programmed.





On all models, the pressure gauge continuously indicates the internal boiler pressure and the coffee dispensing pressure in accordance with the specifications set out in the table on page 37.



Adjust the pressure switch screws to adjust pressure inside the water heater.



Adjust the internal pump screw to adjust coffee dispensing pressure.



Always maintain the level of water in the water heater above the minimum mark.



The coffee machine that you have purchased is fitted with a water heater in top quality copper. When the machine is in use, it contains steam and hot water under pressure. **DANGER OF BURNS.**
Check the steam nozzles located on the sides regularly and clear them of any obstructions.

4.1 - CLEANING

Cleaning the filter:

after dispensing the last coffee, the filter holder and the filter must be thoroughly rinsed and cleaned with water. Replace the filter if it is too dirty or in too bad a condition.

Always keep the cup support grill and drip tray clean and tidy.
Use only water to clean.

Checks:

the machine does not require any particular servicing and checks. It is necessary only to regularly check the level of water in the water heater (L), the water heater level gauge (D) and the delivery pump pressure gauge (N).

OUTER CASING:

To keep the outer casing clean, use a sponge or piece of cloth soaked in special cleaning liquid (neutral detergent).



DO NOT USE SOLVENTS, POWDERS, ABRASIVES OR STEEL WOOL.

SECTION 5 - ACCESSORIES AVAILABLE ON REQUEST



5.1 - WATER SOFTENER

Use appropriate salts or kitchen salt (SODIUM CHLORIDE) Na CL to reactivate the water softener when necessary. Hard water is caused by calcium and magnesium. Hard water is not harmful or a health hazard but it can cause scaling in the pipes and water collection tanks.

Water is hard when it reaches 30-45° on the French hardness scale and is very hard at above 45°. To measure the hardness of your water, use the testing kits sold in chemists or at one of our after-sales service centres.

Using a water softener will save on electricity and maintenance costs.

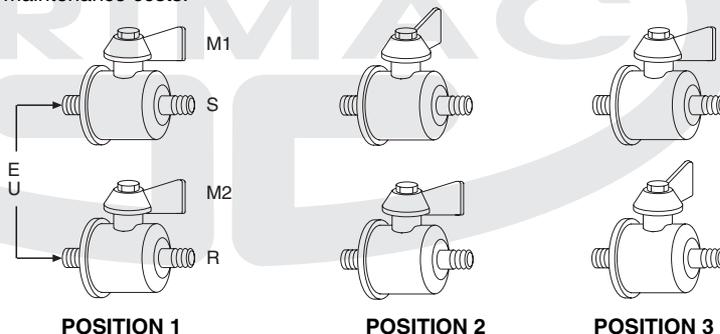
M1-M2 : tap handles

R : water softener pipe

S : drain pipe

U : drain connection

E : supply connection



Place pipe S in a receptacle capable of containing 2 litres of water, place tap M1 in position 2. Drain the water from the water softener, remove the plug and pour in 1 kg of kitchen salt. Clean the parts of that come into contact with the plug carefully and place the plug back in position.

Next, place pipe R in a position where water can drain out of it and turn the taps to position 3. Let the water flow until soft water emerges and then turn the tap handle to position 1.

5.2 - CUP WARMER

Using the electric cup warmer

This system keeps the cups placed on the top grill at a suitable temperature.

The kit consists of:

- 1 cup heater panel with built-in double-insulated heater
- 1 connection harness
- 1 on/off switch (A) (see seat on left hand side of front panel).



5.3 - CAPPUCCINO MAKER

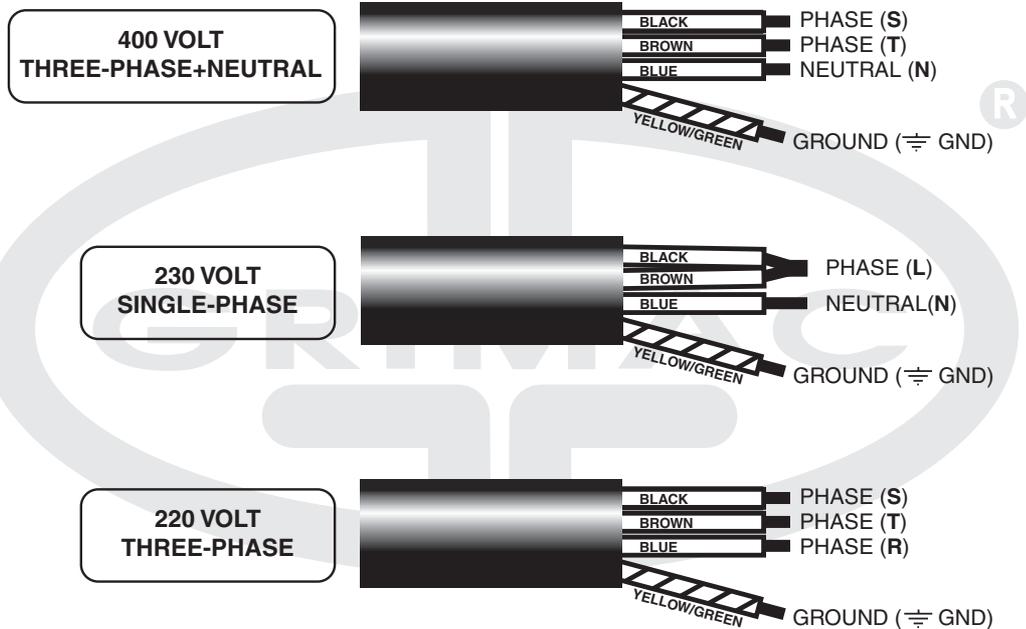
Using the cappuccino maker

This allows an excellent cup of cappuccino to be made quickly and hygienically. The steam handle is still used but the CAPPUCCINO MASTER is fitted onto the steam pipe as shown in the enclosed instructions and is adjusted as necessary to obtain a really good "head" of milk froth.



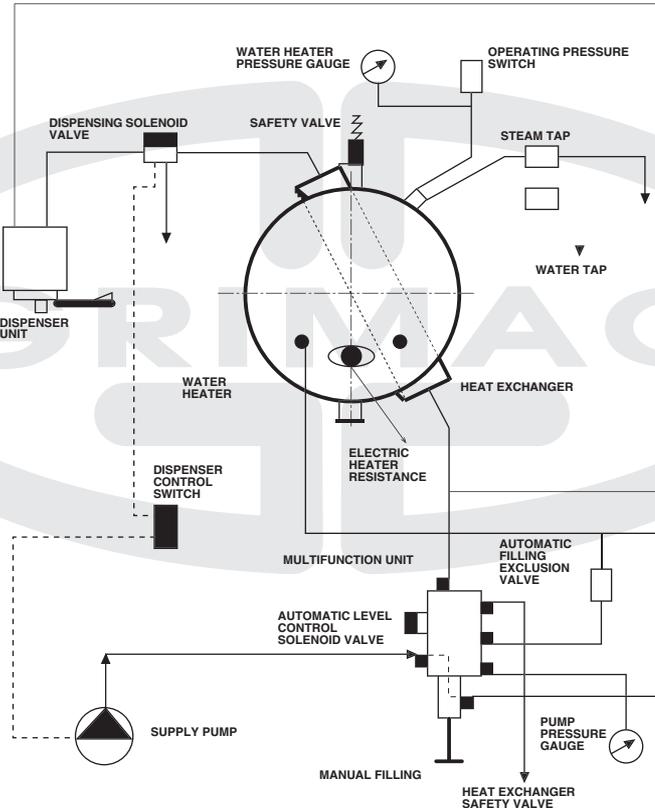
REMEMBER: GRINDING THE BEANS, GROUND COFFEE MIXTURE, COFFEE MACHINE
.... for a cup of coffee that is full of flavour.

SECTION 6 - WIRING DIAGRAM



SECTION 7 - WATER AND STEAM CIRCUIT DIAGRAM

BUTTON OPERATED MODEL





REPRODUCTION PROHIBITED. GRIMAC RETAINS FULL PROPERTY RIGHTS IN ACCORDANCE WITH THE LAW.

Grimac srl reserves the right to make modifications at any moment in order to improve machine performance and to give subsequent notification thereof in this user manual.



GRIMAC - servicing and checking

Sender.....

Street and house number.....

Town or city.....

Telephone no.....

Subject/report.....

.....

.....

.....

Product..... Purchased on:..... Serial no:.....

Signature.....

Date.....

Addressee: **GRIMAC srl**
VIA MORAZZO 2
40069 ZOLA PREDOSA
BOLOGNA ITALY



GRIMAC s.r.l.

VIA MORAZZO 2 40069 ZOLA PREDOSA (BOLOGNA) ITALY

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