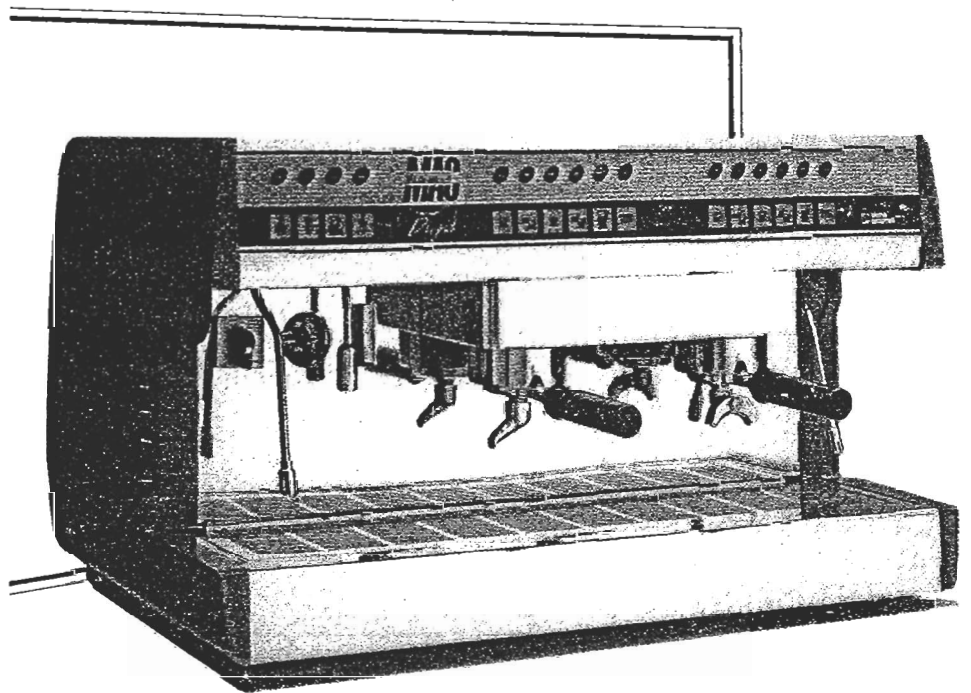


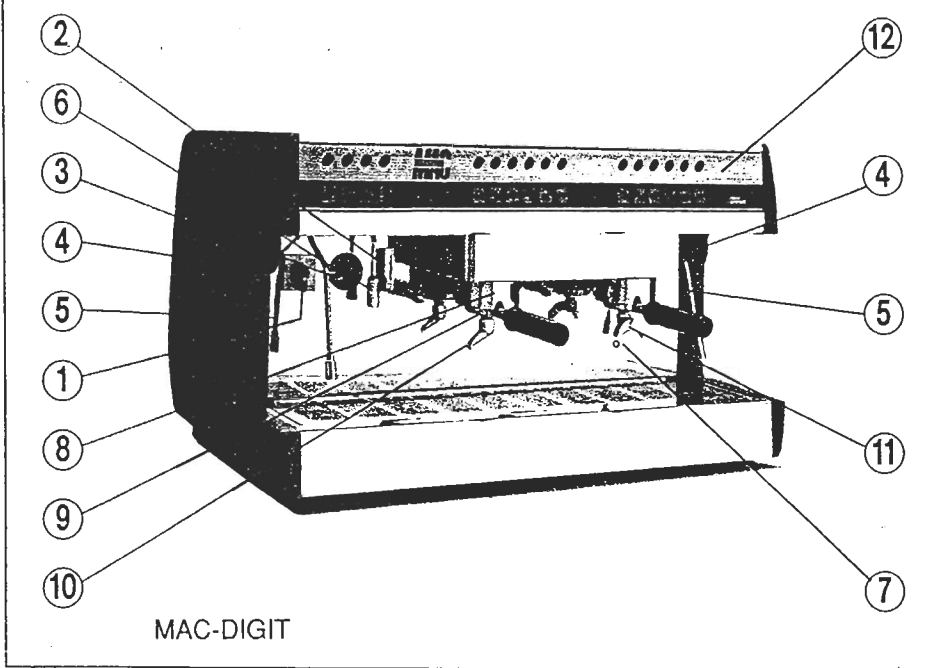
nuova simonelli

Macchine per caffè espresso
Espresso coffee machines
Machines à café espresso
Espresso-Kaffee Maschinen
Máquinas para café espresso

MOD. 

MOD. **IVHU**
INSTALLAZIONE ED USO
INSTALLATION AND USE
INSTALLATION ET USAGE
AUFSTELLUNG UND VERWENDUNG
INSTALACION Y USO





1) Interruttore generale
Main switch
Interrupteur général
Hauptschalter
Interruptor general

2) Livello ottico
Sight level
Niveau optique
Optischer Wasserstand
Nivel optico

3) Manometro doppia scala
Double manometre
Manomètre double échelle
Doppelmanometer
Manometro doble escala

4) Leva rubinetto vapore
Steam tap lever
Levier du robinet vapeur
Dampfahn Hebel
Palanca grifo de vapor

5) Lancia vapore
Steam pipe
Tuyau vapeur
Dampfauslaufrohr
Tubo salida vapor

6) Lancia acqua calda
Hot water pipe
Tuyau eau chaude
Heisswasserauslaufrohr
Tuibo salida agua caliente

7) Valvola sicurezza gas
Gas safety valve
Soupape surêté gaz
Gassicherheitsventil
Valvula seguridad gas

8) Gruppo erogazione caffè
Coffee delivery group
Groupe débit café
Kaffeeabgabegruppe
Grupo erogación café

9) Portafiltro
Filter Holder
Porte-filtre
Filterträger
Portacacillo

10) Becco un getto
Distribution nozzle for 1 coffee
Bec de débit 1 café
Ausgabe-Ausguß 1 Kaffee
Pico erogador 1café

11) Becco due getti
Distribution nozzle for 2 coffees
Ausgabe-Ausguß 2 Kaffee
Pico erogador 2 cafés

12) Pannello comandi
Control panel
Tableau de commande
Schaltbrett
Panel controles

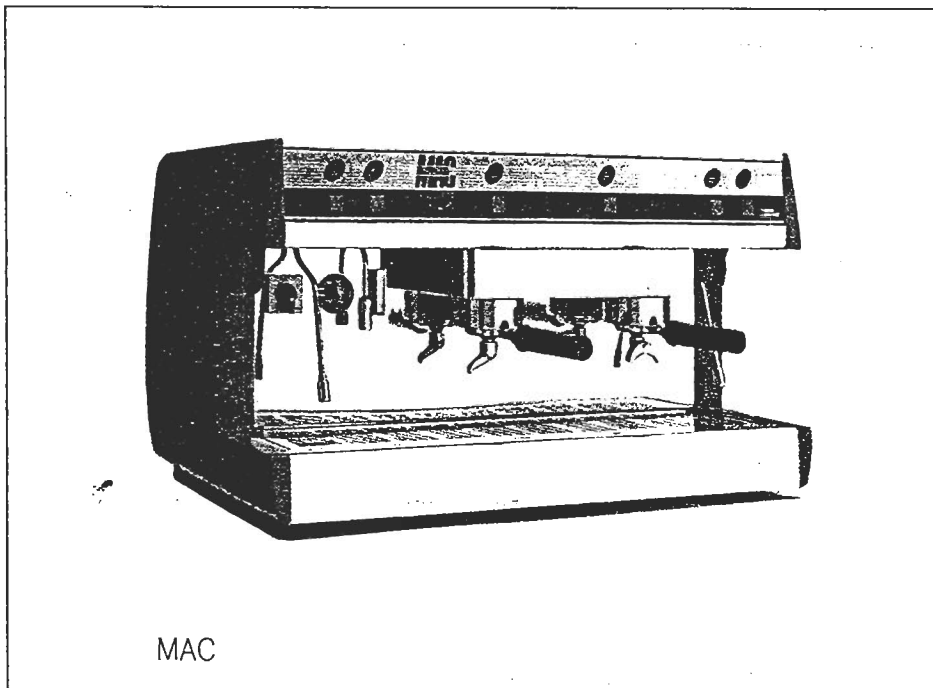


FIG. 3 - BILD 3

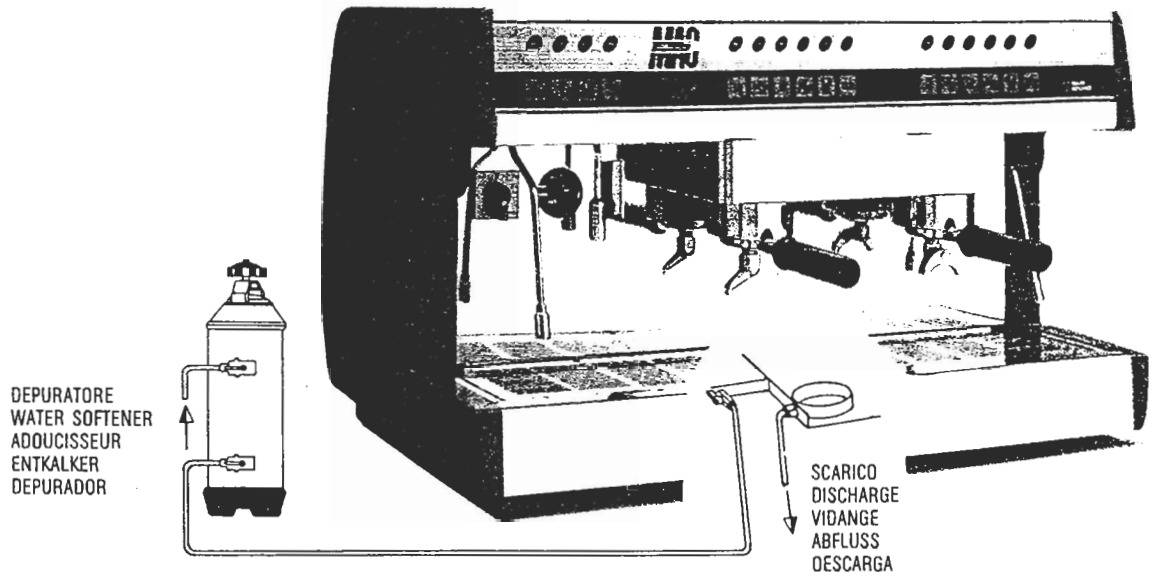


FIG. 4 - BILD 4

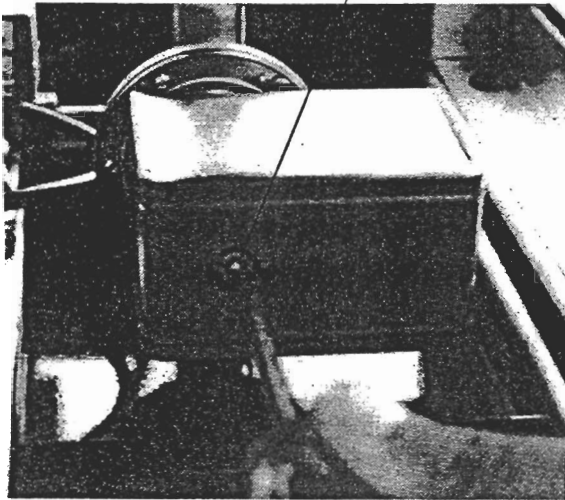
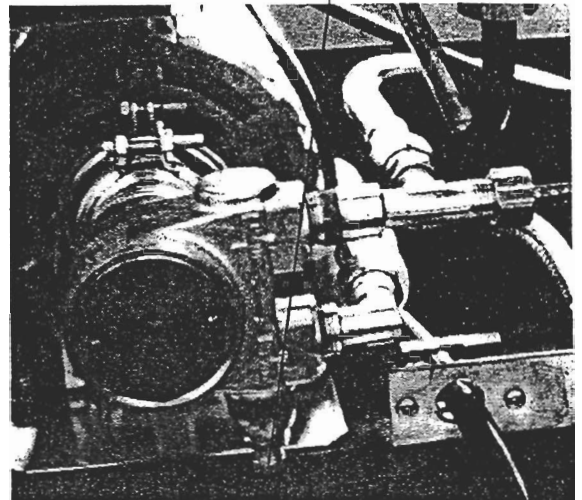
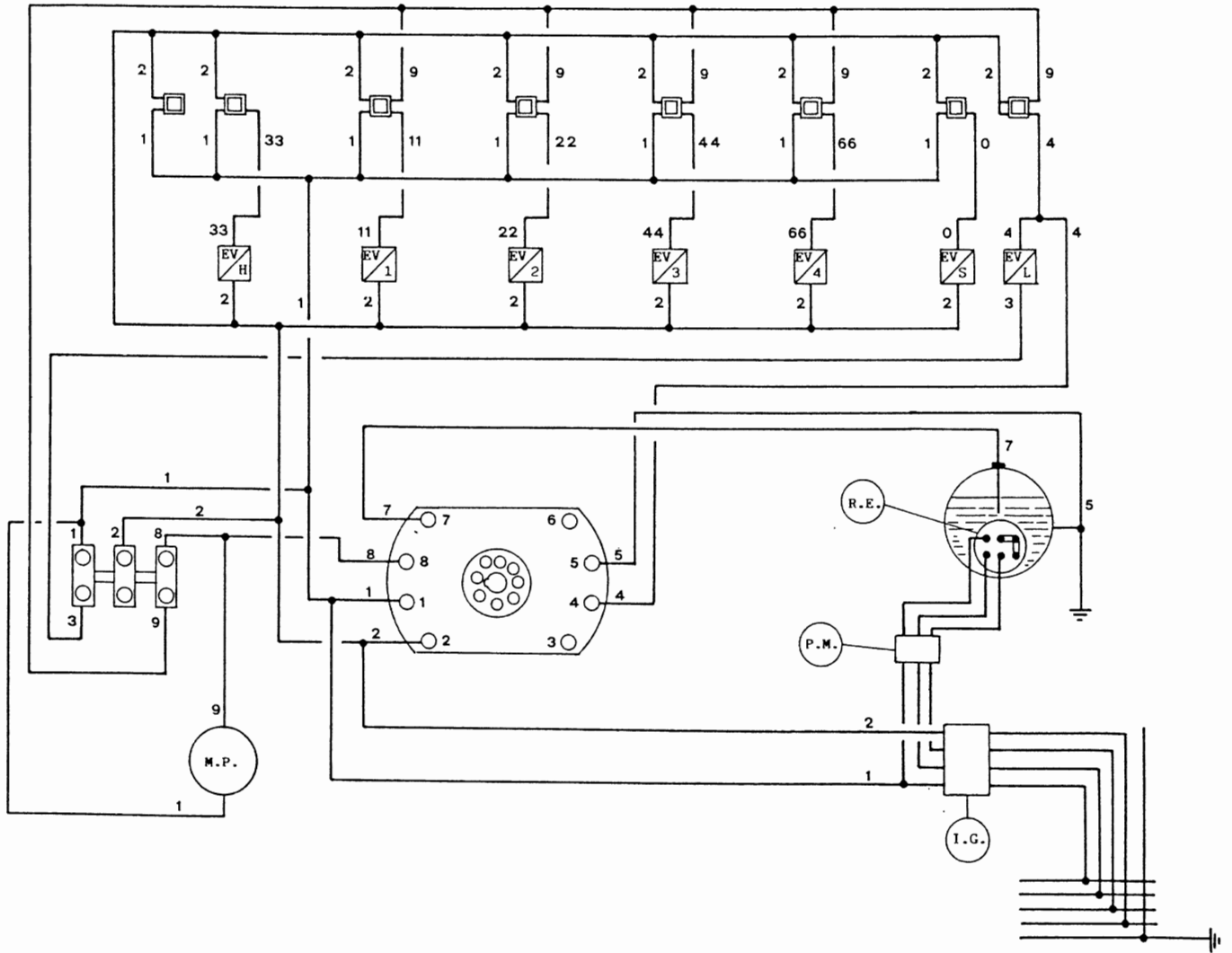


FIG. 5 - BILD 5

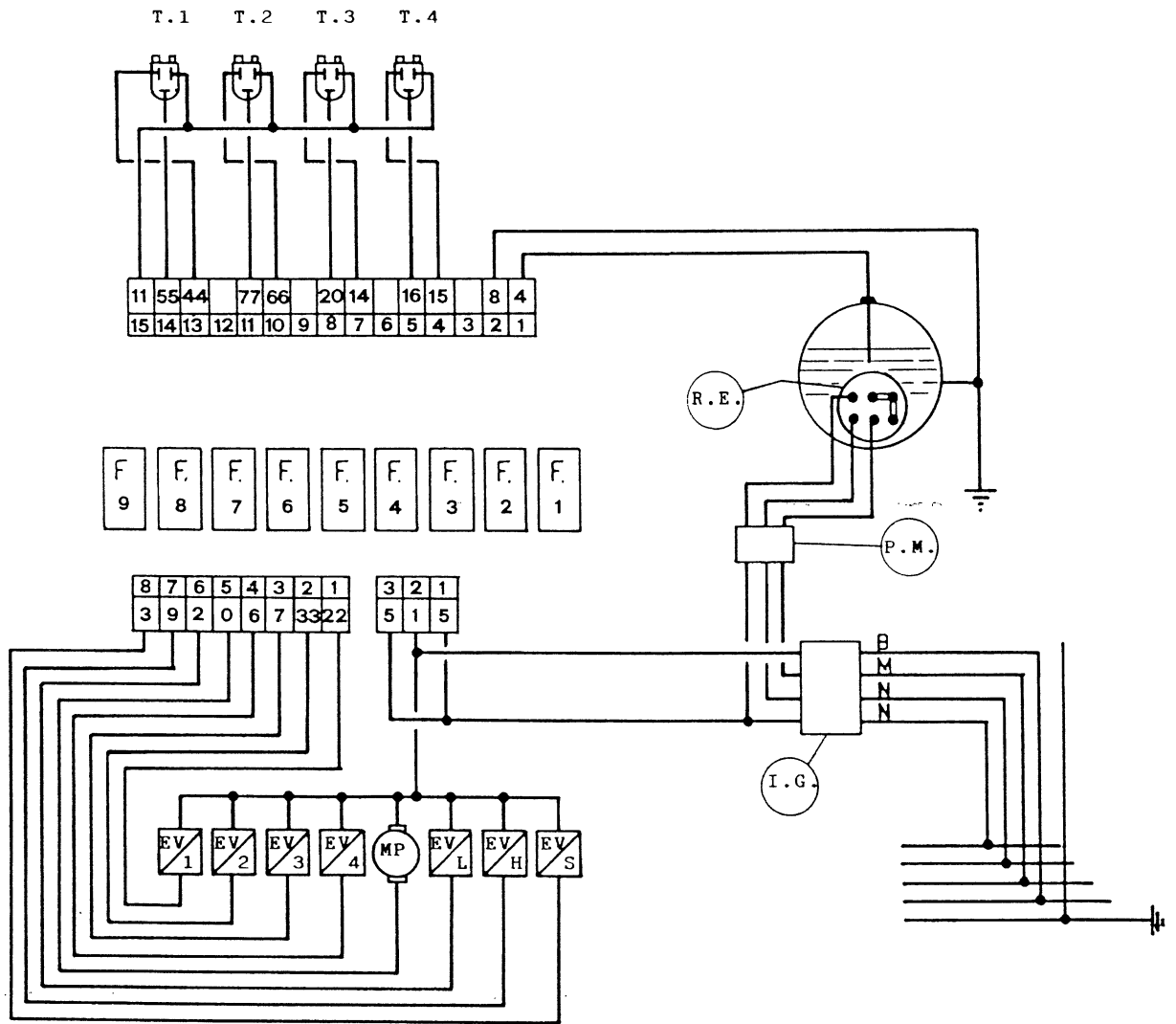


SCHEMA ELETRICO "MAC/S" - 2-3-4 GRUPPI



- M** = MARRONE - BROWN - MARRON - BRAUN - CASTANO
- G** = GIALLO - YELLOW - JAUNE - GELB - AMARILLO
- N** = NERO - BLACK - NOIR - SCHWARZ - NEGRO
- V** = VERDE - GREEN - VERT - GRÜN - VERDE
- B** = BLU - BLEU - BLUE - BLAU - AZUL

SCHEMA ELETTRICO "MAC/Digit" - 2-3-4 GRUPPI



- M** = MARRONE - BROWN - MARRON - BRAUN - CASTANO
- G** = GIALLO - YELLOW - JAUNE - GELB - AMARILLO
- N** = NERO - BLACK - NOIR - SCHWARZ - NEGRO
- V** = VERDE - GREEN - VERT - GRUN - VERDE
- B** = BLU - BLEU - BLUE - BLAU - AZUL

FIG. 6 / BILD 6

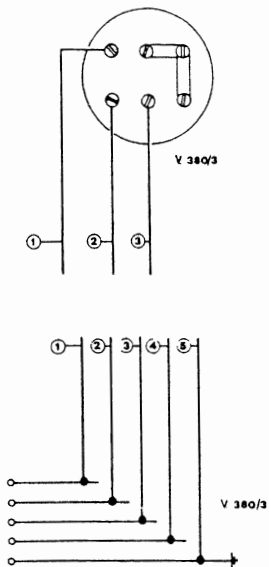


FIG. 7 / BILD 7

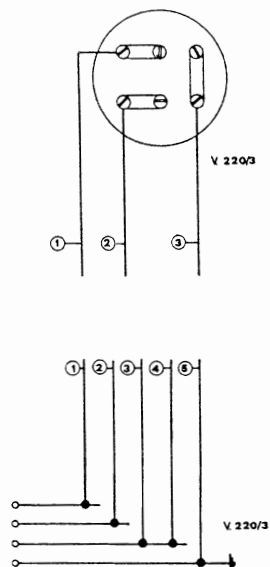
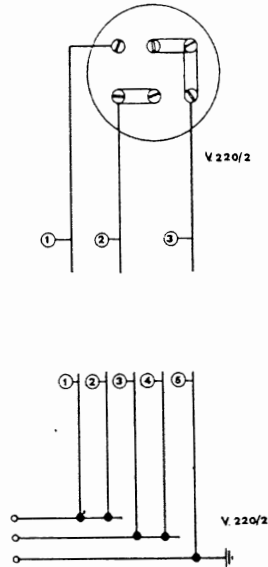


FIG. 8 / BILD 8



LEGENDA
LEGEND
LEGENDE
LEGENDE
LEYENDA

- ① Nero
Black - Noir
Schwarz - Negro
- ② Nero
Black - Noir
Schwarz - Negro
- ③ Marrone
Brown - Marron
Braun - Castano
- ④ Blu
Bleu - Blue
Blau - Azul
- ⑤ Giallo-Verde
Yellow-Green
Jaune-Vert
Gelb-Grün
Amarillo-Verde

LEGENDA SCHEMI ELETTRICI

- T.1 - T.2 - T.3 - T.4** = TURBINA / TRASDUTTORE - TURBINE / TRANSDUCTEUR - TURBINE / TRANSDUCER - WASSER ZAEHL RAD / TURBINE - TRANSDUCTOR / TURBINA.
- R.E.** = RESISTENZA ELETTRICA - HEATING ELEMENT - RESISTENCE ELECTRIQUE - ELEKTRISCHER HEIZKORPER - RESISTENCIA ELETTRICA
- P.M.** = PRESSOSTATO CALDAIA - PRESSURESTAT SWITCH - PRESSOSTAT - DRUCKSCHALTER - PRESOSTATO
- I.G.** = INTERRUTTORE GENERALE - MAIN SWITCH - INTERRUPTEUR GENERAL - HAUPTSCHALTER - INTERRUPTOR GENERAL
- EV.1 - EV.2 - EV.3 - EV.4** = ELETTROVALVOLA EROGAZIONE - DISTRIBUTION SOLENOID VALVE - SOUPAGE ELECTRIQUE DE DEBIT - AUSGABE-ELEKTROVENTIL - ELECTROVALVULA DE EROGACION
- MP** = MOTORE POMPA - PUMP - POMPE - PUMPE - BOMBA
- EV.L** = ELETTROVALVOLA LIVELLO AUTOMATICO - AUTOMATIC LEVEL SOLENOIDS VALVE - SOUPAGE ELECTRIQUE NIVEAU AUTOMATIQUE - NIVEAUREGLER ELEKTROVENTIL - VALVULA PARA NIVEL AUTOMATICO
- EV.H** = ELETTROVALVOLA ACQUA CALDA - HOT WATER SOLENOIDS VALVE - SOUPAGE ELECTRIQUE EAU CHAUDE - HEISSWASSER ELEKTROVENTIL - ELECTROVALVULA AGUA CALIENTE
- EV.S** = ELETTROVALVOLA SCALDATAZZE - CUPWARMAR SOLENOIDS VALVE - SOUPAGE ELECTRIQUE CHAUFFE-TASSES - TASSENWAERMER ELEKTROVENTIL - ELECTROVALVULA CALENTA TAZAS
- F.1** = FUSIBILE ALIMENTAZIONE CENTRALINA 200 mA - 200mA FUSE ELECTRONIC BOX - FUSIBLE 200 mA BOITE ELECTRONIQUE - SICHERUNG 200 mA ZENTRAL STEUERUNG - FUSIBLE 200 mA CENTRALITA
- F.2 - F.3 - F.4 - F.5** = FUSIBILE 1A ELETTROVALVOLA EROGAZIONE - 1A DISTRIBUTION SOLENOIDS VALVE FUSE - FUSIBLE 1A SOUPAGE ELECTRIQUE DE DEBIT - SICHERUNG 1A FUR AUSGABE-ELEKTROVENTIL - FUSIBLE 1A ELECTROVALVULA DE EROGACION
- F.6** = FUSIBILE 3,5A MOTORE POMPA - 3,5A PUMP FUSE - FUSIBLE 3,5A POMPE - SICHERUNG 3,5A PUMPE - FUSIBLE 3,5A BOMBA
- F.7** = FUSIBILE 1A EV.L - 1A EV.L FUSE - FUSIBLE 1A EV.L - SICHERUNG 1A EV.L - FUSIBLE 1A EV.L
- F.8** = FUSIBILE 1A EV.H - 1A EV.H FUSE - FUSIBLE 1A EV.H - SICHERUNG 1A EV.H - FUSIBLE 1A EV.H
- F.9** = FUSIBILE 1A EV.S - 1A EV.S FUSE - FUSIBLE 1A EV.S - SICHERUNG 1A EV.S - FUSIBLE 1A EV.S

Instructions for installing the MAC - MAC/Digit

Make sure nothing is missing in the packing. Position the machine in the place provided, make sure it is leveled and adjust the feet if necessary.

Place the water softener in the space provided. Remember that in all the MAC models the pump is built into the machine and this simplifies hook-up operations considerably.

Before hooking up the water to the machine, let the water run from the water softener to eliminate impurities and greasy deposits.

Then connect the water and electricity as shown in Fig. 3.

Make sure there are no narrowings in the piping and that drainage is efficient. If the electric wire supplied is not sufficient, use one with the same cross section and make sure the system is equipped with efficient earthing and connect it to the machine using the yellow-green wire.

THE MACHINE MUST ALWAYS BE PROTECTED WITH AN ADEQUATELY POWERED AUTOMATIC SWITCH.

The Company shall not be liable for any damage to persons or things because of failure to observe safety standards.

For proper operation, the machine requires a water pressure not higher than 4 bar. If higher, install a pressure reducer upstream of the softener.

The water inlet pipe must have an internal diameter of not less than 8 mm.

N.B. Before connecting the electricity to the machine, make sure the voltage of the machine and the system corresponds (Figs. 6-7-8), otherwise make the necessary change.

SETTING UP THE MACHINE FOR OPERATION

Before supplying electricity to the machine, make sure the water level is sufficient in the boiler by checking the height in the glass sight level.

Even though all the machines are equipped with an automatic level system, during the initial phase it is a good rule to fill the boiler manually to prevent any possible damage to the heating element and to make sure the electronic protection device (in model MAC/Digit only) doesn't switch on which

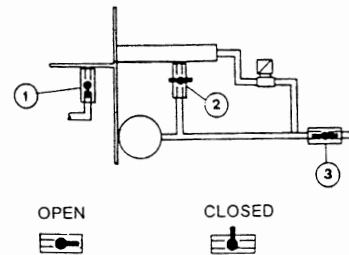
stops the machine if the automatic level is connected for more than 30 seconds. Should this happen, simply switch the machine off and on so it can start up again normally.

To fill the boiler manually, lift the top to gain access to the faucets underneath.

There are three faucets (see Fig. 9): faucet 1 for shutting off the water throughout the machine; faucet 2 for filling the boiler manually; faucet 3 for excluding the automatic level if necessary.

The following operations are possible:

Fig. 9



A) Manual filling of boiler:

Set the faucets as follows:

Faucet 1 open; Faucet 2 open; Faucet 3 open. It is important to shut off Faucet 2 when the level in the boiler is reached.

B) Normal working operation:

Set the faucets as follows:

Faucet 1 open; Faucet 2 closed; Faucet 3 open.

C) Exclusion of automatic level:

If the automatic level is not working properly, shut off Faucet 3 immediately.

N.B.: If the water level has to be restored in the boiler manually, use Faucet 2 (open to let in water and shut off to exclude).

At this point the machine can be turned on by working the general switch (No. 1 - Fig. 1) and the pilot lamp will light up.

During the heating phase, always leave the cup warmer on to normalize the pressure inside the boiler and to keep the liquid to be steam heated from being drawn up into the boiler.

As a standard feature on the MAC/Digit model, there is an automatic system which opens the cup warmer when the machine is switched on and keeps it open for about 14 minutes. To exclude this cycle, work the switch.

After being on for about 20 minutes, the machine reaches working pressure. This can be read on the two-scale pressure gauge (No. 3 - Fig. 1).

To change the working pressure (and consequently the temperature) according to the various requests or the characteristics of the coffee used, simply raise the top to work the pressure-switch screw (No. 7 - Fig. 4), turning it clockwise to lower the pressure and counter clockwise to raise it (normally the standard tested machine set at about 1.1 - 1.2 bar).

The pump is adjusted during testing to working pressure of 9 atm. This pressure is shown on the pressure gauge (No. 3 - Fig. 1) during the delivery phase.

Whenever the pressure has to be changed, raise the top as for the other adjustments and turn the pumping element screw (No. 5 - Fig. 5) as necessary to reach the desired pump motor pressure. Should the desired result not be achieved even when turning the adjustment screw all the way, the pumping element must be replaced.

For a new one, contact the nearest authorized service centre.

GAS HEATING

Gas heating is provided as an option. This system is equipped with piezoelectric ignition and safety device for shutting the gas if the flame goes out accidentally. Since for each type of gas that may be used there is a correspondingly different firing power, consult the following table for the right nozzle to install:

	1 GRUPPO GROUPE UNIT GRUPPE	2 GRUPPI GROUPES UNITS GRUPPEN	3 GRUPPI GROUPES UNITS GRUPPEN	4
GAS LIQUIDO GAZ LIQUIDE LIQUID GAS FLUESSIGGAS	50 	70 	80 	
GAS METANO GAZ METHANE METHANE GAS METHANGAS	70 	100 	120 	
GAS CITTA GAZ DE VILLE TOWN GAS STADTGAS	110 	140 	170 	

USE OF STEAM

To use steam, simply pull the conveniently located, easy-to-reach levers (No. 1 - Fig. 1) outwards. These levers provide for the dually adjusted outward flow of steam through their respective nozzles (No. 5 - Fig. 1) and can be locked in the maximum delivery position.

The steam nozzles can be directed in the usual manner.


To obtain the cream during the milk heating phase, dip the steam spout three-quarters of the way into the full vessel (preferably a truncated-cone form).

When the milk boils, move the steam spout to the surface shifting it lightly through the milk upwards to obtain the desired cream.



At the end of this operation remember to clean the steam nozzles carefully with a damp cloth.

USE OF HOT WATER


To obtain hot water from the purpose-designed nozzle (No. 6 - Fig. 1), press push-

button . To stop the flow in the

MAC version, press the pushbutton again. In the MAC/Digit version, in addition to the above function, it is also possible to time delivery of hot water for a maximum of 2'30" which can be set during installation by programming delivery time.


To do this proceed as follows: press the **STOP** button  and, without releasing the **STOP**, press pushbutton ;

the machine will begin delivering hot water. When the desired dose is reached, press

button  again. This memorizes the quantity of hot water. Then press the

STOP button to leave the programming

phase. This feature is useful if fixed quantities of hot water (for tea, etc.) are often used. However, it is still possible to interrupt delivery manually at any time by pres-

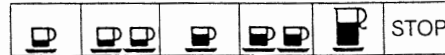
sing pushbutton .

PREPARATION OF ESPRESSO COFFEE


1) Unhook the filter holder from the unit and add one or two measures of coffee depending on the filter used; press down the coffee with the tool provided and before connecting the filter holder to the unit, with the palm of your hand clean the filter ring to remove any excess coffee which in the long term could interfere with the perfect seal between the unit and the filter holder.


2) In the MAC version press the coffee delivery switch and when the desired dose is obtained, press it again.

In the MAC/Digit version, to have the coffee, press the pushbutton relative to the desired dose as shown on diagram:



There are 4 measure possibilities: 1 normal coffee, 2 normal coffees, 1 long coffee, 2 long coffees. These 4 possibilities for each unit can naturally be preset during the installation phase by programming the amount of coffee for each single cup and for each unit as needed. To programme these amounts, proceed as follows: Press

the **STOP** key of the unit in which the doses are to be programmed and then, without releasing the **STOP**, press  key for the same unit.

Entrance into the programming state is signalled by the flashing of the  LED

and the LEDs for the doses on the pushbutton panel of the unit used.

Now press the key for pouring one measure.

Only the LED for the programmed dose will remain on. When the coffee has reached

the desired level in the cup, press **STOP**

and the dose will be memorized in a protected memory zone.

At this point the LEDs will start flashing again to the exclusion of the LED for the dose that has just been programmed.

Proceed similarly for the other doses of the unit and to return to working condition,

press **STOP** twice consecutively.

In addition to the 4 measure possibilities, it is also possible in any case to stop pouring

at any time by pressing the **STOP** button

or to continue pouring by pressing the

 button.

Pouring of the preset dose is completed in any case independently of the fineness of the grind since the amount of coffee and not the pouring time is measured electronically.

3) After pouring the coffee and even if another is not to be poured immediately, leave the filter holder hooked to the

unit so it remains warm. The delivery units are thermocompensated with total circulation of hot water so the units remain at constant temperature in every working condition.

GENERAL CLEANING INSTRUCTIONS

The machine should be cleaned very thoroughly in order to maintain its maximal performance.

All the steel and chromed parts including the steam and hot water nozzles should be cleaned with a damp cloth.

The stainless shower inside the group should be disassembled every week and cleaned carefully so that all the holes are perfectly free. To do this, simply uncrew the central screw of the group with a normal screwdriver.

TO CLEAN THE GROUP WITH THE BLIND FILTER

Replace the normal filter in the filter-holder with the blind filter provided, place 2 teaspoons of detergent in the filter, reconnect the filter-holder to the group and push the distribution push-button. After approx. 30 seconds stop distribution and repeat this operation three times.

Finally, replace the normal filter and make a coffee which is to be thrown away in order to remove all remaining soap residues.

TO CLEAN THE FILTERS AND FILTER-HOLDERS

Place 2 teaspoons of specific detergent in half a litre of boiling water and leave the filters and filter-holders to soak for approx. half an hour.

Rinse thoroughly under running water.

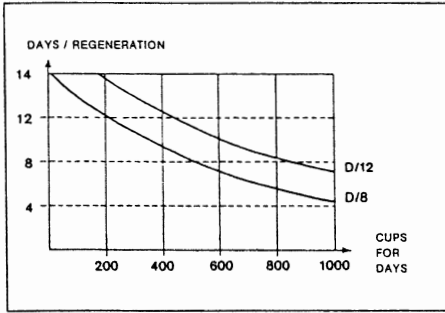
Remember to use glass or stainless steel containers and keep the handles of the filter-holders out of the soapy liquid.

REGENERATION

In order to prevent the formation of lime deposits inside the boiler and the heat exchangers, the water softener should always be perfectly efficient. The cationic resins should therefore be regularly regenerated at the established dates.

The regenerating times depend on the quantity of coffee distributed daily and the hardness of the water in the area.

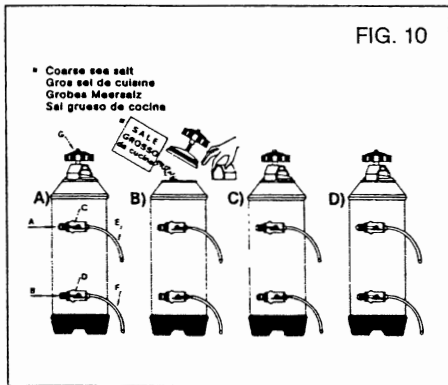
The following graph gives an approximate indication of regeneration times for the type D/8 softener for machines with up to 2 groups and type D/12 for machines with 3 or 4 groups.



Once the generation times have been set, proceed as follows: Switch the machine off place a 2 litre container under the pipe E (Fig. 10A). Turn the levers C and D from left to right (Fig. 10B), remove the tap by unscrewing the knob G and fill with coarse salt (2 pounds for the D/8, 3 pounds for the D/12).

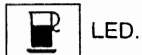
Replace the tap and reposition only lever C to the left (Fig. 10C) - allow the salt water to drain from the pipe F until fresh water is running (1/2 hour), taste to be sure.

Return lever D to the left (Fig. 10D).



COMING INTO PLAY OF TROUBLE DIAGNOSIS SYSTEM

The delivery of each unit has a time limit which if reached causes the unit to stop and the trouble is signalled by the flashing



To eliminate the blockage, press the **STOP** button of the unit involved.

Testing for regular operation of the flow transducer

If the machine operates irregularly, the trouble is signalled by the flashing of the



LED on the pushbutton panel of the unit involved.

In this case delivery is not stopped but if the operator does not intervene manually and press the **STOP**, the appliance is blocked upon reaching the time limit.

Testing for regular operation of the automatic level gauge

To prevent the machine from flooding, an alarm has been fitted to regulate the maximum time of operation of the automatic level. If the electric valve of the automatic level remains open for more than 30 seconds, it is disconnected automatically and the trouble is signalled by the flashing



LEDs.

The pump is disconnected at the same time. To start up the machine again, voltage must be removed for at least 3 seconds.

Maximum delivery duration 120 seconds (delivery time limit).

Maximum automatic level charge 30 seconds (automatic level time limit).

The automatic level is provided with a manual control to permit charging the boiler 60 seconds continuously after which the manual control too is blocked.

To unblock it, release the control pushbutton momentarily.

TECHNICAL CHARACTERISTICS

Power supply 220 Vac

Input 7 VA

Minimum duration of memory with power electronic box not fed: 60 days.

Maximum time for restoring memory 15 hours with power electronic box fed.

The power box can meter up to a maximum of 4 units with a maximum dose of 9999 impulses for each unit.

The amount of water delivered depends on the type of transducer used (with DIG-MESA reed transducer about 8 liters).

TECHNICAL NOTES FOR CORRECT INSTALLATION

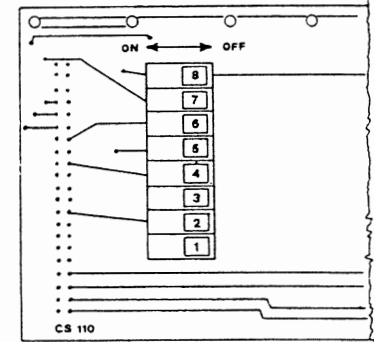
Protection fuses are connected in the electronic box so that connection of an external protection is not necessary.

INSTALLATION OF THE PUSHBUTTON PANELS

The pushbutton panels are connected to the electronic box by a 26-way cable and they are parallel with each other.

For correct operation, each pushbutton panel on its respective unit must be personalized and operation of the electric valve for delivery of the unit permitted.

This personalization is effected by numbered switches located inside the pushbutton panel.



The switches are positioned according to the following table:

UNIT	sw 1	sw 2	sw 3	sw 4	sw 5	sw 6	sw 7	sw 8
UNIT 1	ON	Off	Off	Off	ON	Off	Off	Off
UNIT 2	Off	ON	Off	Off	Off	ON	Off	Off
UNIT 3	Off	Off	ON	Off	Off	Off	ON	Off
UNIT 4	Off	Off	Off	ON	Off	Off	Off	ON

"MAC HOTEL" Model

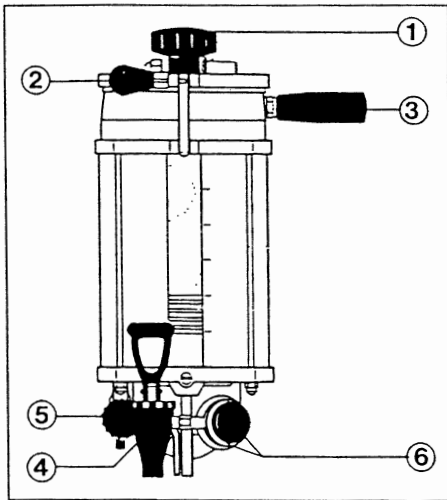
This machine has been especially designed to meet the requirements of hotels and catering services. It is installed in the same way as any other machine in the MAC series.

Remember that the procedure for preparing coffee for group hotel units is substantially different from normal procedures.

In fact, while for espresso coffee it is the pump which generates a pressure of 9 Atm to dispense the coffee, in the Reserve unit this is performed by the water in the boiler (P. 1-1-5 Atm). Therefore the coffee for the reserve unit must be ground more coarsely than for the espresso unit.

HOW TO PREPARE NORMAL COFFEE

Unscrew knob ① and raise the dispenser lid after unhooking the spring-operated safety stop ②; remove the large filter holder ③ and put in about 200 grams of coffee which has been ground as described in the preceding paragraph; put the large filter holder back in place and screw knob ① all the way down to avoid possible leakages caused by the overpressure of the coffee dispenser lid.



Push the tap ⑥ to dispense the coffee, which will be stopped upon reaching the desired amount. In any case the maximum amount possible is 2.5 liters (thermal re-

serve full). The coffee can be dispensed through the tap ④.

The hot plate keeps the coffee temperature constant, however additional heating is provided by a tap which delivers steam whenever necessary.

All the parts which come into contact with the coffee are made of perfectly hygienic material corresponding to International Sanitary Regulations.

The Company recommends filling the cylinder (thermal reserve) with water but no coffee, from time to time, to remove any deposits which may form.

PROGRAMMING THE DOSES OF ESPRESSO COFFEE (VOLUMETRIC MODEL)

Press the button of the unit on which you wish to programme the doses, and then release.

Press , and now, holding down STOP press the 2 short dose button on the same unit.

The STOP led and the DOSE leds on the pushbutton panel of the unit in question, flash to indicate that programming has started.

Press the dose supply button.

Only the led of the dose being programmed, stays on.

When the quantity of coffee in the cup is sufficient, press and the dose will be memorized in a non volatile memory.

The LEDs will now flash, with exception of the LED of the dose which has just been programmed.

Follow this procedure to set the other doses on the unit. To return to operating mode, press twice consecutively.

In the case of power failure, the data are stored for a guaranteed minimum of 60 days, after which the data programmed may vary.

TROUBLE SHOOTING

The supply of each unit has a maximum time limit. If this is exceeded, the unit locks and the red lock led flashes while the green unit ready led, switches off.

To release the lock, push on the locked unit.

Testing the regular operation of the flow transducer

In the case of faulty operation, the LOCK led flashes and the green led on the unit with the fault, switches OFF.

The coffee supply is not stopped, but if the operator does not press the STOP button by hand, the unit will lock at the end of the maximum time limit.

The flow transducer test is not inserted when the doses are programmed.

If the transducer is not operating, the fault will not be signaled so that a nil dose is programmed.

If you are not in the programming mode and the programmed dose is nil, the led of the dose selected for supply and the lock led, flash while the ready unit led switches off.

Testing the regular operating of the self-leveling device

In order to avoid water overflow on the machine, the machine has a warning alarm even on the maximum activation time of the self-leveling device.

If the electrovalve of the self-leveling device stays open for more than 30 seconds, it is automatically deactivated; the LOCK led flashes and the level leds switch ON to indicate the fault.

The pump is switched off at the same time.

To switch on the machine, unplug from the mains for at least 3 seconds.

Maximum supply duration 120 seconds (maximum supply time).

Maximum self-leveling load 30 seconds (maximum self-leveling time).