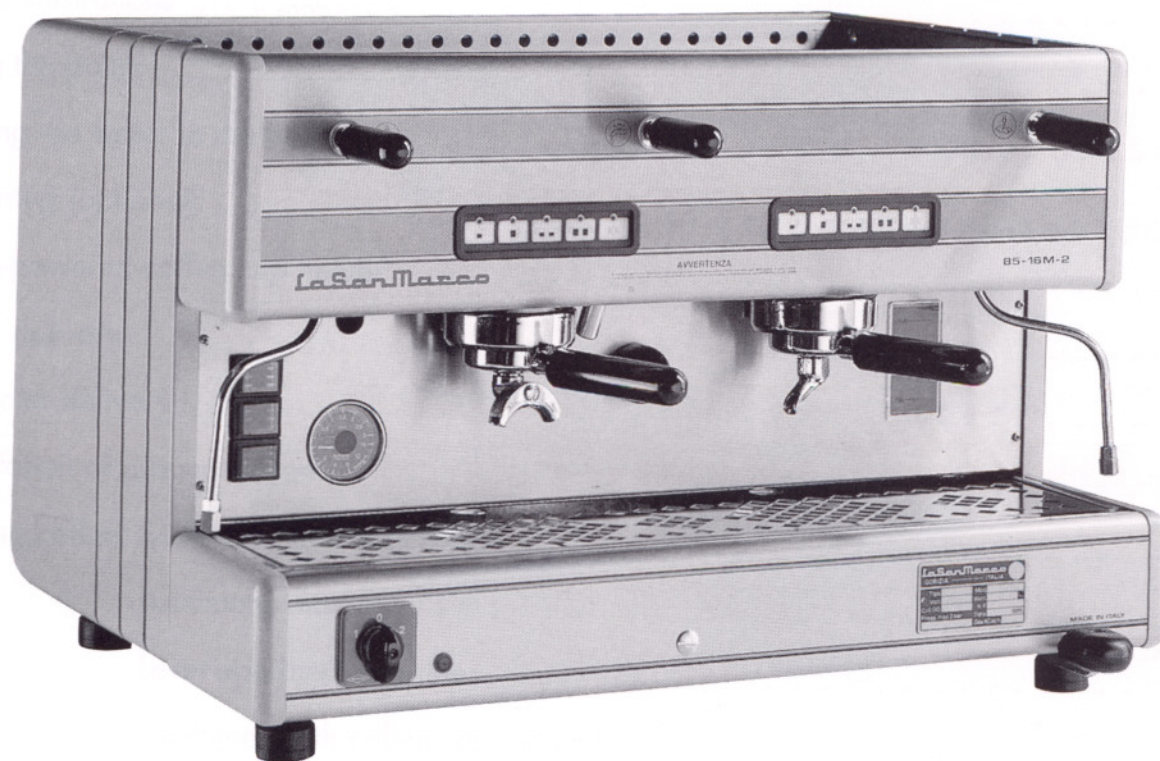


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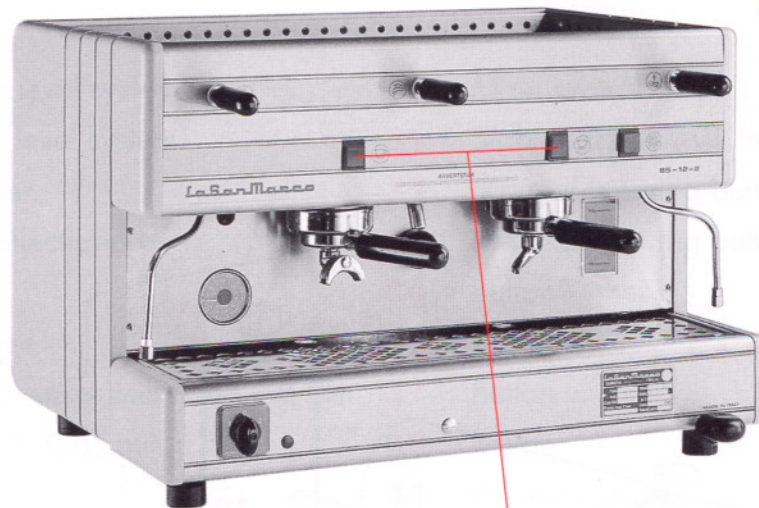


OPERATION AND MAINTENANCE SERIES 85 ESPRESSO COFFEE MACHINES

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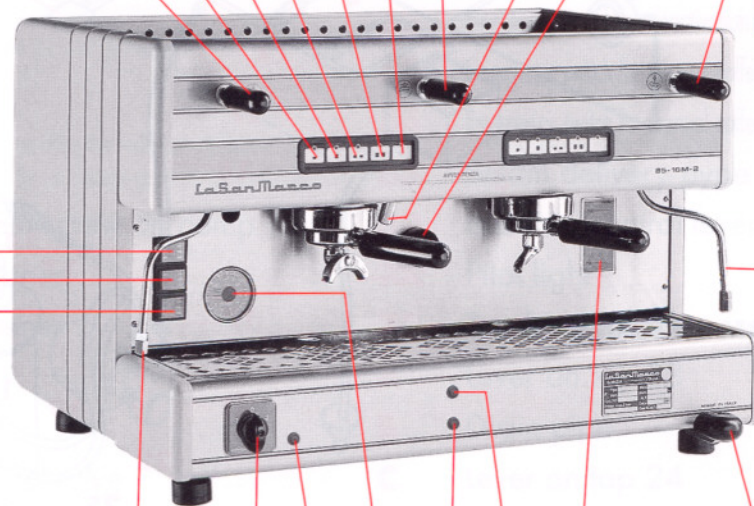
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SEMI-AUTOMATIC
MACHINES MOD. 85-12



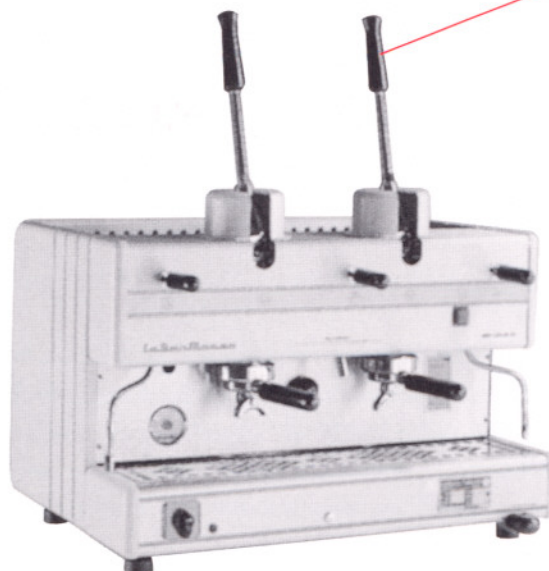
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AUTOMATIC
MACHINES MOD. 85-16M



68 30 71 44 51 53 31 69 28 68

MANUAL MACHINES
MODEL 85-LEVA



TECHNICAL SPECIFICATIONS

SEMI-AUTOMATIC MODELS

MODEL	No. OF BREWING UNITS	BOILER CAPACITY IN LITRES	POWER CONSUMPTION (W)		PUMP	WEIGHT (kg)	DIMENS. A (mm)	SPECIAL FEATURES
			POWER CONNECTION					
			SINGLE PH.	TRI-PH.				
85 - 12 - PRACTICAL	1	4,9	1750 / 1500	—	300	39	360	<ul style="list-style-type: none">• Coffee brewing is started and stopped by a single pushbutton.• Hot water and steam delivery on all models.• Automatic water level (boiler is automatically refilled) on Practical model, only.• Steam-powered coffee cup heater on machines with 2-3-4 brewing units.
85 - 12 - 2	2	12	3000	3000	300	56	700	
85 - 12 - 3	3	19	4000 / 4500	4500	300	74	940	
85 - 12 - 4	4	25	—	6000	300	85	1180	

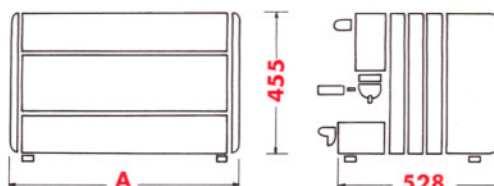
AUTOMATIC MODELS

85 - 16M - PRACTICAL	1	4,9	1750 / 1500	—	300	39	360	<ul style="list-style-type: none"> Electronically-controlled coffee brewing: four different automatic portions can be programmed on each brewing unit. Hot water and steam delivery on all models. Automatic water level (boiler is automatically refilled) on all models. Steam-powered coffee cup heater on machines with 2-3-4 brewing units. Semi-automatic operation (on up to two brewing units) in case of a malfunction on the electronic control system.
85 - 16M - 2	2	12	3000	3000	300	56	700	
85 - 16M - 3	3	19	4000 / 4500	4500	300	74	940	
85 - 16M - 4	4	25	—	6000	300	85	1180	

MANUAL MODELS

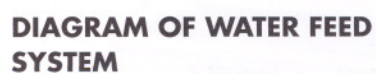
85 - LEVA - 1	1	4,9	1750 / 1500	—	—	52	605	<ul style="list-style-type: none"> Coffee brewing is manually started and stopped on each brewing unit by pulling down and then releasing a lever. Hot water and steam delivery on all models. Steam-powered coffee cup heater on machines with 2-3-4 brewing units.
85 - LEVA - 2	2	12	3000	3000	—	67	700	
85 - LEVA - 3	3	19	4500	4500	—	82	940	
85 - LEVA - 4	4	25	—	6000	—	107	1180	

- These machines can be powered with the following voltages:
400V - 3N tri-phase (wire Δ)
230V - 3 tri-phase (wire Δ)
230V single-phase
- Practical models can be powered with 110/230 V single-phase, only.
- Models with four brewing units are available with 3-Triphase input power requirement, only.
- External pump for all models.



Optional accessories

- Water softener on all models.
- Automatic water level (boiler is automatically refilled) on semi-automatic model 85-12 (with 2-3-4 brewing units).
- Gas firing on all models with 2-3-4 brewing units (excluding Practical).



KEY TO ILLUSTRATIONS

- | | | | |
|-----------|---|-----------|--|
| 2 | Tap on automatic level system | 30 | Main switch |
| 3 | Tap on automatic level system | 31 | Sight glass |
| 4 | Drain tap on boiler | 32 | Manual brewing button |
| 8 | Coffee ground collection tray | 33 | Manual brewing button |
| 9 | Check valve | 34 | Button |
| 10 | Check/safety valve | 35 | Button |
| 11 | Solenoid valve on aut. water level system with filter | 37 | Button |
| 12 | Hose adapter with 3/8" nut | 38 | Button |
| 13 | 3/8" nipple | 44 | Pressure gauge |
| 14 | Hose adapter with 3/8" nut | 51 | Safety button on gas feed system |
| 15 | Water feed tap (master valve) | 53 | Button for automatic gas ignition |
| 16 | Water feed pipe (from main water syst.) | 59 | Hot water delivery tap |
| 17 | Tube clamp | 61 | Hot water delivery pipe |
| 18 | Rubber tube | 62 | Emergency switch for deactivation of automatic coffee brewing system |
| 19 | Rubber tube | 63 | Emergency switch for manual coffee brewing - brewing unit I |
| 20 | Drain tube | 64 | Emergency switch for manual coffee brewing - brewing unit II |
| 21 | Pump | 68 | Steam delivery pype |
| 22 | Pressure adjustment screw on pump | 69 | Brewing control lever |
| 23 | Tap for water softener | 71 | Pilot light |
| 24 | Tap for water softener | 72 | Tap for steam-powered coffee cup heater |
| 25 | Rubber tube | A | Lever on tap 23 |
| 26 | Water softener | B | Drain pipe |
| 27 | Pushbutton-operated valve | C | Lever on tap 24 |
| 28 | Pushbutton on valve | D | Drain pipe |
| 29 | Lever-operated tap (steam delivery) | E | Knob on water softener cover |

OPERATING INSTRUCTIONS

FILLING THE BOILER

Checking the position of the taps in the water system

- a) Remove the coffee ground collection tray with grille. Now, check for the following configuration:
 - Boiler drain tap **4**: closed
 - Tap on the automatic level control valve **2**: open
 - Tap on the automatic level control valve **3**: open
- b) Install the coffee ground collection tray with grille
- c) Open the main water fill tap **15**
- d) Open a steam delivery lever **29** to allow air to escape from the system as the boiler is filled.

Models: Practical 85-12; Practical 85-16M

- e) Move the main switch **30** to position 1 to fill the boiler automatically without activating the heating elements. The led marked "MAX" will light up when the water reaches the level probe.

Models: 85-12; 85-16M; Leva-85

- f) Make sure that the main switch **30** is in position "zero".
- g) Press and hold down the button **28** until the sight glass **31** is 3/4 full.

HEATING THE WATER IN THE BOILER

- a) Rotate the main switch **30** to position 1.
- b) Hold down a steam delivery lever **29** to allow air to escape from the system as the machine heats up. Release the lever as soon as steam escapes from the delivery pipe. Boiler pressure is indicated on the 0-to-3-bar scale on the pressure gauge **44**. The pressure will increase until it reaches the calibrated value of the pressure switch: 0.9-1.1 bar.

GAS FIRING (Optional)

LIGHTING THE BURNER

- a) Press and hold down the safety button **51** on the gas feed system. After a few seconds, press the automatic gas ignition button **53** repeatedly until a flame can be seen through the flame observation hole. Allow the flame to burn for 5-6 seconds, and then release the gas safety button **51** (if a sufficiently full flame cannot be obtained, call your local service technician).
- b) Move the main switch **30** to position 2. A single heating element will be activated.
- c) The gas regulator will automatically reduce the flame to minimum level when the boiler reaches operating pressure.

Important: a suitable exhaust hood must be installed above gas-fired machines.

STEAM- POWERED COFFEE CUP HEATER

Use the tap **72** to increase the heating action on the cup storage shelf. This function can be turned on and off as desired.

STEAM DELIVERY

This function is used to deliver steam from the boiler to heat liquids, or to foam milk for cappuccinos. Lower or raise the lever **29** to obtain the maximum flow of steam. Move the lever sideways to the left of right to obtain a reduced steam flow.

HOT WATER DELIVERY

The lever-operated tap **59** is used to deliver hot water from the boiler for making tea, camomile herb tea, etc. This lever operates in the same way as the steam delivery lever.

PREPARATION OF GROUND COFFEE

Make sure that the filter with the desired capacity has been installed in the filter holder. After the coffee has been loaded and pressed into the filter, the coffee level in the filter must just touch the spray head on the brewing unit. To check for correct coffee level, install the full filter holder onto the brewing unit and then remove the holder. Now, look at the surface of the coffee: if the level is correct, the coffee will contain the imprint of the central mounting screw on the spray head of the brewing unit.

BREWING COFFEE

Semi-automatic models: Practical 85-12; 85-12M

Once the filter holder has been installed onto the machine, simply press the switch **32** to actuate the pump and solenoid valve. When the coffee in the cup has reached the desired level, move the switch back to its original position to terminate brewing.

Automatic models: Practical 85-16M; 85-16M

Once the filter holder has been installed onto the machine, press one of the five brewing buttons. The first two buttons **34** and **35** are used to select the two pre-programmed single portions of coffee. The second two buttons **37** and **38** are used to select the two pre-programmed double portions of coffee. The fifth button **33** immediately shuts down brewing if pressed during a coffee brewing cycle. Button **33** can also be used to brew the desired quantity of coffee manually: press this button to start brewing, and press the button a second time to stop brewing when the desired quantity of coffee has been obtained.

Manual machine: Leva-85

Once the filter holder has been installed onto the machine, pull down the lever **69** and then let it return to its original position. The coffee will begin to flow after a short time. To obtain a greater quantity of coffee, repeat this operation.

Important: Because it travels over a considerable distance during operation and cannot be stopped, this lever may be dangerous if pulled when the filter holder is not installed on the machine. Operation is especially hazardous if the filter holder is removed from the machine while coffee is being brewed.

Machines 85-12 and 85-16M with coffee reserve unit

Besides the normal production of espresso coffee on one or more brewing units, these machines are also equipped with a special container that can contain and deliver a remarkable quantity of coffee.

PREPARATION:

Make sure that the red light in the switch on the right of the reserve unit is off. Load the filter holder with about 90 grams of coffee that has been ground more coarsely than usual. Install the filter holder back place and close the cover. Be sure to close the cover energetically to prevent water leaks during brewing. Press the red switch on the right of the reserve unit; coffee will now flow into the storage tank.

Important: During this operation (when the red light in the switch is on), do not loosen the knob so that the cover cannot be raised.

DELIVERING COFFEE

Lower the lever on the tap at the bottom of the container until the desired quantity of coffee is delivered.

MAINTENANCE:

Clean the RESERVE UNIT on a daily basis. Repeat the operations described for coffee preparation and brewing, but do not fill the filter holder with coffee; instead, empty the filter holder completely and remove all residual coffee grounds. When the storage tank is full of hot water, allow the system to stand for at least one minute. Then, drain the water through the tap at the bottom of the unit. Dry the container and remove any scale deposits on the inside.

DRAINING THE BOILER

If the boiler must be emptied, shut off the power to the machine by moving the main switch **30** to the "zero" position. On gas-fired machines, extinguish the flame by closing the gas feed valve. Open the drain tap **4** until the boiler has been completely drained.

Important: *Be sure to close the tap before refilling the boiler.*

AUTOMATIC OPERATION - PROGRAMMING THE COFFEE BREWING CYCLES

Mod: Practical 85-16M; 85-16M

A. Entering the programming mode

Set the main switch **30** on the machine to position "zero" (machine switched off).

Hold down the fifth button **33** on the first brewing unit. Now, rotate the main switch **30** to position 1 (machine switched on). After a few seconds, release the button **33**. The indicator led for the button will now begin to flash, as will the same led on all the other brewing units. The machine is now ready for programming.

B. Programming

To program the four portions on brewing unit I, proceed as follows: place the single-portion filter into the single-portion filter holder. Use the coffee dispenser to dispense a single portion of coffee into the filter.

Mount the filter holder onto brewing unit I.

Place an espresso cup under the spout on the filter holder.

Press the first button **34** whose portion is to be programmed. When the coffee in the cup reaches the desired level, press the fifth button **33** to stop brewing.

Follow the same procedure to program the other portions on each group. Once the four portions on brewing unit I have been programmed as desired, the relative data can be transferred to the other brewing units by pressing the fifth button **33** on each unit. When each button **33** is pressed, the indicator led for the button will stop flashing and remain steadily lit. This shows that the data on brewing unit I has been transferred successfully.

C. Exiting from the programming mode

After you have finished programming the machine, press the button **33** (with flashing led) on brewing unit I and all the leds will turn off. The programmed quantity of coffee will now be delivered when an automatic brewing button is pressed.

REGENERATING THE WATER SOFTENER

- Place a container with a capacity of at least two litres under drain pipe **B**. Now, lower lever **A**.
- Remove the cover on the water softener by unscrewing knob **E**. Wait for the water level in the water softener to lower, and then pour 1 kilogram of coarse kitchen salt. Replace the cover and tighten knob **E** securely.
- Lower lever **C**, raise lever **A**, and make sure that water runs out of pipe **D**. Let the water run from the pipe until it is no longer salty, and then raise lever **C**.

Note: *Do not remove the synthetic resins in the water softener for any reason.*

Important: *To insure proper machine operation and maximum service life, the water softener unit must be regenerated every 7 days.*

IMPORTANT INFORMATION ON DAILY MAINTENANCE

To keep your espresso machine in top operating condition and obtain maximum performance, the following cleaning operations must be performed on the brewing units at the end of the work day:

- a) Install the blank filter (without holes) into the filter holder. This filter is provided with the machine.
- b) Install the filter holder with blank filter onto the brewing unit to be cleaned but do not tighten the holder, thus allowing water to overflow at the sides. Push the continuous brewing button and let the water run for about a minute. This will clean the spray head and the water delivery pipe in the unit.
- c) Tighten the filter holder onto the brewing unit so that water can no longer overflow at the sides. Manually run the unit once again for around 5 seconds, and then shut the unit down. Repeat this operation 5 or 6 times to clean the solenoid valve and the drain pipe on the unit.

Note: To clean the brewing units more thoroughly, the blank filter can be filled with one of the special detergents that are available on the market.

EMERGENCY OPERATION AFTER AN ELECTRONIC MALFUNCTION

SEMI-AUTOMATIC EMERGENCY OPERATION

Mod. 85-16M

Semi-automatic operation is controlled by the three green switches located on the left side of the machine. Switch no. I **62** shuts down the electronic control unit and lights up the relative indicator. Switch no. II **63** performs manual (start and stop) brewing on brewing unit I. Switch no. III **64** performs manual (start and stop) brewing on brewing unit II.

*Important: When the electronic control unit is shut down, the automatic level feature (automatic refilling of the boiler) is also deactivated. Thus, the water level in the boiler must be checked visually, and the boiler must be refilled with the manual level button **28**.*

ALARMS

A flashing Led on the first button of pushbutton array indicates a malfunction on the flow meter.

A flashing Led on the second button of all the pushbutton arrays indicates a malfunction on the automatic boiler refill system (jammed solenoid valve, insufficient water from the main water system, etc.). After 1'30", the pump motor will shut down.

Note: If the machine shuts down as described above, call your local service technician.

IMPORTANT INFORMATION

- Do not use water sprays, steam or similar cleaning methods. Before cleaning or maintenance operations, DISCONNECT THE POWER CABLE IF POSSIBLE; OTHERWISE, SHUT OFF THE OMNIPOLAR MASTER SWITCH INSTALLED AHEAD OF THE MACHINE.
- If the power cable is damaged, it must be replaced with the specially prepared, original equipment replacement part which conforms to safety regulations.
- Special maintenance, parts replacement, long-term shutdown and dismantling operations must be performed by LA SAN MARCO service personnel.
- These machines have been designed to produce espresso coffee, steam and hot water. La San Marco declines all liability if the machine is used for any other purpose.
- This instruction manual, all technical documents, and the booklet issued by I.S.P.E.S.L. (INSTITUTE FOR ACCIDENT PREVENTION AND OPERATING SYSTEM) should all be stored in safe place.

San Marco spa reserves the right to make any necessary technical changes on its equipment without prior notice.