

Software Programming Guide

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E N

#### Description

- This espresso machine has a CPU and many configurable settings.
- Additionally, there are many feedback controls employed in this espresso machine to troubleshoot problems should they occur.
- The following is a brief introduction to the controls and display and how they interact with the operator.

#### **Digital Display**



The digital display (display) is a backlit display capable of displaying 2 lines of 16 characters. The display enables the operator to interact with the espresso machine to visibly change parameter values. The display also provides valuable information to the operator.

There are several warnings that the can be displayed to alert the operator of an unusual condition or a fault. Additionally, simple messages are displayed alerting the operator that an action has been started or that a process needs to begin.

# **Programming Keypad**



The keypad has two functions. The first is for control of the espresso. The second is for programming individual software parameters.

The button and the button are used to change the values of the individual parameters. The label for these buttons are "Espresso" and "2 Espressos" respectively.

The button is used to access certain parameters and for advancing the cursor within a parameter. The label for this button is "Coffee".

The button is currently not used in programming mode. The label for this button is "2 Coffees".

The button  $\mathbf{P}$  is used to access the programming mode. This button is also used as a function key and to scroll through parameters. The label for this button is "Continuous".

The button is used to turn on and turn off the espresso machine and to activate the dispensing of the Tea Water.

#### **MP (PADDLE) Programming Keypad**

This keypad has the same functions as the above keys according to the identical symbols in bottom left corner.



## Accessing Programming Mode

#### **Programming Mode**



Description

- To change the values of any parameter the operator must first enter into the programming mode.
- There are two levels within the • programming mode that allow the programming of specific parameters.
- The two programming levels are as follows
- Machine "On" The parameters

contained within this level are ones the operator can change to affect the quality of the espresso.

Machine "Off" - The parameters contained within this level are ones the operator can change to affect the performance of the espresso machine. These parameters are set at the factory and there is no need for adjustment. La Marzocco reccomends that no changes are made at this level.

Display	Operating Procedure
	Machine On Programming Level
200.5°F 09:30 La Marzocco T:00	1 While the espresso machine is on, press and hold the button . After approximately 5 seconds the following display appears.
Doses Setting Select within50s	2 This is the "Machine On" programming level. To program the dispense volume for each button see "Water Volume Programming". To access the "Machine On" programming mode press the button .
	Note: You must scroll, using the object button, to the end to exit programming mode.
	Machine Off Programming Level
0FF 09:30	1 While the espresso machine is off, press and hold the button . After approximately 5 seconds the following display appears.
Language Engl i sh	2 This is the "Machine Off" programming level. Press the button Note: You must scroll to the end to exit programming mode.
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#### **Initial Installation**

## **Initial Installation**



#### Description

- This is the initial display shown when first installing this espresso machine.
- NOTE: If machine has been bench tested by your local distributor you will not see this first display.

**NOTE:** Prior to turning on the espresso machine, please read the Installation Guide

Display		Operating Procedure
First installat. Enter to confirm	1	Press the button 🗩 confirm that this in the initial installation of this espresso machine.
0FF 09: 30	2	Please refer to the section "Turning the Espresso Machine On" to continue

#### Start Up Procedures



#### Description

The following is the procedure for turning on the power to the espresso machine.

• Please follow the procedures carefully to avoid any damage to the espresso machine.

**NOTE:** If the message "First Installat. Enter to confirm" appears in the display, please see the preceding page entitled "Initial installation".

Display	Operating Procedure
	1 Turn the Main Switch to the On position.
3D5 DE LUXE MAR OFF 09: 30	2 The message at left will be displayed briefly. This message indicates the revision level of the software installed in this espresso machine. Then the following message is displayed.
170.5°F 06:30 La Marzocco T:00	<b>3</b> To complete the turn on process, press the button automatically fill the steam boiler until full. When the espresso machine reaches operating temperature, all keypad lights will light indicating that the espresso machine is ready to use.
	<b>NOTE:</b> Ensure all air is removed from the group prior to staring the espresso machine. This only needs to be completed once during the initial setup or when water is drained from the coffee boiler
	A WARNING A
30	Instantion voltage bioconneor richt of Fer Ber oke servioing



#### Description

The following is the procedure for turning off power to the espresso machine.

- Please follow the procedures carefully to avoid any damage to the espresso machine.
- This machine has two off settings. One setting turns off all of the components in the espresso machine and the other turns off power to the complete espresso machine.

Display		Operating Procedure
	1	The following is the procedure for safely turning off the espresso machine.
170.5°F 06:30 La Marzocco T:00	2	Press and hold the button $\mathbb{P}$ then press the button $\mathbb{P}^{\mathbb{P}}$ . The display changes to the following:
0FF 09: 30	3	This is the OFF setting used in the normal operating conditions.
	4	During servicing or other conditions that warrant it, the main switch should be turned to the OFF position.
		The espresso machine is off and display should be blank. It is important to follow this procedure when turning off the machine. Failure to do so can damage the electronics.
		A WARNING A
		HAZARDOUS VOLTAGE DISCONNECT FROM POWER SUPPLY BEFORE SERVICING

# Quick Access Programming (Quick Keys)



• In the current version of the software

(ver 1.15) the following quick keys are

Quick Key Number	Function
1	Group rinse cycle
2	Coffee Boiler Temperature
3	Steam Boiler Temperature
4	Pre-Brewing enable/disable
6	Machine Off function



#### Description

LA-MARZOCCO Language Engl i sh Firenze - Italia

Language

• This parameter allows the operator to change the language of the display.



# Name LA:MARZOCCO Name Firenze - Italia

- This parameter allows the technician to program a 16 character user name.
- The user name is displayed continuously on the display on the second line.
- The user name is not displayed when the Crono Function is ENABLED.



# Heating (Power Mode)



Description

• This espresso is equipped with a power saving feature that allows the espresso machine to operate at lower power if needed.

- While in power saving mode you may experience slightly longer steam recovery time. The steam boiler pressure/temperature may be adjusted to compensate for this if needed.
- There are two options in Power saving mode:
- Full This mode gives full power to both the coffee boiler and the steam boiler. On 120V model, in full power mode, a 20 Amp circuit is required.
- Half In this mode the power is alternated between the coffee boiler and the steam boiler.

Display	Operating Procedure	
0FF 09: 30	1 Enter into "Machine Off" programming mode.	
Language Engl i sh	2 Scroll through the displayed parameters using the button with the following display appears:	
Heati ng Ful I	<b>3</b> Press the button or the button to change the value between Half and Full.	
	4 When finished, press the button $\mathbf{e}$ to continue to the next parameter.	

# Water Reservoir (Tank)



#### Description

• This parameter allows the user to choose the use of a water reservoir. If the espresso machine is connected directly to the water supply, then this value should be set to "not present". This must be done before the machine is plumbed.

Display	Operating Procedure
OFF 09: 30	1 Enter into "Machine Off" programming mode.
Language Engl i sh	2 Scroll through the displayed parameters using the button 🔊 until the following display appears:
Tank Present	<b>3</b> Press the button or the button to change the value between Present and Not Present.
	<b>4</b> When finished, press the button $\mathbf{v}$ to continue to the next parameter.
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# Tea Water



- This parameter allows the technician to select the activation of the water pump during hot water dispensing.
- When hot water is drawn from only the steam boiler this parameter should be set to "without pump".
- If you wish to adjust temperature of water using the Hot Water Adjusting Knob, set this parameter to "with pump", see page 11 for more details.

Display		Operating Procedure
OFF 09: 30	1	Enter into "Machine Off" programming mode.
Language Engl i sh	2	Scroll through the displayed parameters using the button until the following display appears:
Tea Water with Pump	3	Press the button or the button to change to either "with Pump" or "without Pump".
	4	When finished, press the button 😥 to continue to the next paramete



#### Description

• This parameter allow the user to set the probe sensitivity depending of the hardness of the water. The harder the water, the lower the sensibility of the probe.

Display		Operating Procedure
OFF 09: 30	1	Enter into "Machine Off" programming mode.
Language Engl i sh	2	Scroll through the displayed parameters using the button 🔊 until the following display appears:
ProbeSensitivity Low	3	Press the button or the button to change the value between Low, Mid and High.
	4	When finished, press the button 🔎 to continue to the next parameter.

#### **Service Cycles**



- This parameter allows the user to program a threshold number of cycles when the machine prompts for service.
- When Prompted for Service, the "Service Phone" number will be displayed.

Display		Operating Procedure
0FF 09: 30	1	Enter into "Machine Off" programming mode.
Language Engl i sh	2	Scroll through the displayed parameters using the button with the following display appears:
Servi ce Cycl es	3	Press the button $\bigcirc$ or the button $\bigcirc$ to change the value (range =99000).
	4	When finished, press the button to continue to the next parameter.
		<b>N.B.</b> : To reset this parameter once "Service Phone" number is displayed. Turn off machine with on/off switch behind machine.
		Press and hold and buttons. Turn on machine holding the two buttons until "Service Reset" appears on display.



Display	Operating Procedure		
OFF 09: 30	1	Enter into "Machine Off" programming mode.	
Language English	2	Scroll through the displayed parameters using the button 🔎 until the following display appears:	
Temperature <sup>o</sup> F	3	Press the button 🕒 or the button 🔛 to change the value to either Celsius (°C) or Fahrenheit (°F).	
	4	When finished, press the button to continue to the next parameter.	
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Proportional, Integral, Derivitive (PID) Settings (Coffee Boiler)



- This parameter is preset at the factory based upon theoretical calculations and physical experiments.
- It is not recommended that these numbers are changed.
- Changes to these parameters can cause unexpected results.
- Qualified technicians may wish to experiment with different values.

- If you do wish to change the values and find that unexpected results occur, return to the factory default values:
  - kP kl kD 8.0 0.15 10.0

Display		Operating Procedure		
OFF 09: 30	1	Enter into "Machine Off" programming mode.		
Language Engl i sh	2	Scroll through the displayed parameters using the button with the following display appears:		
C kP kI kD 8.0 0.15 10.0	3	Press the button 🕑 or the button 💬 to change the value of the flasing parameter.		
	4	When finished, press the button to continue to the next parameter.		

**PID Setting** 

# LA-MARZOCCO PID Setting 20.1 °F Firenze - Italia

- This parameter sets a range in which the PID algorithm is active.
- This parameter is preset at the factory based upon theoretical calculations and physical experiments.
- It is not recommended that this number is changed.
- Changes to this parameter can cause unexpected results.
- It is important to write down the number before any changes are made to make sure you can return to the factory programming if unexpected results occur.
- Experienced technicians may wish to experiment with different values.
- The lowest value for this parameter is  $3.6^{\circ}F/2.0^{\circ}C$

Display	Operating Procedure		
0FF 09: 30	1 Enter into "Machine Off" programming mode.		
Language Engl i sh	2 Scroll through the displayed parameters using the button 💭 until the following display appears:		
PID Setting 20.1 °F	<b>3</b> Press the button or the button to change the value of the parameter.		
	<b>4</b> When finished, press the button to continue to the next parameter.		
//2			

## Coffee Boiler Temperature Offset



- This parameter isused to calibrate the coffee boiler temperature system to ensure the display temperature accurately represents the temperature of the water exiting the group head.
- This parameter is preset at the factory based upon initial tests of this espresso machine.
- It is not recommended that this number is changed.

- Changes to this parameter can cause unexpected results.
- It is important to write down this value before making changes to be sure you can return to the factory programming if unexpected results occur. Each machine may have a different value as it is set individually.

	is changed.				
Display	Operating Procedure				
0FF 09: 30	1	Enter into "Machine Off" programming mode.			
English	2	Scroll through the displayed parameters using the button 🖭 until the following display appears:			
Coffee T. Offset 1.5 °F	3	Press the button or the button to change the value of the flasing parameter.			
	4	When finished, press the button 💌 to continue to the next parameter.			

#### Water Filter Alarm



- This parameter allows the technician to preprogram an alarm that notifies the user when the water filter requires service or replacement.
- When the programmed volume of water has passed through the espresso machine the error message "Change Filter" is displayed.
- A value of 0 (zero) disables the filter alarm parameter.

Display		Operating Procedure		
0FF 09: 30	1	Enter into "Machine Off" programming mode.		
Language Engl i sh	2	Scroll through the displayed parameters using the button 🖭 until the following display appears:		
Water filter 0	3	Press the button 🗭 or the button 😧 to change the value of the flasing parameter.		
	4	When finished, press the button for the continue to the next parameter.		
Filter Alarm	5	When the espresso machine has dispensed the value of this parameter the message "Filter Alarm" will appear.		
		<b>NOTE:</b> To reset this message turn off the espresso machine using the main power switch. Then, press and hold the button and the button and turn on the machine using the main power switch.		
Filter Reset		Hold both buttons until the following message appears. Release both buttons and continue to use the espresso machine as normal.		

Water Volume Programming



Description

• This parameter allows the operator to program the water volume (shot volume) for the individual buttons on the keypad.

- The saved program is a number. This number relates to the number of pulses the flowmeter delivers to the CPU. Once the programmed number of pulses is received by the CPU, the flow of water is stopped.
- This parameter is not available on MP Paddle model as volume is manually controlled by use of paddle.

Display	Operating Procedure				
200.5°F 06:30 La Marzocco T:00	1	Enter into "Machine On" programming mode.			
Doses Setting	2	Press one of the following buttons:			
Select within 30s					
	3	Water will begin to flow. When the desired amount of water has been dispensed, press the same button again to Stop the flow of water. The button is now programmed. Repeat this process for subsequent buttons.			

# **Clock Adjust**



- This parameter allows the user to set the time of day and the day of the week.
- This parameter is used to display time and is also used by the "Auto On/Off" parameter
- There are 4 changeable values within this parameter:
- Hour
- Minute
- Day of week
- Hour Format 12h or 24h



# Auto ON/OFF



• This parameter allows the user to program the espresso machine to turn on at a preset time and turn off at a preset time.

Description

• This feature also allows the espresso machine to remain in the off condition for one repeating closed day.



# **Coffee Boiler Temperature**



#### Description

- This parameter is set at the factory at a preset nominal temperature.
- The temperature of the boiler is measured at the most critical point in the boiler where temperature fluctuation is the greatest.
- The temperature of the water exiting the group head is held constant by means of the mass of the group casting. Even though the temperature

of the boiler may vary slightly, the temperature of the water exiting the group is constant.

• To properly calibrate the temperature of any espresso machine it is import to measure the temperature of the water exiting the group by means of an external temperature measuring device. The difference of the display temperature and the measured temperature may be compansated by use of the "Coffee T. Offset" parameter.

Display		Operating Procedure		
200. 5°F 06: 30 La Marzocco T: 00	1	Enter into "Machine On" programming mode.		
Doses Setting Select within30s	2	Press and hold the button 🔊 to enter into programming mode.		
Clock Adjust	3	Then press the button 📄 to access the adjustable parameters.		
	4	Scroll through the displayed parameters using the button until the following display appears:		
Temp Cof. Boiler 200.5 °F	5	Press the button 💽 or the button 💬 to change the value of the parameter.		
	6	When finished, press the button $\mathbf{s}$ to continue to the next parameter.		
		NOTE: It is also possible to change the temperature of the coffee boiler using the "Quick Keys". Please see the section titled "Quick Keys" A DANGER A CAUSE THE STEAM BOILER CONTAINS WATER AT ELEVATED TEMPERATURES. WATER TEMPERATURE OVER 125 °F CAN CAUSE SEVERE BURNS INSTANTLY OR DEATH FROM SCALDING.		

#### **Steam Boiler Temperature**



Description

- This parameter is set at the factory at a preset nominal temperature.
- The temperature of saturated water is proportional to the pressure inside the Steam Boiler. Therefore it is possible to regulate the pressure of the steam boiler by means of electronic temperature control. Please use the following tables as reference when setting the steam boiler temperature.

Temperature	Pressure
247°F/119°C	1.0 bar
260°F/127°C	1.5 bar
272°F/133°C	2.0 bar

# CAUTION

The saturation temperature of water will vary will ambient atmospheric pressure. Tables in this manual are created for atmospheric pressure at sea level. Slight adjustment in temperature will be required for elevations other than sea level.

Display	Operating Procedure		
200. 5°F 06: 30 La Marzocco T: 00	1 Enter into "Machine On" programming mode.		
Doses Setting Select within30s	2 Press the button for to enter into programming mode		
Clock Adjust	<b>3</b> Then press the button <b>b</b> to access the adjustable parameters.		
	4 Scroll through the displayed parameters will using the button until the following display appears:		
Steam Boiler Temp 245.5 °F	<b>5</b> Press the button 🔛 or the button 💬 to change tthe value of the flashing parameter.		
	When finished, press the button $\mathbf{r}$ to continue to the next parameter.		
	<b>NOTE:</b> It is also possible to change the temperature of the steam boiler using the "Quick Keys". Please see the section titled "Quick Keys"		
	THE STEAM BOILER CONTAINS WATER AT ELEVATED TEMPERATURES. WATER TEMPERATURE OVER 125 °F CAN CAUSE SEVERE BURNS INSTANTLY OR DEATH FROM SCALDING		
	SEVERE BORNS INSTANTET OR DEATH FROM SCALDING.		

# Pre-Infusion or Pre-Brewing



#### Description

- This parameter allows the user to enable or disable the pre-brewing (also called pre-infusion) function.
- When enabled the user is able to program buttons 1-4. Each button may have different programming.
- Pre-brewing has two values to adjust for each button. "ON" time is the amount of time (in seconds) that the

brew valve is open during during the prebrewing cycle. "OFF" is the amount of time (in seconds) that the brew valve is off during the prebrewing cycle. After the pre-brewing cycle has completed, the normal brew cycle continues until complete.

• This parameter is not available on MP paddle versione where pre-infusion is controlled manually by paddle.

Display	Operating Procedure				
200. 5°F 06: 30 La Marzocco T: 00	1	Enter into "Machine On" programming mode.			
Doses Setting Select within30s	2	Press the button 🔊 to enter into programming mode.			
Clock Adjust	3	Then press the button 📄 to access the adjustable parameters.			
	4	Scroll through the displayed parameters using the button 🔎 until the following display appears:			
PreBrewi ng enabl ed	5	Press the button 🕒 or the button 💬 to change the value of the parameter.			
PreBrew ON sec Espresso 0.6	6	When enabled, additional parameters are displayed, press the button 🗩 or the button 😭 to change the value.			
PreBrew OFF sec Espresso 0.1	7	7 When finished press the button to continue to the next parameter. Repeat steps 6-7 for all 4 buttons. A value of zero disables this feature on the corresponding button.			
		<b>NOTE:</b> It is also possible to enable and disable this parameter using the "Quick Keys". Please see the section titled "Quick Keys"			
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# Service Phone Description Image: Company of the service of th







#### Description

- This espresso machine is equipped with several feedback mechanisms that alert the operator when an unusual condition occurs. Additionally the espresso machine will warn the operator when certain parameters fall below or above the programmed point. These errors and warnings will appear as a message in the display.
- The following section will describe errors and warnings that may appear in the display.

Message	Description	Message Solution
First installat. Enter to confirm	This is the first installation of the espresso machine and the CPU is asking for verification of this event.	Press the ENTER button on group 1 keypad to confirm. Then will initialize the CPU and boot the electronics.
Coffee boiler filled?	This message is displayed after the boilers have been drained. The CPU is verifying that the coffee boiler is full.	Fill the coffee boiler with water (see operating manual for detailed instructions). Ensure that all air is bled from the coffee boiler using the air bleed screw atop each group casting. The CPU will display this message to ensure that the coffee boiler is full before supplying power to the coffee boiler heating element.
Corrupted Data	This message is displayed when the CPU does not understand an instruction.	Most likely the machine power was disconnected with out first turning off the machine through the keypad and display. Turn off machine using main switch to cycly power on and off. This should clear the error.
Filling-up in progress	This message is displayed when the steam boiler autofill cycle is activated and water is entering the steam boiler.	No action is required when this message is displayed. This message is only displayed to notify the operator of the active process.
Filling-up Alarm	This message is displayed when the CPU does not detect a full signal from the steam boiler within the set time interval.	When this message is displayed the CPU also shuts down and turns off power to the machine (see the parameter "Level Timeout"). Press the ON/OFF button to reset this error.
Steam Boiler Empty	This message is displayed when the CPU does not receive any signal from the Safety Probe in the steam boiler.	When this message is displayed the CPU turns off power to the steam boiler heating element. The only way to reset this error is to repair the Safety Probe to restore the signal to the CPU.
Steam Boiler Temperature	This message is displayed when the steam boiler temperature exceeds the maximum allowed temperature.	When this message is displayed call an authorized service technician to repair this fault. The also CPU turns power off to the steam boiler.
Flowmeter Alarm	This message is displayed when the CPU does not receive the appropriate signal from the flowmeter.	When the flowmeter alarm is displayed, the light on the corresponding button that initiated the brew cycle ill begin to flash. This problem is a result of water not flowing through the flow meter. This can be causedn by the coffee packed too tightly, a blockage in the tubes, a malfunctioning water pump, a faulty valve, or a damaged flowmeter. Call a service technician to fix this problem.
Coffee Boiler 1 Heating	This message is displayed when the coffee boiler does not reach the minimum temperature with the programmed time interval.	See the parameter "Heating Timeout" for more information.
Coffee Boiler Temperature	This message is displayed when the coffee boiler temperature exceeds the maximum allowed temperature.	If this happens call an authorized service technician to repair this fault. When this message is displayed the CPU turns power off to the coffee boiler displayed.

