

Popup Drink Thru

Espresso Machine Info & Cleaning

La San Marco 20/20 Manual

June 2021

Confidential & Proprietary

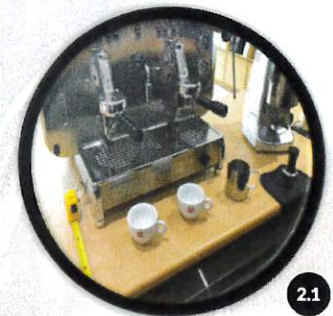
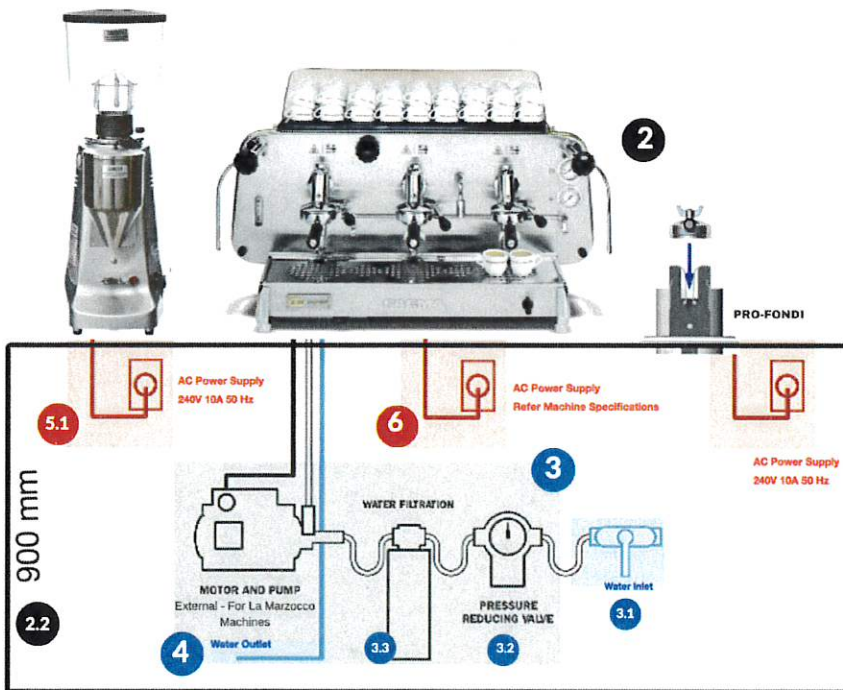


ESPRESSO MACHINE INSTALL REQUIREMENTS

ONLY LICENCED PLUMBERS AND ELECTRICIANS TO BE USED



- 1) CUSTOMERS CHECKLIST**
 - 1.1 Clean Structurally Sound SERVICE Area to place Espresso Machine and Grinder.
 - 1.2 Cold Water In Supply. With reduced line pressure to be less than 5 Bar on the brew gauge.
 - 1.3 Waste Water Outlet.
 - 1.4 Electrical Supply.
- 2) SERVICE AREA - FOR ARCHITECTS AND DESIGNERS**
 - 2.1 A dry and ventilated space is required with 200-250mm in front of the machine to make coffees and 50mm around machines to clean.
 - 2.2 An OPEN SPACE under the machine (not behind a wall or fridge) is required.
 - 2.3 A 50-60mm HOLE through the bench for cables (water and electrical).



2.1

Allow 200mm min in front of machine to work



2.3

50-60mm Hole in Bench

- 3) COLD WATER IN SUPPLY - FOR PLUMBERS**
 - 3.1 A dedicated Cold-water outlet within 1 m of machine is required. Must be accessible and have a tap.
 - 3.2 Pressure limiting valve to be installed by customer. ½ inch BSB with 3/8-inch male adaptor to connect machine too.
 - 3.3 Water Filter (Cartridge at an extra cost) can be installed in line.

NOTE: - INCOMING WATER MUST HAVE A PH BETWEEN 6.5 AND 8.5 AND THE QUALITY OF CHLORIDES LESS THAN 50mg/L AND MUST BE OF HARDNESS GREATER THAN 90PPM (9°F / 5°d) AND LESS THAN 150 PPM (15°F / 8.4°d)
- 4) WASTEWATER OUTLET - FOR PLUMBERS**
 - 4.1 A 40 mm diameter drainpipe with trap is required within 1 meter of the machine.

Note: Waste Water falls with gravity so there should be a natural fall to exit wastewater.
- 5) ELECTRICAL SUPPLY - FOR ELECTRICIANS**
 - 5.1 Grinders require standard 10 Amp/120 VOLT supply.
- 6) ESPRESSO MACHINE ELECTRICAL SUPPLY - FOR ELECTRICIANS**
 - 6.1 Machines are preferred to be connected using weatherproof recepticles with switches for ease of connecting and reconnecting.
 - 6.2 Please ensure correct Current ratings are used to match espresso machine specifications.



MACHINE RATING: _____ (SINGLE PHASE)

NOTE : CHECK SPECIFICATIONS OF MACHINE FOR CURRENT (AMP) RATINGS.

DO YOU HAVE A QUESTION? +1 323 592 3303 SUPPORT QUESTION? aaron@cmdepotusa.com
coffeemachinedepotusa.com

Reduce Wear: In order to reduce wear & tear on your machine it is best to leave your machine on at all times if used on a daily basis. Less energy is required when the machine is left on and less fatigue on the copper tubes, pipes, brass etc.

Water Filtration: Filtered tap or bottled water alone is not enough. We need softened water in our espresso machines or a mix 2-3 parts distilled water to one part filtered water. This will improve the life span of the machine and improve the coffee flavor. Our target is number 150ppm of Total Dissolved Solids (TDS).

Care for your Machine: Clean the grouphead(s) daily with a brush and damp towel. Backflush daily. Clean the steam wand(s) after every use; purge before and after every use. Clean, disassemble and soak portafilter(s) and baskets at least once a week in Puly Caf detergent.

Espresso machines have the capability to be directly plumbed into your water line, and although not a difficult process there are a few things you need to know.

Facts About Water Pressure

The ideal pressure for espresso machines is somewhere around 2 BAR or 25 PSI. If your water line pressure is too high your machine may develop leaks. A pressure regulator is recommended for your setup to avoid possible damage. When installing a pressure regulator, it should be located between your water filter and the espresso machine. The eventual reduction in pressure is also one of the ways to indicate that your water filter cartridge needs to be replaced.

Water Quality Facts

It is imperative to know the quality of the water going into your machine before you fill it with water the first time. There are two key aspects of the water quality to consider.

1. Filtration – Water filtration is required in order to remove the impurities from the water. Tiny particles too small for the eye to see can clog up your espresso machine. Please be aware that water filtering does not soften the water as the minerals are dissolved not removed from the water. The only way to soften water is with a specialized softening filter.

2. Hardness – Water hardness is defined as the quality of dissolved minerals in water. High levels of minerals in your water can cause serious performance problems in your machine. The minerals can result in build-up of limescale within your machines leading to serious maintenance issues, which are not covered by the warranty. Different regions have different water hardness levels. In order to find out the hardness level of your water, you are recommended to use Water Hardness Test Strips. If the hardness is below 50PPM or 3 Grains Per Gallon, a water softener is not needed, yet the installation of one is still recommended as water hardness levels can change throughout time (it is recommended that you check your water hardness at least once every three months).

Water Softening

If a water softening filtration is installed we recommend that you regularly check the hardness in order to know when to replace the cartridge. The frequency of changing the cartridge will vary depending on the inbound water hardness and the volume used.

Be aware using distilled or deionized water should not be used with your machine. Distilled and deionized water have zero mineral content which may sound good but, in reality, it will cause the machine to malfunction as it needs a few minerals dissolved in the water to detect its presence in the boiler. Furthermore, water with no minerals will not produce good tasting coffee as those minerals help to extract the best flavor from coffee.

Reverse Osmosis (RO)

Reverse osmosis is commonly used as a softening process but if it is too effective you run the same risks of malfunction as when using distilled or deionized water. Many who use an RO filter will use a calcifier to add a touch of dissolved minerals into the water after filtration. If you have an RO system installed it is important to test the water hardness to be sure it is suitable for your machine.



Professional Espresso Training

Training Guide

CMD | 2020





The Barista

A barista is accomplished in the art, skills and techniques of espresso extraction and preparation.

BARISTA RESPONSIBILITIES:

- Know the full menu for your location
- Recommending a drink to patrons when asked
- Taking the time to explain the menu and specifics to patrons
- Serving patrons quickly and efficiently
- The reputation and consistency of the establishment's coffee
- Checking the grind, dosage and freshness of the location's coffee daily
- Verify that coffee is stored correctly
- Oversee the quality of espresso drinks served
- Training of new staff on equipment and industry standards
- Reporting, logging and following up with equipment faults and maintenance

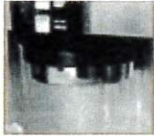


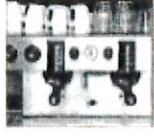

TRAINING FORMAT

By the end of this course you should have in sound knowledge of the following topics:

- Equipment safety
- Coffee Storage
- Startup procedures
- Espresso Production
- Milk Texturing
- The Espresso Menu
- Equipment cleaning and care

COFFEE MACHINE DEPOT USA: SAFETY PRECAUTIONS










ALL TEAM MEMBERS NEED TO BE AWARE OF THE POINTS THAT ENSURE SAFE WORKING PROCEDURES WHEN MAKING ESPRESSO COFFEE. BE AWARE THAT MANY PARTS OF AN ESPRESSO MACHINE ARE VERY HOT AND THEREFORE CAN BURN!

	<p>Group Heads</p> <ul style="list-style-type: none">• These are always hot and can burn.• Water released from the group heads is between 92°C and 95°C. Avoid being splashed by the water. Never look down at the water while it is flowing – water splashes can reach eye level.
	<p>Group Handles</p> <ul style="list-style-type: none">• These areas are also very hot. Hold by the handle only!• Steam arms, these are very hot after use – don't hold or lean against them.• When steam is on, avoid any contact with the steam especially near the tip – steam can cause severe burns.
	<p>Hot Water Outlet</p> <ul style="list-style-type: none">• Water comes out boiling and under pressure, avoid splashes or touching the spout. If a team member has filled a jug or container of hot water, ensure they don't spill water on themselves or on any team members. Sleeves for paper cups are recommended.
	<p>Espresso Machine</p> <ul style="list-style-type: none">• Never remove any covers or panels to expose the internal wiring or electrics. Only authorized technicians are permitted to do this or make any adjustments to the internal workings of the coffee grinder or espresso machine.
	<p>Coffee Grinder</p> <ul style="list-style-type: none">• The grinder has a sharp circular blade spinning at up to 1400 rpm, when cleaning the grinder, always turn it off and unplug.• Never take the hopper off while the grinder is operating.• Never put any object, especially fingers, into the ground coffee chute of the dosing chamber while the coffee grinder is operating.• Never assume the blades have stopped because the power has been turned off. Blades can take approximately 30 seconds to come to a full stop.
<p>If hoses or water are used to clean down benches – extreme care must be taken not to splash water on the coffee grinder or espresso machine</p>	

PERFECT ESPRESSO MADE EASY

ACTION	ICQ
1. Check that there is enough COFFEE in the dosing chamber	Accurate dosing
2. Check you have <u>warm</u> cups for the order	Cold cups alter content temperature
3. KNOCK OUT Spent coffee from the filter basket	A coffee cake is only to be extracted once and then discarded.
4. WIPE Clean the filter basket with a towel	Spent coffee clogs filter holes and effects coffee taste. Paper towel ensures no cross contamination.
5. DOSE 1. Click for a single group handle 2. Clicks for a double group handle	Up to 9grams of coffee is acceptable
6. LEVEL The coffee in the filter basket by tapping the side with side	Even distribution ensures correct tamp
7. TAMP Using 18kg of pressure	Incorrect pressure/tampering affects espresso extraction
8. BRUSH Loose coffee from the basket rim	Grounds on the rim affect seal life
9. FLUSH The group head for 1-2 seconds to clean	Ensures water for next coffee is clean
10. EXTRACT Espresso 25-30ml in 25-30 seconds Ristretto 15-20ml in 15-20 seconds Doppio 30-40ml in 15-20 seconds	EXTRACT COFFEE AS SOON AS HANDLE IS IN GROUP. COFFEE WILL BURN WITHIN 4 SECONDS IF NOT ACTIVATED IMMEDIATELY. LEAVE GROUP HANDLES IN MACHINE.

COFFEE MACHINE DEPOT USA – MAKING THE PERFECT ESPRESSO

	Coffee	<ul style="list-style-type: none"> • Check there is enough ground coffee in the dosing chamber
	Knock-Out	<ul style="list-style-type: none"> • Remove handle from group and knock out used grinds
	Wipe	<ul style="list-style-type: none"> • Clean the filter basket with a paper towel if there is excess residue
	Dose	<ul style="list-style-type: none"> • 1 click for a single group handle • 2 clicks for a double group handle level • Tap the side of the filter holder to level the coffee • Some sites may be calibrated at two clicks for a single and three clicks for a double.
	Tamp	<ul style="list-style-type: none"> • Very firmly tamp the coffee evenly in the basket. Use a hand tamp or grinder tamp • For a hand tamp, press firmly to create an even, smooth surface. Gently twist the tamp to ensure an even surface
	Wipe	<ul style="list-style-type: none"> • Any loose coffee must be wiped from the basket rim and wings
	Flush	<ul style="list-style-type: none"> • Run water for 1-2 seconds to remove residual grounds from previous coffee
	Lock	<ul style="list-style-type: none"> • Fit filter holder onto group head and begin extraction within 4 seconds.
	Extract	<ul style="list-style-type: none"> • Espresso 25 – 30 ml in 25 – 30 seconds • Ristretto 15 – 20 ml in 15 - 20 seconds • Doppio Ristretto 30 – 40 ml in 15 – 20 seconds • If the extraction rate is not meeting these guidelines; refer to the Perfect Grind section

*Remember: Always use warm cups!

COFFEE MACHINE DEPOT USA – THE PERFECT GRIND

Assessing Coffee Extraction

A number of factors can affect extraction:

- Humidity
- Grind settings
- Incorrectly stored coffee

Assess the flow of the coffee, either visually or by counting the time taken to produce 25-30ml of coffee. Use the following guide to identify what is wrong:

GRIND IS TOO COARSE



- Coffee is gushing out of the spouts
- Extraction is faster than 25-30 seconds
- The coffee tastes weak or watery
- The crema on top of the espresso disappears in less than 30 seconds

GRIND IS TOO FINE



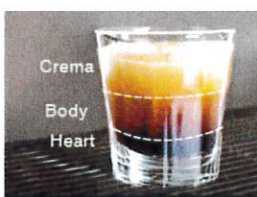
- Coffee is dripping or very slow
- Extraction is slower than – seconds
- Coffee taste burnt
- Preset button is flashing
- The boom of the basket is stained with coffee oils

GRIND IS CORRECT



- Balanced, steady pour
- Extraction volume is -ml in – seconds
- The coffee has a smooth, shiny and even colored crema
- Crema holds on top of the espresso for approximately seconds

PERFECT EXTRACTION



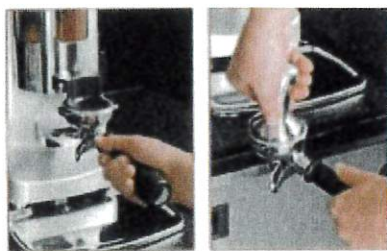
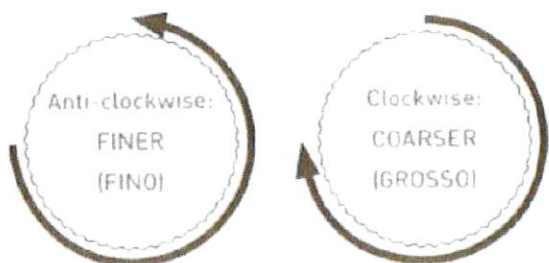
- This is a good example of what a perfect extraction should look like 25-30ml of espresso with 5-10ml of dense fine crema

COFFEE MACHINE DEPOT USA – MAKING ADJUSTMENTS

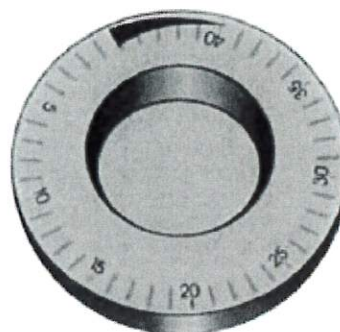
After making a change, remember to grind coffee for about 5 seconds. Stop, remove the coffee then re-grind for another 5 seconds. Use the second grind of coffee to check the extraction.

Too Fine – Clockwise – Coarser

Too Coarse – Anti-clockwise – Finer



SOME GRINDERS ADJUST DIFFERENTLY




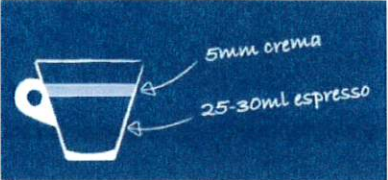

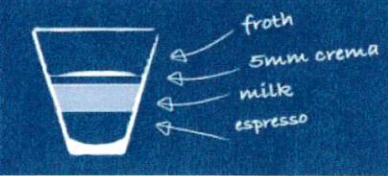




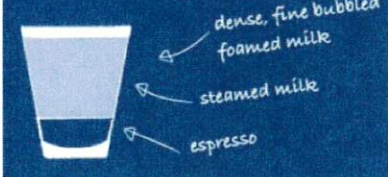







COARSER + - FINER

Look for a tapered curve in the collar and adjust directions on the curve" + = coarse - = fine

The Extraction Can Be Affected By:

- Blunt grinder blades
- Tamping too lightly or too hard
- High humidity
- Stale coffee
- Inexperienced staff trying to adjust grind
- Blocked filter baskets
- Incorrect dose in the group handle basket

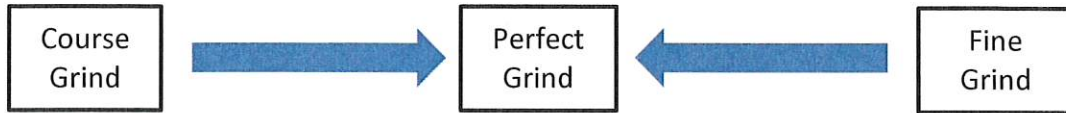
Check all these factors before beginning any grind adjustments. Remember: IF the café is prone to high humidity, the grind may need to be adjusted frequently. This is due to coffee absorbing moisture making the coffee particles swell which affects the dosage. Making the grind slightly finer corrects particle size which in turn corrects the dose.

	<p>ESPRESSO</p> <p>Standard espresso is 7g of freshly ground coffee extracted to 25-30ml within 25-30 seconds. This is the heart of every espresso-based drink. A perfect espresso always has a 5mm hazel 'crema'. Ristretto is a short extraction, 15-20ml used for weak drinks. Doppio is 14g of coffee extracted to 25-30ml for strong drinks.</p>				
	<p>MACCHIATO</p> <p>Meaning marked or stained in Italian, macchiato is an espresso that has a dash of milk or dense froth added. If the froth is carefully added into the center of the espresso, the milk will separate from the froth to form a layer on top of the espresso. Can be served in a glass or an espresso cup.</p>				
	<p>LONG BLACK</p> <p>Fill a cappuccino cup with 2/3 of hot water and run a doppio into the cup. This guarantees the full flavor and tanginess of the coffee.</p>				
	<p>CAPPUCCINO</p> <p>The most popular espresso-based drink. Espresso with perfectly steamed milk added. Milk should be steamed to 60°C, giving a pouring temperature of 65-70°C with a texture of fine, dense bubbles. Pour to create a slight dome. Milk will drop out of the foam to give the perfect balance of milk and espresso in the cup. Dust lightly with chocolate powder.</p>				
	<p>CAFFÉ LATTE</p> <p>Served in a glass, espresso with steamed milk added. Poured carefully to ensure a 1cm head of foam.</p>				
	<p>FLAT WHITE</p> <p>Espresso with steamed milk added. Poured to ensure just milk is added. Top of a flat white will have a very thin layer of crema and foamed milk.</p>				
 <p>Tamp evenly & firmly using a hand tamper or grinder tamper.</p>	 <p>Brush rim of basket to avoid loose grounds building up on the gasket.</p>	 <p>Flush group head for 1-2 seconds to remove grounds from previous coffee.</p>	 <p>Extraction should be an even smooth pour for 25-30seconds to give 25-30ml of espresso. Faster extraction could mean under dosing or too coarse a grind. Too slow an extraction means over dosing/tamping or too fine a grind.</p>	 <p>Foaming Milk: Use the right size jug and amount of fresh, cold milk for the number of coffees being made. Steam milk until textured to a dense, smooth and silky froth. Turn steam off at 60-65°C. Roll milk in jug to prevent milk/foam from separating.</p>	 <p>Wipe the steam arm with a wet, clean cloth and purge after every use. Rinse the cloth as often as possible.</p>

PERFECT MILK MADE EASY

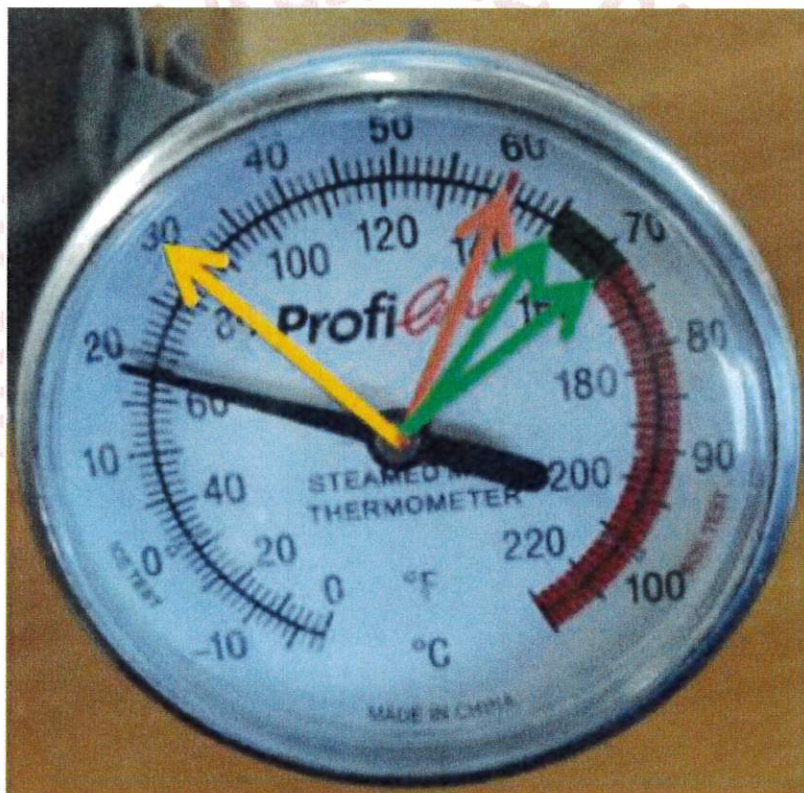
<p>Using fresh cold milk fill the jug to the required amount 600ml jug maximum 2 small/1 large coffee 1-liter jug maximum 3 small/ 2 large coffees</p>	<p>MILK TEXTURING SCALE</p>
<p>Purge steam wand, pointing away from you. Lift jug to steam wand and rest the steam wand in spout of jug so the steam tip is off center and is below the milk</p>	<p>Fresh cold milk straight from the refrigerator at 4°C WARNING Do not reheat milk. Milk does not aerate or froth properly.</p>
<p>Turn steam on and lower the jug steadily so the steam tip is just touching the surface listening for the hissing noise that will stretch the milk. Keep the steam wand positioned off center and steadily lower the jug slowly as the milk rises.</p>	<p style="text-align: center;">Up to the first 15°C</p> <p>Remember the milk is extremely cold and requires a few seconds for the steam to break through the cold snap</p>
<p>At 35°C lower the steam wand into the jug while maintaining the vortex, sucking in the excess bubbles and continue heating WATCH THE THERMOMETER!</p>	<p style="text-align: center;">Between 15°C - 30°C</p> <p>This is the crucial stretching stage; thick creamy dense froth is created at this stage</p>
<p>Stop the steam wand at 60 °C - 65 °C it will rise to 70 °C+ for the perfect drinking temperature</p>	<p style="text-align: center;">35°C</p> <p>Stop the stretching process. Lower the steam wand in the jug and continue heating.</p>
<p>Wipe and Purge the steam wand Roll the milk to keep from separating Cappuccinos – pour low and fast Latte – pour high and slow and bring spout closer and lower when glass is ¾ full Flat white – Keep jug spout high and bring down when 1cm from top of cup.</p>	<p style="text-align: center;">STOP!</p> <p style="text-align: center;">60°C - 65°C</p> <p>Turn off the steam wand, swirl the milk and pour to the recipe specification.</p>

MAIN POINTS



Tamper harder than
18kgs and or add
more coffee

Tamper lighter than
18kgs or add less
coffee



30°C

You must aerate the milk before this temperature

60°C to 65°C

You must stop heating the milk between these temperatures

65°C to 70°C

Correct serving temperature

72°C & above

Milk is burnt – Do not use!

COFFEE MACHINE – MILK POURING

- Once milk is frothed, remember to keep rolling the milk to keep it from losing its structure.
- As the milk is rolled, the surface will form a glossy sheen.
- Begin pouring as soon as possible for correct temperature and milk density.



- Pouring should be smooth and steady into the cup.
- Pouring with the spout low allows more froth to flow.
- Pouring with the spout high allows more milk to flow.



- To manage the correct amount of milk and froth for the different drinks, pour cappuccino's first, then lattes, finishing with flat whites.
- Between pours, keep rolling the milk.



- CAPPUCCINOS – Pour low and fast, then ease the jug up as the dome forms.
- LATTE – Pour high and slow until the glass is $\frac{3}{4}$ full, bring spout close to the glass and allow froth to flow creating the 1cm head.
- FLAT WHITE – Keep jug spout high then lower to finish pour.



- MILK
- Full Cream Milk – Best for silky, dense froth
- Low Fat/Skim Milk – Needs extra attention to avoid large bubbles forming.
- Soy Milk – Keep within temperature parameters to avoid boiling
- Never put jugs with hot milk into the fridge or try to cool overheated milk with ice.



- Always purge and wipe the steam wand with a clean cloth after use. ALWAYS use a clean, damp cloth.
- Never scrape the steam wand with knives or metal scourers as these scratches and damage the arm.
- Steam arms should never be left soaking in water/detergent overnight.



CLEANING THE COFFEE MACHINE

<p>1. Clean steam arms with clean wet cloth</p>	<p>Wrap cloth around steam arm and activate steam. Milk residue will then easily wipe away. So not use scourers, knives or any other "tool."</p> <p>CAUTION – cloth will be hot after activating steam arm.</p>
<p>2. Remove filter basket from the filter holder and soak into water for 10-15 minutes.</p>	<p>Use a scouring pad to remove coffee residue. Replace basket in Filter Holder after cleaning.</p>
<p>3. Soak filter holders in water for 10-15 minutes</p>	
<p>4. Clean the heads by running water, insert the filter holder and gently jiggle filter holder side to side until water runs clear.</p> <p>Use a group cleaning brush and clean around group seals.</p> <p>BACKFLUSH machine with or without chemical cleaner (see methods in next page)</p>	
<p>5. Wash drip tray and wipe down any coffee/milk splashes on machine. Remember to wipe cup tray.</p>	<p>DO NOT DEPRESSURIZE THE ESPRESSO MACHINE BY OPENING THE STEAM WANDS. The water vapor from the steam will damage electrical components in the machine.</p>

COFFEE MACHINE DEPOT USA – MACHINE CLEANING GUIDE

- Soak steam arms for 3-4 minutes - no longer.
- Wipe clean with cloth and remove any possible blockages.
- Purge steam arms to release any water and loosen blockages.



- Remove baskets from filter holders and soak in hot water with ¼ teaspoon full of approved chemical cleaner for 20 minutes. Ensure only metal parts are submerged in solution.
- Scour inside of filter holders and sides of filter baskets. Check all the holes in the filter baskets are clean of coffee grounds.
- Don't put filter holders or baskets in dishwasher!



- Fit blind filter into filter holder. Activate group head; without locking filter holder in place and gently move filter holder side to side for 4-5 seconds or until the water runs clear.



Use Chemical Cleaner

- Put ½ teaspoon chemical cleaner in blind filter, lock into group head
- Activate for 10 seconds. Turn off and leave for 10 seconds to allow cleaner to permeate through coffee residue. Repeat this process 3 times.
- Tip out dregs, flush blind filter under hot water outlet then follow daily back flushing to remove all traces of chemical.



Daily Back Flushing

- Activate group head; without locking filter holder in place, gently move filter holder side to side for 4-5 seconds.
- Lock filter holder back onto group head, activate for ten seconds. Tip out water and residue. Repeat this process 3 times.
- Back flushing is done at close of business daily when chemical cleaner isn't used.
- Remove mesh cover and drip tray, ensure drain reservoir is clear. Clean mesh cover and drain place and replace. Ensure holes on mesh cover are aligned to the rear of group heads.
- NEVER depressurize the espresso machine!
- If the espresso machine is left on, filter holders must be on



Recommended Cleaning

- 1 - 10kgs per week: Use chemical 1-2 times per week, back flush other days
- 11– 20kgs: Use chemical 2-3 times per week, backflush other days
- 20kgs: Use chemical daily



CLEANING THE GRINDER

<p>1. REMOVE BEANS from the hopper, store in airtight container in the fridge overnight.</p>	<p>Avoid beans becoming stale overnight in warm environment</p>
<p>2. REMOVE AND CLEAN Grinder Hopper</p> <p>Twice a week wash out with gentle detergent, rinse and DRY. All other days wipe clean with towel.</p>	<p>Residual oils can affect the taste of the fresh coffee</p>
<p>3. EMPTY OUT GROUND COFFEE From the dosing chamber</p>	<p>Flick out remaining ground coffee. Store grind overnight in airtight container in the fridge. Use this coffee to season machine the next day not to make coffee for patrons.</p>
<p>4. Using a grinder or pastry brush, BRUSH OUT ALL THE GROUND COFFEE residue. Empty out and throw away.</p>	<p>Avoid ground coffee residue building up.</p>
<p>5. NO COFFEE SHOULD BE LEFT IN THE HOPPER OR DOSING CHAMBER OVERNIGHT!</p>	<p>Coffee in the Hopper should stay no longer than 3 hours and no longer than 1 hour in the dosing chamber once ground.</p>
<p>6. Clean base plate. Throw away any spilt coffee grounds</p>	<p>Spilt coffee must never be put in the dosing chamber</p>

SIMPLE AND EASY!



Preventative Maintenance Summary

(all machines)

3/9 Month Maintenance

- Clean and backflush machine
- Check portafilter baskets and springs
- Replace group head gasket
- Replace shower screen
- Check expansion valve operation
- Test buttons for proper operation (if AV)
- Test flow-rate of each group (ml/30 secs)
- Check steam valve for proper operation
- Check auto-fill probe
- Check vacuum breakers
- Inspect drain system
- Inspect/replace water filters and ensure the water quality is good

6-month Maintenance (in addition to the above)

- Rebuild steam valves

12-month maintenance (in addition to the above)

- Replace safety valve
- Replace steam boiler vacuum breaker
- Replace steam valve vacuum breakers
- Replace expansion valves

check Water Quality (after filtration sample of water must be taken at the pump)

Value	min	max	pre	post	Value	min	max	Pre	post
T.D.S ppm	90	150			Total Chlorine	0	0.1		
Total Hardness ppm	70	100			PH	6.5	8		
Total iron ppm	0	0.02			Alkalinity ppm	40	80		
Free Chlorine ppm	0	0.05			Chloride ppm	0	30		

20/20 CLASSIC



IT – USO E MANUTENZIONE



EN – USE AND MAINTENANCE



FR – EMPLOI ET ENTRETIEN



DE – BEDIENUNG UND WARTUNG


La San Marco

A stylized red logo consisting of the letters 'S' and 'M' in a cursive, handwritten style.

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- The machine creates heat. Therefore it needs to be placed in a room that is sufficiently ventilated to ensure heat dissipation.
- Keep the machine away from sources of direct heat.
- Before connecting the device to the electrical mains, check that the voltage of the power outlet does not differ from that indicated in the technical data and on the machine's identification plate. If the voltage is different, do not connect the machine, this could be dangerous and could damage the machine.
- The electrical connection must be made in accordance with the regulations of the country of installation. There must be suitable category III overvoltage disconnection devices. In case of single phase powered machines, before accessing energized parts of the machine itself, move the main switch to 0 and then disconnect the power cord upstream of the machine.

1.2.2 Use of the machine - Safety instructions

- The machine must never be switched on before connecting it to the water supply. The water shut-off valve must be left open when the machine is on. The user must check and make sure.
- This machine is designed and built to deliver espresso coffee, hot water (for the preparation of beverages and infusions) and steam (used to heat liquids). The use of the machine for any other than its intended purposes is considered to be improper and unauthorized. The manufacturer declines any liability for damage resulting from the improper use of the machine.
- The user must be a responsible adult, who is expected to comply with local safety rules and accepted common sense procedures. For a proper and safe use of the machine, the operator must always comply with applicable rules and any other accident prevention, work safety, health and hygiene requirements in the country of use.
- This device is not intended for use by persons (including children under 8 years of age) with impaired physical, sensory or mental abilities, or a lack of experience and knowledge, unless they are supervised or instructed regarding use of the device by a person responsible for their safety. Children must be supervised to make sure they do not play with the appliance.
- Do not submerge the group in water to clean it.
- Place only empty cups in the cup holding shelf.
- The machine in operation must never be covered. There must be suitable air circulation around the machine.
- The machine must never be used with the fixed and/or mobile guards removed or with the safety devices cut off. The safety devices must absolutely never be removed or tampered with.
- The panels covering the machine must not be removed, as the machine contains live parts (there is the risk of electric shock).
- When cleaning the machine, avoid using products such as alcohol, petrol or solvents in general; use water or neutral detergents.
- To clean the machine frame, it is sufficient to use a moist cloth or a sponge. Avoid using abrasive products that could damage the elements on the body. To clean the coffee brewing groups, the portafilters, the grates and the trays, follow the instructions of the Routine Maintenance chapter.
- For better product quality, replace the hot water in the boiler and circulate the water in the pipes upon first turning the machine on in the morning. If the machine is expected to remain idle for a few hours during the day, we also recommend changing the water by running it through the hot water tap and the coffee brewing groups.

1.2.3 Using the coffee machine

Ambient temperature: from 5 to 45 °C (empty the water system in the event of frost)

Water mains water pressure: from 0.08 MPa to 1 MPa (from 0.8 to 10 bar)

Water hardness: between 5 ° f and 9 ° f

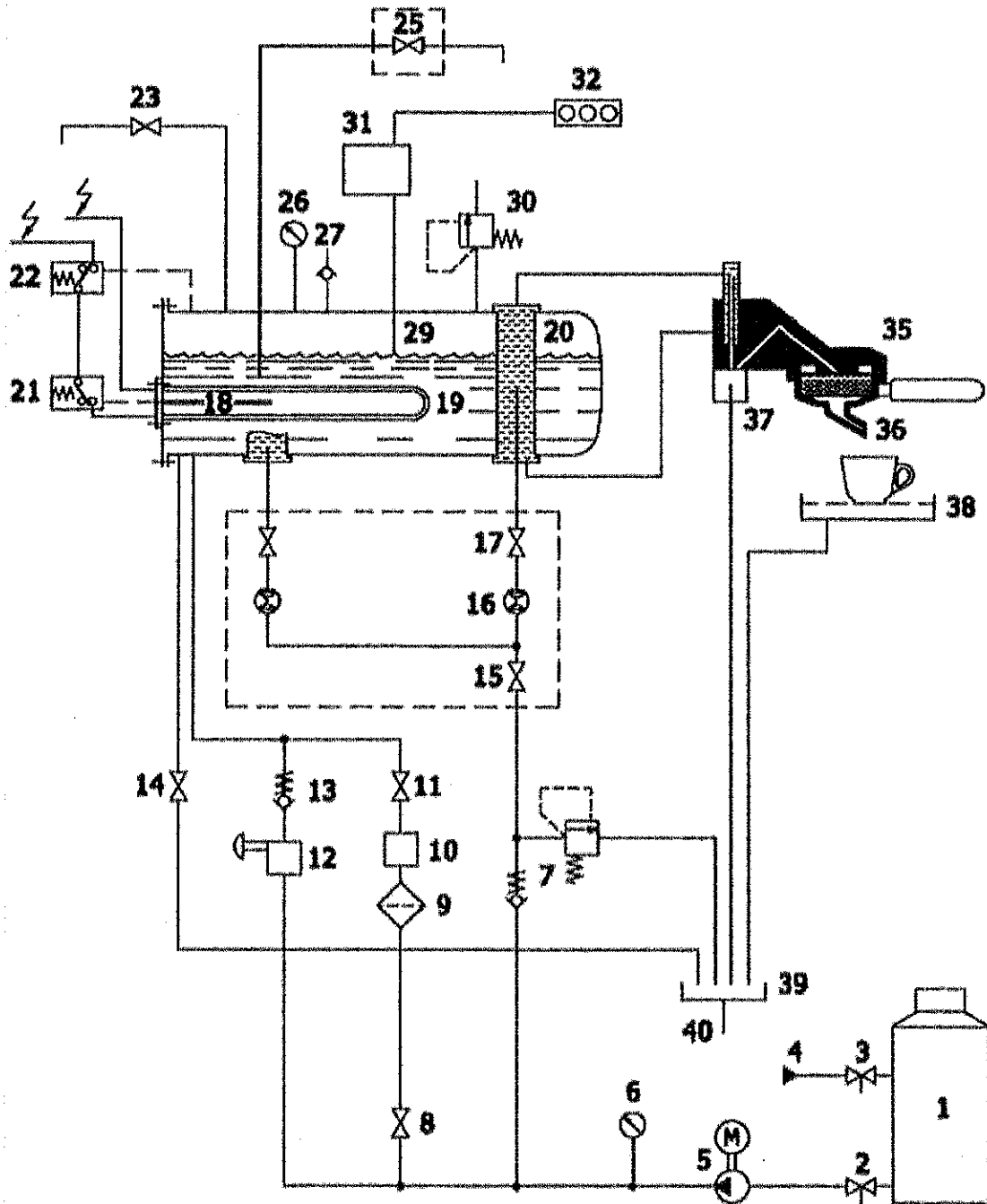
Acoustic noise emitted by the machine: The A-weighted sound pressure level is lower than 70 db (A), in normal conditions of use of the machine

2. Technical characteristics

Models	2020 CLASSIC 1GR	20/20 SPACE	2020 CLASSIC 2GR	2020 CLASSIC 3GR	2020 CLASSIC 4GR
No. of brewing groups	1	2	2	3	4
N° of steam wands	1	2	2	2	2
No. of hot water wands	1	1	1	1	1
Boiler capacity	5 L	8 L	12 L	19 L	25 L
Net weight	35 Kg	49 Kg	59 Kg	68 Kg	96 Kg
Width	380 mm	570 mm	720 mm	960 mm	1200 mm
Height	470 mm	470 mm	470 mm	470 mm	470 mm
Depth	545 mm	545 mm	545 mm	545 mm	545 mm
Single phase connection	230 V 1 N ~ 50 Hz	230V 1N~50 Hz	220-230- 240 V 1 N~ 50 Hz	220-230- 240 V 1 N~ 50 Hz	220-230- 240 V 1 N~ 50 Hz
Power consumption:	2000 W	3000 W	3500 W	5500 W	7000 W
Tri-phase connection	-	400V 3N~50 Hz	400 V 3 N ~ 50 Hz	400 V 3 N ~ 50 Hz	400 V 3 N ~ 50 Hz
Power consumption:	-	3500 W	3500/4500 W	5500/7000 W	7000/9000 W
Cup warmer (optional)	-	-	100 W	125 W	150 W
Built-in motor pump	-	275 W	275 W	275 W	275 W
External motor pump (optional)	300 W	-	300 W	300 W	300 W

2.2 General water system diagram

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3. Installation



- Installation must be performed by qualified and authorized La San Marco technical personnel.
- The coffee machine is delivered to customers in a special package. The packaging contains the machine and its accessories, the user manual and the declaration of conformity. After opening the packaging, check the condition of the coffee machine and its components. In case of doubt, do not use the appliance and contact the manufacturer.
- The packaging must be carefully preserved, in all its parts, for future transport of the machine.
- The machine must be placed on a perfectly horizontal surface sufficiently strong to support the weight of the machine, at a height not less than 1000 mm above the floor, with a space around it sufficient to dispose of the heat produced during operation..
- Do not install the espresso machine in places where cleaning must be carried out with water jets. Do not submerge the unit in water to clean it.
- For safety against the dangers associated with electric currents, the machine must be placed away from sinks, tanks, aquariums, taps, wet areas or areas with possible splashing water.
- The machine, developing heat, must be placed in a sufficiently ventilated room to guarantee heat dissipation. Keep the machine away from direct heat sources.
- Make sure that the voltage of the power socket is not different from that indicated in the technical data and on the identification plate affixed to the machine.
- **If the voltage is different, do not connect the machine. This could be dangerous and could damage the appliance.**

3.1 Mains water set-up

SUPPLY

Bring the water feeding tube (of at least 3/8" diameter) up to the machine and install a cut-off valve (preferably of 3/8" ball type) that allows rapid opening and closure. The appliance should be connected to the water mains using the tube supplied with it. Do not connect the appliance with used tubes.

DRAIN LINE

The appliance must be connected to the water mains by a suitable coupling in compliance with national standards where these are applicable.

Provide an inspectable drainage pit on the floor connected with the sink drainage line, suitable for receiving the machine gravity drainage tube. The drain tube must be positioned so that the water flows out freely, without possibility for the pipe to clog up during the operation.

3.2 Water softener (optional)



The water softener for softening the mains water can be manual or automatic, depending on customer's request.

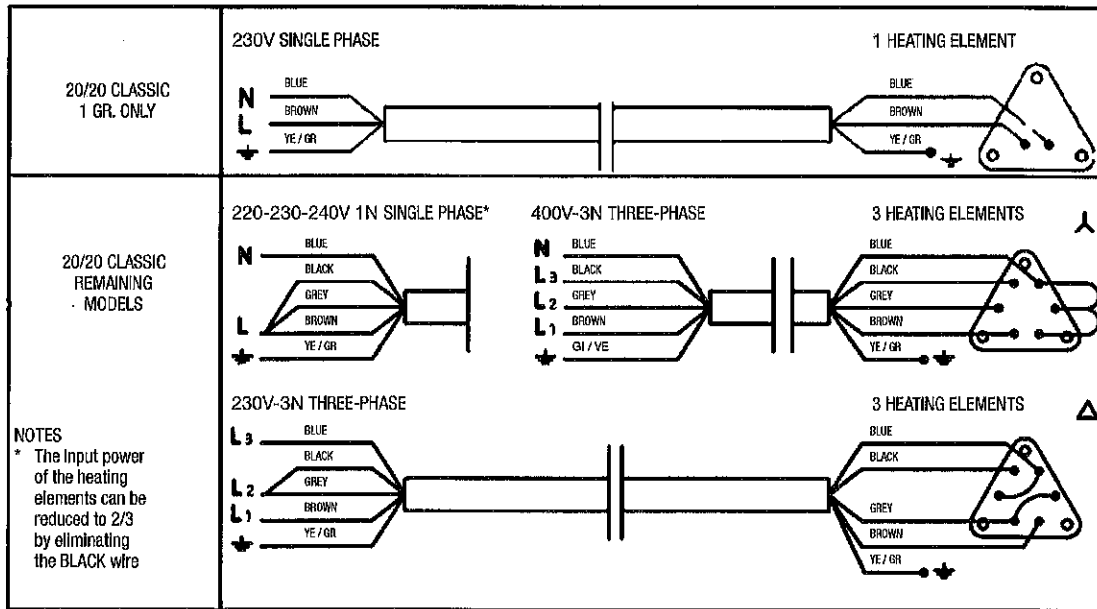


Before connecting the purifier to the coffee machine, the resins contained in it should be washed off as described in the users manual supplied with the appliance.

Note:

The water softener is considered an essential device to guarantee a proper operation of the espresso coffee machine. A water softening system should be provided in order to guarantee the efficiency, performance and duration of the components in the machine.

Connect the power cable of the coffee machine to the power supply according to the attached diagram:



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3.6 Connection to equipotential clamp



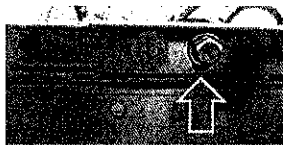
The machine is provided with an equipotential clamp placed under the tray and the bottom support cup grid.

The terminal is identified by the equipotential symbol reported here on the side.

Connect only cables of 2.5 mm to 6 mm with eyelet terminal for M8 screws.



The connection to the equipotential clamp must be performed by LA SAN MARCO SPA authorized qualified personnel.



To make the connection remove the bottom tray. On the left side of the frame, indicated by the equipotential symbol, there is the screw-clamp to be used to connect a cable of 2.5 mm to 6 mm with ring lugs for screw M8.

4. Start-up



- *The coffee machine start-up procedure must be performed by LA SAN MARCO SPA qualified and authorized technical personnel.*
- *Once the electric and hydraulic connections are completed, the user is advised to start the espresso coffee machine with the following procedure in order to avoid damaging the appliance.*

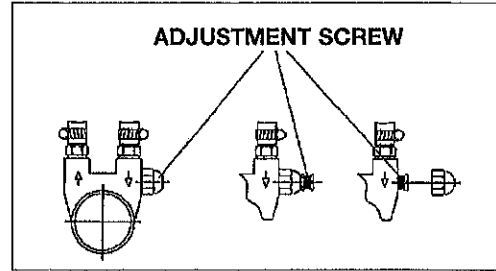
4.1 Filling the boiler with water

Check that the machine main switch is in position 0 (zero).

- 1) Remove the cup support tray and grate and make sure that:
 - a) The boiler drain valve a is closed (figure 8).
 - b) The taps of the automatic level valve b-c must be open (figure 9).
 - c) The taps of the flow meters e must be open (figure 10).

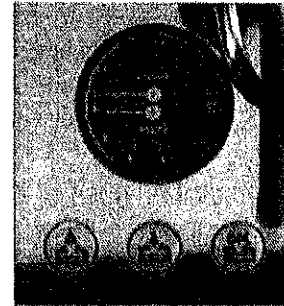
As indicated in the following figure, depending on the pump model supplied with the machine, this screw can be adjusted in three different ways:

- Adjust the screw only
- Adjust the screw and lock it with the lock nut
- Unscrew the cap nut and adjust the screw.



5.3 Boiler steam pressure regulation

The steam pressure in the boiler is shown on the upper graduated scale of the pressure gauge B (figure 13). The lower graduated scale indicates the operating pressure of the pump. To change the pressure of the liquid-saturated steam mixture inside the boiler, you will need to vary the temperature as explained in the programming chapter.



5.4 Brewing group temperature regulation

In models 2020 CLASSIC (except for models 2020 CLASSIC DTC) it is possible to adjust the brewing temperature of the espresso coffee without altering the internal boiler pressure. A valve (flow variator) is positioned at the top of the group which regulates the flow of hot water coming from the exchangers; this valve is accessible from the top part by removing the cup support tray. Above each group there are four numbered notches **2-3-4-5** (figure 14), the valve is normally positioned on number 3 (this is the default setting by LA SAN MARCO SPA). If you want to change the serving temperature, you will need to use the valve (flow variator) of the group. To increase the temperature, turn the valve towards the higher numbers. Contrarily, to decrease, turn the knob towards lower numbers.

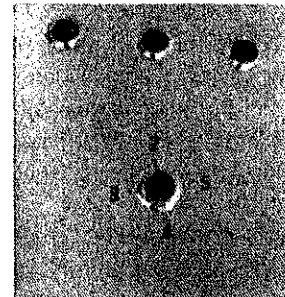


Figure 14

6. Operating instructions







During the delivery of espresso coffee, tea or steam, these substances can cause burns due to accidental skin contact.

Each brewing group has a keypad with 5 buttons (four for programmed coffee doses, one for manual coffee doses).

Make sure the coffee is brewed in the cup as desired. If the result is not as desired, see the "Troubleshooting" chapter.

6.1 Espresso coffee brewing



- 1) Remove the portafilter from the brewing group and fill it with one dose of ground coffee (single portafilter) or with two doses of ground coffee (double portafilter).
- 2) Press the ground coffee using the relative coffee tamper and then hook the portafilter into the brewing group.
- 3) Place one or two cups under the delivery spouts. Brewing is always enabled and does not depend on the temperature in the boiler or the level of water in the boiler.

	Short programmed dose	
	Long programmed dose	
	Continuous manual dose	

6.4 Automatic washing system

The automatic washing system allows the cleaning of coffee brewing groups.

Insert the portafilter with blind filter in the brewing group.



To start the washing cycle press the continuous dose key  together with the short coffee single dose key  for a few seconds. The two keys are blinking and the cycle starts automatically.

At the end of the washing cycle the brewing group returns to its normal operating conditions.



Repeat the washing cycle for all the other groups in the same way.

6.5 Preinfusion

Activation of the preinfusion:

- With the machine off, turn the machine on by pressing the single short key  of the first group. The button  lights up to indicate that preinfusion is enabled. Switch the machine off and on again to restore normal operation with preinfusion during coffee brewing.

Preinfusion deactivation:

- With the machine off, turn the machine on by pressing the single long key  of the first group. The button  lights up to indicate that preinfusion is disabled. Switch the machine off and on again to restore normal operation without preinfusion during coffee brewing.

7. Programming of the machine

7.1 Programming coffee doses

A. Access to programming.

Move the main switch 1 to position <<zero>> (machine off). Holding the fifth key  of the first group pressed, move the main switch 1 to position 1 (machine on). After a few seconds release the key .

At this point, the LED corresponding to the key just released will flash, and the same LEDs of the other groups will flash at the same time. In this condition, the machine is in programming mode.

B. Programming


Programme the 4 doses of the 1st group as follows:

From the grinder-dispenser, take the amount of coffee corresponding to the dose used for a single espresso. Insert the portafilter in the 1st group.


Position the cup under the portafilter spout.

Press the first button where the dose will be saved, and, once the cup has the desired amount of coffee in it, stop and save the dose by pressing the fifth key 10.

Repeat the same operation to save the other doses of each group.

To programme the other groups with the same doses as the 1st group. Once the 1st group has been programmed, simply press the button  on each of the other group's keypads so that the corresponding LED stops flashing and remains lit.

C. Exit from programming

To exit machine programming, press the button  of the 1st group and the LEDs will turn off. Each key subsequently pressed will deliver the previously saved dose.

7.2 Programming hot water doses

Use the same method described in section 6.6 to programme the hot water doses.

Note:

Special commercially available detergents can be used to effectively clean the brewing groups.

8.2 Cup support tray and grate cleaning

The lower cup support grate must be kept clean at all times; during normal machine use, it is sufficient to clean it with a sponge or a moist cloth. At the end of the working day, clean the tray and grate also in the internal areas using warm water and neutral detergent.

8.3 Steam wand cleaning

Clean the steam spout with a sponge or a moist cloth at the end of the working day to remove all traces of milk or other substances that inevitably form during the normal operation of the machine. Open the steam valve, inserting the wand inside the tray to remove any residues which may have accumulated inside the wand.

8.4 Boiler water replacement

To change the water inside the boiler, proceed as follows:

- 1) Cut off the power supply to the machine by turning the main switch to position 0 (zero).
- 2) Remove the cup support tray and grate and open the boiler drain tap.
- 3) Open a steam valve to facilitate the draining of the water until the end of the operation.
- 4) When water no longer comes out of the boiler, close the boiler drain valve and the steam valve vapore.
- 5) Fill the machine with water following the instructions of paragraph "Filling the boiler with water".
- 6) For best product quality, when the machine is turned on each day, it is recommended to replace the water in the boiler, and also the water in the water system tubes..

9. Idle periods

If the machine is to remain idle for long periods (weekly closing days, holidays, etc.), take the following precautions:

- 1) Turn the main switch to 0 (zero) and as necessary disconnect the power cord or the main switch of the electrical mains.
- 2) Close the cut-off valve of the water mains.
- 3) If you think the temperature might drop below 5° C, completely drain the water system of the machine.
- 4) Wash the components of the machine as described in the paragraph on routine maintenance.
- 5) Cover the machine if necessary.

10. Safety devices

10.1 Manual reset safety thermostat

The safety thermostat is located next to the control unit and can be accessed by removing the left side panel from the machine. The thermostat probe, placed inside the electric heating elements, cuts the electric power supply any time there is an abnormal increase in temperature. The heating elements will no longer heat the water in the boiler and it will not be possible to use the machine correctly. Contact a technician from the LA SAN MARCO SPA technical service centre.

The safety thermostat will have to be reset by the specialized LA SAN MARCO SPA technician, who must first remove the cause of the malfunction.

10.2 Safety valve

The safety valve is installed on the upper part of the boiler, in the part corresponding to the area occupied by the steam. The valve is activated if there is a considerable pressure increase inside the boiler. The valve rapidly lowers the pressure by expelling the steam in the atmosphere (the valve trips in at 2÷2.5 bar). If the

11. La San Marco S.p.A declines every responsibility for eventual damage caused, directly or indirectly, from the improper use of the machine, incorrect installation or poor maintenance, excluding that explicitly provided for by the law.
12. La San Marco S.p.A doesn't answer to warranty conditions, beyond those listed, conceded by the importers/dealers to their clients. Also the obligations of labour are excluded from the warranty of La San Marco, travel and added costs relative to the reparation or substitution of the defective components of the machine.
13. If, after an examination of La San Marco the returned component proves not to be defective, the client shall be charged any costs for management, technical inspections and possible tests. Also the charges for the shipping and the restitution of the material will be charged.

13. Troubleshooting

	DEFECT	CAUSE	SOLUTION
1.	The boiler is full of water and the water flows out of the safety valve.	<ul style="list-style-type: none"> • The automatic filling solenoid remains open. • The manual filling valve is faulty. 	<ul style="list-style-type: none"> • Close the main water supply valve and contact an authorized qualified technician. • The authorized qualified technician must check the correct operation of the filling solenoid, the electronics controlling the automatic level and any faults in the manual filling valve.
2.	The safety valve trips, venting the steam. The pressure gauge indicates a boiler pressure higher than 1.8 bar.	<ul style="list-style-type: none"> • Absence of heating element control system (the heating element is always powered). • Safety thermostat error. • Increased boiler pressure (1.8 bar safety valve tripped). 	<ul style="list-style-type: none"> • Turn the machine off, moving the power switch to position 0 and contact an authorized qualified technician. • The authorized qualified technician must check the electrical wires powering the heating element, the temperature control system switch and the safety thermostat.
3.	The machine was started properly but the water in the boiler does not warm up.	<ul style="list-style-type: none"> • The electric heating element is defective or not connected. • The main switch is in position 1. 	<ul style="list-style-type: none"> • The main switch must be turned to position 2. • The authorized qualified technician must check the electrical wires powering the heating element. Moreover, it is important to check whether the thermostat tripped the heating element safety and to check its correct operation.

	DEFECT	CAUSE	SOLUTION
9.	Autolevel alarm.	<ul style="list-style-type: none"> • No water in automatic level water circuit. • The mains water supply valve is closed. • Autolevel electromagnetic valve is defective. 	<ul style="list-style-type: none"> • Check that the mains water shut-off valve is open. • The authorized qualified technician must inspect the automatic level water circuit and check the operation of the solenoid, and replace it if necessary.
10.	Overfill alarm.	<ul style="list-style-type: none"> • Circuit automatic level malfunction, the filling solenoid is always open. • The manual filling valve is faulty. 	<ul style="list-style-type: none"> • The authorized qualified technician must check the correct operation of the filling solenoid, the electronics controlling the automatic level and any faults in the manual filling valve.
11.	The machine is on (main switch in position 1 or 2 and the indicator light is on) but the electronic control is out of service.	<ul style="list-style-type: none"> • The electrical wiring of the electronic board or touch panel is defective. • The electronic board or touch panel are defective. 	<ul style="list-style-type: none"> • The authorized qualified technician must check the electrical wiring of the electronic board and touch panel. Check the operation of the electronic board and touch panel and replace any defective components if necessary.
12.	The machine delivers water from a brewing group even if no coffee dose buttons have been selected.	<ul style="list-style-type: none"> • The brewing group solenoid and/or pump are powered continuously. 	<ul style="list-style-type: none"> • The authorized qualified technician must check the electronic board and the touch panel. Check the operation of the electronic board and touch panel and replace any defective components if necessary.
13.	The steam wand drips slightly, even when in the closed position.	<ul style="list-style-type: none"> • Steam valve gasket is worn. • The valve needs to be adjusted. 	<ul style="list-style-type: none"> • The authorized qualified technician must check the gasket and replace if necessary or adjust the steam valve.
14.	The hot water spout drips slightly, even if in the closed position.	<ul style="list-style-type: none"> • Hot water valve gasket is worn. • The valve needs to be adjusted. 	<ul style="list-style-type: none"> • The authorized qualified technician must check the gasket and replace if necessary, or adjust the hot water valve.
15.	The unit whistles after brewing a coffee.	<ul style="list-style-type: none"> • Defective check valve. • High pump pressure. 	<ul style="list-style-type: none"> • Inspect the check valve and replace if necessary. Calibrate the valve to 12 bar. • The authorized qualified technician must check the pump operating pressure. Calibrate the pump to 9 bar.

	DEFECT	CAUSE	SOLUTION
21.	Coffee grounds in the cup.	<ul style="list-style-type: none"> a) Coffee grinding too fine. b) Grinders of coffee grinder worn. c) Pump pressure above 9 bar. d) Filter holes on brewing group are clogged. e) Filter holes are clogged (portafilter). 	<ul style="list-style-type: none"> a) Increase coffee grinding size. b) Replace grinders (this operation can only be performed by authorized qualified technicians). c) Decrease pump pressure (this operation can only be performed by authorized qualified technicians). d) Check and clean the brewing group using portafilter with blind filter or replace filter. e) Check and replace filter of the portafilter.
22.	Coffee with too little cream in cup (spurts out of spout).	<ul style="list-style-type: none"> • The filtering holes of the brewing group are clogged. 	<ul style="list-style-type: none"> • Check and clean the brewing group using the portafilter with blind filter or replace the filter.
23	The cream in the cup is too thin (it disappears after a few seconds).	<ul style="list-style-type: none"> • Coffee extraction takes a long time due to the clogged brewing group filter. • Coffee extraction takes a long time due to the clogged portafilter filter. • Water temperature too high. 	<ul style="list-style-type: none"> • Check and clean the brewing group using the portafilter with blind filter or replace the filter. • Check and replace the filter of the portafilter. • Reduce the temperature of the brewing group.
24.	Depressions in the coffee grounds (looking inside the portafilter).	<ul style="list-style-type: none"> • Brewing group filter partially clogged. 	<ul style="list-style-type: none"> • Check and clean the brewing group using the portafilter with blind filter or replace the filter.

Note:

If the problem cannot be solved as described above, or if other malfunctions occur, contact the La San Marco S.p.A. service centre.