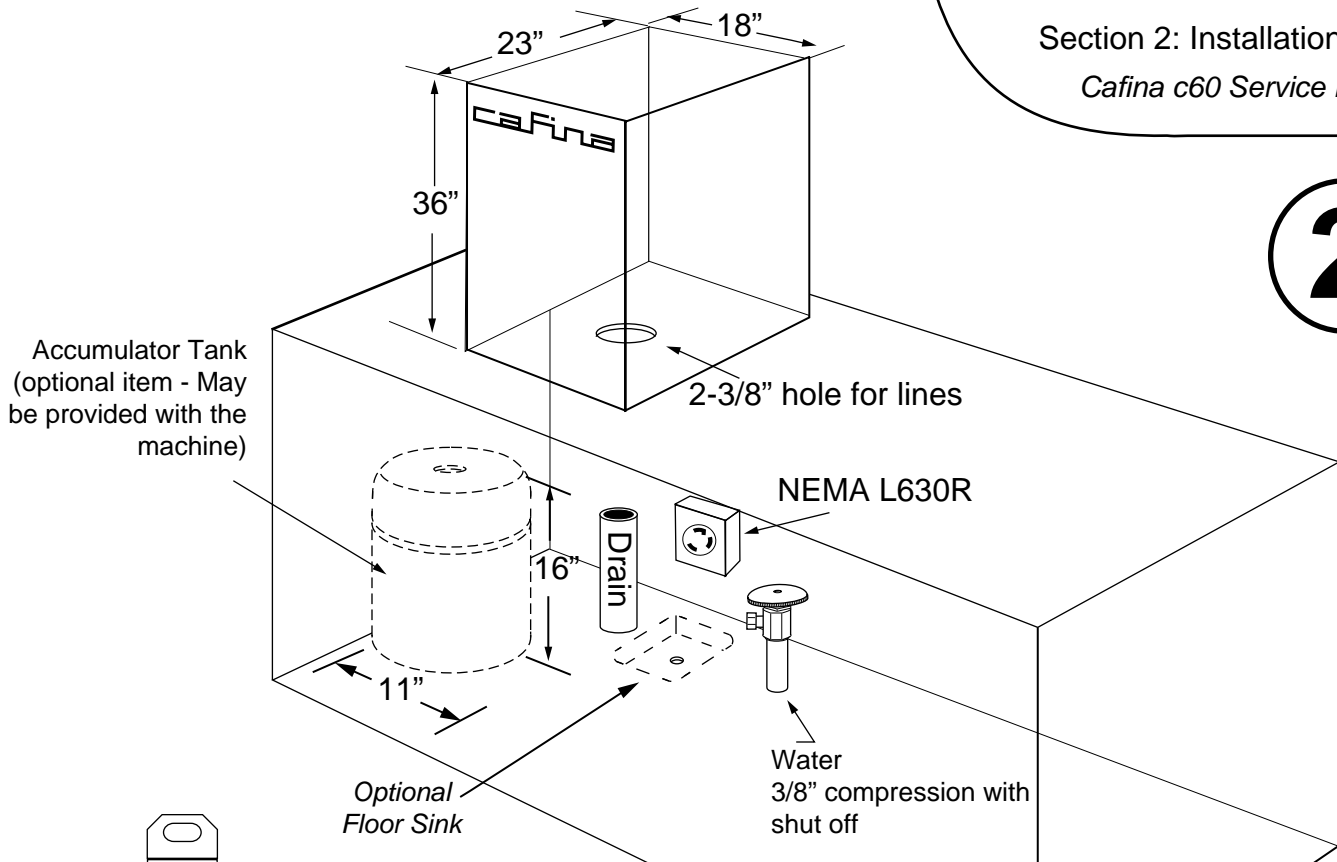


Cafina Technical Service Manual

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2



Accumulator Tank
(optional item - May
be provided with the
machine)

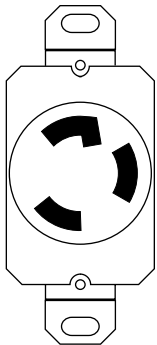
2-3/8" hole for lines

NEMA L630R

Drain

Water
3/8" compression with
shut off

Optional
Floor Sink



30 Amp, 220 Volt outlet:

NEMA L6-30-R

Outlet within 6 feet of Cafina

208 Volts minimum at outlet

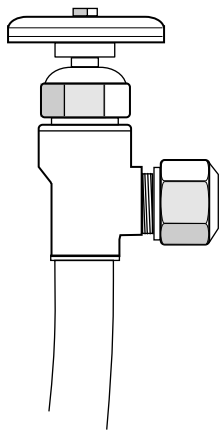
(A booster may need to be installed)

Cold water feed line:

3/8" Compression Fitting with Shut Off Valve

Located within 6-10 feet of Cafina

Water line must be flushed thoroughly



Filtration:

Water line **MUST** have a coarse particulate filter

A fine carbon filter is strongly advised

Hardness Should be below 7 GPG

(A water softener may also be needed)

Drain:

Floor Sink or drain should be within 6 feet

Path for drain hose must not have Horizontal runs

Drain Hose must have a 2" air gap at floor

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Installation Check list

Page 2 of 2

Section 2 : Installation/Tools

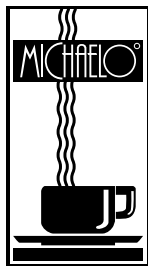
Cafina c60 Service Manual

- Check over equipment for shipping damage.** Report any damage found to Michaelo: 800-545-2883.
- Check Incoming Water Pressure.** It should be between 45 PSI and 90 PSI, if the incoming pressure is greater than 90 PSI there **MUST** be a pressure reducer placed in the line. Preferably before the filtration system.
- Flush Incoming Water Line.** Run several gallons of water through the lines at full force before connecting to the machine. This is extremely important; there are several very small ports that will become clogged if this procedure is not followed.
- Install long legs.**
- Hook up Water Line.** Use white Teflon washers as needed.
- Install Drain Hose** with clamp provided and ensure that it runs continuously downward. The end of the hose should have an air gap at the floor drain.
- Purge Brew Boiler.** Unscrew the top of the Hex shaped Safety valve above the brew boiler until water flows out into the drip tray. Re-tighten valve.
- Check White Coffee Chute.** Should be snug against grinders, tighten screw.
- Check Piston Assembly Mounting Screws.** Screws can work loose in shipping.
- Check Incoming Voltage and Amperage.** The Cafina requires 208v **MINIMUM**, and ideally 220v. The unit is 5400W and **MUST** have a 30-amp breaker. Do Not plug Cafina in until Water is hooked up.

- Set Cafina Pump Pressure to 8 bars.** Go to the service position, select handling, and switch the pump on. Check pressure on gauge. Turn off pump and release pressure by running the bypass valve, adjust pump as needed and check again.
- Run the Reference.** If beans are available at the time of installation, follow the Run Reference instructions in the service manual.
- Run Each Drink.** Test each drink button at least once.
- Test Steam and Water buttons.**
- Run A Cleaning Cycle.**

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Recommended Tools

Recommended tools

Page 1 of 1

Section 2: Installation/Tools

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2

Wire Brush and Dental Pick



Allen Wrenches with long handles 2.5mm, 3mm, 4mm



Michaelo recommends
Wiha Brand System 6 with
284 series long blades
Wihatools.com



Open end wrenches
22mm
20mm
14mm
12mm
7mm



Small Phillips for ICU board adjustments



Standard and Phillips Screwdrivers



Set of Metric Allen Wrenches

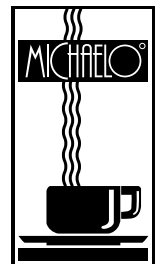


8mm Socket for Grinder Burr Change



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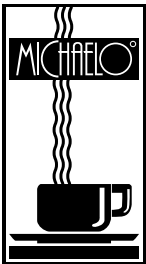


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Section 2 : Installation/Tools
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Cafina Service Worksheet

Service Call Worksheet

Technician: _____

Service Company: _____

PO #: _____

Date: _____

Upon completion of call, fax this sheet

back to Michaelo (206) 695-4951

Section 3: Service Call Instructions

Cafina c60 Service Manual

3

Customer:

Machine Serial #:

1. Check condition of Filters:

Incoming Pressure PSI

Output Pressure PSI

2. Number of shots on hit counter

3. Run Protocol in Service Mode (*delete when finished*)

Record DP Codes Here:

Number of DP 30 Codes / Cleanings:

4. Check Water flow and Flowmeter under "System" in Manager mode.

Actual flow time: Sec

4-6 Seconds is normal for 65ml

5. Grind Times: *From reference or run shot then look at Manager mode page 3*

Double* Sec

Double** Sec

Consider changing burrs if over 2.5 sec

6. Check for coffee grounds in Slider area under Piston.

Vacuum if needed

7. Run Reference if needed

Double shots should average 14 seconds

8. Run hot water until Boiler Autofills

Wait 30 seconds then test Steam Output OK, no leaks

9. Check that drain line is running smoothly OK, no leaks

10. Delete Filter counter

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Filter Reminder Reset


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Section 3: Service Call Instructions

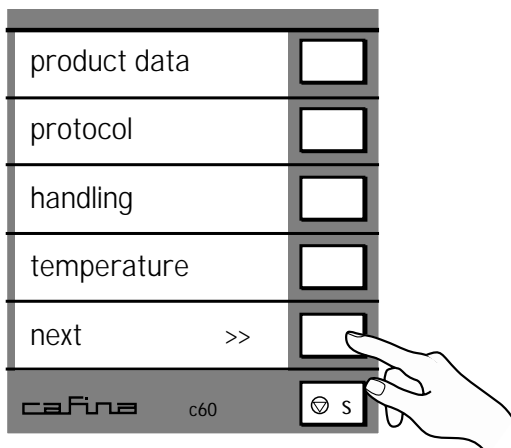
Cafina c60 Service Manual

The Cafina filter reminder displays a flashing “filter” message over the drink menu after a preset number of drinks have been run (60,000 is the default).

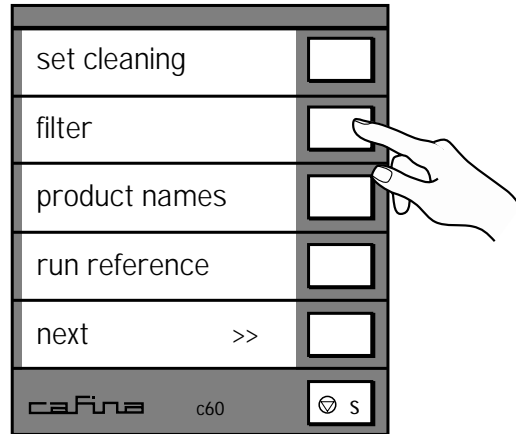
Since the reminder needs to be reset with a service key, we recommend resetting the count at every service call and monitoring the filters independently.

1 Key to Service Position ON  (Service) OFF

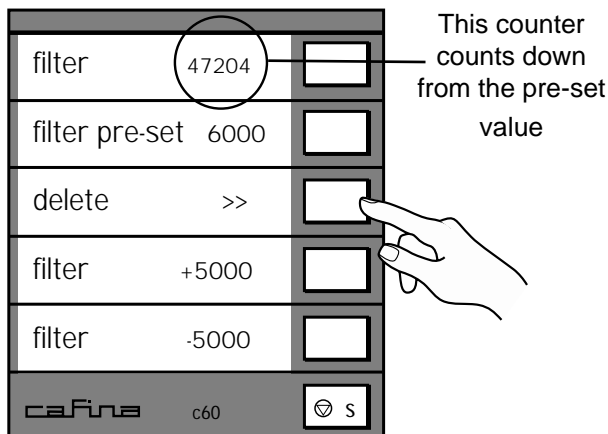
2 Select **Next**



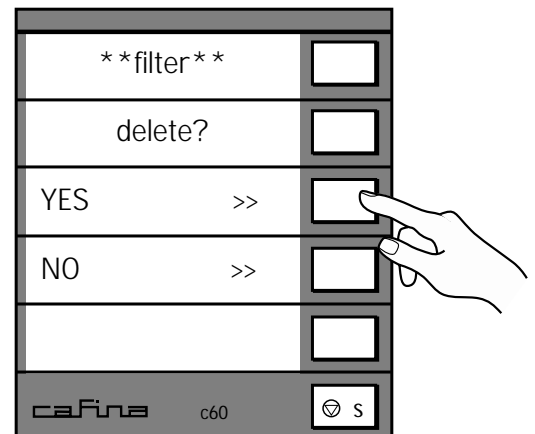
3 Select **filter**



4 Press **delete** to reset the counter to the pre-set value

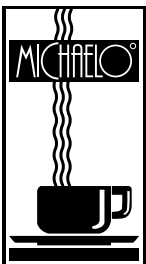


5 Select **YES** to confirm



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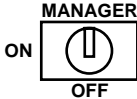
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The condition of the grinder burrs is monitored by watching the change in grinding time for the reference drinks. The grind time increases as the grinder burrs wear out. Worn burrs take longer to grind the same amount of coffee.

3

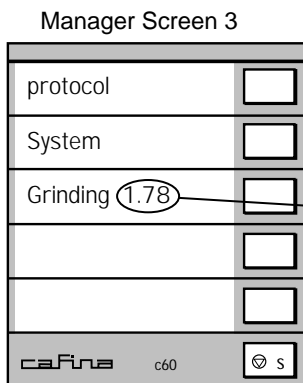
The time displayed will always be the time of the last drink made.

V3.51 Software automatically displays the grind time of the last drink made on page 3 in Manager mode (If Grind time doesn't display in Manager, go to main Reference page in service to see time.)

- ① Select the Reference Drink you wish to check and allow the machine to brew it. Reminder: The Reference Drink name is followed by an asterisk.
- ② Turn key to Manager position 
- ③ Press Shift twice to view 3rd Screen of Manager Mode and note the time recorded next to Grinding.

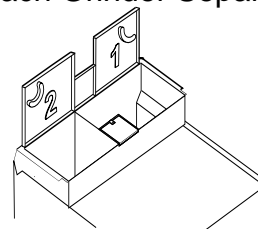


Default 1st page of drink menu when machine is on



Grinding time for last drink brewed

Check each Grinder Separately



★ **Evaluating Grinder Burr Condition from the Grind Time Reading** ★

FOR 14 GRAM DOUBLE SHOT*

New Burrs = less than 1.7

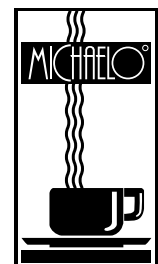
Normal Burrs = 1.2 - 2.25**

*If Double Shot is not 14 Grams, call Michaelo for grind time range

**If time = greater than 2.25 - Call Michaelo for advice

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Checking Filters, Typical Set-up

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Section 3: Service Call Instructions

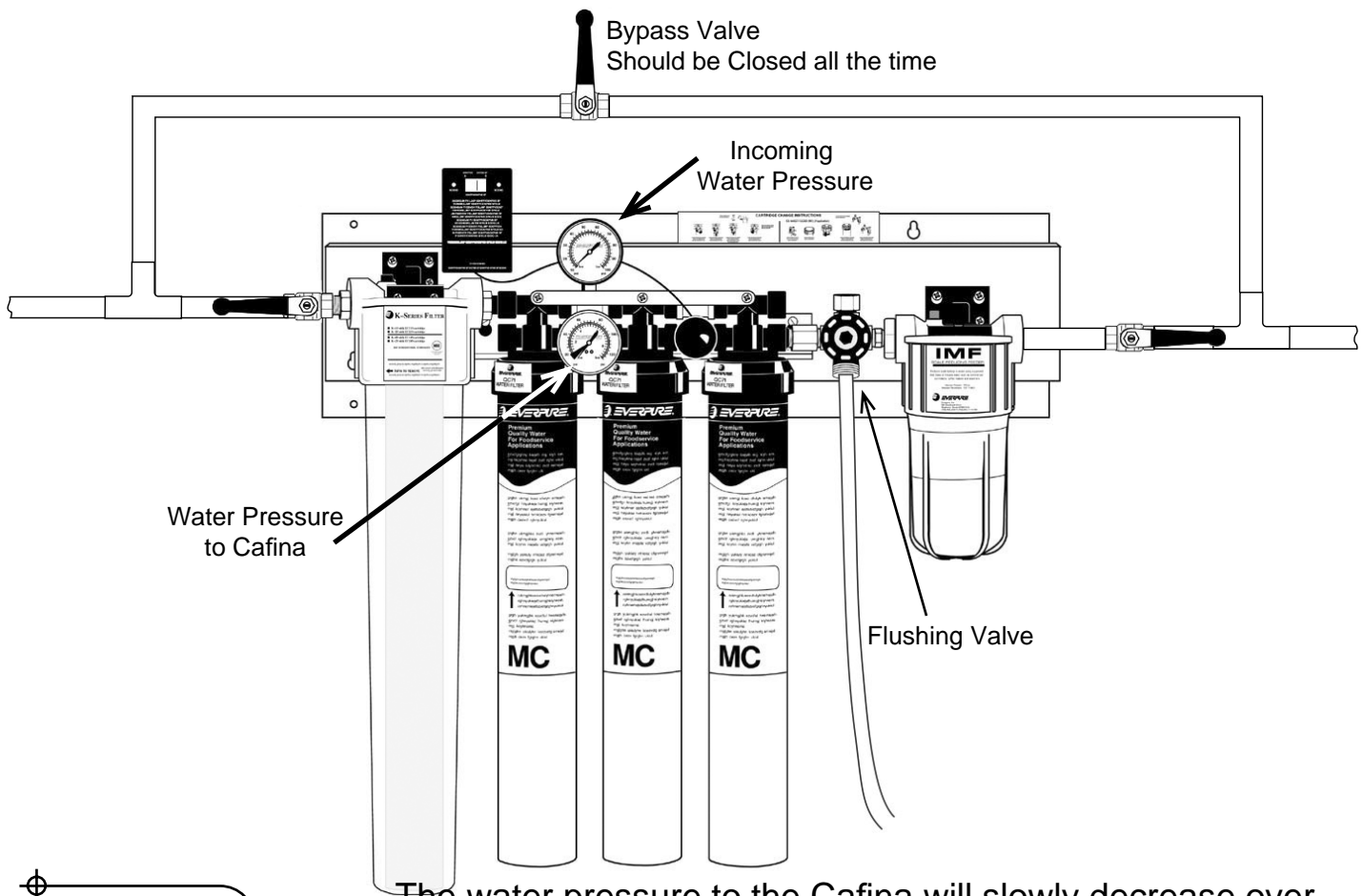
Cafina c60 Service Manual

Clogged Filters may cause:

“no water” reading

DP 31 (Boiler slow to fill)

DP 11 & 13 (poor flow through coffee)



The water pressure to the Cafina will slowly decrease over time as the filters become clogged.

Test the flow through the filters by opening the Flushing valve.

The outgoing gauge may still read high with clogged filters if no water is being used, but will drop as soon as the flushing valve is opened.

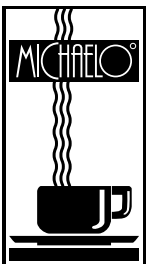
The Coarse Filter should be changed when it turns brown. When the filters clog up it shows that they're working. They are stopping the coarse and fine sediment from harming the machine and changing the taste of the coffee.

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No Coffee water flow test

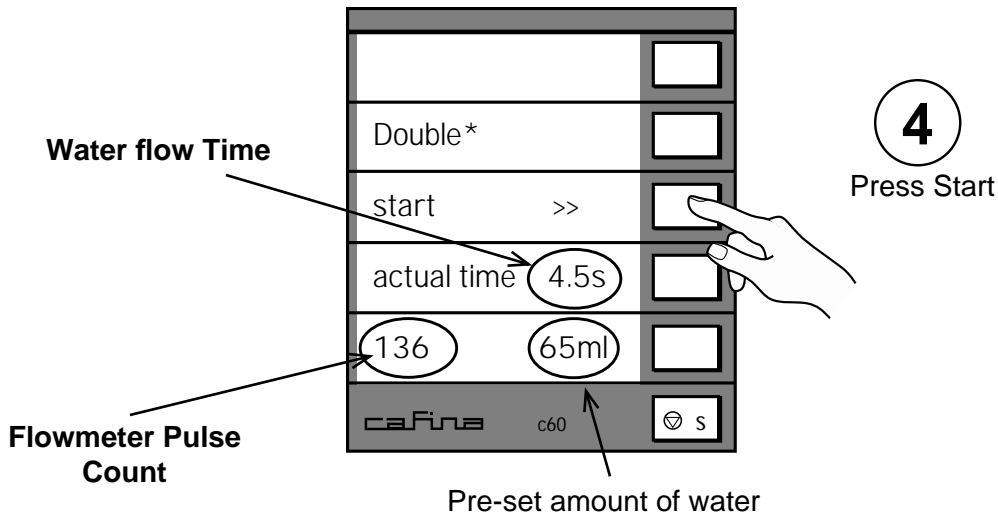
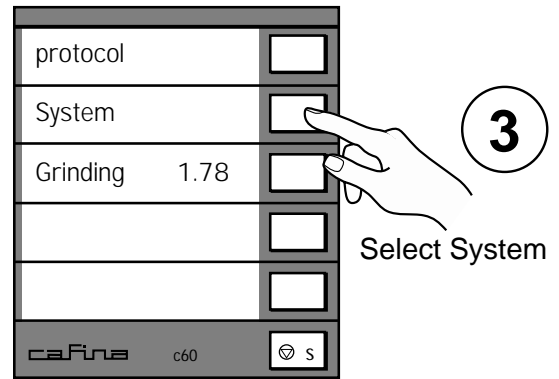
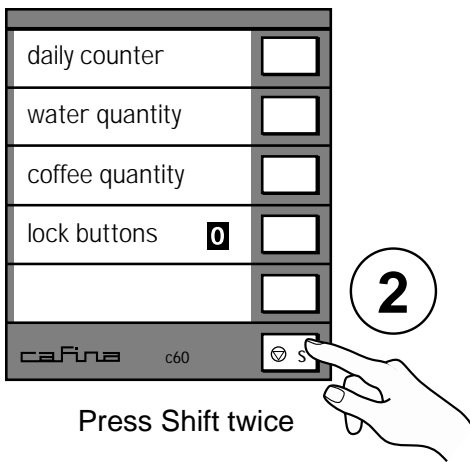
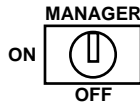
Section 3: Service Call Instructions
Cafina c60 Service Manual

The System Test is used to make sure the water is flowing freely through the machine before running reference or troubleshooting shot time problems

3

1

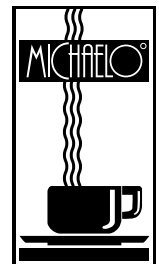
Key to Manager Position



- 4-6 seconds Normal flow time for 65ml of water
 - 6-8 seconds Run several cleaning cycles and try again
 - 8+ seconds Check water flow from Brew Valve
- See next page

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Check Water Flow from Brew Valve

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Section 3: Service Call Instructions
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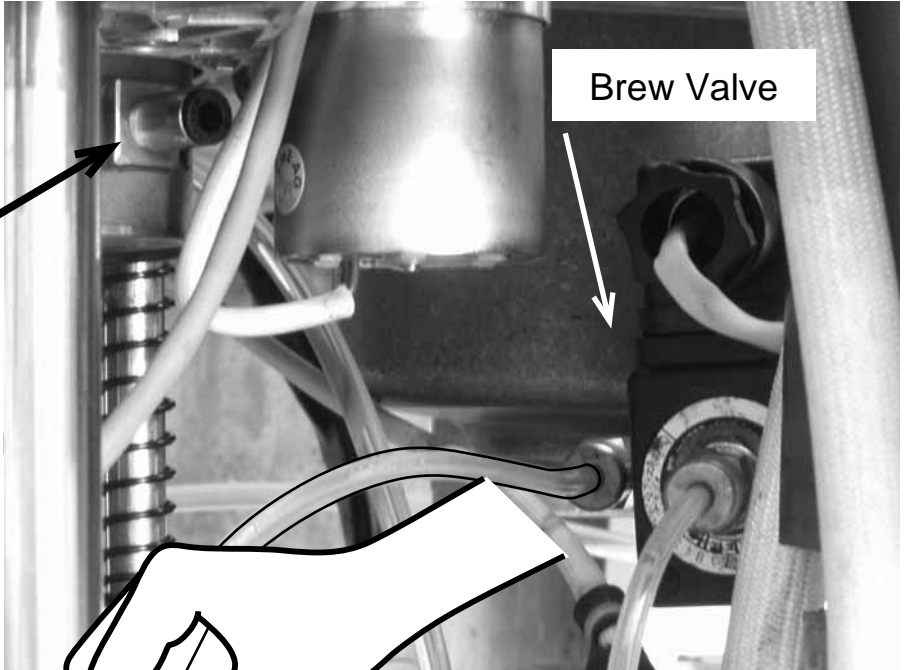
Use if the System test is over 8 seconds to isolate the location of the clog

Times the water flow from the Brew Valve before it goes to the Piston

Remove the Spout Panel
Replace the Grounds
Drawer

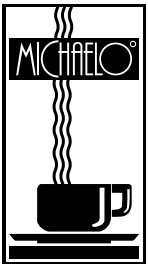
Disconnect the line to the bottom of the brew chamber

Turn Key to **Manager**
Press shift twice to display **System Test**



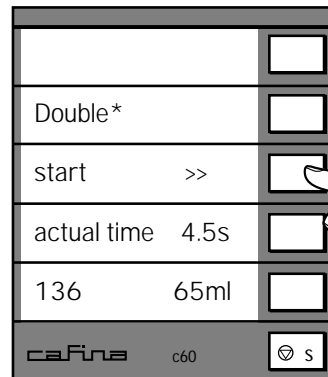
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Run System test while holding the line pointed into the drip-tray



If **actual time** returns to normal the problem is a clog in the **Brew Chamber, Tamp or Spout**

If **actual time** is still over 8 seconds then look for a clog in the:

Flowmeter, Brew Valve, or Brew Boiler

Steam Wand Backflush

Steam Wand Backflush

Page 1 of 1

A clogged Steam Tip is the most likely cause of weak steam flow. Remove the Steam Tip by unscrewing it from the wand and clean out the holes.



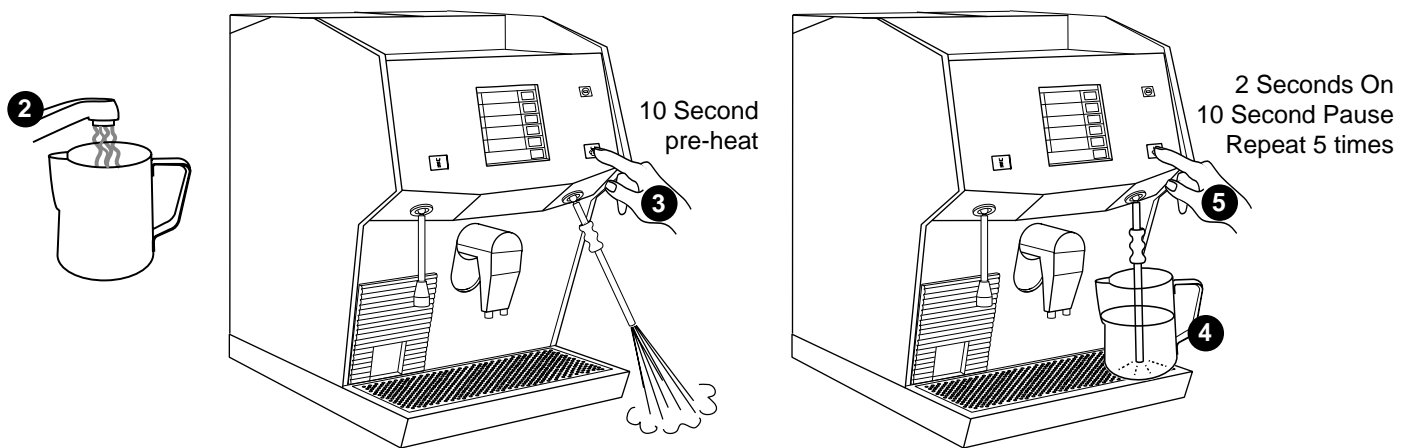
Section 3: Service Call Instructions

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3

If cleaning the tip doesn't restore good flow try this cold water backflushing procedure:

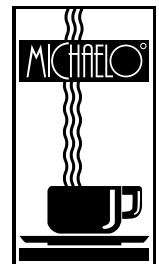
*NEVER leave the steam wand in the milk pitcher.
The milk will be sucked up into the wand and may contaminate the boiler.*



- ① Remove the Steam Tip
- ② Fill a Milk Pitcher with cold water (Never use any cleaner!)
- ③ Heat the Steam Wand by running it for 10 seconds
- ④ Turn the Steam off and immediately insert the Wand into the cold water
- ⑤ Run Steam again for 2 seconds then turn off
- ⑥ Wait 10 seconds for the water to be sucked up into the wand/valve
- ⑦ Repeat steps 5 and 6 four to five times to soften and flush out the clog
- ⑧ Refill the pitcher with fresh cold water and repeat if needed

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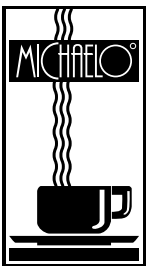


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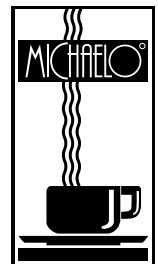
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4

- Check DP codes in Protocol
Record codes then Delete when prompted
- Check grind time for each grinder
- Run Cleaning Cycle or System Test to empty coffee chamber
- Run bypass valve in handling to check for clog
Remove and clean Bypass Elbow if needed
- Remove Piston, set aside
- Move Grinder collars by hand to check for free play
Remove Collar and clean threads if hard to turn
- Clean inside of machine
- Clean Dispensing spout, Bean hopper, and all panels
- Install new Piston
- Plug machine in with key in the ON position
- O-data should count automatically (pulses at top of travel)
if not clear o-data in service mode and turn OFF/ON
- Check that pump is set to 8 bars
- Run Reference for both Grinders
- Check Steam Wand for leaks
- Delete Filter counter
- Run hot water, check that boiler autofills
- Check each drink button
- Check filters and drain line

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Remove Panels

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Section 4: General Service

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Top Cover

- Remove the two 2.5mm Allen screws on either side of the cover.
- Lift cover and disconnect grounding wire.

Sides

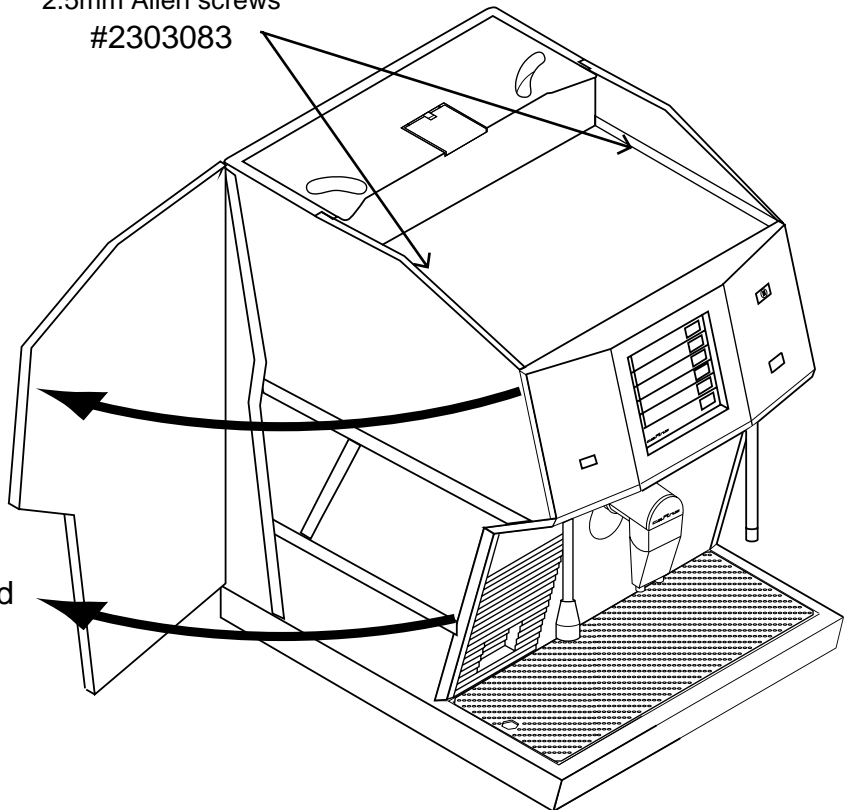
- Remove Top Cover
- Grasp side panel at front edge, top and middle with fingertips.
- Pull sharply out.

** To replace: insert rear of side panel into back panel. Snap the front edge into place with the heel of your hand.*

Back Panel (Usually can stay on for Piston change)

- Remove Top Cover and Sides
- Loosen the 10mm nuts on the bottom tabs first, then the 4mm Allen screws on the top tabs.
- Swing panel out from the bottom.

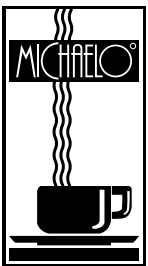
2.5mm Allen screws
#2303083



Grab Side panel
with fingertips and
pull sharply to
open.

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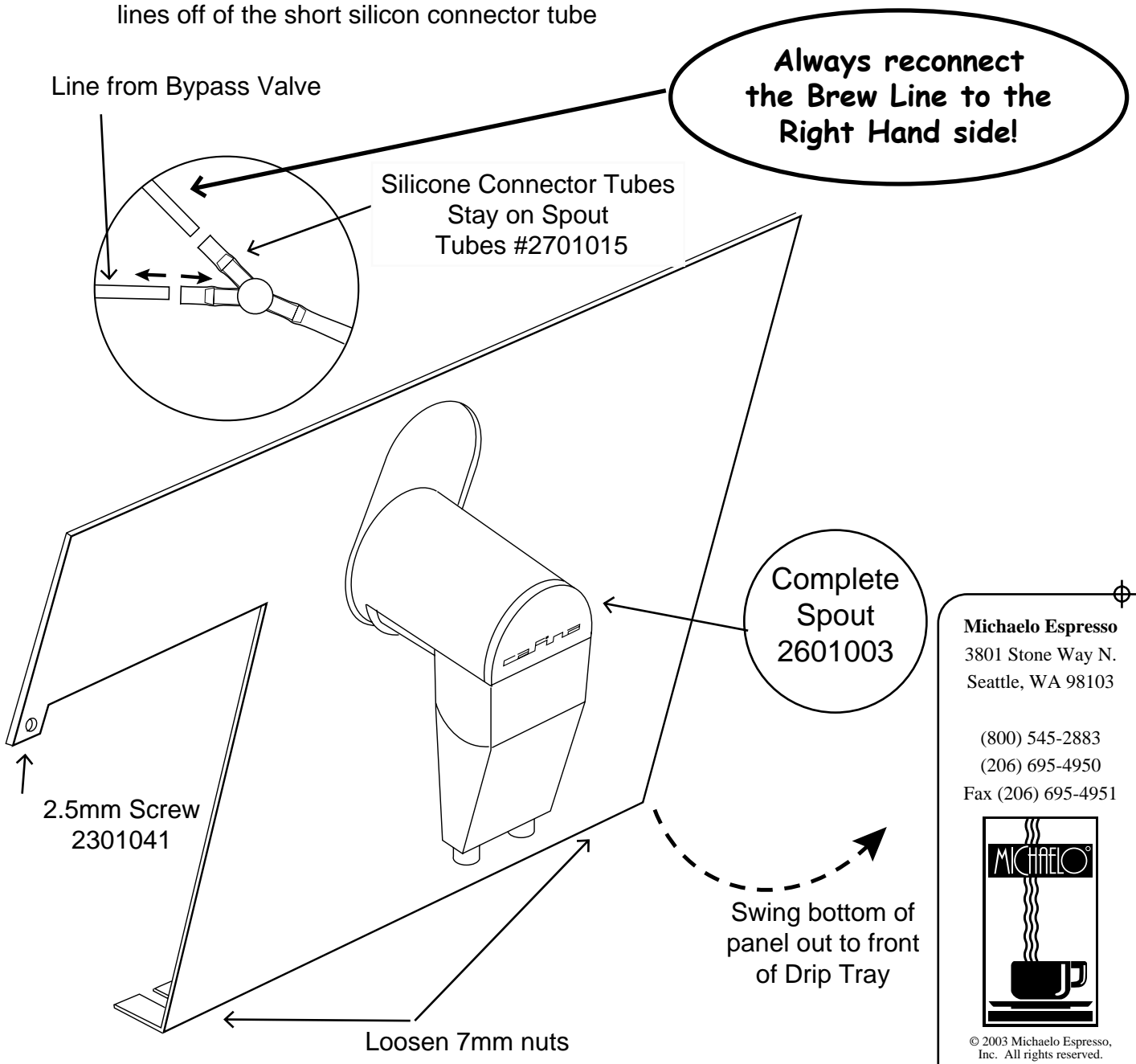
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Remove Dispensing Spout Panel

Remove Dispensing Spout Panel

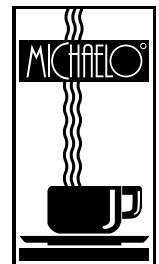
1. Remove Grounds Drawer
2. Remove the 2.5mm Allen screw in the upper left corner
3. Remove Drip Tray Grating
4. Loosen the two 7mm nuts on the underside bottom edge of the panel
5. Push Spout to lowest position
6. Swing bottom of panel out of the front of the Drip Tray
7. Disconnect brew lines by reaching behind panel and pulling the clear lines off of the short silicon connector tube

4



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Replace Step Motor Cable - see next page

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Section 4: General Service

Cafina c60 Service Manual

Replace the Step Motor Cable even if it looks OK. The stress from thousands of cycles can damage the wires even if the outer insulation looks fine.

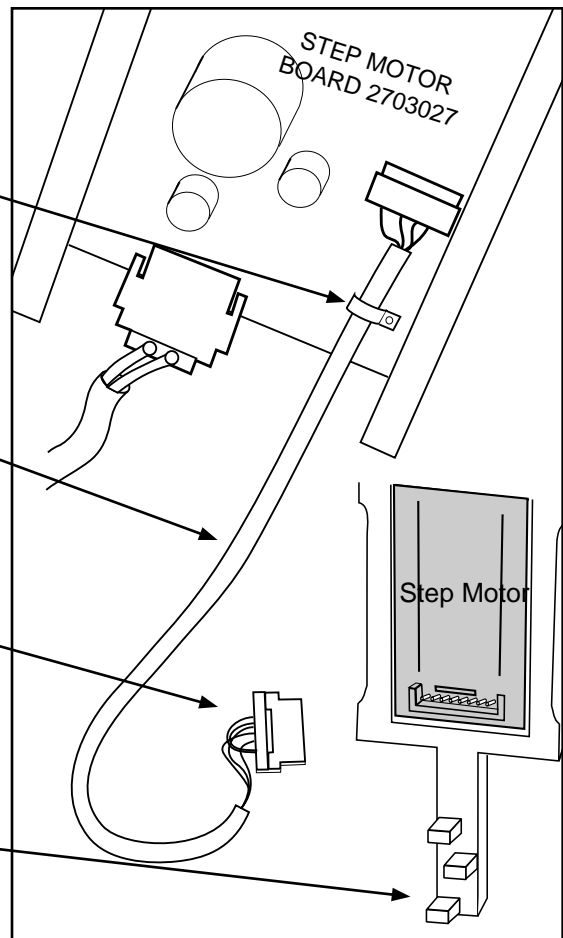
- 1 Unplug connector and disconnect cable clamps from Step Motor control Board

NOTE:

Inspect the new cable. Notice that, although the connectors at each end of the cable are identical, one end has two black jumper wires attached. This end of the cable must be connected to the Step Motor.

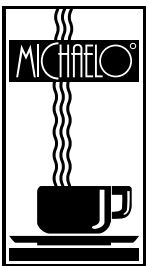
- 2 Plug the cable end without jumper wires into the circuit board
- 3 Secure the cable clamp
- 4 Set the Step Motor Board aside until you have reinstalled the piston
- 5 **Cable MUST be threaded through guides on step motor frame!**

Make sure to re-install the Cable Clip



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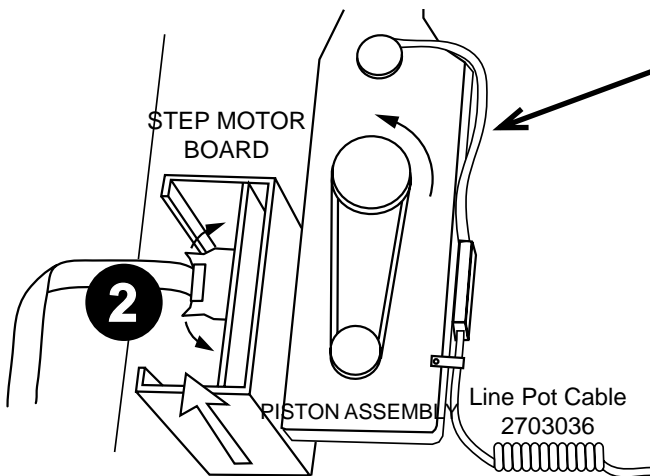
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Before replacing piston:

- **Unplug Machine**
- **Remove Top Cover**
- **Remove Dispensing Spout Panel**

Section 4: General Service

Cafina c60 Service Manual



1 Raise Piston by turning sprocket counter clockwise

4

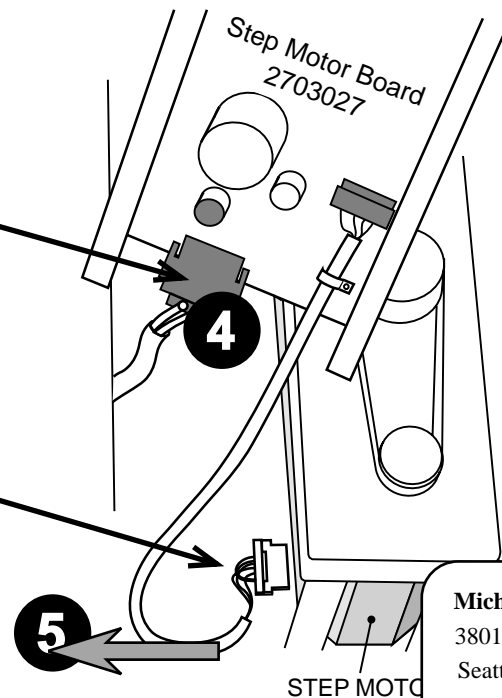
2 Disconnect ribbon cable from top of Step Motor Board

3 Slide Step Motor Board up and out of guides

4 Unplug power lead from bottom of Step Motor Board

5 Disconnect cable from Step Motor:

- Pry gently with screwdriver
- Plug pulls directly to the left
- Be careful not to bend pins
- **Plug end with black jumpers goes to step motor**
- Refer to page previous for detailed instructions

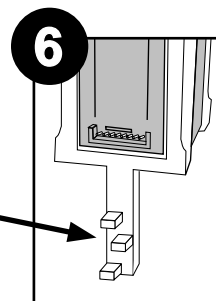


6 Unhook cable from guides on Step Motor frame

It may be easier to screw the piston down by hand and unhook the cable from the front

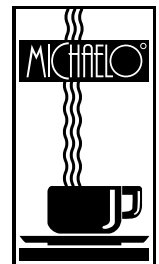
Cable **MUST** be threaded through guides when reinstalling

7 Set Board and attached cable aside



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Replace Piston

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Section 4: General Service

Cafina c60 Service Manual

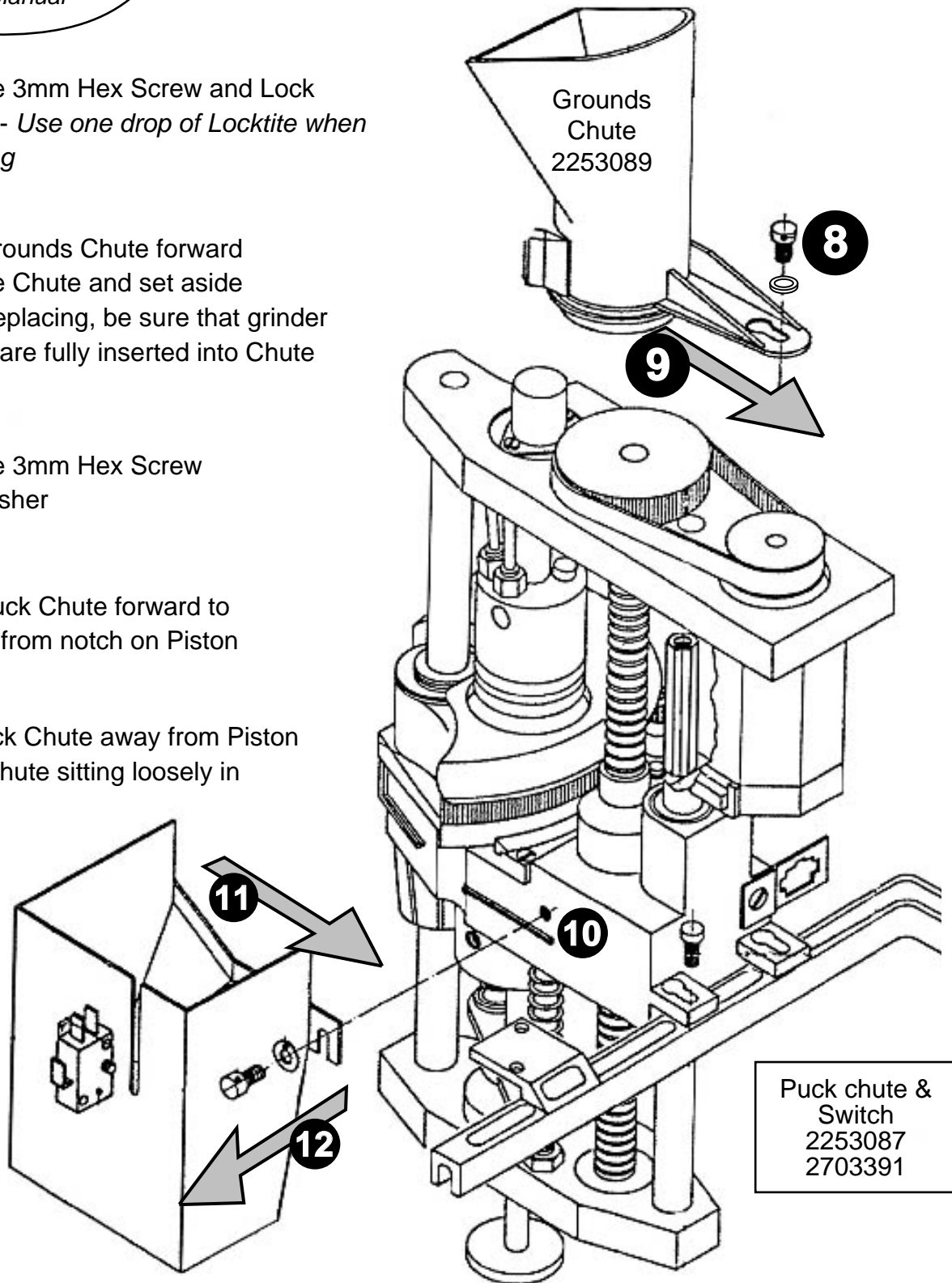
8 Remove 3mm Hex Screw and Lock washer - *Use one drop of Loctite when replacing*

9 Slide Grounds Chute forward
Remove Chute and set aside
When replacing, be sure that grinder tunnels are fully inserted into Chute

10 Remove 3mm Hex Screw and Washer

11 Slide Puck Chute forward to release from notch on Piston

12 Pull Puck Chute away from Piston
Leave chute sitting loosely in place

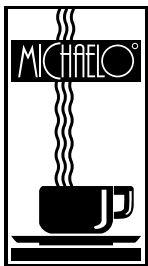


Puck chute & Switch
2253087
2703391

When replacing the Puck Chute, be sure it is fully seated in the notch or water will leak during cleaning cycle

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Replace piston

Replace Piston

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Section 4: General Service

Cafina c60 Service Manual

- 13 Unplug Line Pot Cable
Loosen clip holding black cable
2.5mm hex

- 14 Disconnect line from Pressing Valve
2403206
12mm wrench

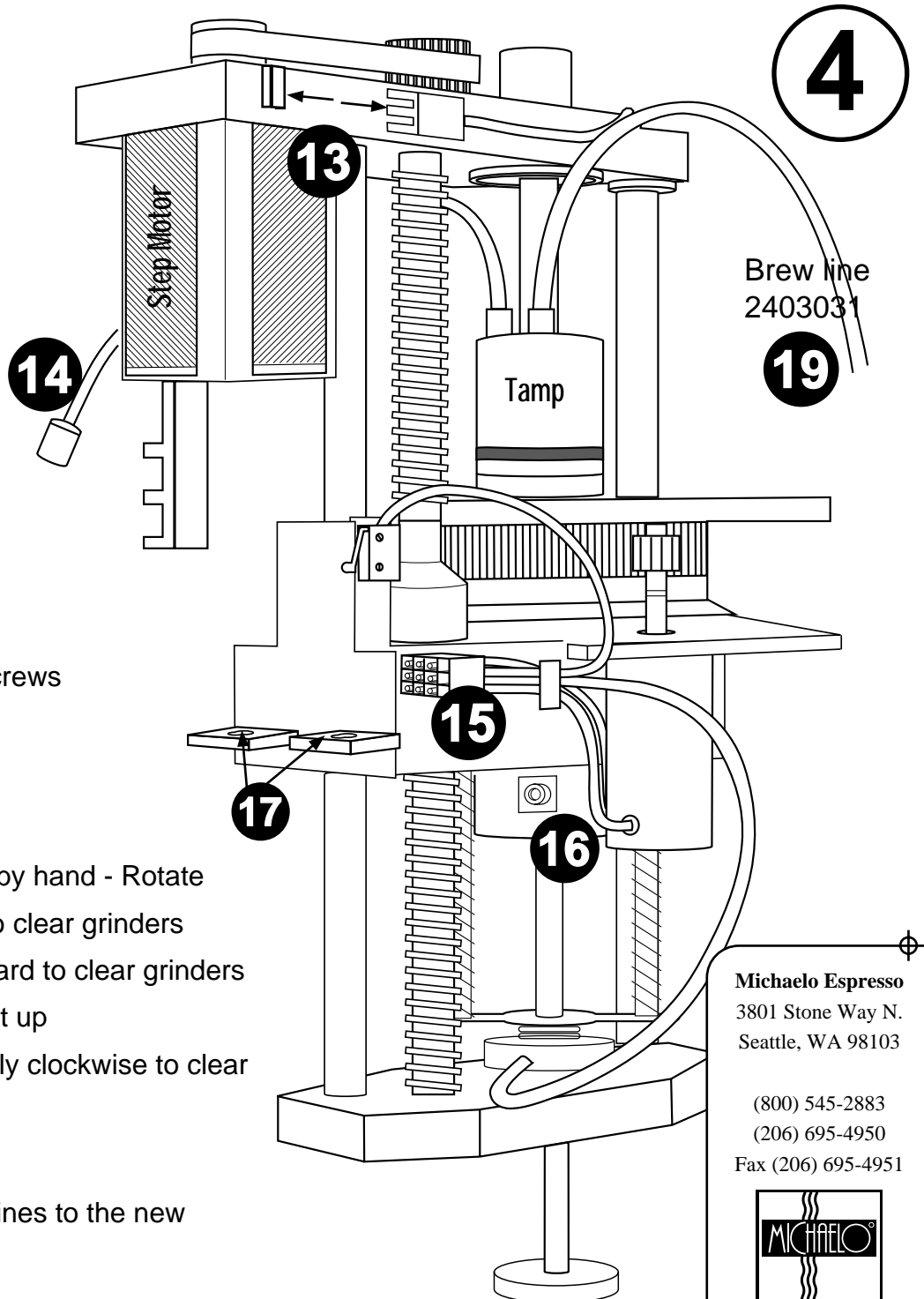
- 15 Unplug Main Plug

- 16 Disconnect line from Brew Valve (press black ring in while pulling line out)

- 17 Loosen Mounting Screws
4mm hex

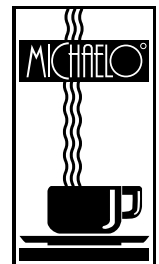
- 18 To Remove Piston
 - 1 Screw Piston up by hand - Rotate Slider forward to clear grinders
 - 2 Slide Piston forward to clear grinders
 - 3 Lift Piston straight up
 - 4 Turn piston slightly clockwise to clear boiler pipes

- 19 Transfer both clear lines to the new Piston



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Always Clear **o-data** immediately after replacing piston!

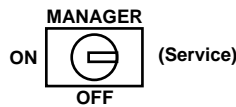
Clear o-data

The O-data is the instructions for how far the step motor moves the piston during a cycle. It needs to be cleared and reset when a new piston is installed or when the step driver board is replaced.

When the piston bounces at the top or bottom of its travel, it may have lost count of the steps for the step motor. (Check that the Line Pot Cable is connected first.)

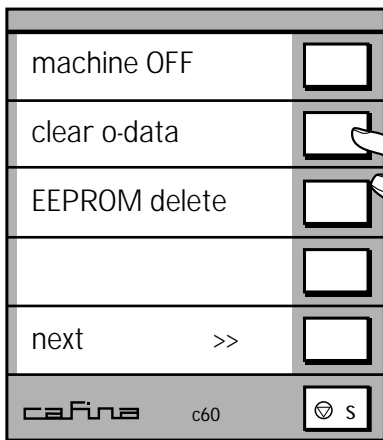
After the O-data is cleared the machine automatically recounts the steps during the first start-up cycle.

1 Key to Service Position



If the machine is unplugged:
Turn key to the service position
before plugging machine back in.

2 Press **next** 3 times to go to the 4th service screen

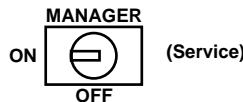


3 Press **clear o-data**

4 Then Press **machine OFF**

*** Caution: ***
Never touch the EEPROM delete button. This will delete all machine programming!

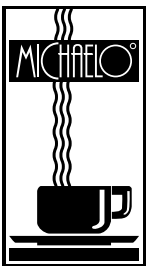
5 Turn Key to **ON**



The machine will go through a start-up cycle. At the top of its travel it will pulse as it determines the exact place to stop. It will then count the steps down and test the slider clearance.

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5

Running Reference

Setting the home position of the Grinder Collars. The grind needs to be adjusted for the type of Coffee Beans, Temperature, Water and Humidity at each location.

Once set, the cafina will automatically adjust the grinders to maintain the ideal espresso shot

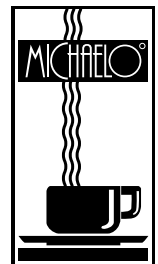
This calibration is done after the install is completed. It is important to use a fresh bag of the same brand of coffee beans the customer will be using and to redo if the customer changes brands

This adjustment is also done after a piston or grinder burr change.

The machine should need no further technician adjustment until the next scheduled service. However, occasionally the adjustment needs to be redone sooner if the machine is not self-adjusting properly. Call Michaelo for advice.

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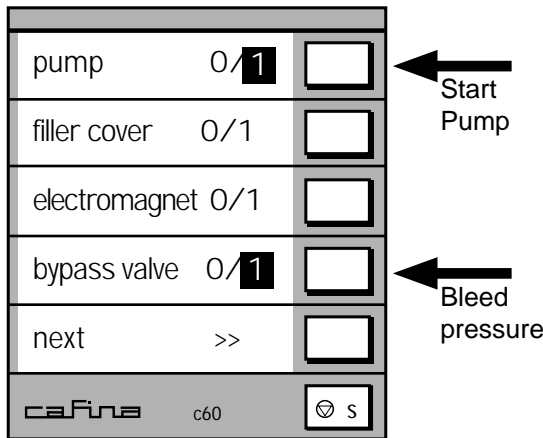
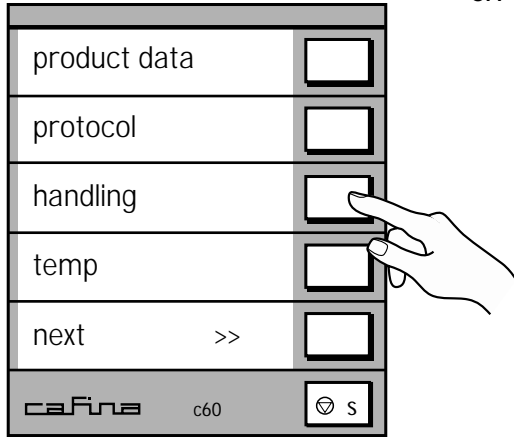
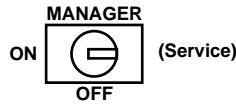
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Adjust Pump Pressure

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Section 5: Reference Calibration
Cafina c60 Service Manual

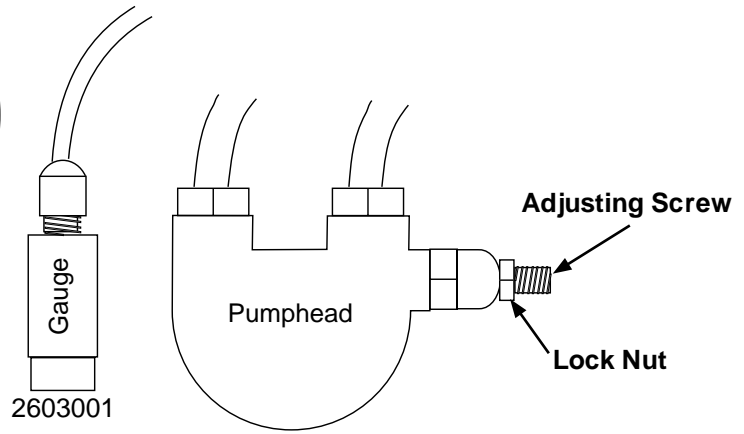
The Pump pressure is measured with all water valves closed. This is different from a conventional espresso machines where the pressure is measured with the water flowing from the grouphead.



- 1 Turn key to Service position
- 2 Remove left side panel of machine
The gauge is in a spring holder directly behind the Pump. The Pump Adjusting Screw is on the front of the pump head, facing the operator.
- 3 Select **handling**
- 4 Press **pump** to run Pump
- 5 Note reading on Gauge
- 6 Press **pump** again to stop the Pump
- 7 Press **bypass** valve ON then OFF to bleed pressure from line
- 8 Turn Pump Adjusting Screw as needed:
Clockwise to increase pressure
Counter-Clockwise to decrease pressure
- 9 Run Pump again to check new pressure
- 10 Repeat steps 3 - 9 until gauge reads between 7 and 9 bars

A Check Valve in the system holds the last highest reading

Use the Bypass Valve to bleed down the pressure in-between adjustments



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The technician sets the grind to the type of coffee and the ambient conditions of a specific location. Once the grind is properly set, the machine will self adjust as these conditions change. A separate Reference must be set for regular and decaf drinks.

5

The Cafina will always try to dispense a shot to the pre-set time (usually 14 sec) Completing the Reference calibration simply sets the grinder self-adjusters to "0" so they have the maximum amount of future adjustment available.

The Reference must be run when the machine is first set up, after a piston change, and after each time the grinders are changed or worked on. The Reference should last until the next scheduled service call, but will occasionally need to be rerun sooner.

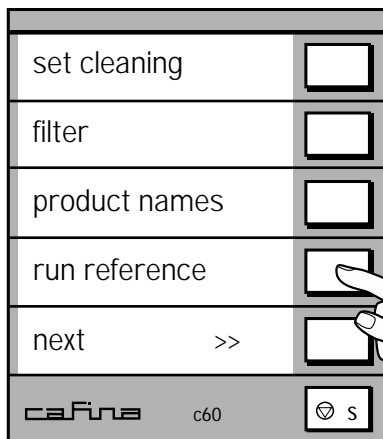
It may take several dozen shots to properly set the Reference. Please be patient. You are "teaching" the machine how to make good coffee.

- ① Check that the Pump is set to 8 bars
- ② Check the water flow with no coffee with the System Test first. It should be less than 6 seconds before running reference
- ③ Fill hopper with beans. Do not let beans run out during reference.
- ④ Turn key to Service position

If the water was turned off during service: Turn Key to OFF then ON then to Service.



- ⑤ Select **next** to display second service screen

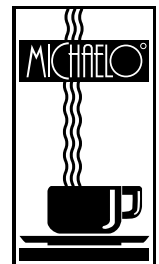


Second Service Screen

- ⑥ Select **Run Reference**

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Reference Calibration

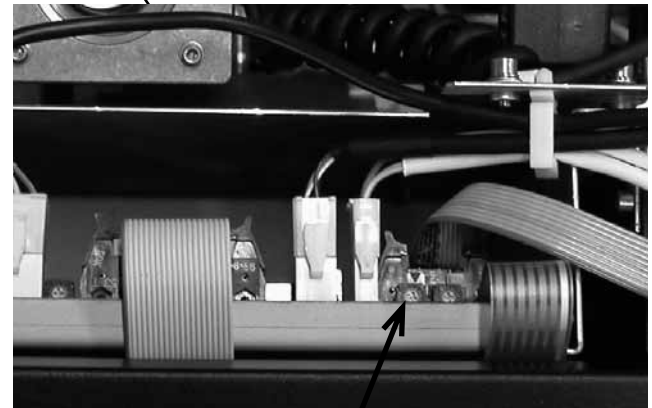
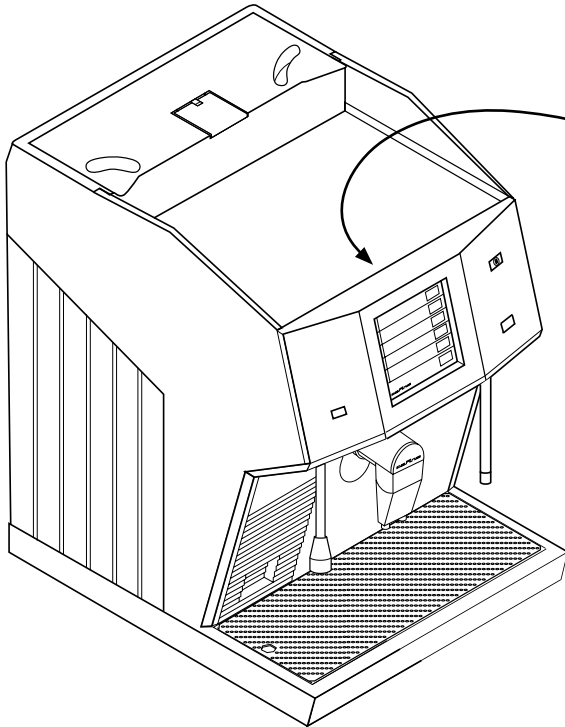
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Section 5: Reference Calibration

Cafina c60 Service Manual

6 Set Line Pot to 0 (-1 or +1 is OK)

Line Pot adjustment is on back of ICU board, behind front panel directly above the keypad buttons. The Line Pot is the tamping pressure sensor on the piston.



Line Pot Adjustment

REFERENCE		
Double*		
Double D**		
Lin. Pot	0	
caFina	c60	S

7 Select which of the two Reference drinks you wish to calibrate

A Reference for each hopper has been indicated with a * and **

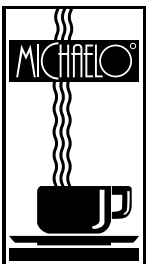
Both reference drinks must be calibrated separately

REFERENCE		
Double*		
Double D**		
delete		
Lin. Pot	0	
caFina	c60	S

Select the drink you wish to calibrate

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Continued on next page →

- 8 The Reference time must be set to the desired shot time found on the Data Sheet

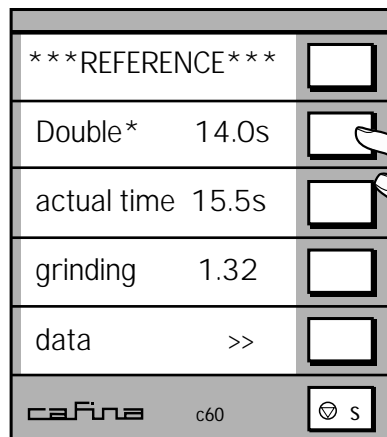
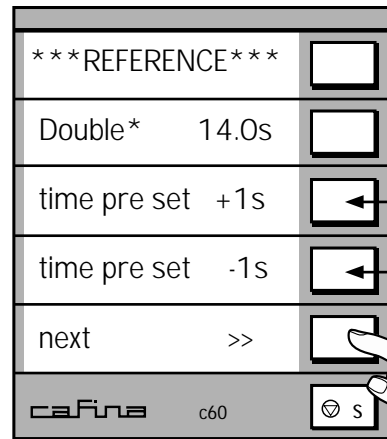
This is the target time that the machine will use for future self-adjustments

Target time 8

- 9 Select **Next**

- 10 Run 4 shots at first to look for a consistent Actual Time:

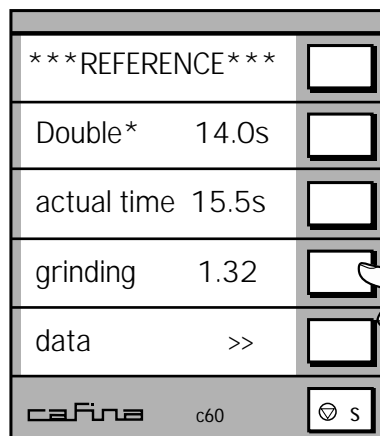
- Press button 2 to start a test shot
- Wait for Actual Time to be displayed
- Machine may automatically run several cycles to find the correct grinding time
- If Actual Time is very slow, the cycle may be canceled by pressing the Shift key
- Change the grinder setting if the average Actual Time is above or below desired time
- Slightly longer time (14 - 16 seconds) is better than too fast



Start
Cancel cycle

To Change Grind

- 1 Select **grinding** from REFERENCE screen

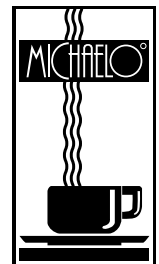


Change grind

Continued on next page →

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Reference Calibration

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Section 5: Reference Calibration

Cafina c60 Service Manual

- 2 Select **Coarse** or **Fine** to adjust grind to change the Actual Time as needed:

Coarse - moves the burrs further apart, and speeds up the actual shot time.

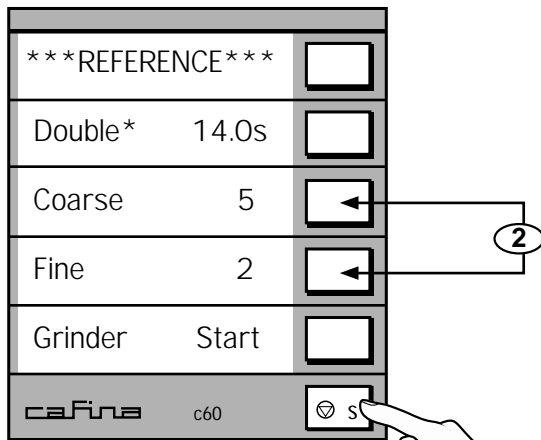
Fine – moves the burrs closer together, and slows down the actual shot time.

Adjust 4-5 increments for major change, 1-2 increments for small change.

EASY DOES IT!

(The Fine adjustments are smaller increments than the Coarse adjustments)

(Grind increments will zero out each time the Reference is run; they have no set value)



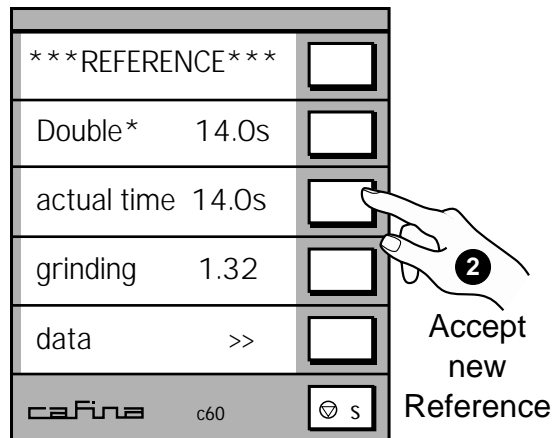
- 3 Press Shift to return to the REFERENCE screen

Always return to the Reference page and run 3-4 cycles after making a grind change. This allows the previous grind to make its way out of the grinder chamber and for the machine to “settle in” to the new grind setting.
To cancel the water flow on the 1st cycle, press shift as soon as the grinder starts.

If the buttons lock and “grinding” flashes, the waste drawer is full.

Accepting the New Reference

- 1 Look for at least 3 consistent shots within 2 seconds of desired time
- 2 Press the button next to **actual time** to accept the new Reference

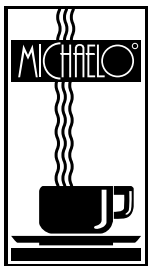


*Exiting the program any other way will not set the new reference
 Accepting the actual time sets the center point of the grinder collar*

- 3 Don't forget to also run the Reference for the other hopper

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Flashing “Filter”

Delete filter counter

Section 6: Troubleshooting

Cafina c60 Service Manual

Flashing “cleaning”

“Set Cleaning” counter reached, normally 250 shots. Run cleaning



Flashing “reference”

No reference drink assigned, Check all drink values in product data

Temp > 106

Temp probe wire disconnected at brew boiler or J13 on ICU

Clean J13 pins with electrical contact cleaner

Air in water line entered Brew Boiler, *Bleed through 12 bar safety valve*

Temp probe defective: 2k @ room temp, 3k + when hot

Please Wait– and two different temps displayed

Water continuously flowing in drip tray from *leaking 12 bar Expansion valve*

Water continuously flowing in drip tray from *leaking Brew Valve*

Water filling Grounds box from *leaking Brew Valve*

Dual ceramic High limit on front of brew boiler corroded – replace

Element in Brew boiler bad (least likely) should read 22

24 Volt missing

Jammed slider motor. Powerboard may be burned

Short in: Flowmeter or Mechanical counter

Short in one of the Valve plugs/coils or wiring

F4 fuse on powerboard

Grinder collar jammed

Screen displays “>>> on >>> “ and won’t start-up:

Switched ON from service mode before brew boiler fully heated,

Switch OFF and then ON with key

Binding slider motor

Water turned OFF

Check that brew boiler is heating / check dual ceramic high limit

Re-seat piston main plug and all plugs on ICU and powerboard

Re-seat flowmeter plug

Clean or replace flowmeter impeller

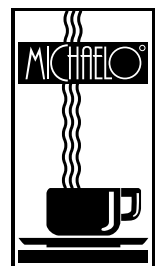
Possible air in water line (recent filter change etc.)

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General Troubleshooting

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Section 6: Troubleshooting

Cafina c60 Service Manual

No flow from spout:

Coffee leaks inside machine: detached hose to spout
DP13: Coffee too fine, clogged tamp (run System test)
Output hose kinked or “Y” clogged at back of spout
Check grinder adjust motor operation in handling (grind too fine)
Check that the pump is running during each shot

Screen shows condensation, Buttons may not work

Leaking Steam valve. Normal operation will return when display panel dries out.

Screen Dim

Adjust LED trim pot on ICU board. *see page 71*

Check F6 fuse on powerboard *Red diode will light when fuse is bad*

Screen Blank or shows only Vertical lines

Plug on gray ribbon cable to ICU wet. Blow out with air or contact cleaner. Power must be disconnected before blank screen will reset.

Water from Steam Wand

Boiler overfilled (See Overfilled Boiler troubleshooting section)
Autofill or adding Valve leaking past. *Check for flow into drip tray*
Autofill probe scaled over / disconnected

Water Wand sprays steam & water

Adding valve not working or clogged
Low incoming water pressure

Continuous steam puffs or drips from Water Wand

Water solenoid leaking past

All buttons (menu, water & steam) not functioning

Water or Steam button shorted - unplug J6 & J10 to check

Water violently pulses in drip tray from behind front panel

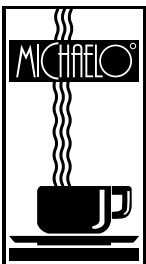
Powerboard ground wire not attached causing Autofill Valve to be open all the time.
(usually just after powerboard change)

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Always use the Double or Double D to evaluate the Extraction / shot time

Shot time is long Reg or Decafe

- Run 5 reference drinks to allow machine to self adjust
- Run reference to reset grinder
- Check grind time to see if burrs are worn (over 2.5 seconds)
- Check that the pump is running during each shot
- Check pump pressure in Handling, should be 8 bars
- Check grinder adjust motor operation in handling (grind too fine)



Shot time is long Reg and Decafe

- Does pump run? Check in Handling
- Run System test to check water flow
- If still long check water flow from Brew Valve. see page 36

Shot time is fast

- Run 5 reference drinks to allow machine to self adjust
- Run reference to reset grinder
- Check grinder adjust motor operation in handling (grind too coarse)

Shots are long Volume

- Check water Quantity in Manager mode
- Measure volume during System test
- Clean or replace flow meter impeller
- Call Michaelo for further advice

Shots are Short Volume:

- Check Water Quantity in Manager Mode (Double usually 65ml)
- Measure volume during System test
- Possible air in water line (recent filter change etc.)

See solution above for “ >>> ON >>> ”

- Clean or replace flow meter impeller
- See water leak into Grounds box solutions

Is water also flowing from behind front panel during short shot?:

- Pump set too high, set to 8 bars in handling
- Brew valve leaking through vent tube. Open and clean valve

If shots are still Short Volume call Michaelo for further advice

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Water Leaks

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Section 6: Troubleshooting

Cafina c60 Service Manual

Water on counter:

During brew cycle

- Line from Brew valve to piston
- Line from tamp to Spout
- Bleeder screw on top of Tamp
- Pressing valve not working

During cleaning cycle

- Misaligned Puck Chute
- Leak from underside of brew chamber
– replace piston

Water Leaking into drip tray from behind front panel:

A small burst of water will normally flow from here at the end of each shot and during the cleaning cycle when the pressure in the brewing chamber is vented . Some flow is also normal when the machine is first turned on.

Water leaks into drip tray continuously

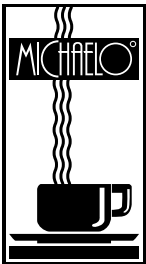
- Steam boiler overfilling, Safety valve opening
Check for debris in Autofill Valve
- Brew boiler Expansion (Safety) valve leaking past
Replace seals
- Brew Valve leaking past, *Rebuild or replace*

Water leaks into drip tray only when shot is brewing

- Pump set higher than 12 bars, Safety valve opening
- Brew valve leaking through vent tube, run cleaning cycle, rebuild brew valve.

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Water into Grounds box:

Small amount is normal during cleaning cycle

Large amount of water in grounds box

- Brew valve leaking past
- Loose sealing ring bleeder screw on top of Tamp
- Tamp Sealing (pressing) valve not working
- Tamp Sealing (pressing) valve leaking

Watch the piston during start-up cycle

Piston will not move immediately after piston change

- Step motor cable installed backwards
- Black jumpers should be on the Motor side*



Slider hits or nicks lower edge of Tamp

- O-data corrupted—clear o-data
- Piston switch faulty—replace piston
- Bottom Screen in brewing chamber loose, pushing slider up
- Cable to Step motor faulty - replace cable
- Step Motor Faulty (Slowly turn motor to feel for flat spot)

Slider hits the side of Tamp broadside, high pitched whine, or Piston counts o-data before reaching top of travel

- Cable to Step motor faulty (most likely)
- O-data corrupted—clear o-data
- Socket Pin on step motor bent, Step motor driver board bad

Slider stops halfway — DP5

- Slider Reed Switch Socket Pin loose - Reed switch faulty
- Slider motor Socket Pin loose

Slider stops halfway on 3rd sweep of start-up cycle — DP5

- Spray Screen loose, screen dragging on lower edge of Slider

Slider had no bounce back, stops dead, DP32 after clear 0-data

- Slider reed switch shorted

Piston rapidly reverses direction at end of travel

(zoop, zoop sound)

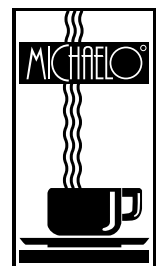
- O-data corrupted
- Clearing o-data or start-up with coffee in chamber (DP 7)
 - Clear coffee and try start-up again
- Line pot Cable disconnected
- Line Pot wire broken - check reading in reference

DP 13, No flow from spout

- Screen in Tamp or bottom of brew chamber clogged
- Run brew Valve in “handling” to test flow
- Disconnect brew line from bottom of brew chamber and check flow again
- Clog in “Y” at back of spout

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Clearing a Stuck Puck

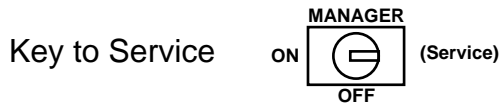
Page 1 of 2

Section 6: Troubleshooting
Cafina c60 Service Manual

A stuck puck may show up as one or more of the following codes:

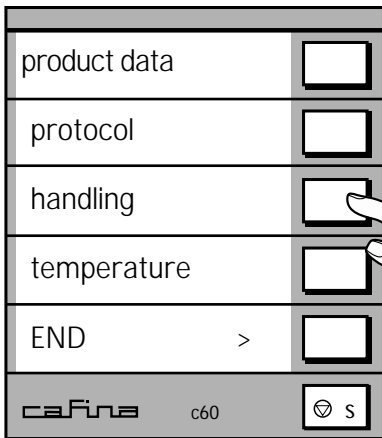
DP4 DP5 DP7 DP20&21 DP26&27 DP32

Coffee grounds that fail to eject from the brewing chamber is the most common cause of machine failure. This is usually caused by lack of regular cleaning. The machine will make several attempts to clear the chamber on it's own by displaying "switch machine **OFF** and **ON**" prompts.

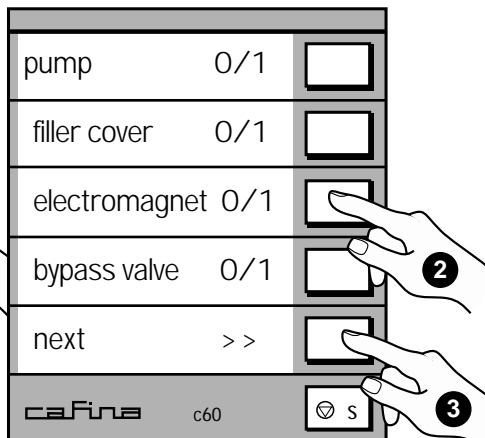


Remove Top Cover to watch piston

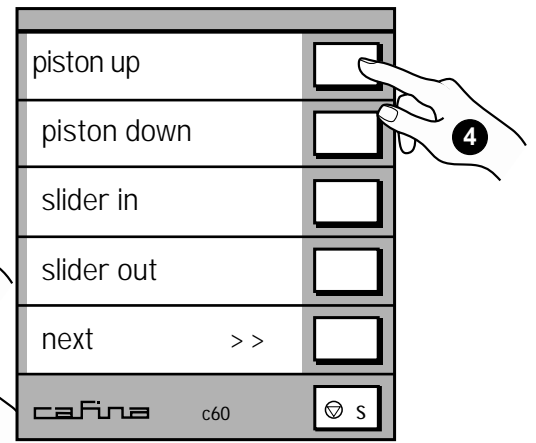
Select Handling



Set electromagnet to 1
Then Press next



Press Piston up

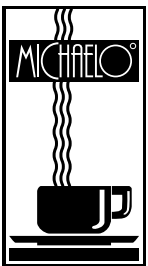


Did inner piston bring puck up?

- Yes:** Press **slider in** then **slider out** to eject puck
- No:** Unplug machine and manually scoop chamber out (don't scratch sides!)
Check for coffee grounds on underside of lower piston plate.
Clean and vacuum out machine if necessary.
Lube inside of chamber with Windex, 409 or a similar cleaner (All traces of cleaner can be rinsed away with a cleaning cycle.)
Plug back in and allow to go through Startup

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Clearing a Stuck Puck

Clearing a Stuck Puck

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Section 6: Troubleshooting

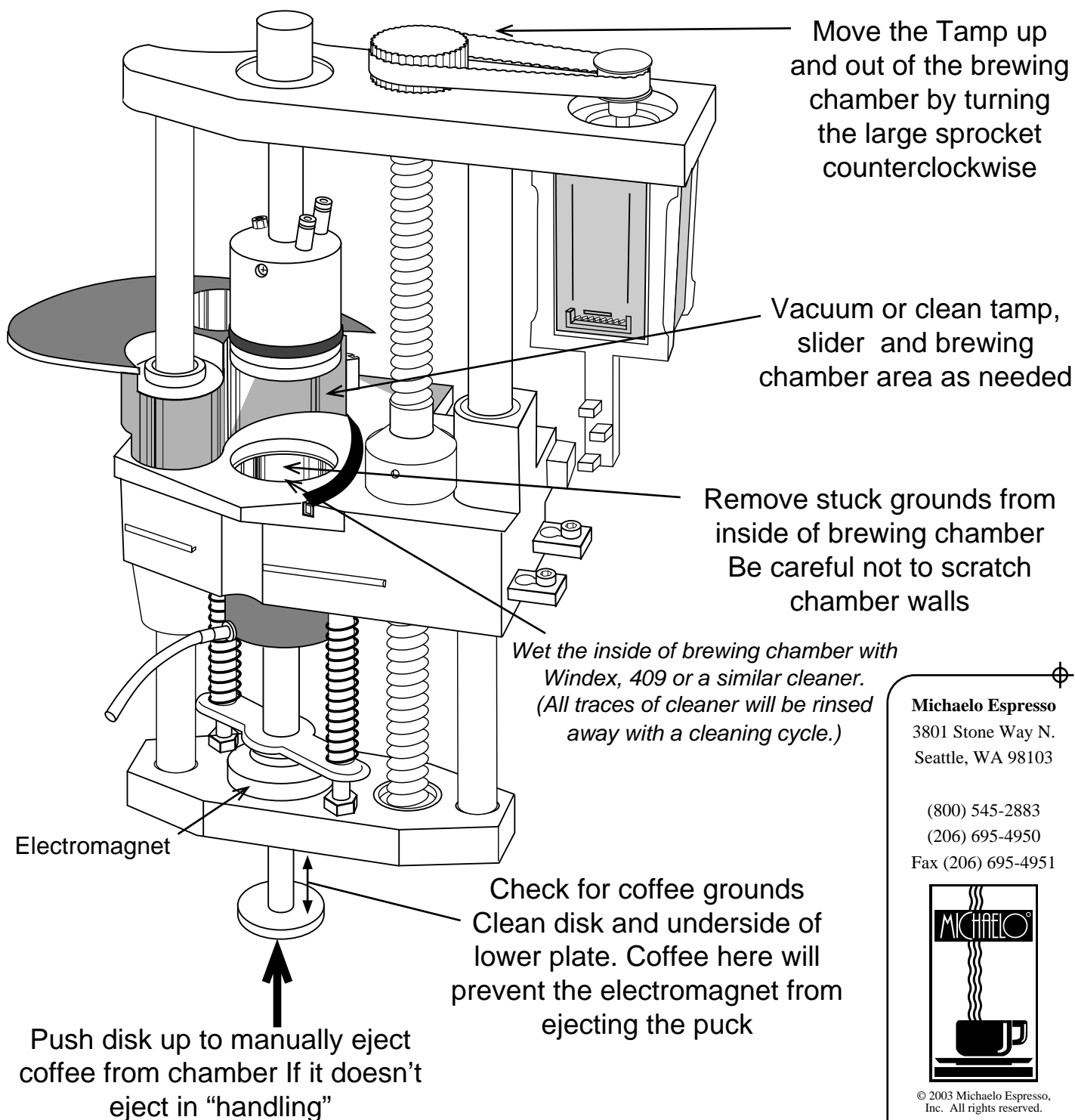
Cafina c60 Service Manual

It is not necessary to remove the piston from the machine.

The Dispensing Spout panel may have to be removed to clean the Electromagnet area.

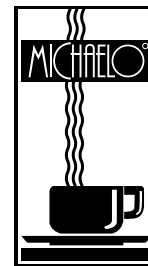
6

Unplug the machine first to prevent unexpected piston movement!



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Check Water Flow from Brew Valve

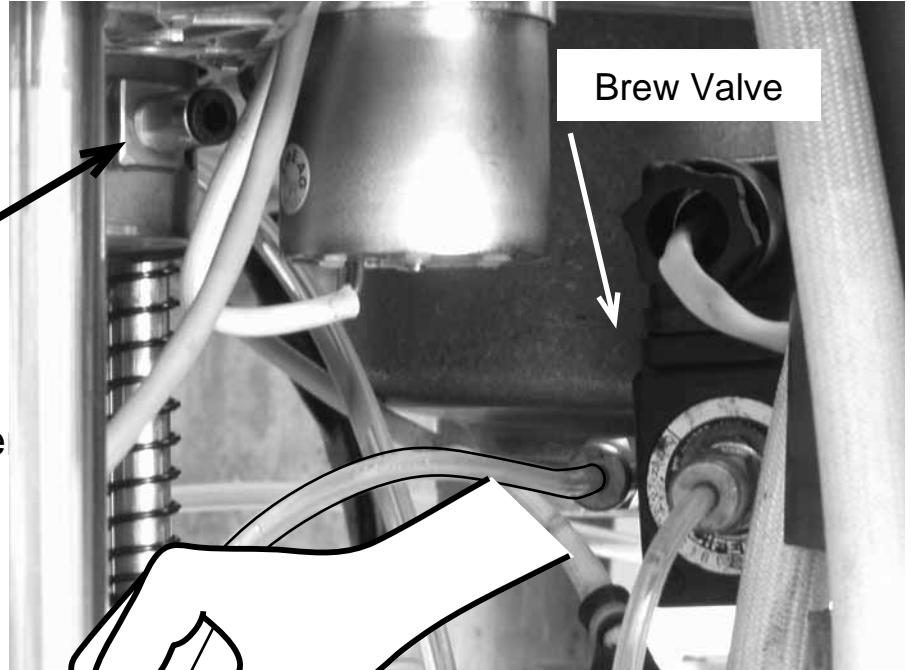
Page 1 of 1

Section 6: Troubleshooting
Cafina c60 Service Manual

Times the water flow from the Brew Valve
before it goes to the Piston

Use if the System test is over 8 seconds to isolate the location of the clog

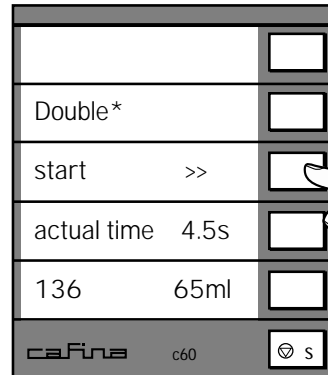
Remove the Spout Panel



Disconnect the line to the
bottom of the brew chamber

Turn Key to **Manager**
Press shift twice
to display **System Test**

Run System test
while holding the line
pointed into the drip-tray



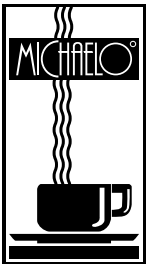
If **actual time** returns to normal the problem is a clog in
the **Brew Chamber, Tamp or Spout**

If **actual time** is still over 8 seconds then look for a clog
in the:

Flowmeter, Brew Valve, or Brew Boiler

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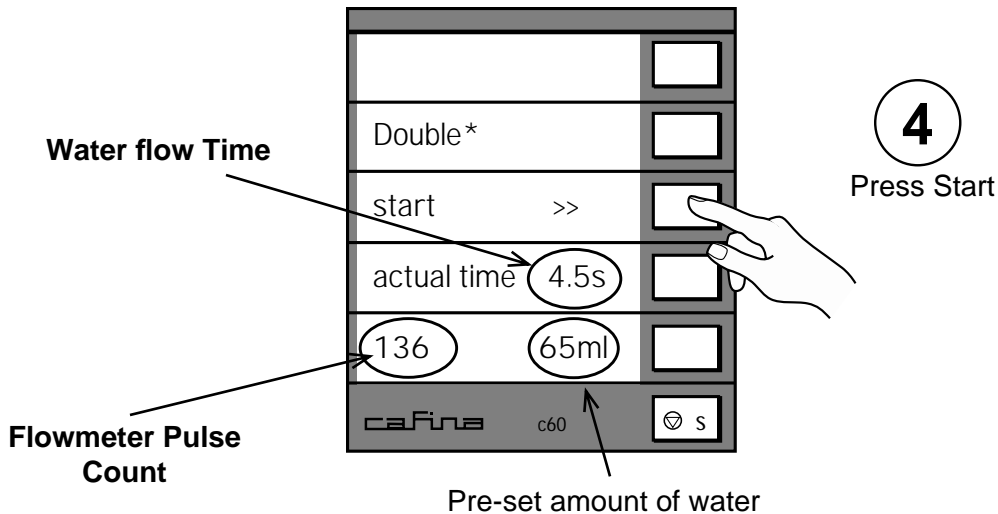
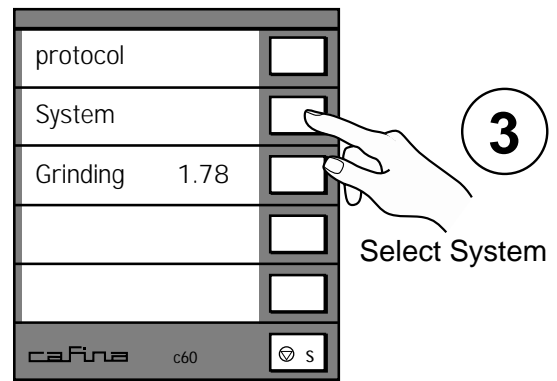
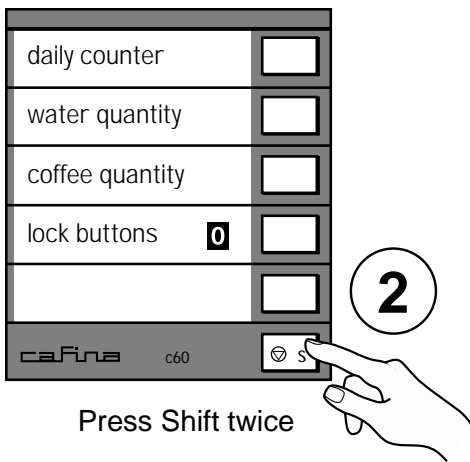
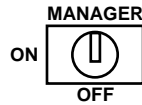
No Coffee water flow test

The System Test is used to make sure the water is flowing freely through the machine before running reference or troubleshooting shot time problems

6

1

Key to Manager Position

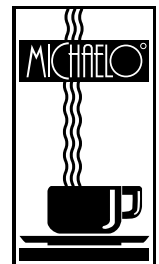


- 4-6 seconds
- 6-8 seconds
- 8+ seconds

- Normal flow time for 65ml of water
- Run several cleaning cycles and try again
- Check water flow from Brew Valve

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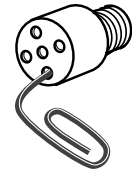
Steam Wand Backflush

Steam Wand Backflush

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Cafina c60 Service Manual

A clogged Steam Tip is the most likely cause of weak steam flow. Remove the Steam Tip by unscrewing it from the wand and clean out the holes.

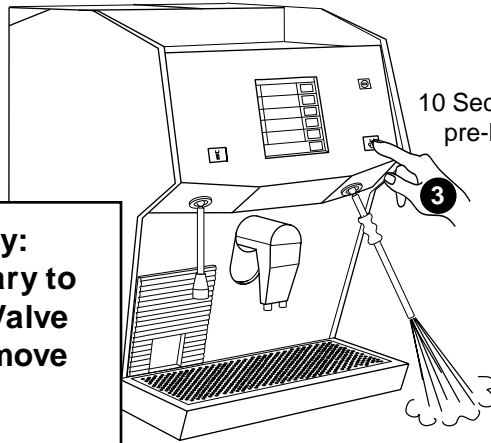


If cleaning the tip doesn't restore good flow try this cold water backflushing procedure:



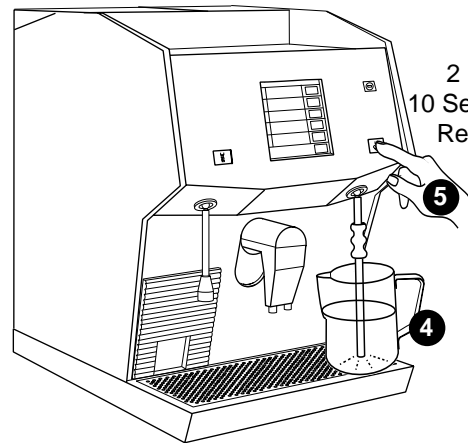
*NEVER leave the steam wand in the milk pitcher.
The milk will be sucked up into the wand and
may contaminate the boiler.*

10 Second
pre-heat



Technician only:
It may be necessary to
open the Steam Valve
to completely remove
the clog

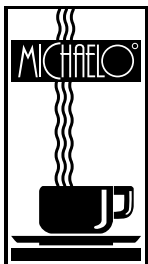
2 Seconds On
10 Second Pause
Repeat 5 times



- ① Remove the Steam Tip
- ② Fill a Milk Pitcher with cold water (Never use any cleaner!)
- ③ Heat the Steam Wand by running it for 10 seconds
- ④ Turn the Steam off and immediately insert the Wand into the cold water
- ⑤ Run Steam again for 2 seconds then turn off
- ⑥ Wait 10 seconds for the water to be sucked up into the wand/valve
- ⑦ Repeat steps 5 and 6 four to five times to soften and flush out the clog
- ⑧ Refill the pitcher with fresh cold water and repeat if needed

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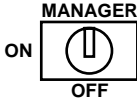
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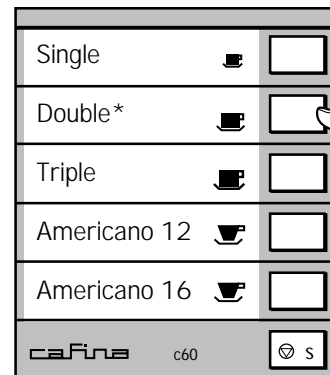
The condition of the grinder burrs is monitored by watching the change in grinding time for the reference drinks. The grind time increases as the grinder burrs wear out. Worn burrs take longer to grind the same amount of coffee.

6

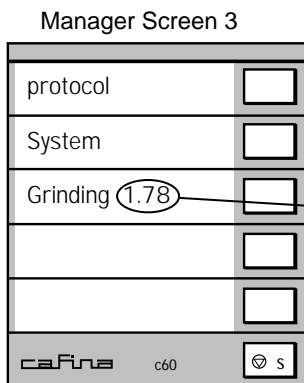
The time displayed will always be the time of the last drink made.

V3.51 Software automatically displays the grind time of the last drink made on page 3 in Manager mode (If Grind time doesn't display in Manager, go to main Reference page in service to see time.)

- ① Select the Reference Drink you wish to check and allow the machine to brew it. Reminder: The Reference Drink name is followed by an asterisk.
- ② Turn key to Manager position 
- ③ Press Shift twice to view 3rd Screen of Manager Mode and note the time recorded next to Grinding.

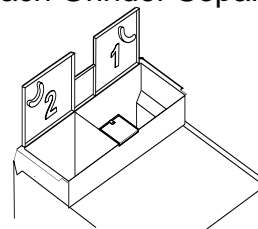


Default 1st page of drink menu when machine is on



Grinding time for last drink brewed

Check each Grinder Separately



★ **Evaluating Grinder Burr Condition from the Grind Time Reading** ★

FOR 14 GRAM DOUBLE SHOT*

New Burrs = less than 1.7

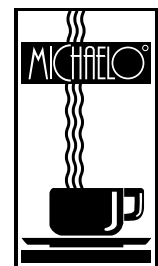
Normal Burrs = 1.2 - 2.25**

*If Double Shot is not 14 Grams, call Michaelo for grind time range

**If time = greater than 2.25 - Call Michaelo for advice

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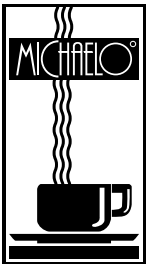
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Section 6: Troubleshooting

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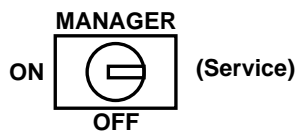
The Bypass Valve delivers hot water from the Brew Boiler directly to the Spout

Section 6: Troubleshooting
Cafina c60 Service Manual

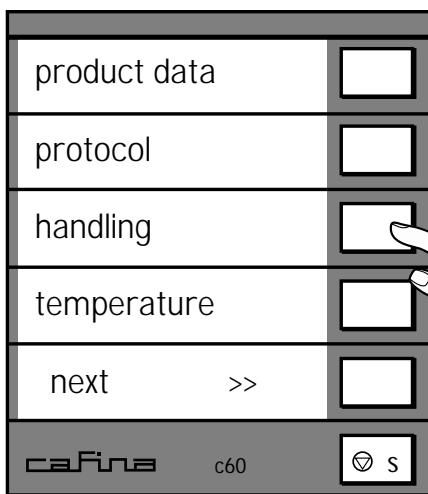
6

The Bypass amount in Product Data is the amount of time the bypass valve is open. At a 30% setting, the valve opens for the last 30% of the drink flow. The first 70% of the water flows only through the coffee grounds. When the valve is open some of the water can flow directly to the spout.

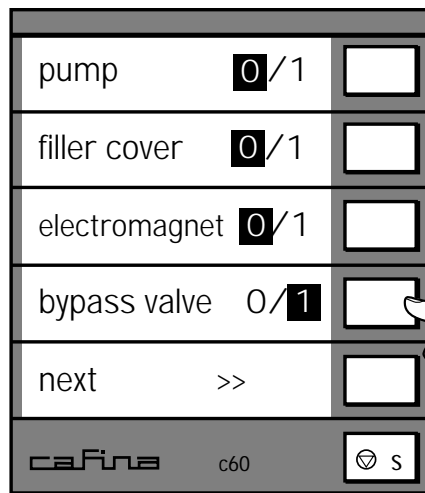
① Turn key to Service position



1% bypass is added to all Espresso shots to flush the spout at the end of the flow

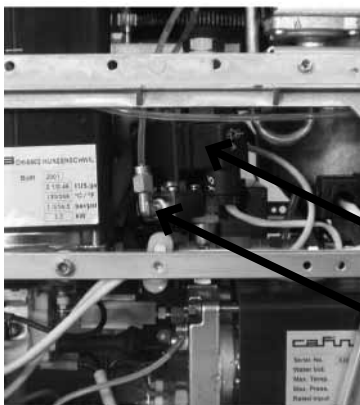


② Select Handling



③ Switch valve ON

Water should dribble from the spout when the Valve is switched ON



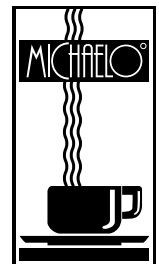
No Water flow from Spout?
 Check that Solenoid Coil is Energizing
 Check Elbow from Bypass Valve for clog
 (Remove Elbow and clean .4mm nozzle)
 Check for clog in Tube to Spout

Bypass Valve 2603052

Bypass Elbow 2403184

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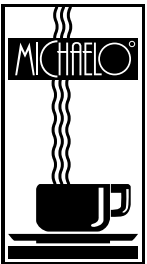
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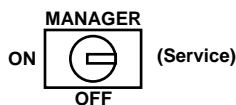
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Grinder Adjusting Motor Test

The grinder adjusting motors change the coarseness of the grind by turning the grinder collar through a worm gear.

The motors can be tested in the Handling section:

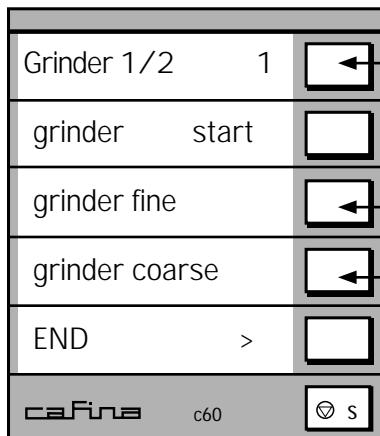
6



Key to Service mode

Select "Handling"

Press "next" 3 times



Select grinder 1 or 2

Press fine or coarse while listening to the motor

Watch the grinder collar to see if it moves evenly!

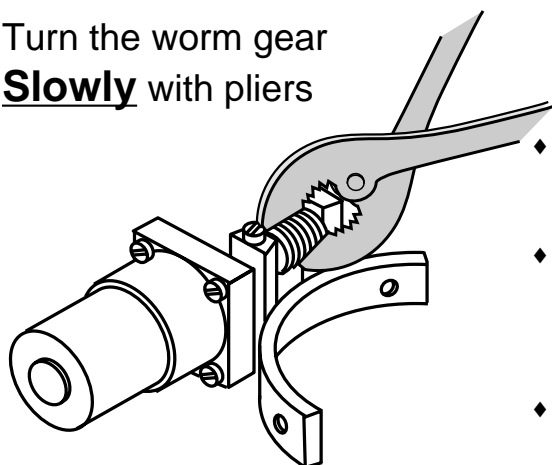
- ◆ A good motor will make a firm whirring sound as it operates.
- ◆ A weak motor will make a gravelly sound. It may turn the collar slowly or unevenly.
- ◆ A broken motor will make a clicking sound

Checking the motor out of the machine:

Remove the Hopper

Remove the Grinder Adjusting Motor with its bracket

Turn the worm gear **Slowly** with pliers



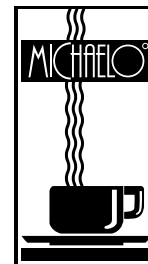
Grinder Adjusting Motor 2253656

You should feel a firm even resistance as the gears turn.

- ◆ A new motor will have a firm feel and make a whirring sound.
- ◆ A used motor may have a looser feel and make a louder gear sound.
- ◆ A defective motor will feel loose and uneven or gravelly. It may also have a loud sound.

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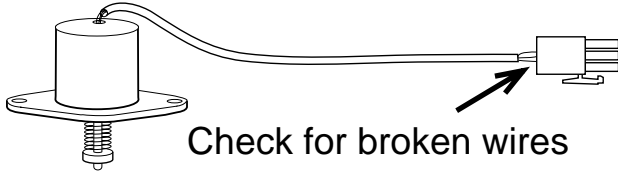
Line Pot Test

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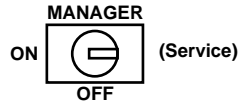
Section 6: Troubleshooting
Cafina c60 Service Manual

The Line Pot is a potentiometer that sits on top of the Piston Assembly directly over the Tamp.

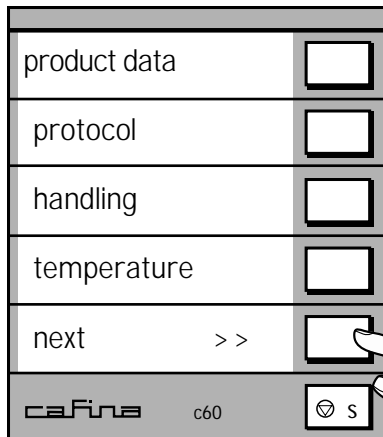
The Line Pot measures the force used to tamp the coffee and the quantity of coffee dosed into the brewing chamber.



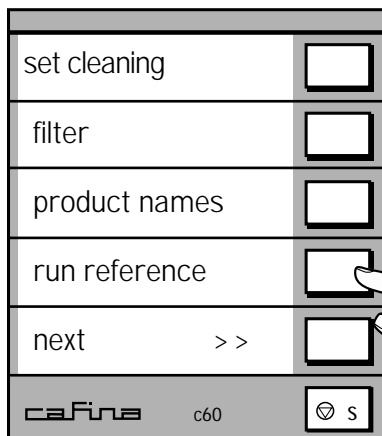
Wiggle plug during test
Reading shouldn't change from 0
Line Pot will read about -14 if unplugged or broken wire



A broken wire or plug pin will cause the piston to suddenly reverse direction with a zoop sound. Usually followed by a DP7



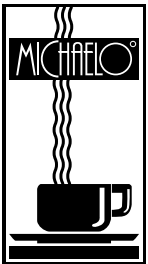
Press next



Select run reference

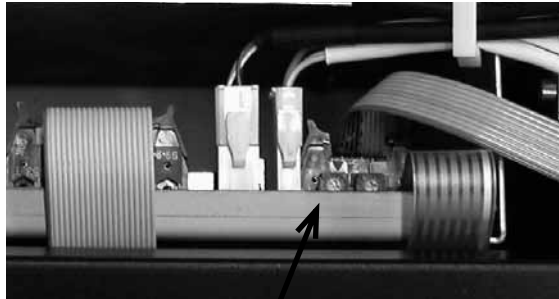
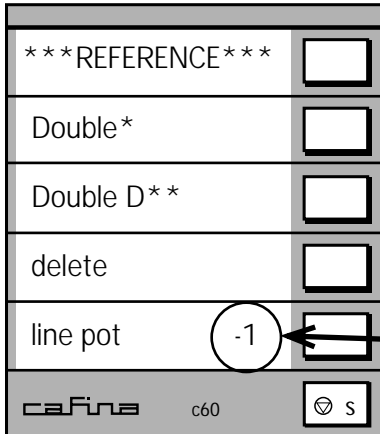
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6

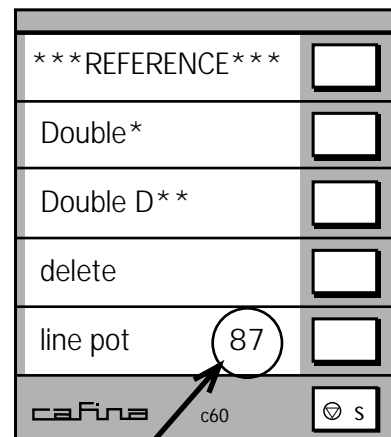


Set Line Pot between -3 & +3

Line Pot adjustment is on back of ICU board, behind the front panel, directly above the keypad buttons
(Caution: adjuster is Fragile)

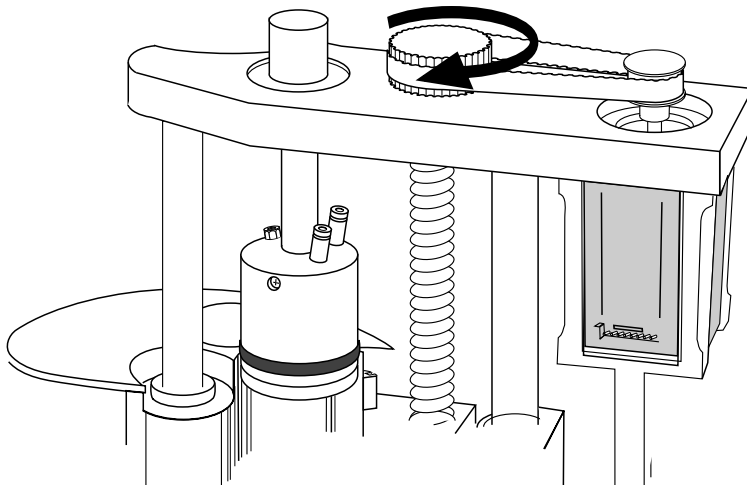
Run the Piston all the way down by hand

- Turn the large sprocket clockwise
- Turn it hard about 1/4 turn further after the Tamp touches the bottom of the chamber
- Line Pot reading should change to 80-100 and then return to 0 when the sprocket is backed off to release the pressure



Should change
Up to 80-100 when tamp
is forced down

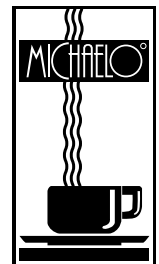
Apply pressure and release



Wiggle plug, if Reading
changes 3 or more check
for loose wire at plug

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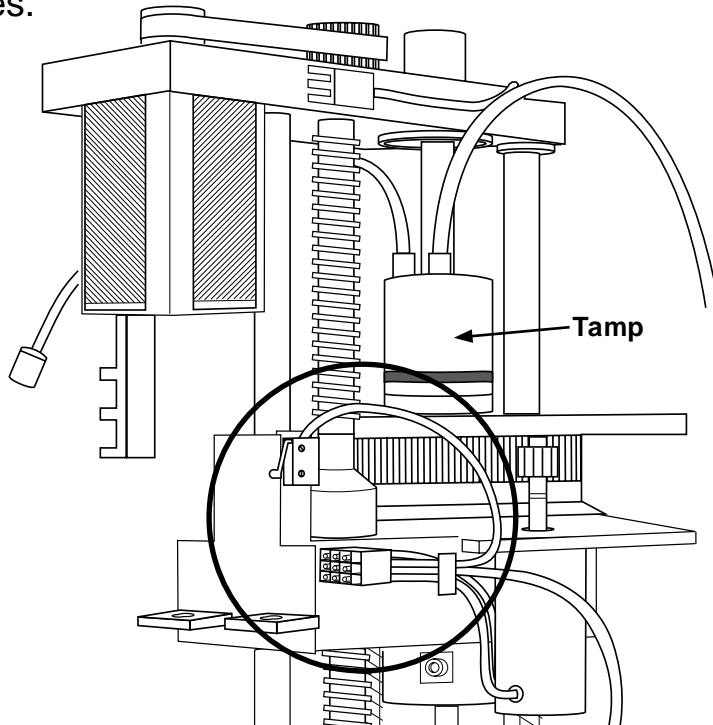
Piston Switch

Section 6: Troubleshooting
Cafina c60 Service Manual

**The Piston Switch sets the “home position” of the piston.
It also signals if the Tamp is in the brewing chamber.**

The most common switch failure causes the slider to hit the bottom edge of the Tamp

Coffee pucks stuck in the chamber or coffee grounds under the piston assembly will prevent the piston from moving all the way down and may give piston switch DP codes.

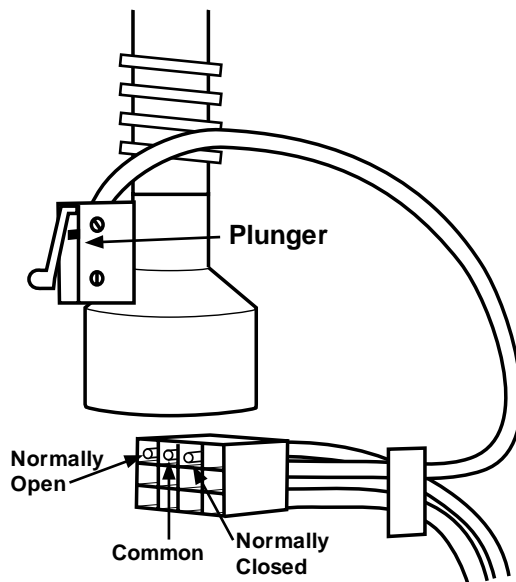


Piston Switch mechanical test:

1. Raise piston by hand
2. Press roller with finger, switch should click on and off.
3. Raise and lower the piston by hand to verify that the switch clicks when the motor housing touches it
4. A single drop of water may free the plunger if it is stuck. (Follow with a drop of WD-40.)

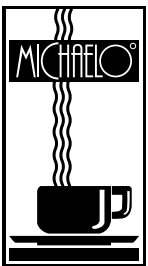
Piston Switch electrical test:

1. Raise piston by hand
2. Unplug main plug
3. Measure resistance between the top center pin and the pins on either side
4. Resistance should toggle from infinite to less than 2
5. Switch is bad if there is any hesitation in the readings (ie. hangs up on 6 for an instant)



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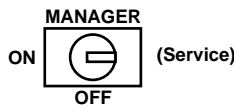
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More than 5-10 occurrences of a code will indicate an area of the machine that needs closer evaluation.

7

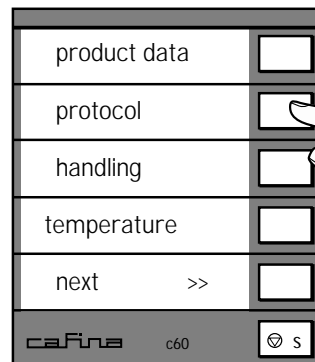
The DP codes (diagnostic codes) are a record of faults that the Cafina has recorded since the last service call. It is important to remember that the codes only show symptoms. They don't always point directly to a problem. It is normal to see a some codes in the memory, they are a record of the self correcting actions of the machine.

Turn Key to the Service position



Select **protocol** from 1st screen

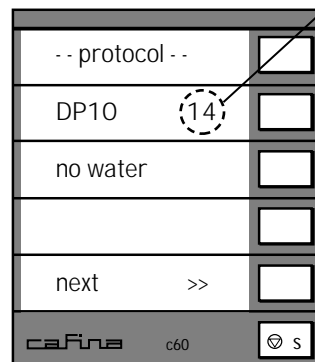
The program will cycle through and check each DP code



If the program stops, record the DP code and number of occurrences.

Press **next** to continue.

At the end of the cycle Delete the DP codes to prevent old codes from accumulating in the counters

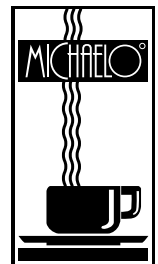


Sample DP Code

Number of occurrences

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Read out all the codes in Service/Protocol section
Remember the codes only show the symptoms, not the problem

DP #	Message Given	Problem	Check
	Refill Hopper (See DP 8)	Beans jammed Grinder overheated	Stir beans, foreign object in hoper Quality of beans or worn burrs
DP 01	24V supply	Switch off/ on, check F4 fuse or Replace Power Board	Jammed slider - Bent Grinder mounting plate Slider motor faulty, incoming voltage spikes
DP 03	Piston Switch always Closed	Piston not moving up, No 24v on ICU J11 pin 2 with piston up	Does plunger click when roller pressed, Round Cable to Step Motor, Step Motor Cable in backwards
DP 04	Piston Switch always Open	Piston not completely down, Stopped before piston switch	Piston movement, piston switch, slider jam Round cable to step motor, stuck puck Step Motor board overheated, add fan
DP 05	Slider switch always Open	Slider jammed Slider hits tamp	Stuck puck, Piston switch erratic Step motor cable or board, 24v always on J11 pin 1
DP 06	Slider switch always Closed	Slider is not moving or binds at end of travel. Reed switch shorted	Coffee jam, Slider motor, Tamp clearance, Back of slider drags on grinder Reed switch, <i>24v never on J11 pin 1</i>
DP 07	No. compression (Lin. Pot.)	Signal not found at right time	Stuck Puck, Lin pot reading, Line pot plug/ cable Grounds under Piston, Clear O Data, ohm piston switch
DP 08	Grinder 1 Quantity less than set amount	Not enough coffee in chamber	Pressing drink buttons after refill hopper message Jammed or worn grinder burrs Grinder Chute misaligned Coffee drop slow
DP 09	Grinder 2 Quantity less than set amount		
DP 10	No water	No reading from sensor	Water pressure and flows, Filters Wiring to sensor on pump, J4 plug on ICU
DP 11	No flow meter impulses	No flowmeter pulses with Brew and bypass valves open	Flowmeter cable unplugged, bypass elbow clogged (DP 13) Clog in meter, J4 plug on ICU, Filters restricted, Water shut OFF
DP 13	Infusion valve (brew valve)	No flowmeter pulses with Brew valve open	Clog in: Coffee Filter Screen, Brew valve, Spout, Tamp Run flow meter test Check filters



After fixing problems related to piston movement, the Piston may bounce or move erratically. It may have lost count of the steps for the Step Motor. See Instructions for Clearing O Data to reprogram.

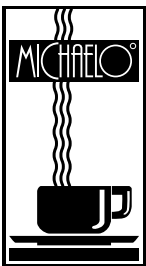
DP #	Message Given	Problem	Check
DP 20	Grinder 1 Quantity more than set amount	Too much coffee in chamber	Coffee drop slow, Grinder chute misaligned Clean chamber, Slider area
DP 21	Grinder 2 Quantity more than set amount		
DP 26	Pressure reached before piston switch	Too much coffee in chamber, Coffee puck stuck in chamber,	Coffee drop slow, clean brewing chamber Is spent puck ejecting from chamber? Electromagnet holding? Clean underside of piston
DP 27	After DP 26 occurred twice	Tamp finds pressure before it clicks the switch	
DP 28	Cleaning program interrupted by failure	Jammed piston, Power failure	NO Powdered Cleaners, Check other piston codes 1 cleaning tablet per cycle
DP 30	Cleaning completed	Counts # of Cleanings	Should be at least on Cleaning for each day since last service
DP 31	Boiler level too low	Steam boiler slow to fill	Filters, Water flow to machine, Autofill solenoid Steam boiler takes more than 30 sec to fill
DP 32	Piston position	Piston fault code during start-up	Check for other piston related codes
DP 33	Temp brew boiler over 106 deg. C	No signal or high reading from Brew Boiler Temp Sensor	Plug J13 wires on ICU loose Sensor disconnected/plug contact bad Scale build up on Temp Sensor Boiler high limit dirty, leaking mA to Grnd
DP 34	Step motor overheated	Plug in ribbon cable on top of step motor board!	Ribbon Cable to Step Motor Board, Bad Step Motor, Restricted Piston movement, Step Motor Board
DP 40	External error	Can't find external unit	Change External to "0" in Manager Mode
DP 41	Loss of data		Unplug and restart Delete EEPROM, Replace EEPROM chip

Section 7: DP Codes (Protocol)
Cafina c60 Service Manual



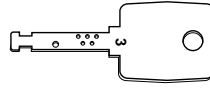
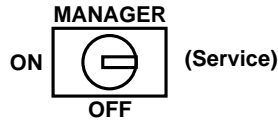
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See the next section to access the Service mode without a Service key



Section 8: Service Mode
Cafina c60 Service Manual



To skip the startup cycle:

Plug the machine back in with the key already in the Service position

or

Turn key from **OFF** directly to **SERVICE** (¾ turn).

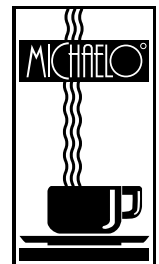
Any programming changes made in Service Mode will only be saved if the shift button is pressed before turning the key back to ON.

product data		View and edit drink specifications
protocol		View and reset Diagnostic Program (DP) codes
handling		Control pump, piston, grinders, valves, and chute cover manually
temperature		Set brewing water temperature
next >>		Next page
caFina c60		

set cleaning		Set # of cycles prior to cleaning warning
filter		Set and reset # of cycles prior to filter change warning.
product names		Edit product names/symbols. Changing names will delete product data!
run reference		Set the fineness of grinding to obtain the desired extraction time for reference drinks. (see Reference Section).
next >>		next page
caFina c60		Return to Service Page 1

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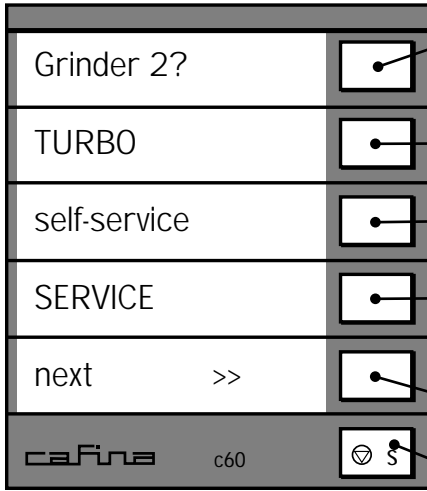


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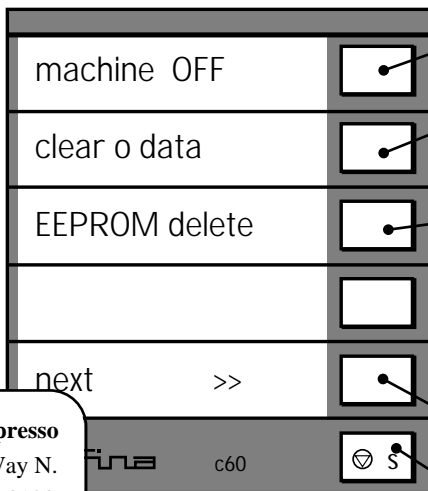
Service Mode

Section 8: Service Mode

Cafina c60 Service Manual



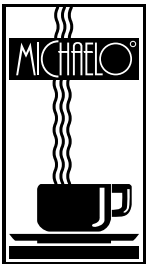
- Used to Factory initialize the machine. Changing will delete all product data
- Not used, set to 0 for all locations
- Set to 0 for all locations
- Enter telephone number to be displayed when service is required
- next page
- Return to Page 1



- Turn machine off
- Resets Piston movement instructions. Turn key OFF then ON to complete.
- Deletes all drink names, product data, o-data, DP codes, and water temperature settings
Machine reverts to default settings
Never touch unless directed by a Michaelo technician
- next page
- Return to Page 1

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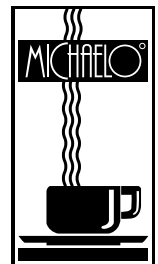


EXTERNAL	<input type="checkbox"/>	Not used Set to 0 for all locations
layout	<input type="checkbox"/>	Not used
unit	<input type="checkbox"/>	Not used
enter prices	<input type="checkbox"/>	Not used
next >>	<input type="checkbox"/>	next page
caFina c60	<input type="checkbox"/> S	Return to page 1

EXTERNAL A/B/C	<input type="checkbox"/>	Not used Set to "A" for all locations
language	<input type="checkbox"/>	Not used Set to "language for all locations
	<input type="checkbox"/>	
	<input type="checkbox"/>	
	<input type="checkbox"/>	
caFina c60	<input type="checkbox"/> S	

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Handling

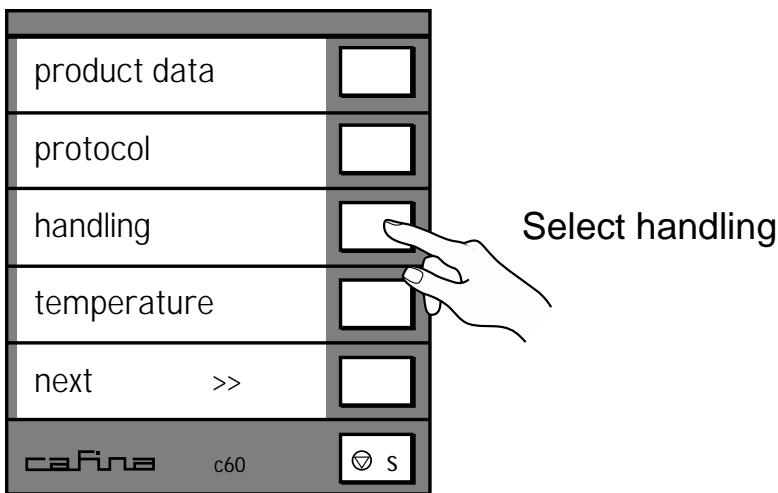
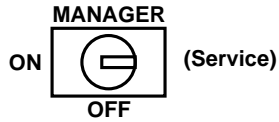
Page 1 of 2

Section 8: Service Mode

Cafina c60 Service Manual

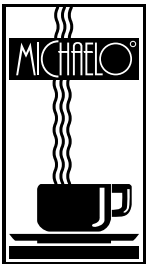
The Handling section is used to test the operation of individual parts of the machine without having to run complete cycles.

Key to Service Position

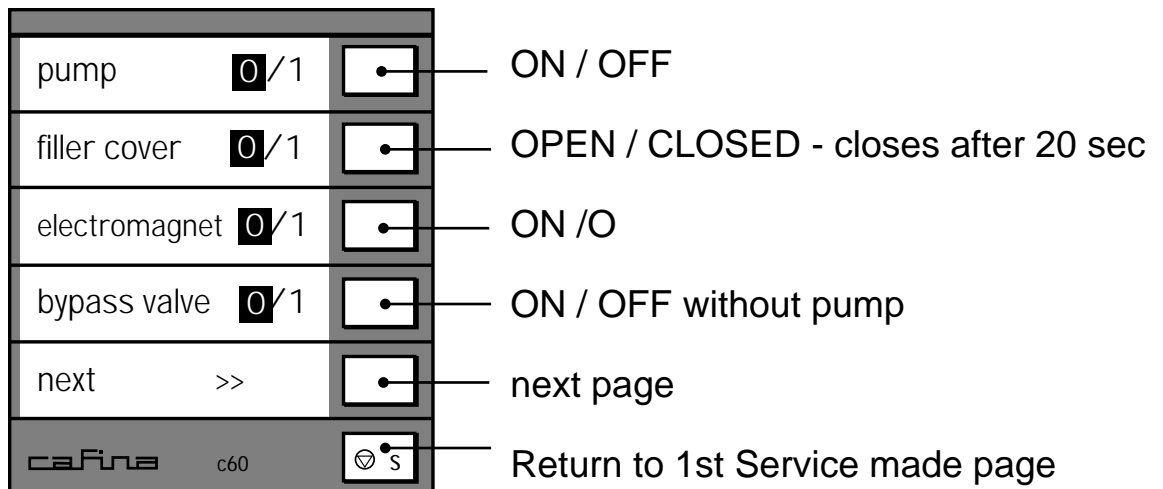


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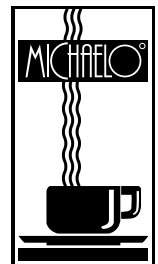
piston up		Raise Piston
piston down		Lower Piston (4 sec delay before lowering)
slider in		Move Slider in (only with Piston raised)
slider out		Move Slider out
next >>		next page
caFina c60		Previous page

brewing valve 0/1		ON / OFF (only if piston is down)
pressing valve 0/1		ON / OFF (only if piston is down)
bypass valve 0/1		Open Bypass Valve and runs Pump
next >>		next page
caFina c60		Previous page

grinder 1/2 1		Select Grinder 1 or 2 for next 3 buttons
grinder start		Grinds and ejects from selected grinder
grinder fine		run adjuster on selected grinder
grinder coarse		run adjuster on selected grinder
END >		piston returns to home position
caFina c60		Previous page

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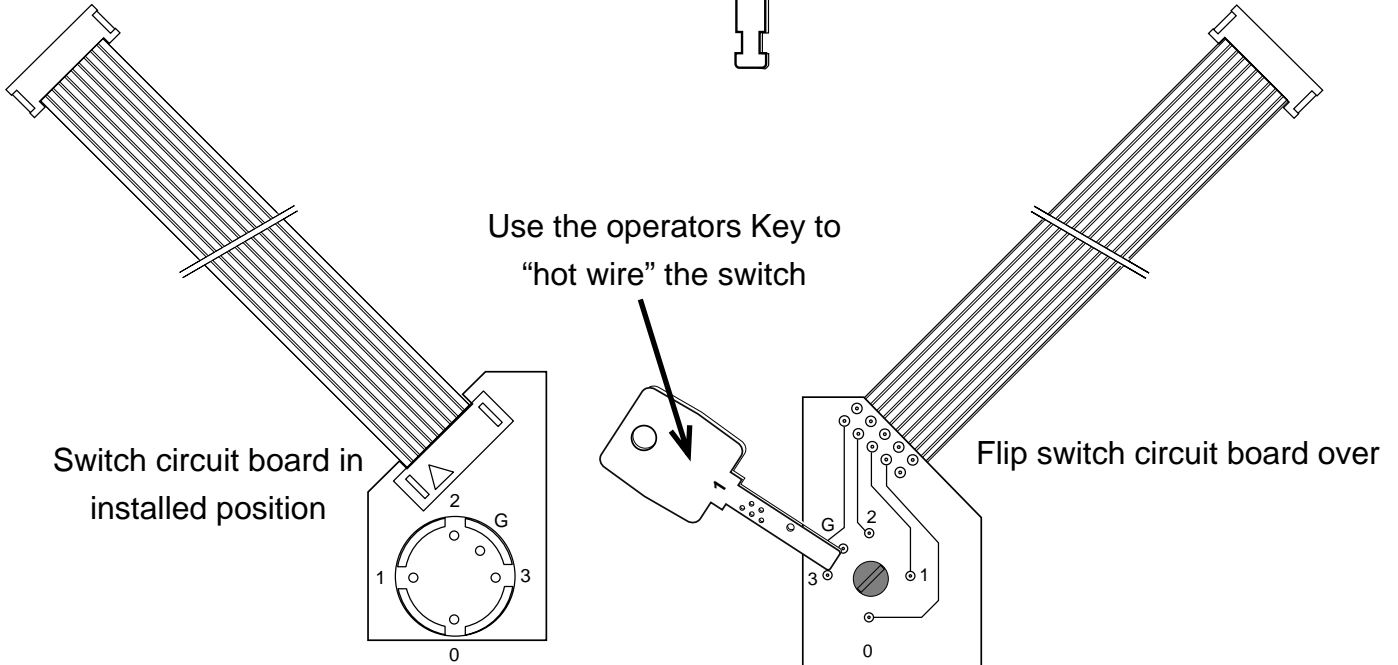
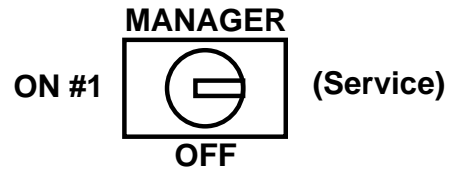
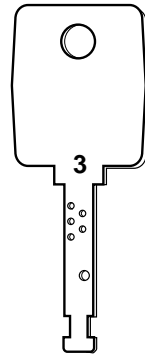
Service Mode Without a Key

Page 1 of 1

Section 8: Service Mode

Cafina c60 Service Manual

The SERVICE mode is the unmarked 3 o'clock position of the key switch. Only a #3 technicians service key will turn to this position.



Setting the Cafina to the SERVICE Mode without a Service Key

1. Remove the top cover.
2. Remove circuit board from the back of the key switch by carefully pulling it straight back. (circuit board carries only 5 volts DC and is safe to handle)
3. Turn the board over .
4. Briefly short the #3 terminal to the Ground terminal with the tip of the operators key.

Machine will stay in SERVICE until circuit board is replaced.

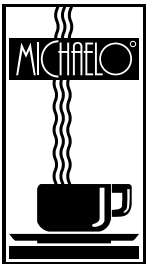
To return to **ON** or **MANAGER** mode, carefully plug board back into switch.

G to #1 for ON

G to #2 for manager

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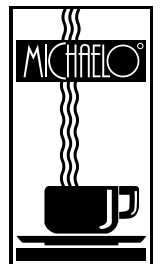
USA 3.51 CPU Default Programming

Page/ Button	Beverage Name	1 or 2 Cups	Grinder 1/2/3	# or Repetitions	Reference	Relieve	Pre- Infusion	Comp- pression	Water Quantity	Coffee Quantity	By-Pass	Dispensing Time
1/1	Single	1	1	1	0	0	1	125	35	7.5	1%	
1/2	Double	1	1	1	1	0	0	80	65	14	1%	14
1/3	Triple	1	1	1	0	2	0	25	100	15	30%	
1/4	Americano 12	1	1	1	0	2	0	25	350	14	99%	
1/5	Americano 16	1	1	1	0	2	0	25	435	15	99%	
2/1	Single D	1	2	1	0	0	1	125	35	7.5	1%	
2/2	Double D	1	2	1	1	0	0	80	65	14	1%	14
2/3	Triple D	1	2	1	0	2	0	25	100	15	30%	
2/4	Americano 12 D	1	2	1	0	2	0	25	350	14	99%	
2/5	Americano 16 D	1	2	1	0	2	0	25	435	15	99%	
4/1	Double D	1	2	1	1	0	0	80	65	14	1%	14
4/3	Double	1	1	1	1	0	0	80	65	14	1%	14
4/5	Americano 12	1	1	1	0	2	0	25	350	14	99%	



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Check Drink data

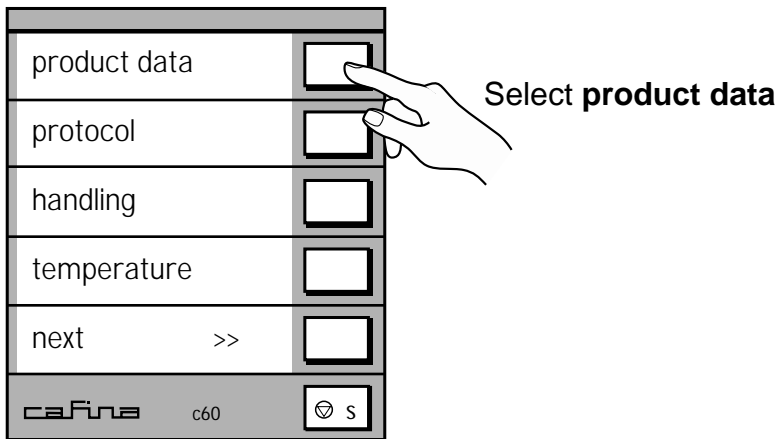
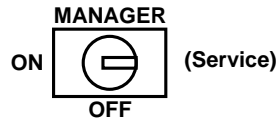
Page 1 of 3

Section 9: Programming
Cafina c60 Service Manual

The drinks are set by Michaelo Espresso to make best use of the Cafina. Changing them may adversely affect the machine performance.

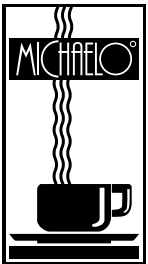
- Press the button next to the drink name to cycle through all available drinks
- Set values for each drink to match values on product data sheet
- You can only move forward through these screens
- Press Shift to exit or start over

Turn key to Service position

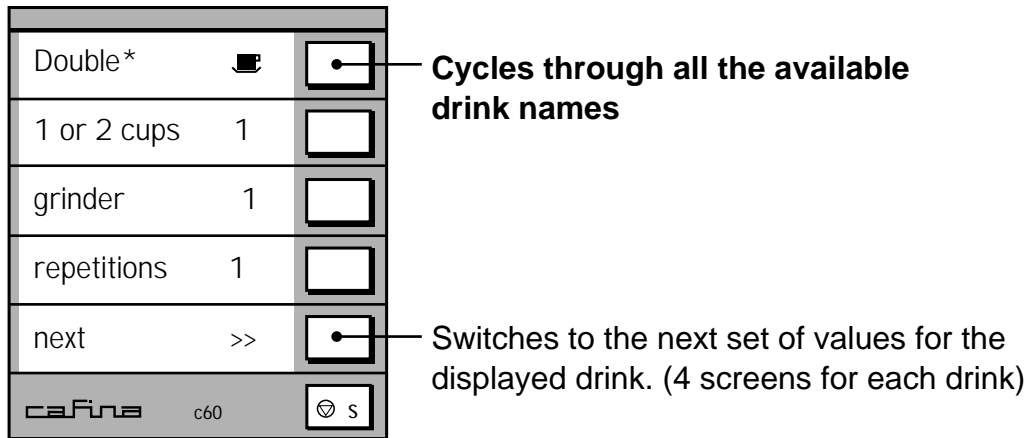


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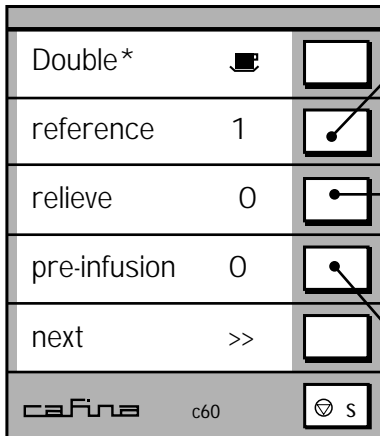


9



Screen 1

- Not Used (Caution: do not change)
- Selects hopper
1 = Right hopper 2 = Left Hopper
- Automatically repeats drink if set to more than 1



Screen 2

Sets reference beverage
(allows only one per hopper)

Backs off tamping pressure
halfway through shot

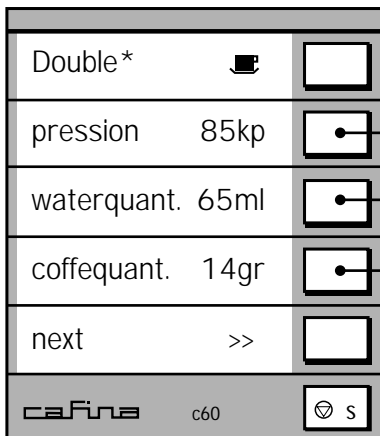
- 0 = OFF
- 1 = low
- 2 = medium
- 3 = high

Improves flow of espresso
shots over 100ml water

Extends the time water is
in contact with the coffee

- 0 = OFF
- 1 = 1.5 seconds
- 2 = 3 seconds
- 3 = 5 seconds

Used for shots of less than
40ml water



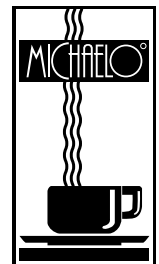
Screen 3

- Tamping pressure (80 KP = 30 psi)
- Water Quantity
- Coffee Quantity (max 18 grams)

Select these to display adjusting screen
(see next page)

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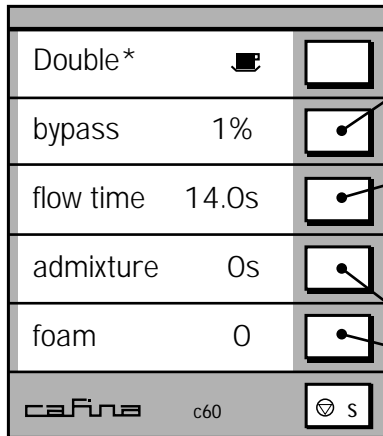
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Check Drink Data

Page 3 of 3

Section 9: Programming

Cafina c60 Service Manual



Screen 4

Sets amount of plain water added at the end of shot to clear spout

Opens shot time test page

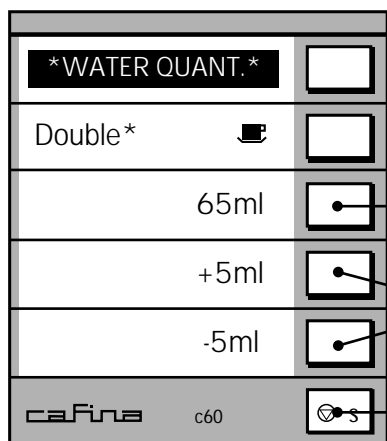
Brews and times one shot

Pre-set time is changed only on Run Reference age

Not used

Sample Adjusting Screen

Tamp Pressure, Coffee and Water Quantities, Bypass amount



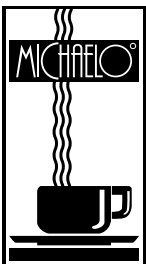
Current quantity

Changes quantity

Locks in new value and returns to product data pages

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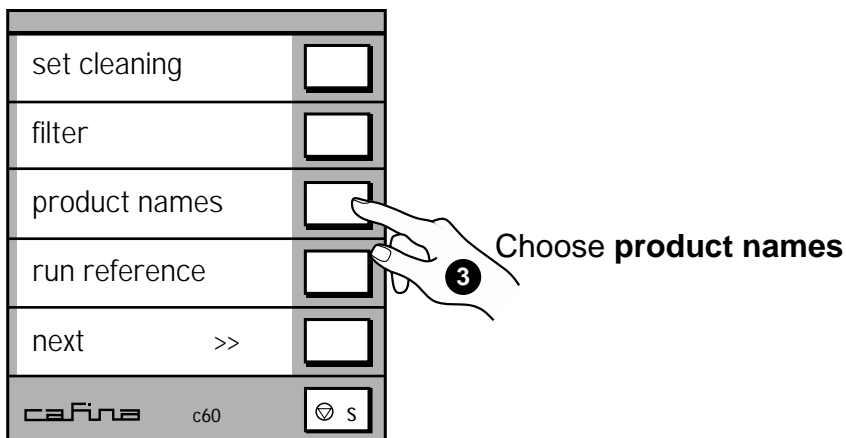
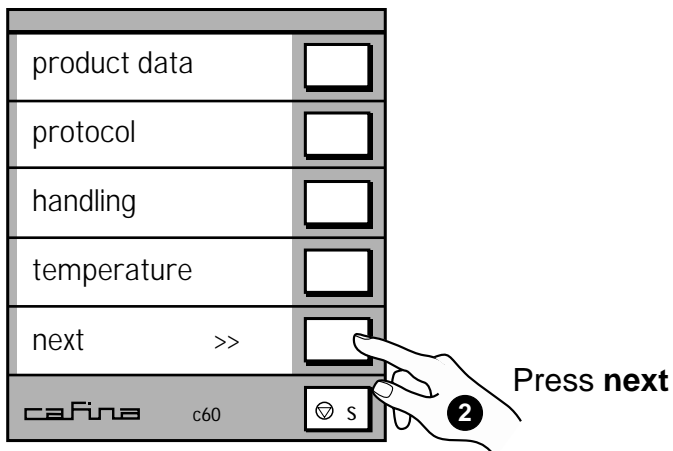
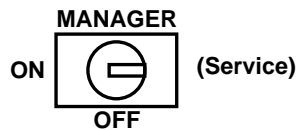
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WARNING:

Making any changes to an existing drink name will delete all Product Data for that drink.

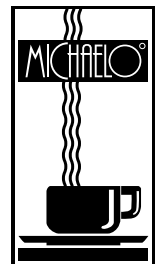
9

① Turn key to Service position



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Change Drink names

Page 2 of 3

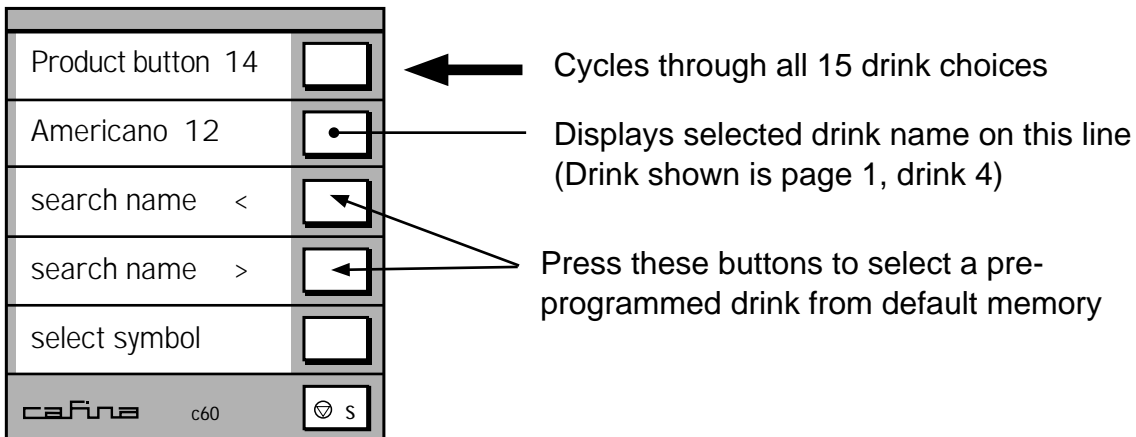
Section 9: Programming
Cafina c60 Service Manual

Use the first button to cycle through all drink lines and stop on the one that you wish to change. (Drink will be displayed on line 2)

There are two different ways to add or change a drink name:

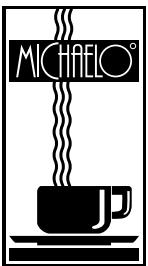
1. Use the “search name” buttons to select a pre-programmed drink from the default memory. (Software v3.51 has more usable drinks) “OFF” will produce a blank line on the menu.
2. Manually enter a drink name by pressing button next to the selected drink on line 2.

1. Select a Pre-Programmed Drink

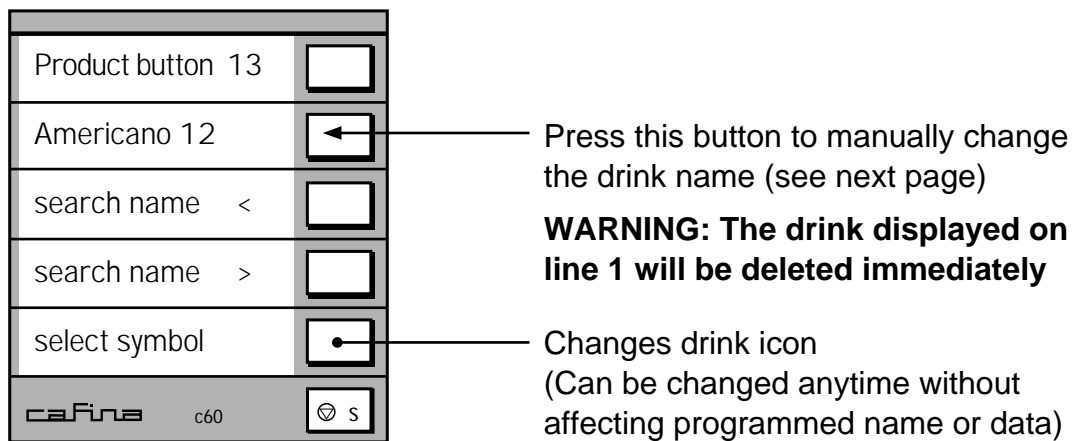


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2. Manually Enter Drink Name



A		Display
next >		Moves cursor one space to the right
A - Z		Cycles through alphabet on selected space
characters/ 0-9		Numbers and other characters
capitols		Switches between capitols and lower case
caFina c60		

Sample Name Entering Screen

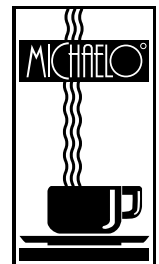
Espress		
next >		
a - z		
characters/ 0-9		
capitols		
caFina c60		← Press Shift to lock new name in

- Continue moving cursor to the right one space at a time
- Cycle through letters and characters at each space until you spell the desired product name
- The cursor will not move backward. If you make a mistake you must press Shift to start over

There will be no Product Data values for the new drink
Enter desired values in the **Product Data** Section.

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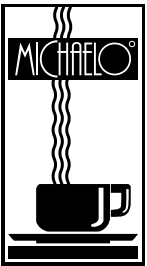


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10

Grinder burrs will typically last for over 50,000 single shots or 800-1000 lbs of coffee. The actual life of the Burrs will depend on the type of coffee used and the operating conditions. (20,000–30,000 or more on the machine counter is typical)

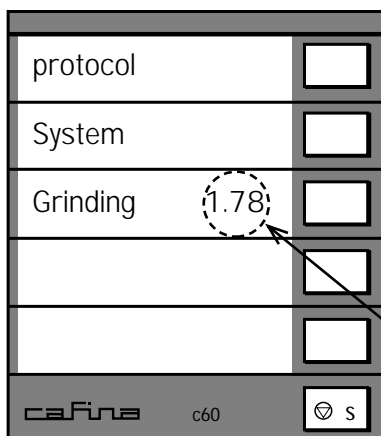
Burrs start out grinding between 1.4 & 1.9 seconds for a Double. They are typically replaced when the Grinding time for a Double reaches 2.5 seconds. (Call Michaelo for advice when grind time is over 2 seconds)

Worn burrs will cause inconsistent coffee extraction and may eventually jam the grinder. The grinder may be jammed if the machine gives repeated DP8's and you don't hear the grinder run.

Worn burrs may also cause additional heat buildup, which may cause machine errors.

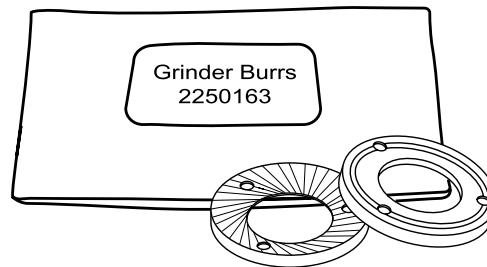
The **Double*** & **Double D**** reference drinks are used to check the grind time for each grinder

V3.51 Software automatically displays the grind time of the last drink made on page 3 in Manager mode



Page 3 Manager Mode

Burrs 2250163
Always replace burrs
as a matched pair



Displays the grind time of
the last drink made

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Change Grinder Burrs

Page 2 of 5

Section 10: Maintenance

Cafina c60 Service Manual

Scoop as many beans as possible out of the hoppers using a paper cup do not put your fingers into the grinders!

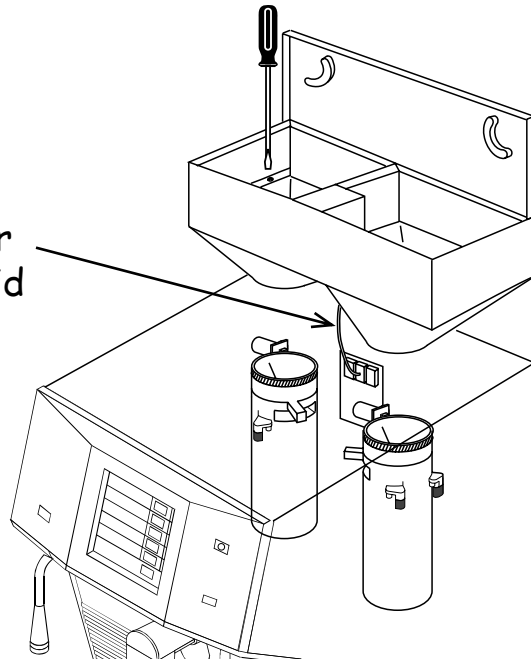
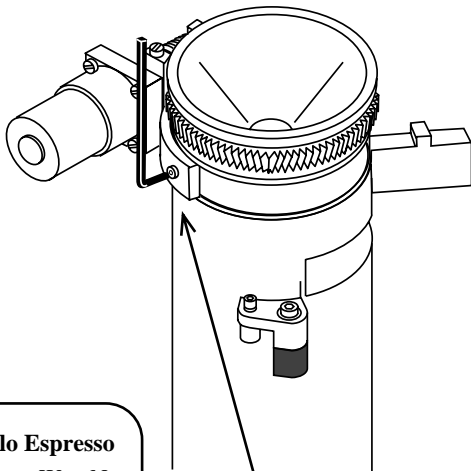
Run drinks from the grinder you are going to change until the screen reads "refill hopper"

Unplug the machine

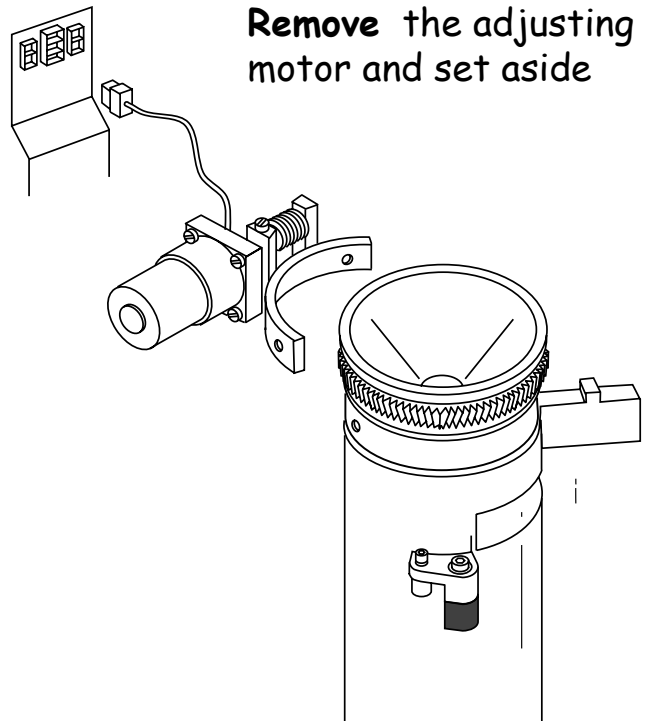
Loosen the hopper screws
Be careful not to drop a screw into the grinder

Unplug the wire connector for the cleaning lid solenoid

Remove the hopper and set aside



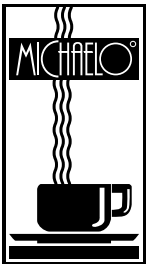
Remove the adjusting motor and set aside



Remove the adjusting motor's 4mm Allen screws

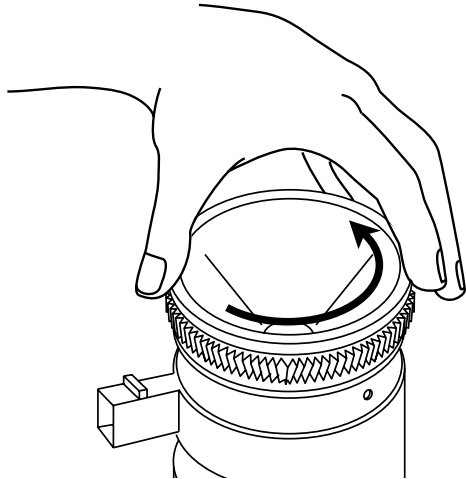
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10

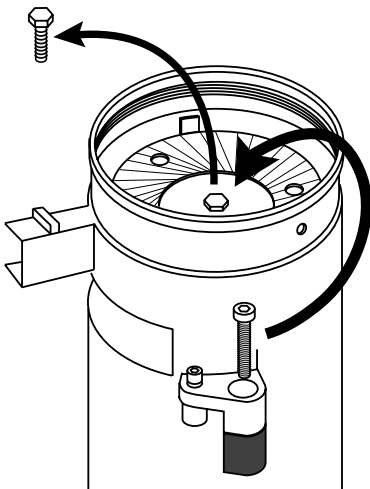
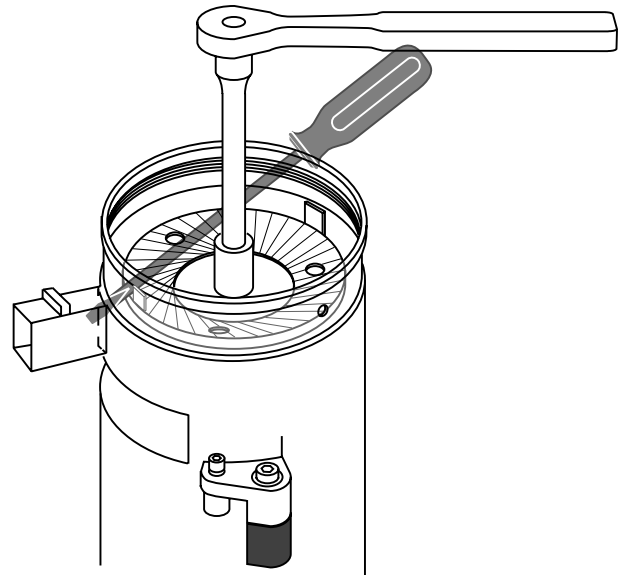
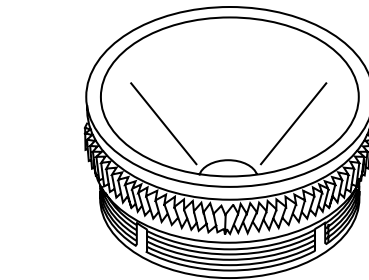


Remove the Grinder Collar

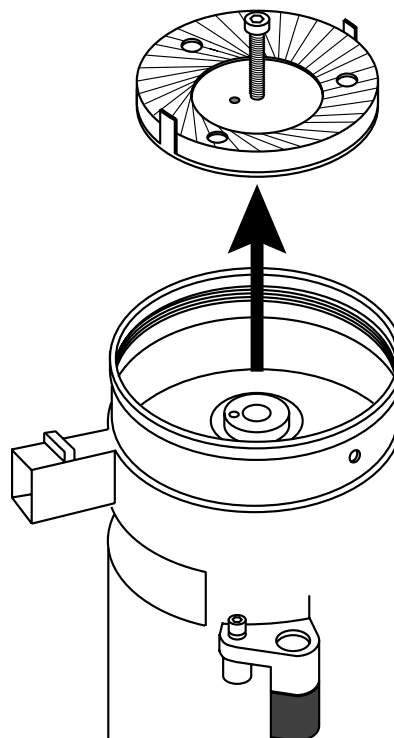
Remove the center bolt from lower burr holder with a 8mm socket.

Use a screwdriver to prevent the burr from turning.

Set the center bolt aside.

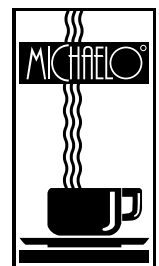


Borrow a 5mm grinder mounting screw to use as a puller to lift the lower plate out. Be careful not to lose the small drive pin in the lower plate.



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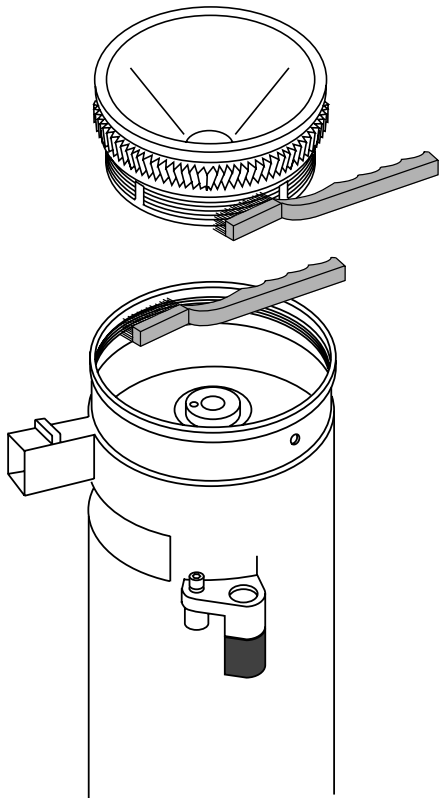
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Change Grinder Burrs

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Section 10: Maintenance

Cafina c60 Service Manual

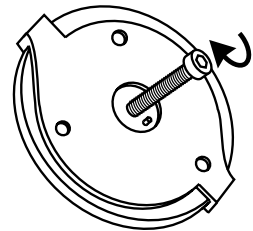


Vacuum the coffee residue from inside the grinder and thoroughly clean the threads with a wire brush
Or **Push** the excess grounds out the chute then wipe the inside clean with a lightly oiled rag

Install the new burrs—tighten screws firmly

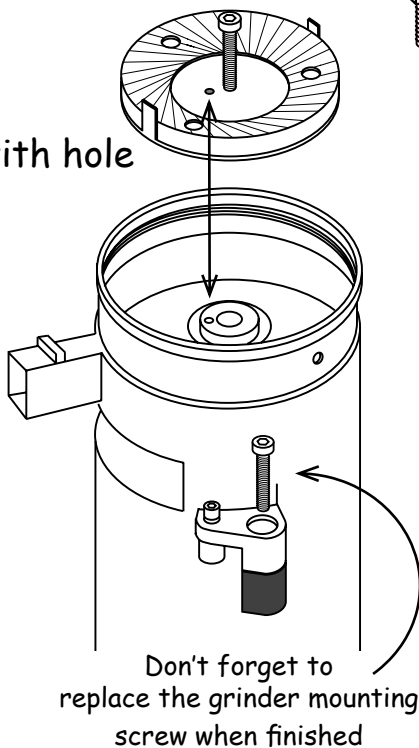
Wipe the threads clean with a rag lightly coated with WD-40 or similar oil

Thread the mounting screw through the back of the burr holder to clean out the threads



Center bolt

Align pin with hole



Reinstall the lower burr holder:

Turn motor shaft so the hole points to the spout.

Hold burr holder so that the pin aligns with the spout.

Lower holder until seated, it should rock slightly and not scrape the sides when rotated

Remove puller screw and replace center bolt.

Tighten the center bolt very firmly

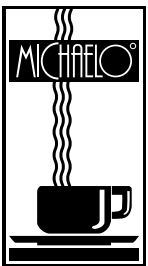
Holder should still turn freely

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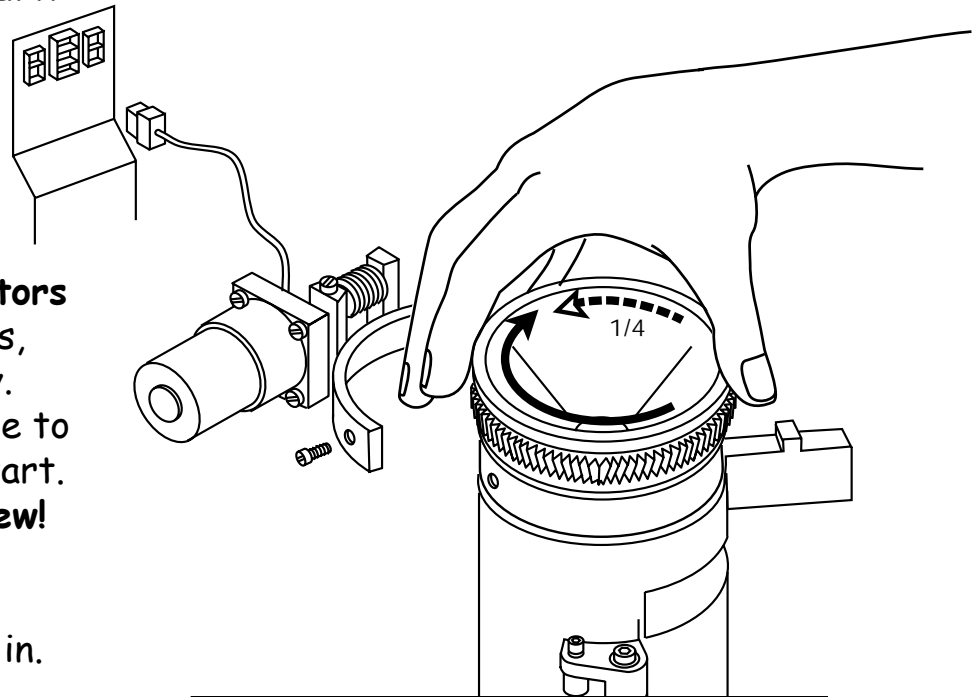
Carefully screw collar back on
Do not cross thread! The grinder threads
are softer than the collar threads

Screw the collar down until burrs touch,
then **back off** 1/4 turn

10

Reinstall Adjusting motors
Do not force the screws,
the threads strip easily.
Switch screws from side to
side if one is hard to start.
Don't use a longer screw!

Plug the Adjuster back in.



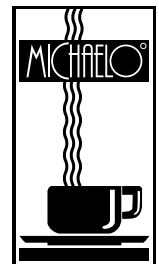
If you accidentally strip an adjusting motor screw thread, swap the grinders to bring fresh holes into position. Do not use a longer screw. Mark the stripped hole with a black arrow

Reinstall the Hopper, don't forget to re attach the
cleaning cover plug.

You Must Run reference with new burrs.
**The collar setting is approximate and must
be reset to get an accurate shot time.**

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Grind Time Check

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Cafina c60 Service Manual

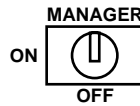
The condition of the grinder burrs is monitored by watching the change in grinding time for the reference drinks. The grind time increases as the grinder burrs wear out. Worn burrs take longer to grind the same amount of coffee.

The time displayed will always be the time of the last drink made.

V3.51 Software automatically displays the grind time of the last drink made on page 3 in Manager mode (If Grind time doesn't display in Manager, go to main Reference page in service to see time.)

① Select the Reference Drink you wish to check and allow the machine to brew it. Reminder: The Reference Drink name is followed by an asterisk.

② Turn key to Manager position



③ Press Shift twice to view 3rd Screen of Manager Mode and note the time recorded next to Grinding.

Single		<input type="text"/>
Double*		<input type="text"/>
Triple		<input type="text"/>
Americano 12		<input type="text"/>
Americano 16		<input type="text"/>
caFina c60		S

Default 1st page of drink menu when machine is on

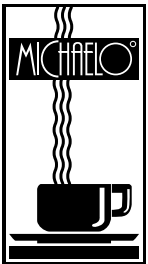
Manager Screen 3

protocol	<input type="text"/>
System	<input type="text"/>
Grinding (1.78)	<input type="text"/>
	<input type="text"/>
	<input type="text"/>
caFina c60	S

Grinding time for last drink brewed

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★ Evaluating Grinder Burr Condition from the Grind Time Reading ★

FOR 14 GRAM DOUBLE SHOT*

New Burrs = less than 1.7

Normal Burrs = 1.2 - 2.25**

*If Double Shot is not 14 Grams, call Michaelo for grind time range

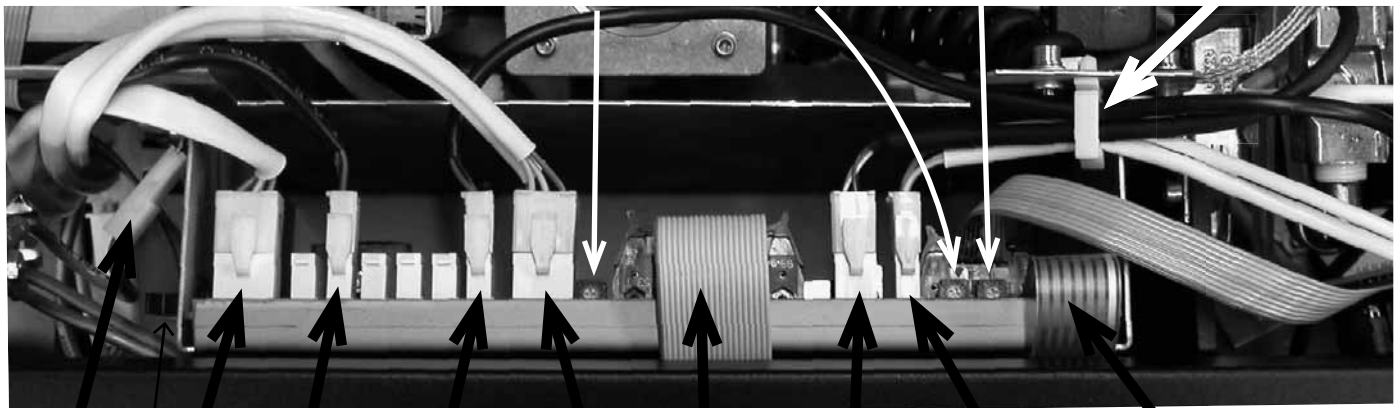
**If time = greater than 2.25 - Call Michaelo for advice

- Unplug machine
- Disconnect all plugs from top of board
Press locking tab and pull plugs straight back
Gently rock buttons ribbon cable and pull straight up
Open locking wings to remove gray ribbon cables
- Remove wires from retaining clip on right side
- Remove ground wire
- Disconnect 3" ribbon cable from left side of board
Open locking wings and rock connector out
- Hold blue buttons and gray display ribbon cables out of the way and lift board up out of rails

10

Caution:
 Adjusters are fragile.
 Use a small Phillips head
 screwdriver and light
 pressure!

Adjustments for: Display contrast Line pot Keypad sensitivity Retaining Clip



Ground J4 J6 Water Button J10 Steam Button J11 Piston Display J12 Line Pot J13 Auto fill / Brew temp Keypad Buttons



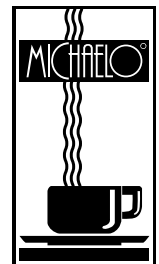
3" Ribbon Cable

Reverse steps to install new board:

- Hold blue and gray display Ribbon Cables out of the way while sliding new board onto nylon rails
- Reattach all connectors
- Plug machine in, allow to go through start-up
- Clear 0-data
- Adjust Display Contrast
- Adjust keypad buttons sensitivity
thump panel next to buttons to check
- Set line pot to 0 in reference page
- Run reference for both grinders

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Flowmeter Service

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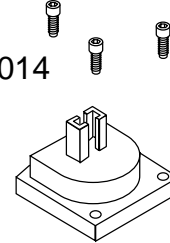
The fastest and easiest way to service the flow meter is to remove the entire Flowmeter assembly through the rear (non-operator side) of the machine. Only two plumbing fittings need to be disconnected.

Removing the entire meter allows thorough cleaning of the inlet & outlet ports

Flowmeter Service:

- Remove the 3 screws that hold the cap in place
- Remove impeller and o-ring
- Unscrew the inlet tube from the back of the meter body
- Check for obstruction in the small inlet port
- Clean the port with a fine wire, Careful not to enlarge the hole!

Screws 2300014



O-ring 2500015



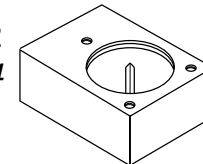
Impeller 2700165



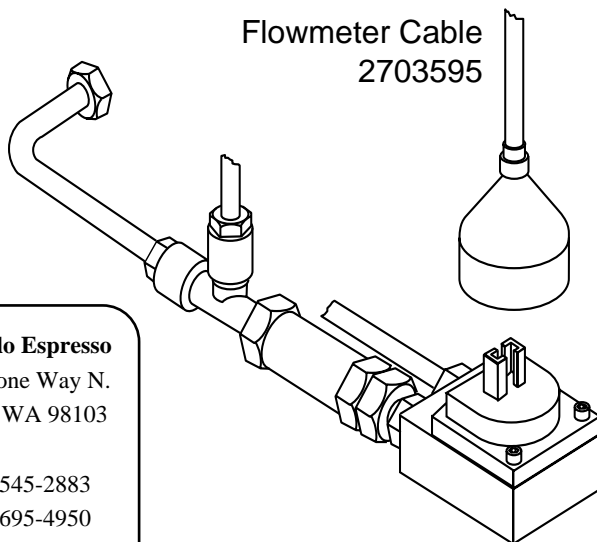
Inlet nipple 2403192
Nylon seal 2500059



Outlet nipple 2403182
o-ring 2503004



Flowmeter with cap 2703578



Flowmeter Cable
2703595

Complete Flowmeter w/check
valve and copper tube
2253679

Flowmeter Removal:

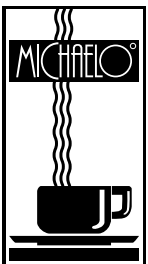
1. Shut off water supply
2. Remove Top Cover, Sides & Back Panel
3. Remove the electric plug from the top of the Flowmeter
4. Disconnect the copper tube from the rear of the lower boiler
5. Disconnect the flexible input tube from the top of the pump
6. The complete Flowmeter assembly can now be removed straight out the back of the machine

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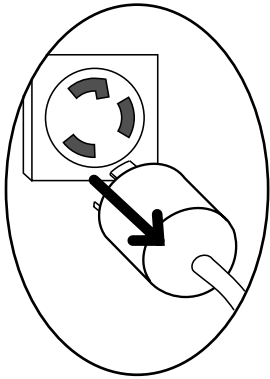
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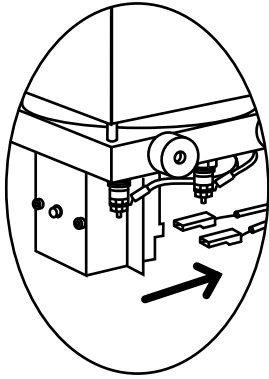


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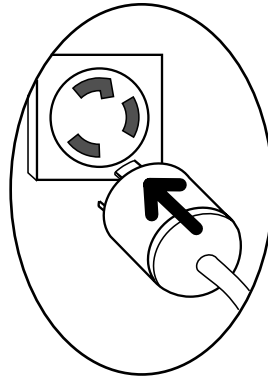
Hot Boiler:
Bleed Pressure First



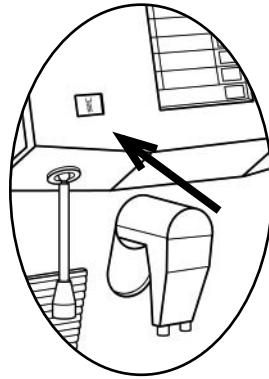
Unplug Machine



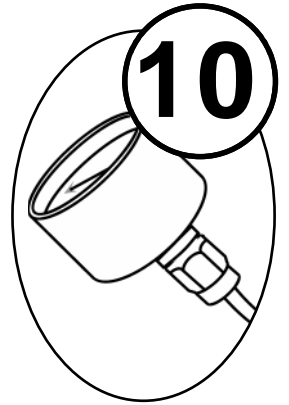
Disconnect power leads from boiler



Plug back in

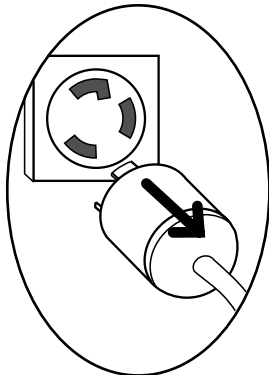


Press water button to bleed pressure

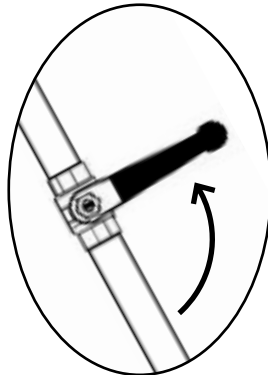


Check that steam gauge reads 0

Remove Boiler:



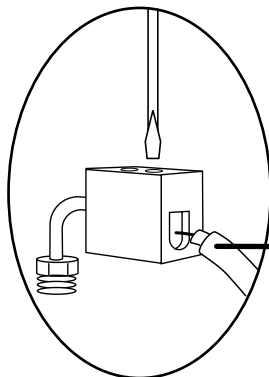
Unplug Machine



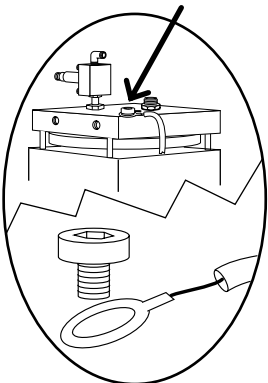
Shut Off Incoming Water Supply



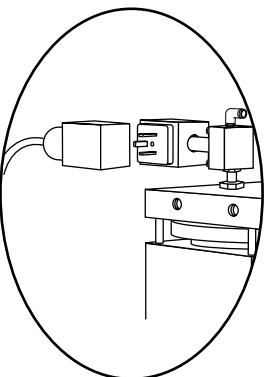
Loosen the 4 Front Panel Screws



Disconnect Wire to Autofill Probe



Disconnect Ground Wires on Top and Bottom of Boiler

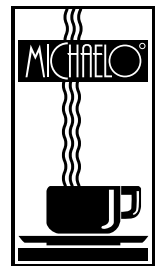


Remove Connectors from Valve Coils Label for reassembly



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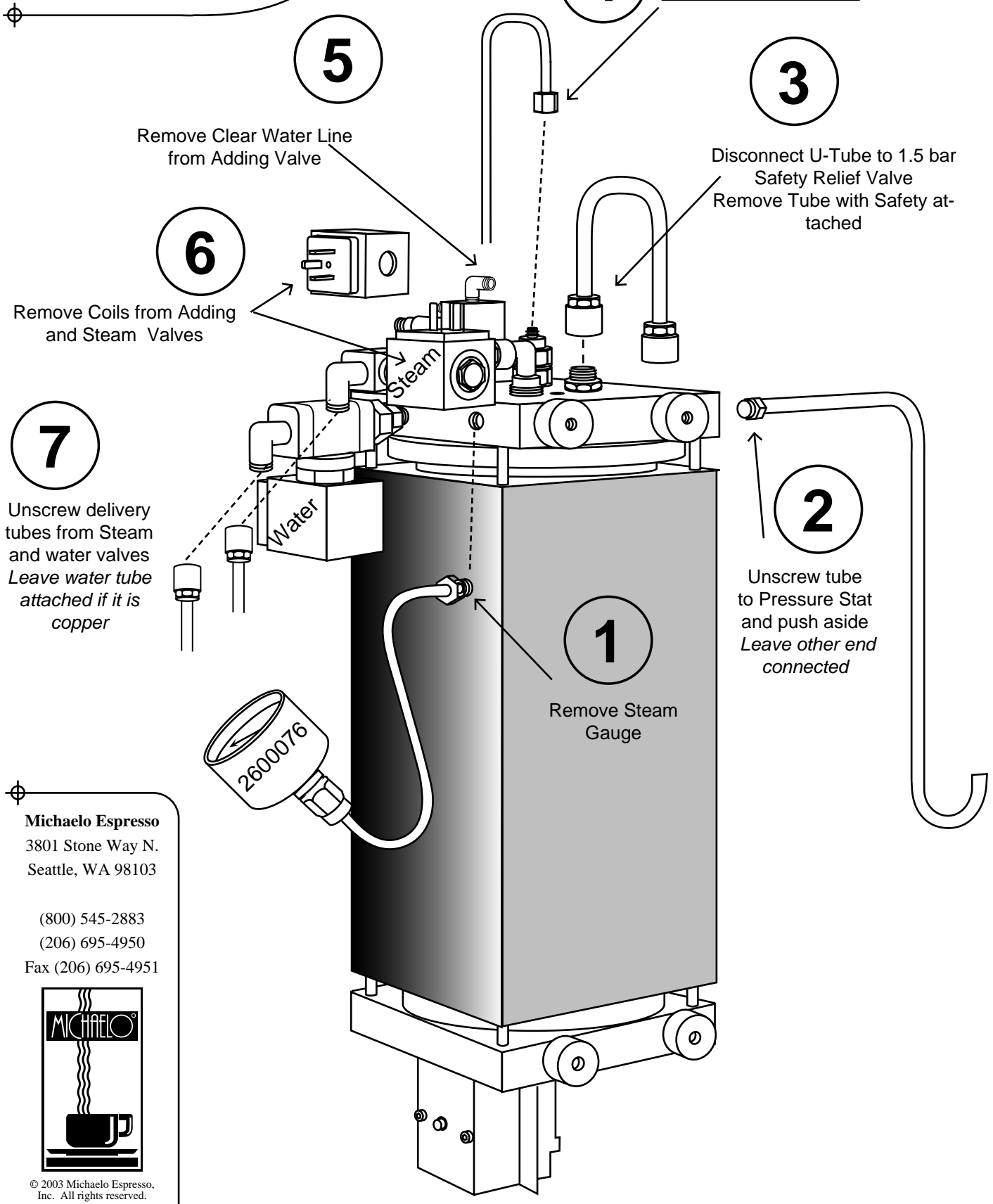
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Steam Boiler replacement

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Section 10: Maintenance

Cafina c60 Service Manual



7

Unscrew delivery tubes from Steam and water valves
Leave water tube attached if it is copper

6

Remove Coils from Adding and Steam Valves

5

Remove Clear Water Line from Adding Valve

4

Disconnect vent Tube

3

Disconnect U-Tube to 1.5 bar Safety Relief Valve
Remove Tube with Safety attached

2

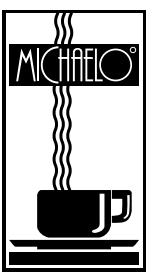
Unscrew tube to Pressure Stat and push aside
Leave other end connected

1

Remove Steam Gauge

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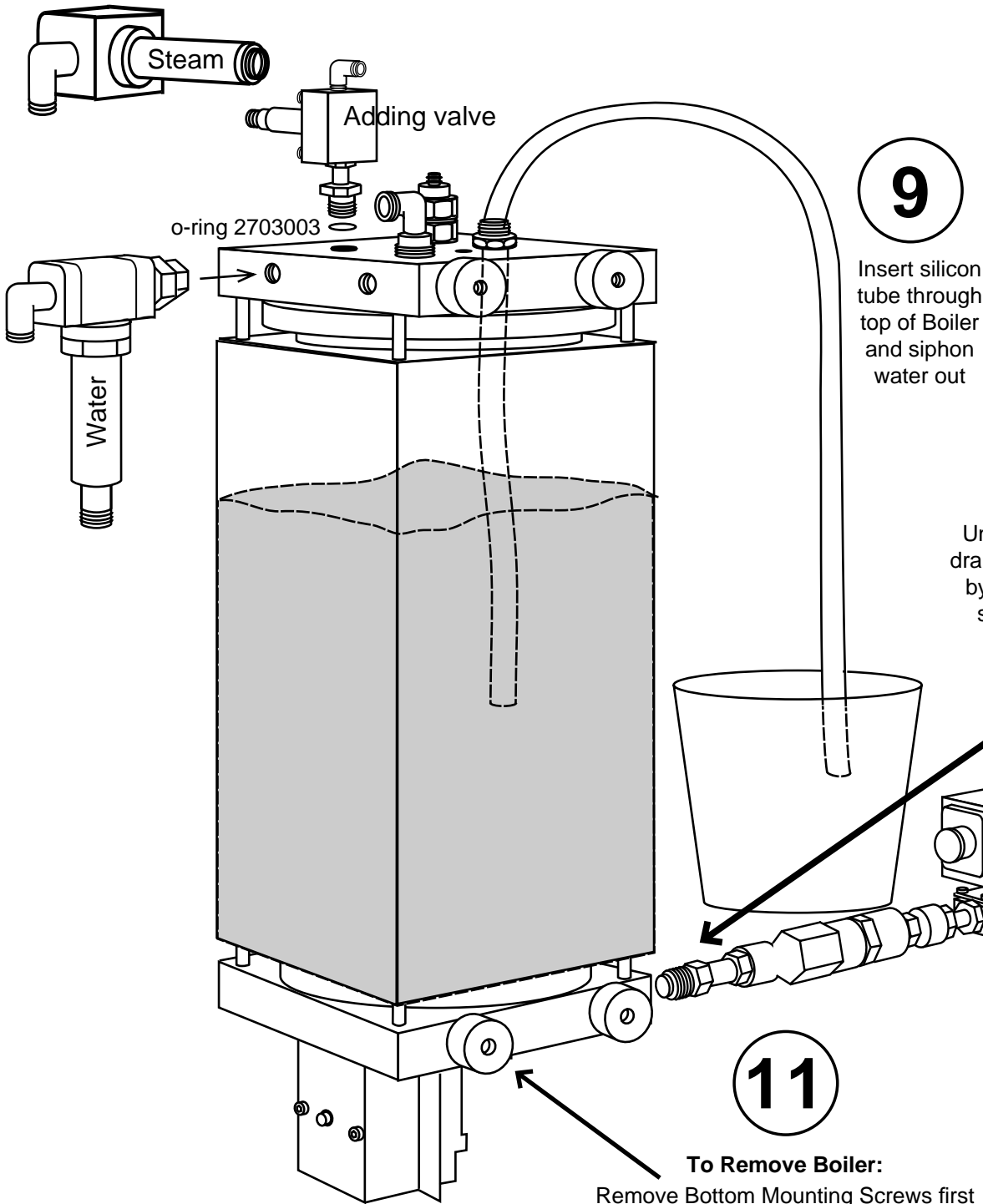


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8

Remove Steam and Water valves
Water valve with Copper delivery tube Should be removed after Boiler is out

10



9

Insert silicon tube through top of Boiler and siphon water out

Unscrew the water inlet drain any remaining water by quickly inserting the silicon tube into hole

10

11

To Remove Boiler:
Remove Bottom Mounting Screws first
Hold top of Boiler and remove top screws
When reinstalling Boiler replace top screws first

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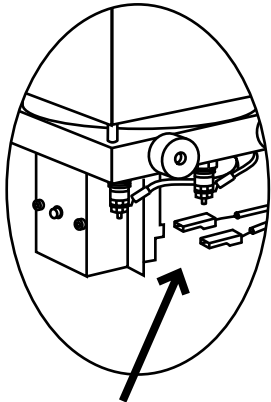
Steam Boiler replacement

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Section 10: Maintenance

Cafina c60 Service Manual

Machine may be plugged in for boiler testing before the
Piston has been installed
**TURN KEY TO THE SERVICE POSITION BEFORE
PLUGGING IN WITHOUT PISTON**



**DO NOT CONNECT
POWER LEADS TO
ELEMENT WITH
BOILER EMPTY!**
**Plug machine back in
and allow boiler to fill
first**

Install new boiler:

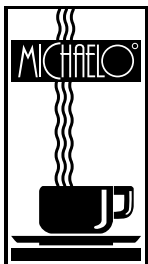
- Make sure drain manifold and solenoid plugs are pushed to the left side
- Lower boiler into place and loosely install the mounting screws, top screws first
- Position pressure stat tube in place, tighten fitting
- Tighten mounting screws
- Attach Autofill pipe
- Install water-dispensing valve
- Install Steam valve, Connect Teflon line first for new style steam wand
- Attach Steam gauge assembly
- Attach Pressure relief/vent tube assembly; make sure braided drain line isn't pressed against boiler
- Connect Adding valve clear water line; line should pass between top mounting pads
- Install coils on steam and adding valves
- Attach plugs to coils, Steam valve plug should point up and Adding valve plug should point to the display panel.
- Connect ground wires on top and bottom
- Connect Autofill probe wire
- Turn on Water supply, check for leaks
- Plug Machine in with the Key in the Service position and allow to autofill
- When autofill shuts off Unplug machine and connect element power leads
- Pressure stat should open between .9 – 1.2 bars

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External Parts

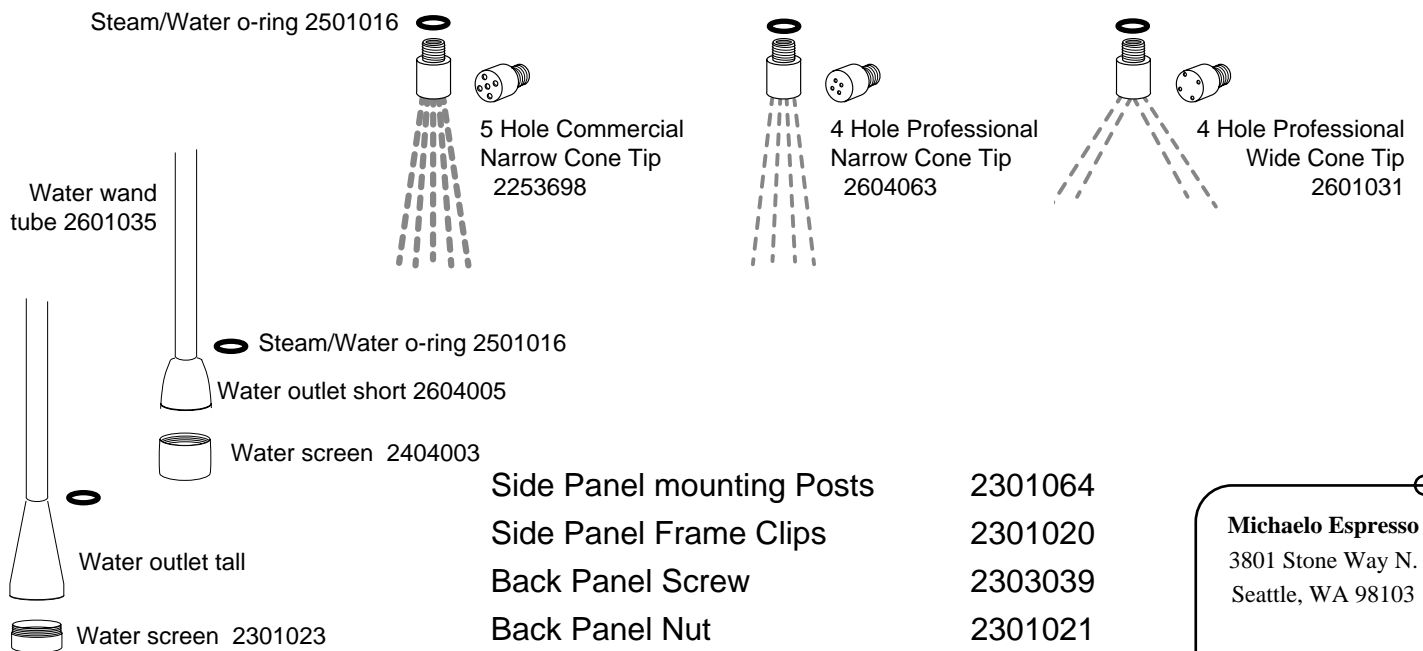
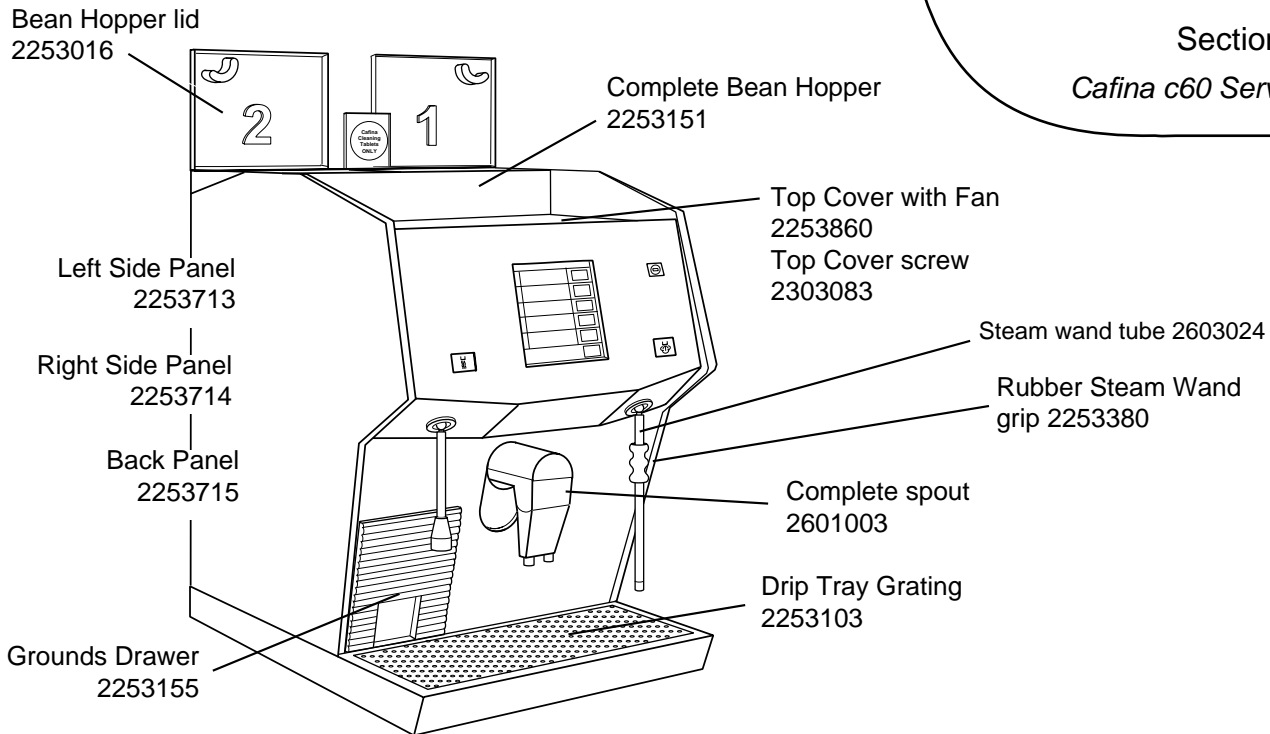
External Parts

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Section 11: Parts

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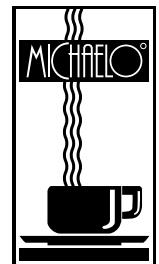
11



Side Panel mounting Posts	2301064
Side Panel Frame Clips	2301020
Back Panel Screw	2303039
Back Panel Nut	2301021
Bolt for Legs	2303077
Short Leg	2253177
Long Leg with threaded hole	2253652
Plastic insert for Long Leg	2303097
Long Leg with threaded post	2254996
Leg leveling screw	2304131
1.5 Meter Braided Water Line	2402067
Sealing washer for Water Line	2500055
Drain Line	DHOSE

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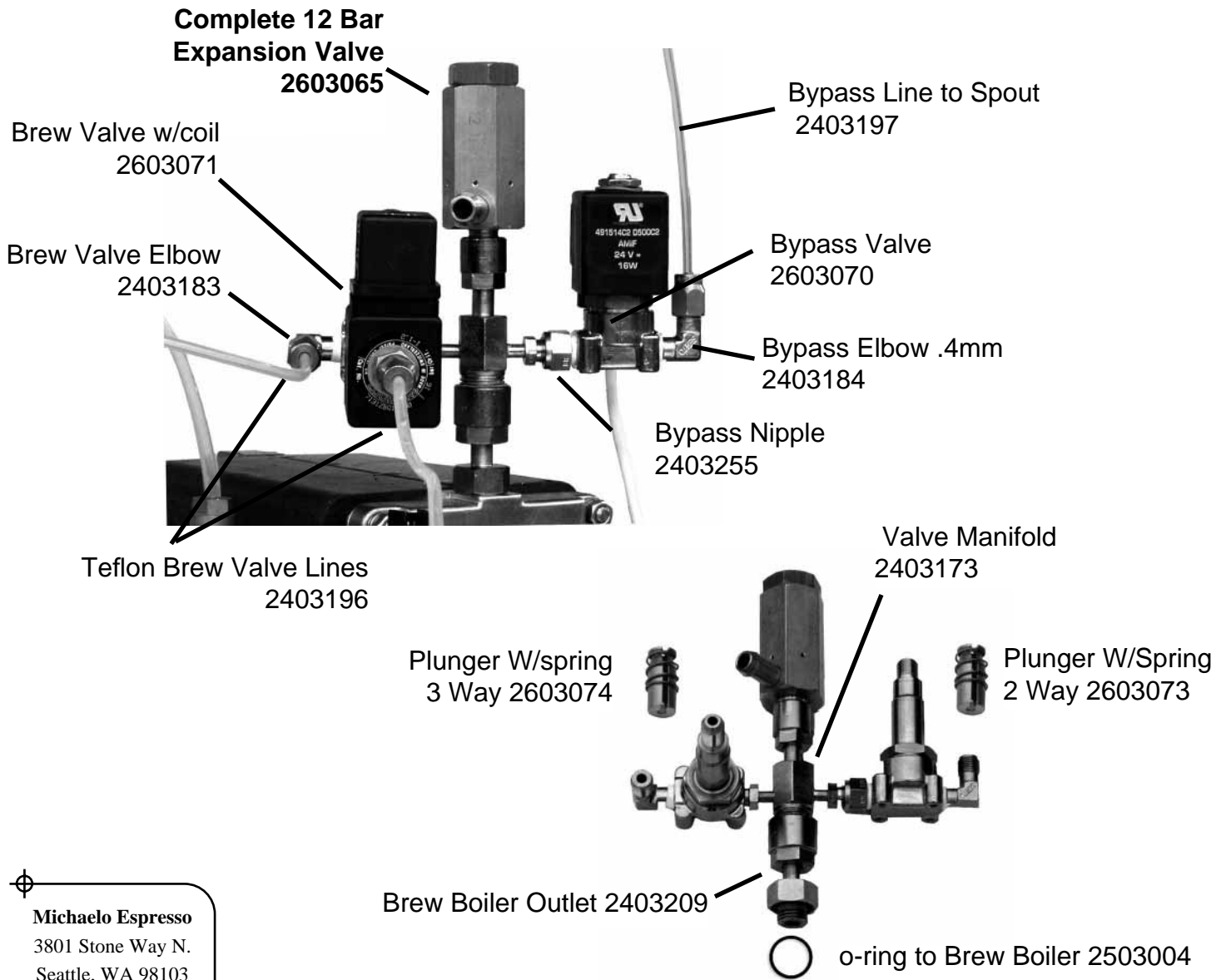
Brew Boiler Valves

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Section 11: Parts

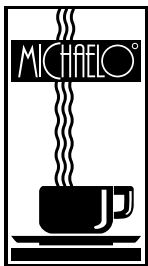
Cafina c60 Service Manual

Brew and Bypass valves must always be ordered with Elbows and Nipples
Replace delivery lines when replacing valves



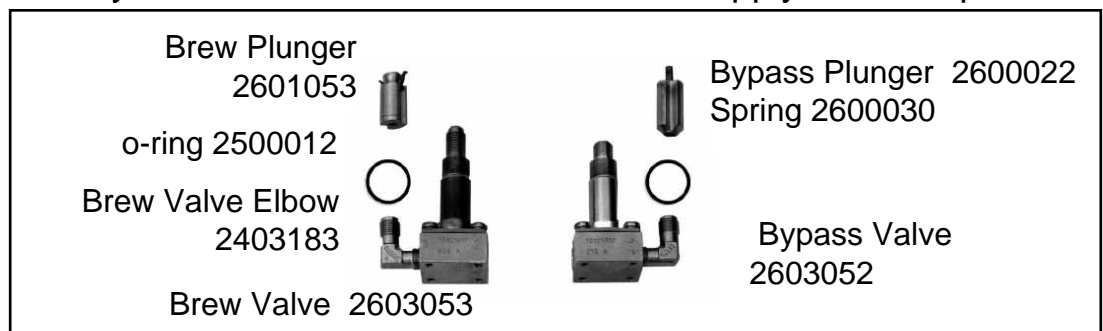
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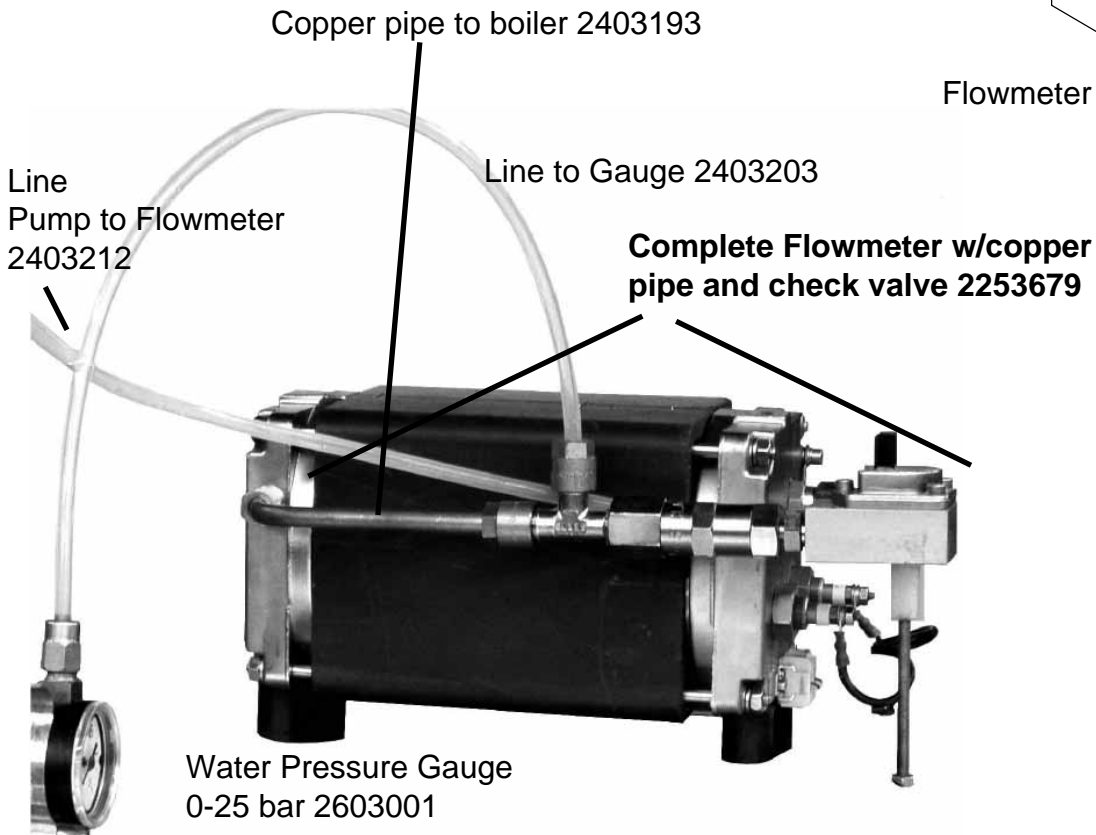
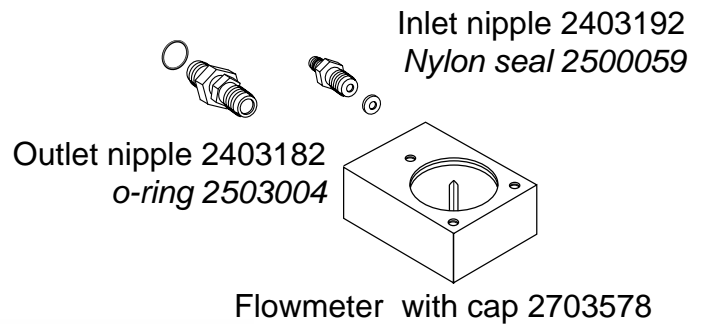
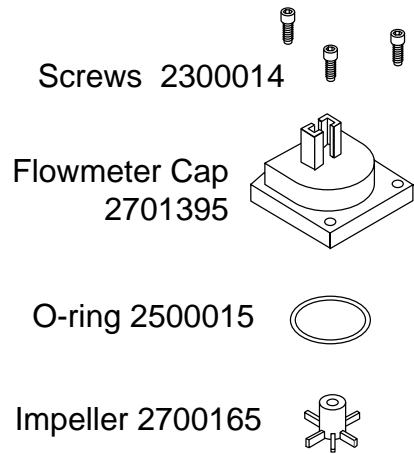
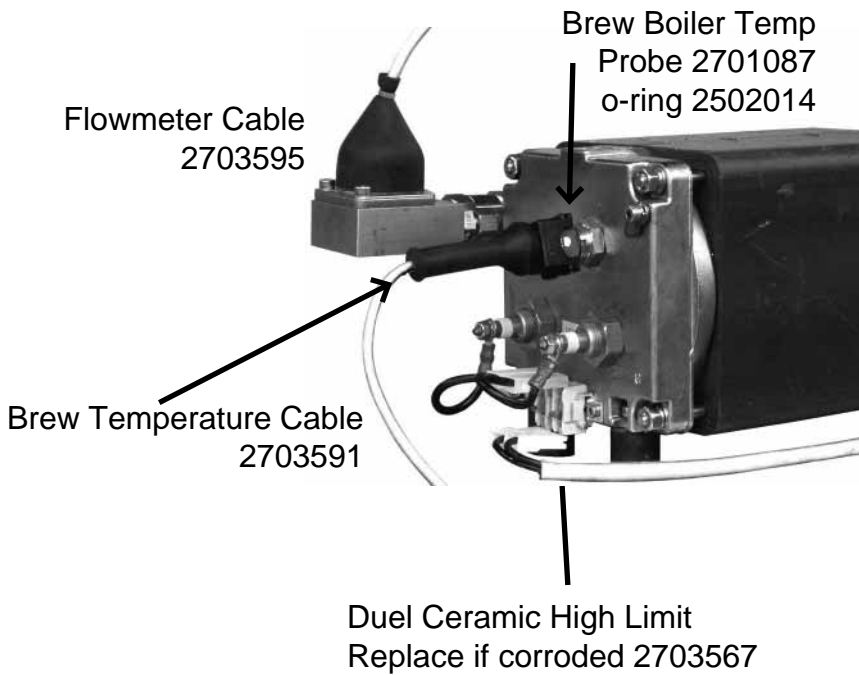
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Old Style Valves will be sent until current supply is used up:



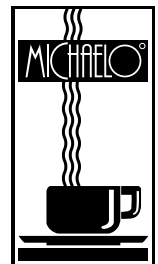
Rebuilt Brew Boiler 2253659

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Steam Boiler Valves/Tamp Sealing Valve

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Adding Valve

Plunger W/Spring
2 Way 2603073

Adding Valve Elbow
2403177

Adding Valve body w/coil
2603070

Adding Valve Nipple
2403178

o-ring 2503003

Steam Valve 113

o-ring 2503004

Steam Valve Elbow
2403169

Steam Valve Nipple
2403181

Steam Plunger
2600056
Longer Spring
2600028

Steam Valve
body w/coil
2603056

Water Valve 317

o-ring 2503004

Water Valve Elbow
2403169

Water Valve Nipple
2403182

Water Plunger
2600021
Short Spring
2600029

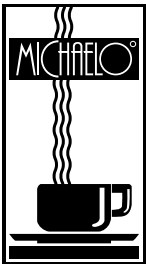
Water Valve
body w/coil
2603055

Sealing Valve:

Inflates the Orange Ring on the Tamp to seal Brewing Chamber during extraction

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Complete Tamp Sealing Valve w/nipples & coil 2253670

Line to Tamp
2403206

Sealing Valve
Nipple 2400058

Sealing Valve
Elbow 2400071

Line from Pump
2403198

Sealing Valve body w/coil
2603068

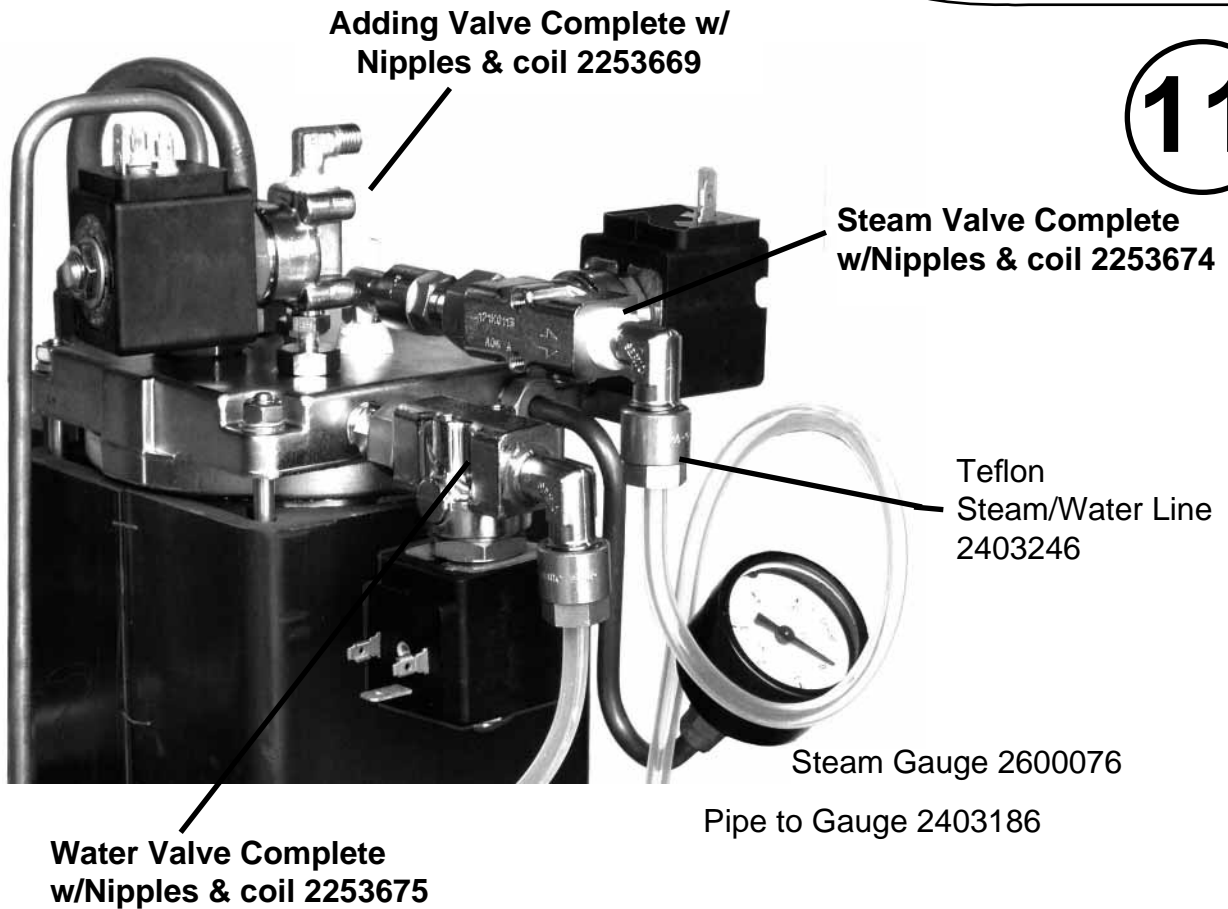
Plunger W/spring
3 Way 2603074

Rebuilt Steam Boiler 2253662

Section 11: Parts

Cafina c60 Service Manual

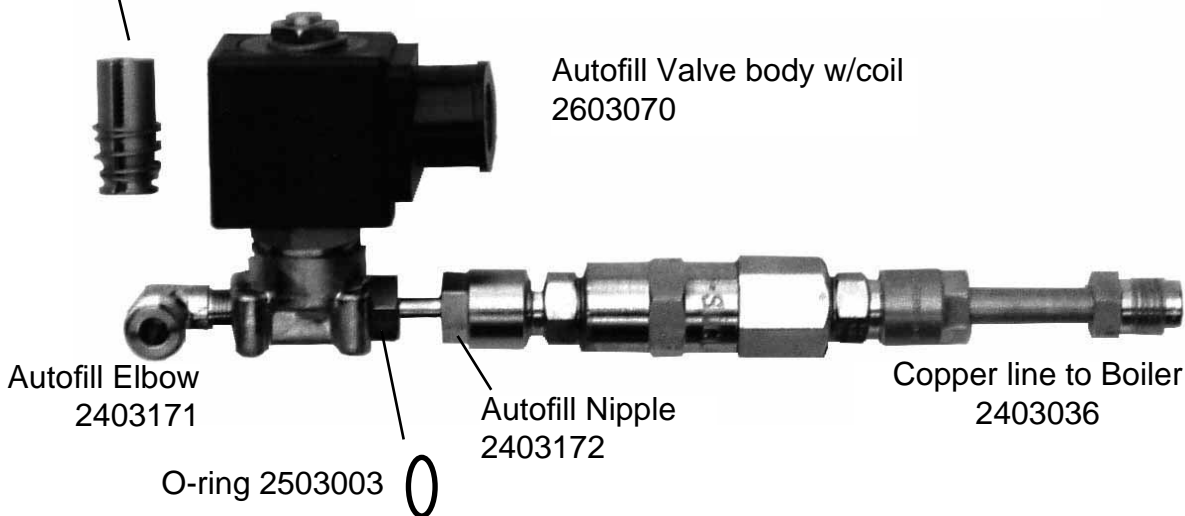
11



Plunger W/Spring
2 Way 2603073

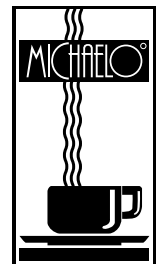
Autofill Valve Complete as shown 2253668

Autofill Valve body w/coil
2603070



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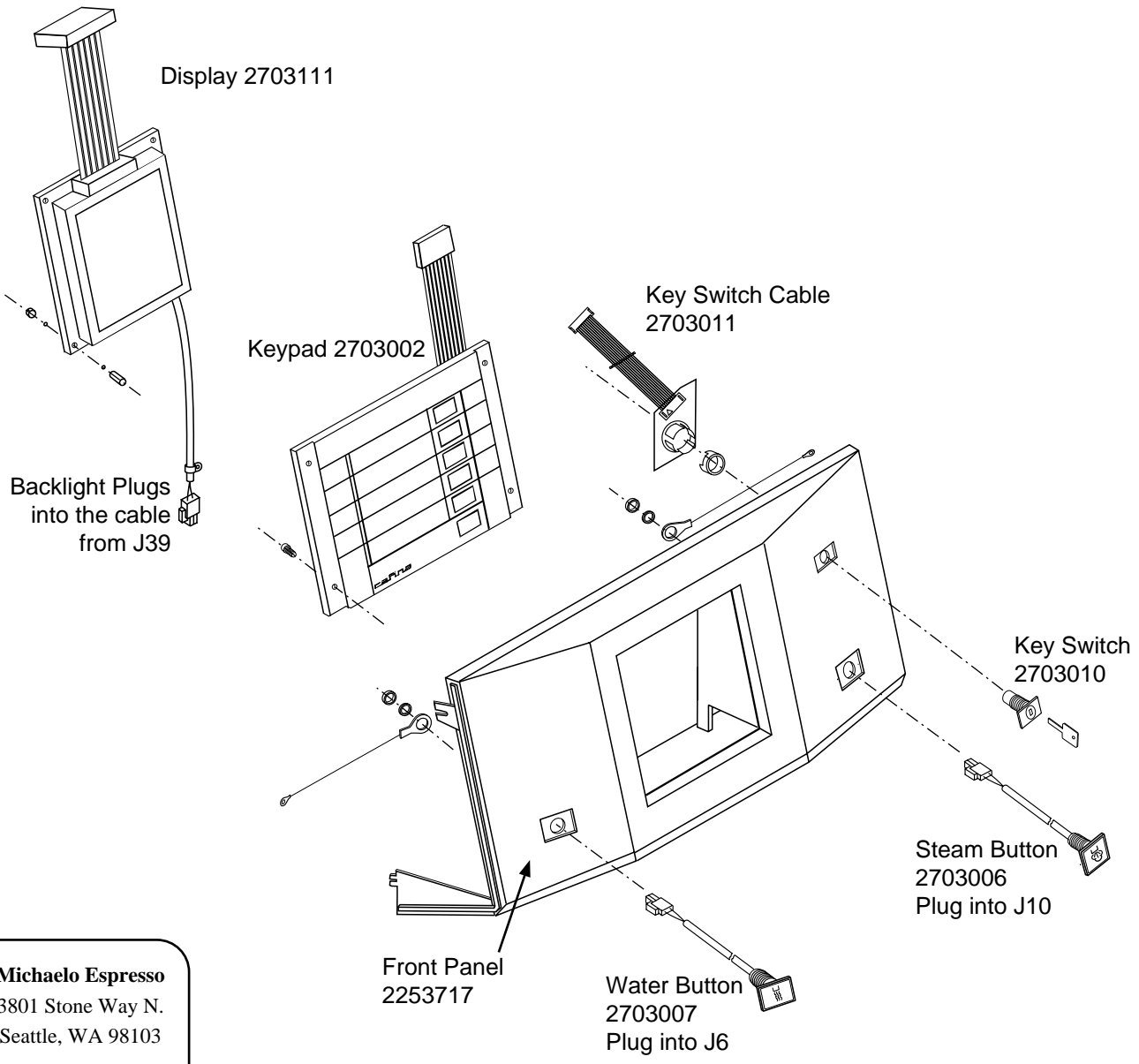
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Front Panel Parts

Page 1 of 1

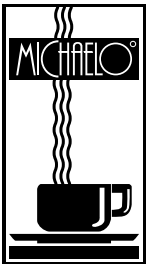
Section 11: Parts

Cafina c60 Service Manual



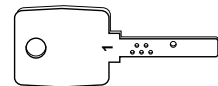
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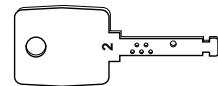


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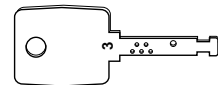
Operator Key 2703092



Manager Key 2703093



Service Key 2703094



Boiler Safety Valve System

Boiler safety Valves

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Cafina c60 Service Manual

Rebuild Parts shown in Italics

11

Steam Boiler vent
2403207

Complete Steam Boiler
Safety valve 2603066

Valve Seat 2603061
Flat Seal 2500062
o-ring 2503004
Spring 2253671

Steam Boiler
Vacuum Break
Complete
2603050

2501027
2601062
2500012

2501037

Hose Manifold
2403208

Notch on silver
ring faces down
underneath dual
springs

Complete Brew Boiler
Expansion Valve
2603065

o-ring
2503033

Flat Seal
2503031

Valve
Seat
2603059

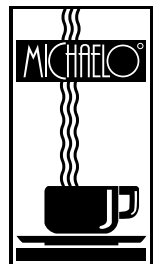
Brew Valve
Exhaust Vent tube
2403196

Order both Complete Valves,
Hose manifold and Steam
Boiler Vent to convert from
old style system

Cut Slits to insert
Vent Lines

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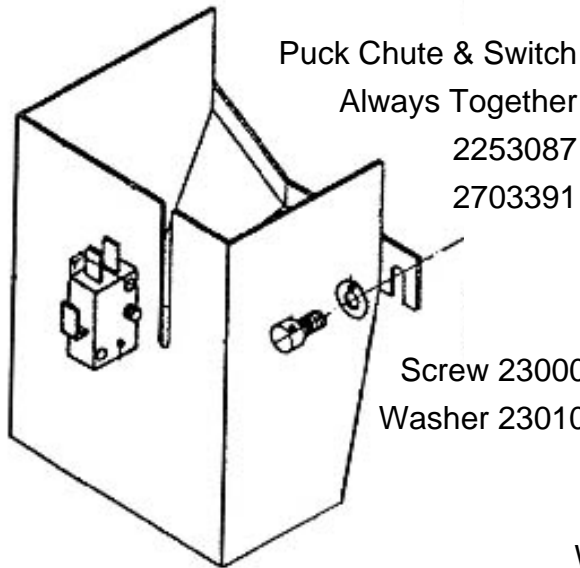
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Water Lines/Chutes

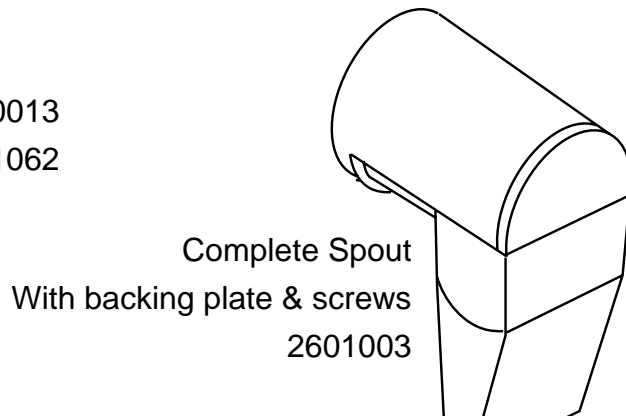
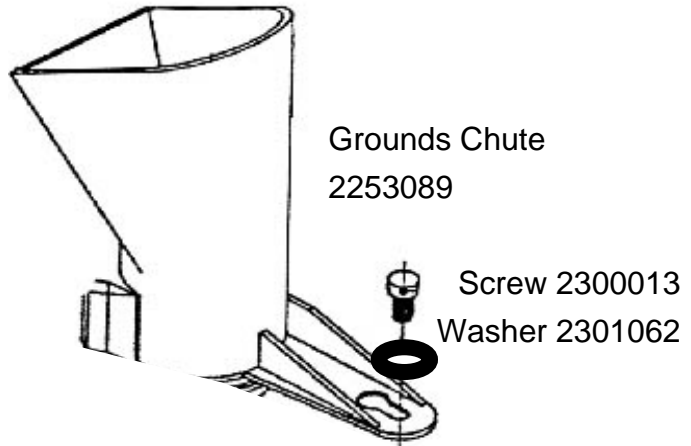
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Section 11: Parts

Cafina c60 Service Manual



Screw 2300013
Washer 2301062



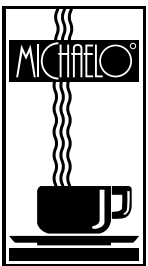
Water Lines:

Tamp	●—————●	Spout	2403031
Tamp Sealing Valve	●—————●	Tamp	2403206
Brew Valve	●—————●	Piston or Drain	2403196
Bypass Valve	●—————●	Spout	2403197
Pump	●—————●	Autofill Valve	2403211
Pump	●—————●	Tamp Sealing Valve	2403198
Pump	●—————●	Flowmeter	2403212
Flowmeter	●—————●	Gauge	2403203
Pump	●—————●	Adding Valve	2403199



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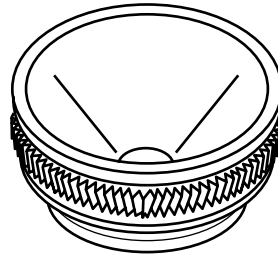
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(206) 695-4950
Fax (206) 695-4951



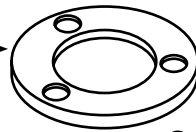
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11

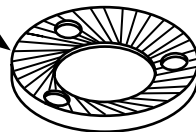
**Complete Grinder
2253665**



**Grinder Burrs
2250163 (pair)**



**Burr Mounting Screw
2300041**



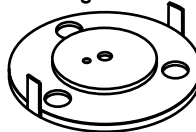
**Lower Plate Mounting Screw
2300018**



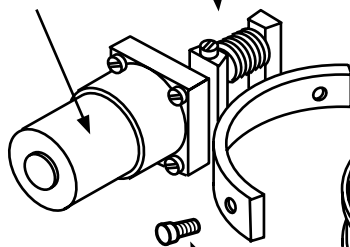
**Pin
2301056**



**Lower Plate W/pin
2253021**



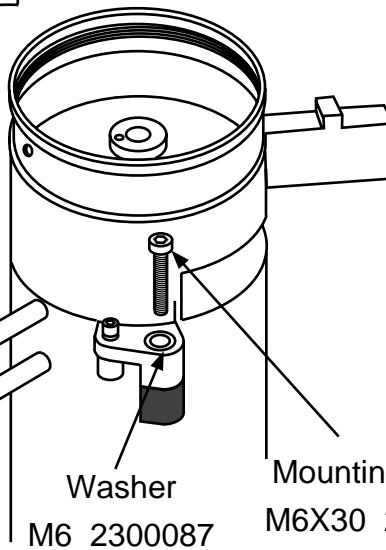
**Grinder Adjusting Motor
2253096**



**Screw
2300015**

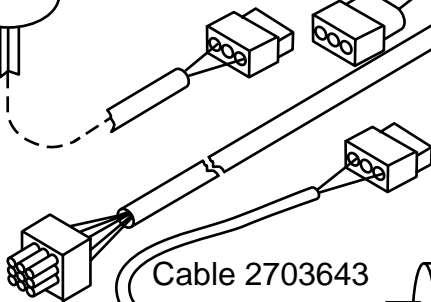


**Capacitor with cable
400v 2703306**



**Washer
M6 2300087**

**Mounting Screw
M6X30 2301077**



Cable 2703643

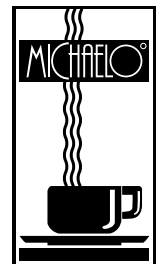
**New Style
Capacitor
2704007**

Screw 2302033

Bracket 2253731

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Pump

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Section 11: Parts

Cafina c60 Service Manual

Complete Pumphead

Replacement Parts:

Pumphead 2253105

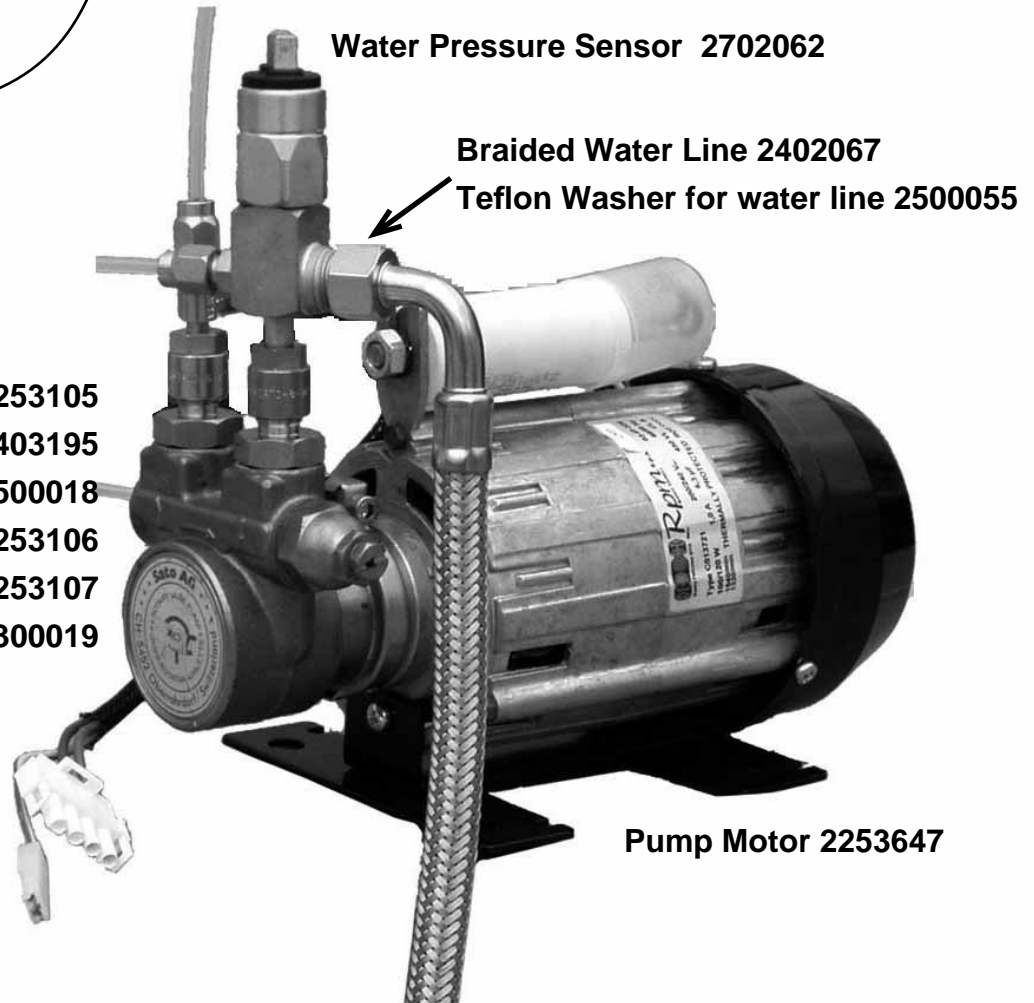
Pump Nipples 2403195

Nipple o-rings 2500018

Pump Drive Coupling 2253106

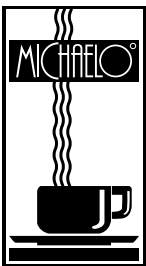
Mounting Ring 2253107

Mounting ring Screw 2300019

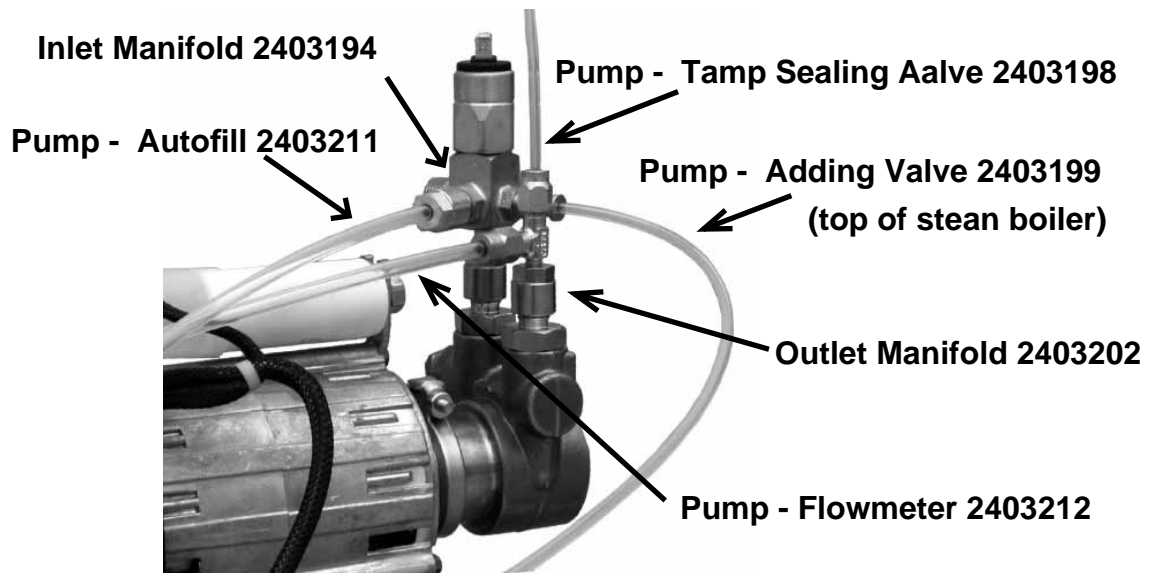


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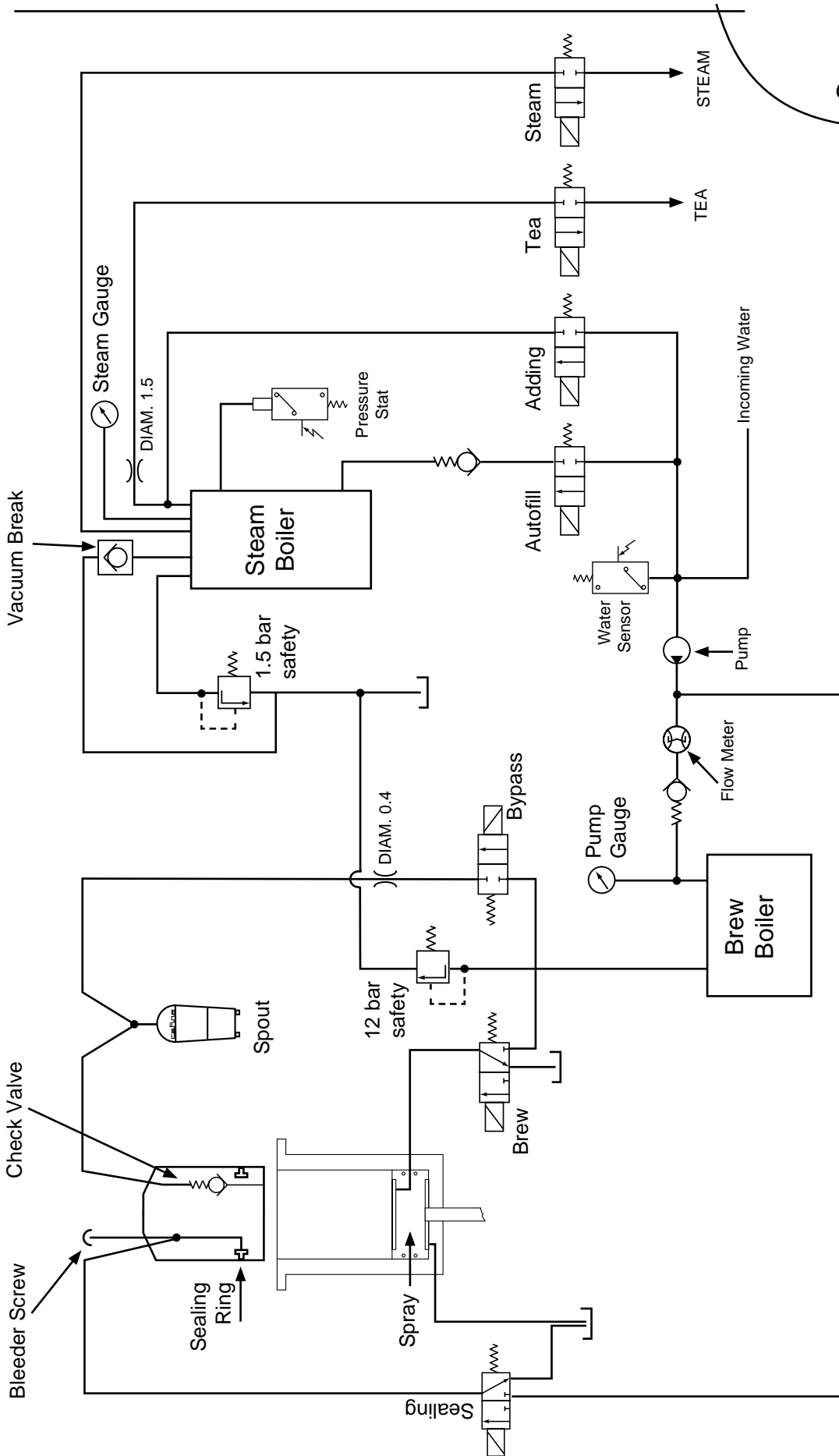
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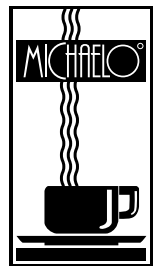


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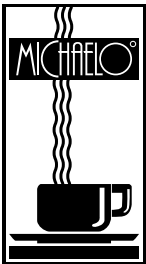
Section 11: Parts

Cafina c60 Service Manual

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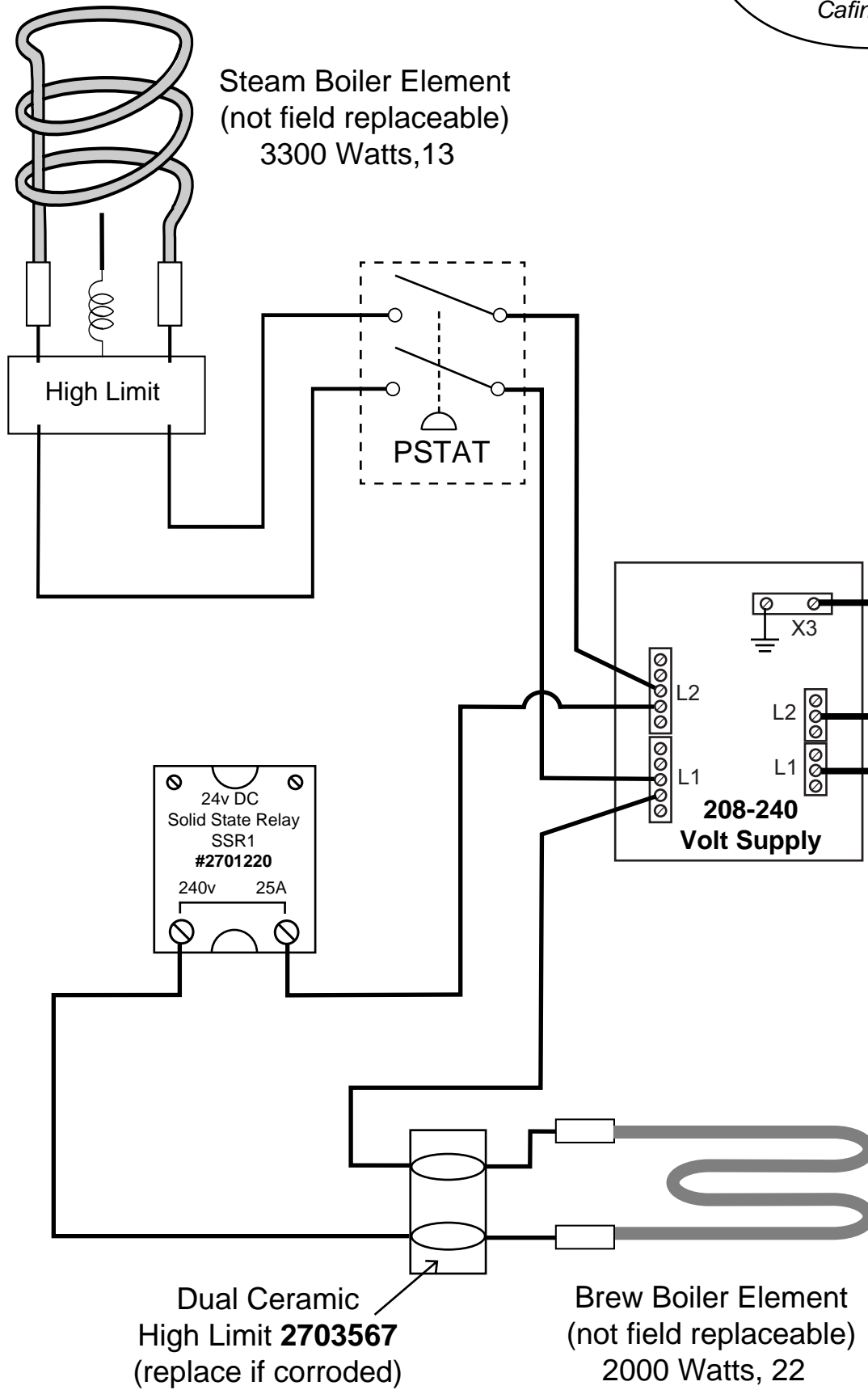
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12



Steam Boiler Element
(not field replaceable)
3300 Watts, 13

High Limit

PSTAT

24v DC
Solid State Relay
SSR1
#2701220
240v 25A

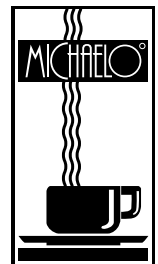
208-240
Volt Supply

Dual Ceramic
High Limit **2703567**
(replace if corroded)

Brew Boiler Element
(not field replaceable)
2000 Watts, 22

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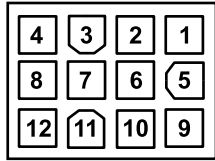
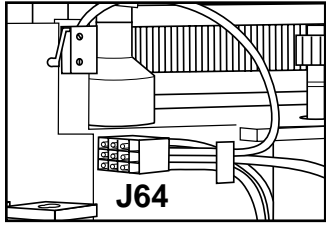


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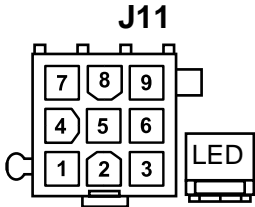
Valves / Piston wiring

Section 12: Electrical

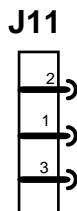
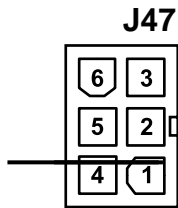
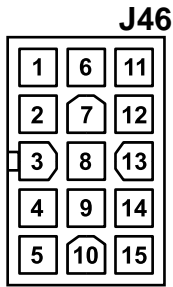
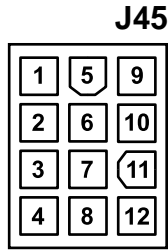
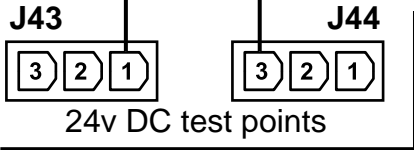
Cafina c60 Service Manual



Piston Plug Socket on Piston



Plug on ICU Board

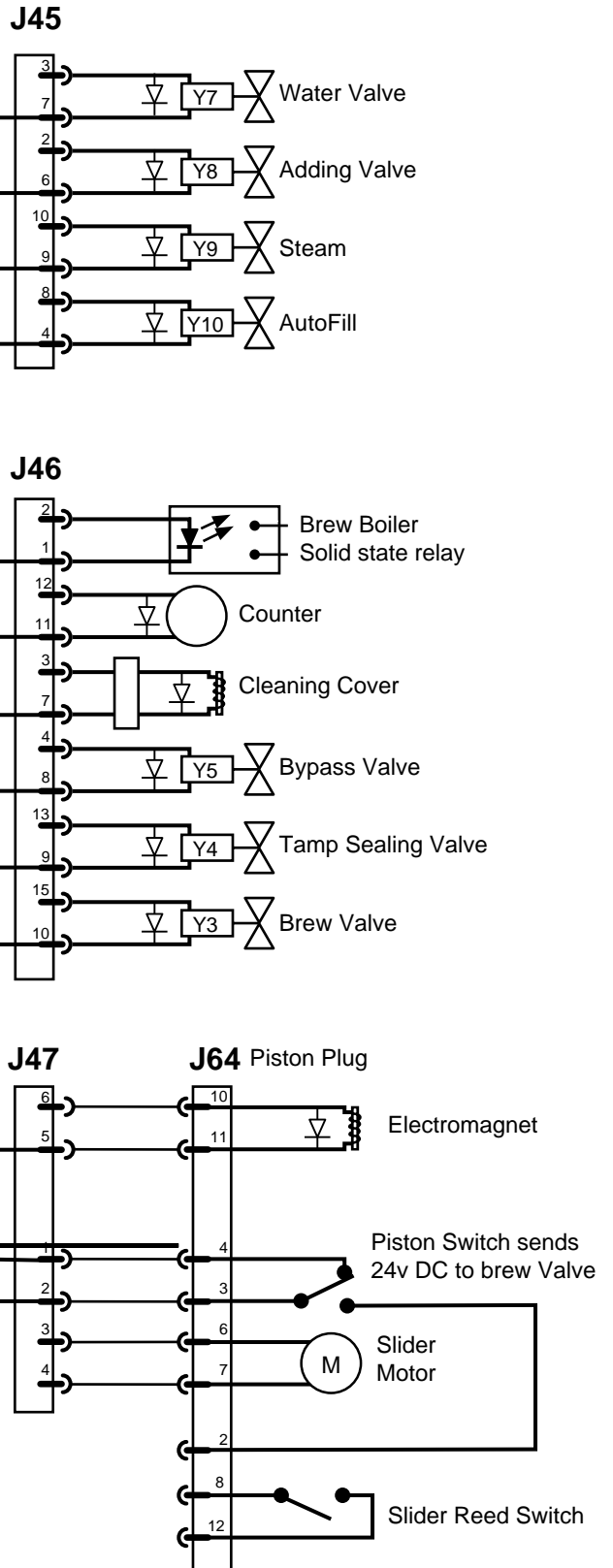


24v DC here when piston is up



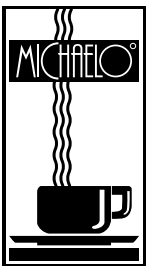
+24v DC

Valve ground pins will read 24v DC with valve OFF and 0v when valve is on

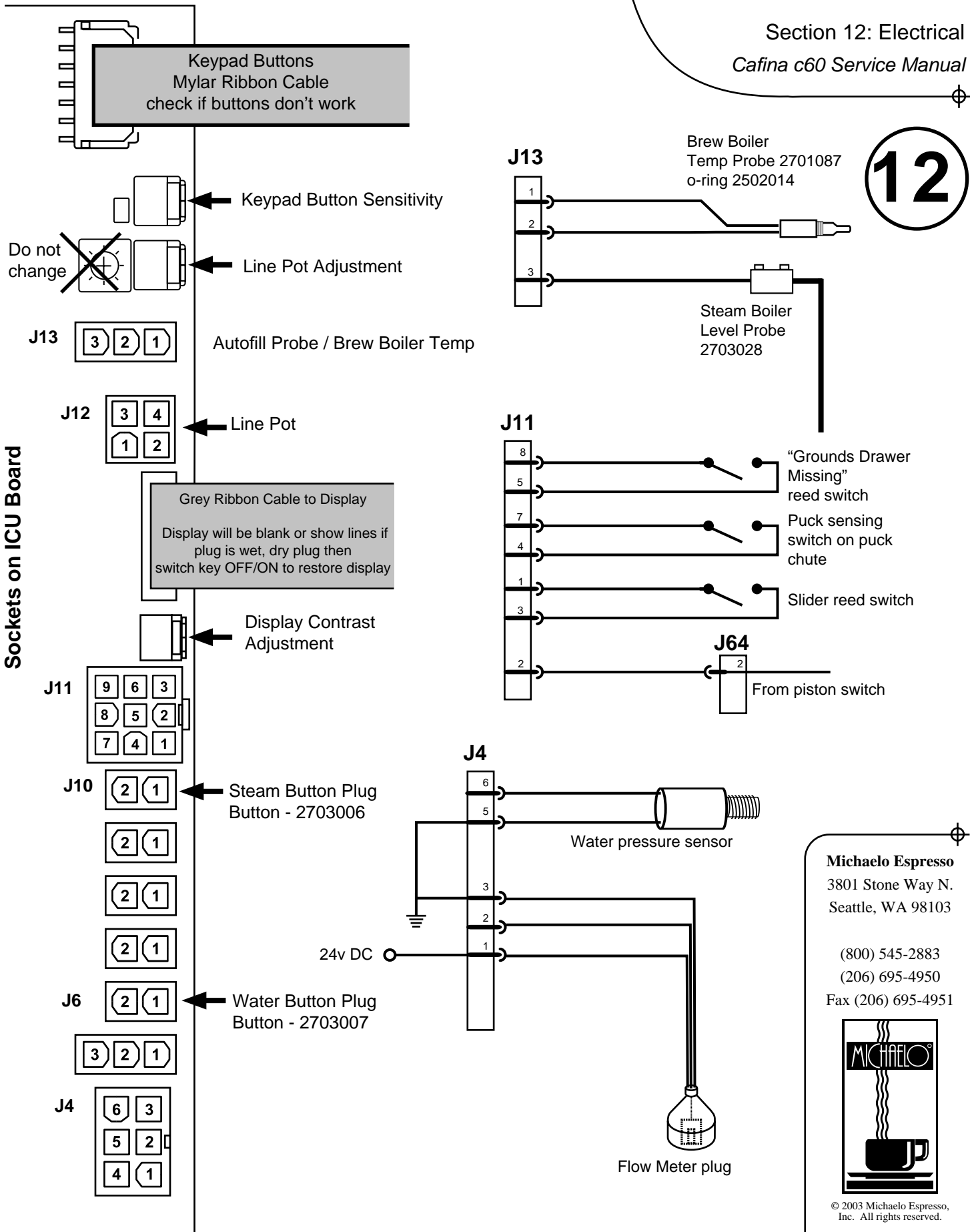


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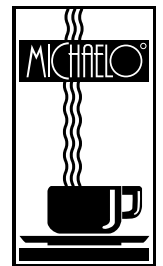
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Sockets on ICU Board

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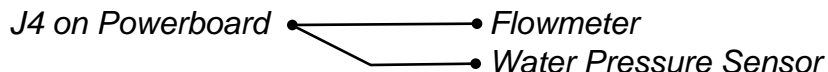
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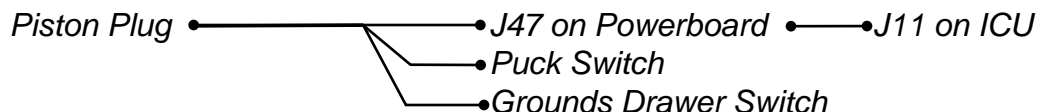
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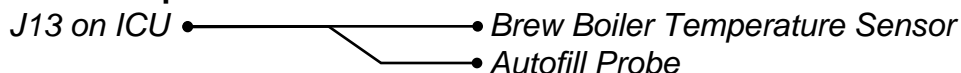
Flowmeter/Water Pressure 2703595



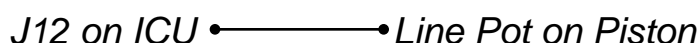
Main Piston Cable 2703597



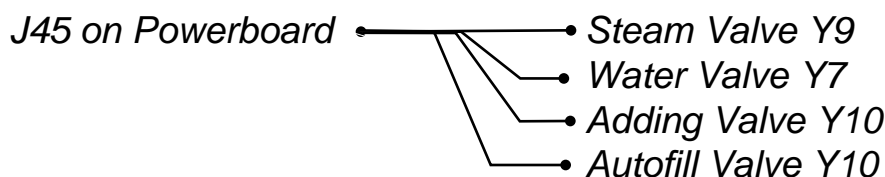
Brew Temperature/Autofill Probe 2703591



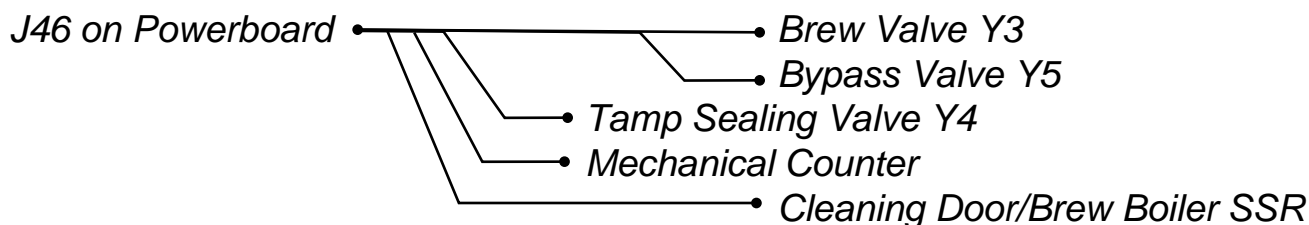
Line Pot Cable 2703036



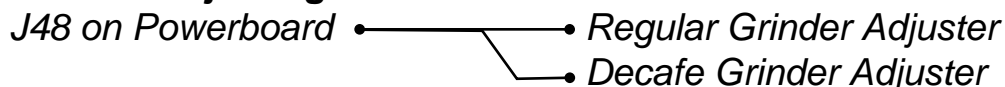
Steam Boiler Valves 2703598



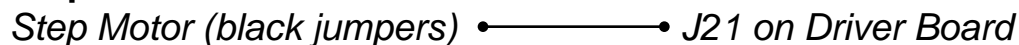
Brew Boiler Valves 2703599



Grinder Adjusting Motors 2703593

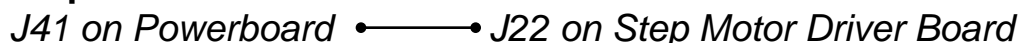


Step Motor Round Driver Cable 2703048



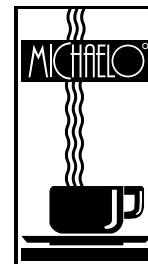
Powerboard to ICU 3" Ribbon Cable 2703033

Step Motor Ribbon Cable 2703042



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