COFFETEK

VITRO X3

BEVERAGE MACHINE

TECHNICAL MANUAL

VITRO X3

TECHNICAL MANUAL

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FOREWORD

1. The information contained in this technical manual is applicable to the Vitro X3 Beverage Machine. Due to customer requirements some units may vary from the one described in the manual.

2. Personnel who have undergone relevant equipment training must only undertake maintenance of the beverage machine.

3. The manufacturer reserves the right to make changes, without notice, to the design of the beverage machine, which may affect the information, contained in this manual.

4. The Vitro X3 Beverage Machine is designed for indoor use, in an environment with an ambient temperature range of between 1ºC and 40ºC.

5. THIS APPLIANCE CAN BE USED BY CHILDREN AGED FROM 8 YEARS AND ABOVE AND PERSONS WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES OR LACK OF EXPERIENCE AND KNOWLEDGE IF THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTION CONCERNING USE OF THE APPLIANCE IN A SAFE WAY AND UNDERSTAND THE HAZARDS INVOLVED. CHILDREN SHALL NOT PLAY WITH THE APPLIANCE. CLEANING AND USER MAINTANCE SHALL NOT BE MADE BY CHILDREN WITHOUT SUPERVISION.

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Section 1
Technical Information

INTRODUCTION

1. The Vitro X3 Beverage Machine dispenses hot beverages in response to a capacitive touch screen drink selection. All beverages are dispensed in cup measurements. A liquid crystal display provides status indications and operational information. All operations are microprocessor controlled.

2. A cup is placed under the dispense head and the selection is made via a capacitive touch screen. The drink is then dispensed in the required quantity. The machine does not accept money as standard, but a feature such as this can be added.

3. The status of the machine may be monitored, and the configuration altered, by accessing a program using the keypad and display. The program offers a menu of options; each consisting of a number of sub-options which can be altered.

4. The Vitro X3 Beverage Machine has a feature, which heats the water in the boiler very quickly, with one heater connected to the instant boiler and another to the espresso boiler, from the same 230V~, 16A single-phase supply.

FIG 1.1 VITRO ESPRESSO DUO BEVERAGE

SPECIFICATIONS

5.

DESCRIPTION	DETAILS
HEIGHT/CM	70
WIDTH/CM	42
DEPTH/CM	55
WEIGHT/KG	45
TANK CAPACITY/LITRE Inst	2.5
TANK CAPACITY/LITRE Esp	0.32
CANISTER CAPACITY - GRAM	DETAILS
FRESH COFFEE BEANS	1.5Kg (200 Cups)
FRESH LEAF TEA	550g (220 Cups)
CHOCOLATE	1200g (60 Cups)
MILK (Powder)	1200g (300 Cups)
MENU OPTIONS/SELECTIONS	10
DISPENSE TIME PER CUP INST	15 Seconds
DISPENSE TIME PER CUP ESP	40 Seconds
POWER (Instant)	2.8KW
POWER (Espresso)	1.1KW
CUP SERVING/HOUR	150
MAINS WATER/PORTABLE	YES/YES
MIN/MAX PRESSURE-MPa	MIN-0.08/MAX-1
ILLUMINATED BUTTONS	YES
BACK PANEL	YES
SELF CLEANING BUTTON	YES

SERVICES REQUIRED

Electrical Supply

6.

(a) Duel Heater Operation

Supply voltage : 230V~, 50Hz, single phase, fused supply

Current rating : 10A/16A

(b) The fused electrical supply should terminate at an appropriate isolator located within 1m of the beverage machine.

Water Supply

7.

(a) 15mm dia. Water mains supply, terminating at a convenient stop tap located within 1m of the beverage machine.

(b) Water pressure : 0.08MPa minimum, 1MPa maximum

(c) A 15mm double backcheck valve, with inspection port, should be fitted prior to the flexible hose.

GENERAL DESCRIPTION

8. The Vitro X3 Beverage Machine is a table top unit which may be mounted on a secured table, bench, cabinet or food and drink counter.

Cabinet Front

9. The cabinet front door has a large glass panel and located within this panel are 10 capacitive touch switches. On the rear of the door is the display for accessing product information and machine settings with an internal keypad which provides access to the Operator's and Engineer's Program and a USB port

10. The panel can, when unscrewed, be hinged to give access to the ZMCU control board, button control board, ZMCU adaptor and capacitive touch PCB's.

Cabinet Rear

11. The rear lower portion on the cabinet has six screws which if removed allow the espresso boiler, solid state replay, pump and valves to be accessed by sliding the metalwork which all of this is mounted onto out.

Cabinet Interior

12. A swivel open door provides access to the three plastic product containers, each fitted with a gear driven worm screw located in the base of each canister to dispense ingredients in exact amounts. Accessed through the lid of the machine is the forth bean hopper canister.

    The ingredients are mixed with hot water in mixing bowls prior to the beverage being poured from the dispense head.
    A plastic agitator is located inside of the milk topping and chocolate canister to ensure free and consistent flow of product. Additionally a whipper unit, located beneath the mixing bowls, ensures that the product and water are correctly mixed.

    The ingredient canisters must be removed for filling of the products and when all four canisters are removed and steam hoods of the mixing bowls are removed the extract chamber can be removed for cleaning.

13. Located on the rear of the machine on the back left hand panel is the machine on/off switch, which controls the power to the MPU, power supply. Access to all other components is either by removal of the lid assembly/boiler cover and motor shelf.

14. Further access to the inner components is achieved by removing the left-hand side panel by unscrewing the location screw and then the panel will drop down clear of its keyhole slots. Removing this panel gives access to all internal components.

15. The mains electricity supply cable enters the machine via a cable gland on the base panel of the machine, where it terminates in a terminal block. The supply is then connected via the terminal block, line filter to the on/off switch on the front of the machine.

WATER SYSTEM

16. The main water supply enters the machine via a double inlet valve, which is mounted in the cabinet base panel. A length of tube then takes the water supply into the top of the water boiler via an air break into a channel, which is directed, to the bottom of the heater tank for the instant products.

    The Espresso system water enters through the same double inlet valve mounted in the base of the cabinet. The water then enters an internal water tank where it sits before being pumped via an ULKA pump into the espresso boiler.

17. Instant hot water is dispensed from the boiler, via the appropriate solenoid operated valve, to the mixing bowl. A length of tube directs any overflow from the boiler via overtemp safety thermostats to the waste tray.

    Espresso hot water is dispensed from the boiler, via the appropriate solenoid operated valve, to the brewer group. A length of tube attached to the purge valve on the top of the coffee valve directs any overflow into the water tray. The boiler is protected via overtemp safety thermostats to the waste tray.

18. The cold water mains supply enters the machine at the back of the cabinet and connects with a double solenoid operated inlet valve, which controls the flow of water to both the instant and espresso boilers. The water is maintained at a constant level in response to signals from a water level probe which is connected to the Controller Board for the instant and a volumetric counter for the Espresso system.

19. The water is heated to the required temperature by a single heating element in the instant boiler and a single element in the espresso boiler. The Controller Board ensures that the temperature is maintained to a predetermined level by controlling the supply to the heater in response to signals from the N.T.C. temperature sensor which forms part of the level/temperature probe assembly in the Instant boiler and temperature sensor in the Espresso boiler.

20. Hot water from the boiler is fed directly to the mixing bowls where it mixes with the dispensed ingredient to produce the selected beverage. Solenoid operated valves distribute the hot water to the selected mixing bowl, the amount of water being determined by the program setting.

21. The temperature of the water is monitored by the Controller Board via a sensor inserted into the tank, thus causing the supply to the heater to be removed when the water in the boiler reaches its required temperature setting. If the temperature in the boiler increases causing the water to boil over, the water will flow down the overflow pipe over the overtemp sensors which will cut off the electrical supply to the heating elements. These sensors are mounted on the cabinet rear and are re-settable.

Heater and Boosting

22. The instant heating control system employs an intelligent algorithm to obtain maximum performance as follows:-

    Boost operation takes place when the inlet valve opens following a selection being taken. The heater control algorithm is instructed to turn on the SSR's for the duration specified in the variable CUP BOOST referred to Section 2 paragraph 24.

    If the temperature is 50 more than the DESIRED TEMPERATURE, set in the CHANGE SETTING MENU (see Section 2 paragraph 24) all boosting operations are disabled.

If the actual temperature is between 0 – 35 less than the DESIRED TEMPERATURE one SSR is OFF and the other one toggles ON & OFF unless a boost operation is in progress then both SSR are ON.

If the actual temperature is between 35 - & 50 less than the desired temperature one SSR is ON and the other is OFF. Boost operations are as above.

If the actual temperature is more than 50 below the desired temperature both SSR's are ON.

The Espresso system also has a boost control which operation takes place when the heater control is instructed to turn on the SSR's for the duration specified in the variable GRP OVRDRVE TIME referred to Section 2 paragraph 24.

The GRP OVEDRVE TIME is located in the CHANGE SETTINGS menu. If a coffee based vend has not produced from the machine inside the specified time of the GRP OVERDRVE TIME the next coffee based vend produced from the machine will heat the Espresso boiler to the specified GRP OVRDRVE TEMP from the CHANGE SETTINGS MENU to ensure a cooler vend is not to be produced

Tank Filling & Overflow Protection

23. The control system will only open the inlet valve for a maximum of 40 seconds. If the tank is not full at the end of this time the machine will enter a fault condition. The internal display will read “TANK FILL FAULT CALL OPERATOR” for the Instant system or “GROUP WATER SYSTEM FAUT” for the Espresso. This fault can be cleared by switching the machine off and on and attempting a refill.

    Note: An empty tank may take several cycles to fill completely depending on water pressure.

24. The second protective mechanism is designed to act as a fail-safe in the event that a slow leak occurs which does not result in the liquid entering the drip tray. The machine will cease all attempts to fill the tank after 20 tank top ups have been made, if no selections have been taken in the meantime.

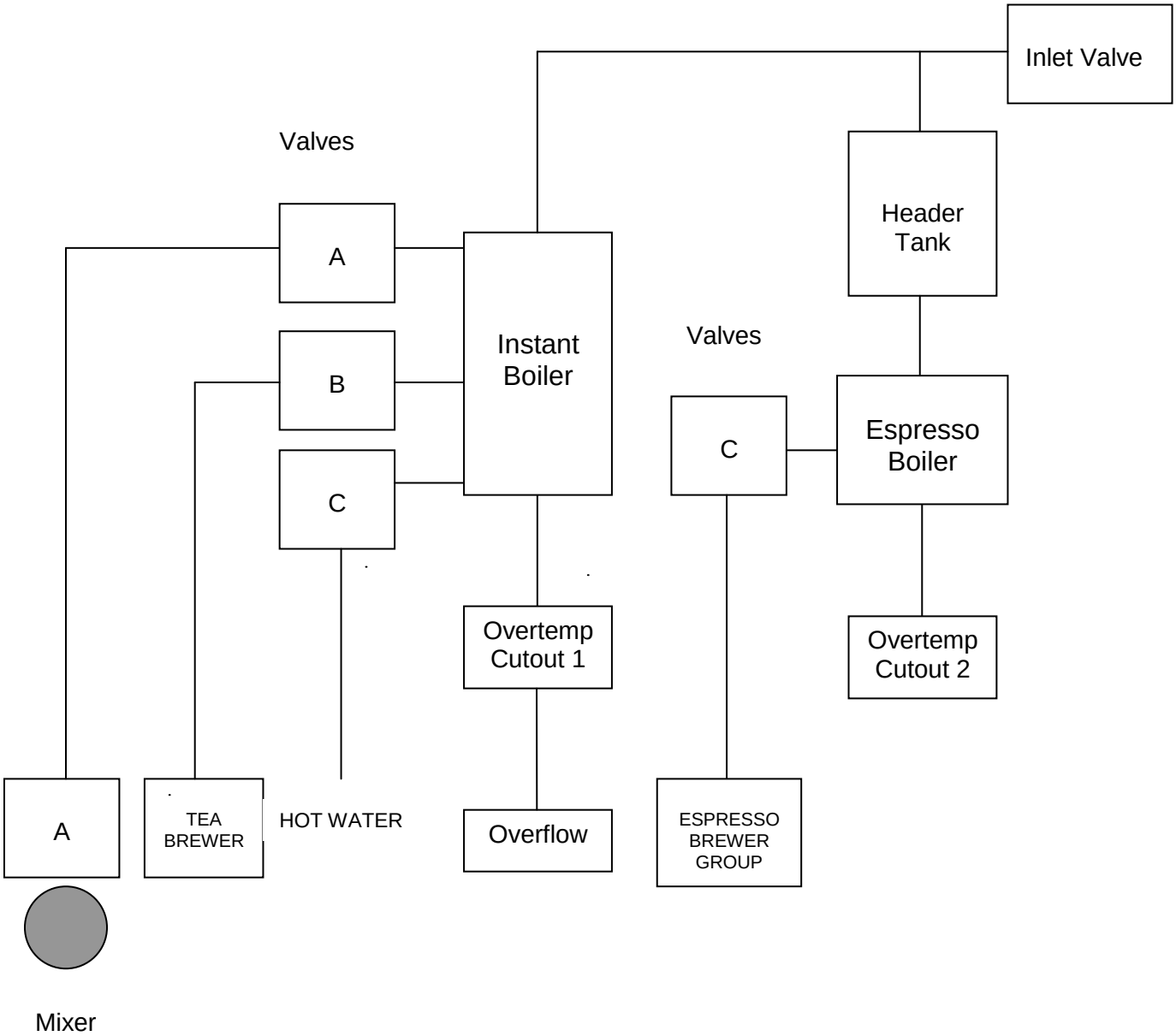


FIG 1.2 WATER SYSTEM – FUNCTIONAL DIAGRAM

ELECTRICAL AND ELECTRONIC SYSTEM

Functional Description

25. The MPU Controller Board employs Microprocessor technology to monitor and control the operation of the beverage machine. The board contains the main System Program, the Operator's Program and the Engineer's Program, each stored in programmable read only memory.

26. Variables, such as the amount of ingredients dispensed, are stored in non-volatile random access memory (NVRAM) and are called up by addressing either the Operator's Program or the Engineer's Program as appropriate.

27. The main System Program tasks the microprocessor with continually checking the status of the input devices (keypad, probe, etc.) and responding to data received by signalling the output devices (LCD display, motors, whippers etc.) to take the appropriate action. The System Program also requests the microprocessor to interrogate the variable settings in NVRAM and to modify its actions accordingly.

28. Output transistors and F.E.T. devices on the MPU Controller Board convert signals from the Controller's microprocessor circuit to the current drive necessary to operate output devices, i.e. motors, whippers and inlet valve.

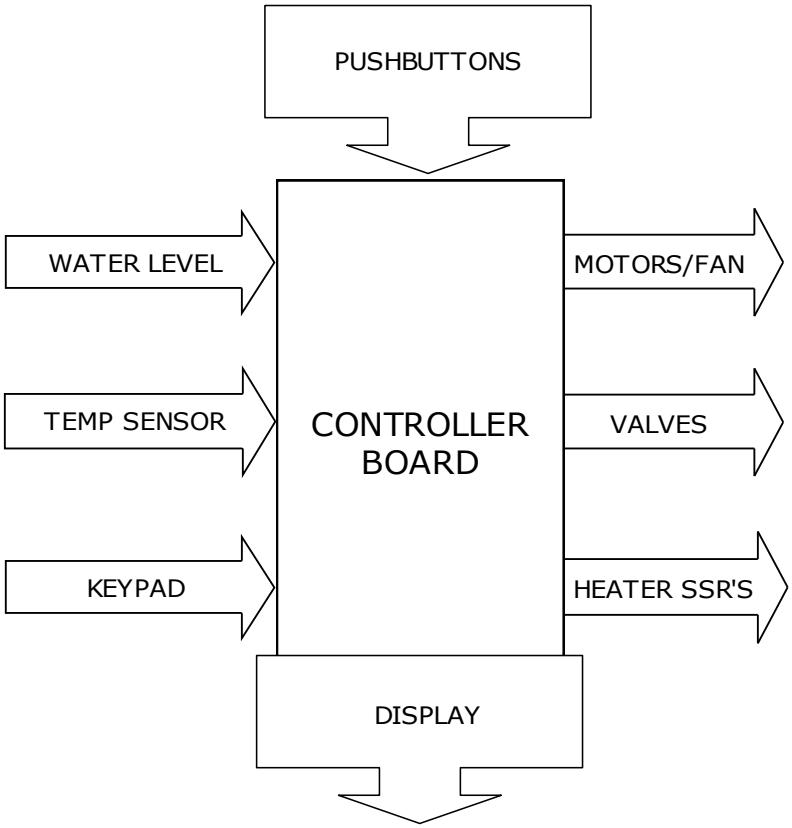


FIG 1.3 ELECTRICAL & ELECTRONIC SYSTEM – FUNCTIONAL DIAGRAM

Circuit Description

29. If the beverage machine is supplied by a 230V~ single-phase supply from a 10A or 16A outlet (or from a 13A domestic outlet), only one heater can be connected in circuit a 15A fuse protected heater circuit, a solid state relay (SSR) contact and high temperature cut-out is placed in the circuit of heater, there is one circuit to protect the Instant boiler and the same to protect the Espresso boiler.

30. The SSR switches the supply to the heaters as directed by the MPU Controller in response to data received from the temperature sensor part of the temperature/level probe for the Instant boiler and purely the temperature probe for the Espresso boiler, thus maintaining the water in the boiler at the correct temperature. However, if the water in the boiler starts to boil, the high temperature cut-outs remove the supply to the heaters. A reset button for the Instant cut-out is accessible at the top of the machine and the Espresso boiler cut-out is accessed by removing the left hand side panel and depressing the cut-out directly on top of the boiler.

31. A 230V~ ac main supply is taken from terminal block to the Power Supply PCB via the on/off switch. The Power Supply PCB provides DC supplies of 24V, 12V and 5V. The 24V-dc output supplies the ingredient motors, whipper motors, extract fan, SSR and solenoid operated valves. The 12V-dc output supplies the MPU Controller Board and operational coin acceptor (if fitted).

32. The MPU Controller Board continually checks the status of input devices connected to plugs J1 and J3, and responds to any change of state by signalling the operation of the relevant output devices via on-board current drive transistors. Thus, for example, the water level probe controls the operation of the inlet valve and the temperature sensor controls the operation of the SSR.

33. The dispensing of a beverage begins with the keypad selection, which is scanned by the MPU Controller Board via a ribbon connector. Control Signals corresponding to the required actions are then generated by the MPU Controller to operate the relevant output devices in the correct sequence and for the specified duration. Operator data information is sent in parallel form to the (LCD) Display.

Section 2
Programming

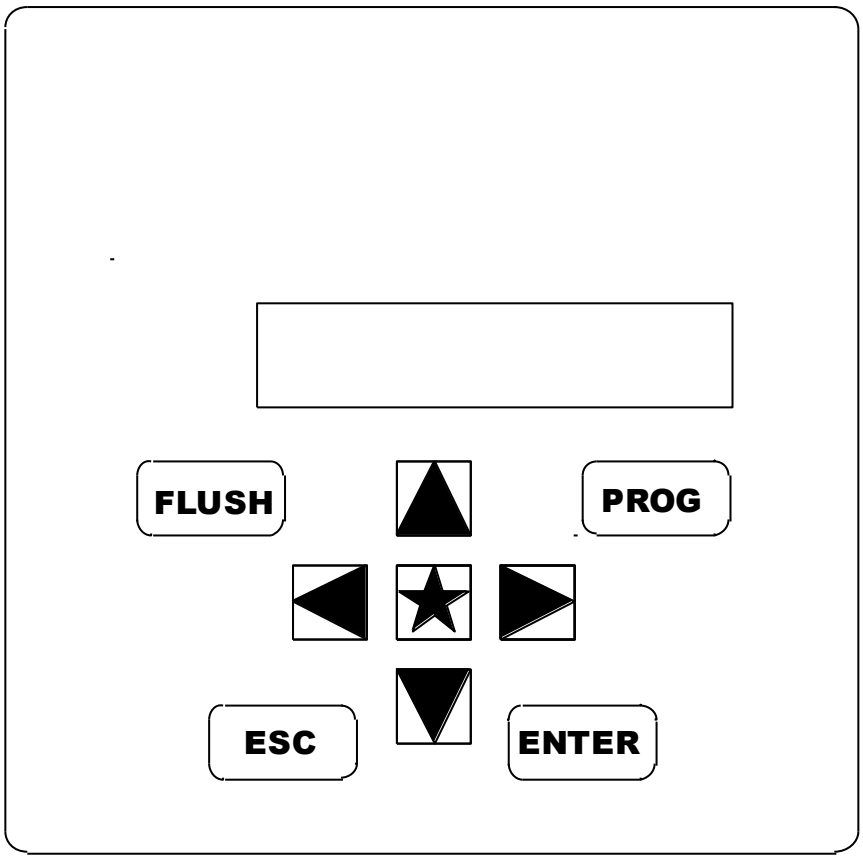
INTRODUCTION

1. The Vitro X3 Beverage Machine provides two discrete user programs: The Operator's program and the Engineer's Program. The Operator's Program is available to both the Operator and the Service engineer, but the Engineer's Program is only available to the SERVICE ENGINEER.

2. Both the programs are stored in programmable read only memory on the Controller Board. The values and settings (Variables), which the program allows the programmer to alter, are store in NVRAM (non-volatile random access memory).

3. Settings are maintained, with out the need for back-up battery, when the power supply is removed.

INTERNAL KEYPAD LAYOUT



KEYPAD FUNCTIONS

4. The Operator's Program is available to the operator and Service Engineer. The Program provides options for counting the number of drinks dispensed for each beverage, monitoring the weight of ingredients used, showing the total vends dispensed and resetting the drink dispensed counters if applicable. Additionally, the operator can set the machine to Out of Service if required.

5. Keypad functions when used in the Operator's programming mode, are as follows:-

Key (ENTER) used to access a function.

Key (PROG) used to access the operators program, then used to change menu functions.

ARROWS UP (⮝), DOWN (⮟), LEFT (⮜), RIGHT (⮞) are used for adjustments when in program mode.

★ key is used for selecting option when in output test mode.

OPERATOR PROGRAM

Accessing the Operators Mode

6. Accessing the Operator program is by pressing the PROG key on the internal keyboard. The display will show:

PRESS DRINK TO DISPLAY COUNTER

DISPLAY COUNTER

7. The DISPLAY COUNTER option is accessed on entering the Operator's Program. The resettable vend counts may be viewed by pressing each drink key (as shown on the keypad) in turn.

8. To access other options, press PROG on the internal keypad. The other options are as follows:

- Total Vends
- Reset Counters
- Disable Vends
- View Ingredient Counters
- Machine Serial No.
- Output Audit Data
- MDB Fill Tubes

TOTAL VENDS

9. Access the Total Vends Count option using PROG key, the display will show total vend count.

RESET COUNTERS

10. Access Reset Counters by using PROG key, to clear drink counters press ENTER. The display will show:

ARE YOU SURE
ENTER (Y) ESC (N)

DISABLE COUTERS

11. Access the DISABLE VENDS option by pressing the PROG key and then press ENTER when DISABLE VENDS is displayed. This will then disable all of the vends selections until they are re enabled.

VIEW INGREDIENT COUNTERS

12. Access the View Ingredient Counters option by using PROG key. Press ENTER to display the first counter, then press the ▲ UP arrow to scroll through the others.

MACHINE SERIAL NUMBER

13. Access the MACHINE SERIAL NUMBER by pressing the PROG key until the machines serial number is disabled on the LCD display.

MDB FILL TUBES

14. This allows you to fill the MDB coin mech. This option is only visible when a coin mech is connected and the correct cash system has been set (see payment system settings)

ENGINEER PROGRAM

Accessing the Engineer Program

15. The operator program must be accessed before the Engineer Program can be accessed, the operation is as follows:

    - Press PROG to access the Operator Program, the display will show:

PRESS DRINK TO DISPLAY COUNTER

Press PROG again, the display will show:

TOTAL VENDS

Now, press the STAR key on the internal black touch panel. The display will now show:

SELECT DRINK TO MODIFY

Program Options

16. Programing options are available as follows:

- **SELECT DRINK TO MODIFY**
- **SELECT DRINK TO TEST**
- **MOVE OR COPY DRINK**
- **INPUT TEST**
- **OUTPUT TEST**
- **CHANGE ACCESS CODE**
- **CHANGE PRICE OR INHIBIT DRINK**
- **SET INGREDIENT THROW RATE**
- **EVENT LOG**
- **BLUETOOTH MENU**
- **USB ACTIVITIES**
- **SET MACHINE SERIAL No**
  (Inhibited by default only appears when enabled)
- **I2C STATUS**
- **SET DATE AND TIME**
- **TIMED EVENTS**
- **TANK STATUS**

- **CHANGE SETTINGS**
- **PRESS DRINK FOR FIXED COUNTERS**
- **EDIT BIN NAMES**
- **SET FACTORY DEFAULTS**
- **LEAVE ENGINEER PROGRAM**

17. Repeated pressing of PROG key causes the program to scroll through the options in the above sequence. Therefore a specific option is accessed by pressing PROG key until that option is displayed. To access any program press ENTER.

SELECT DRINK TO MODIFY - INGREDIENT/WATER/WHIPPER ADJUSTMENTS PROGRAM

18. The Vitro Espresso Duo program provides total flexibility in setting the function of the selection buttons. Each button has the possibility to add to its recipe any of the ingredients in the machine. Thus, for example, the button programmed to dispense chocolate will have in its control variables list, parameters to control the coffee, topping and tea motors, mixers and valves. It would in theory be possible to program a button to have a little of each product available. The program is arranged in sections showing the start time and running duration for the ingredient motors, dispense valves and mixer motors. There is a start time and running duration for each actuator. The times are in tenths of a second. In addition to this other selection, specific parameters are included in the list of settings that can be changed.

    The SELECT DRINK TO MODIFY menu now features adaptive menus to hide settings from view until they are required. For example, a drink which utilises milk ingredient will find additional milk ingredient times are available to facilitate greater drink customization. The adaptive menus are,

    CHOCOLATE ING 2 & CHOCOLATE ING 3 – If a chocolate ingredient duration is set then these additional settings will also appear.

    MILK ING 2 & MILK ING 3 - If a milk ingredient duration is set then these additional settings will also appear.

    TBRW WTR1, TBRW WTR 2 - If the tea ingredient is set and the machine has a tea brewer these variables will become visible for customization of the brewer component of the drink.

19. The settings for a selection are accessed using the SELECT DRINK TO MODIFY menu as follows:

With the SELECT DRINK TO MODIFY menu displayed, press the selection button on the front panel you wish to change.

Access will then be granted to the list of configuration parameters for that selection.

The list is navigated using the ⮝, ⮟ arrows and ENTER or ESC to select items to change.

20. The first entry in the SELECT DRINK TO MODIFY menu allows the drink name to be changed. In general, on Coffetek equipment the drink name has no effect on the behavior

of the selection button. Choosing a drinks name on some competitor's equipment actually configures the selection, so this point should be noted. The primary purpose for the drink name change facility is to allow the correct name to be displayed when a selection is taken or when using the auditing features. With the exceptions listed in the table on page 17 the drink name assigned to a selection button has no effect on the selection, other than to control the characters displayed on the LCD screen when that selection is taken.

The display will show:

DRINK 03 NAME IS
<DRINK NAME> (IF NAME IS CORRECT MOVE TO STEP 4)

where <DRINK NAME> is the displayed name for that drink, e.g. Coffee.

- To change the name Press ENTER. The display will show:

<DRINK NAME>
⮝, ⮟ ENTER OR ESC

- Use the ⮝ ⮟ keys to scroll through the available drink names. Press ENTER to confirm the new name or ESC to return to the old one.

  A limited number of names do affect the function of the buttons to which they are assigned. These special names and their effects are listed in the following table:

STOP KEY	This button becomes a stop key. When pressed all vends will be terminated immediately.
GO LARGE / ALT KEY	This button becomes a 'GOING LARGE / ALT KEY' key. If pressed the machine will emit two beeps to show it is in 'large/alt' mode and the next drink to be selected will use the alternative set of presets associate with the other selection buttons. Typically these alternate selections will have been set to give a larger version of the standard drink in order to realise a GO LARGE function. Equally though the alternative selection could be configured to give Decaf selections.

- If drink name is correct, use ⮝, ⮟ to step through the program. The display will show:

USES NOZZLE000

On the Milano range this should always be set to zero.

- Press ⮝, ⮟ to show Ingredient Settings. Display will show:

Where <ING A> is the name of the ingredient assigned to bin A (see EDIT BIN NAMES).	**<ING A>** **000 (Start)**	Time after button pressed that ingredient A motor starts in tenth of a second.
Typically ingredient A is Milk	**<ING A>** **000 (Duration)**	Time for which ingredient A motor runs in tenths of a second.

Typically ingredient B is Chocolate	**<ING B> 000 (Start)**	Time after button pressed that ingredient B motor starts in tenth of a second.
	<ING B> 000 (Duration)	Time for which ingredient B motor runs in tenths of a second.
Typically ingredient C is Coffee	**<ING C> 000 (Start)**	Time after button pressed that ingredient C motor starts in tenth of a second.
	<ING C> 014 (Duration)	Time for which ingredient C motor runs in tenths of a second.
Typically ingredient D is Espresso or Decaf	**<ING D> 000 (Start)**	Time after button pressed that ingredient D motor starts in tenth of a second.
	<ING D> 000 (Duration)	Time for which ingredient D motor runs in tenths of a second.
	<WATER A> 000 (Start)	Time after button pressed that dispense valve associated with ingredient A/B mixer system opens.
	<WATER A> 000 (Duration)	Time for which A/B dispense valve opens in tenths of a second.
	<WATER D> 000 (Start)	Time after button pressed that dispense valve associated with ingredient D mixer system opens.
	<WATER D> 030 (Duration)	Time for which D dispense valve opens in tenths of a second.
	<WHIPPER A> 000 (Start)	Time after button pressed that A/B mixer motor begins to run.
	< WHIPPER A > 000 (Duration)	Time for which A/B mixer motor runs in tenths of a second.
	<WHIPPER D> 000 (Start)	Time after button pressed that D mixer motor begins to run.
	< WHIPPER D > 008 (Duration)	Time for which D mixer motor runs in tenths of a second.
	HOT WATER 010 (Start)	Time after button pressed that hot water dispense valve opens.
	HOT WATER	Time for which hot water dispense

000 (Duration)	valve opens.
FLUSH BOWL A 060 (Start) **FLUSH BOWL A 010 (Duration)**	At the end of a dispense cycle it is possible to program a small amount of water through the large mixing system to clean it and prevent drips. These parameters control the timing of this shot of water. Note. Only occurs on last cycle of multi-cycle drinks.
VEND DELAY 060 (Start) **VEND DELAY 010 (Duration)**	Under some circumstances it is desirable to have a pause between cycles of a multi-cycle selection. Theses variables provide the means to achieve this.
NUMBER OF CYCLES 001	Number of times settings repeat. For example set to 2 for a two cup pot.
SCALE FACTOR 100	Scale factor applied to basic drinks settings. To accommodate different drink sizes. Operates on all settings together.

- To adjust the drink, first select the parameter you wish to change. For example to adjust the Coffee strength scroll through to the parameter controlling the run time for the coffee ingredient motor. The display will show for example:

  COFFEE
  010 (DUR)

- Press ENTER - display will show:

  COFFEE
  VALUE = 012 (FLASHING DIGIT)

- Press ▲ to increase or ▼ to decrease.

- Press ENTER to accept the new value.

- Press ▲ to step through program to adjust other value or press ESC to return to SELECT DRINK TO MODIFY, then press ESC again to return to normal operating mode.

SELECT DRINK TO TEST

21. The SELECT DRINK TO TEST option allows any selected drink to be dispensed, while still in the Engineer's Program, in order to be tested. This facility is useful for testing a drink that has been modified.

    Press DRINK A, for example, to test a change made to the selection in the SELECT DRINK

TO MODIFY option.

MOVE OR COPY DRINK

22. The MOVE OR COPY DRINK option facilitates the rapid movement or cloning of a drink to another physical button on the keyboard. This is to aid the customization of menus to suit requirements in the field on an individual machine basis. Three options are available.

- SWAP DRINKS – the drinks on the selected buttons are swapped over.
- COPY DRINK – the selected drink is copied to the destination button but remains at the original button also.
- MOVE (ERASE ORG) – the selected drink is moved to the destination button but the original button is erased to facilitate adding a simple drink such as hotwater manually. Most of the more complex drinks would probably be copied from other drinks for instance a Café Latte might use an existing Cappuccino drink as a template.

23. To move or copy a drink

- Press the ENTER key on the MOVE OR COPY DRINK menu.
- The Display will show,

  SELECT DRINK TO
  MOVE OR COPY

- Press the key of the drink that you wish to move or copy. Once you have done so the keyboard led of that drink will remain illuminated.
- The display will now show,

  PLEASE SELECT
  DESTINATION

- Press the key that you want the selected drink to be moved or copied to. The destination key will now flash and the display shows…

  SELECT PROCEDURE
  SWAP DRINKS

- The bottom line of the display shows the currently selected procedure. Using the ▲ (UP) and ▼ (DOWN) keys you can choose from the options explained above namely SWAP DRINKS, COPY DRINK and MOVE (ERASE ORG). Once you are happy with the selection press ENTER to confirm or ESCAPE to cancel.

24. NOTE: If there is an ALT or GO_LARGE key assigned to a button an extra step will be required. As soon as you press ENTER on the MOVE OR COPY DRINK menu the display will show…

  DESTINATION OPT'
  REGULAR->REGULAR

- Press ▲ (UP), ▼ (DOWN), ENTER (SELECT) and ESCAPE keys to select the appropriate option. There are four possible options to choose from.

- REGULAR->REGULAR – Copies a regular sized drink to another regular drink position.
- REGULAR->LARGE – Copies a regular drink to a large drink position. This is often used so a regular drink can act like a template for a larger one.
- LARGE->LARGE – Copies a large sized drink to another large sized drink position.
- LARGE->REGULAR – Copies a large drink to a regular drink's position.

- Once an option is selected the process becomes exactly the same as when an ALT or GO LARGE key has not been asserted.

OUTPUT TEST

25. The OUTPUT TEST option allows an output device to be operated. The ▲ (UP), ▼ (DOWN), keys are used to move through the list of output devices. When the desired device is displayed use the STAR key to switch the device ON/OFF

    For example, to operate the coffee mixer motor select **COFFEE WHIPPER** by pressing ▲ until it appears in the display window, then press STAR to switch the motor ON.

CHANGE PRICE OF, OR INHIBIT DRINKS

26. The CHANGE PRICE OF, OR INHIBIT DRINK option allows individual drinks to be priced or inhibited.

    Changing the price/inhibiting on a paid machine;

    - Press the drink you wish to set
    - Use the arrow keys to set the price and press ENTER
    - If you set the price as 0004 it will inhibit the drink

    Inhibiting a drink of a free vend machine;

    - Press the drink you wish to inhibit
    - Use the arrow keys to change this to Inhibited and press ENTER

SET INGREDIENT THROW RATE

27. The SET INGREDIENT THROW RATE option allows the engineer to alter ingredient throw rates in grams dispensed per second of operation of the ingredient motor for the product usage calculation displayed in Operators Program.

    - Press ENTER. The display will show:

      INGREDIENT A (GRAMS PER SECOND)
      00001.05

To change the value of the Espresso throw rate, press ENTER again. The display will show:

INGREDIENT A (GRAMS PER SECOND)
VAL = 00001.05

Press ⮝ (UP) to increase the value or ⮟ (DOWN) to decrease it.

Having set the new throw rate, press ENTER to enter the new value.

Press ⮝ (UP) to display the next ingredient.

Press ESC to exit from the SET INGREDIENT THROW RATE option.

Event Log

28. The EVENT LOG

BLUETOOTH MENU

29. The Bluetooth Menu is used with the Button Barista APP. There is a more detailed section covering the APP later. The Bluetooth Menu has the following options;

Menu	Description
CHG BT DEV NAME	Change the name of the Bluetooth Interface PCB of the machine.
CHG APP X DRNK 1	Modify the drink settings related to Extra Drink 1 for the Application.
CHG APP X DRNK 2	Modify the drink settings related to Extra Drink 2 for the Application.
CHG APP X DRNK 3	Modify the drink settings related to Extra Drink 3 for the Application.
CHG APP X DRNK 4	Modify the drink settings related to Extra Drink 4 of the Application.
CHG APP X DRNK 5	Modify the drink settings related to Extra Drink 5 of the Application.

USB ACTIVITIES

30. The USB ACTIVITIES menu provides various activities for use with USB memory sticks a.k.a. flash drives. From this menu you can choose to save or load various machine features or download machine audits. The options available are

Menu Item	Description
CLONE MACHINE	Takes all data from the machine, to allow the entire machine to be cloned.
SAVE M/C	Takes the machine drinks settings, configuration settings, canister information,

CONFIG	payment settings and timed events. It does not take audit data.
SAVE RECIPES	Takes only the drink settings (which includes drink prices).
SAVE TIMED EVENTS	Takes only the timed event data.
SAVE PRICES	Takes only the pricing data.
WRITE AUDIT DATA	Writes the machine audit data to the USB device.
SETTINGS (CSV)	Outputs the machine settings in human readable format. The file can be opened with Excel on a PC.
TOUCH FW UPDATE	Updates the firmware on the Touch PCB.
SAVE TIMED EVENTS	Takes only the timed event data.
RESTORE MACHINE	Restores the settings from a previous cloned machine.
LOAD M/C CONFIG	Loads the configuration data from a previously saved configuration file.
LOAD RECIPES	Loads the recipe data from a previously saved Recipes file.
LOAD TIMED EVENTS	Loads the Timed event data from a previously saved Timed Events file.
LOAD PRICES	Loads the pricing data from a previously saved pricing file.

31. For example, to save a configuration to a card,

- Press ENTER on the USB ACTIVITIES menu. The display will show,

SELECT ACTION:

SAVE M/C CONFIG

- Press ENTER again and the user will be asked whether to save to the default file. (See below for the procedure for inputting a custom filename). The display will show,

  DEFAULT FILE?
  YES

- Press ENTER to confirm. If the file already exists the display will show,

  FILE EXISTS
  OVERWRITE?

- Press ESCAPE to cancel or press ENTER to confirm that you wish to overwrite the existing file.
- If ENTER is pressed during the file writing process the display will show,

  PLEASE WAIT

- Once the file has been successfully written the display will show,

  MACHINE CONFIG
  WRITTEN OK

- If a USB stick is not detected on entering the USB activities menu the display will show,

  PLEASE INSERT
  USB STORAGE DEV'

- PLEASE NOTE: Do not remove the USB stick during the file writing process.

32. For a custom filename select NO when the display is on the default file screen. The display will then show…

  FILE :-
  4567890 ABCDEFGH (FLASHING DIGIT)

- The filename can be up to 8 chars and directly above the flashing 'A' char is the first character of the filename which defaults to a space.
- Use the ⮜ (LEFT) ⮞ (RIGHT) to scroll through the permitted chars on the bottom line. You can hold the key down to scroll faster or a single touch will scroll by a single character.
- Pressing the * (STAR) key on the internal keypad will place the character highlighted by the cursor in the filename at the current position. The display will show…

  FILE :- A
  34567890 ABCDEFG (FLASHING DIGIT)

- The cursor will move along one position to denote that you are now editing the second character of the filename. Pressing the * (STAR) key again will make the display show…

  FILE :- AA
  234567890 ABCDEF (FLASHING DIGIT)

- Note the bottom line centres on the previously entered character (or 'A' for the first character) by default if the character hasn't previously been edited otherwise it centres on the current character of the filename. To modify the filename character you can press the ⮝ (UP) key to move to the filename on the upper line of the display. You can then use left and right to highlight the character that needs correcting. For example, if you press ⮝ (UP) followed by the ⮜ (LEFT) key the display will show…

  FILE :- AA (FLASHING DIGIT)
  234567890 ABCDEF

- Press ⮟ (DOWN) to move the cursor back to the bottom line and then press the * (STAR) key to select the correct character. The display will show…

  FILE :- AB
  34567890 ABCDEFG (FLASHING DIGIT)

- Press the ENTER key when you have finished editing the filename or ESCAPE to cancel the operation. If you select ENTER the file will be copied to …

FILE TYPE	DESTINATION
Configuration files	"./Coffetek/Zmcu/Configs/"
Timed Events	"./Coffetek/Zmcu/TimEvts/"
Prices	"./Coffetek/Zmcu/Prices/"
Audits	"./Coffetek/Zmcu/Audits/"

SET MACHINE SERIAL NUMBER

33.

- Press ENTER, if not set press ENTER again. The display will show:

  MACHINE SERIAL #
  VALUE 00000 (FLASHING DIGIT)

- To set serial number press ⮝ (UP) to increase or ⮟ (DOWN) to decrease, or press ⮜ (lLEFT) ➢ (RIGHT) to move cursor.

I2C STATUS

34. The I²C status menu contains the following submenus;

- Plus 16 Status
- Coin Pod Status
- Milk Pump Status

For each of the above sub menus the following options are available;

Menu Item	Description
I2C ACKS	The number of successful messages transferred since power on. Can wrap around to 0.
I2C NAKS	The number of unsuccessful messages transferred since power on. Can wrap around to 0.
ISOLATION TEST	Shuts down all I²C communication with other devices. Continues communication with the device under test and feeds back real time ACKS or NAKS.

SET DATE

35. The SET DATE AND TIME menu configures the Real time clock facility now available on the control board.

36. To set the date press ENTER on the SET DATE AND TIME menu. The display will show,

SET DATE
⮝, ⮟ ENTER OR ESC

- Press ENTER and the display will change to,

SET DATE
SAT 07/01/2000 (FLASHING DIGIT)

- Use the ⮝ (UP) key to increase or ⮟ (DOWN) to decrease, or press ⮜ (LEFT) ⮞ (RIGHT) to move the cursor.
- Once the date is correct press the ENTER key to confirm your changes or press ESCAPE to cancel them.

SET TIME

37. To set the time press ENTER on the SET DATE AND TIME menu. Then press the ⮝ (UP) key or ⮟ (DOWN) key until the display shows,

SET TIME
⮝, ⮟ ENTER OR ESC

- Press the ENTER key to adjust the time. The display will show,

SET TIME
TIME = 22:18 (FLASHING DIGIT)

- Use the ⮝ (UP) key to increase or ⮟ (DOWN) to decrease, or press ⮜ (LEFT) ⮞ (RIGHT) to move the cursor until the correct time is visible and then press the ENTER key. The display will then return to,

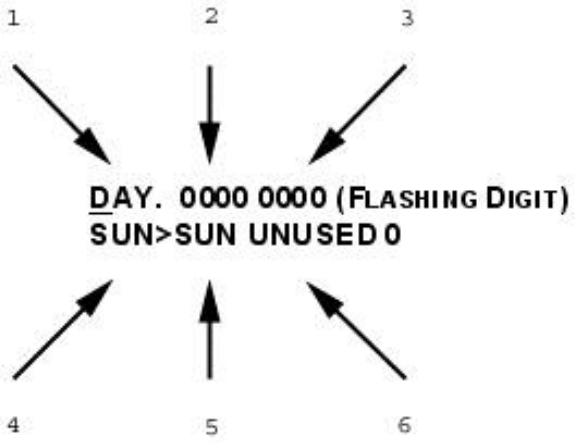
SET TIME
⮝, ⮟ ENTER OR ESC

- Press the ESCAPE key to exit the menu

TIMED EVENTS

- The timed events menu allows you to use the time and date previously set up to activate activities such as free vend periods for machines with payment systems, machine inhibit periods or to perform periodic flushes.

- Press ENTER on the TIMED EVENTS menu and the Display will show,



- Where,

  1) Daily event or block event selector. A daily event would happen everyday at the specified time. A Block event would happen continuously between the two times specified.
  2) Is the Start time in 24 hr format
  3) Is the Stop time in 24 hr format.
  4) Is the start day of the week for this timed event.
  5) Is the stop day of the week for this timed event.
  6) Is the event type which can be FLUSH, FREE (Free vend mode), TMD INH (Timed Inhibit).

- For example, to inhibit the machine each day between 5 and 6 pm you could set up the timed event as follows,

  DAY. 1700 1800
  SUN>SAT TMD INH

- To enter free vend mode during weekdays between 12 and 1 pm you could set the timed event as,

  DAY. 1200 1300
  MON>FRI FREE

- To inhibit the machine over a weekend you could write,

  BLOK. 1700 FRI >
  0800 MON TMD INH

TANK STATUS

38. The TANK STATUS option allows the engineer to view the status of the boiler water level and temperature in both the Instant and Espresso boilers.

- Press ENTER to display the tank status. The display will show:

WET 92°C 0447
G: WER 92 °C 0577

The top row refers to the Instant boiler, showing either WET or Dry, the temperature i.e. 92°C and the value 0447 is a number corresponding to the temperature setting.

The bottom row refers to the Espresso boiler signified by G: referring to the GROUP BREWER, showing either WET or Dry, the temperature i.e. 92°C and the value 0577 is a number corresponding to the temperature setting.

Press PROG to exit from the TANK STATUS option and access the next Engineer's Program option.

Set the Credit Lock to 0.

CHANGE SETTINGS

39. CHANGE SETTINGS allows alteration of the following machine settings:

There are several submenus, that cover various aspects;

- TEMPERATURE SETTINGS
- MACHINE SETTINGS
- MAINTENANCE SETTINGS
- PAYMENT SYSTEM SETTINGS
- AUDIT SETTINGS
- TIMED EVENT SETTINGS
- LIGHTING SETTINGS

Temperature Settings

40.

Settings	Description
DESIRED TEMP	86°C (0407) Allows setting of normal operating temperature for the Instant boiler.
TEMP LOW	75°C (0332) Allows setting of low cut-out point for the Instant boiler.

ECON TEMP	60°C (0230) Allows setting of the Economy mode the Instant boiler will lower to if set in the TIMED ACTIVITIES
CUP BOOST	Allows increase/decrease of temperature boost per cup dispense.
RESERVED 1	17
RESERVED 2	30

MACHINE SETTINGS
41.

Settings	Description
OUT OF SERVICE	0 Enables machine to be programmed out of service: Setting this to 1 sets the machine out of service
GLOBAL SCALING	100 Adjustment of cup volume of drinks. All aspects of drink are scaled, i.e. product, whipper, water.
DRY VEND FLAG	0 Enables product only operation: 0 = Water On, 1 = Water Off
SERIAL NUMBERS	The machines serial number can be entered so that it can be viewed on the LCD display. By default this facility is disabled.
BEHAVIOUR CODE	Status Display, STANDARD being the default. BEHAVIOUR 1 – Debug setting for Coffetek Software engineers only. FLUSH TIME OUT – The machine will function normally until the number of hours set in the FLUSH TIME HRS setting passes then the machine will inhibit all the vends until the machine has

	been flushed. COLD WATER OUT – If the machine is fitted with a chiller kit to produce cold vends. EXTERNAL PUMP – If the machine is fitted with an external pump kit i.e. Whale Pump. INGRED MONITOR – Will allow the machine to monitor how much product is being dispensed per drink to prevent a purely water vend being produced. EXT WASTE SENSOR – If the machine is fitted to a base cabinet or side unit with a waste kit to remove the coffee grouts and water this heading must be turned on.
STATUS DISPLAY	001 Will show on the internal display what the machines current boiler status is
LANGUAGE	This setting changes the language of the software. Great care should be taken when changing this value.
SILENT KEYS	When set to one this variable disables the beep when a key is pressed on the machine. Note that this does not disable the buzzer completely; all other sounds warning or otherwise will still be audible.
GROUP FLUSH POS	100 This is a setting the machines program looks to when moving the brewer group to flush and SHOULD NOT BE ADJUSTED
LEVELS RETRY	If set to 1 this will attempt to refill the tank when encountering a tank fill fault
GRP BRW ALT PARK	Set this as 1 to change the rest position of the brewer after a vend
QUICK DRINK TEST	If set to 1 this will allow you to test a drink while in “select drink to modify” by pressing the star key
SHOW GRP OP ERROR	If set to 001 will show the group brewer needs flush error when a drink takes too long to vend
RM COMMANDS	Reserved for future use
DISABLE APP	Use this option to disable the Button Barrista APP

CODED ACCESS	When set to 1, access to engineer's mode is protected by a code.
PRE GRIND FACILITY	When set to 1, the machine fills the doser ready for the subsequent vend during the current one. Now works with the Barista brewer too.
BARISTA MODE	When set to 1, the machine does multiple fills of the doser. Requires barista brewer.
DOSER CAPACITY GRAMS	This is the doser capacity in grams. This is used when you have a Barista brewer for calculating how long to run the second grind operation.
SCRN SAVE TIMOUT	This is the number of seconds before the screensaver becomes active.
SCREEN SAVE MODE	This changes the behaviour of the screensaver. Options are SCROLLING TEXT, DISPLAY LOW POWER and DISPLAY OFF

MAINTENANCE SETTINGS
42.

Settings	Description
MAX BREWER VENDS	80 This is the number of coffee vends until the machine inhibits the coffee vends.
GROUP OVERPRESSURE TIMEOUT	The amount of time a vend can run for before it times out.
MAX ESPRESSO SYS CLEAN	Number of coffee vends before “espresso system clean required” message is displayed
BIN WT A	Weight of ingredients in canister A. Used when behaviour code is set on INGRED MONITOR
BIN WT B	Weight of ingredients in canister B. Used when behaviour code is set on INGRED MONITOR

BIN WT C	Weight of ingredients in canister C. Used when behaviour code is set on INGRED MONITOR
BIN WT D	Weight of ingredients in canister D. Used when behaviour code is set on INGRED MONITOR
FLUSH TIME HRS	029 This function comes into operation if the BEHAVIUOR CODE is set to FLUSH TIME OUT, the machine will function normally until the number of hours set in this setting passes then the machine will inhibit all the vends until the machine has been flushed.

PAYMENT SYSTEM SETTINGS
43.

This menu is broken down into a further three submenus.

- **GENERAL SETTINGS**

Settings	Description
RES CREDIT DEVICE	Choose which type of credit device is attached to the machine. If no credit device use FREE
COINAGE TYPE	Pounds
COIN POD DISPLAY	If set to 1 the display will be set as ON
LOW CREDIT KB LIGHT BEHAVIOUR	Choose if drinks are illuminated when they are available but not enough credit.
COIN POD BUSY ANIMATION	010
CHIPKNIP PUB PURSE	Prevents credit from showing
CREDIT LOCK	0 Disables all access to machine programs: 0 = Credit Lock disabled (default setting) 1 = Credit Lock active When Credit Lock is set to 1, Credit Device and Credit Lock settings are

	not displayed. Additionally, Select Drink to Test, Select Drink to Restore Presets, Change Price or Inhibit Drinks and Initialise options are disabled. DISABLING THE CREDIT LOCK • To disable the CREDIT LOCK after it has been set, proceed as follows: • Enter CHANGE SETTINGS and set the Dry Vend Flag to 42. • Exit from CHANGE SETTINGS. • Enter CHANGE SETTINGS Set the Credit Lock to 0 and set the Dry Vend Flag to 0

- **MDB SETTINGS**

Settings	Description
EXACT CHANGE LIMIT	Limit of how much change it will pay out
MAX CREDIT	The maximum credit that can be accepted
NORMAL COINS	The coins accepted in normal mode. 0 is not accepted, 1 is accepted
EXACT CHANGE COINS	The coins accepted in exact change mode. 0 is not accepted, 1 is accepted
NORMAL BILLS	The bills accepted in normal mode. 0 is not accepted, 1 is accepted
EXACT CHANGE BILLS	The bills accepted in exact change mode. 0 is not accepted, 1 is accepted
MASK AUTO CONFIG	Use this to make the Vitro and the coin mech communicate.
CHANGER MODE	Single Vend – Vends one drink then gives change. Multi Vend – Vends drinks up to the value of credit. Change is given when the reject button is pressed
VEND BEFORE	If set on, will enforce a vend before change is given. If off, money can be

CHANGE	returned without a drink being selected.
VALIDATOR ESCROW	Not used
CLEAR RC	Clears remaining credit
MDB CASHLESS MAX TIMEOUT	The amount of time the Vitro will wait for confirmation when using a cashless device such as a card reader.

- **ACCEPTOR SETTINGS** -

Settings	Description
LEAST COIN VALUE	£0.05
EDIT COIN TYPE 1	£1
EDIT COIN TYPE 2	£2
EDIT COIN TYPE 3	5p
EDIT COIN TYPE 4	10p
EDIT COIN TYPE 5	20p
EDIT COIN TYPE 6	50p
OVERPAY CREDIT	How much extra credit the acceptor has taken as it doesn't give change.

AUDIT SETTINGS
44.

Settings	Description
ONE TOUCH AUDIT	Set to 1 to turn on one touch audit.
AUDIT FILE FORMAT	What type of file the audit uses
DDCMP ADDRESS	001
AUDIT BAUDRATE	9600
DDCMP SECURITY	0
DDCMP PASSCODE	0
EVADTS ASSET NUM	Set this to give a unique number for the machine.

TIMED EVENT SETTINGS
45.

Settings	Description
DAYLIGHT SAVING	If daylight saving applies to clock
IGNORE RTC	Ignore real time clock for timed events
ECONOMY DELAY	20s

LIGHTING SETTINGS
46.

Settings	Description
BACKLIGHT STANDBY	On, off, flash,alternate.
BACKLIGHT VENDING	On, off, flash,alternate.
BACKLIGHT VEND COMPLETE	On, off, flash,alternate.
BACKLIGHT ERROR	On, off, flash,alternate.
DOWNLIGHT STANDBY	On, off, flash,alternate.
DOWNLIGHT VENDING	On, off, flash,alternate.
DOWNLIGHT VEND COMPLETE	On, off, flash,alternate.
DOWNLIGHT ERROR	On, off, flash,alternate.
RGB LIGHT STANDBY	On (white), off, custom , cycle.
RGB LIGHT VENDING	On (white), off, custom , cycle.
RGB LIGHT VEND COMPLETE	On (white), off, custom , cycle.
RGB LIGHT ERROR	On (white), off, custom , cycle.
RGB CUSTOM COLOUR	This is the custom colour to use when the RGB light behaviour is set to custom. It is defined by Red Green and Blue values.

PRESS DRINK FOR FIXED COUNTERS

47. The PRESS DRINK FOR FIXED COUNTERS option allows the engineer to view the resettable vend counters associated with a selected drink.

- Press the drink selection key on the keypad.

Press prog to exit from the PRESS DRINK FOR FIXED COUNTERS option and access the next Engineer's Program option.

EDIT BIN NAME

- Press ENTER. Display will show: -

A B C D
(✸) (✸) (✸)

- Select canister to set Bin Name by using ⮜ (LEFT) ⮞ (RIGHT) and ENTER.
- Press ⮝ or ⮟ to scroll to option required to change.
- Press ENTER.
- Press ⮞ to scroll to next canister.

SET FACTORY DEFAULTS

48. THE FACTORY DEFAULT option will allow the Engineer to initialise a new MPU Board with default settings, if not using Palmtop PC.

- Press ENTER; the display will show:

ARE YOU SURE?
ENTER (Y), MODE (N)

- Press ENTER to select required factory default settings.
- Press ⮟ or ⮝ to find required machine type.
- Press ENTER to set factory default settings.

BOOTLOADER

49. The new USB functionality now supports software updates in the field via USB flash drives. To allow this to occur each ZMCU contains two software components namely the bootloader and the firmware. To run the bootloader it is necessary to fit the jumper labelled ENG_LK and restart the machine. Once the machine starts up the display will show:

BOOTING…
(001)

50. The lower line of the display is the Bootloader version number and is not to be confused with the actual firmware version number that can be loaded onto the control board to run the machine.

51. All firmware must be stored in ".\COFFETEK\ZMCU\FIRMWARE" on the USB flash drive. On an operational machine any USB activity which saves data to the flash drive will create this directory automatically. It is recommended to keep this directory small to avoid erroneous firmware being loaded onto the ZMCU.

52. The machine will then search for attached USB devices. If a device is not found the display will show,

PLEASE INSERT
USB DEVICE

53. If a USB flash drive is attached the screen will briefly say

DEVICE PRESENT

54. The bootloader will then scan the USB flash drive to see if any firmware updates are available in the ".\COFFETEK\ZMCU\FIRMWARE" directory. If this directory is not available the display will say

NO FIRMWARE
DIRECTORY FOUND!

55. If the directory exists but there are no valid files to upload the display will show,

NO FIRMWARE
FILES FOUND!

56. If a USB flash drive is inserted that does contain valid files the display will change to,

SELECT FILE
NG648_GB.000

57. The lower line displays the software version of the file that is about to be uploaded.

NOTE: It is imperative that the correct version of software for the machine is selected otherwise correct machine operation cannot be assured.

Pressing the ▲ (UP) or ▼ (DOWN) key will select any alternative software versions that are also available. Once you have the necessary software version selected press ENTER to confirm you wish to upload or press ESCAPE to cancel.

58. There are three stages which occur when ENTER is pressed. The first is verification that the file has valid contents. If it doesn't have valid contents the operation is aborted but if it does then the memory storing the old software is erased. Finally the board is programmed with the new software. Once completed successfully the display will show,

FIRMWARE UPDATED
REMOVE ENG' LINK

59. IF ESCAPE is pressed or there is a problem with the programming the display will show,

REMOVE ENG' LINK

60. Once the Engineer's link is removed there will be three short beeps before the machine then restarts with the newly programmed software.

61. After programming it is always necessary to SET FACTORY DEFAULTS so that the machine is running with valid data. On start-up the ZMCU's memory is scanned for corruption or misalignment and if detected it will prompt the user to set the factory defaults.

CORRUPT FRAM
SET DEFAULTS?

- Press ESCAPE to ignore or press ENTER to confirm where it will then advance you to within the SET FACTORY DEFAULTS menu where you can select the defaults you require.

- NOTE: The corrupt FRAM warning only occurs when the structure of the memory is not correctly in place and therefore is most often utilised for uninitialized boards. It is not guaranteed to trigger on each programming of the board so it's important to remember to set the defaults regardless to ensure the machine works as expected.

Quit Engineer Program

62. Press ENTER.

Section 3
Installation and Maintenance

INTRODUCTION

1. The information given in this Section covers installation, commissioning and maintenance procedures for the Vitro X3 Beverage Machine. These procedures must be carried out by authorised personnel who are fully conversant with the equipment, using only manufacturer's approved parts.

2. Servicing personnel must be familiar with the SAFETY WARNINGS, as detailed, before undertaking any installation, commissioning or maintenance procedure on the beverage machine. Any procedure which is found to be impracticable, inadequate or inaccurate should be reported to the Management for further investigation.

3. The requirements of proper hygiene in respect of food products must be ensured at every level of contact with the beverage machine and the ingredients associated with it.

4. In compliance with current regulations, the materials used in the manufacture of the beverage machine are non-corrosive, non-tainting and do not support the growth of bacteria. Refer to Statutory Instrument 1987 No.1523, and to The Model Water Bylaws 1986, Statutory Instrument 1987, No.1147. Non-metallic materials in contact with drinking water comply with the requirements of BS6920: Part 1: 1988. Therefore, only manufacturer's parts must be used.

SAFETY WARNINGS

1. Maintenance of the beverage machine is only to be undertaken by trained personnel who are fully aware of the dangers involved and who have taken adequate precautions.

2. Lethal voltages are exposed when the mains electrical supply to the beverage machine is available and any of the following items are removed:

   - Lid and cover assembly
   - Motor shelf
   - Side panels

   Maintenance personnel must ensure that the machine is isolated from the mains electrical supply before removing any of these items.

3. Replacement of the Type Y mains cable requires special tools. Should the cable become damaged, a trained person from an approved service agent must only carry out replacement.

4. THIS APPLIANCE MUST BE EARTHED.

5. Ensure that the connection to the water system is compliant with the pertinent national and local legislation. In the UK the Model Water Bylaws 1986 Statutory Instrument (SI) No.1147 are applicable.

6. Ensure that the unit is positioned such that the plug connecting the unit to the mains supply is accessible.

7. The beverage machine is designed for indoor use, in an environment with an ambient temperature range of between 1°C and 40°C. The machine should be located close to the appropriate electrical and water services with a minimum of 100mm (4in) clearance between the rear of the cabinet and the wall to allow adequate ventilation, and, if in a corner location, not closer to the right hand wall than 400mm (16in) to accommodate opening of the door.
   The unit should not be situated in an area where a water jet could be used.

8. The beverage machine is a heavy item. Care must be taken when lifting it.

9. The water in the boiler, and the boiler itself, are hot enough to scald or burn, even some time after the machine has been switched off. The boiler must be drained, filled with cold water and drained again before any attempt is made to handle it or any of its associated parts.

10. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance in order to protect them from the risk of being scalded by hot beverage.

FROST WARNING

Care must be taken to protect the beverage machine from frost. Do not attempt to operate the machine if it becomes frozen. Contact the nearest service agent immediately. Do not restore the machine to operational use until it has been checked and approved for use by the service agent.

INSTALLATION

WARNINGS (1) THE BEVERAGE MACHINE IS A HEAVY ITEM. CARE MUST BE TAKEN WHEN LIFTING IT.

(2) THE BEVERAGE MACHINE MAY TOPPLE IF THE MOUNT IS WEAK OR INSECURE. ENSURE THAT THE MOUNT IS SECURE AND THAT IT CAN SUPPORT THE WEIGHT OF THE MACHINE.

(3) ENSURE THAT THE MAINS ELECTRICAL SUPPLY IS ISOLATED BEFORE CONNECTING THE SUPPLY CABLE TO THE MACHINE.

Location

5. The beverage machine is designed for indoor use, in an environment with an ambient temperature range of between 1°C and 40°C. The machine should be located close to the appropriate electrical and water services with a minimum of 100mm (4in) clearance between the rear of the cabinet and the wall to allow adequate ventilation, and, if in a corner location, not closer to the right hand wall than 400mm (16in) to accommodate opening of the door.

   The unit should not be situated in an area where a water jet could be used.

Levelling

6. The machine should be levelled both fore and aft and side-to-side by adjustment of the four leveling feet, using a spirit level on the cabinet floor to check for level.

   The unit must be mounted within 10º of the vertical for safe operation.

Securing

7. The Vitro X3 Beverage Machine is a free-standing unit which can be mounted on a secure table, bench, cabinet or food and drink counter.

CONNECTING THE WATER SERVICES

Refer to the current requirements of The Model Water Bylaws 1986

Statutory Instrument (SI) No.1147.

IF THE EQUIPMENT WAS SUPPLIED WITH A MAINS WATER HOSE, THIS HOSE SHOULD BE USED. DO NOT USE A HOSE FROM A PREVIOUSLY INSTALLED PRODUCT EVEN IF IT WOULD FIT. TO DO SO COULD LEAD TO A HEALTH HAZZARD.

8. The water supply should be taken from a 15mm rising main at a pressure of between 0.08MPa to 1MPa and should be fitted with a stopcock to isolate the supply during servicing. A 15mm double backcheck valve, with inspection port, should be fitted to the flexible hose.

9. A mains water blocker MUST be fitted in the mains water supply line before the water reaches the vending machine.

10. The outlet should be fitted with BSP connections and must be positioned within 1.5m of the machine to ensure correct fitting of the hose. If possible, the outlet should be located behind the machine to prevent misuse.

11. Before connecting the machine hose to the mains outlet, flush the system, via the stopcock, to remove any impurities that may have accumulated in the mains supply pipe.

12. Connect the machine hose to the mains outlet using the seals supplied and ensure that all fittings are tight. Turn on the water supply at the stopcock and check for leaks, both behind and inside the machine.

CONNECTING THE ELECTRICAL SERVICES

WARNINGS (1) THE MACHINE MAINS CABLE MUST BE CONNECTED TO THE SUPPLY VIA A SAFETY ISOLATOR SWITCH WHICH PROVIDES A CONTACT SEPARATION OF AT LEAST 3mm.

(2) REPLACEMENT OF THE Y TYPE MAINS CABLE REQUIRES SPECIAL TOOLS. SHOULD THE CABLE BECOME DAMAGED, REPLACEMENT MUST ONLY BE CARRIED OUT BY A TRAINED PERSON FROM AN APPROVED SERVICE AGENT.

(3) ENSURE THAT THE SUPPLY TO THE ISOLATOR SWITCH IS ISOLATED BEFORE MAKING ANY CONNECTIONS TO IT.

(4) ENSURE THAT THE SUPPLY TO THE BEVERAGE MACHINE IS ISOLATED BEFORE MAKING ANY CONNECTIONS TO THE TERMINAL BLOCK AT THE REAR OF THE MACHINE.

(5) THE BEVERAGE MACHINE MUST BE EARTHED.

13. The mains cable fitted to the machine should be 3-core, depending on the electrical supply available and the number of heaters to be connected in circuit. The cable is terminated at a terminal block at the base of the machine. Connection to the electrical supply must not be carried out using a cable with more cores than required.

14. Do not attempt to connect more than one heater to a 230V~, 10A or 16A single phase supply. The mains cable must be connected to the supply via a safety isolator switch, preferably located behind the machine. Ensure that the supply to the isolator switch is isolated before making the connections. Ensure that the supply to the beverage machine is isolated before making any connections to the terminal block. The machine must be earthed.

15. Connect the beverage machine, via a safety isolator switch with a contact separation of at least 3mm, to a 230V~, 50Hz, 13A supply. Note that replacement of the Y Type mains cable requires special tools. Should the cable become damaged, replacement must only be carried out by a trained person from an approved service agent.

To reconfigure the machine to operate from a 110V supply, move the voltage selector link on the PSU to the 110V position and replace the 240V 3kW element (part no. 12345) with a 110V 1.6kW element (part no. 56223).

16. Preferably, the isolator switch should be located behind the machine to prevent accidental

damage or misuse.

17. The number of heaters which can be connected in circuit depends on the supply available. The supply requirements are as follows.

- Heater Operation (3kW): 230V~, 10A/16A single phase, 50Hz

18. The 3-core cable connections for 2 heaters to operation from a 230V~, 10A/15A supply are as follows:

LIVE	**BROWN**
NEUTRAL	**BLUE**
EARTH	**GREEN/YELLOW**

Important: Where a beverage machine is to be connected to a 13A domestic socket outlet, a 3-core power cable capable of carrying a minimum current of 13A, Part No. 54416, must be used. This cable is fitted as standard.

DESCALING THE TANK

WARNING

ENSURE THAT THE TANK IS FLUSHED WITH COLD WATER
BEFORE ATTEMPTING TO HANDLE IT.

19. If the tank requires descaling, proceed as follows:

- Isolate the machine from the electrical supply.
- Flush the tank with cold water.
- Remove the tank, taking note of the connections, which have been removed.
- Remove the solenoid operated valves and the thermostat probe from the tank.
- Check the heater element for signs of deterioration. Replace if necessary.
- Descale the tank in the approved manner.
- After descaling, flush the tank thoroughly with cold water, refit the solenoid operated valves and thermostat probe, and install and reconnect the tank to the machine.
- Restore the electrical supply to the machine and carry out a test of the quality of each beverage before returning the machine to operational use.

COMMISSIONING

WARNINGS (1) TO AVOID EXPOSURE TO HAZARDOUS VOLTAGES, DO NOT LEAN INTO THE MACHINE OR TOUCH ANY EXPOSED LIVE POINTS WHEN THE MAINS SUPPLY IS AVAILABLE TO THE MACHINE AND ANY OF THE FOLLOWING ITEMS ARE REMOVED: INGREDIENT CANISTER ENCLOSURE, LID AND COVER ASSEMBLY, MOTOR SHELF, SIDE PANELS.

(2) THE WATER IN THE BOILER IS HOT. AVOID CONTACT WITH WATER LEAKING FROM THE BOILER OR FROM ANY OF ITS ASSOCIATED VALVES, TUBES AND PIPES.

20. It is essential that the Service Engineer responsible for installing and commissioning the machine ensures that:

- all electrical and water supplies are correctly and safely connected;
- all covers, panels or access doors are in place and secured, and the machine is left in a SAFE condition;
- the Operator is familiar with the SAFETY PRECAUTIONS for the machine;
- the importance of hygiene and regular cleaning is fully appreciated by the Operator.

21. With the water and electrical supplies connected to the machine, proceed as follows:

- Set the On/Off switch on the machine to OFF.
- Isolate the electrical supply from the machine.
- Open the cabinet door and locate the waste tray.
- Ensure that the overflow pipes are not trapped.
- Restore the electrical supply to the machine.
- Set the On/Off switch on the machine to ON.
- Check that the boiler fills with water and that the water supply cuts off when the correct level is reached, i.e. no water overflows into the waste tray. (The machine may have to be switched OFF and ON several times in order to fill the tank).
- Check that the heater heats the water to the correct temperature.
- Select the Engineer's Program and run through the Output Test to check that all components are functioning correctly.
- Fill the ingredient canisters.
- Check the complete range of machine operations.

- If required, select the Engineer's Program and change the pre-set values to suit customer requirements.
- Set the On/Off switch on the machine to OFF.
- Isolate the electrical supply from the machine.
- Check all hose connections for leaks.
- Clean the interior and exterior of the cabinet.
- Restore the electrical supply to the machine.
- Set the On/Off switch on the machine to ON.
- Operate the machine through the complete range of dispense operations and check that each one is correct.

DAILY HYGIENE

Cleaning Instant

22.

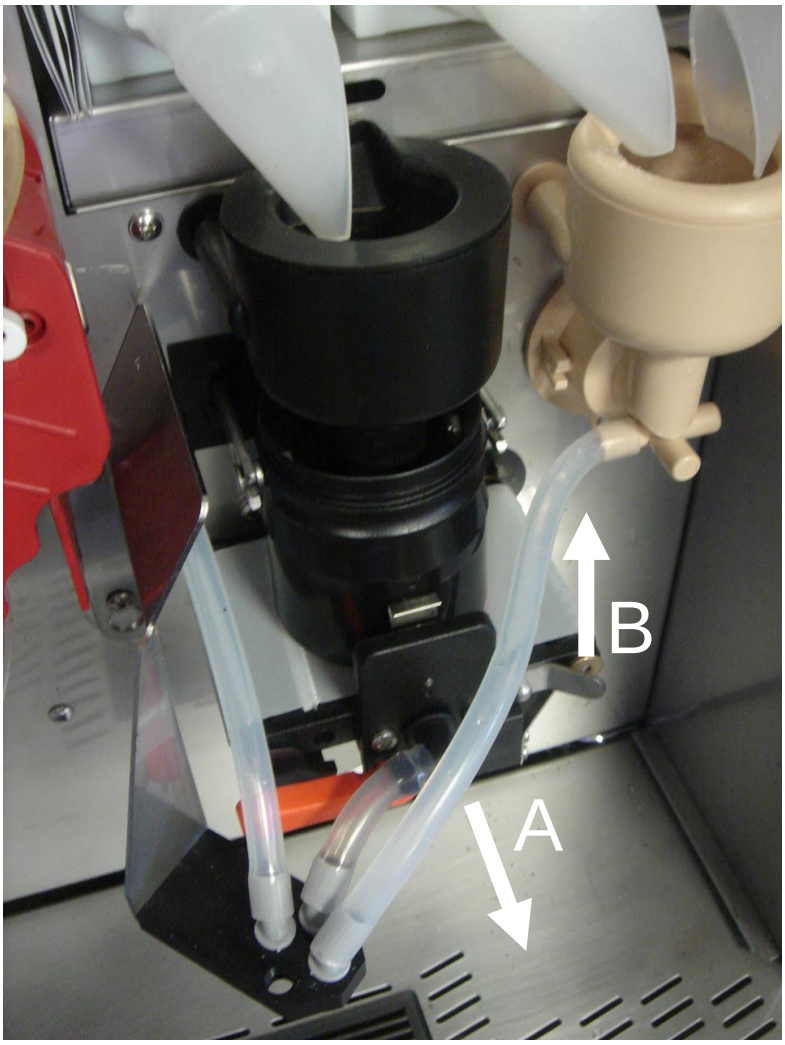
- Set the On/Off switch on the machine to ON.
- Remove the instant ingredient canisters. Wipe clean the exterior surfaces of the canister assembly. Wipe dry.
- Remove the coffee grouts bucket. Empty the contents of the bucket and wash and dry it.
- Remove the waste tray and grille. Empty the contents of the tray and wash and dry the tray and grille.
- Put a container of at least 300ml capacity under the dispensing nozzles.
- Press the FLUSH button once on the internal keypad. The screen will ask if you wish to flush the espresso system. Press UP several times until it shows FLUSH INSTANT. Press ENTER
- The machine will run warm clean water through the instant bowl whilst running the whipper motor. This process will clean any residual product that has been left in any of the systems.

WEEKLY HYGIENE

Cleaning (Tea)

23.

- Remove the coffee grout bucket.
- Disconnect the tube connecting the tea brewer to the dispensing nozzle by pulling the black right-angled fitting (A) away from the brewer itself. Lift the lower carriage locking lever (B) to the vertical, (unlocked position). Remove the whole carriage assembly by pulling it gently towards the front of the machine.



- Once the carriage is removed slide the tea chamber towards the front of the machine to remove.
- Wash and dry the carriage and tea chamber. Check the filter belt for signs of wear or damage and if necessary replace.

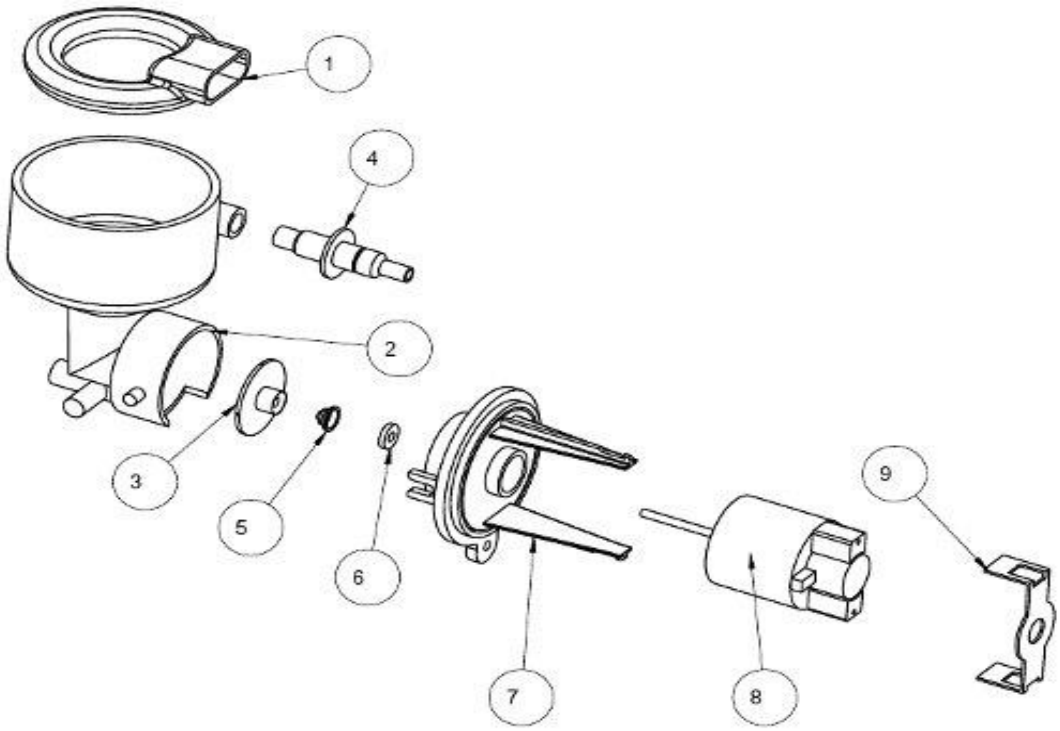
Cleaning (Instant)

24.

- The ingredients should be removed from the canisters and the canisters washed and allowed to thoroughly dry, before being refilled with ingredients and restored to the machine. It is recommended that the canisters be left to dry overnight.

- The brewer filter belt should be removed and cleaned by soaking it in a suitable de-staining solution.

WARNING	(1)	THE UNIT MUST NOT BE CLEANED USING A WATER JET OR SPRAY.
	(2)	THE ENCLOSURE IS NOT WATERPROOF AND DAMAGE MAY OCCUR IF EXCESSIVE VOLUMES OF WATER ARE USED IN THE CLEANING PROCESS.



WHIPPER AND MIXING BOWL ASSEMBLY

- Set the on/off switch on the machine to off and isolate the mains electrical supply from the machine. Unlock and open the cabinet door.

- Rotate the canister nozzles then remove the ingredient canisters. Wipe clean the

exterior surfaces of the canister assembly and dry thoroughly.

- Disconnect the pipes from the mixing bowls and remove the dispense nozzles from the dispense head. Wash and dry these items.
- Rotate and remove the steam trap ❶, then remove the mixing bowl/whipper housing ❷ by pulling the chamber towards yourself.
- Remove the whipper impellor ❸ by pulling toward you, the red whipper seal ❺ and the PTFE washer ❻.Undo the screw at the bottom of the whipper base and then turn the whipper base ❼ to the right and pull off.
- Clean all the whipper parts in hot water using the recommended sterilising agent and dry them thoroughly.
- Remove the extract chamber from the canister shelf. Wash and dry the cover.
- Clean all accessible inner and outer surfaces of the machine using a damp cloth and wipe dry.
- Replace the cleaned parts.
- Replace the ingredient canister after filling with product and rotate the canister nozzle downwards.
- Switch on the machine and set on/off switch to on.
- Flush the machine by pressing the FLUSH button on the internal door to ensure there are no leaks and everything is working correctly.
- Remove waste tray and grille and empty contents.
- Clean waste tray and grille and replace.

Filling Procedure (Instant & Tea)

25.

- Open door of machine with key provided.
- Turn ingredient chutes to ensure that product is not trailed over the counter.
- Lift out the product canister. Remove lid of canister and fill with correct ingredients to within 3cm of top of canister. Do not overfill canister or compress the product in canister.
- Wipe the exterior of the canister with a clean damp cloth using the recommended cleaning agent. Dry the canister with a clean dry cloth or paper towel.
- Return the canister to the machine. Remember to turn the ingredient chutes back to a downward facing position.
- Always ensure that the canisters are located in the correct position. The ingredient name is written on the rear of the machine to assist you.

- Check that the auger at the rear of the canister is correctly aligned with the cogs at the back of the machine.

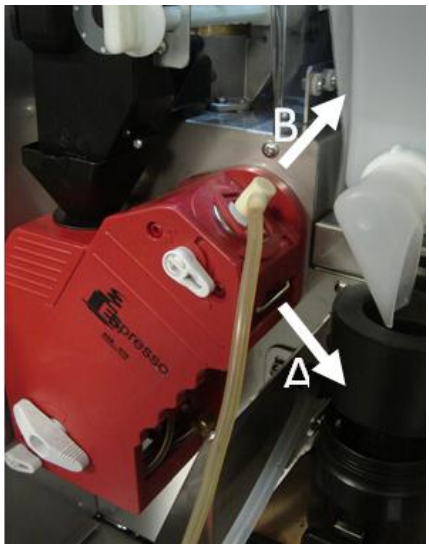
Filling Procedure (Espresso)

26.

- Open door of machine with key provided.
- Pull the bean hopper lid lock forward towards the front of the machine.
- Lift the lid of canister and fill with correct ingredients to within 3cm of top of canister. Do not overfill canister or compress the product in canister.
- Wipe the exterior of the canister with a clean damp cloth using the recommended cleaning agent. Dry the canister with a clean dry cloth or paper towel.
- Return the canister lid to the closed position and push the canister lock back into position.
- Close the door of machine and lock with key provided.

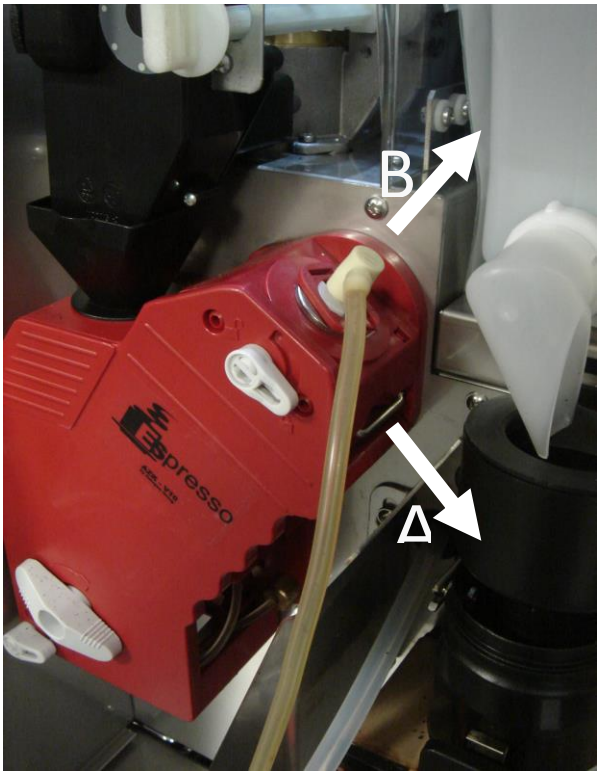
FLUSHING THE "ESPRESSO" BREWER – TO BE DONE EVERY 3 MONTHS

- Ensure both the water waste and grout buckets are in place as they are both used during this process. The total process will take approximately 5 minutes to complete.
- Press the "FLUSH" key on the internal keypad.
- The machine's internal display will show: "Flush Sys Esp, Enter Yes, Esc No"
- The brewer will move to various positions and will dispense water in to the grout bucket.
- Once this initial flush has completed the machines beep will change and the internal display will show: "Insert Tablet, Press Enter"
- Insert the tablet into the brewer and press Enter
- The cleaning of the "Espresso" brewer will now continue, at the end of the cycle the machine will do three espresso drinks to ensure all of the residue from the tablet has be purged from the system.
- For best results remove the brewing piston and clean the upper filter with a soft brush to eliminate any particles which remain. For the Barrista brewer it's required to remove the brewer to access the piston filter. See removing brewer below.

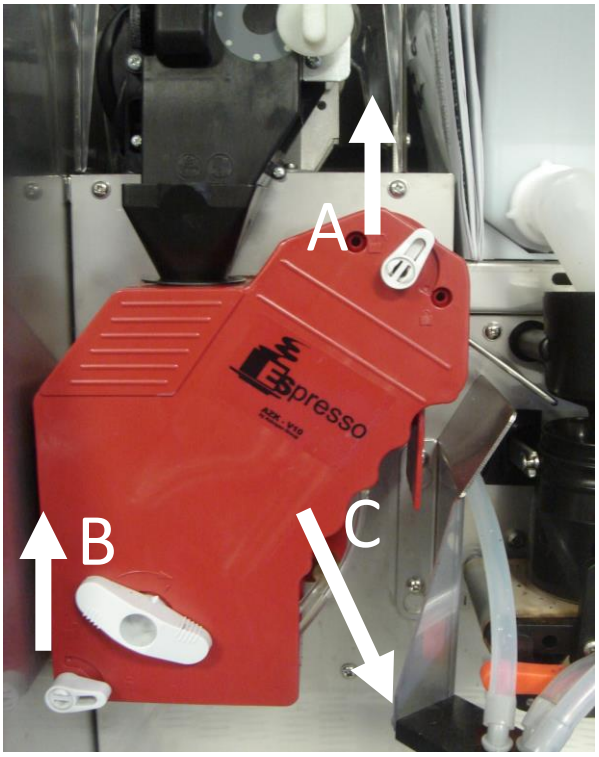


Removing Espresso Brewer

- Remove the top piston from the brewer by pulling the lock (A) angled down away from the group towards the tea brewer. Once done slide the piston (B) up out of the body of the group.



- Unlock the body of the group from the machine by turning the white clips (A & B) to the unlock position (A already in unlocked position) then pull the while group towards the front of the machine to remove (C)



- Once the group has been removed the whole system can be cleaned with warm clean

water.

Cleaning Barista Espresso Group Addendum

Closed

Open

- Turn machine on and watch as brewer cycles from closed position to open position. When it reaches open position turn the machine off.

- Remove these two silver screws

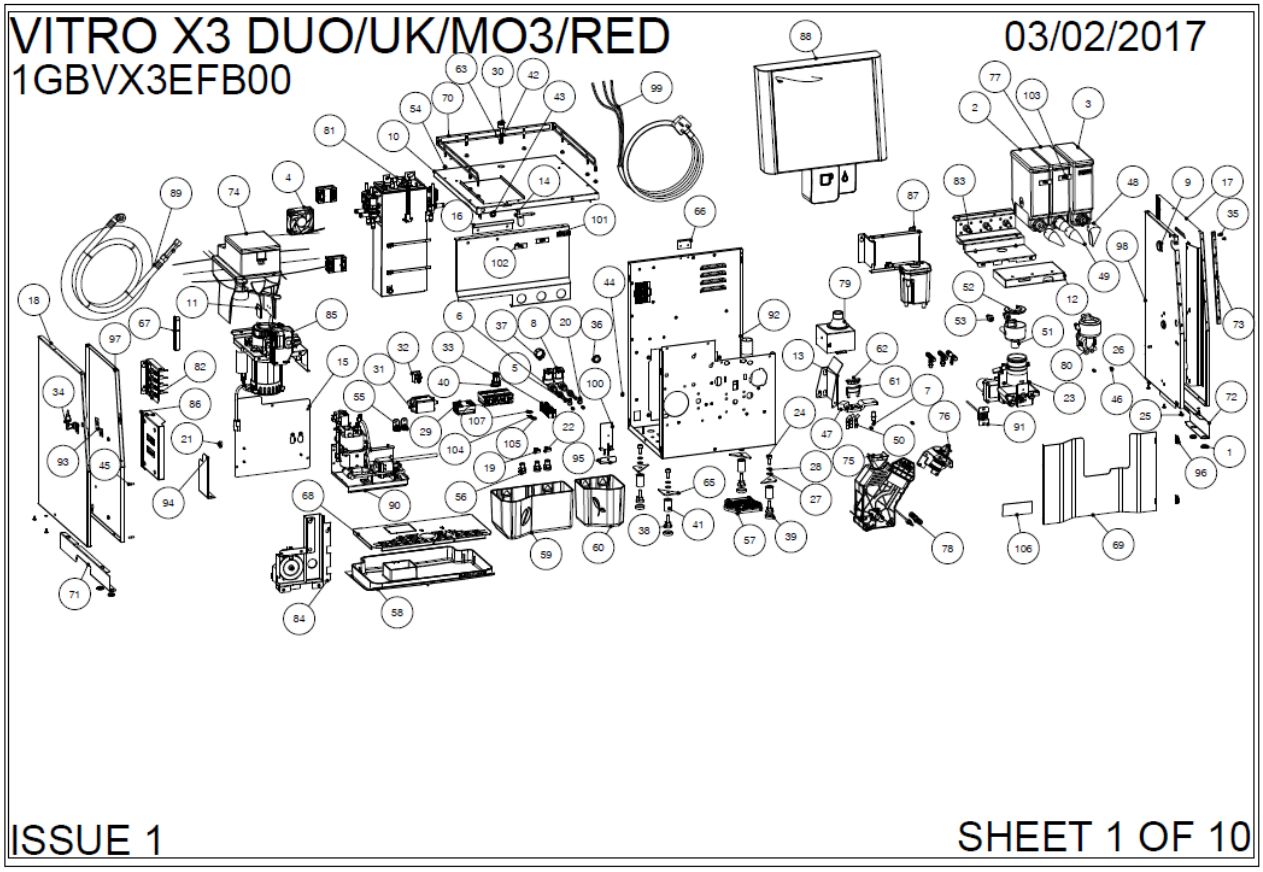
FAULT FINDING GUIDE

FAULT		POSSIBLE CAUSE		ACTION
FATAL I^2C ERROR Displayed	(a)	Electrical noise	(a)	Check motors
	(b)	MPU Board fault	(b)	Replace MPU Board
	(c)	Software error	(c)	Reset power
Keypad does not bleep	(a)	Keypad damaged	(a)	Replace keypad
	(b)	Keypad disconnected	(b)	Reconnect
	(c)	MPU Board fault	(c)	Replace MPU Board
Drinks cold	(a)	Heater fuse blown	(a)	Check and replace
	(b)	Thermal cut-out tripped	(b)	Reset trip
	(c)	Desired temperature incorrectly set	(c)	Check desired temperature setting
	(d)	Excessive scaling in heater tank	(d)	Check tank and descale if necessary
	(e)	Solid state relay fault	(e)	Check relay
	(f)	Low cut-out in program incorrectly set	(f)	Reset low cut-out setting
	(g)	Temperature probe wet	(g)	Dry probe and check for leaks.
No motor operation	(a)	Jammed motor	(a)	Check motor operation
	(b)	Power Supply failure safety trip	(b)	Reset power
Machine inoperable; no display	(a)	Power Supply failure	(a)	Replace Power Supply Board

FAULT		POSSIBLE CAUSE		ACTION
Heater tank not filling	(a)	Low water pressure	(a)	Check water pressure
	(b)	Inlet valve fault	(b)	Check inlet valve
	(c)	MPU Board fault	(c)	Replace MPU Board
Heater tank boiling over	(a)	Incorrect desired temperature setting	(a)	Reset desired temperature setting
	(b)	Temperature probe fault	(b)	Replace probe
	(c)	MPU Board fault	(c)	Replace MPU board
	(d)	Short on solid state relay	(d)	Replace relay
Heater tank overfilling	(a)	Probe open circuit	(a)	Check probe circuit
	(b)	Inlet valve fault	(b)	Check inlet valve and replace if necessary
	(c)	Level probe incorrectly positioned	(c)	Reposition probe
Bearding of ingredient	(a)	Extractor fan fault	(a)	Check fan
	(b)	Steam hoods missing from mixing bowls or incorrectly positioned	(b)	Fit steam hoods to mixing bowls and position correctly.
Machine floods	(a)	Dispense pipes incorrectly fitted to dispense head	(a)	Reposition pipes
	(b)	Mixing bowls incorrectly fitted	(b)	Reposition mixing bowls
	(c)	Whipper seals missing	(c)	Check seals
	(d)	Overflow pipe incorrectly fitted	(d)	Refit overflow pipe
No display	(a)	Display connector loose	(a)	Refit connector
TEMP LOW displayed	(a)	Thermal cut-out tripped	(a)	Reset cut-out
	(b)	Heater fuse blown	(b)	Check fuse

	(c)	Incorrect temperature setting	(c)	Check program setting

Section 4
Exploded Parts Diagram



VITRO X3 DUO/UK/MO3/RED

03/02/2017

1GBVX3EFB00

ITEM	REFERENCE	TITTLE	QTY.
1	22449	GROMMET BLIND	4
2	54434	CAN 220MM WIRE AUGER	1
3	54436	CAN 220MM PLASTIC AUG+AGI	1
4	54877	FAN 24 VDC	1
5	55132	REGTRICTOR GREEN 2.8 l/mi	2
6	56087	PI2512165 FITTING STRAIGHT Ø9.5 x Ø12.7	2
7	56920	DISP NOZZLE VENDING MACH	1
8	57800	TWO WAY VALVE WITH RESTRICTORS	1
9	59080	GROMMET OPEN Ø25MM BLK329	1
10	63190	SUBASSY LID NEVA T/T B2C AZK	1
11	63197	MICRO SWITCH PUSH PLATE	1
12	63322	EXTRACT DUCT B2C AZ TEA	1
13	63324	ST F/HEAD BRKT B2C AZT TT	1
14	63325	TOP CANISTER LOCK B2C AZ	1
15	63328	SUBASSY AZ BOILER B/PLATE B2C AZ	1
16	63404	CANISTER L/PLAT B2C AZT TT	1
17	63473	SUBASSY R/H STIFFENED S/PANEL G/D	1
18	63611	SUBASSY VITROFL ESP L/H SIDE PANEL	1
19	71740	SNAPPER CLIP NO 10	1
20	71743	SNAPPER CLIP NO 3	2
21	71744	SNAPPER CLIP NO 2	1
22	71745	SNAPPER CLIP NO 12	1
23	88100-TEMP	12 OZ RH TEA BREWER	1
24	01006380	SCREW DIN 912 M8x20 STAINLESS	4
25	01010281	SCREW DIN 7981F H WASHER BZ ø3.9x9.5 ZINC	6
26	02002070	GROWER WASHER DIN 7980 M4 STAINLESS	3
27	02003260	FLAT WASHER DIN 125A M8 STAINLESS	4
28	02053510	WASHER DIN 6798J M8	4
29	03600110	TRIAC	5
30	04001580	SAFETY THERMOSTAT RESET BLACK BUTTON	1
31	04804130	FILTER 20A 250V	1
32	04804150	LC-R595KDFT2FA ROCKER SWITCH ON-OFF RED	1
33	04804490	12-32A CONNECTION TERMINALS STRIP	1
34	08502400	MINI CAMLOCL & CAM 2 KEYS	1
35	09718340	SNAP RIVET BLACK	2
36	09718630	GROMMET Ø16	2
37	09718680	PROTECTION CAP 3/4"x14 BSP/GAS	1
38	09722100	5200-1-99 LEVELLER M8x25	4
39	09722110	FOOT COVER NON SLIP	4
40	09722120	CABLE GLAND (NESTLE)	1
41	09722130	FOOT SPACER TAPPED Ø25xM8x36	4
42	09722140	'O' RING RESET BUTTON BLACK Ø15xø3	1
43	09722170	GROMMET Ø9.6	1
44	10012840	SUPPORT SHELL	1
45	10037200	PIN BULLET Ø4mm	2
46	10040180	WASTE BUCKET LOCK PIN	4
47	10041521	VITRO ESP DISPENSE HEAD	1
48	11037820	DO091 R/H CHUTE	1
49	11037830	L/H CHUTE	4
50	11037871	ANGLED NOZZLE	3
51	11037891	TEA BOWL - BLACK	1
52	11037901	TEA BOWL LID	1
53	11038281	MIX BOW I/L PIPE BLACK	2
54	11038391	DOOR PIP GROMMET Ø5 2214BF	8
55	11043091	DRAIN HOSE DEVICE	2
56	11043111	BOWL ADAPTOR	3
57	11047751	VITRO FL PLASTIC GRID	1
58	11047761	VITRO FL 400 TRAY	1
59	11047771	VITRO FL - COFFE BIN	1
60	11047781	VITRO FL - TEA BIN	1
61	11047791	DOUBLE SPOUT BODY	1
62	11047801	DOUBLE SPOUT COVER	1
63	12017770	COMPRESS SPRING 11ODx12x5x5.1	1
64	29102270	HOSE 1.1/4" EXTRA FLEX	1
65	31195390	FOOTPLATE	4
66	31195400	REAR LID HOLDER	1
67	31199381	ESPRESSO BEAN BRACKET	1
68	31213450	VITRO FL METALLIC GRID	1
69	31213470	VITROFL FRONT COVER	1
70	31213821	LID WIRE	1
71	31218860	SURE FOOT LHS DUO FL	1
72	31218870	SURE FOOT RHS DUO FL	1
73	39023131	DOOR HINGE B2C T/TOP	1
74	41193191	ASSY VITALE BEAN HOPPER	1
75	41204811	STANDARD ESPRESSO BREWER	1
76	41204841	ASSY. PISTON SUPPORT AZK10	1
77	41222661	220MM WIRE AUGER CANNISTER + AGITATOR	1
78	41237431	4MM TO 4MM PUSH FIT NON RETURN ASSEMBLY	1
79	41237771	ASSY FAN BOX (BOX 66390)	1
80	41237861	ASSY WHIPPER MOTOR BEIGE	1
81	41238311	VITRO ESP DUO GB - BOILER ASSMBLY	1
82	41238321	FUSE PANEL ASSY - VITRO ESP	1
83	41238331	MOTOR SHELF ASSY - VITRO ESPRESSO	1
84	41238341	ESP BREWER MOTOR ASSY - VITRO ESP	1
85	41238361	GRINDER PANEL ASSY - VITRO ESP	1
86	41238371	PSU PIVOT ASSY - VITRO ESP	1
87	41238381	WATER TANK ASSY - VITRO ESP	1
88	41238851	COMPLETE DOOR ASSY - VITRO FL ESPRESSO	1
89	41518600	WITTERN LTD HOSE KIT	1
90	41521351	VITRO ESPRESSO BASE TRAY ASSEMBLY	1
91	41521361	ASSY VITRO ESPRESSO BREWER PIPE	1
92	42043230	VITRO FL ESP DUO - ASSY MAIN BODY	1
93	42951370	ASSY STABLISING BRACKET	1
94	42954810	SUBASSY VITRO ESPRESSO BOILER SHIELD	1
95	42961160	ASSY WAGGLER SUPPORT BRACKET	1
96	42967130	VITROFL FRONT COVER HINGE	2
97	42967140	SUBASSY VITROFL ESP L/H SIDE INSERT	1
98	42967150	SUBASSY VITROFL ESP R/H SIDE INSERT	1
99	43222880	MAINS LEAD WITH 13A PLUG	1
100	43317350	WAGLER OVERFLOW DETECT AS	1
101	82039450	CANISTER CHOCOLATE LABEL	2
102	82039470	CANISTER LABEL TEA	2
103	82039480	CANISTER LABEL MILK	2
104	82041250	LIVE TERMINAL LABEL ("L")	1
105	82041260	NEUTRAL TERMINAL LABEL ("N")	1
106	82041280	WARNING LABEL CAUTION	1
107	82041290	EARTH TERMINAL LABEL	1

ITEM	REFERENCE	TITLE	QTY
	39021641	Tea Brewer Seal Kit	1
	58589	Main Loom Vitro DFB	1
	09722360	grippa bag 3x7.5"	0.200
1	56363	Thread - Tea Belts WHITE	0.400
2	09718430	Tea Brewer Belt 12oz 70mm	1
3	56534	Tea Belt Mesh 70mm	0.300
4	09722360	grippa bag 3x7.5"	0.200
5	56363	Thread - Tea Belts WHITE	0.400
6	81038810	OPERATOR MANUAL (ENGLISH) VITRO LINE	1
7	82042900	Quality Sticker	1
8	81041000	Safety Information Leaflet	1
9	41238911	VITRO FL ESP DUO BOILER TUBE KIT	1
10	29101880	Tube 11x18mm Overflow/Dmp	0.640
11	29101950	TUBE 8x12 PLAT CURED - CLEAR	0.700
12	29101870	Tube 9x15 Dispense/Inlet	0.680
13	29102440	Tube 8x12 PLAT CURED - RED	0.310
14	29102450	Tube 8x12 PLAT CURED - BLUE	0.330
15	55683	Tube 6x10mm Outlet	0.480
16	29101900	Yellow Tube PlatCure 6x10	0.600
17	41239161	VITRO-FL ESP DUO GENERAL TUBE KIT	1
18	29101850	Silicon Breather Tube 3.2 x 1.6	0.240
19	29101890	Red Tube Plat Cure 6x10	0.050
20	29101910	Blue Tube Plat Cure 6x10	0.180
21	54099	Insulation Tape 25MM X 33	0.002
22	49054571	ENGLISH HORECA DECAL SET	1
23	29101380	9X14 BLACK/BROWN SILICONE TUBE	0.050
24	29101380	9X14 BLACK/BROWN SILICONE TUBE	0.140
25	29101380	9X14 BLACK/BROWN SILICONE TUBE	0.240
26	29101850	Silicon Breather Tube 3.2 x 1.6	0.230
27	29101870	Tube 9x15 Dispense/Inlet	0.160
28	29101950	TUBE 8x12 PLAT CURED - CLEAR	0.400
29	29101950	TUBE 8x12 PLAT CURED - CLEAR	0.450
30	14008080	VFL ESPRESSO PACKING - LID	1
31	14008090	VFL ESPRESSO PACKING - BASE	1
32	14008100	VFL ESPRESSO PACKING - FRONT&BACK SPOORT	2
33	14008110	VFL ESPRESSO PACKING - SIDE BAR	4
34	14008120	VFL ESPRESSO PACKING -LOCATION TRAY	1
35	14008130	VFL ESPRESSO PACKING -CORRUPADS	2

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VITRO X3 DUO/UK/MO3/RED

03/02/2017

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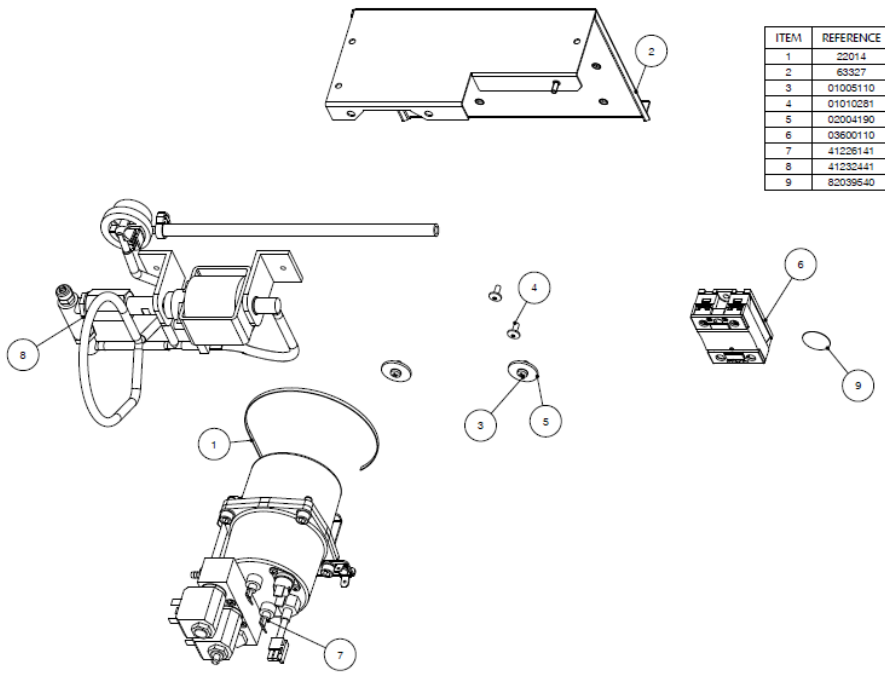


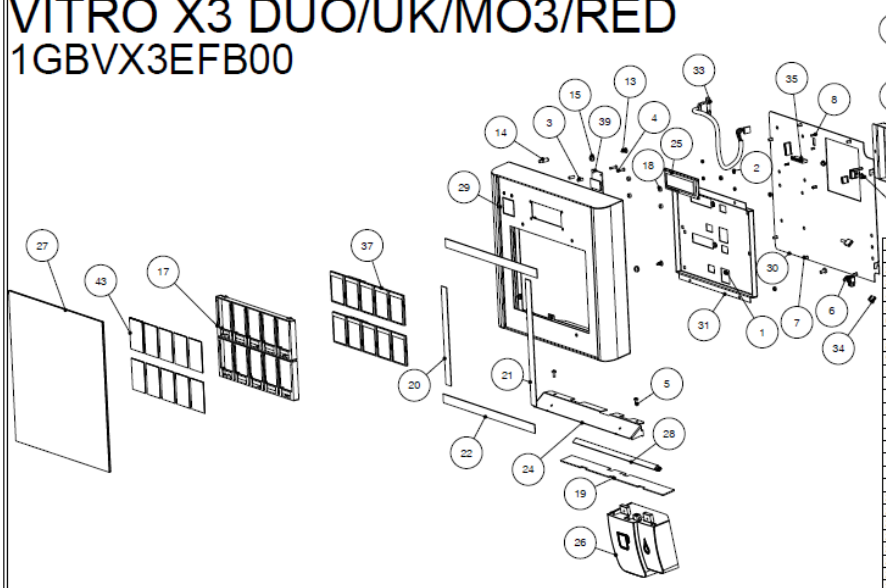
ITEM	REFERENCE	TITTLE	QTY.
1	22014	CABLE TIE LONG 200x2.5mm	1
2	63327	SUBASSY AZ BOILER MOUNT B2C AZ TE	1
3	01005110	SCREW DIN 7985 H M4x10 STAINLESS	2
4	01010281	SCREW DIN 7981F H WASHER BZ ø3.9x9.5 ZINC	2
5	02004190	FLAT WASHER DIN 9021 M8 STAINLESS	2
6	03600110	TRIAC	1
7	41226141	ASSY. BOILER VITRO	1
8	41232441	TABLE TOP PUMP ASSEMBLY	1
9	82039540	LABEL WARRANTY	1

ISSUE 1

SHEET 3 OF 10

VITRO X3 DUO/UK/MO3/RED
1GBVX3EFB00

03/02/2017



ITEM	REFERENCE	TITTLE	QTY.
1	00000130	NUT DIN 934 M4 STAINLESS	4
2	00002180	NUT DIN 934 M3 STAINLESS	4
3	54047	12MM KEYBOARD SPACER	2
4	01000091	SCREW DIN 7985 H M3x15 ZINC	2
5	01005110	SCREW DIN 7985 H M4x10 STAINLESS	2
6	01005350	SCREW DIN 7985 H M5x10 STAINLESS	2
7	01010281	SCREW DIN 7981F H WASHER BZ ø3.9x9.5 ZINC	8
8	01014980	SCREW DIN 7985 H M3x8 STAINLESS	2
9	02000091	TOOTHED WASHER DIN 6798A M4	2
10	04804850	WIRE HARNESS CLAMP Ø 16.7mm	1
11	09718561	CIRCUIT BOARD BLACK SUPPORT	8
12	09722070	CIRCUIT BOARD SUPPORT	4
13	09722160	DOOR PIPS BLACK PLASTIC	2
14	10037210	DOOR PIN	1
15	11038391	DOOR PIP GROMMET Ø5 .221 ABF	2
16	11039070	CIRCUIT BOARD SUPPORT	4
17	11040181	NEXUS STEP 5 BUTTON FRAME	2
18	11041591	SPACER NYLON Ø4.2 x Ø4 x 8 mm	4
19	19072921	VITRO FL - LIGHT DOOR DIFFUSER	1
20	29102480-0-215	DOUBLE-SIDED FOAM TAPE 19x1mm	1
21	29102480-0-275	DOUBLE-SIDED FOAM TAPE 19x1mm	1
22	29102480-0-335	DOUBLE-SIDED FOAM TAPE 19x1mm	2
23	31195461	B2C GLASS DISPLAY BOX	1
24	31213480	VITRO FL - LED BRACKET	1
25	41221161	ASSY OLED DISPLAY WHITE LARGE 2x16	1
26	41237121	ASSY. VITRO FL NOSE	1
27	41238871	VITRO-FL ESPRESSO GLASS + BLACK TAPE	1
28	41238921	VITRO FL - ASSY LED DOOR	1
29	42105771	VITRO FL - SINGLE DOOR	1
30	42966841	VITRO FL - SUBASSY DOOR BACKER	1
31	42968551	SUBASSY VITRO BUTTON MOUNT	1
32	43224630	BUTTON BOARD RIBBON CABLE L=535	1
33	43227270	USB TYPE_A - PANEL FTO 1 x 5	1
34	43231980	VITRO FL LIGHTING LOOM	1
35	43231990	2MCU PLUS EXTERNAL DISPLAY LOOM	1
36	43315790	NEXUS STEP BUTTON C/BOARD (58547)	1
37	43316110	NEXUS STEP 5 BUTTON BOARD(58545)	2
38	43317300	INTERNAL KEYPAD	1
39	43318240	BOARD BLUETOOTH CB OB5421	1
40	43319710	GROUP CONTROL PLUS PCB	1
41	43319730	2MCU PLUS CONTROLLER	1
42	43319890	ASSY. LCD MONOCHROME DISPLAY	1
43	49030301	VITRO DECAL SET	1

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VITRO X3 DUO/UK/MO3/RED
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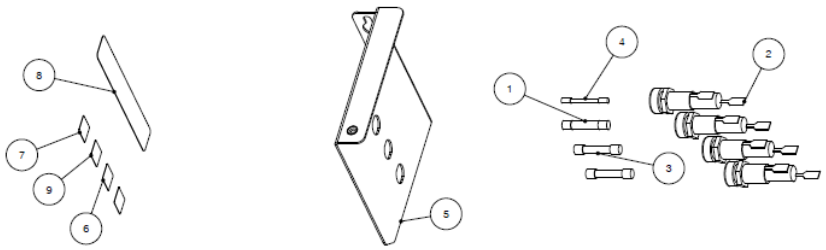
ITEM	REFERENCE	TITTLE	QTY.
1	55881	F5A FUSE (FAST)	1
2	04201170	FUSEHOLDER 1/4"x1-1/4"	4
3	04804080	T5A FUSE	2
4	04804090	T15A FUSE	1
5	42966871	ASSY CANISTER SHELF SUPPORT	1
6	82039560	FUSE LABEL ("T5A")	2
7	82039570	FUSE LABEL ("F15A")	1
8	82039730	LABEL DANGER LIVE TERMINAL	1
9	82041270	FUSE LABEL ("F5A")	1



ISSUE 1

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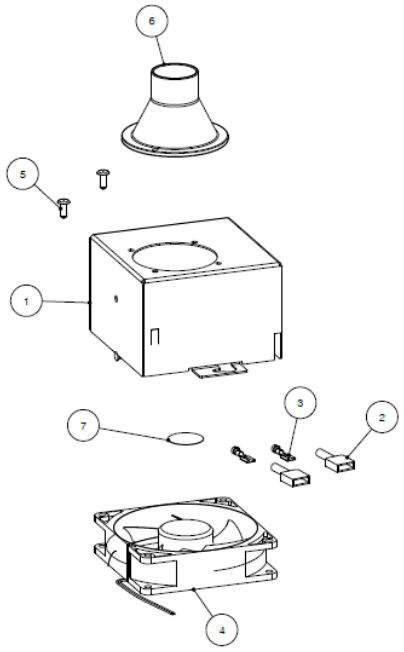
VITRO X3 DUO/UK/MO3/RED
1GBVX3EFB00

03/02/2017



ITEM	REFERENCE	TITTLE	QTY.
1	66390	SUBASSY FAN BRACKET	1
2	03808050	MALE BOOT SPADE	2
3	03910740	FASTON MALE CRIMP TAP TERMINAL 1/4"	2
4	04101680	FAN 24 VDC	1
5	07002071	RIVET ISO 15977 BLACK ø4x9	2
6	11043051	EXTRACT FAN FUNNEL	1
7	82039540	LABEL WARRANTY	1

ISSUE 1

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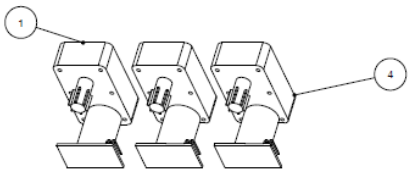
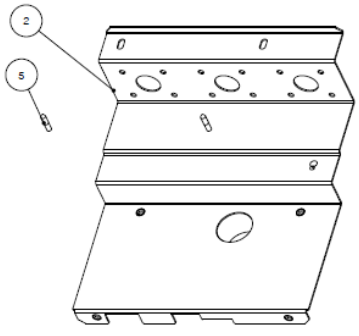
VITRO X3 DUO/UK/MO3/RED
1GBVX3EFB00

03/02/2017





ITEM	REFERENCE	TITTLE	QTY.
1	59207	ING MOTOR / GEARBOX	1
2	63320	SUBASSY RH CANISTER SHELF B2C AZ	1
3	01010400	SCREW DIN 7981C H ø2.9x9.5 STAINLESS	12
4	04101790	ING MOTOR / GEARBOX	2
5	10037200	PIN BULLET Ø4mm	2

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03/02/2017

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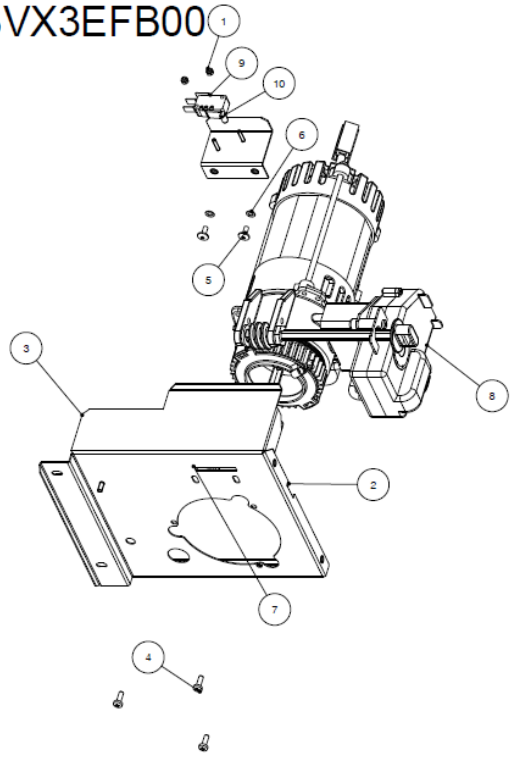

ITEM	REFERENCE	TITTLE	QTY.
1	00002090	NUT DIN 985 M3 STAINLESS	2
2	00002100	NUT DIN 985 M4 STAINLESS	3
3	63193	SUBASSY LH C/SHELF NEVA TT B2C	1
4	01005160	SCREW DIN 7985 H M4x12 STAINLESS	3
5	01010281	SCREW DIN 7981F H WASHER BZ ø3,9x9,5 ZINC	2
6	02000091	TOOTHED WASHER DIN 6798A M4	2
7	09718630	GROMMET Ø16	1
8	41233681	ASSY. GRINDER M03P 230V 50Hz W/D LONG	1
9	41523021	MICROSWITCH BREWER ASSEMBLY	1
10	42966861	ASSY MICRO SWITCH BRKT NEVA TT	1

ISSUE 1

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VITRO X3 DUO/UK/MO3/RED

03/02/2017

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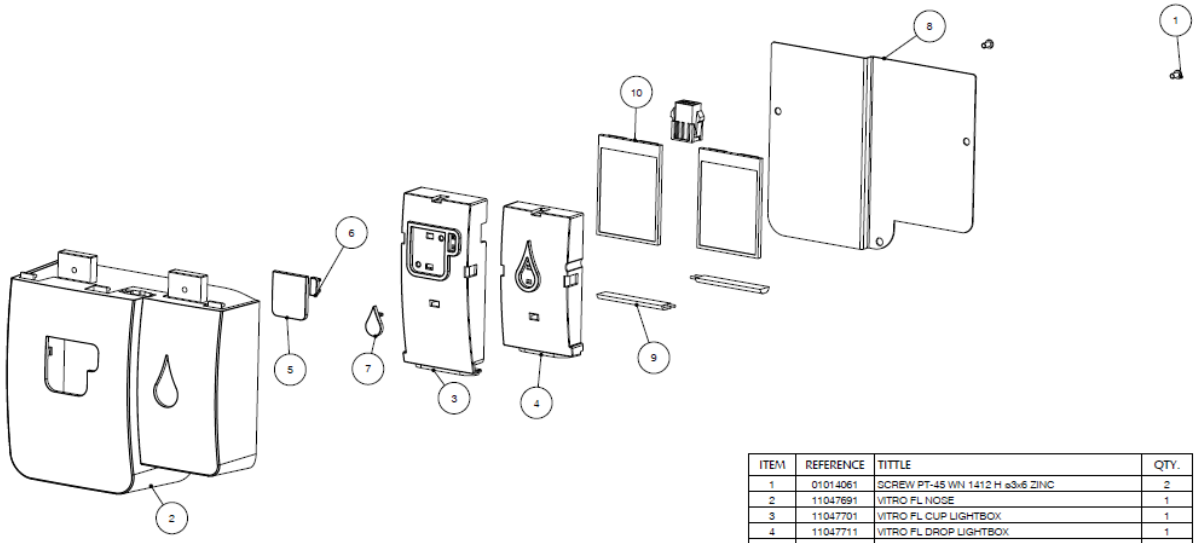

ITEM	REFERENCE	TITTLE	QTY.
1	01014061	SCREW PT-45 WN 1412 H ø3x6 ZINC	2
2	11047691	VITRO FL NOSE	1
3	11047701	VITRO FL CUP LIGHTBOX	1
4	11047711	VITRO FL DROP LIGHTBOX	1
5	11047721	VITRO FL CUP FILLING	1
6	11047731	VITRO FL HANDLE FILLING	1
7	11047741	VITRO FL DROP FILLING	1
8	31212870	VITRO FL BACK NOSE COVER	1
9	43129430	VITRO FL - ASSY NOSE STRIP LIGHT	1
10	43319850	VITRO FL - ASSY CARD NOSE BACK LIGHT	2

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VITRO X3 DUO/UK/MO3/RED

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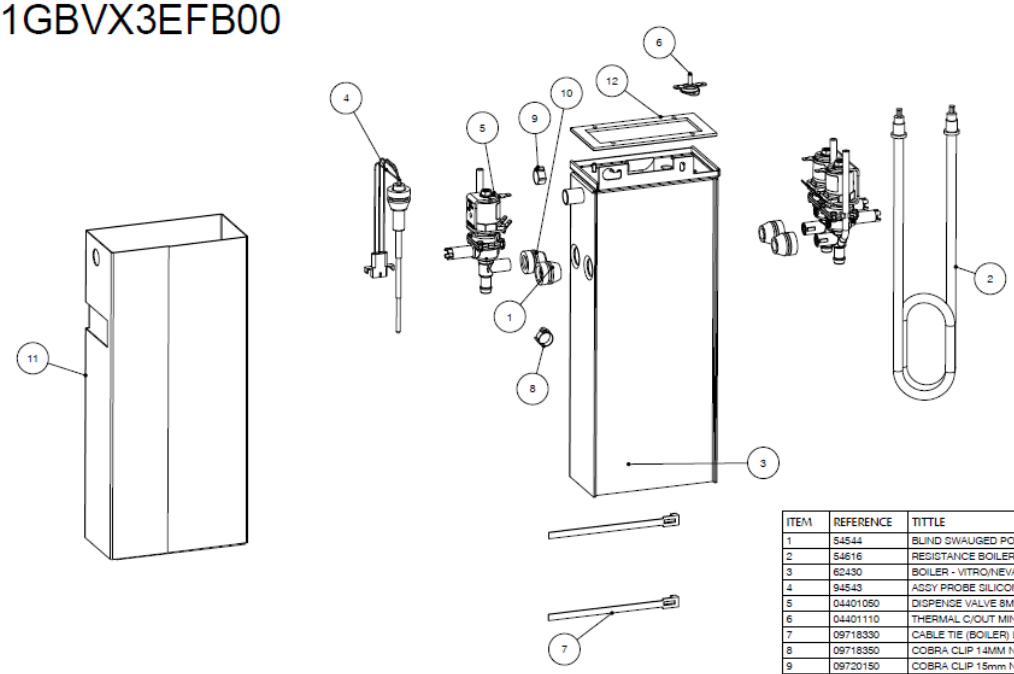


ITEM	REFERENCE	TITTLE	QTY.
1	54544	BLIND SWAUGED PORT SEAL	1
2	54616	REGISTANCE BOILER - 230v 2kw ELEMENT - ULTRA	1
3	62430	BOILER - VITRO/NEVA 5	1
4	94543	ASSY PROBE SILICON BUNG	1
5	04401050	DISPENSE VALVE 8MM 24V DC	3
6	04401110	THERMAL C/OUT MINI BERGAMO	1
7	09718330	CABLE TIE (BOILER) LONG 12X1000mm	2
8	09718350	COBRA CLIP 14MM NORMAL	1
9	09720150	COBRA CLIP 15mm NORMA	1
10	11038251	SWAUGED PORT VALVE SEAL	3
11	19073100	BOILER INSULATION - VITRO ESPRESSO	1
12	39023121	BOILER SEAL CAFE 4 PLATCU	1

ISSUE 1

SHEET 10 OF 10

Button Barista App*

*for machines with the appropriate hardware/software added

Overview:

This document concerns machines that utilise Azkoyen's Button Barista app with Vitro machines using the serial bluetooth interface PCB (43318050). Note that on espresso machines telemetry wiring changes are required to make the machine function. An extra five drink slots have been made available exclusively for use with the app, and as such some functions of the machine have changed and these are explained below.

1) Changes to the 'Move or Copy Drink' Menu

A few new options have been added to the move or copy drink menu in software versions that support the Button Barista Mobile Application. The full list of options can be seen in the table below.

Move or Copy Drink Options…	
REGULAR->REGULAR	-
REGULAR->LARGE	-
LARGE->LARGE	-
LARGE->REGULAR	-
BOTH (LRG & REG)	-
REGULAR->APP SLOT	New
LARGE->APP SLOT	New
APP SLOT->REGULAR	New
APP SLOT->LARGE	New

(Table 1 – Move or copy drink menu options)

The keyboard on the Vitro has already been split into one of two possible overlays once for the 'Alternative/Going Large' menu. That is when the 'Alt/Going Large' key is pressed a different set of virtual keys become available offering a variation of the selections on the original keyboard.

Five more drink slots have been added exclusively for use with the app and this can be visualised as a second overlay on the main keyboard utilising the topmost keyboard only.

(Figure 1 – illustrating the virtual keyboard for large and app drinks).

NOTE: That the actual number of drinks available on the app depends on the machines mechanical configuration, in particular the number of ingredient canisters present.

For example, to copy a regular drink to an application slot

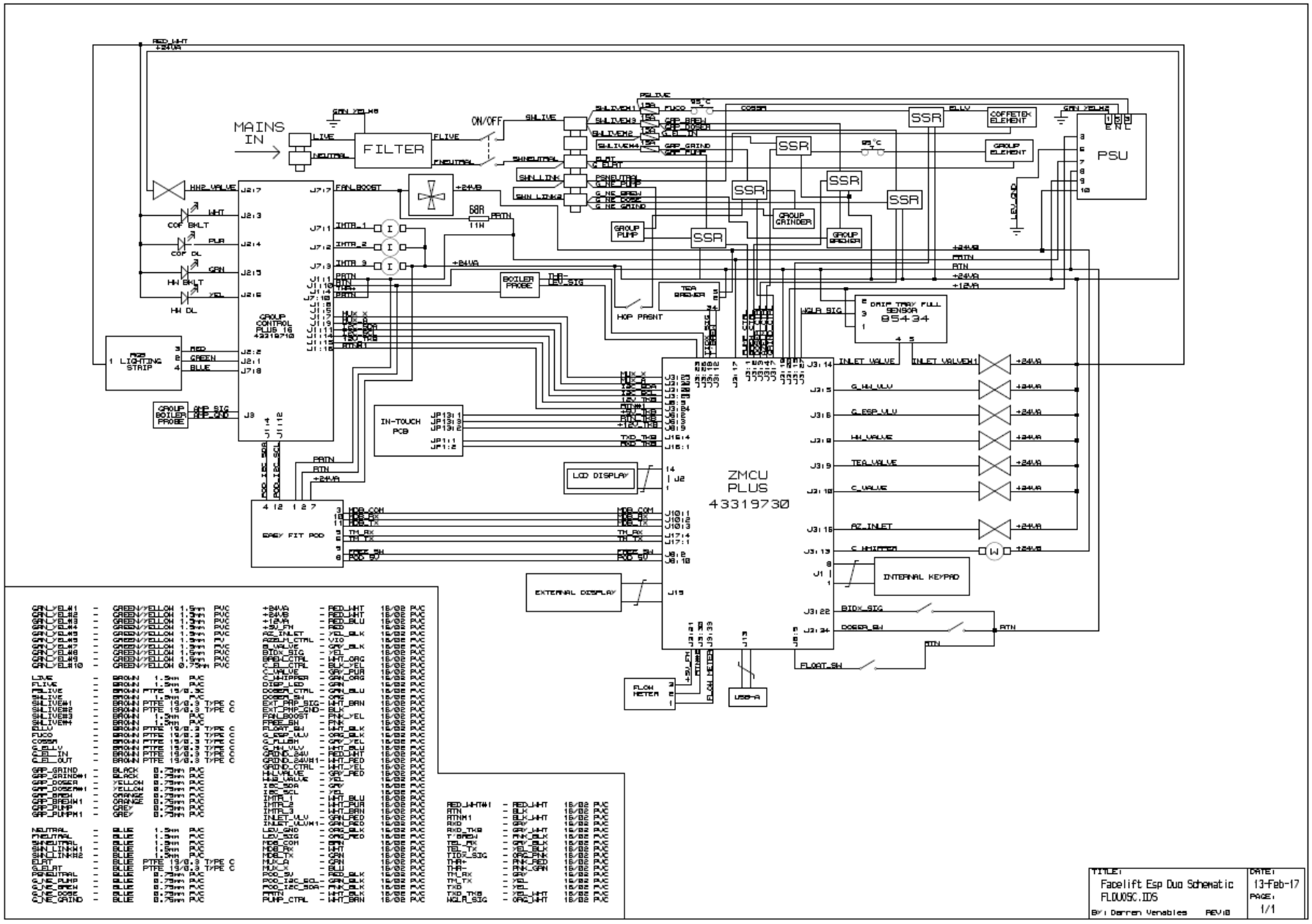
1. Go to MOVE OR COPY DRINK in engineer's mode.
2. Press the ENTER key
3. Select REGULAR->APP SLOT
4. Press the ENTER key
5. Select the key to copy from
6. Select one of the five keys on the top keyboard corresponding to the extra drink slot you wanted to copy to.
7. Using the Up/down keys select the COPY DRINK item

2) A New Bluetooth menu has been added.

To cater for the App we have a new menu in engineer's mode with the following options.

Menu	Description
CHG BT DEV NAME	Change the name of the Bluetooth Interface PCB of the machine.
CHG APP X DRNK 1	Modify the drink settings related to Extra Drink 1 for the Application.
CHG APP X DRNK 2	Modify the drink settings related to Extra Drink 2 for the Application.
CHG APP X DRNK 3	Modify the drink settings related to Extra Drink 3 for the Application.
CHG APP X DRNK 4	Modify the drink settings related to Extra Drink 4 of the Application.
CHG APP X DRNK 5	Modify the drink settings related to Extra Drink 5 of the Application.

COFFETEK



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BY: Darren Venables REV:B	PAGE: 1/1