VOCE MEDIA

Technical Manual

Part Number: PR

Issue: A - Sept 2014

EC Declaration of Conformity

We Crane Merchandising Systems (UK),

Of Pipsmore Park, Bumpers Farm Industrial Estate, Chippenham, Wiltshire, UK, SN14 6NQ

Declare that:

Type of Equipment: Beverage Vending Machine
Model Name: VOCE Media

Has been designed and manufactured to comply with all essential requirements of the following Regulations/Directives:

73/23/EEC ⇒ 93/68/EEC ⇒ 2006/95/EEC — The Low Voltage Directive and its amending directives

89/336/EEC ⇒ 91/263/EEC ⇒ 92/31/EEC ⇒ 93/68/EEC ⇒ 2004/108/EEC — The Electromagnetic Compatibility Directive and its amending directives

REG. (EC) 1935/2004 — on materials and articles intended to come into contact with food

REG. (EC) 1895/2005 — on the restriction of use of certain epoxy derivatives in materials and articles intended to come into contact with food.

DIR. 2002/72 EC — relating to plastic materials and articles intended to come into contact with foodstuffs.

Tests have been performed by accredited certification bodies in accordance to the following specifications:

Low Voltage Directive: EN 60335-1: 2002 + A1+ A11, EN 60335-2-75: 2004+ A1
EN ISO 11201 + EN ISO 3744
EMC Directive: EN 55014-1:2000+A1+A2, EN 55014-2:1997+A1,
EN 61000-3-2: 2000+A2, EN 61000-3-3:1995+A1+A2,EN 61000-4-4,
EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, EN 61000-4-2,
EN 50366:2003 +A1

HMM: Contribution of heavy metal migrants from different parts of the circuits of machine under in use conditions according to EU directives and guidelines.
With regard to hygiene for foodstuffs in location, the operator must comply with 852/2004/EEC which lays out the general and specific hygiene rules to ensure a high level of consumer protection with regard to food safety.

Date: 03 January 2012
Legal Representative

Signature:

The following Symbol is used throughout this Manual: 

Safety First! Take care, risk of personal injury.

Crane Merchandising Systems accepts no responsibility for damage caused to the equipment through misinterpretation or misuse of the information contained in this manual.

Introduction

This manual provides you with guidance on the installation, daily operation and basic maintenance of your VOCE Media freestanding vending machine. Crane Merchandising Systems always recommend that a trained technician service its equipment.

Crane Merchandising Systems is committed to continuous product improvement. This means that the information within this document, although correct at time of publication, is for guidance only and may be subject to change without prior notice.

Important Safeguards

Always follow these basic safety precautions when operating or maintaining your machine:

1. Ensure that you and anyone who operates or maintains your machine has this manual available for quick and easy reference, read all instructions carefully before commencing work.
2. **Beware of Electricity** Certain maintenance operations require your machine to remain connected and switched on. Only trained personnel should carry out these routines, and independently of all other operations. Observation of safe working practices in accordance with current regulations is necessary at all times.

Important! Unless otherwise specified, always disconnect your machine from the electrical supply before commencing work.

3. Servicing the Heater Tank/Espresso pressurised water system.

Important! Water in this machine can exceed 99°C/210°F. Water at this temperature can cause severe injury. Espresso machines may be fitted with a pressurised water system, under no circumstance should this be dismantled other than by a full trained engineer.

4. Do not operate your machine if any part is damaged until a service technician has carried out necessary repairs and ensured that it is safe.
5. Beware of moving components when servicing the machine.
6. Allow your machine to cool before handling or moving.
7. Never immerse your machine in water or any other liquid and never clean it with a water jet.
8. In machines fitted with carbonator units the CO_2 bottle is filled with gas at up to 800psi and MUST be secured in an upright position. In the event of a leak, ventilate the area in the vicinity

9. Ensure that you are familiar and adhere to the most recent Health and Safety at Work and Electricity at Work Regulations.

Important! This machine is not intended for use by persons (including children and the infirm) with reduced physical, sensory or metal 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 machine.

Your VOCE Media machine is for indoor use only and because it is a beverage machine, should be placed in a clean and hygienic area.

Table of Contents

Section 1 - Machine Specifications

1.1 Specifications

General

Height . . . . . .1830mm (72”)

Width . . . . . .700mm (27.55”)

Depth . . . . . .785mm (30.90”)

Weight . . . . . .184kg (406 lbs)

Cup Capacity (UK)

Cup Type		Cup Capacity *
150ml plastic squat	7oz plastic squat	800
150ml plastic tall	7oz plastic tall	750
150ml paper tall	7oz paper tall	665
180ml plastic	9oz plastic	650
180ml paper	9oz paper	575
250ml paper	12oz paper	400

Cup Capacity (US)

Cup Type	Cup Capacity *
12oz SVS	450
12oz SMR	325
16oz SVS	275
16oz SMR	250
20oz SMR	300

*Approximate and are for guidance only.

Electrical Services

Voltage . . . .UK & EU 220 - 240 Volts US 110 - 130 Volts
AC Current . . . . …13 Amp Fused
Frequency . . . .50 Hz US 60 Hz

Water Services

Pressure . . . . . .200 Kpa (2 Bar - 29 PSI) - 600 Kpa (6 Bar - 87 PSI)

Stopcock . . . . . 15 mm BSP from rising main

All weights and dimensions are approximate and are for guidance only.

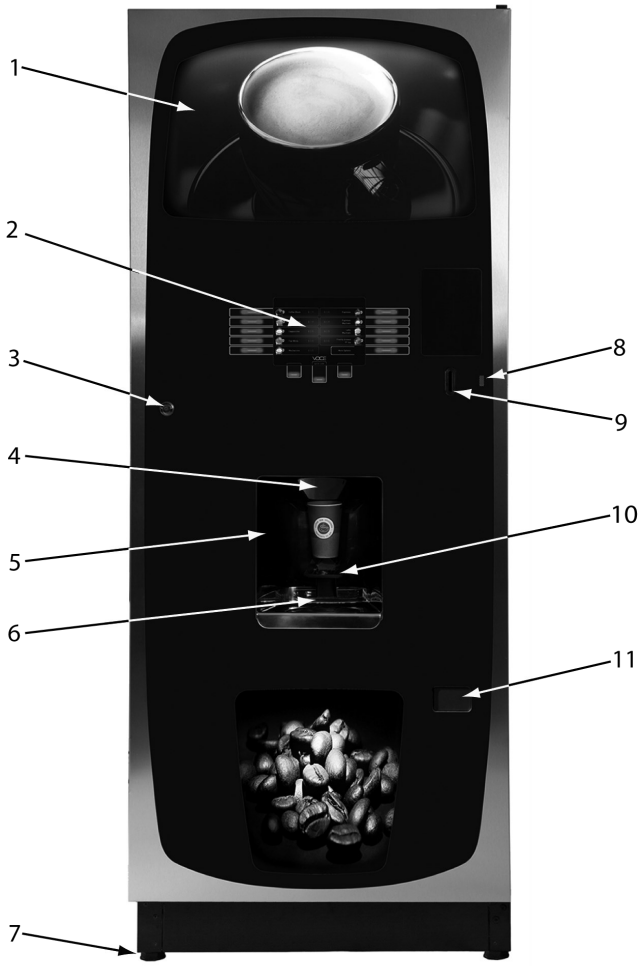
1.2 Water Filter

If your VOCE Media machine is fitted with a CoEx® B2C brewer, then it must be connected to the water supply via a scale inhibiting water filter. Crane Merchandising Systems recommend and supply the Brita AquaQuell, and Cuno range of water filters.

1.3 External Features

Key:

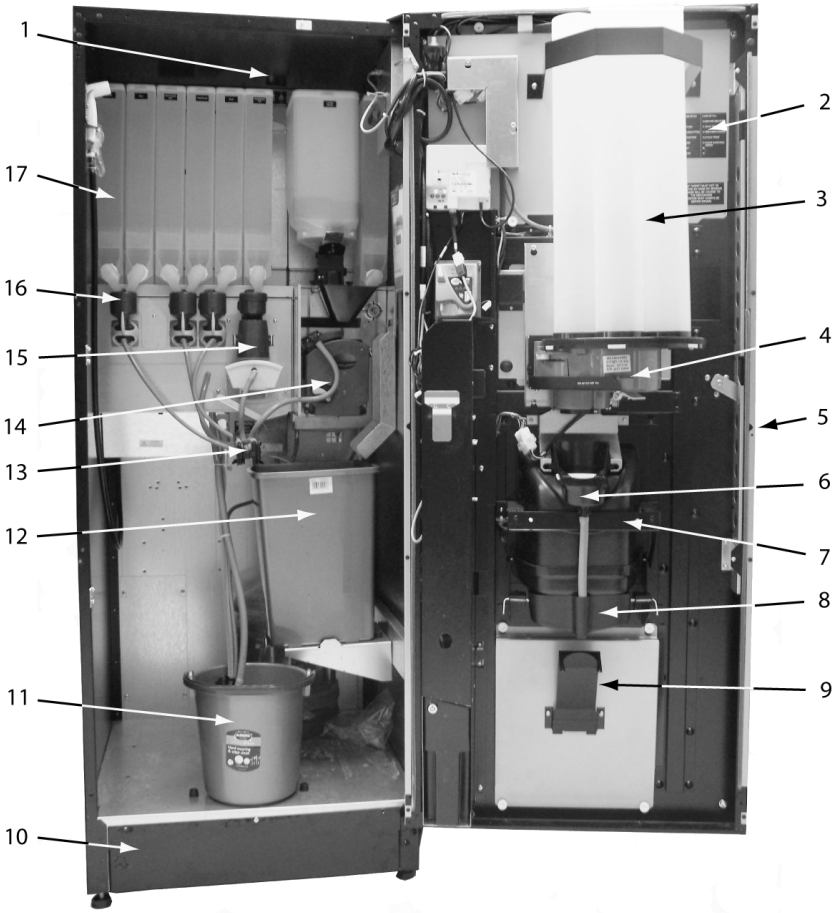
1	Door	7	Adjustable Foot
2	LCD-screen	8	Free/Jug vend key
3	Door lock	9	Coin entry
4	Cup station	10	Cup stand
5	SureVend™ Sensor	11	Coin return cup
6	Drip tray		



1.4 Internal Features

Key:

1	Main Switch	10	Kick Plate
2	Service keypad	11	Waste Bucket (liquids)
3	Cup Turret	12	Waste Bucket (solids)
4	Cup Dispense Unit	13	Dispense Head
5	Door Locking Mechanism	14	CoEx® Brewer
6	Cup Catcher	15	Oltre Brewer
7	Surevend™ Sensor	16	Mixer, Whipper System
8	Drip Tray	17	Ingredient Canisters
9	Drip Catcher		



Section 2 - Installation

Important! It is essential that the personnel responsible for installing and servicing your machine, understand the following:

1. The installation and commissioning of your machine should only be carried out by a trained and authorised service technician.
2. All water and electrical services must be correctly and safely connected.
3. All covers must be replaced correctly and securely and your machine left in a safe condition.

2.1 Installing your Machine

1. Your machine is only suitable for indoor use, we recommend that it be situated in an area with an ambient temperature not below 10º C and not exceeding 30º C. Your machine should be located near the appropriate water and electrical services, refer to Section 1.1 Specifications.
2. Prior to placing your machine in its final location, ensure that there is sufficient access space available via passageways, stairs, lifts, etc.
3. To ensure adequate ventilation, 100 - 150 mm (4 - 6 inches) clearance must be allowed between the back of the cabinet and the wall.
4. Open the door using the key provided. Remove transit packing and installation kit. Check for visual signs of damage which may have occurred during transit. If your machine is damaged or any parts are missing, you must contact the supplier immediately.
5. Level your machine in both the front-to-back and side-to-side planes by adjusting the feet. Ensure that the door opens and closes easily and the lock operates correctly.

2.2 Connecting the Water Supply

1. Your machine should be situated within 1 metre of a drinking water supply from a rising main, terminating with a W.R.C. approved 15mm compression stop-tap.

   N.B. The water supply should comply with both the Statutory Instrument No.1147 - “Water, England and Wales” and The Water Supply (Water Quality) Regulations 1989. Water pressure at the stop-tap must be within the limits 2 - 6 Bar (200 Kpa - 600 Kpa).
2. **Freshbrew** & **B2C Machines**: VOCE Media machines fitted with a paperless freshbrew brewer or CoEx® brewer must be connected to the water supply via a water filter. This filter must be of food grade quality and able to remove temporary hardness (scale), heavy metals (lead, copper, iron, cadmium), chlorine and any organic pollutant’s/discolouration .

Warning! If your Freshbrew or B2C machine is connected to a water supply and used without a water filter as specified above, your warranty will be void.

3. Connect the flexi-hose supplied with your machine to the stopcock. Flush the water supply before connecting the machine.

   N.B. When connecting your machine to a water supply always use a new flexi-hose. Never re-use an existing hose.

4. Connect the hose to the inlet located on the rear of your machine. Ensure that the seal is correctly fitted. Ensure that all water supply fittings are tight.
5. Turn on the water supply at the stop tap and check for leaks.

2.3 Connecting the Electrical Supply

Safety First!

The electrical safety of this appliance can only be guaranteed if it is correctly earthed. The manufacturer declines all liability for damage resulting from a system which has not been earthed. On no account should it be earthed only to the water supply pipe.

The appliance must be connected to a mains supply with a capacity appropriate for the application and in compliance with National and local regulations on electrical safety.

Important: If any internal fuses become damaged or fail in any way they must be replaced by the correct fuse available from the manufacturer quoting the information written on the label adjacent to the relevant fuse-holder.

Important: If the mains lead becomes damaged in any way it must be replaced by a lead available from the manufacturer.

2.4 Installation Procedure

A trained installation engineer must carry out the following procedure before the machine can be used for the first time. Ensure that the electrical and water services to the machine are connected correctly. Check for leaks in the water supply.

1. Open the front door of your machine.
2. Ensure that the waste bucket is fitted correctly. Clip the level detector and overflow pipes correctly onto the rim of the bucket.
3. **Cup Turret.** Remove the cup stack assembly from its packaging and carefully place it onto the cup drop unit. Remove the lid and fill the tubes with the correct size cups for the cup catcher type fitted to your machine. Allow the cups to drop into the tubes directly from the packaging. DO NOT touch the cups with your hands .

Important: Do not fill the tube directly above the cup dispense position. Allow the cup turret motor to rotate a full tube to the cup dispense position when the machine is powered up. Rotating the cup turret by hand will damage the mechanism.

Note: If you are loading paper cups, first inspect each pack for damage to the cup

rims. Damaged cups must not be used.

4. The cup turret mechanism will index the first available cups to the dispense position and drop the cup stack into the cup drop mechanism. Fill the remaining empty cup stack with cups and replace the lid.
5. **All Models:** The water inlet valve will open and the heater tank will start to fill. As the water heats, ensure that no water overflows from the heater tank overflow pipe into the waste bucket. Check the system for leaks.
6. **Instant** & **Freshbrew Machines**: As heater tank fills and heats, ensure that no water overflows from overflow pipe into the waste tray.
7. **B2C Models:** The machine will pump approximately 400ml of water through the system which will be heated to operating temperature.

   Note! The machine has a safety cut-out which will only allow the heater tank to fill for a maximum of two minutes. If after software power-up the heater tank has not filled within this time, the mains power supply should be switched off and then on again to reset the heater tank time-out.

   Important: Should the machine fail to fill correctly or leak, turn off the stopcock and the power to the machine before investigating the fault.

8. Check the display on the front of the machine to ensure that the water has heated to the correct temperature and that the machine is in standby mode.
9. **All Models:** Rotate soluble/freshbrew ingredient canister outlets to upright position.
10. Remove the canister from the machine and remove the lid. Place the canister into the canister filling station located on the door and fill canister with correct ingredient.

    DO NOT place the canister on the floor or overfill with ingredient.

11. Carefully remove the canister from the filling station and replace the lid. Refit canister into machine ensuring that it is returned to correct operating station.
12. Repeat this operation for all soluble/ freshbrew ingredient canisters fitted to the machine. Rotate the canister outlets to their correct operating positions.
13. Ensure that the agitator is removed for any freeze dried products and the canister blanking bung is clicked into position.

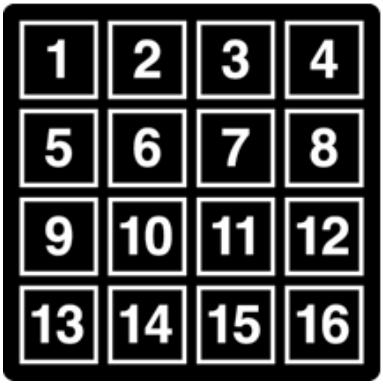
14. **B2C Models:** Close the outlet slide to seal the fresh beans canister outlet before removing the canister from the machine. Remove the canister lid. Hang the fresh beans canister on the rear of the door.

    DO NOT place the canister on the floor.

    Fill the canister with fresh coffee beans. Refit the canister lid and fit the canister into the machine, ensuring that it is located correctly. Open the outlet slide to ensure correct operation.

    N.B. To maintain optimum drink quality, Crane Merchandising Systems recommend that the bean canister is replenished on a daily basis.

15. Press the Cup Test button (7), located in the Service Keypad on the rear of the door and ensure that a cup is ejected from the cup drop unit.



16. Press the Park Head button (8), located in the Service Keypad on the rear of the door and ensure that the dispense head moves to its fully extended position. Press the button again to return it to its correct (homed) position.

17. **Freshbrew Models**: Ensure the brewer cover waste deflection chute and brewer waste container are fitted correctly. Slide the container into position directly under the brewer with its lip outside the brewer cover.

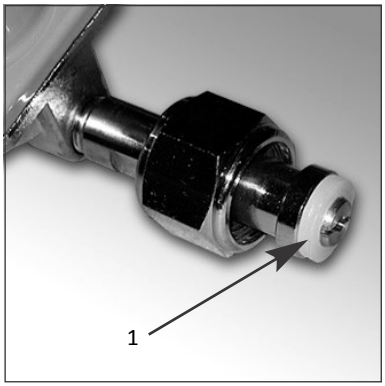
18. If fitted, check that the coin mechanism and cash box operate correctly, from within the program (MDB). Fill the coin tubes with correct coinage. Ensure coin return mechanism functions correctly.

19. Operate the machine through its complete range of selections to ensure that each vend is correctly dispensed. Follow the instructions detailed in Service Keypad Functions for making a vend using the Test Vend button (6).

20. Close the cabinet door. Ensure that the machine is left in a clean and safe condition.

2.5 Setting Up the Carbonator Unit (If Applicable)

1. Open the cabinet door. Fit the seal (1), provided in the installation kit, to the regulator as shown in the photograph. Connect the regulator to the CO_2 bottle.
2. Tighten the locknut. Carefully lift the CO_2 bottle into the machine ensuring that the gas supply pipe is not trapped or obstructed in any way.



⚠ **Safety First!** The CO_2 bottle may be heavy. Always follow the correct procedure when lifting heavy objects.

3. Secure the CO_2 bottle with the safety chain. Turn on the supply from the bottle and ensure that the regulator (2) is indicating a pressure of 35 PSI.
4. Place the carbonator overflow pipe into the waste bucket. Fill the carbonator water bath with clean cold water until it starts to flow from the overflow pipe.
5. Switch on the carbonator unit using the Cold Unit switch located near the power supply.
6. Place the syrup containers in the bottom right-hand side of the cabinet and insert the dip tubes into the containers ensuring that the correct flavours correspond to the drinks displayed on the display.

7. Prime the syrup selections ready for use by pressing button 13 on the service keypad.

   N.B. Ensure that the waste bucket is empty and in place before priming the pumps.
8. To prime syrup pump 1, press and hold button 1 on the drink selection keypad until the syrup appears from the dispense head. Repeat for syrup pump 2 by pressing and holding button 2 on the drink selection keypad. Press the X (Exit) key to return the machine to standby mode. Empty the waste bucket and refit to the machine.
9. Test vend the carbonated drinks to ensure correct operation of carbonator unit. Check for leaks and ensure that the machine is left in a clean and safe condition. Close the door.

N.B. If a still unit is fitted ensure that the ingredient timers for syrup drink 1 and 2 are set to 6 seconds (recommended).

2.6 Warranty Card

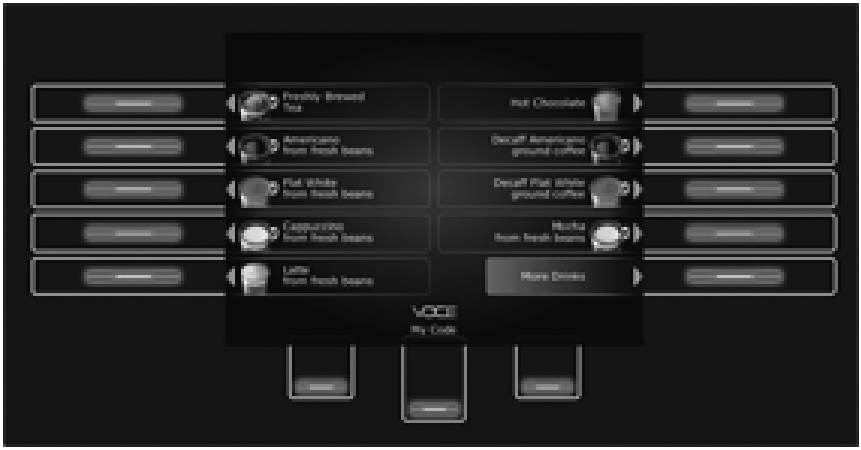
Please complete and return the warranty card that comes with the machine. Use the card to note any problems you encountered during installation, your feedback helps us to improve our products and services. Return the warranty card, whether problems were encountered or not, **failure to do so may invalidate your warranty**.

Section 3 - How to Vend A Drink

The VOCE Media freestanding drinks vendor features an interactive menu display. The intuitive full-colour LCD, with a direct selection touch-panel, makes it easy for the customer to produce a drink to their preferred taste and strength.

3.1 Selecting A Drink using the Direct Selection method

If the machine has not been used for 30 seconds, the machine enters standby mode and displays the idle screen. To activate the machine and display the drink selection menu press any touch-pad on either side of the display.



Drink selections are made by pressing the corresponding touch-pad. Depending on the drink selected the customer may be able to alter the drink strength and add milk/sugar to suit their personal preference by following the options displayed on screen.

The following example describes how to vend a Coffee selection from a machine set to 'Free Vend'.

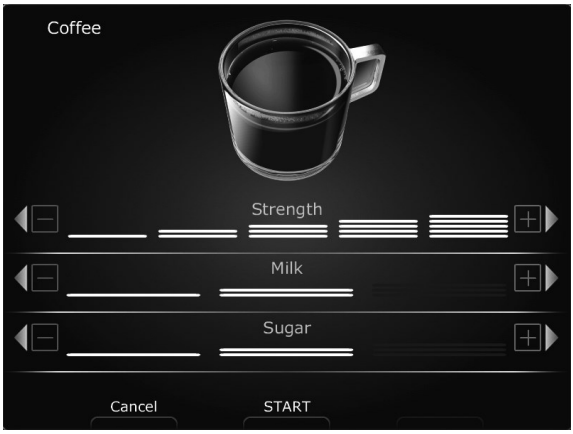
1. Select Coffee by pressing the corresponding key. The LCD will display the screen as shown.
2. From this option screen you may adjust drink **Strength** and add **Milk** and/or **Sugar**.

   N.B. For most coffee selections there are five strength levels available. Each selection has a default strength setting that may be adjusted up or down. The default strength setting for this drink selection is three as indicated by the three highlighted bars.
3. To obtain a stronger or milder coffee press the corresponding **Stronger** or **Milder** key. In this example **Stronger** is pressed twice to achieve a strength selection of five as shown.

3.2 Adding Milk (Lightener)/Sugar

If milk is required select **Milk** by pressing the corresponding key. The screen updates and displays the menu as shown.

1. The default milk level is two. If more or less milk is required press the corresponding [+] or [–] key. There are three milk levels available for this selection.



2. If sugar is required select **Sugar** by pressing the corresponding key., and again levels can be adjusted.

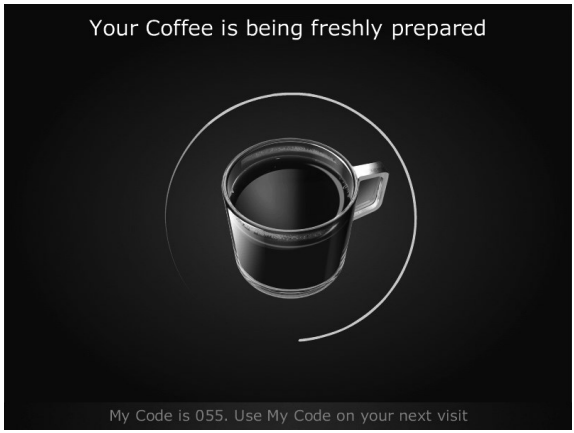
N.B. Certain drink selections do not allow milk to be added, e.g. Cappuccino, Sugar options remain available. Other drink choices do not allow the strength option or milk/ sugar to be selected, e.g. Chocolate.

3. When no further adjustments are required press **Start** to begin the vend (see Para. 3.3 Vending A Drink).

3.3 Vending A Drink

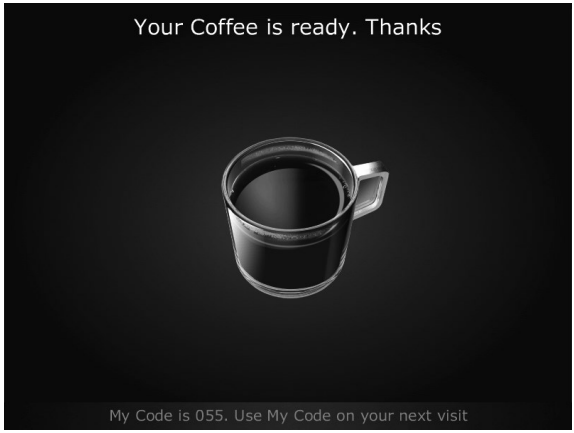
Once the required drink has been selected and no further adjustment is required:

1. Press **Start** to begin the vend. Whilst the drink dispenses the screen updates and displays the confirmation message as shown.



N.B. Unless the customer has placed their own cup into the dispense area, a cup will automatically be ejected from the cup drop unit into the dispense area and the drink selection will be delivered into the cup.

2. Once the drink has been dispensed the screen will display the image as shown. The drink can then be carefully removed from the dispense area.
3. After the drink has been removed by the customer the screen will briefly display a thank you message as shown.



4. If another drink is not selected the machine returns to standby mode after a pre-set time.

3.4 Selecting A Drink Using Number Choice

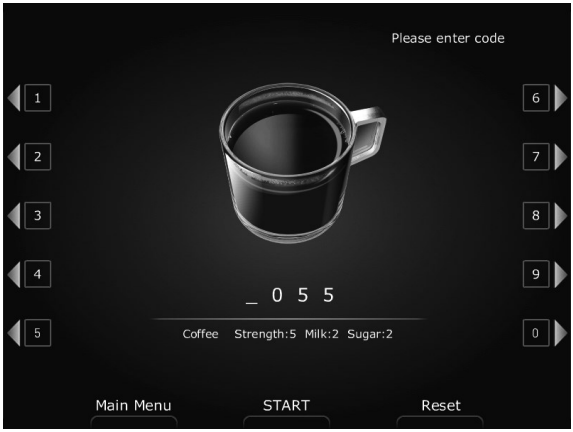
At the bottom of the screen as the drink is been prepared (dispensed) is the message:

"The number choice of this drink is 055"

By entering this number the same drink as just selected, with the coffee strengths, milk and sugar levels, is dispensed. This enables the user, on subsequent visits to the machine, to quickly and easily obtain the drink to their preferred taste.

Also if collecting drinks for other people and if each has a number, enter their number and they get exactly the drink they want.

1. On the drink selection screen select the 'number choice' key to display the enter code screen as shown below.
2. Using the keys enter the 'number choice' code, in this example '055'.
3. Select Start to begin the vend (see 3.3 Vend A Drink).



3.5 Selecting A Jug Or Free Vend With Keyless Transitions

To select a jug or a free vend with keyless transitions set up (see Para 5.11.15):

- Enter 9999 plus your four digit pin for a jug vend.
- Enter 9998 plus your four digit pin for a free vend.

Section 4 - Programming Mode

4.1 Program Entry

Programming mode utilises the interface seen below and enables the engineer to view and amend the service menus.

4.2 Navigating through the Menu Display

The full colour LCD display with illuminated touch-keys help to make navigating the programming menu structure easy and intuitive.

1. There are two levels of programing mode and both are passcode protected:
   - **Operator** - this menu offers limited access to the software program., enabling drinks to be configured, data to be extracted and timed procedures and events to be programmed.
   - **Engineer** - this menu enables full access to the program to configure and run test procedures within the machine. See Section 5 for full details.
2. Once access has been gained to the programming mode (see 4.3 Accessing the Programming Mode), the screen displays the programming Main Menu. Most subsequent menus follow the same format as this root menu.
3. A menu item is selected by pressing the corresponding touch-key found to the immediate left or right of the item. The key flashes briefly and bleeps to indicate that it has been selected.
4. The touch-keys are illuminated against active items.
5. Details about the current menu option is displayed at the bottom of the screen.
6. In certain configuration menus the current value is displayed against the item.
7. Navigation between multiple pages is via a **Next page** icon and to return to a higher menu via a **Up one level** icon.
8. Where a configuration parameter has been changed a **Save** icon maybe made available to save the setting and return to the previous screen.

4.3 Accessing the Programming Mode

To gain access to the programming mode:

1. Open the front door of the machine.
2. The screen below is displayed.

3. Using the touch-keys enter the correct four digit code PIN to access the required programing mode.
4. Press OK to enter the program, the Main Menu screen is displayed.
5. The factory default Engineer's code is 4444 and the Operator's 3333. These maybe changed if required.

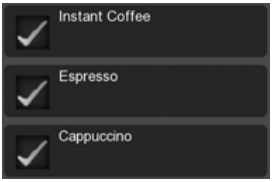
4.4 Entering or Updating Parameters

There are various forms of screens to change the configuration parameters of the machine, from Check Boxes, Radio Buttons to Value Increment and Value Entry.

4.4.1 Check boxes

These are used where there is a multiple selection of parameters available, in this example drink selections.

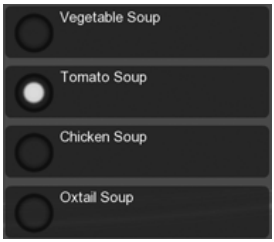
1. Press the illuminated touch-key next to the required selections and a tick appears in the check box. Press again to remove the tick.
2. When all the required selections have been made press the **Up one Level** icon to return to the previous screen.



4.4.2 Radio Buttons

These are used to turn functions On/Off or to Enable/Disable them , where only one of a multiple of selections can be selected. In this example to name the soup that is available.

1. Press the illuminated touch-key next to the required selection, to fill the radio button.
2. When the required selection has been made press the **Up one Level** icon to return to the previous screen.



4.4.3 Value Increment

These screens enable a value to be increased or decreased, in this example setting the Heater Tank Temperature.

1. Using the illuminated touch-keys increase or the decrease the value as required.
2. Select **Save** to save and apply the new value.
3. Select **Previous page** to return to the previous page without saving any changes to the setting.

4.4.4 Value Entry

These screens enable a value to be entered, in this example the selection timer for the Milk 1 ingredient.

1. Using the appropriate illuminated touch-keys add the required value.
2. When the required value is set select **Save**.
3. **Reset** - clears any displayed value.

Section 5 - Engineer's Program

The Engineer's Program enables the machine to be configured, and sales and diagnostic information viewed. The machine is supplied with default configurations for minimum setup time, however some setup is required and certain settings can be adjusted for specific customers and their preferences. To access this program, navigate, select and enter values refer to Section 4 – Programming Mode for detailed information.

The menu structure is laid out below with brief explanations for each screen, with references to more detailed information and tasks.

5.1 Menu Structure Overview

Main Menu Page 1/2 (see para. 5.2)		
	Data Recall (see Para. 5.3)	enables monetary and sales data to be viewed
	Non Resettable Sales Data	the accumulative data values for the life of the machine
	Resettable Sales Data	enables data to be viewed and cleared, enabling data to be recorded over a period of time
	Events	enables certain events which have happened with the machine to be viewed: power losses, last actions etc..
	Identification Numbers	this displays the serial numbers of any the boards and MDB equipment fitted
	SureVend™	displays details of SureVend™ activities
	Mug Vends	displays a count of Mug vends
	Cup Vends	displays a count of Cup vends
	Diagnostics (see Para. 5.4)	this displays any errors that have occurred: active and historic with the ability to clear
	Test Page 1/2 (see Para. 5.5)	enables operations and components to be tested
	Dispense Head	ensures that the dispense head can move to the selected position
	Switches & Sensors	displays the current state of all switches and sensors in the machine
	Components	enables individual or collective components to be test
	Vend Without Cup	enables drinks to be delivered without a cup being dispensed from the machine
	Vend With Cup	enables drinks to be delivered into a cup dispensed from the machine
	Keypad	enables the touch-keys on the drink selection interface and the buttons on the service keypad to be tested

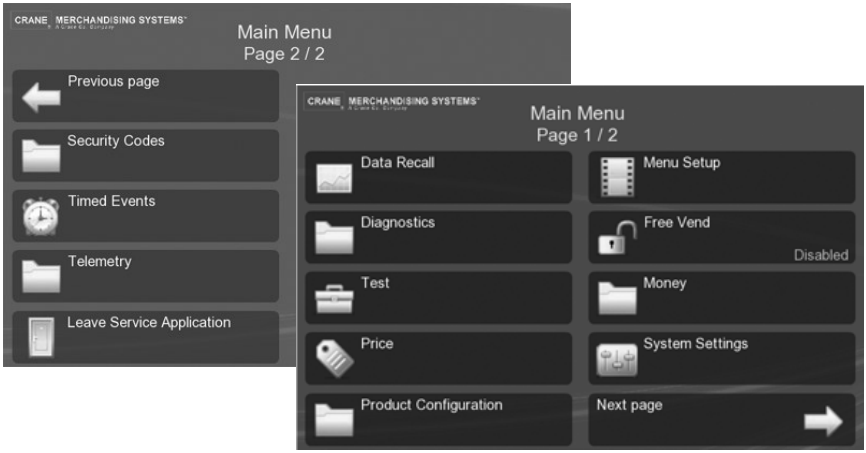
Coin Return Motor	runs the motor
Cup Drop	drops a cup
Test Page 2/2 (see Para. 5.5.9)	
Display	illuminates the screen and touch-key lights
CoEx Module	enables the CoEx module components to be tested
Price (see Para. 5.6)	enables the pricing of drinks
Individual Prices	enables the price of all the individual drinks to be changed
Entire Machine	set one price for all drinks
Mug Discount	set a discount for customers using their own mugs
View High/Low Price	displays the price range
Product Configuration Page 1/2 (see Para. 5.7)	enables all aspects of the drinks to be setup and adjusted.
Heater Tank Setup	enables the target water temperature, the minimum temperature for a drink and displays the current tank temperature
Selection Timers	enables the recipes of each drink to be adjusted
Custom Selection Names	enables a name to be selected for Still Syrup pump and Soup drinks
Jug Vend Configuration	enables the selection of drinks available, the number of cup vends per jug and to enable/disable SureVend™
Disable Selections	enables individual selections to be disabled
Token Enabled	enables which drinks are available with payment by token
SureVend™	enable or disable SureVend™
Cup Mechanism	can be switched off if mug vend only is used
Product Configuration Page 2/2 (see Para. 5.7.9)	
Cup Size Selection	enables the cup size used in the machine to be selected
Brewer Waste Management	enable or disable and to manage brewer waste capacity
Water Filter Management	enable or disable and to manage filter service intervals
Water Only – No Cup	enables hot and cold water to be dispensed without a cup being dispensed
Stick Stirrer	enables a stirrer to be dispensed with dry sugar

	Low Water Reset	enables the main water tank and CoEx boiler to be filled as required
	Oltre Brewer	enables the Oltre brewer to be setup
	Water Compensation	adjust the water quantity
	CoEx Brewer	enables the CoEx brewer to be setup
Menu Setup (see Para. 5.8)		enables the drink selection menu layout to be changed
Free Vend (see Para. 5.9)		removes all pricing from the drink selection menu
Money (see Para. 5.10)		controls all aspects of payment from currency to payment methods and change. The options available depend on the equipment fitted
System Settings Page 1/3 (see Para. 5.11)		enables aspects of the machine to be set up.
	Machine Information	enables particulars about the machine to be recorded and displayed on the screen if the machine becomes inoperable
	Machine Id	enables the machine's Id to be changed
	Machine Configuration Id	displays the current configuration and enables selection
	Time and Date	enables the time and date to be set
	Language	enables individual languages to be set for both the engineer and user
	DTS	Data Transfer Standard, enables the method of data transfer from the machine to a device to be specified
	Screen Brightness	enables the brightness of the screen in both standard and power save mode to be set
	Software Updates	Enables updating of the LE board software.
System Settings Page 2/3 (see Para. 5.11.9)		
	Backup/Restore	enables a backup of the current configuration to be made and restored
	Copy Configuration	enables the current configuration to be copied to a USB stick and to be restored from a USB stick
	Change Operator Logo	enables the customer logo to be changed
	Custom Configurations	pre-programmed configurations can be selected

Software Version	displays details of the version currently installed
Temperature Units	enables the selection of Celsius or Fahrenheit
Keyless Transitions	Enables the user to vend into a jug or vend free of charge
Standby Screen	enables the machine to display a standby screen and to set a time between the last vend and when the Stand by screen is displayed
System Settings Page 3/3 (see Para. 5.11.17)	
Default Dispense Head Position	enables a default position to be selected
Security Codes (see Para. 5.12)	enables access to the machine to be restricted, codes for both Engineer and Operator access can be set
Timed Events (see Para. 5.13)	enables the setup of procedures that the machine automatically carries out
Time of Day Events	enables prices, free vends and to inhibit vends at certain times/periods
Sanitation Events	enables cleaning procedures and flushing procedures to be created.
Backup Events	enables auto backup of user configurable settings and sales data stored on the machine.
Power Saving Events	enables periods when the machine can enter a power saving mode (the tank water temperature is reduced etc.)
Telemetry (see Para 5.14)	enables telemetry units to be assigned to communicate with the machine
Leave Service Application (see Para 5.145	exits the Engineer's Program and returns the machine to standby mode

5.2 Main Menu

This is the top level menu in the engineering program and enables access to all programing / configuration sub menus.



5.3 Data Recall

This menu enables the engineer to view Non-Resettable and Resettable Sales Data, view data relating to Events and SureVend™ assisted vend information. The Re-settable Sales Data and SureVend™ data menus contain an extra sub-menu which enables the engineer to delete the current data from the machines memory.

N.B. All sales data is presented in a format required by the latest European Vending Association Data Transfer Standards (EVA DTS). Surcharge data fields are not supported by this machine.

5.3.1 Non Resettable Sales Data

This menu enables the engineer to view and record monetary and sales values. This data cannot be reset and will remain intact for the service life of the control board (unless the back-up battery is removed).

Data is displayed in the following two options:

5.3.1.1 Overall Totals

1. This displays the total sales in a table listed under: **Sales**, **Discounts**, **Test Vend**, **Surcharge**, and **Free Vend**.
2. The currency column indicates the total monetary value and the **#** column indicates the total number of actual vends for each data type

5.3.1.2 By Products

1. This enables the total machine sales for each product to be displayed in a table under: **Price**, **Sales**, **Discounts**, **Test Vend**, **Surcharge**, and **Free Vend**.
2. The **Price** row indicates the price of the actual product.

The total machine sales for **Cash**, **Cashless**, **Token** and **Token Count** are displayed directly on this screen.

5.3.2 Resettable Sales Data

This menu contains similar data to that available from the **Non Resettable Sales Data** menu. However, once viewed, data from this menu can be cleared from the machines memory and enables sales data to be recorded over a period of time.

The options **Clear Data** and **Reset** are available to reset the sales data, a warning is given before the data is reset.

5.3.3 Events

This screen enables certain events which have occurred in the machine to be viewed.

1. **Power Losses** displays a table listing the most recent occasions (10 maximum) when power to the machine was disconnected.

   Details of the **Date**, **Time** and **Duration** are displayed.

2. Details of when the **Last Data Clear**, **Last Vend**, **Last Clock Set** and the **Last Price Change** were performed are display directly on this screen.

5.3.4 Identification Numbers

This screen displays information about the MDB coin/card device if fitted to the machine.

Information such as serial and part number and version types of the **Coin Mechanism**, **Bill Validator** and **Card Reader** are displayed directly on screen.

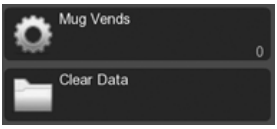
5.3.5 SureVend™

This screen displays details of SureVend™ activities.

1. The totals of **Cup Drop Failures** and **SV Assisted** vends are displayed directly on the screen.
2. An option to **Clear Data** is available to reset the totals, a warning is given before the data is reset.

5.3.6 Mug Vends

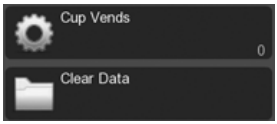
This screen displays the total number of vends the machine has made without dropping a cup.



1. An option to **Clear Data** is available to reset the total, a warning is given before the data is reset.

5.3.7 Cup Vends

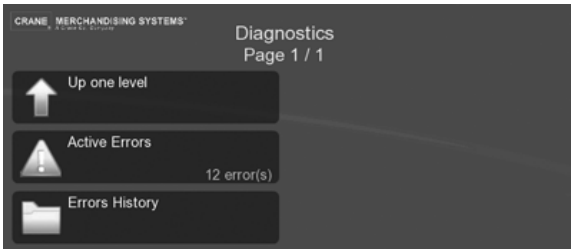
This screen displays the total number of cup drop vends the machine has made.



1. An option to **Clear Data** is available to reset the total, a warning is given before the data is reset.

5.4 Diagnostic

Should a fault occur within the machine an error is logged and a message is displayed. In some cases this may cause the machine to be inoperable.



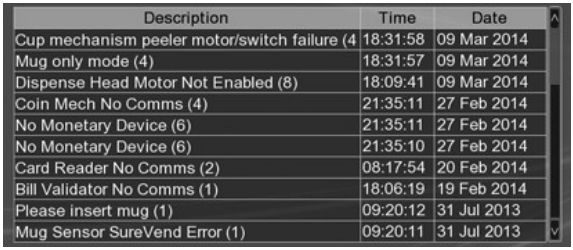
5.4.1 Active Errors

This details all the active errors, listing them in a table under the headings: a description of the error **Event** and the **Time** and **Date** (see Para. 10.1 Diagnostics for a complete list of error messages).

5.4.2 Error History

This displays a table of all the active errors, listing them

1. The total of the **Active Errors** is display on screen with the ability to view the fault details (**Event Id**, **Time** and **Date**) in a table.
2. A table of **Error History** can also be viewed with the option to **Clear History Data** from the table, a warning is given before the data is reset.

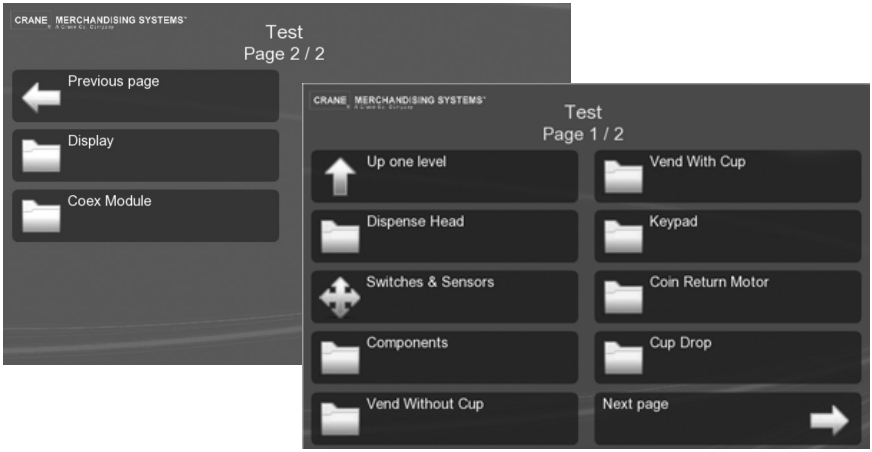


Description	Time	Date
Cup mechanism peeler motor/switch failure (4	18:31:58	09 Mar 2014
Mug only mode (4)	18:31:57	09 Mar 2014
Dispense Head Motor Not Enabled (8)	18:09:41	09 Mar 2014
Coin Mech No Comms (4)	21:35:11	27 Feb 2014
No Monetary Device (6)	21:35:11	27 Feb 2014
No Monetary Device (6)	21:35:10	27 Feb 2014
Card Reader No Comms (2)	08:17:54	20 Feb 2014
Bill Validator No Comms (1)	18:06:19	19 Feb 2014
Please insert mug (1)	09:20:12	31 Jul 2013
Mug Sensor SureVend Error (1)	09:20:11	31 Jul 2013

NB. See Para. 10-1 Diagnostics for a complete list of error messages.

5.5 Test

This menu enables the engineer to test individual components and switch inputs to ensure correct operation.



5.5.1 Dispense Head

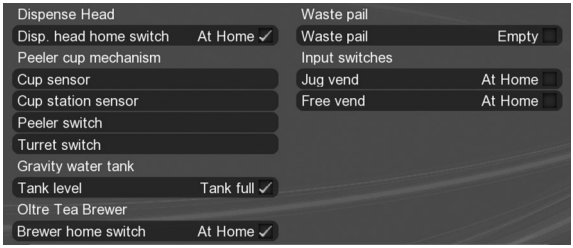
This menu enables the engineer to test the operation of the dispense head mechanism, moving through all vend positions before return to its 'home' position.

1. While the test is running the 'test animation' accompanied by a **Test Started** message.
2. On completion of a successful test the screen returns to the **Dispense Head** screen. If the dispense head fails to move a **Moving Failed** message is displayed and you are asked to **Continue** , returning to the **Dispense Head** screen.
3. Four test positions are available; **Home**, **Vend Position 1**, **Vend Position 2** and **Fully Extended**.

5.5.2 Switches & Sensors

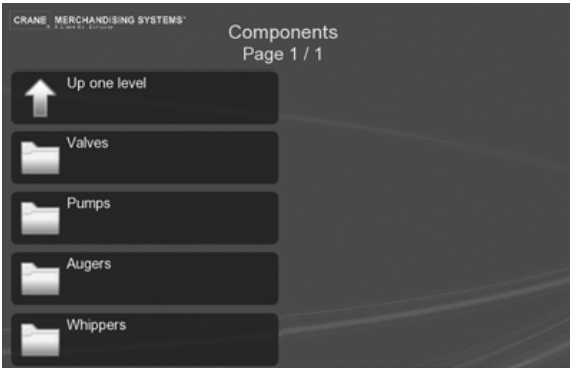
This screen displays the current state of all switches and sensors, this is active information and can therefore change.

1. This information can be used to determine the status of each switch and sensor.



5.5.3 Components

This menu enables the engineer to test the operation of individual or collective valves and motors on the components displayed. While the tests are running the 'test animation' accompanied by a Test Started message, on a successful completion of the test the screen returns to the Components screen.



5.5.3.1 Valves

Use this option to test the correct operation of each individual dispense valve fitted to the heater tank, the dispense head will also move to its fully extended position.

1. Water will be dispensed from the heater tank during the test sequence. Place a suitable container under the dispense position and on completion empty the contents of the container.

N.B. In this test the valves are each energised for 4 seconds, allowing an accurate calibration of volume via the restriction on the valves.

Important: Keep hands away from the dispense area as hot water is dispensed during the test.

Important: After carrying out the valve test on a freshbrew selection the brewer must be run using **Brewer Open**, button **2** on the service keypad (see Section 6 - Service Keypad Functions).

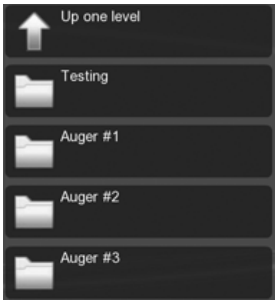
5.5.3.2 Pumps

Use this option to test the correct operation of the syrup pumps if fitted.

5.5.3.3 Augers

Use this option to test the correct operation of each individual ingredient motor. This test causes the ingredient canister auger to turn, remove the canisters before starting the test sequence.

Important: DO NOT place ingredient canisters on the floor.



1. Each **Auger** on the machine is listed and can be tested individually or by using the **Testing** option a test sequence of each can be run.
2. An **Abort** option enables the **Testing** sequence to be stopped at any time.
3. Refit the ingredient canisters on completion of the test.

5.5.3.4 Whippers

Use this option to test the correct operation of each individual whipper motor, each motor is run for 4 seconds.

1. Each **Whipper** on the machine is listed and can be tested individually or by using the **Testing** option a test sequence of each can be run.
2. An **Abort** option enables the **Testing** sequence to be stopped at any time.

5.5.4 Vend Without Cup

This menu enables the engineer to test vend all of the drinks that are available from the machine without dropping a cup, to ensure each drink is correctly dispensed.

A suitable container must be placed under the dispense position to receive the vend. While the tests are running the 'test animation' accompanied by a **Test Started** message, on a successful completion of the test the screen returns to the **Vend Without Cup** screen.

1. Select the required drink to be tested.
2. The ingredient, milk and sugar strengths can be changed using the – and + to change the values as required.
3. Select **Start** to start the vend process.
4. Each drink can be tested as required by repeating the procedure above.

5.5.5 Vend With Cup

This menu enables the engineer to test vend all of the drinks that are available from the machine into a cup, to ensure each drink and cups are correctly dispensed. While the tests are running the 'test animation' accompanied by a **Test Started** message, on a successful completion of the test the screen returns to the **Vend With Cup** screen.

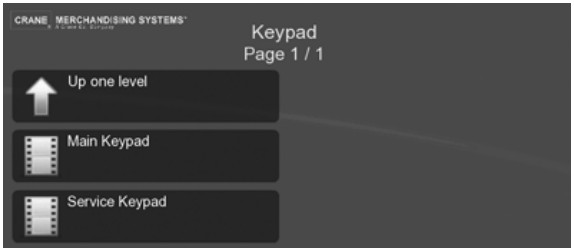
1. Select the required drink to be tested.
2. The ingredient, milk and sugar strengths can be changed using the – and + to change the values as required.
3. Select **Start** to start the vend process; drop a cup and dispense the drink.

N.B. If the SureVend™ system is turned on the sensors must be activated within 3 seconds of the cup being dispensed (see Para. 5.7.7 SureVend™)

4. Each drink can be tested as required by repeating the procedure above.

5.5.6 Keypad

This menu enables the engineer to test each touch-key on both the drink selection



interface and internal service keypad to ensure correct operation.

5.5.6.1 Main Keypad

1. Select **Main Keypad** to test the drink selection keypad.
2. All the touch-keys are illuminated and the screen displays blank menu options.
3. Press each touch-key on the drink selection interface (once only) a bleep and a flag icon appears against the touch-key pressed, indicating that the touch-key is operating correctly.

4. When complete, press the top left touch-key three times to return to the **Keypad** menu screen.

5.5.6.2 Service Keypad

1. Select **Service Keypad** to test the keys.
2. An image of the Service Keypad is displayed.
3. Locate the keypad on the rear of the door and press each key to test its operation.
4. As each key is pressed the corresponding key on the screen is highlighted.

5.5.7 Coin Return Motor

This menu enables the engineer to test the operation of the coin return motor.

1. While the test is running the 'test animation' accompanied by a **Please Wait** message, on a successful completion of the test the screen returns to the **Test** screen.

5.5.8 Cup Drop

This menu option enables the engineer to test the operation of the cup drop unit to ensure a cup is dropped.

While the test is running the 'test animation' accompanied by a **Cup Dropping** message, on a successful completion of the test the screen returns to the **Test** screen.

5.5.9 Display

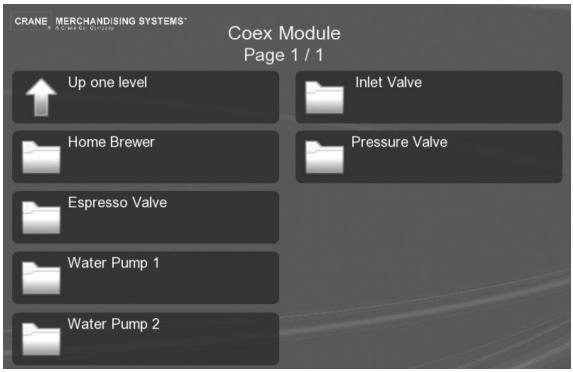
This menu option enables the engineer to test the **LCD** display screen.

1. Select **Display**, the **LCD** display changes to display a test pattern, revealing any flaw in the **LCD** screen.

   N.B. To see a correctly displayed test pattern, in full colour, visit the Tech Zone: website www.cranems.co.uk/technical/

2. When complete, press any touch-key to return to the **Test** screen.

5.5.10 CoEx



Module

This menu enables the engineer to test the operation of the CoEx module components. While the tests are running the 'test animation' accompanied by a Test Started message, on a successful completion of the test the screen returns to the CoEx Module screen.

5.5.10.1 Home Brewer

Use this option to ensure that the brewer is able to reset and return to the home position.

5.5.10.2 Espresso Valve

Use this option to test the correct operation of the espresso valve.

5.5.10.3 Water Pump 1 and 2

Use this option to test the correct operation of the water pump or pumps as fitted to the

machine.

1. Water will be dispensed from the heater tank during the test sequence. Place a suitable container under the dispense position and on completion empty the contents of the container.

5.5.10.4 Inlet Valve

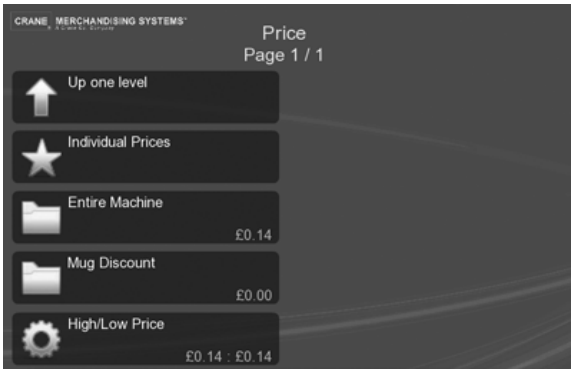
Use this option to test the correct operation of the inlet valve.

5.5.10.5 Pressure Valve

Use this option to test the correct operation of the pressure valve.

5.6 Price

This menu allows the engineer to enter individual prices for each drink selection available, one price for all drink selections, set a discount for customers who use their own cup/mug and view the highest and lowest price set in the machines memory.



Tip: If most selections are to be sold at the same price, use the **Entire Machine** menu to quickly set the entire machine to this price, then access the **Individual Prices** menu to adjust prices for individual selections. Entering a single price for the entire machine will over-ride any individual prices previously programmed.

5.6.1 Individual Prices

This option enables the price of each drink to be set. Each drink selection is shown with the current price, select the required drink and enter the new price in the value entry screen.

5.6.2 Entire Machine

This option enables a single price to be set for all drinks from the machine. Enter the new price in the displayed value entry screen.

Tip: If the majority of drinks are the same price use this option to set the price for all drinks. Then select the individual drinks that are priced different.

5.6.3 Mug Discount

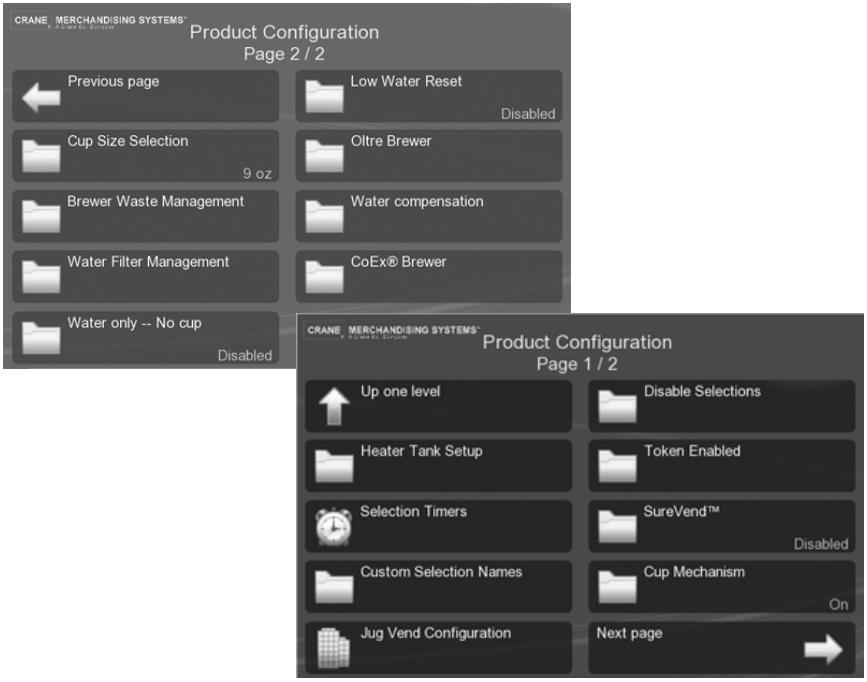
This enables a discount value against all drink selections for customers who use their own cup/mug.

1. Select and enter the discount amount in the value entry screen.
2. When a customer places their own cup into the dispense area and selects a drink, the SureVend™ sensors detect the cup and disables the cup drop mechanism. The value set for **Mug Discount** is then subtracted from the price of the drink selected and the appropriate change/credit returned to the customer.

N.B. It is important to ensure that any value entered for a mug discount is supported by the coin mechanism fitted to the machine, e.g. if a mug discount is set at 2p but the lowest coin available from the coin mechanism is 5p, the machine will not be able to return the discount to the customer.

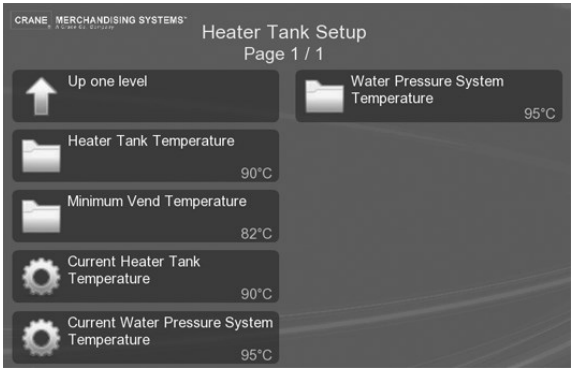
5.6.4 View High/Low Price

This displays the price range, from lowest to highest, on the machine as. If a single price is set across the machine this is indicated by the same price appearing in both fields.



5.7 Product Configuration

This menu enables all aspects of the drinks to be adjusted, from temperature and ingredients to how they are dispensed and the management of water quality and waste.



5.7.1 Heater Tank Setup

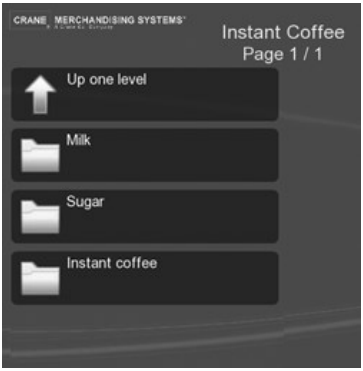
This option enables the maximum water temperature in the tank and the pressure boiler, the minimum temperature for a drink to be set and displays the current temperatures.

1. **Heater Tank Temperature -** this can be reduced to 75 or raised to 97°C.
2. **Minimum Vend Temperature** - the default value is 75°C, this cannot be reduced but can be raised to 97°C.
3. **Current Heater Tank Temperature -** the current water temperature.
4. **Current Water Pressure System Temperature -** the current water temperature in the pressure boiler.
5. **Water Pressure System Temperature -** this can be reduced to 75 or raised to 97°C.

5.7.2 Selection Timers

This menu enables the drink recipes to be adjusted to suit individual preferences. Each drink available on the machine can be adjusted and each has default values.

Important! B2C machines with the CoEx brewer must be calibrated before the options on this menu are adjusted see Para 5.7.2.1 below for details.



Selecting a drink displays the ingredients that make up the drink and timers to make the drink and are explained below:

1. Select the drink from the **Selection Timer** menu to display the ingredients that make up the drink.
2. **Milk**, **Sugar** and **Instant Coffee** – these ingredients can be adjusted to offer different strengths to the user and appear in this menu as for example **Milk 1**, **Milk 2** and **Milk 3** , where **Milk 1** is the least amount of milk and **3** is the most. The strength is measured in seconds and controls how long the ingredient motor is run and is known as the ingredient throw.
3. Each ingredient can be adjusted in this way and the following can also be adjusted to
reate the drink.
4. **Water Quantity** – how long the water valve is opened.
5. **Product Delay** – to delay the adding of product after a valve opens.
6. **Whipper Time** – how long the whipper is run.
7. **Whipper Delay** – to delay the whipper after a valve opens.
8. **Post Dispense Delay** – this is the length of time the dispense head remains in the extended position after the last ingredient has been vended.

5.7.2.1 CoEx Brewer Calibration

The CoEx brewer must be calibrated to ensure it delivers the correct amount of coffee to satisfy customers taste preferences. The following two calibrations must be performed before any of the above Selection Timers or Water Compensation (see Para 5.7.16) are adjusted.

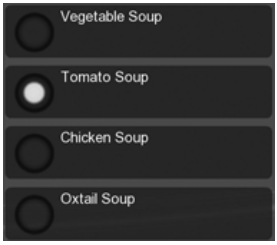
Grinder Adjustment

1. To adjust the grinder, select a drink that contains **Coffee Beans** "Espresso made from Beans" for example from the **Selection Timer** screen.
2. Select the **Coffee** option and then **Selection Timer** to display the **Timer** screen and show the **Timer** figure.
3. Press button **15** on the **Service Keypad**, to dispense a quantity of ground coffee for the amount of seconds displayed.
4. Check the consistency of the coffee grind & adjust if required. This also enables you to weigh the coffee & adjust the gram throw figure.

Auger Calibration

1. To calibrate the augar, select a drink that contains **Fresh Coffee** from the **Selection Timer** screen.
2. Select the **Coffee** option and then the **Selection Timer** to display the **Timer** screen to show the **Timer** figure.
3. Press button **15** on the **Service Keypad**, to dispense a quantity of fresh coffee for the amount of seconds displayed.
4. This enables you to weigh the coffee & adjust the gram throw figure.

5.7.3 Custom Selection Names



This menu enables syrup based drinks and soups to be given a name that appears on the drink selection screen. The types of drinks available are displayed and selecting the required type displays names that are available.

1. If for example soup is available, select **Soup** to display a list of soups.
2. Select the type of soup, in this example **Tomato**.
3. **Tomato Soup** will now be shown on the drink selection screen.

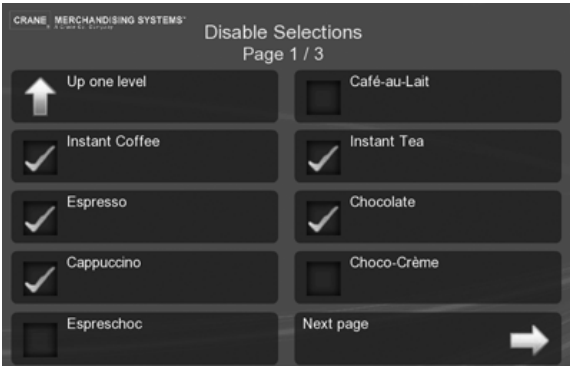
5.7.4 Jug Vend Configuration

This menu enables the selection of drinks available for jug vend, the number of cup vends per jug and to enable SureVend™.

1. **Enable Selections** – use this option to select the drinks that are to be available for

jug vends.

2. **Setup Selections** – use this option to enter the number of vends per jug.



3. **SureVend™ for Jug Vend** – use this option to enable/disable SureVend™ should a glass jug be used.

5.7.5 Disable Selections

This menu enables individual drinks to be temporarily disabled.

1. Press the touch key next to the drink to be disabled to display a tick
2. To enable a drink, select the drink to remove the tick.

5.7.6 Token Enabled

This enables the selection of those drinks that can be dispensed using a token.

5.7.7 SureVend™

This menu enables the SureVend™ product delivery sensor to be **Enabled** or **Disabled**.

SureVend™ Overview:

1. SureVend™ ensures that a cup is always available in the cup station before any money is collected or product delivered. The sensing system is a beam of infra-red light across the cup station that is broken by a cup as it falls into position from the cup drop unit, or by a customer placing his own mug in the dispense area.
2. The SureVend™ software monitors the cup station sensor during the time that the cup ring is operated and for three seconds afterwards. If a cup is not detected the software will then attempt to drop a cup a second and if necessary, a third time, after which the customer's money is returned
3. The machine remains in service and the machine will accept another customers vend request and payment, and will attempt to drop a cup a further three times. If a cup is still not detected the customer's money is again returned.

   The machine will now accept a third customers payment and attempts to drop a

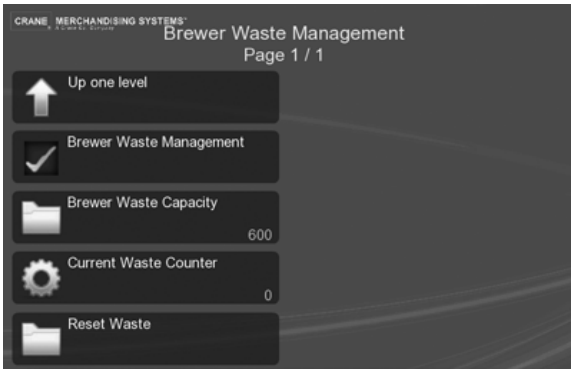
cup three more times. If these attempts fail, the customer's money is returned and the message "Out of Cups" is displayed.

4. To clear the message and return to standby mode, open the door.
5. Check and, if necessary, clear the cup drop unit. Ensure correct operation before leaving the machine.

5.7.8 Cup Mechanism

This enables the cup drop unit to be switched **On** or **Off**. If user's own cups are to be used set this to **Off** to disable the cup drop unit, SureVend™ can still be used to monitor the dispense area and will not dispense drinks without a cup in the dispense area.

5.7.9 Cup Size Selection



This indicates the cup size used in the machine and must be set to match the cups size used.

5.7.10 Brewer Waste Management

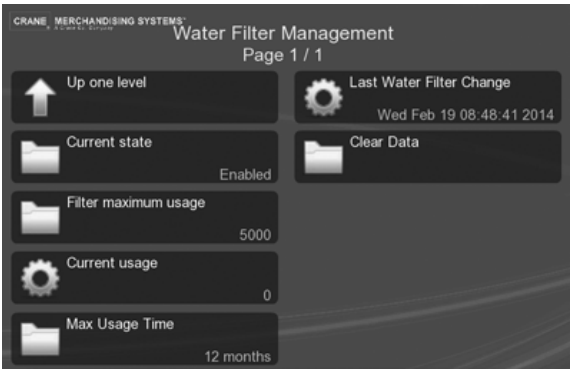
If this feature is **On** it enables the number of fresh brew drinks dispensed to be limited before the brewer waste bucket is emptied, ensuring the bucket is not over filled.

1. **Brewer Waste Capacity** - enter the number of vends before the fresh brew drinks are disabled and the waste bucket emptied.
2. **Current Waste Counter** – this indicates the number of fresh brew drinks

dispensed.

3. **Reset Waste** – this resets the counter with a warning.

N.B. If this feature is **On** the operator must press button **12** on the Service Keypad every time the brewer waste bucket is emptied.



5.7.11 Water Filter Management

This enables an indication of when the water filter requires changing, a litre count or time period can be used and whichever is reached first displays an alternating message 'Water Filter Change Required' on the standby screen, although the machine remains operational.

1. **Current State** – Enable or Disable this feature.
2. **Filter Maximum Usage** – specify the maximum number of litres through the filter, the default is 5000.
3. **Current Usage** – this indicates current litre count.
4. **Max Usage Time** – enables a set time period to be entered after which the change filter message is displayed.
5. **Last Water Filter Changed** – this indicates the date and time of the last filter change.
6. **Clear Data** – resets the counter with a warning.

5.7.12 Water Only – No Cup

This disables the cup drop unit and forces the user to dispense Hot and Cold water using their own cup. If SureVend™ is enabled the user's cup must be in the dispense area before the water is dispensed.

5.7.13 Stick Stirrer

This option is only available on specific spec machines that dispense dry sugar. It enables the user to receive a stirrer with their dispensed drink.

5.7.14 Lower Water Reset

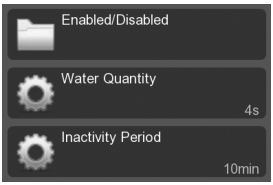
In normal operation a machine will only allow the main tank and B2C boiler to fill for two minutes after which the inlet valve will be closed and the machine turned off until the machine is power cycled. If this feature is turned on the machine will allow the inlet valves to be opened every thirty minutes for a further two minutes as required without it being power cycled.

5.7.15 Oltre Brewer

This menu enables the Oltre brewer configurations to be viewed and set-up:

5.7.15.1 Oltre Brewer #1 (2) Belt Motor Direction

These two indicate the direction the brewer belt is driven and must not be changed.



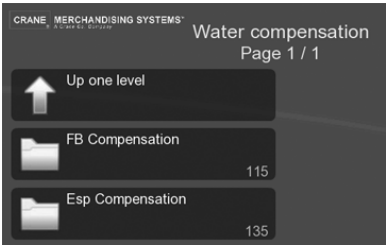
5.7.15.2 Prevend Heat

This enables the brewer components to be flushed through with hot water after a period of inactivity. This flush ensures the brewer components are warm and therefore the vend hot.

1. **Enabled/Disabled** - to enable or disable the Prevend Heat option.
2. **Water Quantity** - enables the amount of hot water used during the flush to be set.
3. **Inactivity Period** - this is the period of time after the last vend the flush will occur and can be adjusted here.

5.7.16 Water Compensation

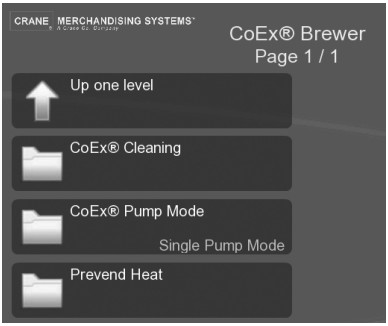
This sub menu enables the engineer to set the B2C water system to vend the correct amount of water for individual site operating conditions.



Important! Grinder and Auger Calibration must be carried out before setting the **Water Compensation** (see Para 5.7.2.1).

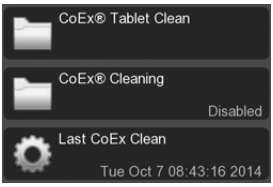
The goal is to vend the programmed amount of water (in Selection Timers) during a vend, more or less will be vended by increasing or decreasing the numeric value.

1. **FB Compensation**: relates to low pressure drinks.
2. **Esp Compensation**: relates to high pressure drinks and is set in exactly the same way.



5.7.17 CoEx Brewer

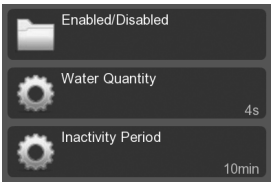
This menu enables the following options for the CoEx brewer to be set-up:



5.7.17 1 CoEx Cleaning

This option enables the cleaning of the CoEx brewer, with the following options.

1. **CoEx Tablet Clean** - This option initiates the CoEx brewer tablet cleaning routine also initiated by Button 11 on the Service keypad. For more information see Para 6.11 and the Operator's Manual
2. **CoEx Cleaning** – This enables a warning to be displayed when the CoEx brewer requires cleaning and if ignored the drink selections using the CoEx brewer are withdrawn. If this option is disabled no such warning is displayed and the CoEx brewer can continue to be used.
3. **Last CoEx Clean** – this indicates the time and date the CoEx Brewer was cleaned.



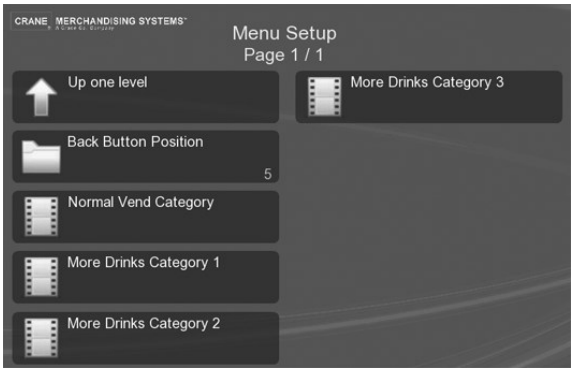
5.7.17 2 CoEx Pump Mode

This indicates the CoEx pump mode installed in the machine, ether **Single** or **Dual**.

5.7.17 3 Prevend Heat

This enables the brewer components to be flushed through with hot water after a period of inactivity. This flush ensures the brewer components are warm and therefore the vend hot.

1. **Enabled/Disabled** - to enable or disable the Prevend Heat option.

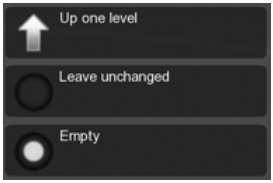


2. **Water Quantity** - enables the amount of hot water used during the flush to be set.
3. **Inactivity Period** - this is the period of time after the last vend the flush will occur and can be adjusted here.

5.8 Menu Setup

This menu enables the position of the available drinks on the drink selection menu to be changed. A maximum of ten drinks can be offered on one menu if more are offered further menus (or Page 2/2) are displayed. The following three options display the current order of the drinks on the menu.

1. **Back Button Position** - this enables the position of the Back Button to be set after the last menu Selection on the drink selection menu. The position is indicated here.
2. **Normal Vend Category** – these are the drinks available from the first drink selection menu.
3. **More Selections Category 1, 2** and 3 – if there are more than ten drinks available from the machine these further options display the drink selection menus available.



Selecting one of the above category options displays the screen below and shows the alternate drink labels that can be placed on the drink selection menu.

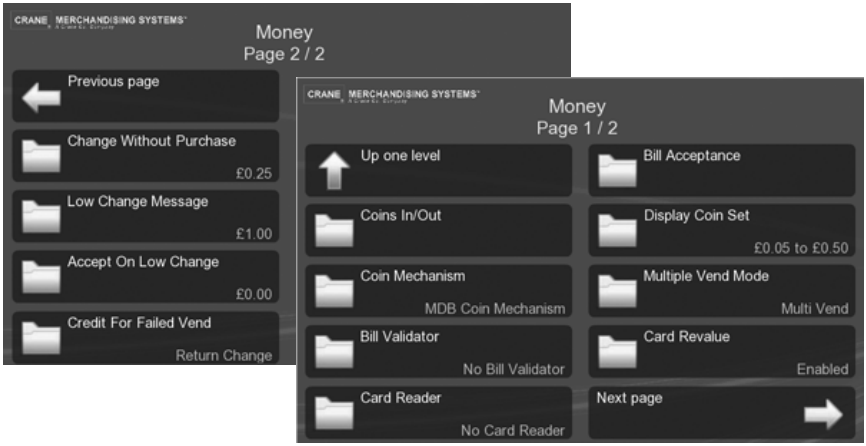
1. **Leave unchanged** – leaves the original drink in the menu.
2. **Empty** – clears the drink from the menu leaving an empty slot.
3. All additional drinks are displayed and can be selected

to replace the original drink.

5.8.1 To change the menu

1. Select the menu **Category** that is to be changed, the current drink selections are displayed.
2. Select the drink that is to be removed or moved.
3. Select new drink or select **Empty**.

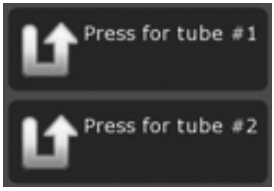
   If left as **Empty**, the words **Empty slot** indicate that a blank space will appear on the customer drink selection menu.
4. Select **Up one level** to display the new selection on the **Cateory** screen.



5. Select **Save** to save the change and return to the **Menu Setup** screen.

Tip: Using these screens you can group drink types together or if there are less than ten drinks you can leave empty slots at the bottom of the screen.

5.9 Free Vend



This enables the user to dispense drinks free of charge, if enabled it overrides all prices.

5.10 Money

This menu enables the type of coin/card mechanism or note reader fitted to the machine to be selected, to configure the coin set, values for low change, multiple vends and credit for failed vends. The options available on this menu depend on which options are selected.

5.10.1 Coins In/Out

This displays the totals of coins through the coin mech, a table displays: the total **Coins**, **Count** and **Value** of the coins.

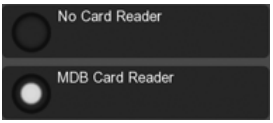
1. To load the coin mech tubes with change select the required tube.

5.10.2 Currency Setup

This enables the currency for the machine to be selected from the displayed list when using exec monetary devices.

5.10.3 Coin Mechanism

This enables the coin mechanism fitted to the machine to be selected, including the options:



1. **No Coin Mechanism**, for machines not charging for drinks.
2. **MDB Coin Mechanism** and **Exec Coin Mechanism**.
3. Selecting **Exec Coin Mechanism** requires the Executive kit to be fitted.

5.10.4 Bill Validator

This enables the **MDB Bill Validator** (if fitted) to be selected.

5.10.5 Card Reader

This enables the **MDB Card Reader** (if fitted) to be selected.

5.10.6 Bill Acceptance

This enables which denominations of bills (notes) are accepted.

5.10.7 Multiple Vend Mode

This menu is only applicable when a MDB Coin Mechanism is fitted to the machine and is

Enabled on the Coin Mechanism menu. Two options are available:

1. **Multi Vend** - The user can make multiple vends as long as there is sufficient credit entered. In order to get change, the customer must press the coin return touch-key.
2. **Single** - Change is returned to the use automatically as soon as a valid selection is made.

5.10.8 Card Revalue

If the **MDB Card Reader** is fitted, enabling the use of a payment card, it is possible for a user to pay cash into the machine to add credit to their card.

This menu enables this facility to be **Enabled**/**Disabled**.

5.10.9 Change Without Purchase

This menu is only seen when a MDB Coin Mechanism is fitted to the machine and Enabled on the Coin Mechanism menu.

The **Change Without Purchase** value specifies how and when the machine returns change to a customer. If the customer deposits credit into the machine which is less than or equal to the value set in the **Change Without Purchase** menu, change will be returned without a purchase. However, if the credit is larger, the customer must make a purchase before change will be given. For example:

1. **Value set to 1.00** - Non-escrowed coins less than or equal to £1.00 will be changed without purchase. All escrowed coins are returned.
2. **Value set to 0.00** - Forced Vend. This value forces the customer to make a selection. No change will be returned without a purchase.

N.B. Each coin denomination for which the coin mechanism has a tube is called an Escrowed coin because it can be returned.

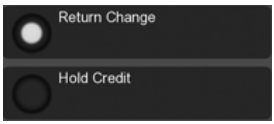
5.10.10 Low Change Message

This menu is only seen when a MDB Coin Mechanism is fitted to the machine and is Enabled on the Coin Mechanism menu.

1. When the total value of the coins in the coin mechanism falls below the value set on this menu, the standby message displayed on the screen reads "Use Exact Change".
2. The machine will still accept money with this value set, but may short change the customer if there is insufficient coinage in the coin mechanism.

Tip: Set the Low Change Message and the Accept on Low Change values (see Para. 5.10.11 Accept on Low Change) to the same figure to avoid the customer being short changed.

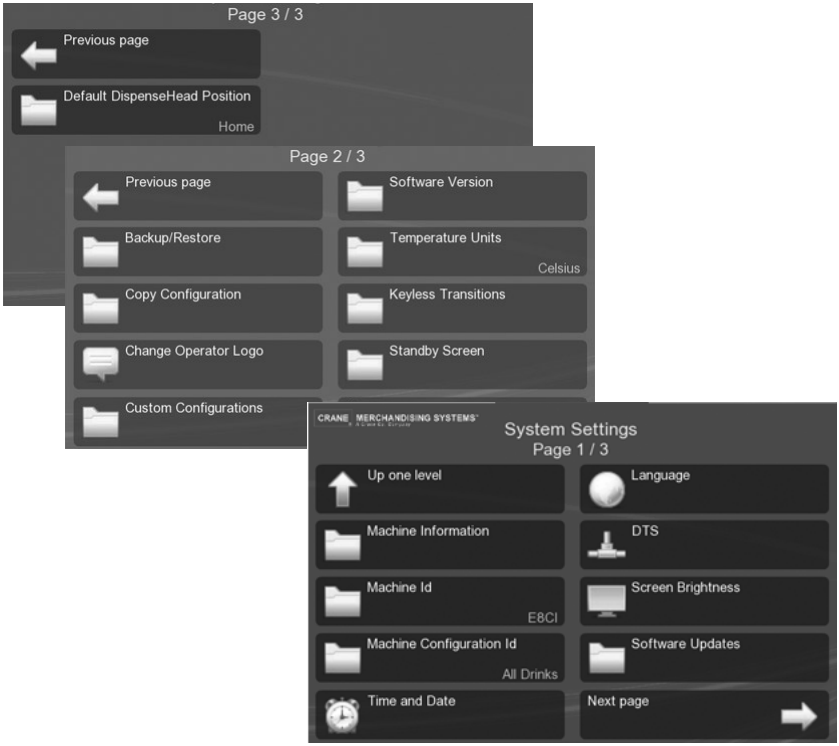
5.10.11 Accept On Low Change



This menu is only seen when a MDB Coin Mechanism is fitted to the machine and is Enabled on the Coin Mechanism menu.

When the total value of the coins in the coin mechanism falls below the value set on this menu, the machine will stop

accepting coins and notes for which it cannot return change. For example, if the engineer sets a value of £1.00, the machine will not accept a £1 coin if there is less than £1 value of



coins in the coin mechanism.

5.10.12 Credit For Failed Vend

This menu is only seen when a MDB Coin Mechanism is fitted to the machine and is Enabled on the Coin Mechanism menu.

When a vend fails the machine can do one of two things:

1. **Return Change** - The customers change is immediately returned after a failed vend.
2. **Hold Credit** - The customers credit is retained, allowing them to either make an alternative selection or press the coin return.

5.11 System Settings

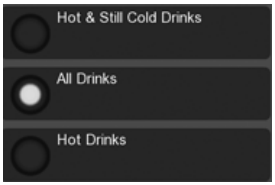
This menu enables the machine to be set up using the following menus.

5.11.1 Machine Information

This enables details of the machine and contact information to be entered and can be displayed on screen if the machine develops a fault and is inoperable.

1. **Show/Hide Machine Information** – this enables the information entered to be displayed on the screen if required.
2. **Contact Number** – this enables a contact phone number to be entered. New numbers can be added, deleted and any previous numbers used are shown.
3. **Machine Id** – each individual machine can be named to help with identification and is shown in the DEX report.
4. **Machine Location** – the location of the machine can be added to help with identification and is shown in the DEX report.

5. **Custom Configuration Name**, **Manufacturer ID**, **Model Number** and **Board Serial Number** this information is displayed on screen and identifies the machine system set.



5.11.2 Machine Id

This identifies the machine by the configuration of drink types it is setup to vend i.e. Instant, Freshbrew, or B2C. The Id's are as follows:

E8CI—Instant machine.

I6CF—Freshbrew machine (Single, Double and Triple Fresh brew machines based on Oltre Brewer).

I5CF—Co-Ex based machine (Bean to Cup based on Co-Ex brewer and Oltre brewer).

5.11.3 Machine Configuration Id

This enables the drink types to be selected that are available based on the Machine Id.

5.11.4 Time and Date

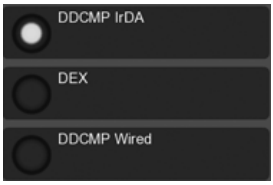
This enables the **Time Zone**, **Time** and **Date** of the machine's location to be selected.

1. In the **Time** menu there is the option to use either a 12 or 24 hour clock display.

5.11.5 Language

This menu enables the selection and installation of different languages on the machine, available languages are displayed, additional languages can be installed from a USB stick. Different languages for the customer (user) and the service engineer can be used simultaneously.

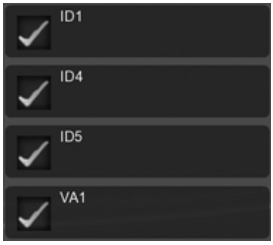
1. **Install Language** – to install a new language it must be available on a suitable USB stick and file format.
2. **Remove Languages** – this removes current languages installed on the machine. As a safe guard you cannot remove all languages from the machine.
3. **Service Application** – this enables the selection of the language that is used on all screens accessed by service engineers.
4. **User Interface** – this enables the selection of languages that are available for selection by the customer (user). A default language can be selected with the option to provide a further four languages that are available for the customer to select on the drink selection screen.



5.11.6 DTS

This menu enables the configuration of the data transfer standard to send audit data relating to sales and events, stored in the machines memory, to a data carrier or other device.

Data Transfer Standard (EVA-DTS): This is the standard that makes it possible to transfer information from vending machines/payment systems to PC-based accounting/ management systems and/or the opposite way. It is important that all suppliers of vending machines and payment systems agree to a common standard for the Electronic Data Transfer, because only this way the operator can be sure that all his equipment can be read out and programmed by means of the same handheld device.



5.11.6.1 DTS Standby Mode

This indicates the current mode and is factory set to enable data transfer via:

1. **DDCMP IrDA** - data can be downloaded from the machine using a hand held infra red DDCMP device.
2. **DEX** - data can be downloaded from the machine by plugging a DEX enabled device into the DEX port (J16) on the main control board, located on the rear of the door
3. **DDCMP Wired** - data can be downloaded via a plugged in DDCMP device.

5.11.6.2 DTS Audit List

This menu enables the selection of which data is transferred from the machine to a DEX/ DDCMP data carrier. All data and events fields within a vending machine are assigned a unique code determined by the DTS and these fields are available for selection on this

screen.

5.11.6.3 CA304 Data Type

This menu determines whether the data will be displayed as **Currency** or **Numeric**.

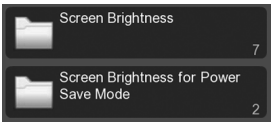
1. For example, assuming that the value of pound coins in the machine is £3.00, when set to **Currency** CA304 will read 300 in the DEX/DDCMP report.
2. When set to **Numeric** it will read 3.

5.11.6.4 Data Reset Mode

This menu enables all resettable data to be either saved or reset to zero, select:

1. **Auto -** to reset the data after a successful read
2. **Save -** to save the current data values held on the machine.

5.11.6.5 Event Reset Mode



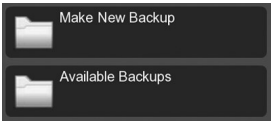
This menu enables all event data to be either saved or reset to zero, select:

1. **Auto -** to reset the event data after a successful read
2. **Save -** to save the current data held on the machine.

5.11.6.7 Printer Baud Rate

This enables the correct baud rate for a serial printer to be set if one is to be used. It is important for this to be set correctly to ensure successful data transfer.

5.11.6.8 Passcode Reset



Data collection is passcode protected, but the machine is able to remember the passcode of the collection device. If a different device is used that the machine does not recognise the passcode must be reset to enable the transfer of data.

This option enables the passcode to be reset, a warning is given to confirm the reset is required.

5.11.7 Screen Brightness

This menu enables the brightness of the drink selection screen to be adjusted when in normal operating mode and when in Power Saving Mode.

5.11.8 Software Updates

This menu enables new software versions to be uploaded , via a USB stick.

5.11.9 Backup/Restore

This enables a backup of the current configuration on the machine and the ability to restore the default or available configurations.

1. **Make New Backup -** follow the on screen instructions to save the current machine configuration.
2. **Available Backups -** this enables a default configuration or any available (as listed on this screen) to be used on the machine.

5.11.10 Copy Configuration

This enables the current machine configuration to be copied and used on other machines.

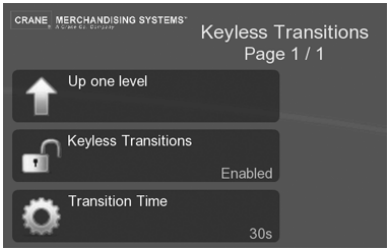
1. **Perform Configuration Clone** - this enables the current configuration on the machine to be copied onto a USB stick. The configuration should be given a name (Clone comment).
2. **Restore Configuration** - this enables the configuration on the machine to be loaded back on to the machine.

5.11.11 Change Operator Logo

This enables a logo to be added to the top of the screen. The logo file must be:

- a .png file; no spaces are allowed in the file name, use an underscore if necessary
- no larger than 94 x 94 pixels
- located on a USB stick in a folder called atlas/logo/file_name.png.

The USB stick is inserted into the USB 3 socket on the Control Board, .the machine automatically recognises the file location and inserts the logo.



5.11.12 Custom Configurations

This enables a specific configuration available on the machine to be selected and installed.

5.11.13 Software Version

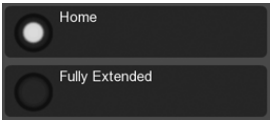
The current software: **Release**, **I/O Board Version** and **Kernal** version numbers.

5.11.14 Temperature Units

The enables the temperature to be displayed in either **Celsius** or **Fahrenheit**.

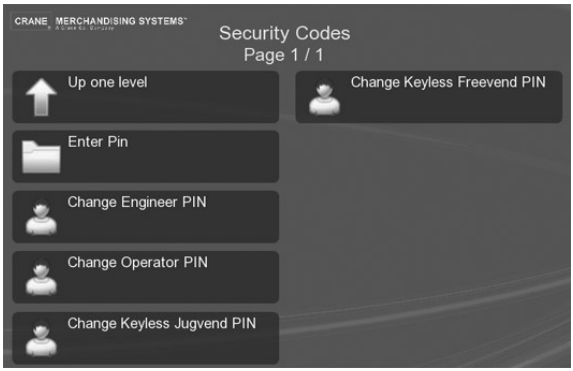
5.11 15 Keyless Transitions

This enables the user to vend into a jug or vend free of charge, however a passcode is required in both cases.



1. This can be **Enabled** or **Disabled** and a **Transition Time** entered after which the machine reverts to normal vend mode.

⚠ 5.11.16 Standby Screen



This enables standby screen to display after the machine has remained idol for a set time. This can be **Enabled** or **Disabled** and a **Transition Time** (or idol time) entered after which the Standby Screen is displayed.

5.11.17 Default Dispense Head Position

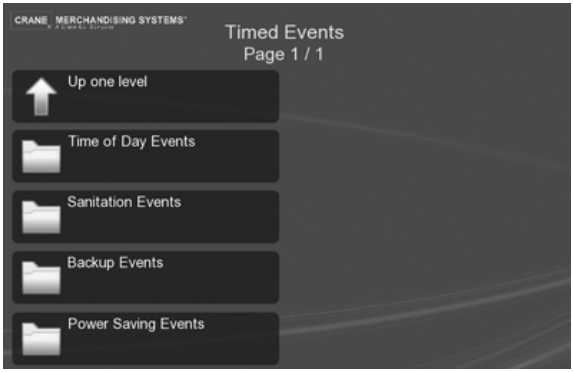
This is the position of the dispense head after a vend, the following two options are available:

1. **Home** - fully retracted into the machine.
2. **Fully Extended** - remains extended in the vend position.

5.12 Security Codes

This screen enables the security codes to be entered for both entry into the programming modes and for user entry codes.

The security code for entry into the Engineer's Program is factory set so that the operator presses button 1 on the

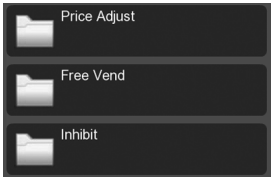


service keypad followed by the sequence 4-4-4-4 on the drink selection interface. This screen enables these entry codes to be changed.

Important: On no account should this code be altered without first consulting your supervisor or manager.

1. **Enter Pin -** this pin enables the following pins to be changed.
2. **Change Engineer PIN -** this displays and enables the pin to be changed, for entry into the Engineers program.
3. **Change Operator PIN** - this displays and enables the pin to be changed for entry into the Operators program.
4. **Change Keyless Jugvend PIN** - this displays and enables the pin to be changed for the user to use a jug vend. The default PIN is 9999.
5. **Change Keyless Freevend PIN** - this displays and enables the pin to be changed for the user to use Freevend. The default PIN is 9998.

5.13 Timed Events



This enables the creation, deletion and update of timed events that are run automatically

in the machine via the following menus.

1. **Time of Day Events**—This enables the setup of discounted vend, free vend and

   inhibited vend periods.

2. **Sanitation Events**—This enables the setup of periods when the machine will automatically flush through the water system.
3. **Backup Events**—This enables the machine to be programed to perform an automatic backup of all user configurable settings and sales data stored in its memory.
4. **Power Saving Events**—This enables the setup of periods when the machine enters a power saving mode. In this mode the water in the boiler is not maintained at the normal vend temperature, but at a lower temperature of 70°C.

The method for creating/updating a timed event is the same for all four event types. The following example describes how the engineer can program the machine to free vend

specific drink selections between 10.30 am and 2:30 pm on week days.

Studying this example will provide an understanding of how timed events are created.

1. Select **Time of Day Events** on the **Timed Events** screen.
2. Select **Free Vend** to display the following screen.

N.B. By default, four empty entries are available for free vend events. Additional events can be created by selecting **Create New Event**.

3. Select **Free Vend #1** to display the following screen.

N.B. By default the state is set to **Disabled** and the **Frequency Type** is set to **Daily**.

4. Select **Enabled/Disabled** and **Enable** to enable the event.
5. Select **Start Time** to display the **Start Time** screen.

N.B. You can switch to either **12hr** or **24hr** mode on this screen.

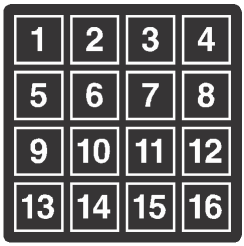
6. Set the start time to **10:30** and **Save**.
7. Select **End Time** to display the **End Time** screen.
8. Set the end time of **2:30** (**14:30**) and **Save**.
9. Select **Days Of Week** and select on which days of the week Free Vend will be available. Individual days or **Select All** options are available.
10. **Frequency Type** - enables the free vend period to be either **Daily** or **Weekly**.

    Daily - this enables a free vend period to be available on any selected day or all days of the week.

    Weekly - this enables a free vend period to be available on a weekly bases, and can be set to be available over several days. A **Start** and an **End Day** can be selected.
11. Select **Selections**.
12. This screen enables the selection of which drinks are to be available for free vends

on the days and between the times entered above.

The drinks selected here appear with no price against them on the drink selection screen.



13. All the required parameters for the event are now set and the screen below displays the following Free Vend event.

    The event is **Enabled** and starts at **22:30** on **Friday** night, it finishes at **02:30** on **Sunday** afternoon and occurs **Weekly** for the selected **Selections** of drinks.

14. From this set up **Backup** 1 menu the engineer can quickly and easily additional **Time of Day**, **Sanitation**, and/or **Power Saving Events** as required.

N.B. When setting value for the mechanism, coin tubes. 2 a discount price event it is necessary for the engineer to enter a discount as a percentage (%). If the machine is fitted with a coin please ensure that the discount value entered is supported by the

5.14 3 Telemetry

This enables telemetry units to be assigned to communicate with the machine.

5.15 Leave Service Application

This exits the Engineers Program and returns the machine to standby mode. Alternatively the machine door can be closed to exit the program and standby mode.

Section 6 - Service Keypad Functions

The machines is fitted with a service keypad mounted on the rear of the door. It enables the Operator to carry out specific functions during routine cleaning and maintenance.

N.B. During certain operations e.g. View Counters 'it is necessary for the operator to utilise the LCD mounted on the front of the door to access data.

This keypad enables the following functions:

6.1 Button - Program Entry

There is no functionality behind this button.

6.2 Button 4 - Brewer Open (Freshbrew Models Only)

This button operates the brewer and enables the engineer to replace the filter paper used in paper type brewers. Oltra brewers are cycled when using this button.

6.3 Button - Rinse/Flush

1. The flush sequence rinses the mixing bowls. Before the sequence begins, the system waits until the water in the boiler is at the set temperature.
2. In order to guarantee the highest standards of cleanliness, the boiler fill valve is disabled, ensuring that the water used in the sequence is delivered at the optimum temperature to kill any micro-organisms.

3. Each water sequence. 5 valve and the corresponding whipper are switched on in Once the flush cycle is complete the machine returns to standby mode.

   N.B. Co Ex brewers are cycled and rinsed, Oltra brewers are not rinsed.

4. To flush the machine:

   - Open the front door of the machine.

   Caution: Ensure that a suitable container is placed under the dispense position. Keep hands away from the dispense area whilst the flushing cycle is in operation. 6

   - Press and release the Flush button (3). The flush sequence begins.
   - Empty the waste water container when complete.

6.4 Button - Brewer Clean (Freshbrew Models Only)

1. The brewer clean button enables the brewer to be cleaned independently. In order to guarantee the highest standards of cleanliness, the boiler fill valve is disabled, ensuring that the water used is delivered at the optimum temperature to kill any micro-organisms.
2. The brewer unit is filled with hot water and then operated through four complete brew cycles.
3. Once the at the ready to vend. 7 cleaning cycle is complete, the boiler refills and when the water is required temperature the machine returns to standby mode

6.5 Button - View Counters

The View Recall Menu. and Resettable 8 Counters button (5) enables the operator to access the Data Entry into this menu allows the operator to view Non-Resettable Sales Data, view data relating to Timed Events and Identification Numbers of installed components and (if the feature is enabled) view SureVend™ assisted vend data. The Resettable Sales Data and SureVend™ Data menus contain an extra sub-menu which memory. Refer to and its contents. 9 allows the operator to delete the current data from the machines Para. 5.3 Data Recall Menu for full details relating to this menu

6.6 Button - Test Vend

The Test Vend button (6) enables the operator to vend a drink from the machine to ensure correct operation after cleaning or maintenance.

1. When the button is pressed and released the LCD will display the screen as shown opposite. Press a drink selection button followed by the **START/?** button to begin

the vend 10 sequence.

2. Ensure that the selection is correct, has not under/overfilled the cup and most importantly, tastes good!
3. Press the **X** (Exit) key on the drink selection keypad to exit from the Test menu and return to stand-by mode.

6.7 Button - Cup Test

This button 11 enables the operator to test the operation of the cup drop unit after refilling the cup stacks. When the button is pressed the cup drop motor is operated and a cup is ejected from the cup drop unit. This function ensures that the mechanism is working correctly.

6.8 Button 12 - Park Head

When this button is pressed, the dispense head moves to its fully extended position and stops. Press the button again to return the dispense head to its correct (homed) position.

6.9 Button - Boiler Fill (B2C Machines)

When this button is pressed, the machine pumps a measured amount of water through the system - 13 approximately 600ml, heating it as it does so. This ensures that heated water is immediately available when a drink is selected. This button should also be used to purge any water left in the system after the machine has been moved or shut down for any length of time.

Note: This should 14 be used if there is an air lock in the closed loop system i.e. after an install or the machine has been serviced.

6.10 Button - Machine Cool Down (B2C Machines)

This button 15 enables an engineer to work safely on the B2C module.

When this button is pressed the hot water in the pressure system is replaced by 370ml of cold water. When complete the Message “Machine Cooled” is displayed and all outputs disabled, at this stage once the power to the machine has been disconnected the engineer can work safely on the B2C module (refer to Para. 10.4 for full details).

6.11 Button - CoEx® Tablet Clean (B2C Machines)

This button when pressed, initiates the CoEx® brewer tablet cleaning routine. Crane Merchandising Systems recommends that this brewer cleaning routine should be carried out on a weekly basis (refer to the Operator’s Manual for full details).

6.12 Button - Reset Waste Counter (F/Brew & B2C Machines)

This is only relevant if the feature is turned on during installation.

Every time that the waste container is emptied the waste counter must be reset. Press button 12 on the service keypad. Two audible bleeps confirm that the counter has been

Section 7 - Technical Information

7.1 Water Services

The mains water supply provides water for the heater tank and the pressure system fitted to Espresso (B2C) machines. Water enters at the rear of the machine through a solenoid operated inlet valve operating at 24v DC, which opens or closes the water supply as required.

7.2 Hot Water System

7.2.1 General

1. Water is heated in the heater tank to the required temperature by a heating element rated at 2.4 Kilowatts. The mains voltage required for the element is switched by a solid state relay, controlled by the vending machine controller via an analogue signal transmitted by the thermistor probe.
2. The water level inside the heater tank is controlled by a water level probe. When the water drops below the required level, the controller board operates the mains water inlet valve until the required water level is restored.
3. A series of 24v DC control valves are mounted on the outside of the heater tank. These supply heated water to each of the mixing stations where ingredients are added to make the drink. The “hot water” valve dispenses straight into the cup.
4. Should the inlet valve fail (or mains water supply be disabled), the controller board will detect a fault after the inlet valve ‘open’ signal has been active for 2 minutes and the required water level has not been reached.

   At this point the keypad will be disabled, all outputs from the controller board (including the heater element) will be switched off and the LCD will show the message “Sorry Out of Service, Fill Timeout”.

7.2.2 B2C Machines

The water system fitted to B2C machines is described in detail in this manual , refer to Section 8.2 - System Overview for full details.

7.3 Ingredient Dispense

1. The ingredients required for making up either an instant or freshbrew drink are contained in ingredient canisters and are dispensed by means of an auger located in the base of each canister. Each auger is driven by a 24v DC 128 RPM motor.
2. The amount of product dispensed by each canister is controlled by the vending machine controller and may be adjusted via the Selection Timers menu , refer to the Engineers Program – Para. 5.7.2 for full details.
3. The required ingredients for each vend are delivered to the mixing bowl, where they are blended with hot water by a high speed whipper prior to discharge at the dispense head.

4. To ensure a free flow of ingredient powder and granules, it is essential that they are kept completely dry. This is achieved by extracting steam from the mixing system using an extract fan. The electrical supply for the extract fan is 230v AC.

N.B. The fan runs continuously whilst the machine has power.

5. B2C machines: Coffee beans are stored in a bean container and are dispensed into the CoEx® Brewer via a 230v AC grinder located under the bean container outlet.

   The amount of beans dispensed from the container is controlled by the vending machine controller and may be adjusted via timing constraints set in the Engineers Program.

7.4 Mixing System

1. The mixing system utilises 24v DC 13,000 RPM motor assemblies and mixes ingredient with hot water from the heater tank.
2. The mixing units are front mounted and secured by a single fixing screw. For servicing, the complete unit can be quickly and easily removed.

7.5 Moving Dispense Head

1. Voce machines are fitted with a moving dispense head mechanism. This allows for a quicker and more direct cup drop and also helps to prevent cross contamination of drinks. The head features two separate dispense positions depending upon the drink being dispensed.
2. The mechanism is operated by a 24v DC 48 RPM motor. The motor is connected to a pinion which engages with a rack on the dispense arm. This mechanism is used to move the dispense head backwards and forwards.
3. A micro switch, fitted to the rear of the dispense head chassis detects the home position (head withdrawn/not dispensing). An optical sensor is also fitted and this works in conjunction with a decoder bracket attached to the rack to determine the position of the dispense head.
4. A moulded dispense head mounted at the front of the unit connects the tubes from the various mixing systems, brewers and hot water, to separate dispense nozzles.

   N.B. Dispense pipe lengths are shown in Section 9.

7.6 Cup Dispense Unit

1. Cups (either paper or plastic) are stored in tubes which are located above the cup dispense unit. The unit incorporates a 24v DC, motor for Indexing the correct turret over the cup drop unit as required.
2. The cups are separated and ‘dropped’ by a cup ring. The cup ring comprises five separator cams operated by a 24v DC motor, which is controlled by the vending machine controller.

3. The cup level is monitored by an electronic system. An infrared LED (cup sensor transmitter) is positioned in the cup assembly above the cup splitter, with an infrared detector (cup sensor receiver) mounted directly opposite.
4. The light emitted by the LED is detected when NO CUPS are present. With a stack of cups present, the beam is broken. As the cups drop below the LED, transmitted light is detected. If this is the case, the controller will index the cup tubes until a full stack is located. A turret location micro- switch ensures that the cup tubes stop centrally over the cup ring.

N.B. The turret motor will run until the next stack is deposited into the cup splitter, which breaks the LED beam, and the cup stack micro switch returns to its normally open state. The motor will run until it either finds the next stack or all the turret extrusions have been checked. If no cups are present the “Out of Cups Please Insert Mug” message is displayed on the LCD.

5. The cup stack index motor is protected by a time-out feature. The motor will rotate for a maximum period of 60 seconds. If at the end of this period no cups have been detected the LCD will display the “Out of Cups” message.

7.7 Waste Level Probes

1. The waste level probes, positioned in the waste bucket, detect the water level in the bucket.
2. The system consists of two probes in a moulded body. When the water level is high enough that both of the probes are immersed in the water a message is displayed on the LCD indicating the waste bucket is full and the machine is disabled. The machine will remain in this state until the waste bucket has been emptied.

7.8 CoEx® Brewer (If Applicable)

The unique CoEx® combined coffee and espresso brewer provides both freshly brewed coffee along with fresh coffee from beans through the same unit. The unit is driven by a 24v DC, 13 RPM motor, controlled by a micro switch. The switch sends logic signals to the controller during vend and initialise operations, indicating its position.

Please refer to Section 9 for full details of the CoEx® brewer and its operation.

7.9 Oltre Brewer (If Applicable)

Machines may be fitted with either one or two continuous belt Oltre brewers. The chamber, base plate, filter belt and outlet elbows are different depending on whether you are vending leaf tea or ground coffee.

Two 24v DC 30rpm motors are used on each of these brewers, one to raise and lower the brewer chamber the other to advance the filter belt. A cam operated micro switch signals to the Main Controller whether the chamber is open or closed.

7.9.1 Coffee Brewing

1. The coffee outlet elbow and baseplate are colour coded yellow and the belt is tan.
2. The chamber clamps down onto the base plate and filter, water and coffee is then dispensed. After the brew time (set in program) has elapsed a 24v DC peristaltic pump draws the coffee liquor through the filter and is pumped to a whipper chamber where it can be whipped if required before being delivered into the cup.
3. The chamber now lifts and the second motor drives the filter belt and the waste is scraped into the waste bucket.

7.9.2 Tea Brewing

1. The tea outlet elbow and baseplate are colour coded blue and the belt is white.
2. The chamber clamps down onto the base plate and filter, water and tea leaves are then dispensed. Gravity draws the tea through the filter and it is delivered into the cup.
3. The chamber now lifts and the second motor drives the filter belt and the waste is scraped into the waste bucket.

7.10 Power Supply

1. The main power supply unit (PSU) provides power to the machine. It is mounted in the top right hand side of the machine and can be accessed by removing the top RH panel.
2. The PSU converts 230v AC to 24v DC to run the valves, whipper motors, ingredient motors, brewers, etc. fitted to the machine. The solid state relay, mounted on the PSU chassis, uses a 24v DC switching circuit to provide 230v AC for the heater element.
3. A secondary PSU converts 230v AC to 12v DC to power the screen and associated LEDs.
4. The Input/Output (I/O) board, mounted on the PSU chassis, utilises signals from the main controller in order to operate valves, whipper motors, the dispense head motor, ingredient motors, brewer motors, etc.
5. The PSU houses the fuses. These are as follows.
    - Heater, 12 amp (T) (ceramic) - Heater Tank
    - 240v Auxiliary, 4 amp (glass)
    - 240v Cold Unit, 4 amp (T) (glass) - if a fridge is fitted
    - 24v Coin Mech, 4 amp (T) (glass) - if a Exec monetary system is fitted

    Early machines had separate fuses for the Pressure Boiler (12A T) and also for the PSU (4A T).

7.11 Mains (Voltage) Filter

A mains filter, mounted on the rear panel, prevents spurious voltages generated by the machine from reaching the mains supply. .

7.12 Coin Mechanism Transformer (Optional Extra)

The coin mechanism transformer converts 230v AC to 24v AC for Executive protocol type coin mechanisms and cashless systems.

7.13 Coin and Card/Key Systems

The VOCE may be equipped with coin or card/key validation systems using either protocol 'A' or an MDB system. The coin or card/key system informs the vending machine controller of the amount of credit which has been deposited into the vending machine.

7.14 Coin Mechanism

1. The coin mechanism which validates the coins, communicates with the vending machine controller through a serial communication interface.
2. Once sufficient credit has been accumulated a vend will be permitted. Where possible the coin mechanism will return the appropriate amount of change to the customer.

7.15 Card/Key System

1. The card system fitted to the machine communicates with the vending machine controller using the same principle as the change giver.
2. The card system informs the vending machine controller of the amount of credit on the customer's card. If there is sufficient credit for the selected drink, the vending machine controller permits a vend and informs the card system of the amount of credit to be taken from the card. The new balance will then be re-written onto the customer's card.

N.B. For full information and programming instructions for all of these systems, please refer to the user manual supplied with the validation system.

Section 8 - B2C System

B2C machines are capable of producing high quality espresso based drinks through the unique CoEx® brewer unit either independently (Espresso, Americano), or in conjunction with soluble product (Cappuccino, Caffe Mocha etc). The machine will also vend high quality freshbrew coffee from pre-ground product.

8.1 Vend Sequence

When an Espresso drink is selected the following sequence occurs:-

1. The customer selects an espresso drink. Fresh beans are delivered into the grinder and the grinder is operated for a pre-determined time. Ground coffee is deposited into the CoEx® brewer.
2. The brewer moves to the vend position. The brewer motor starts running clockwise, causing the filter assembly to cover the piston chamber and the piston to move upwards, forming the ground coffee into a compressed pellet as it does so.
3. When the heater reaches the correct temperature the inlet valve is opened and the 3 bar pressure relief valve closed. At the same time the pumps will start pumping water through the system and into the brewer.
4. Whilst water is passing through the system a water flow meter will send pulses back to the main controller and the espresso selection will be delivered into the cup.
5. Once the required amount of water has been pumped through the system, the inlet valve closes and the pumps stop pumping water through the system. The brewer compresses the used coffee pellet, the pressure relief valve is opened and the espresso valve switched off.
6. The brewer motor reverses and drives the piston back up to the top of the chamber. The wiper mechanism ejects the used coffee pellet into the dry waste container and the brewer piston moves back to the stand-by position.

8.2 System Overview

Important: The machine must be operated in conjunction with a water filter of food grade quality, capable of removing temporary hardness (scale), heavy metals (lead, copper, iron, cadmium), chlorine and any organic pollutants/discolouration. Crane Merchandising Systems recommend the Brita AquaQuell water filter for use with B2C machines.

1. Water Inlet Valve

A 24V dc single solenoid water inlet valve. When a drink is selected the inlet valve is opened. At the same time the pumps are operated, pumping water through the system.

2. Reducing Valve

An inline reducing valve that maintains water pressure entering the system at 0.5 bar.

3. Flow Meter

As water flows through the system, the flow meter sends pulses back to the control board.

4. Vibration Pump/s - 230V ac

When a drink is selected the pumps switch on at the appropriate moment until the required amount of water has been pumped through the system.

5. Pressure Boiler

The pressure boiler has a capacity of 350ml and is fitted with a 2kW heating element. Cold water is diffused as it enters the boiler through the lower coupling. Heated water exits the boiler through the top coupling. A resettable temperature cut-out is mounted externally near the top of the boiler as a safety feature. A thermistor is mounted in the front of the boiler to measure water temperature.

6. Espresso Valve

Supplies heated water to the CoEx® brewer when an espresso or freshbrew drink has been selected.

7. Pressure Valve

This valve is normally open exposing the system to the 3 bar mechanical relief valve. It is closed during vends to allow higher pressures to be achieved within the system.

8. Relief Valve - 3 Bar (Mechanical)

The 3 bar pressure valve is a mechanical safety valve. The valve allows for heat expansion while the machine is in stand-by mode.

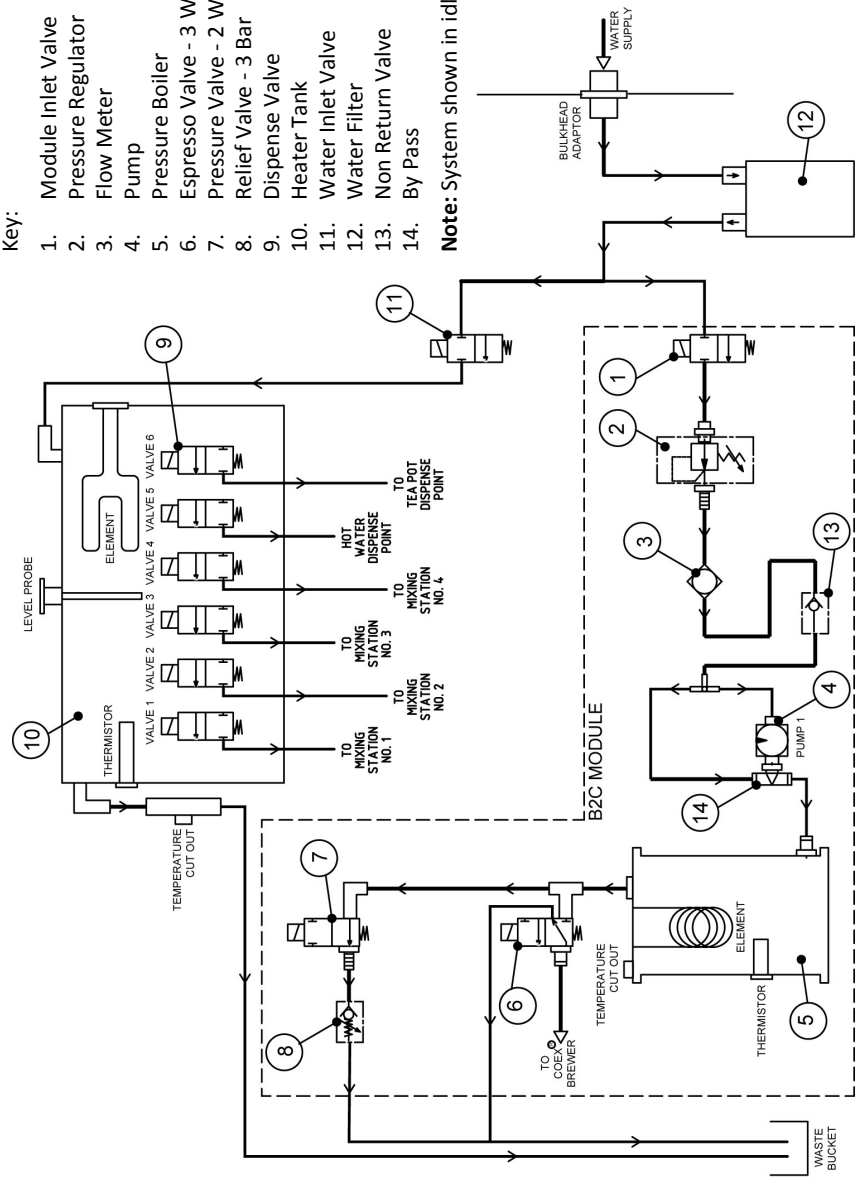
9. Grinder Mechanism (Not Shown On Water Flow Diagram)

The grind mechanism consists of a 230V ac conical grinder with a manual adjustment. When an espresso based drink is selected the grinder will run for the programmed time, grinding beans and feeding the brewer at the same time. The grinder is fitted with a manual adjusting mechanism which allows the engineer to vary the size of the ground coffee in order to satisfy customers' taste preferences.

10. CoEx® Brewer (Not Shown On Water Flow Diagram)

The brewer unit is capable of receiving between 5 and 9 grams of ground coffee. Once the coffee has been ground and dispensed into the brewer unit, the 24V dc brewer motor drives the brewer to the vend position using the current sensing as control. The coffee is compressed into a round 'cake' and water is pumped through the brewer. When the required amount of water has passed through the brewer, the now wet coffee 'cake' is squeezed, removing most of the water from the 'cake', preventing the brewer becoming unnecessarily dirty. After the 'cake' has been squeezed the brewer will deposit the cake into the dry waste container and return to the stand-by position.

8.2.1 Water Flow Diagram (B2C - Single Pump)

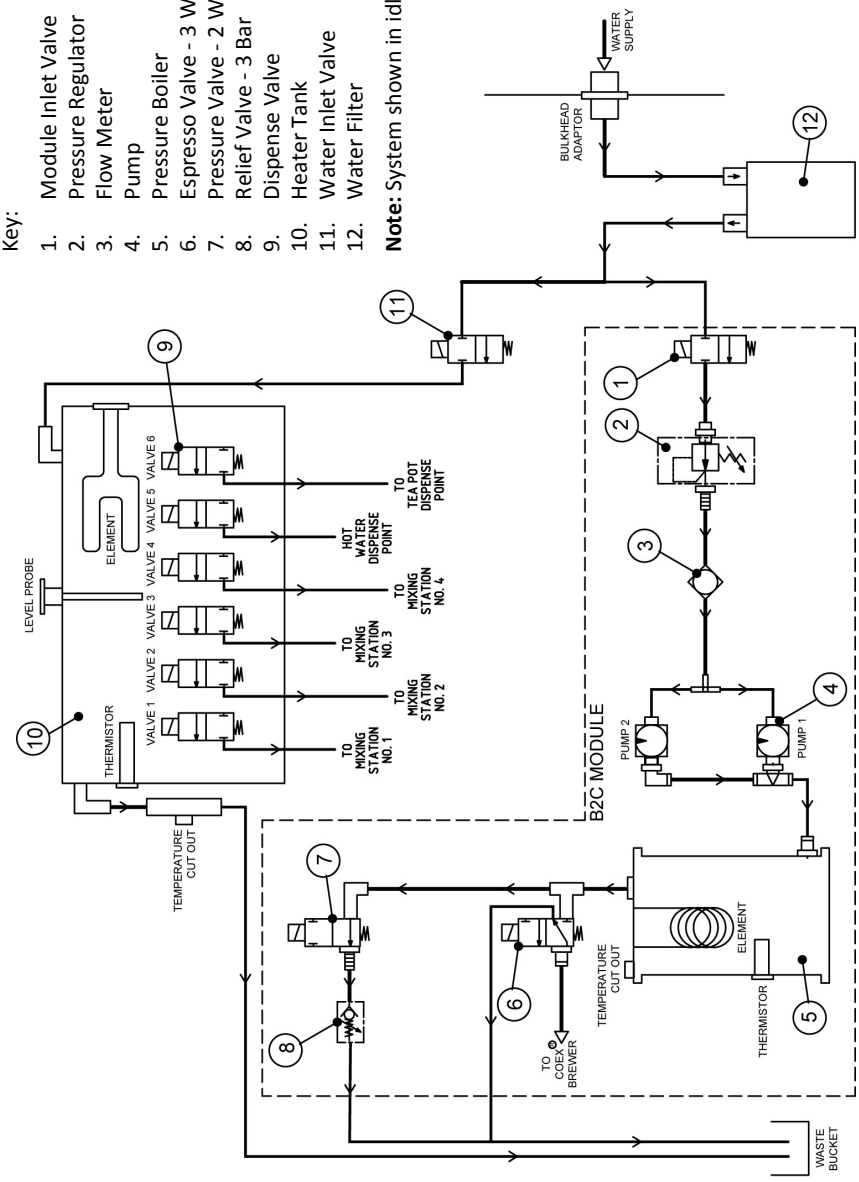


8.2.2 Water Flow Diagram (B2C - Dual Pump)

Key:

1. Module Inlet Valve
2. Pressure Regulator
3. Flow Meter
4. Pump
5. Pressure Boiler
6. Espresso Valve - 3 Way
7. Pressure Valve - 2 Way
8. Relief Valve - 3 Bar
9. Dispense Valve
10. Heater Tank
11. Water Inlet Valve
12. Water Filter

Note: System shown in idle state.



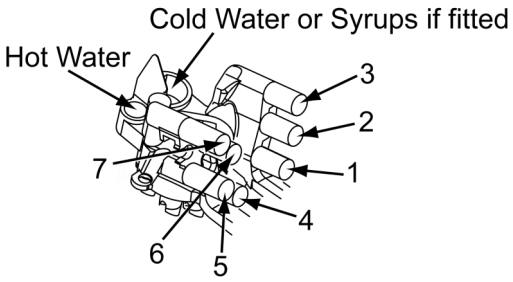
Section 9 - Dispense Pipe Lengths

There are two sizes of pipe which can be replaced by the Operator.

- CoEx outlet – 8mm x 13mm
- All others 6mm x 10mm.

9.1 To replace pipes

1. Open cabinet door and extend the delivery head by pressing 8 on the service keypad.
2. Using the above information about pipe size connect the pipes to the dispense head; the numbers on the diagram below indicate which mixing bowl/brewer should be connected to which nozzle.
3. The pipes should be cut to such lengths that when the head is in this extended position they are not too taut and neither does the pipe sag below the delivery head.



N.B. Soups must be connected to 1 or 4

Section 10 - Diagnostics and Maintenance Procedures

10.1 Diagnostics

The following pages list the error messages that may be displayed, diagnostics messages accessed via the engineers program and fault descriptions. For further help and advice please contact the Crane Merchandising Systems Technical Support Helpline on 01249 667323.

Error Message	Fault Description	Additional information
No Monetary Device	Machine is configured for an incorrect monetary device, or the device is not responding.	This error will move the machine out of service as there are no zero priced or free vend items so vending is not possible.
Coin Mech No Comms	Communication error detected between Coin Mech and machine	
Coin Mech ROM Error	MDB coin mech ROM checksum test failed (fatal error)	
Coin Mech Acceptor Unplugged	MDB coin mech is unplugged or faulty	
Coin Mech Acceptor Jammed	Coin jam detected in coin acceptor	
Coin Mech Payout Jammed	Coin jam detected in coin tube	
Coin Mech Sensor Error	Coin tube sensor fault detected	
Coin Mech All Tubes Error	No useable coin tubes. Machine unable to pay out	
Coin Mech Tube Error	Problem with coin tube. Tube indicates full, but coin count is zero	
Coin Mech Disabled	Coin Mech has been disabled	
Exec Price Error	The maximum price on the machine exceeds the maximum price that the Executive device can support.	

Error Message	Fault Description	Additional information
No Monetary Device	Machine is configured for an incorrect monetary device, or the device is not responding.	There is at least one zero priced item or free vend item so vending is possible.
Coin Return Motor Drive Failure	Failed to operate “Coin Return” motor.	Coin mech will be disabled if this error occurs. As the machine is now unable to operate coin return lever on the coin mech.
Use exact change	The amount of available change is lower than the Low Change Message setting.	
Cup turret switch	Error in turret assembly of cup drop unit while searching for a new cup stack.	Cup drop unit will be disabled once this error is set.
Cup turret switch timeout	Turret switch was not released within the given timeout.	Potential error with Turret switch. Machine will disable the cup drop unit once this error is set.
Cup mechanism peeler motor/switch failure	Error in cup peeler assembly of cup drop unit	Unable to see micro-switch transition within the timeout period. The machine will not attempt to drop any further cups once this error is set.
Searching For Cup Stack	Cup drop unit is currently searching for cups in the turret.	This error will be removed once the search operation is complete. The machine will operate in “Mug only” mode while this error is active.
No Cup Delivered Ring 1 SureVend On	Cup drop unit failed to drop a cup after 9 attempts (3 attempts per vend).	This can be a result of cups jammed in the cup drop unit or faulty sure vend sensors.
Please insert mug	Machine is only able to operate in mug only mode due to sure vend or turret errors.	If the machine was unable to detect a cup in the cup station after trying 9 times (3 tries per vend) to drop a cup, then it will raise this error. This error will also be raised if the turret operation failed.
Mug only mode	Machine will only allow mug vends	If there is a Cup Peeler error or if Cup drop unit is completely disabled then this error will be raised. The machine will still be operational, however, it will not drop a cup and will only allow mug vends.

Error Message	Fault Description	Additional information
Mug Sensor SureVend Error	Mug sensor blocked since bootup	If there is nothing present in the cup station. Then, either the mug sensors are misaligned or sensors are faulty. The machine will be taken out of service if this error occurs. This error will be cleared once the above mentioned issues are fixed.
Dispense Head Not Homed	Dispense head home operation failed.	Machine will be taken out of service, as the machine can no longer dispense a drink. This error is normally a result of faulty home switch.
Dispense Head Not Extended	Dispense head extend operation failed.	Machine will be taken out of service as it can no longer dispense any more drinks. This error is normally a result of faulty opto sensor.
Dispense Head Motor Not Enabled	Dispense head unable to move at all	If the software is unable to detect any activity on opto sensor then it will raise this error. The error can be down to faulty motor or faulty opto sensor.
Brewer Jam	Unable to detect switch input in the given time out for Uni-Paper or Oltre paperless brewer present in the machine.	This will disable all drinks based on this particular brewer.
Brewer Waste Pail Full	Brewer waste capacity is exceeded	This error will only be raised if brewer waste management is enabled. It will disable all fresh brew drinks. The drinks will only be enabled after the counters are reset from the service menus.
Brewer Jam (CoEx®)	Error while operating the CoEx® brewer	Motor is stalled or is taking more current than the allowed limit.
Water filter replacement required	Overall water filter usage has exceeded the set limit. Water filter needs to be changed.	This error is only raised if water filter counters are enabled. Once the error is raised no further drinks could be taken until the counter is reset from service menus.
Water Tank Leak	Main Boiler is experiencing water leakage.	This error is raised if the main boiler requests fill operation 15 times even though none of the valves attached to it were operated.
Low Water	Main boiler is running low on water.	This error will be cleared once main boiler is filled up.

Error Message	Fault Description	Additional information
No Water Available	Main boiler unable to fill up in required amount of time.	The error will be raised if the fill operation continues for more than 20 seconds. However, if the machine is able to successfully complete the fill operation within 2 minutes then it will remove this error. No further drinks can be taken once this error is set.
Waste Pail Full	Waste bucket is full.	Waste bucket needs to be emptied. Once this error is set the machine will not re-attempt to fill the water tank until the operator goes in and out of service menus.
Please Wait	Transition based on door switch is in progress.	This is displayed while moving from Service Mode to Consumer UI or from Consumer UI to Service Mode.
No IO Comms	I/O Board went through a reboot.	This error will be cleared by the software if it is able to successfully reconfigure and re-initialise the I/O board.
No IO Comms 2	VMC unable to establish communication with the I/O board.	This error will be cleared by the software if it is able to successfully re-initialise the I/O board.
No Selections Available	No selections available on the machine.	Usually a result of incorrect machine id, configuration id or Cup Size being set on the machine.
All Selections Disabled	All drink selections have been disabled	The machine is taken out of service as none of the drinks could be dispensed.
Invalid Temperature Tank 1	Water temperature recorded in main boiler is way beyond operational range (0C to 125C).	The error is normally down to a faulty temperature probe. All hot drinks using main boiler will be disabled. The error will be cleared when valid temperature reading is obtained.
Invalid Temperature Tank 2	Water temperature recorded in pressure boiler is way beyond operational range (0C to 125C).	The error can be generated in the following three scenarios: 1. Faulty Temperature probe. 2. Very fine coffee grind which is restricting the water flow. 3. Too much coffee put in the chamber which is restricting the water flow. Machine will disable all CoEx® based drinks when this error is raised. The error will be cleared when valid temperature reading is obtained.

Error Message	Fault Description	Additional information
Card Reader No Comms	The MDB card reader is not responding to commands.	
Card Reader Manuf Trans Error	The card reader reports that there is a manufacturer's transient error.	
Card Reader Comms Error	The card reader reports that there is a communications error.	
Card Reader Service Error	The card reader reports that there is a service error.	
Card Reader Manufact OOS Error	The card reader reports that there is a manufacturer's error and out of service.	
Bill Validator No Comms	The bill validator is not responding to commands.	
Bill Validator Motor Error	The bill validator is reporting a motor error.	
Bill Validator Sensor Error	The bill validator is reporting a sensor error.	
Bill Validator ROM Error	The bill validator is reporting a ROM error.	
Bill Validator Acceptor Jammed	The bill validator is reporting that the acceptor is jammed.	
Bill Validator Stacker Error	The bill validator is reporting a stacker error.	
Bill Validator Stacker Full	The bill validator is reporting that the stacker is full.	
Bill Validator Disabled	The bill validator is reporting that it is disabled.	
Water heating	Water temperature in main boiler is below operating temperature.	The error is cleared once operating temperature is achieved by pressure boiler. The machine will disable all hot drinks using main boiler if the temperature falls below min vend temperature. The drinks will be re-enabled once min Vend temperature is achieved.

Error Message	Fault Description	Additional information
Power save mode	Machine is in power save mode.	Water in both the boilers is maintained at a lower temperature to conserve power.
Boiler heating	The machine is heating up the boilers while coming out of power save mode	This message will be removed once operating temperature is achieved in both the boilers.
SANITATION_EVENT_ FAILED	Failed to complete the sanitation successfully.	
Please wait, Cleaning In Progress	Automatic or manual rinse cycle is in progress.	The error is cleared up once sanitation process is complete.
Water heating (CoEx®)	Temperature in pressure boiler is below operating temperature.	The error is cleared once operating temperature is achieved by pressure boiler. The machine will disable all CoEx® based drinks if the temperature falls below min vend temperature. The drinks will be re-enabled once min Vend temperature is achieved.
No Water (CoEx®)	Unable to see minimum required flow when dispensing water from pressure boiler.	All drinks related to pressure boiler will be disabled.
Low Water (Cold)	Cold unit tank is low on water.	The error is cleared when cold unit tank is filled up.
No Water (Cold)	Cold Unit was unable to fill up in the allocated time.	All cold drinks will be disabled.
Cleaning Required (CoEx®Brewer)	It's been at least 7 days since last CoEx® clean. This error will also be raised if last clean was interrupted in the middle.	The error is advisory from day 7 to 10 unless the error was raise as a result of interruption of the last CoEx® tablet clean. However, on day 10 the software will disable all CoEx® based drinks, until the clean is performed.
No Coffee	One of the ingredients used with CoEx® brewer has run out.	Beans hopper or pre-ground coffee canisters attached to CoEx® brewer needs to be refilled. All drinks using this ingredient will be disabled.
Preparing brewing system...	Pre-heat rinse is in progress.	This is a transient error. Only shown when pre-heat rinse is in progress. Automatically cleared by software after the rinse is successfully completed at the start of the

10.2 Hot Water Tank De-Scale Procedure

To maintain correct water levels and water temperature the heater tank must be inspected regularly and, if necessary, be de-scaled. To ensure long and trouble-free operation, Crane Merchandising Systems recommend that all machines have a water filter fitted.

There are a number of ways of de-scaling the heater tank. The tank can be removed and scraped out with a blunt tool but it can also be left inside the machine and a de-scaling agent introduced into the tank. This eliminates the need to remove the thermistor, water level probe and all the outlet valves from the tank, saving time and money. Always remember to fit a new water filter and boiler seal after de-scaling.

Use the following steps as a guideline only and always refer to the instructions supplied with the de-scaling agents regarding dosage and de-scaling time.

1. Switch off the machine and open the door. Remove all canisters and back covers.
2. Using the drain hose fitted to the tank, remove the bung and drain the water from the heater.

Safety First! Allow the water in the tank to cool before draining.

3. Once all of the water has drained from the tank, replace the bung into the drain hose. Introduce the de-scaling solution in the recommended dosage into the heater tank. on the machine and allow the heater tank to fill.
4. Turn off the machine and leave for approximately 40 minutes before draining the tank again following the sequence described above.
5. Fit a new water filter and switch on the machine. Fill the tank and drain again until all traces of the de-scaler are removed (at least 3 times).
6. Switch on the machine and allow the heater tank to fill and to heat up. Drain and fill one more time. The machine is now ready to be put back in service.

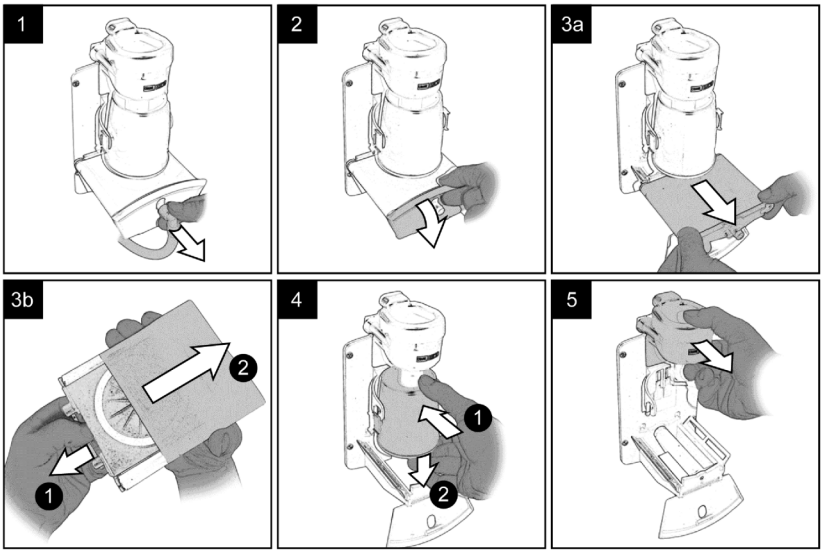
10.3 Brewer Maintenance - Oltre Brewer

The following two cleaning procedures must be completed on a daily and weekly routine.

10.3.1 Daily Cleaning Procedure

Important! Cleaning and maintenance must be completed daily.

1. Fill a cleaning bucket with hot water and dilute the bactericidal cleaner in accordance with the manufacturer's instructions.
2. Open the door of the machine.
3. The brewer will always return to its fully open position at the end of the vend cycle. In the unlikely event that the brewer chamber is closed:.
4. Press '**2**' on the service keypad, the brewer will start to move and will stop at the open position. Disassemble the brewer as illustrated:



5. Clean the Oltre brewer chassis and mounting area.
6. Clean all of the Oltre brewer components.
7. Rinse all components with clean water, dry then refit to machine.

10.3.2 Weekly Cleaning Procedure

Important! Cleaning and maintenance outlined below must be completed on a weekly basis.

1. Check that the Oltre brewer(s) are in an open position, if not then press '**2**' on the service keypad, the brewer will move and will stop at the open position
2. Remove the brewer chamber & filter belt assembly, then remove the belt. Clean all components with the recommended mix of de-staining solution; soak for 5 to 10 minutes.
3. Rinse all parts thoroughly in clean water & re-assemble into the machine.
4. Press the service keypad **Brewer Clean** button '**4**' and the machine will flush the brewer.
5. Empty the brewer waste container. Wash the waste container thoroughly.

N.B. If the feature has been turned on when the brewer waste container is emptied the waste counter must be reset. To reset the waste counter press button '**12**' on the service keypad, two audible bleeps confirm that the counter has been reset to zero.

10.4 System Drain Down - B2C Machines Only

Should it become necessary for the engineer to do any work on the B2C water system it is very important that the following sequence is followed to ensure safe working as well as correct system fill and heating when the machine is powered up.

10.4.1 Cooling down the B2C system

1. Open the front door of the machine. Using the service keypad located in the rear of the door, press the 'Machine Cool Down' button (10) to ensure the system is cooled. Approximately 600ml of cold water is flushed through the system and out to the waste bucket.

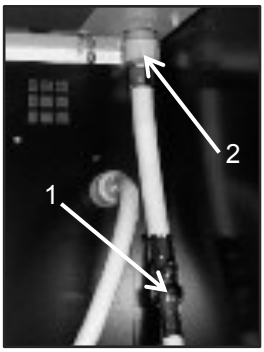
   Important: Pressing button 10 also informs the machine software that the B2C system has been drained ensuring that the B2C system will automatically fill before heating on power up. This is very important and must not be overlooked.
2. Once the B2C system has been cooled the LCD will display the message 'Machine cooled' and water will stop pumping through the system. Remove the waste bucket and empty the contents before re-fitting to the machine. Ensure all pipes etc. are refitted correctly into the bucket.
3. Turn off the power to the machine.

10.4.2 Removing the module for maintenance

N.B. It is not necessary to remove the module to drain the system down.

To remove the module for maintenance, proceed as follows:

1. Close the fresh beans outlet slide and remove the fresh beans container along with the fresh ground coffee canister. Loosen the screws securing the RH boiler cover and remove. Unclip the two loom connectors to the B2C module.
2. Remove the brewer waste bucket from the machine. Turn off the water supply to the module using the cut off (1) located in water pipe situated under the module. Un-screw and remove the water inlet hose (2) to the module.
3. Loosen the two lower B2C module retaining screws. Carefully lift the module up and out of the machine.

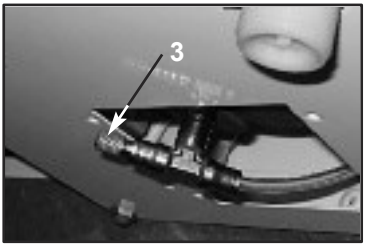


10.4.3 Draining down the module

Draining down the module allows the engineer to safely work on system components. It may also be necessary to do this for transit purposes.

N.B. A cool down cycle MUST be carried out before draining the module.

1. Remove the lower cover from the module to expose the boiler blanking plug (3). Hold the collar and remove the plug. Attach a length of silicone pipe to the outlet to act as a drain tube. Place the other end into a bucket.
2. When the module is completely drained, remove the drain tube from the outlet.
3. Replace the blanking plug (3) and lower cover.



10.4.4 Refitting the module and refilling the system

To refit the module and refill the system, proceed as follows:

1. Carefully re-install the module into the machine. Tighten the 2 lower module fixing screws and refit the top LH retaining screw, plug the two loom connectors into the module connectors and re-fit the water inlet hose.
2. Refit the RH boiler cover, fresh ground coffee canister and fresh beans container. Ensure fresh beans outlet slide is opened.

10.4.4.1 Long fill cycle

1. Turn the power on to the machine, it will initialise, performing a long fill cycle. During this cycle 600ml of cold water is pumped through the system and collected in the waste bucket.
2. At the end of the long fill cycle the brewer initialises and the water in the boiler is heated.

10.4.4.2 Pre-Heat Routine

1. During the pre heat routine a small amount of hot water is pumped through the brewer system. The pre heat routine is performed prior to the first Co-Ex drink vended after powering the machine on or prior to the next Co-Ex drink vended after a 7 minute period of brewer inactivity.
2. The pre heat routine is only available on single pump units.

10.5 CoEx® Brewer/Bean Grinder Maintenance - B2C Machines Only

Espresso machines are fitted with the unique CoEx® brewer unit which produces both fresh coffee and espresso based drinks from ground beans and freshbrew pre- ground coffee from the same unit. Routine cleaning and maintenance instructions for this unit can be found in the Voce Media Operator's Manual - Part No. PR14987000.

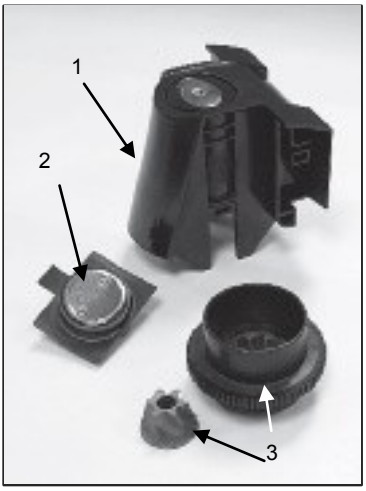
10.5.1 CoEx® Brewer/Grinder Blades - 50,000 Vend Service

Crane Merchandising Systems recommends that the brewer unit and bean grinder is serviced by an authorised engineer after every 50,000 vends.

A CoEx® service kit (part no. PH11705000, shown opposite) is available from the manufacturer and contains all of the components required to ensure the machine continues to give trouble-free service.

The service kit contains the following components (with part nos.):

1. Lower piston and cylinder assembly – Pt. No. ME10592000
2. Filter head assembly - Pt. No. ME11703000
3. Grinder blades - Pt. No. ME07308000
4. 'O' ring - water inlet (not shown) - Pt. No. ME10595000

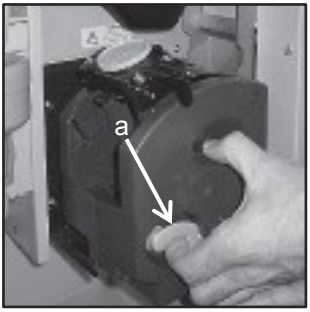


To carry out the 50,000 vend service, proceed as follows:

1. Disconnect the machine from the mains electricity. Open the front door of the machine.

   Remove the coffee dispense pipe from the brewer outlet.

   Holding the unit as shown in the photograph, lift the green lever (a) and carefully pull the brewer unit out of the machine.



2. Carefully unclip the wiper arm from the brewer unit and place to one side.

   Remove the filter assembly from the brewer. Holding the filter assembly as shown, turn the locking ring anti-clockwise to its open position, indicated by the two arrows.

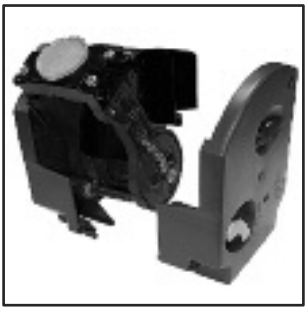
   Carefully remove the old filter unit down and out of the CoEx® brewer unit. Discard the used filter unit.

3. Remove the bolt securing the brewer drive coupling to the input shaft. Pull the coupling off of the shaft and place to one side.

   Ensure that the captive lock nut is retained in the drive coupling moulding.

4. Working from the front of the brewer, unscrew and remove the three retaining screws which secure the brewer unit together.

   Carefully ease both the front and rear brewer panels away from the central piston chamber/ swing arms assembly.



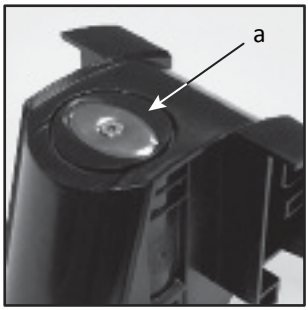
5. Holding the unit as shown in the photograph, rotate the lower piston and cylinder assembly clockwise and then remove it up and out of the swing arms/filter holder assembly.

   Discard the used lower piston and cylinder assembly.

   Clean all of the dismantled brewer components thoroughly to remove all traces of waste coffee product.

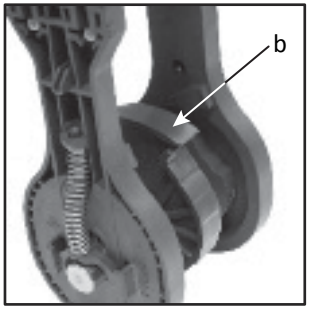
6. Take the new lower piston and cylinder assembly from the service.

   Before assembling the unit to the swing arms/ filter holder assembly, ensure that the lower piston (a) is at the top of its stroke as shown in the photograph.



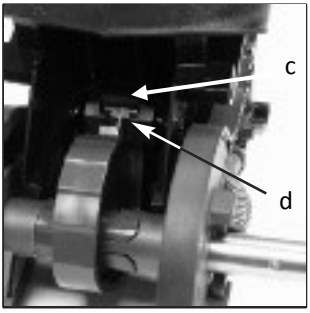
7. Ensure that the piston drive cam (b) is positioned as shown.

   If necessary, push the piston drive cam anti-clockwise until it reaches its stop position.



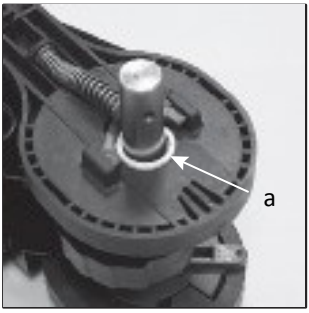
8. Holding the lower piston and cylinder assembly as shown, guide the assembly into the swing arms/ filter holder assembly.

9. Check and ensure that the lower piston guide block (c) locates with the piston drive cam (d) as shown in the photograph.



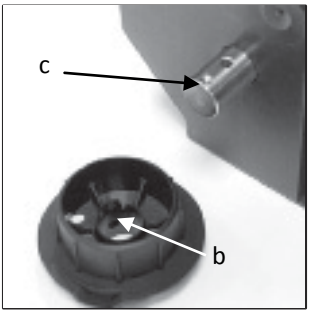
10. Ensure the plastic washer (a) if fitted is placed correctly over the input shaft (long side) as shown.

    Re-assemble the front and rear brewer panels to the central piston chamber/swing arms assembly using the three retaining screws/locknuts. Check and ensure that the brewer release lever mechanism operates correctly.



11. Re-fit the brewer drive coupling to the input shaft ensuring that the raised 'pip' (b) lines up with its locating dimple (c) on the input shaft.

    Ensure that the captive lock nut is retained in the plastic drive coupling moulding. Refit the bolt to secure the brewer drive coupling to the input shaft.



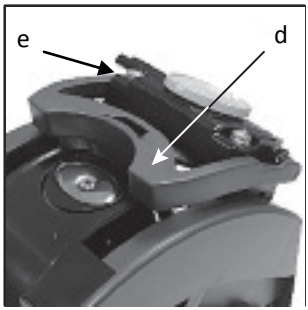
12. Take the new filter head assembly from the service kit.

    Holding the new filter assembly as shown, turn the locking ring anti-clockwise to its open position, indicated by the two arrows.

    Place the filter unit up into the filter holder and turn the green locking ring clockwise to lock it into place.

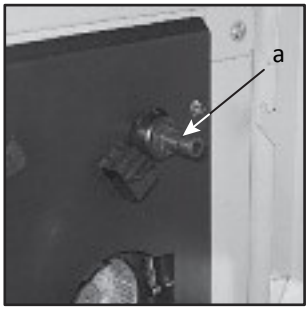
13. Re-assemble the wiper arm (d) to the filter holder assembly.

    Ensure that the wiper arm is located under the coffee outlet pipes as shown (e).



14. Moving to the machine, remove the 'O' ring (a) from the water inlet pipe and discard. Fit the 'O' ring included in the service kit onto the inlet pipe. Ensure that the new 'O' ring is seated correctly.

    Refit the CoEx® brewer unit into the machine. Slide the unit into place until it 'clicks' into position. Refit the coffee dispense pipe to the brewer outlet.



10.5.2 Replacing the Grinder Blades.

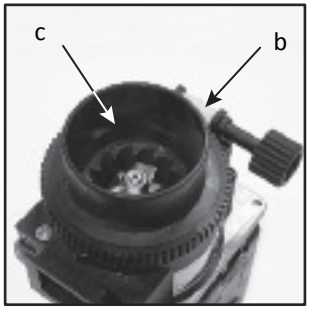
1. Isolate the machine from the Mains power supply.

   Push in the bean canister shut-off to close the fresh beans outlet. Carefully remove the fresh beans canister from the machine and place it to one side.

   Pull up and remove the grinder adjusting wheel assembly (b) from the rear of the grinder body.

   Unscrew the grinder body (c) anti-clockwise and remove it from the blade housing.

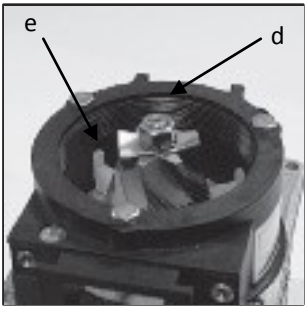
   Note: Grinder mechanism removed from the machine for clarity.



2. Unscrew and remove the nut, star washer and agitator (d) from the drive shaft.

   Note: Nut is fitted with a left hand thread. Remove the Grinder blade block (e) and discard. Replace with the new grinder blade block included with the service kit.

   Refit the agitator, star washer and nut. Ensure that the nut is tightened securely.



3. Take the new grinder body complete with inner grinder ring from the service kit. Screw the grinder body clockwise into the blade housing until it stops.

   Re-set the grinder blades. An approximate starting position is achieved by turning the grinder body back one full turn anti-clockwise. Re-assemble the grinder adjuster wheel assembly to the grinder unit.

4. Refit the fresh beans container to the machine. Pull the bean canister shut- off to its fully extended position.

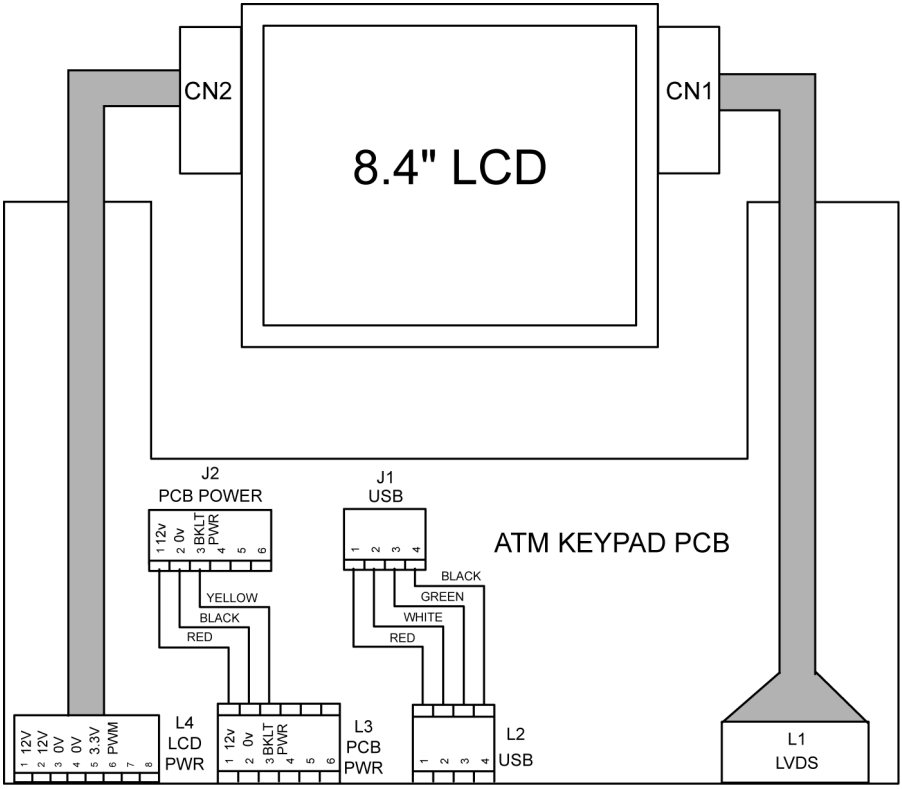
5. Turn on the electricity supply to the machine.

⚠ **Important!** Before returning the machine to service, the engineer must carry out the Grinder Calibration routine (see Para 5.7.2.1) to ensure correct operation of the grinder with the type of beans used in the machine. Use the grinder adjuster wheel to fine tune the blade settings in order to obtain the desired grind quality.

Section 11 - Electrical/Electronics Information

The diagrams shown on the following pages illustrate the layout of and the connections between the electrical and electronic components within VOCE Media machines. The following diagrams are common to all machines except where stated.

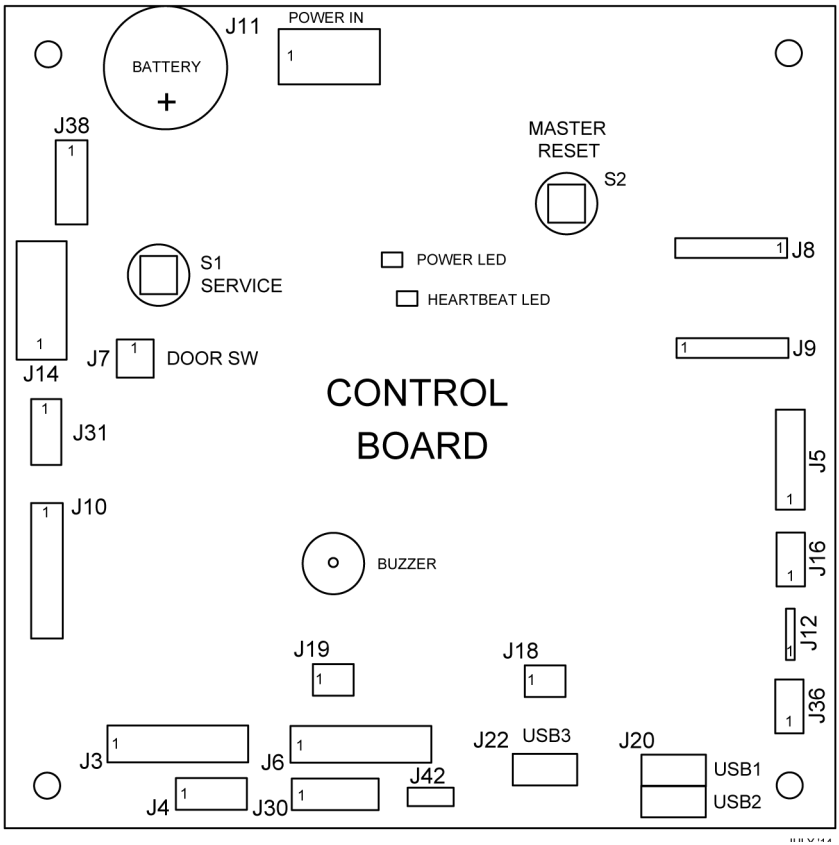
11.1 LCD Screen - ATM Keypad



11.2 Control Board

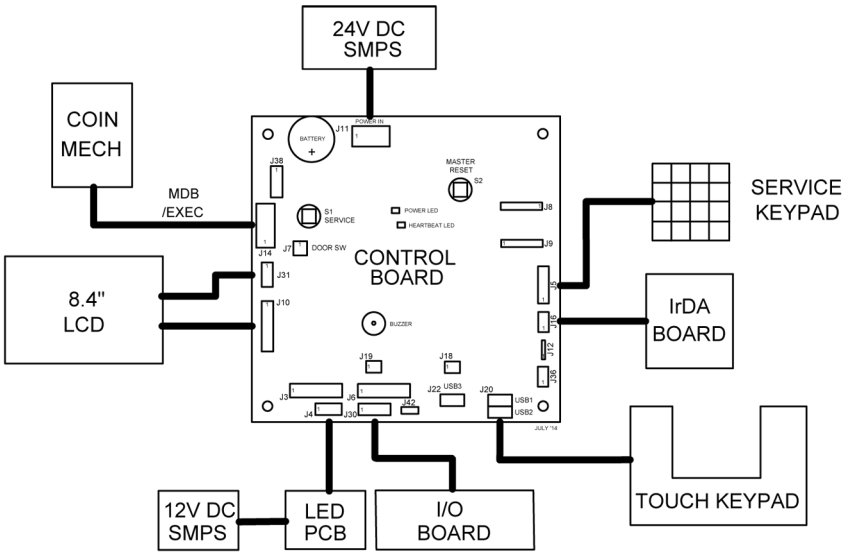
The Control Board is the main controller for all of the machines functions. The board is located inside the door behind the monetary cover. To gain access to the board:-

1. Switch off the power to the machine and open the front door. Release the catch securing the monetary cover.
2. Open the monetary cover. Unscrew and remove the two screws securing the control board cover. Carefully remove the control board cover.



11.3 Control Board Connections 1

The diagram below illustrates the connections between the control, IRDA and LED boards.

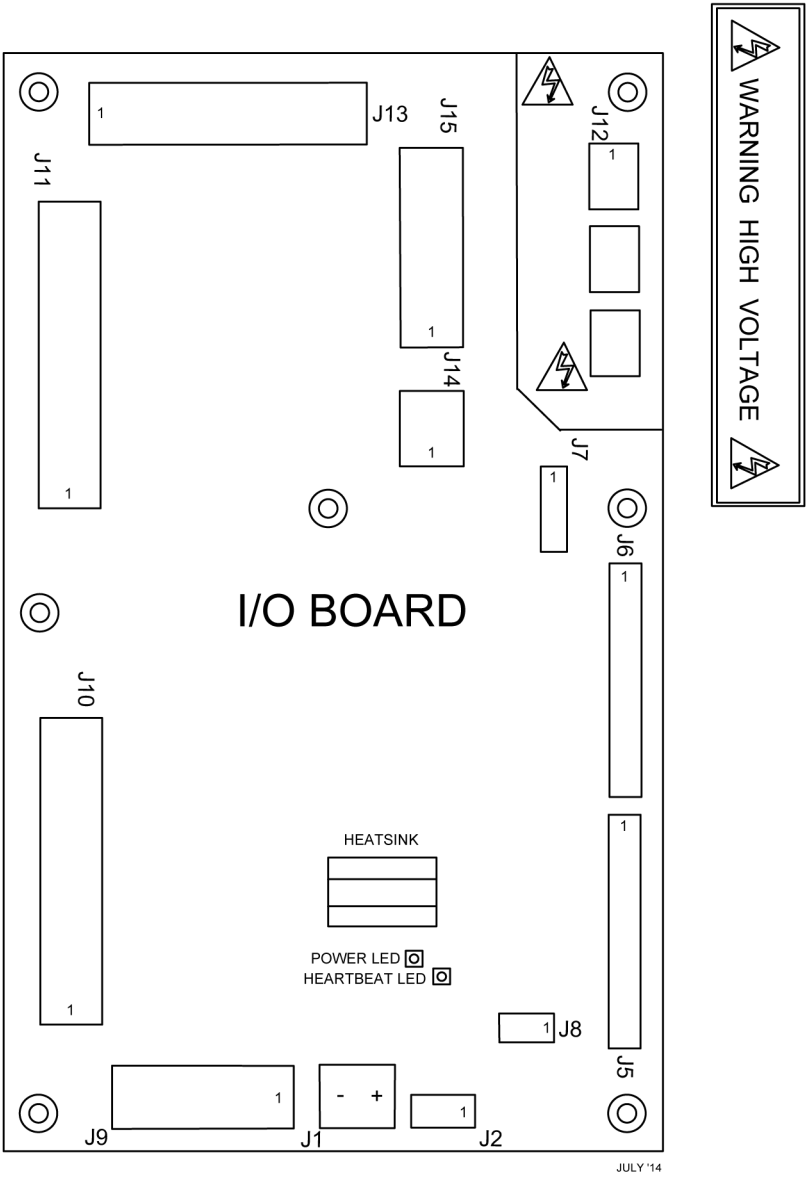


Control Board Connector	Wire Colour	To Connector	Function
J11 Pin 3	RED/BLACK	R1 Pin 2	SMPS (0V)
J11 Pin 4	RED/PINK	R1 Pin1	SMPS (+24V)
J5 Pins 1 - 8	Flexible Foil	Keypad	Service Keypad
J16 Pin 1	RED	R3 Pin 4	IrDA PCBA (5V)
J16 Pin 2	GREEN	R3 Pin 3	IrDA PCBA (RxD)
J16 Pin 3	BLUE	R3 Pin 2	IrDA PCBA (TxD)
J16 Pin 4	BLACK	R3 Pin 1	IrDA PCBA (0V)
J20 (USB 2) Pin 1	RED	L2 Pin 1	Touch Keypad USB (+5V)
J20 (USB 2) Pin 2	WHITE	L2 Pin 2	Touch Keypad USB (Data -)
J20 (USB 2) Pin 3	GREEN	L2 Pin 3	Touch Keypad USB (Data +)
J20 (USB 2) Pin 4	BLACK	L2 Pin 4	Touch Keypad USB (0V)
J30 Pin 8	SCREEN	R10 Pin 4	I/O Comms SCREEN (0V)
J30 Pin 6	GREEN	R10 Pin 1	I/O Comms (RxD)
J30 Pin 5	BLUE	R10 Pin 3	I/O Comms (TxD)
J30 Pin 4	RED	R10 Pin 2	I/O Board (/RST)

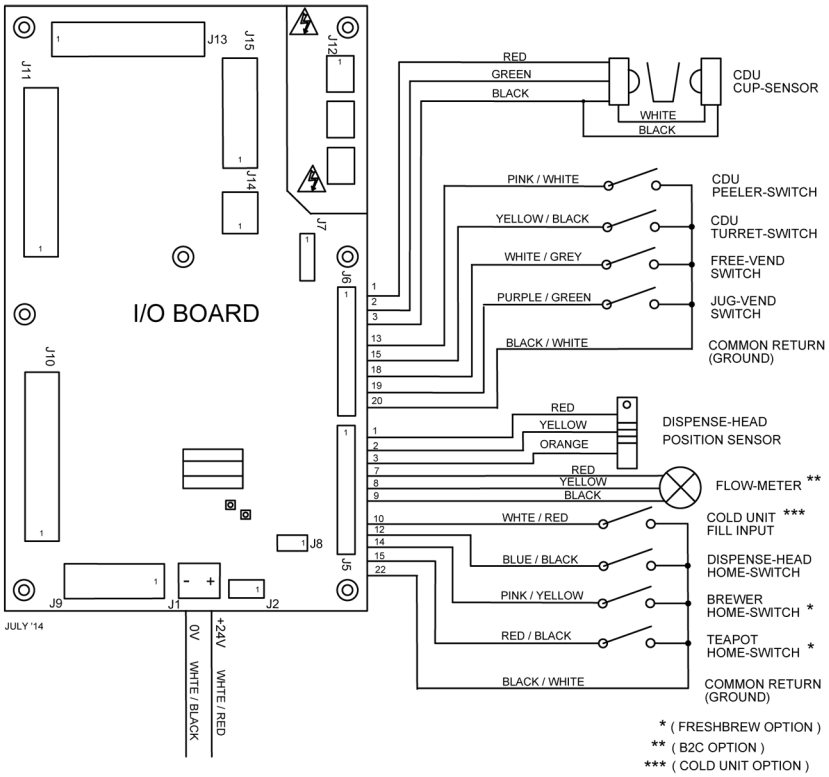
Control Board Connector	Wire Colour	To Connector	Function
J4 Pin 1	RED	R6 Pin 1	SPI (+5V)
J4 Pin 2	BLUE	R6 Pin 2	SPI (CLK)
J4 Pin 3	GREEN	R6 Pin 3	SPI (MOSI)
J4 Pin 4	YELLOW	R6 Pin 4	SPI (MISO)
J4 Pin 5	ORANGE	R6 Pin 5	SPI (CS)
J4 Pin 6	BLACK	R6 Pin 6	SPI (0V)
J10 Pins 1 - 20	CABLE ASSY	L1 (D-Type)	LCD LVDS Cable
J7 Pin 1	YELLOW / RED	Switch	Door Switch
J7 Pin 2	BLACK	Switch	Door Switch (0V)
J31 Pin 3	YELLOW	L3 Pin 3 & L4 Pin 5	LCD Backlight ON/OFF
J31 Pin 2	BLUE	L4 Pin 6	LCD Backlight Brightness
J31 Pin 4	BLACK/GREEN	L4 Pin 3	LCD Signal 0V
J14 Pin 1	N/C	EXEC/MDB OPTION	MDB (+5VDC)
J14 Pin 2	BROWN	EXEC/MDB OPTION	MDB (Com)
J14 Pin 3	BLUE	EXEC/MDB OPTION	MDB (Tx)
J14 Pin 4	YELLOW	EXEC/MDB OPTION	MDB (Rx)
J14 Pin 5	RED	EXEC/MDB OPTION	Ground (0V)
J14 Pin 6	WHITE	EXEC/MDB OPTION	MDB (+24VDC)

11.4 Input/Output Board

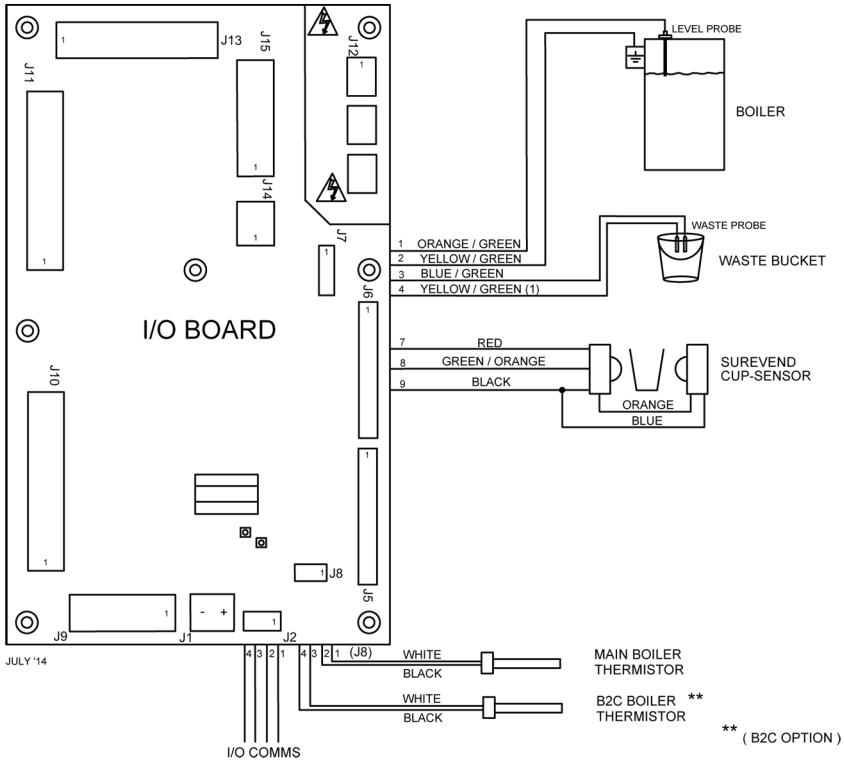
The input/output board is located at the top RH side of the machine. It is mounted onto the rear of the cabinet and can be accessed by removing the ingredient canisters and the RH boiler cover.



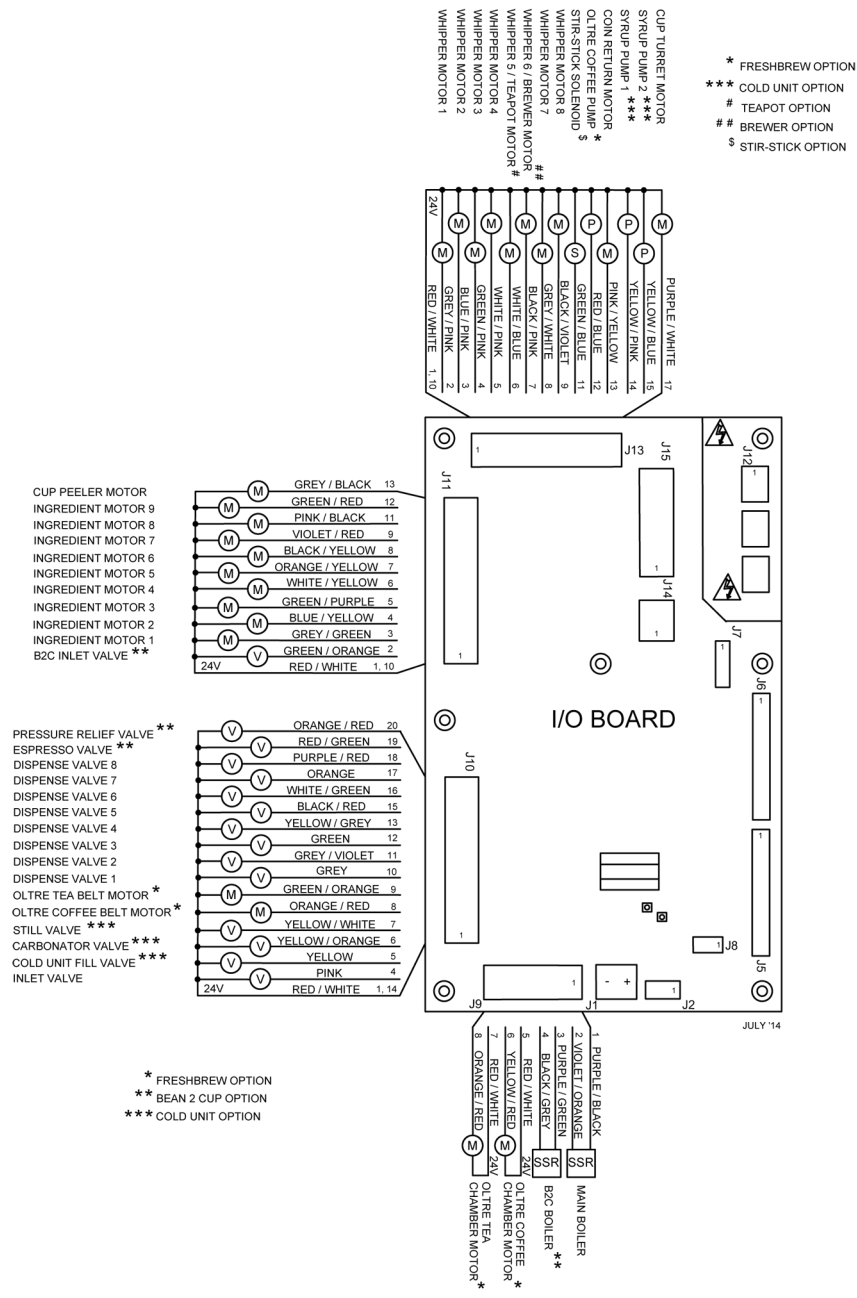
11.5 Input Circuit 1



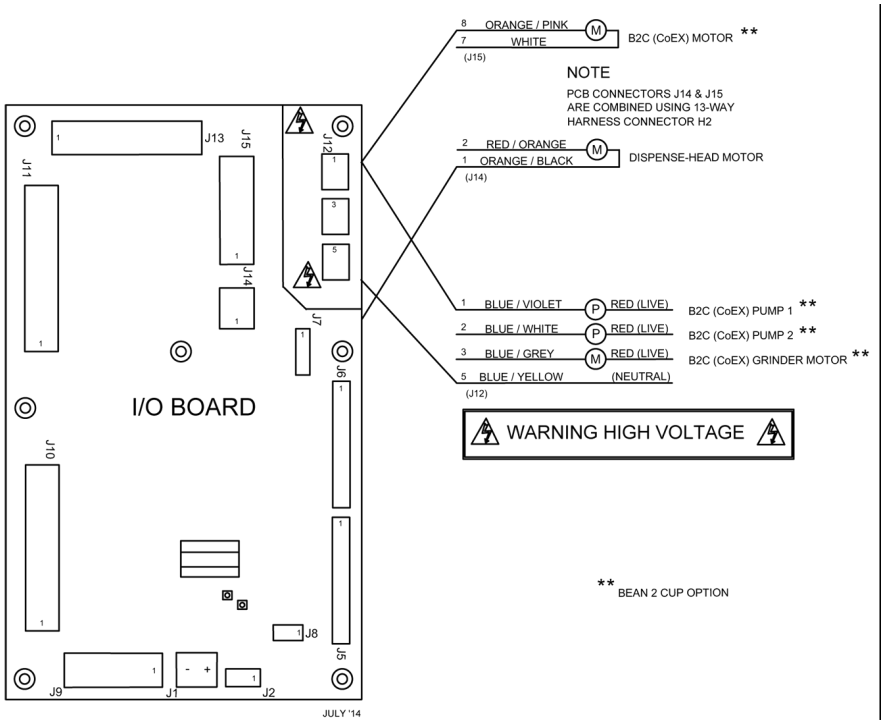
11.6 Input Circuit 2



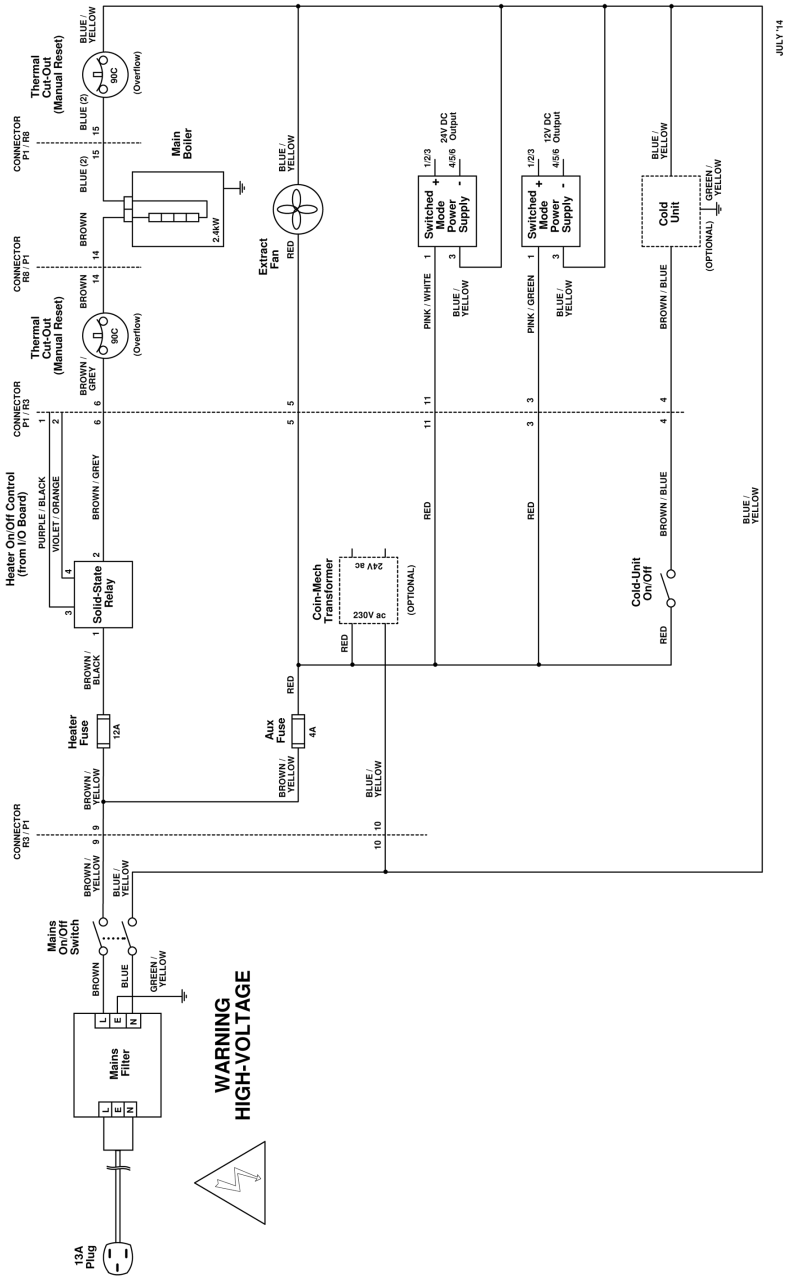
11.7 Output Circuit 1



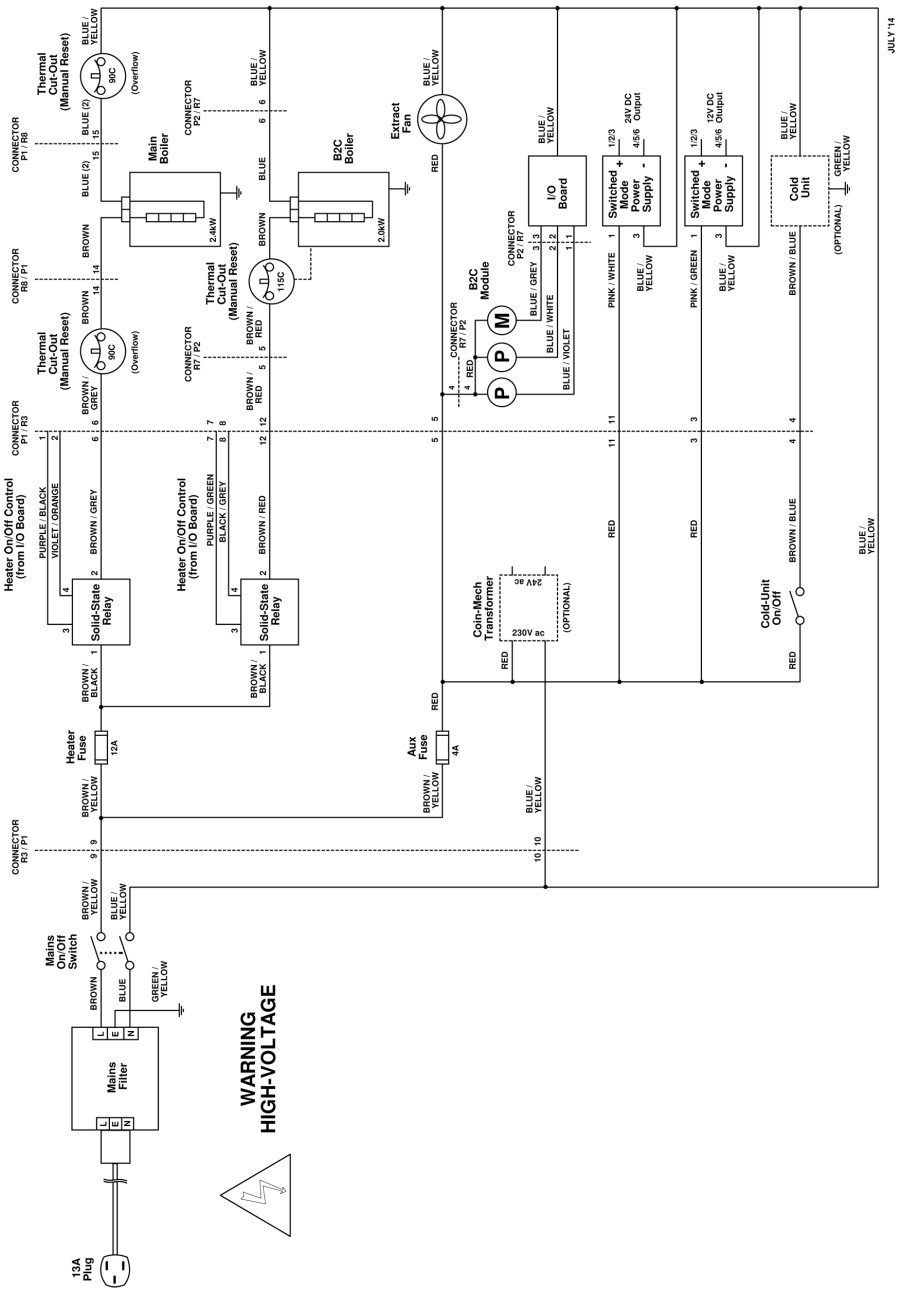
11.8 Output Circuit 2



11.9 Power Circuit - Instant and Freshbrew Machines



11.10 Power Circuit - B2C Machines

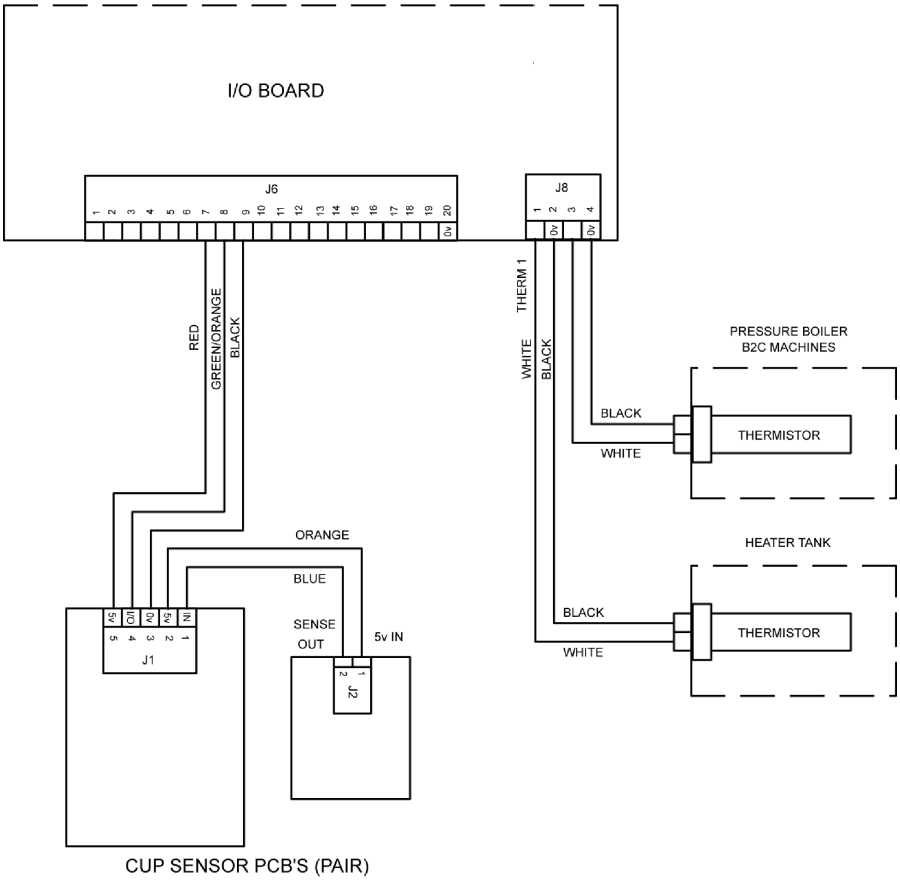


11.11 Heater Circuit

The water temperature in the Main Boiler and the Pressure Boiler (B2C machines) is controlled by a thermistor probe. This has a variable resistance – high resistance when cold, low resistance when hot. The thermistor probe is in contact with the water and continuously monitors the water temperature. At room ambient temperature the thermistor resistance is approx. 3000 ohms. At 96°C the thermistor resistance is approx. 200 ohms.

Both Boiler Heating Elements are controlled by Solid-State Relays, which are in turn controlled from the I/O Board. The Main Boiler Element is rated at 2.4kW, the B2C Boiler Element is rated at 2.0kW.

Should control of the Heating Elements fail for any reason, both Elements are protected by In-Line, Manually Reset-able Thermal Cut-Outs. These are positioned in the overflow pipe of the Main Boiler (90°C), and on the casing of the B2C Boiler (115°C).



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