E·V·O·L·U·T·I·O·N

Technical Manual

Covers Instant, Freshbrew & Espresso (B2C) Machines

Part No. PR10909000

Issue New 01/06

This manual is to be used by authorised personnel involved in installing, commissioning and servicing the Evolution range of free-standing drinks vending machines. The technical information contained within this document is for information only and may be changed without prior notice. Crane Merchandising Systems accepts no responsibility for any damage caused to the machine through misinterpretation or misuse of the information contained in this Technical Manual.

Upon receipt, carefully examine the machine checking for any damage or missing/incorrect parts. Any discrepancy must be reported to Crane Merchandising Systems in writing within three working days.

In accordance with the food hygiene regulations and in compliance with local Public Health Authorities, it is the responsibility of the operator to keep the machine in a thoroughly clean condition.

Contents

Page No.

The following Symbol is used throughout this Technical Manual:

Safety First! Take care, risk of personal injury.

Important Safeguards

When installing or servicing the machine, always have this manual available for quick and easy reference and always follow these basic safety precautions:

1. **Beware of Electricity:** Ensure that the mains electricity supply is isolated before removing any of the protective panels or undertaking any major servicing. Working on live equipment should only be undertaken when there is no practical alternative.

Important! Unless specified, always disconnect the machine from the electricity supply before cleaning and servicing.

2. The mains lead should never trail from the machine and should always be kept away from hot surfaces and sharp edges.

3. **Servicing the Heater Tank/Espresso Pressurised System.**

Important: Water in the tank can reach a temperature of approximately 99°C. Water at this temperature can cause severe burns! Espresso (B2C) machines are fitted with a pressurised water system (up to 12 Bar). Under no circumstances should this be dismantled, other than by a fully trained engineer.

4. Beware of moving components when servicing the machine.

5. Beware of hand entrapment! Never service or clean the brewer unit whilst it is in motion.

6. Allow the machine to cool before handling or moving.

7. Never immerse the machine in water or any other liquid and never clean it with a water jet. This machine must not be installed in an area where a water jet may be used.

8. Machines fitted with carbonator units. The CO2 bottle is filled with a gas at a pressure of 800psi and MUST be stored in an upright position away from sources of heat. In the event of a leak, ventilate the area in the vicinity of the bottle to remove all traces of gas and contact your supplier.

9. In normal operating conditions the machine should not freeze up. In the unlikely event of the machine freezing, turn off the mains water supply, disconnect the machine from the mains electricity supply and contact Crane Merchandising Systems for assistance.

10. Ensure that you are conversant with the most recent Health and Safety at Work and Electricity at Work Regulations.

This machine is for indoor use only and because it is a beverage machine, should be sited in a clean, hygienic area.

Section 1 - Machine Specifications

1.1 Specifications

Height . . . . . .1830 mm

Width . . . . . .660 mm

Depth . . . . . .740 mm

Weight . . . . . .184 kg

Cup Capacity . . .600

Electrical Services

Voltage . . . . . .220 - 240 Volts AC

Current . . . . . .13 Amp Fused

Frequency . . . . .50 Hz

Water Services

Pressure . . . . . .200 Kpa (2 Bar) - 600 Kpa (6 Bar)

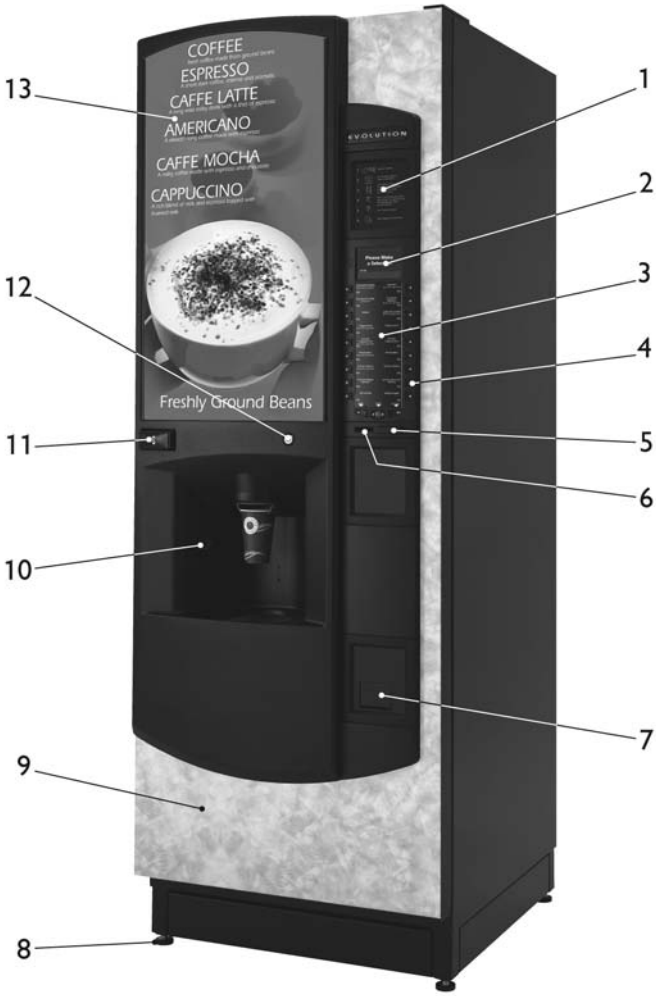
Stopcock . . . . . .15 mm BSP from rising main

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

1.2 Water Filter

Evolution machines fitted with a paperless freshbrew brewer or **CoEx®** espresso brewer must be connected to the water supply via a scale inhibiting water filter. Crane Merchandising Systems recommend and supply the Brita AquaQuell water filter.

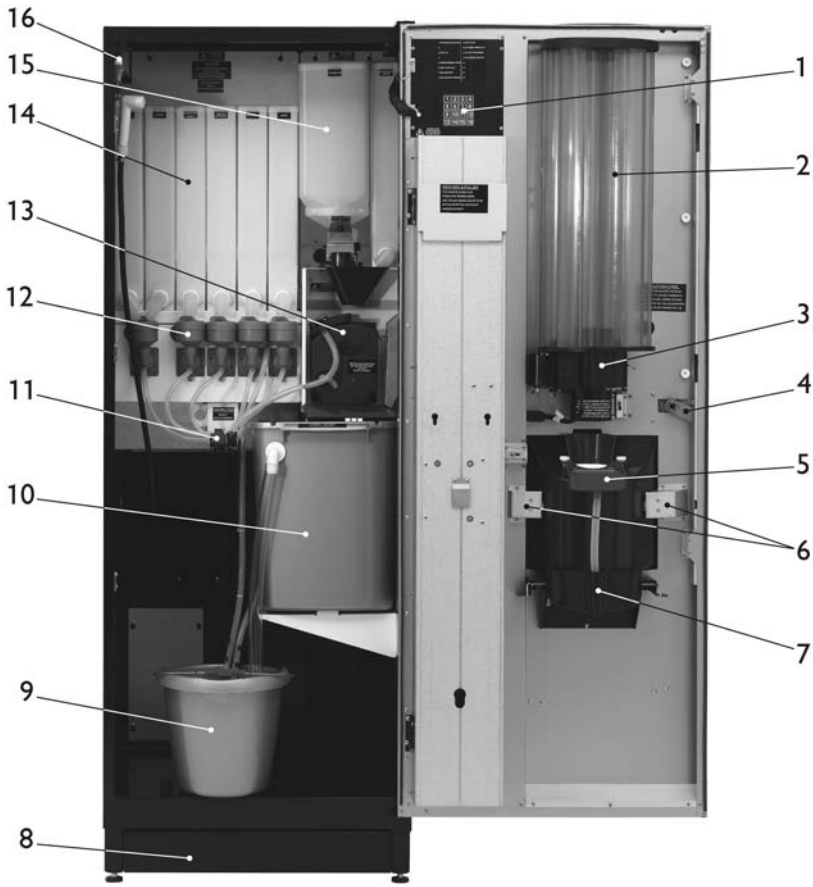
1.3 External Features



Key:

1. Instruction Decal
2. LCD Display
3. Selection Decals (Build A Drink)
4. Drink Selection Keypad
5. Coin Reject Button
6. Coin Entry
7. Coin Return
8. Foot
9. Door
10. SureVend™ Sensor
11. Door Lock
12. Jug/Free Vend Switch
13. Graphic Panel

1.4 Internal Features



Key:

1. Service Keypad
2. Cup Turret
3. Cup Drop Unit
4. Door Locking Mechanism
5. Cup Catcher
6. SureVend™ Sensors
7. Drip Tray
8. Kickplate
9. Waste Bucket
10. Brewer Waste Container
11. Dispense Head
12. Mixing Station
13. CoEx® Brewer (B2C)
14. Ingredient Canister
15. Fresh Beans Canister (B2C)
16. Door Switch

Section 2 - Installation Procedure

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

1. The installation and commissioning of the machine should only be carried out by trained and authorised service engineers.

2. All water and electrical services must be correctly and safely connected.

3. All covers must be replaced correctly and securely and the machine left in a safe condition.

2.1 Locating the Machine

1. The machine is suitable for indoor use only, situated in an area with a recommended ambient temperature not below 10° C and not exceeding 30° C. The machine should be located near the appropriate water and electrical services as detailed in **Specifications** (page 3).

2. Prior to moving the machine to its 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 all transit packing, installation kit and the box containing the cup stack assembly from the machine. Check for visual signs of damage which may have occurred during transit. If the machine is damaged or any parts are missing, you must contact the supplier immediately.

5. Using a 12 mm spanner, adjust the feet until the machine is levelled in both front to back and side to side planes. Ensure that the door opens and closes easily.

2.2 Connecting the Water Supply

1. The 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 & Espresso Machines:** Evolution 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. Crane Merchandising Systems recommend and supply the **Brita AquaQuell** water filter.

BRITA® it's clear from the taste

Warning! If the machines indicated above are connected to the water supply and used without a water filter as specified, the warranty will be void.

3. Connect the flexi-hose supplied with the machine to the stopcock ensuring that the seal supplied is fitted correctly. Flush the system (several gallons) before connecting the machine.

3. Connect the hose to the inlet valve located on the rear of the machine. Ensure that the seal is correctly fitted. Ensure that all water supply fittings are tight.

4. Turn on the water supply at the stop tap and check for leaks. Prime the water filter (where fitted) following the instructions supplied by the filter manufacturer.

2.3 Connecting the Electrical Supply

Safety First! The machine ***must*** be earthed. On no account should it be earthed ***only*** to the water supply pipe.

The machine must be connected to a 230 Volt 50Hz 13 amp fused switched socket outlet, installed to the latest edition of the IEE regulations, using a 3 pin BS approved 13 amp fused plug.

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

2.4 Commissioning Procedure

The following procedure must be carried out by a trained installation engineer 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 the machine. Fit the door switch bracket to the door using the two screws provided. Ensure that the bracket will operate the door switch when the door is closed. Switch on the electricity supply.

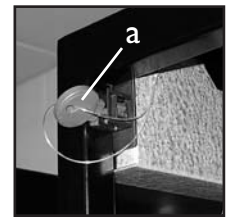
2. Ensure that the waste bucket is fitted correctly. Clip the level detector and overflow pipes correctly onto the rim of the bucket.

3. **Cup Turret.** Release the catch securing the cup drop unit and swing the unit away from the door. Remove the cup stack assembly from its packaging and carefully place it onto the cup drop unit. Ensure that the flat on the turret drive shaft locates with the flat in the cup turret mounting block. Remove the lid and fill the tubes with the correct size cups for the type of cup catcher fitted to the 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 paper cups are being loaded, each pack of cups must first be inspected for damage to the cup rims. Damaged cups must not be used.

4. Insert the safety key (a) supplied with the machine into the door switch as shown. The machine is now on. The cup turret mechanism will index the first available full cup stack 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. Swing the cup turret assembly back to its operating position. Ensure that the unit is held securely by the catch.

6. **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. When the machine has powered up, the LCD will display the message as shown opposite. Check the system for leaks.

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.

Espresso Models: As the machine initialises a small amount of water is pumped through the system and is discharged into the waste bucket. When the machine enters standby mode remove the bucket and empty the contents before refitting to the machine.

N.B. Before using the espresso machine for the first time it is necessary to purge the water system to ensure any water left in the system during transport is dispensed. Press button 9 on the Service Keypad fitted inside the door (photo). The machine will pump approximately 400ml of water through the system which will be heated to operating temperature before being discharged into the waste bucket. When the machine enters standby mode remove the bucket and empty the contents before refitting to the machine.

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

7. Check the LCD 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. A machine set to free vend mode will alternate the messages:

Please Make a Selection	No Money Required

N.B. Messages displayed in standby mode will change depending upon the monetary device fitted and set up during programming.

8. **All Models:** Rotate soluble/freshbrew ingredient canister outlets to upright position.

Remove the milk canister from the machine and remove the lid. Place the canister into the canister filling station located on the door (photo) and fill canister with correct ingredient.

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

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.

Repeat this operation for all soluble/freshbrew ingredient canisters fitted to the machine. Rotate the canister outlets to their correct operating positions.

9. **Espresso Models:** Close the outlet slide to seal the fresh beans canister outlet before removing the canister from the machine. Remove the canister lid.

To aid filling, hang the fresh beans canister on the rear of the door utilising the two keyhole slots provided. DO NOT place the canister on the floor.

Fill the canister with fresh coffee beans. The canister has a capacity of approximately 3.5 kgs. Refit the canister lid and carefully remove the canister from the door. Refit 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.

10. Press the **Cup Test** switch (7), located in the Service Keypad on the rear of the door and ensure that a cup is ejected cleanly from the cup drop unit. If the unit does not drop a cup cleanly, follow the procedure described on page 98 to correctly set the cup splitter for the type of cups being dispensed.

11. Press the **Park Head** switch (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 switch again to return the dispense head to its correct (homed) position.

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

    (Freshbrew models fitted with paper fed brewer only - proceed with steps 13 - 15)

13. Load the filter paper roll (provided in the installation kit) onto the support.

14. Press and hold the **Brewer Open** switch (2) on the service keypad until the brewer chamber reaches its fully open position. Remove the safety key to switch off the power to the machine.

15. Remove the brewer cover and paper/waste ingredient guard. Feed the filter paper under the raised chamber and through the feed wheels.

    Refit the guard and brewer cover. Insert the safety key into the door switch. The brewer will index to its closed position and stop.

16. **Espresso Models:** Ensure that the brewer waste container is fitted correctly beneath the CoEx® brewer unit and tea brewer unit (if fitted).

17. Referring to Sections 3 & 4 of this manual, **Programming Mode** and **Engineers Program**, use the menu selections available to programme the required settings for correct machine operation e.g. drink prices, disable selections, time and date etc.

18. If fitted, check that the coin mechanism and cash box operate correctly. Release the catch securing the coin mechanism cover (photo) and swing the cover away from the door. 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 on page 64 for making a vend using the **Test Vend** switch (6) located on the Service Keypad.

20. Remove the safety key and close the cabinet door. Ensure that the machine is left in a clean and safe condition.

2.5 Setting Up The Carbonator Unit - Where Fitted

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 gas bottle.

2. Tighten the locknut. Carefully lift the cylinder into the machine ensuring that the gas supply pipe is not trapped or obstructed in any way.

Safety First! The cylinder may be heavy. Always follow the correct procedure when lifting heavy objects.

3. Secure the gas bottle with the safety chain. Turn on the gas supply from the bottle and ensure that the regulator (2) is indicating a gas pressure of 35 PSI.

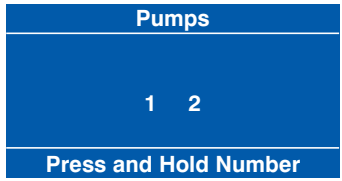
4. Place the carbonator overflow pipe into the waste bucket. Fill the carbonator water bath with clean cold water until it starts to run from the overflow pipe.

5. Re-fit carbonator covers and empty the waste bucket. Switch on the carbonator unit using the carbonator switch located on 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 selection decals.

6. Prime the syrup selections ready for use. Insert the safety key into the door switch. The machine is now ON. When the machine enters standby mode, press button 13 on the service keypad. The LCD will display the screen opposite.



N.B. Ensure that the waste bucket is empty and in place before priming the pumps.

7. 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.

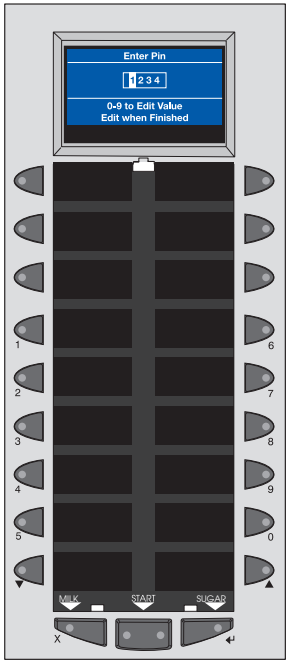
8. Test vend the carbonated drinks to ensure correct operation of carbonator unit. Check for leaks and ensure that the machine is left in a clean and safe condition. Remove the safety key and close the door. The machine reverts to standby mode.

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).

Section 3 - Programming Mode

3.1 Drink Selection Keypad

Programming mode utilises the drink selection keypad and allows the engineer to view and alter stored data within the machines memory. Evolution machines are fitted with either a direct selection (below, left) or build a drink (below, right) keypad. Both types are illustrated below.



During programming the keys are used as follows:

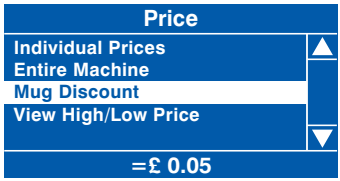
Keys 0-9	Used for entering text and numerical data
▲/ Normal	For indexing up in a program, or incrementing data
▼/ Strong	For indexing down in a program, or incrementing data
↵ / Mild	Edit key. Used to select and enter the highlighted menu and to save data to machines memory
X	Exit key. Press to return to the previous menu screen
START/?	Press to 'set all' or 'clear all' data or begin a test sequence.

3.2 Menu Display

The **Evolution** range of freestanding drinks vending machines feature Crane Merchandising Systems' new interactive menu display. The multi line LCD display helps to make navigating the programming menu structure easy and intuitive. It is used to display programming information and will change according to the type of data being updated.

1. The top line of the screen is the Menu title.

2. Selected items are highlighted in white. Press the ▲ (up) or ▼ (down) keys on the drink selection keypad to highlight an item.



3. Press the ↵ (Edit) key to select the item. In this example, pressing the the ↵ (Edit) key will display the Mug Discount screen.

4. The bottom line of the screen will often show important information. In certain configuration menus it will display the current value for the selected item. In the example shown the screen is showing that the current Mug Discount is set at 0.05p. This is a useful way to quickly check stored settings and also confirm that a value has been altered correctly.

5. To return to the Main Menu from any screen, simply press the **X** (Exit) key until you reach the Main Menu.

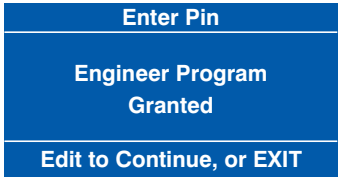
3.3 Accessing the Programming Mode

1. Open the front door of the machine and insert the safety key to restore power to the machine. The machine is now on.

2. Press the Program Entry key (1) on the service keypad, located inside the door (see page 62 for details). The LCD will display the screen as shown opposite. Enter the 4 digit engineers entry pin code using the drink selection keypad.

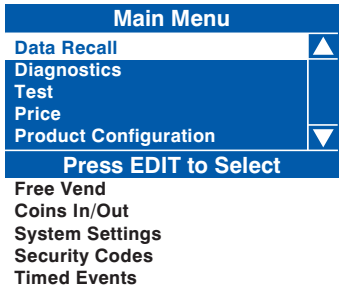
N.B. The factory default engineers code is entered by pressing the sequence 1-1-1-1. You may be issued with your own personalised code.

3. Press the ↵ (Edit) key. Providing the engineer has entered the code correctly, the LCD will display the screen as shown opposite.
   Press the ↵ (Edit) key to access the engineers program or **X** (Exit) key to return the machine to standby mode



4. The LCD on the front of the machine will display the top level programming menu screen - Main Menu. The first available menu Data Recall is highlighted indicating that it can be selected. To move to a different menu press the ▲ (up) or ▼ (down) keys on the drink selection keypad until the required menu is highlighted.

   N.B. Coins In/Out will only be displayed on machines fitted with an MDB coin mech.



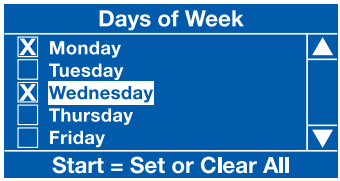
5. With the required menu highlighted, press the ↵ (Edit) key to select it. Using the Price menu as an example, the LCD will display the sub menus as shown opposite.

6. Using the ▲ (up) or ▼ (down) keys, the ↵ (Edit) key and the **X** (Exit) key it is possible to easily navigate through all of the menus contained within the Engineers Program.

7. To update parameters, key in the actual digits of the number required using the selection keys 0-9. Once the correct parameter has been entered, press the ↵ (Edit) key to overwrite the previous value and save the new parameter in the machines memory. Pressing the **X** (Exit) key will move back to the previous screen.

Certain programming functions require that the engineer chooses either one or multiple parameters within a sub program. These can take the form of either check boxes or radio buttons.

8. **Check Boxes:** The example opposite shows the Days of Week screen accessed via the Sanitation Events Menu which allows the engineer to choose multiple days of the week on which a specific function will take place.

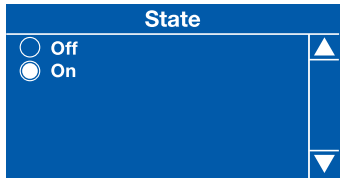


9. Using the ▲ (up) or ▼ (down) keys, scroll through until the required day is highlighted as shown. Pressing the ↵ (Edit) key will select the day, indicated by an X appearing in its adjacent box.

   Continue until all required days have been selected. Pressing the **X** (Exit) key will move back to the previous screen and save the new settings to the machines memory.

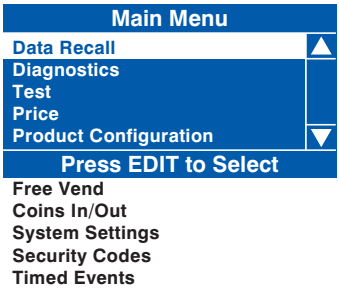
   N.B. Pressing the START/? key on the drink selection keypad will check all boxes if empty or clear all boxes if checked.

10. **Radio Buttons:** The example opposite shows the State screen accessed via the Timed Events Menu which requires the engineer to select one of the options shown. Use the ▲ (up) or ▼ (down) keys to set the required option followed by the ↵ (Edit) key to store/save it (indicated by the filled radio button).



All engineer programming for the Evolution range follows the procedures as described above. Specific program actions are described fully in the following section.

Section 4 - Engineers Program

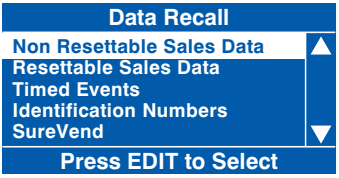


To access the Engineers Program, enter the programming mode as described in section 3. Once in the Engineers Program the LCD on the front of the machine will display the top level programming menu screen - Main Menu.

N.B. Coins In/Out will only be displayed on machines fitted with an MDB coin mech.

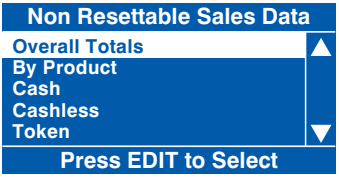
Using the ▲ (up) or ▼ (down) keys, ↵ (Edit) key and **X** (Exit) key on the drink selection keypad the engineer can navigate quickly and easily through the engineers program menus as described in Section 3.

4.1 Data Recall Menu



Entry into this menu allows the engineer to view Non-Resettable and Resettable Sales Data, view data relating to Timed Events and Identification Numbers of installed components and (if feature enabled) view SureVend™ assisted vend information. The Re-settable Sales Data and SureVend™ data menus contain an extra sub-menu which allows the engineer to delete the current data from the machines memory.

1. Non Resettable Sales Data: This menu allows 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 controller board (unless the back-up battery is removed).



1. From the Data Recall screen highlight Non Resettable Sales Data and press the ↵ (Edit) key. The LCD will display the screen as shown opposite. From this menu the engineer can view data for the Overall Totals (highlighted), By Product, along with data relating to Cash, Cashless and Token Vends.

2. To view the Overall Totals screen, press the ↵ (Edit) key on the drink selection keypad. This menu displays both the total £ amount and total vend counts for the following data:

   Sales-£ Displays the total machine sales in £
   Sales-# Displays the total number of machine vends. This value includes normal, discount and surcharge vend totals.

Discount-£	Displays the total monetary value of all discounts in £
Discount-#	Displays the total number of discounted vends
Test Vend-£	Displays the total monetary value of all test vends in £
Test Vend-#	Displays the total number of test vends
Surcharge-£	Displays the total monetary value of all surcharges in £
Surcharge-#	Displays the total number of surcharge vends
Free Vend-£	Displays the total monetary value of all free vends in £
Free Vend-#	Displays the total number of free vends

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 Evolution machines.

3. Scroll through the list displayed using the ▲ (up) or ▼ (down) keys on the front panel and record the audit data.

   When complete, press the **X** (Exit) key on the drink selection keypad to return to the Non Resettable Sales Data menu screen.

Overall Totals	
Sales-£	0.00
Sales-#	0
Discounts-£	0.00
Discounts-#	0
Test Vend-£	0.00
Test Vend-#	0
Surcharge-£	0.00
Surcharge-#	0
Free Vend-£	0.00
Free Vend-#	0

4. The engineer can also view and record audit data by individual product. Press the ▼ (down) key on the drink selection keypad to highlight By Product on the Non Resettable Sales Data menu screen.

5. Press the ↵ (Edit) key on the keypad to enter the By Product menu screen. This menu contains all of the drink selections available from the machine. Use the ▲ (up) or ▼ (down) keys on the drink selection keypad to scroll through the menu until the required selection is highlighted.

6. Press the ↵ (Edit) key on the keypad to enter the highlighted selection e.g. chocolate. The LCD will display the screen as shown opposite. This menu displays both the total £ amount and total vend count as previously described.

   N.B. Individual By Product screens also display the price set for the selection as shown.

Chocolate	
Price-£	0.00
Sales-£	0.00
Sales-#	0
Discounts-£	0.00
Discounts-#	0
Surcharge-£	0.00
Surcharge-#	0
Free Vend-£	0.00
Free Vend-#	0

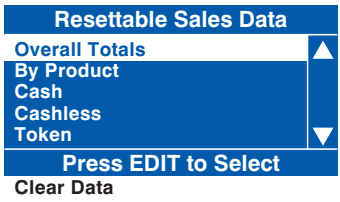
   The engineer can then scroll through the list displayed using the ▲ (up) or ▼ (down) keys on the drink selection keypad and record the audit data.

7. When complete, press the **X** (Exit) key on the drink selection keypad to return the machine to the previous screen. The engineer can then view data for more selections using the procedure described above and also access further menus via the Non Resettable Sales Data menu relating to Cash, Cashless and Token audit data.

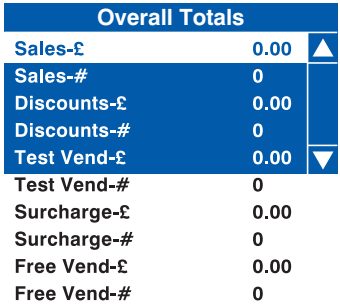
8. To return the machine to standby mode, press the **X** (Exit) key repeatedly until the LCD displays the standby screen.

2. Resettable Sales Data: This menu contains similar data to that available from the Non Resettable Sales Data menu. However, once viewed and recorded, data from this menu can be cleared from the machines memory.

1. From the Data Recall screen, highlight Resettable Sales Data and press the ↵ (Edit) key. The LCD will display the screen as shown opposite and allow the engineer to view data for all parameters as described for Non-Resettable Sales Data. Additionally the menu allows the engineer to delete all resettable data via the Clear Data menu.



2. To view the Overall Totals screen, press the ↵ (Edit) key on the drink selection keypad. This menu displays both the total £ amount and total vend count (since the last time it was cleared) for the data fields shown.



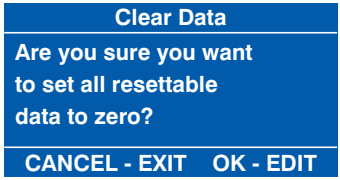
N.B. Please see page 18 & 19 for detailed descriptions of these data fields.

3. Scroll through the list displayed using the ▲ (up) and ▼ (down) keys on the front panel and record the audit data. When complete, press the **X** (Exit) key on the drink selection keypad to return to the Resettable Sales Data menu screen.

4. The engineer can also view and record resettable monetary and vend data for individual product by entering the By Product menu, and also view and record data relating to Cash, Cashless and Token vends using their relevant sub-menus.

Once the engineer has viewed and recorded required information from these sub-menu's, the data can be deleted via the Clear Data sub menu.

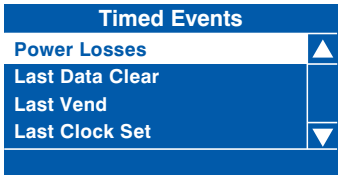
5. From the Resettable Sales Data screen, highlight the Clear Data sub menu using the ▼ (down) key and press the ↵ (Edit) key. The LCD on the front of the machine will display the screen as shown opposite, warning the engineer that all data will be deleted.



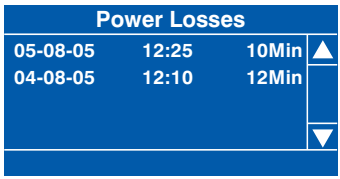
Either press the ↵ (Edit) key to clear the data or press the **X** (Exit) key to exit the menu without clearing the data.

3. Timed Events

1. From the Data Recall menu scroll down and highlight Timed Events then press the ↵ (Edit) key. The LCD will display the screen as shown opposite. From this menu screen the engineer can access then view and record information relating to the four events as shown.



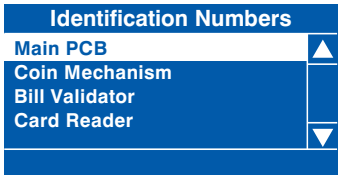
2. To view the Power Losses screen, press the ↵ (Edit) key. The screen displays a list of the 10 most recent occasions when power to the machine has been disconnected in date, time of day and period format. Press the **X** (Exit) key to return to the Timed Events menu.



3. Press the ▼ (down) key to highlight Last Data Clear, Last Vend and Last Clock Set. Information for these events is displayed along the bottom of the screen.

4. Identification Numbers

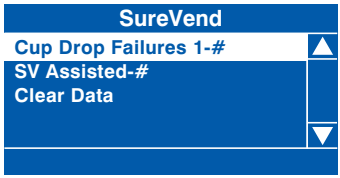
1. From the Data Recall menu scroll down and highlight Identification Numbers then press the ↵ (Edit) key. The LCD will display the screen as shown opposite. From this menu the engineer can access and then view serial number, part number and version type information relating to the main PCB and any MDB coin/card mechanism fitted to the machine.



N.B. Coin Mechanism, Bill Validator and Card Reader will only be displayed if an MDB device is fitted to the machine.

5. SureVend: This menu becomes available when SureVend is enabled via the Product Configuration menu (see page 35).

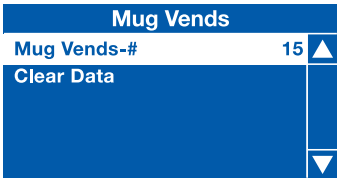
1. From the Data Recall menu scroll down and highlight SureVend then press the ↵ (Edit) key. The LCD will display the screen as shown opposite. From this menu screen the engineer can view and record the number of cup drop failures that SureVend has logged, vends achieved without SureVend activated and also the number of SureVend assisted vends.



2. Once the engineer has viewed and recorded the data it can be cleared via the Clear Data menu as described previously.

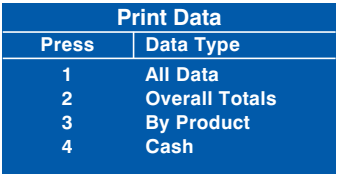
6. Mug Vends

1. This menu displays the number of vends that the machine has made without dropping a cup. Once the engineer has viewed and recorded the data it can be cleared via the Clear Data menu as described previously.



7. Print Data

1. This menu displays the data that can be extracted from the machine when a printer is connected and the corresponding keypad number which needs to be pressed to send the data to the printer. For more information regarding this function, please see page 50.

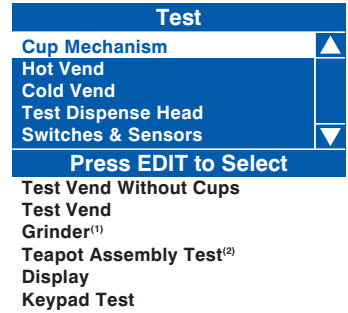


4.2 Diagnostic Menu

1. Should a fault occur within the machine, the LCD will display a fault message and in some cases the machine may become inoperable. The Diagnostic menu displays error messages relating to faults that may occur, enabling the engineer to easily locate and repair the problem, bringing the machine quickly back into service.

2. Tables detailing the error messages displayed on the LCD, diagnostic messages displayed via this menu and fault descriptions are included on pages 92 - 94 of this manual.

4.3 Test Menu



This menu allows the engineer to test individual components and switch inputs to ensure correct operation. On entry into the Test menu the LCD will display the screen as shown.

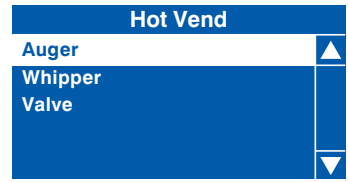
N.B. Grinder (1) and Teapot Assembly Test (2) are only displayed on espresso machines.

1. Cup Mechanism: This sub menu allows the engineer to test the operation of the cup drop unit and replicates the function assigned to switch 7 on the service keypad (see page 64).

1. Press the ↵ (Edit) key twice to display the test screen followed by the START button on the drink selection keypad. The cup drop unit will dispense a cup indicated by the screen opposite.

2. Pressing the **X** (Exit) key twice will return to the main test menu screen.

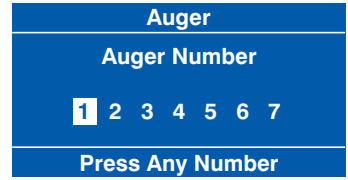
2. Hot Vend: Upon entry into this menu the LCD will display the screen as shown. From this menu screen the engineer can test for the correct operation of auger and whipper motors along with the dispense valves fitted to the heater tank.



1. **Auger:** This sub menu allows the engineer to test for correct operation of each individual ingredient motor fitted to the machine. Press the ↵ (Edit) key to display the test screen which indicates the number of motors fitted to the machine.

N.B. Testing the ingredient motor causes the ingredient canister auger to turn. Remove canisters before carrying out this test sequence. DO NOT place ingredient canisters on the floor. Refit correctly after carrying out the test.

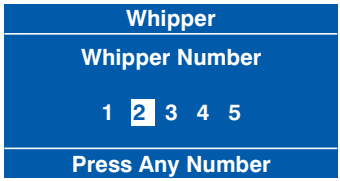
1. To test an ingredient motor, e.g. number 1, press the corresponding button on the drink selection keypad. The selection will be highlighted as shown and the motor will operate for 3 seconds. Repeat this operation to test additional ingredient motors.



2. Press the **X** (Exit) key to return to the main test menu screen.

2. **Whipper:** This sub menu allows the engineer to test for correct operation of each individual whipper assembly fitted to the machine. Press the ↵ (Edit) key to display the test screen which indicates the number of whippers fitted to the machine.

1. To test a whipper, press the corresponding button on the drink selection keypad. The selection will be highlighted as shown and the whipper will run for 3 seconds. Repeat this operation to test additional whipper units.

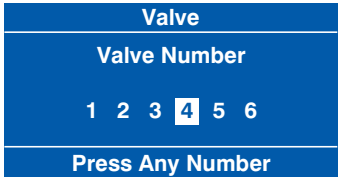


2. Press the **X** (Exit) key to return to the main test menu screen.

3. **Valve:** This sub menu allows the engineer to test for correct operation of each individual dispense valve fitted to the heater tank. Press the ↵ (Edit) key to display the test screen which indicates the number of valves fitted to the tank. The dispense head will also move to its fully extended position.

N.B. Water will be dispensed from the heater tank during the test sequence. Place a suitable container under the dispense position. Keep hands away from the dispense area while the test is in operation.

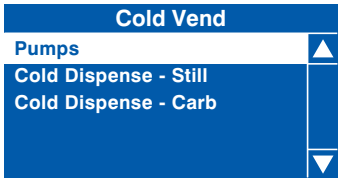
1. To test a valve, e.g. number 4, press the corresponding button on the drink selection keypad. The selection will be highlighted as shown and the valve will operate for 4 seconds. Repeat this operation to test additional valves.



2. Press the **X** (Exit) key to return to the main test menu screen. The dispense head will return to its home position. Empty the contents of the container.

Important: After carrying out the valve test on a freshbrew selection the engineer must run the brewer using the "Brewer Open" switch as described on page 62.

3. Cold Vend: Upon entry into this menu the LCD will display the screen as shown. From this menu screen the engineer can test and ensure correct operation of the syrup pumps and cold dispense, still and carbonated.

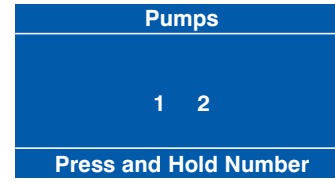


1. **Pumps:** This sub menu allows the engineer to test for correct operation of each individual syrup pump. It also allows the syrup selections to be primed ready for use as described on page 13 (2.5).

N.B. A cold drink will be dispensed during the test sequence. Place a suitable container under the dispense position.

1. Press the ↵ (Edit) key to display the test screen which indicates the number of pumps fitted to the machine. The dispense head will also move to its fully extended position.

2. To test syrup pump 1, press and hold button 1 on the drink selection keypad until the drink appears from the dispense head. Repeat for syrup pump 2 by pressing and holding button 2 on the drink selection keypad.



3. Press the **X** (Exit) key to return the machine to standby mode. Empty the contents of the container.

2. **Cold Dispense - Still:** This sub menu allows the engineer to test for correct operation of both the water inlet valve and cold unit valve.

N.B. Water will be dispensed during the test sequence. Place a suitable container under the dispense position.

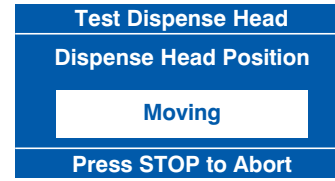
1. Press the ↵ (Edit) key to display the test screen. Press the START/? key to begin the test sequence. The LCD will display the screen as shown during the operation.

2. Press the **X** (Exit) key to return the machine to standby mode. Empty the contents of the container.

3. **Cold Dispense - Carb:** This sub menu allows the engineer to test for correct operation of the carbonator unit fill valve and follows the sequence as described for Cold Dispense - Still.

4. Test Dispense Head: This sub menu allows the engineer to test the operation of the dispense head mechanism.

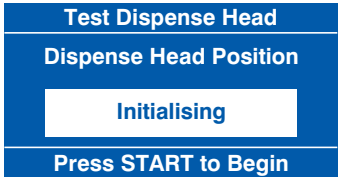
1. Press the ↵ (Edit) key to display the test screen followed by the START/? button on the drink selection keypad. The dispense head mechanism will move to its first dispense position indicated by the screen opposite.



2. When the head reaches its first dispense position, it will stop and the LCD screen

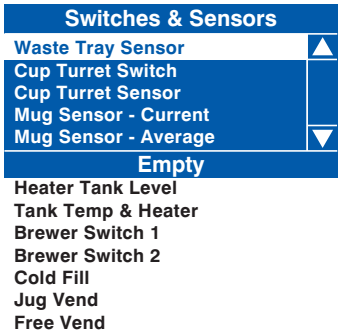
will show the message **Dispense Head Position - Extended**. Press the START/? key a second time to move the head to its second dispense position. Press the START/? key again to move the head to its fully extended dispense position.

3. To return the dispense head to its "home" position and complete the test, press the START/? key. The dispense head mechanism will return to its rest position as indicated by the screen opposite.



4. When the head reaches its "home" position, it will stop and the LCD screen will show the message **Dispense Head Position - Idle** indicating that the test has been completed successfully. Press the **X** (Exit) key to return to the main test menu screen.

5. Switches & Sensors: This sub menu displays the switches/sensors that can be tested. For most of the items displayed the status line at the bottom of the screen indicates the current state of the highlighted sensor/switch. In the example opposite, the status line indicates that the **Waste Bucket Sensor** is detecting that the waste bucket is empty.

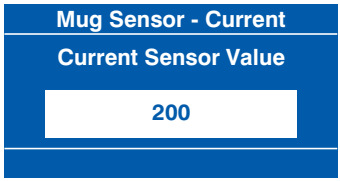


N.B. The Brewer Switch 1 menu will only be displayed on freshbrew models whilst the Brewer Switch 2 will only be displayed on Espresso machines with teapot brewer.

Press the ▲ (up) or ▼ (down) keys to highlight the other switch/sensor inputs and view their status.

Mug Sensor - Current: This menu gives the engineer an indication as to the efficiency of the SureVend™ sensor. The range for correct operation is a numerical value between 51 - 255.

1. Highlight Mug Sensor - Current from the Switches & Sensors menu and press the ↵ (Edit) key. The LCD will display the screen as shown opposite. The numerical value shown indicates the current mug sensor value.

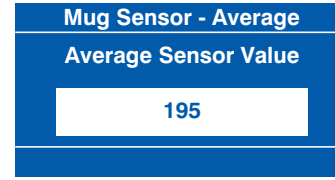


2. The Mug Sensor value can be any number between 0 and 255 and represents the current value read from the sensor. The engineer can test the mug sensor by

blocking the SureVend™ sensors located in the drink dispense area. The value displayed in the status line will drop as the sensors are blocked.

Mug Sensor - Average: This menu gives the engineer an indication as to overall efficiency of the SureVend™ sensor.

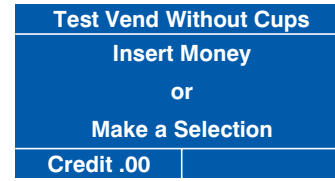
1. Highlight Mug Sensor - Average from the Switches & Sensors menu and press the ↵ (Edit) key. The LCD will display the screen as shown. The value displayed represents the average sensor calibration value.



6. Test Vend Without Cups: This menu allows the engineer to test vend a selection without dropping a cup.

N.B. Ensure that a suitable container is placed under the dispense position to receive the vend.

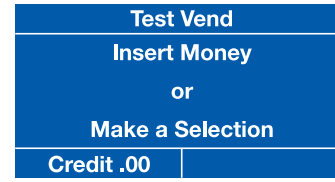
1. Highlight Test Vend Without Cups in the main Test menu and press the ↵ (Edit) key. The LCD will display the screen as shown opposite. Make a selection using the drink selection keypad and press the START/? button. The machine will dispense the selection without dropping a cup.



2. Press the **X** (Exit) key to return to the main test menu screen.

7. Test Vend: This menu allows the engineer to make a test vend in order to verify that the dispensed vend is acceptable.

1. Highlight Test Vend in the main Test menu and press the ↵ (Edit) key. The LCD will display the screen as shown opposite.



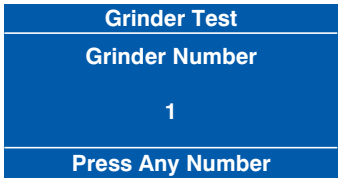
2. Make a selection using the drink selection keypad and press the START/? button. The machine will drop a cup before dispensing the selection. If the SureVend system is turned on the sensors must be activated within 3 seconds of the cup being dispensed. (see page 35)

3. Press the **X** (Exit) key to return to the main test menu screen.

8. Grinder Test (Espresso Machines): This sub menu allows the engineer to test for correct operation of the bean grinder fitted to Espresso machines.

N.B. Remove CoEx® brewer from the machine and place a suitable container under the grinder outlet to catch any coffee grounds before starting the test sequence.

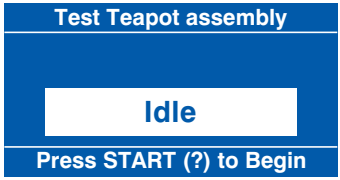
1. Highlight Grinder Test in the main Test menu and press the ↵ (Edit) key. The LCD will display the screen as shown opposite. Press button 1 on the drink selection keypad. The grinder will run for approximately 4 seconds.



2. Press the **X** (Exit) key to return to the main test menu screen.

9. Teapot Assembly Test (Espresso Machines): This sub menu allows the engineer to test for correct operation of the teapot unit fitted to Espresso machines.

1. Highlight Teapot Assembly Test in the main Test menu and press the ↵ (Edit) key. The LCD will display the screen as shown opposite. Press the START/? button. The teapot will rotate one full revolution and the LCD will display the message **Moving**.



2. When complete the LCD reverts to the **Idle** screen. Press the **X** (Exit) key to return to the main test menu screen.

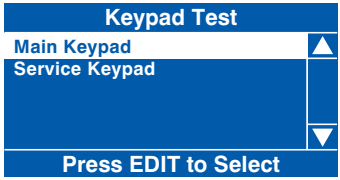
10. Display: Entry into this menu allows the engineer to test the LCD display screen.

1. Highlight Display in the Test menu and press the ↵ (Edit) key. Press the START/? key repeatedly to cycle through the different test patterns. The test patterns will reveal any flaw in the display.

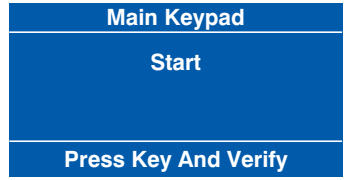
2. Press the **X** (Exit) key to return to the main test menu screen.

11. Keypad Test: This menu enables the engineer to test each key on both the drink selection keypad and internal service keypad to ensure correct operation.

1. Highlight Keypad Test in the Test menu and press the ↵ (Edit) key. The LCD will display the screen with Main Keypad highlighted as shown.



2. To test the Main Keypad, press the ↵ (Edit) key to access the test screen. Press any key on the drink selection keypad and verify that it is displayed correctly. Example; pressing the START/? key on the drink selection keypad will display the screen as shown opposite.



3. Press the **X** (Exit) key to return to the Keypad Test menu screen. Use the ▼ (down) key to highlight Service Keypad and press the ↵ (Edit) key to access its test screen. Follow the procedure described above to test the service keypad.

N.B. Pressing either the ↵ (Edit) key or **X** (Exit) key (or 1 and 2 on the service keypad) will return to the Keypad Test menu screen.

4.4 Price Menu

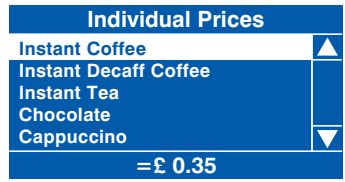
Entry into this menu allows the engineer to enter individual prices for each drink selection available, one price for all drink selections and set a discount to be applied for customers who use their own cup/mug. The menu also contains a sub menu which allows the engineer to view the highest and lowest price set in the machines memory.

N.B. Values entered via this menu are only applicable to machines fitted with a coin/card system.

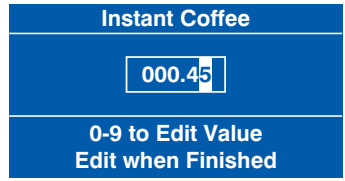
1. Individual Prices: This sub menu allows the engineer to set an individual price for each drink selection available from the machine.

1. With Individual Prices highlighted as shown opposite, press the ↵ (Edit) key to access the menu.

2. Upon entry into this sub menu, all drink selections available from the machine are listed along with the current drink price for the highlighted selection. The example shown illustrates an Instant Coffee selection with a price set currently at 35p.

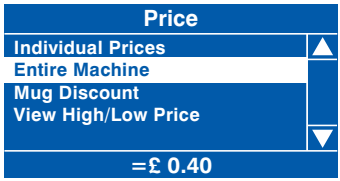


3. To change the price of the highlighted selection, press the ↵ (Edit) key. The LCD will change and display the screen as shown. To update the price, e.g. increase to 45p, press the sequence 0-0-0-4-5 using the appropriate number keys on the drink selection keypad.



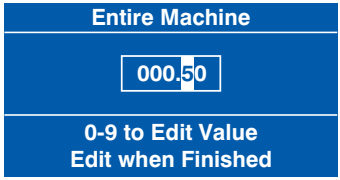
4. Press the ↵ (Edit) key to return to the Individual Prices screen and verify that the new price displays in the status line along the bottom of the display. Use the ▲ (up) or ▼ (down) keys to highlight further selections.

2. Entire Machine: This sub menu allows the engineer to set a single price for all selections available from the machine.



1. When highlighted from within the Price menu, the LCD will display the screen, with the current value (e.g. 40p), as shown.

2. Press the ↵ (Edit) key to access the Entire Machine sub menu. To update the value, e.g. set a price of 50p, press the sequence 0-0-0-5-0 using the appropriate number keys on the drink selection keypad. Press the ↵ (Edit) key to return to the Price menu screen and verify that the new price displays in the status line along the bottom of the display.



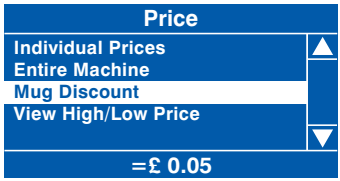
Tip: If most selections are to be sold at the same price, use this menu to quickly set the entire machine to this price, then access the Individual Prices menu to adjust prices for individual selections. Entering a single price for the entire machine will over-ride any individual prices previously programmed.

3. Mug Discount: This sub menu allows the engineer to program a discount value against all drink selections for customers who use their own cup/mug.

When a customer places their own cup into the dispense area and selects a drink, the SureVend™ sensors will detect the cup and disable the cup drop mechanism. The price set for Mug Discount is then subtracted from the price of the drink selected and the appropriate change/credit returned to the customer.

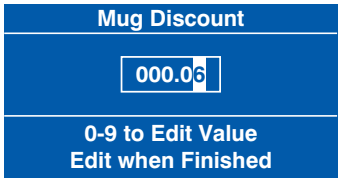
N.B. It is important to ensure that any value entered for a mug discount is supported by the coin mechanism fitted to the machine, e.g. if a mug discount is set at 2p but the lowest coin available from the coin mechanism is 5p, the machine will not return the discount to the customer.

1. Highlight the Mug Discount sub menu from within the Price menu. The LCD will display the screen, with a current value in the status line (e.g. 5p), as shown. Press the ↵ (Edit) key to access the Mug Discount sub menu.



2. To enter a discount value, e.g. 6p, press the sequence 0-0-0-0-6 using the appropriate number keys on the drink selection keypad.

3. The LCD will change and display the screen as shown. Press the ↵ (Edit) key to return to the Price menu screen and verify that the new price displays in the status line along the bottom of the display.

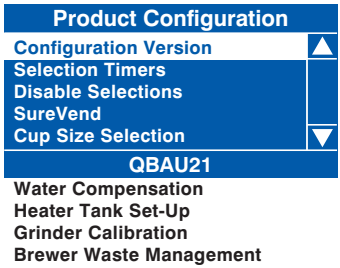


4. View High/Low Price: This sub menu allows the engineer to view the highest and lowest values in force, programmed via the Individual Prices sub menu.

N.B. If a single price is currently in force, this value will be displayed in both fields.

4.5 Product Configuration Menu

Entry into this menu allows the engineer to configure the selection timers for the drink selections, disable drink selections, turn SureVend™ On or Off, set the cup size and heater tank temperature settings and set brewer waste counter values. Additionally for Espresso machines (as shown) the menu includes water compensation and grinder calibration sub-menus.

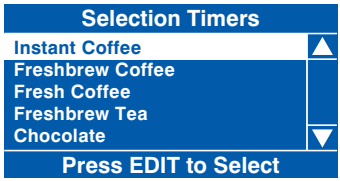


1. Configuration Version: This displays the manufacturer configuration code for the machine and is for information purposes only.

2. Selection Timers: Evolution machines are supplied pre-programmed with carefully tested default recipes for each drink selection. These recipes are for 7oz drinks and will be suitable for most applications. Each selection can, however, be adjusted to accommodate different ingredient types or operator/customer preference. These recipes can be quickly and easily changed from within the Selection Timers menu.

Important: All selection timer values are displayed in seconds except for drink selections made with fresh beans from Evolution B2C (espresso) machines, where water values are displayed in millilitres (ml) and fresh coffee values in grams (g).

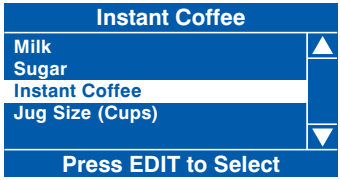
1. Highlight Selection Timers then press the ↵ (Edit) key to access the menu. The menu contains all of the drink selections available from the machine. Scroll down using the ▼ key to highlight a selection and press the ↵ (Edit) key to enter the sub-menu.



N.B. Menu shown is from Evolution B2C (Espresso) machine.

2. The following examples describe how to adjust **Instant Coffee**, a recipe common to all machines and the **Fresh Coffee from Beans** recipe found in the espresso machine.

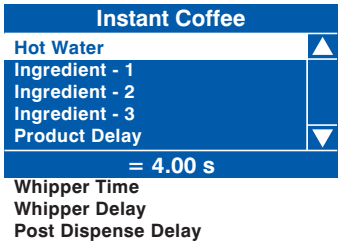
3. **Instant Coffee:** With Instant Coffee highlighted in the Selection Timers menu, press the ↵ (Edit) key to access the Instant Coffee Timers menu. This menu, shown opposite, contains the three ingredients which may be involved in an Instant Coffee selection plus a Jug Size sub menu which allows the engineer to configure the size of an Instant Coffee jug vend.



4. Scroll down and highlight Instant Coffee. Press the ↵ (Edit) key to access the menu. The status line at the bottom of the screen shows the current value of the highlighted timer. In the example shown, the Hot Water value is configured to be on for 4 seconds.

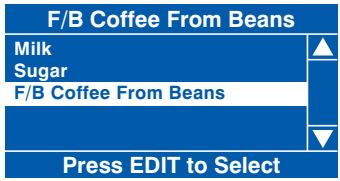
The default Instant Coffee timers are:

Hot Water	=	4.00 s
Ingredient 1	=	0.71 s
Ingredient 2	=	1.07 s
Ingredient 3	=	0.54 s
Product Delay	=	1.00 s
Whipper Time	=	4.50 s
Whipper Delay	=	0.50 s
Post Dispense Delay	=	3.00 s



N.B. Ingredient 1, 2 and 3 shown relate to the default normal, strong and mild timings.

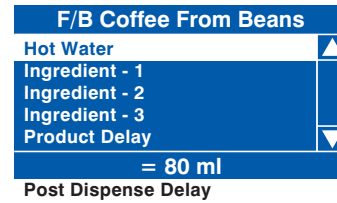
5. **F/B Coffee from Beans:** With F/B Coffee from beans highlighted in the Selection Timers menu, press the ↵ (Edit) key to access the Fresh Coffee Timers menu. This menu, shown opposite, contains the three ingredients which may be required in a fresh coffee from ground beans selection.



6. Scroll down and highlight F/B Coffee from beans. Press the ↵ (Edit) key to access the menu. The status line at the bottom of the screen shows the current value of the highlighted timer. In the example shown, the Hot Water value is configured to deliver 80ml of water during the vend.

The default F/B Coffee from beans timers are:

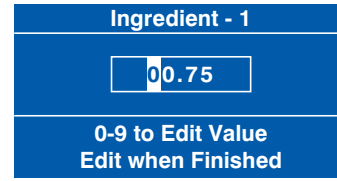
Hot Water	=	80 ml
Ingredient 1	=	6.0 g
Ingredient 2	=	7.0 g
Ingredient 3	=	5.0 g
Product Delay	=	1.00 s
Post Dispense Delay	=	0.00 s



N.B. Ingredient 1, 2 and 3 shown relate to the default normal, strong and mild timings.

7. To strengthen the flavour of the normal coffee/fresh coffee selection, lengthen the time of the product throw. Press the ▼ (down) key to highlight **Ingredient -1**. The status line at the bottom of the screen will display the current value.

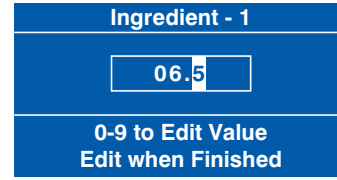
8. **Instant Coffee:** Press the ↵ (Edit) key to access the screen as shown. Enter a value for a stronger normal selection, e.g. 0.75 s. Press the sequence 0-0-7-5 using the drink selection keypad.



9. Press the ↵ (Edit) key to return to the Instant Coffee menu and verify that the new timing value is displayed at the bottom of the screen.

N.B. When in this screen with the ingredient highlighted, pressing the START/? key will run the ingredient motor for the programmed time, allowing the engineer to collect and weigh the ingredient to determine gram throw if required. This also applies to soluble ingredients in espresso machines.

10. **F/B Coffee from Beans:** Press the ↵ (Edit) key to access the screen as shown. Enter a value for a stronger normal selection, e.g. 6.5 g. Press the sequence 0-6-5 using the drink selection keypad.



11. Press the ↵ (Edit) key to return to the Coffee Bean menu and verify that the new value is displayed at the bottom of the screen.

12. Adjust the other timers within the Instant Coffee/Fresh Coffee menu as desired. These recipes also contain menus for Milk and Sugar timers. If necessary adjust the timings for these ingredients. Once all timings have been entered and verified, vend the selection to ensure that the new recipe is satisfactory and that the cup does not under or over-fill.

13. Each drink selection available from the machine will be made up with different selection timers, for example the Cappuccino recipe will contain timers for

Cappuccino Topping, Instant/Fresh Coffee and Sugar and will also contain whipper timers which control how the selection is mixed and presented in the cup.

14. **Product, Whipper and Post Dispense Delays**

Product Delay - This determines the time interval between the water valve start and the start of the product ingredient motor.

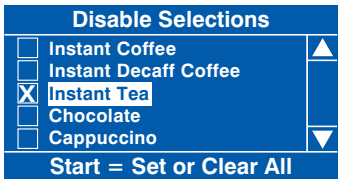
Whipper Delay - This determines the time interval between the water valve start and the start of the product whipper motor.

N.B. The sugar whipper delay will always take precedent over the milk whipper delay. If both are selected the total whipper run time will be the sum of the sugar whipper and milk whipper run times.

Product Delay - This determines when the dispense head is retracted after a vend.

3. Disable Selections: This sub menu allows the engineer to disable individual or all drink selections if necessary. With Disable Selections highlighted, press the ↵ (Edit) key to access the menu.

1. Upon entry into the menu the LCD will display the screen as shown. Using the ▲ (up) or ▼ (down) keys, scroll through the menu until the required drink selection is highlighted. Pressing the ↵ (Edit) key will select the drink, indicated by an X appearing in its adjacent box.



2. If necessary continue until all required drink selections have been checked. Pressing the **X** (Exit) key will move back to the Product Configuration screen and save the new parameters to the machines memory.

   N.B. Pressing the START/? key on the drink selection keypad will check all boxes if empty, disabling all drink selections or clear all boxes if previously checked.

3. On returning to standby mode the selection button light will be extinguished next to any drink selections that have been disabled, indicating to the customer that the drink choice is un-available.

For machines fitted with a carbonator it is also possible to disable either the still or sparkling option for cold drinks.

4. Enter the disable selections sub-menu as previously described and using the ▼ (down) key scroll down until the required cold drink option is highlighted. Pressing the ↵ (Edit) key will disable the option, indicated by an X appearing in the box. To completely disable the selection enter an X into both the Still and Sparkling boxes.

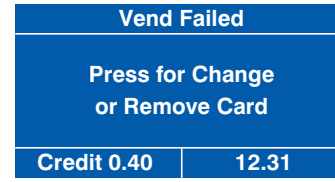
5. With the Sparkling option disabled for Cold Drink 1, on returning to standby mode the light for its selection button will be lit indicating that the selection is valid. When a customer presses for the selection only a still vend can be made as shown.

4. SureVend: Entry into this menu allows the engineer to turn the SureVend™ product delivery sensor on or off.

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 three failed vend attempts the cup ring is placed temporarily out of service. The machine will beep once and the LCD will display the Vend Failed message (if set to Pay Vend mode).

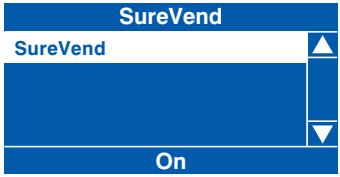


3. Customers can now get their money back by pressing the coin return button or removing their card. The LCD will change and display the message **Out of Cups Please Insert Mug**. The machine remains in service but will not vend a cup from the cup drop unit.

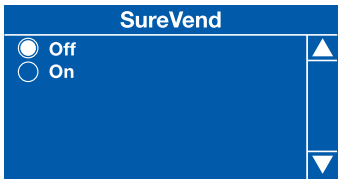
4. To clear the message and return to standby mode, enter the Diagnostic menu and press the START/? key twice to clear each SureVend™ error displayed. Check and if necessary, clear the cup drop unit and ensure correct operation before leaving the machine.

To configure SureVend™, proceed as follows:

1. From the Product Configuration menu highlight SureVend and press the ↵ (Edit) key. By default SureVend™ is factory set to On as indicated by the status line at the bottom of the screen.



2. To disable SureVend™, press the ↵ (Edit) key to enter the SureVend On/Off screen. Use the ▲ (up) key to select Off (indicated by the filled radio button).



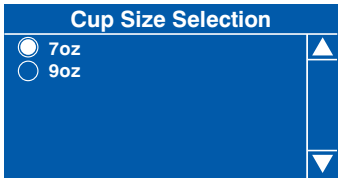
3. Press the ↵ (Edit) key to confirm the selection and return to the SureVend screen. Verify that the status line at the bottom of the screen displays Off when SureVend is highlighted.

4. Pressing the **X** (Exit) key will move back to the Product Configuration screen and save the new parameter to the machines memory.

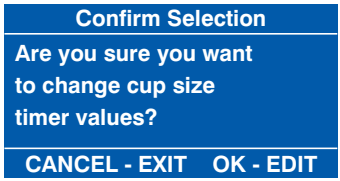
5. Cup Size Selection: This sub menu allows the engineer to quickly and easily change the cup size dispensed by the machine, either 7oz or 9oz when required.

1. From the Product Configuration menu highlight Cup Size Selection.The screen will display the current cup size (eg 9oz) as indicated by the status line at the bottom of the screen.

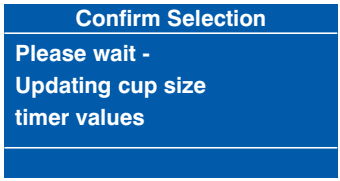
2. To change the cup size, press the ↵ (Edit) key to enter the Cup Size Selection screen. Use the ▲ (up) key to select 7oz (indicated by the filled radio button).



3. Press the ↵ (Edit) key. The screen will change and prompt the engineer to confirm the selection. Press the ↵ (Edit) key to continue.



4. The LCD will display the screen as shown. In the background the software is updating all pre-loaded parameters relating to serving a 7oz drink.



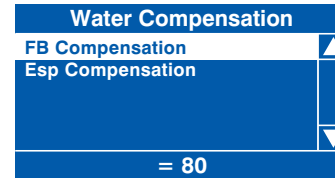
5. Once the software has completed updating the timer values the screen will change and display the message **Update Complete**. Press the **X** (Exit) key twice to return to the Product Configuration screen.

6. Water Compensation (Espresso Machines): This sub menu allows the engineer to finely "tune" the bean to cup water system to compensate for varying operating conditions - type of beans, grind particle size, water flow etc.

IMPORTANT: The Grinder Calibration MUST be carried out before adjusting the Water Compensation - see page 39.

Each drink type has water level compensation enabling tuning of the freshbrew and espresso drink types available from the machine. To adjust the water compensation values, proceed as follows:

1. From the Product Configuration menu highlight Water Compensation and press the ↵ (Edit) key to access the menu screen as shown. Using the ▲ (up) or ▼ (down) keys, scroll through the menu until the required drink type is highlighted e.g. Esp Compensation for espresso and espresso based selections. Press the ↵ (Edit) key to access the menu.



2. The LCD will display the screen as shown opposite where 130 is the default value for espresso selections, set when the machine leaves the factory. The following examples describe how to adjust this setting if required.

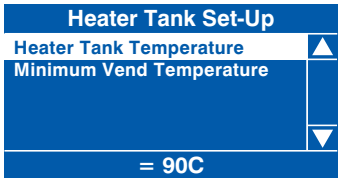
N.B. Before proceeding with the following tests, ensure that you have an accurate measuring cylinder to hand.

3. **Freshbrew Compensation:** Enter the Selection Timers menu and access the Freshbrew Coffee sub menu. Check and note the water timer setting (default 80ml plus 40ml for sugar and 40ml for milk). Return the machine to standby mode and vend a black freshbrew coffee (no sugar) selection. Carefully measure the amount of water dispensed. If the dispensed amount is less or more than 160ml, return to the Water Compensation menu as described above and enter the Freshbrew Compensation sub menu - default value 80. Enter a value higher (e.g. 185) or lower (e.g. 75), return to standby, vend a second black freshbrew coffee selection and measure the amount of water dispensed. Continue increasing/decreasing the water compensation amount until a measured value of 160ml is dispensed.

4. **Espresso Compensation:** Enter the Selection Timers menu and access the Espresso sub menu. Check and note the water timer setting (default 45 ml plus 15 ml for sugar). Return the machine to standby mode and vend an espresso (no sugar) selection. Carefully measure the amount of water dispensed. If the dispensed amount is less or more than 60 ml, return to the Water Compensation menu as described above and enter the Esp Compensation sub menu - default value 130. Enter a value higher (e.g. 135) or lower (e.g. 125), return to standby, vend a second espresso selection and measure the amount of water dispensed. Continue increasing/decreasing the water compensation amount until a measured value of 60 ml is dispensed.

7. Heater Tank Set-Up: This sub menu allows the engineer to set values relating to the target temperature to which the water will be heated to and maintained at within the heater tank, and the minimum temperature at which the machine will vend a drink.

1. Heater Tank Temperature: From the Product Configuration menu, highlight Heater Tank Set-Up and press the ↵ (Edit) key. The Heater Tank Temperature menu is highlighted and displays the default temperature - factory set to 90°C - in the status line at the bottom of the screen.

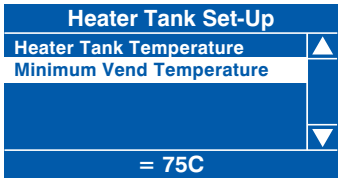


1. To set a new maximum temperature press the ↵ (Edit) key. The LCD will display the screen as shown. Enter the new temperature value, e.g. press 0-8-5 using the drink selection keypad to set a maximum temperature of 85°C.

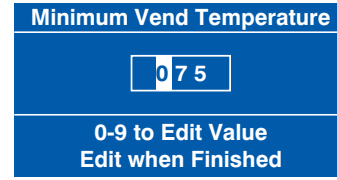
2. Press the ↵ (Edit) key to return to the Heater Tank Set-Up menu screen and verify that the new value is displayed in the status line.

   N.B. The available temperature values range from 75°C to 98°C unless a lower value is set for the minimum vend temperature.

2. Minimum Vend Temperature: The machine will suspend vending if the water in the heater tank falls below a certain value. This value is factory set to 75°C as displayed in the status line at the bottom of the screen when Minimum Vend Temperature is highlighted.



1. To set a new Minimum Vend Temperature press the ↵ (Edit) key. The LCD will display the screen as shown. Enter the new temperature value, e.g. press 0-7-0 using the drink selection keypad to set a minimum vend temperature of 70°C.

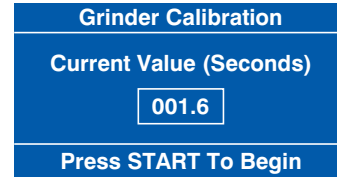


2. Press the ↵ (Edit) key to return to the Heater Tank Set-Up menu screen and verify that the new value for the minimum vend temperature is displayed in the status line.

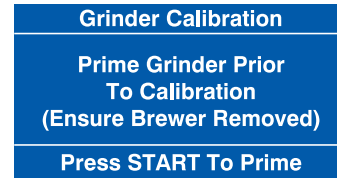
8. Grinder Calibration (Espresso Machines): This sub menu allows the engineer to calibrate the grinder settings (stored in the machines memory) to the type of coffee beans dispensed and converts gram settings to seconds. This procedure must always be carried out by the engineer before the Evolution B2C machine is used for the first time, when the type of beans dispensed is changed, before adjusting the water compensation or after the grinder mechanism has been removed/repaired.

Important: Before commencing the following procedure, ensure that you have a set of accurate gram scales and a cup with which to catch the ground coffee. Using the 'tare' function, calibrate the empty cup with the gram scales. Ensure that the CoEx® brewer is removed from the machine, the brewer waste bucket is in position, the bean container contains beans and the container outlet slide is open. To configure the Grinder Calibration, proceed as follows:

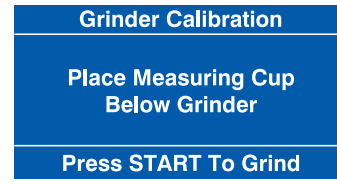
1. From the Product Configuration menu highlight Grinder Calibration and press the ↵ (Edit) key to access the menu screen as shown. This displays the current calibration setting in seconds, eg 1.6 grams of ground coffee will be dispensed per second of grinder operation.



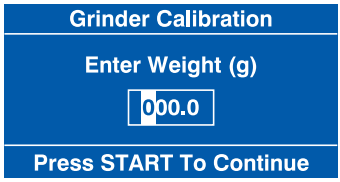
2. Press the START/? key on the drink selection keypad to begin the calibration process. The machine displays the menu screen as shown. Press the START/? key. The machine will pause for 3 seconds before priming the grinder. Ensure that the waste bucket is placed correctly in the machine to catch dispensed ground coffee.



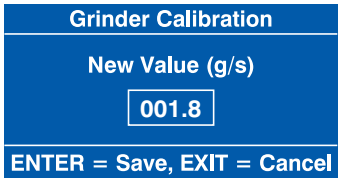
3. The LCD will now display the menu screen as shown opposite. Place the calibrated cup under the grinder outlet and press the START/? key. The grinder will run and dispense dry ground coffee into the cup.



4. The LCD will now display the menu screen as shown opposite. Weigh the cup and its contents and enter the weight into the machine. If the weight of ground coffee was 6.5 grams, enter 0-0-6-5 using the drink selection keypad. Empty the contents of the cup and press the START/? key to continue calibrating the grinder.



5. Repeat steps 3 and 4 twice more. Upon completion the LCD will change and display the new calibrated value as a value of grams per second as the example shown. Press the ↵ (Edit) key to save the new value or **X** (Exit) key to cancel.



9. Brewer Waste Management: This sub menu allows the engineer to set a value for the maximum amount of brewer waste that can be ejected from the brewer (CoEx® and freshbrew) into the waste container. This value is used to determine the number of vends that can be completed before freshbrew/espresso drinks become disabled and the waste container needs to be removed from the machine and emptied. The menu also allows the engineer to turn waste management on or off and view the number of freshbrew/espresso drinks vended since the waste container was last emptied and the waste counter reset.

1. From the Product Configuration menu highlight Brewer Waste Management and press the ↵ (Edit) key to access the menu screen as shown. To set a a maximum waste counter value press the ▼ (down) key and highlight Brewer Waste Capacity.

2. With Brewer Waste Capacity highlighted, press the ↵ (Edit) key to access the sub-menu screen. To change the value enter a new number using the drink selection keypad. Press the ↵ (Edit) key to store the new value.

N.B. The program is set to allow a maximum value of 600 to be entered as shown.

3. From the Brewer Waste Management menu press the ▼ (down) key and highlight Current Waste Counter. The number displayed shows the number of freshbrew/espresso vends that have been dispensed since the waste counter was last reset.

Important: Once the brewer waste container has been emptied, cleaned and re-fitted to the machine, the waste counter must be reset by pressing button 12 on the service keypad mounted inside the door. The machine will bleep twice to confirm that the counter has been reset.

4. To turn waste management Off, highlight Brewer Waste Management from the Brewer Waste Management screen. Press the ↵ (Edit) key to display the screen as shown. Press the ▲ (up) key to select Off (indicated by the filled radio button).

N.B. If the brewer waste management is turned off the waste counter becomes disabled.

4.6 Free Vend Menu

This menu allows the engineer to turn free vend on or off when the machine is fitted with a coin/card mechanism.

1. From the Main Menu screen use the ▼ (down) key to scroll through the menu until Free Vend is highlighted. By default, Free Vend is set to Off as indicated by the status line at the bottom of the screen.

2. To set Free Vend to On, press the ↵ (Edit) key to access the screen as shown. Press the ▼ (down) key to select On (indicated by the filled radio button). Press the ↵ (Edit) key to confirm the selection and return to the Main Menu screen.

3. Verify that the status line at the bottom of the Main Menu screen displays On when Free Vend is highlighted.

N.B. When the machine is set to Free Vend, the standby screen will display the message No Money Required. If set to Free Vend it is also necessary to turn off any monetary devices (as described on pages 45 - 46).

4.7 Coins In/Out

N.B. Coins In/Out will only be displayed on machines fitted with an MDB coin mech.

The Coins In/Out menu emulates the coin mechanism from the front end screen and allows the engineer to view information relating to the coin mechanism and eject coins from the machine without opening the door.

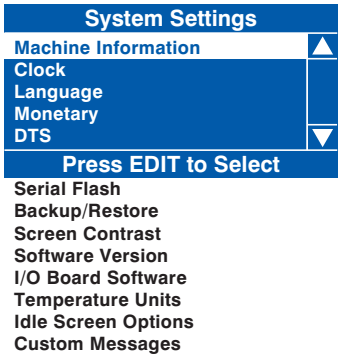
1. From the Main Menu screen use the ▼ (down) key to scroll through the menu until Coins In/Out is highlighted. Press the ↵ (Edit) key to access the menu screen which will look similar to the example shown.

Coins In/Out			
Press	Coin	Count	Value
1	0.05	34	1.70
2	0.10	18	1.80
3	0.20	9	1.80
4	0.50	8	4.00

2. From this screen the engineer can view the coin sets in the coin mechanism, the number of coins in each coin stack and the total value of the coins. To eject coins from the mechanism the engineer simply presses the relevant button on the keypad eg pressing button 4 will eject a 50p coin. The count will reduce to 7 and the value to 3.50.

4.8 System Settings Menu

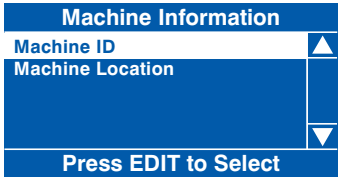
This menu allows the engineer to input text information relevant to the machine and its location, set the current time and date, change the language displayed, configure the monetary system, set and view DTS information, backup and restore machine software, view the machine and I/O board software versions installed in the machine, set temperature and idle screen display options and input custom messages.



N.B. Serial Flash sub menu is only visible when a Serial Flash card is inserted into plug J9A on the control board - see page 51.

1. Machine Information: This sub-menu allows the engineer to create a unique identification for the machine and enter its location. A combination of text and numerical data can be entered and stored via the machines keypad.

1. From the Systems Settings menu highlight Machine Information and press the ↵ (Edit) key. The LCD will display the screen as shown opposite. To update/create a Machine ID press the ↵ (Edit) key.



2. Enter a machine ID using the 0-9 drink selection keys. Press the relevant key until the required letter/number is highlighted. To correct an input error press the 0 key once. To add a space between characters, press the 0 key twice.

The keys are configured as follows:

1 = , . ? ' ; : " 1
2 = a b c 2
3 = d e f 3
4 = g h i 4
5 = j k l 5
6 = m n o 6
7 = p q r s 7
8 = t u v 8
9 = w x y z 9
0 = - \ $ @ % # & 0

N.B. To change from lower to upper case, press the START/? key.

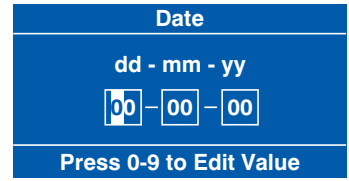
3. When complete, press the **X** (Exit) key to return to the Machine Information menu screen. Press the ▼ (down) then ↵ (Edit) keys to highlight then enter the Machine Location screen. Enter a unique machine location using the 0-9 drink selection keys as described above. When complete press the **X** (Exit) key.

2. Clock: The machine displays the current time in either 12 or 24 hour format.

Upon entry to the System Settings menu, the Clock sub menu is highlighted. Press the ↵ (Edit) key to access the Clock sub menu screen. This menu allows the engineer to set the date, time and daylight saving via 3 separate sub menus.

N.B. The current date, time and daylight saving (when highlighted) held in the machines memory are displayed in the status line at the bottom of the screen.

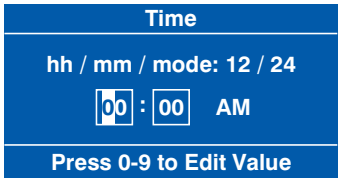
1. **Date:** Press the ↵ (Edit) key to enter the Date menu. The date is displayed in day, month, year format. To set the date, e.g. 27th January 2006, press the sequence 2-7-0-1-0-6 using the appropriate number keys on the drink selection keypad.



N.B. The text '**Press 0-9 to Edit Value**' displayed in the status line at the bottom of the screen will alternate with the text '**Press Start To Change Mode**'. Pressing the START/? key on the drink selection keypad allows the date to be displayed in month, day, year format.

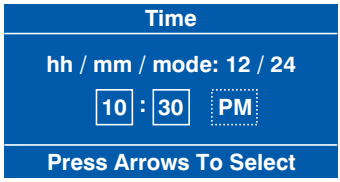
Pressing the ↵ (Edit) key will move back to the Clock menu screen and save the date to the machines memory. Confirm that the status line at the bottom of the screen displays the correct date when Date is highlighted.

2. **Time:** From the Clock menu screen press the ▼ (down) key to highlight the Time menu followed by the ↵ (Edit) key. The LCD will display the screen as shown opposite.



By default the time is displayed in 12 hour format. To enter a time of 10:30 PM press the sequence 1-0-3-0 on the drink selection keypad.

As the engineer presses the final zero, the AM value will appear within a dotted box and the text at the bottom of the LCD will now read '**Press Arrows To Select**'. Press the ▲ (up) or ▼ (down) key until PM appears in the box.



Pressing the ↵ (Edit) key will move back to the Clock menu screen and save the new time to the machines memory. Confirm that the status line at the bottom of the screen displays the correct time when Time is highlighted.

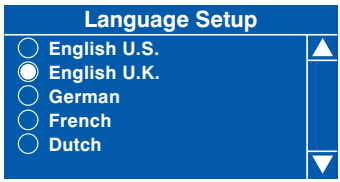
N.B. When set to 12 hour format, the program will only allow the engineer to set the numbers 0 or 1 in the first field. Once the number 24 has been entered via the ▲ (up) or ▼ (down) keys to indicate 24 hour format, the engineer can reset the first two values to reflect 10:30 PM in 24 hour format e.g. 22:30.

3. **Daylight Saving:** From the Clock menu screen press the ▼ (down) key to highlight the Daylight Saving menu followed by the ↵ (Edit) key. The LCD will display the screen as shown opposite.

By default daylight savings time is set to Off. To choose one of the available options, press the ▲ (up) or ▼ (down) key until selected (indicated by the filled radio button) followed by the ↵ (Edit) key. Ensure that the required setting is displayed in the status line at the bottom of the screen. Press the **X** (Exit) key to return to the main menu.

3. Language Setup: From this menu the engineer can specify the language that the machine will use to display messages, programming information etc. The default language for the machine is set to English U.K. To change the language setting:

1. From the System Settings menu, use the ▼ (down) key to highlight the Language Setup menu and press the ↵ (Edit) key. The LCD will display the screen as shown opposite. Using the ▲ (up) or ▼ (down) keys, select the desired language option (indicated by the filled radio button).



2. Press the ↵ (Edit) key to save the language option and return to the System Settings menu. Verify that the chosen language is displayed in the status line at the bottom of the display when Language Setup is highlighted.

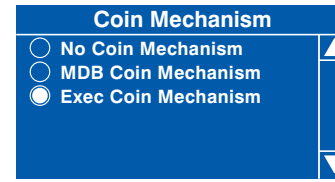
4. Monetary: From this menu the engineer can select the type of coin/card mechanism or note reader fitted to the machine, select the coin set and configure values for low change, multiple vends, credit for failed vends etc.

The Monetary menu can display up to 11 sub menus, depending on machine configuration, as listed below:

- Coin Mechanism
- Bill Validator
- Card Reader
- Bill Stack Option
- Multiple Vend Mode (Only if MDB mech. selected)
- Change Without Purchase (Only if MDB mech. selected)
- Low Change Message (Only if MDB mech. selected)
- Accept On Low Change (Only if MDB mech. selected)
- Credit for Failed Vend (Only if MDB mech. selected)
- Card Re-Value (Only if MDB card reader / key system is selected)
- Display Coin Set

1. Select The Coin Mechanism

1. From the Monetary menu highlight Coin Mechanism and press the ↵ (Edit) key. The Coin Mechanism screen allows the engineer to select one of the options shown. Using the ▲ (up) or ▼ (down) keys, select the desired coin mechanism option (indicated by the filled radio button).



2. Press the ↵ (Edit) key to save the selection and return to the Monetary menu. Verify that the chosen coin mechanism option is displayed in the status line at the bottom of the display.

N.B. An Executive Card/Key system (when fitted) is enabled when Exec Coin Mechanism is selected.

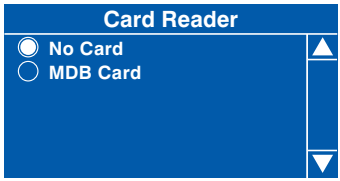
2. Select The Bill Validator

Not applicable for Evolution machines.

3. Select The Card/Key Reader (MDB Systems Only)

N.B. An Executive protocol card/key system emulates an Executive coin mechanism and is selected via the Coin Mechanism menu (see page 44).

1. From the Monetary menu press the ▼ (down) key to scroll down and highlight Card Reader and press the ↵ (Edit) key. Using the ▲ (up) or ▼ (down) keys, select the desired card reader option (indicated by the filled radio button).



2. Press the ↵ (Edit) key to save the selection and return to the Monetary menu. Verify that the chosen option is displayed in the status line at the bottom of the display.

4. Configure Bill Stack Option

Not applicable for Evolution machines.

5. Configure Multiple Vend Mode

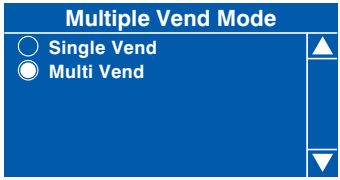
N.B. This option is only applicable when an MDB coin mechanism is fitted and configured from within the Coin Mechanism menu.

The Multiple Vend Mode option specifies how the machine will dispense change to the customer once a purchase is made. The engineer can set one of two options:

(i) **Single Vend:** Change will be returned to the customer automatically as soon as a valid selection is made.

(ii) **Multi Vend:** With this option selected the customer can make multiple vends as long as there is sufficient credit entered. In order to get change, the customer must press the coin return.

1. From the Monetary menu press the ▼ (down) key to highlight Multiple Vend Mode and press the ↵ (Edit) key. Using the ▲ (up) or ▼ (down) keys, select the desired multiple vend option (indicated by the filled radio button).



2. Press the ↵ (Edit) key to save the selection and return to the Monetary menu. Verify that the chosen option is displayed in the status line at the bottom of the display.

6. Configure Change Without Purchase Value

N.B. This option is only applicable when an MDB coin mechanism is fitted and configured from within 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.

Examples:

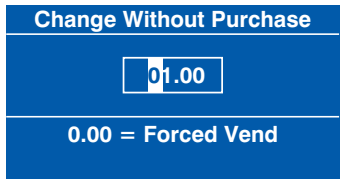
Value set to 01.00: Non-escrowed coins less than or equal to £1.00 will be changed without purchase. All escrowed coins are returned.

Value set to 00.00: 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.

To configure this value:

1. From the Monetary menu press the ▼ (down) key to highlight Change Without Purchase and press the ↵ (Edit) key. Enter the required value, e.g. press 0-1-0-0 using the drink selection keypad to set a change without purchase value of £1.00. To specify Force Vend, set a value of 00.00.



2. Press the ↵ (Edit) key to save the new value and return to the Monetary menu. Verify that the entered value is displayed in the status line at the bottom of the display when Change Without Purchase is highlighted.

7. Configure Low Change Message Value

N.B. This option is only applicable when an MDB coin mechanism is fitted and configured from within the Coin Mechanism menu.

When the total value of the coins in the coin mechanism falls below the value set in the Low Change Message menu, the standby message displayed on the LCD will read 'Use Exact Change'.

To configure this value:

1. From the Monetary menu press the ▼ (down) key and highlight Low Change Message and press the ↵ (Edit) key. Enter the required value, e.g. press 0-1-0-0 using the drink selection keypad to set a low change message value of £1.00.

2. Press the ↵ (Edit) key to save the new value and return to the Monetary menu. Verify that the entered value is displayed in the status line at the bottom of the display when Low Change Message is highlighted.

   N.B. 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. Set the Low Change Message and the Accept on Low Change values (see below) to the same figure to eliminate any chance that the customer will be short changed.

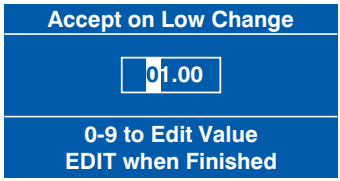
8. Configure the Accept on Low Change Value

N.B. This option is only applicable when an MDB coin mechanism is fitted and configured from within the Coin Mechanism menu.

When the total value of the coins in the coin mechanism falls below the value set in the Accept on Low Change 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 £1 coins if there is less than £1 value of coins in the coin mechanism.

To configure this value:

1. From the Monetary menu press the ▼ (down) key to scroll down and highlight Accept on Low Change and press the ↵ (Edit) key. Enter the required value, e.g. press 0-1-0-0 using the drink selection keypad to set a value of £1.00.



2. Press the ↵ (Edit) key to save the new value and return to the Monetary menu. Verify that the entered value is displayed in the status line at the bottom of the display when Accept on Low Change is highlighted.

9. Configure Credit For Failed Vend Option

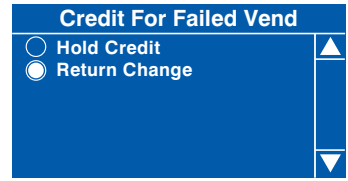
N.B. This menu is only available when an MDB coin mechanism is fitted and configured from within the Coin Mechanism menu.

This option specifies how the machine will react when a vend fails. The engineer can set one of two options:

(i) **Hold Credit:** With this option selected the customers credit is retained, allowing them to either make an alternative selection or press the coin return.

(ii) **Return Change:** With this option selected the customers change is immediately returned after a failed vend.

1. From the Monetary menu press the ▼ (down) key and highlight Credit For Failed Vend and press the ↵ (Edit) key. Using the ▲ (up) or ▼ (down) keys, select the desired option (indicated by the filled radio button).



2. Press the ↵ (Edit) key to save the selection and return to the Monetary menu. Verify that the chosen option is displayed in the status line at the bottom of the display when Credit For Failed Vend is highlighted.

10. Configure Card Revalue

Not applicable for Evolution machines.

11. Configure Display Coin Set

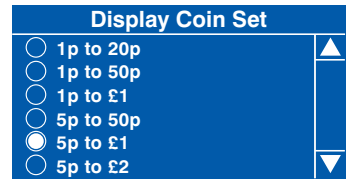
The Display Coin Set menu enables the engineer to configure the coin set to suit the coin/card mechanism or bill validator fitted to the machine. This ensures that the message displayed in standby mode, correctly indicates to the customer which coins (or card/key) may be entered.

The available coin sets are:

1.	1p to 20p	2.	1p to 50p	3.	1p to £1	4.	5p to 50p
5.	5p to £1	6.	5p to £2	7.	5c to 1€	8.	5c to 2€
9.	50c to 1€	10.	Card	11.	Key	12.	Money

To configure the coin set:

1. From the Monetary menu press the ▼ (down) key to highlight Coin Set and press the ↵ (Edit) key. Using the ▲ (up) or ▼ (down) keys, select the desired coin set, card or key (indicated by filled radio button).

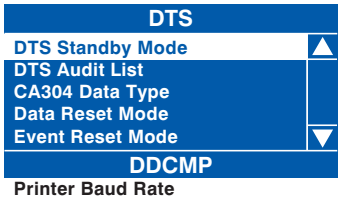


2. Press the ↵ (Edit) key to save the new coin set and return to the Monetary menu. Verify that the chosen set is displayed in the status line at the bottom of the display when Coin Set is highlighted.

5. DTS: Entry into this menu allows the engineer to configure the machine in order 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) - Overview: The standard 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 engineer can be sure that all his equipment can be read out and programmed by means of the same handheld terminal.

1. **DTS Standby Mode:** Scroll down and highlight DTS from the System Settings menu. Press the ↵ (Edit) key to access the menu. The LCD will display the screen as shown. The first sub-menu DTS Standby Mode is highlighted with its current state (DDCMP) shown in the bottom line.

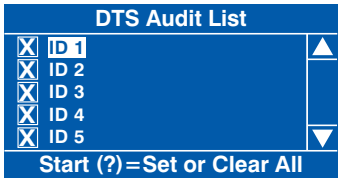


The machine is factory set to enable data transfer via the optical DDCMP link. To change this to the DEX setting, press the ↵ (Edit) key to access the menu and the ▲ (up) key to select DEX (indicated by the filled radio button. Press the ↵ (Edit) key to save the selection.

N.B. Even if the default is set to DDCMP, once the controller detects a DEX activity, it will automatically switch to the other mode. However, setting the default to the correct protocol will speed up response time.

The engineer can now download data from the machine by plugging a DEX enabled device into the DEX port (J36) on the I/O board, located on the rear of the door.

2. **DTS Audit List:** From this sub-menu the engineer can select which data is transferred from the machine to a DEX/DDCMP data carrier. Scroll down and highlight DTS Audit Data. Press the ↵ (Edit) key to access the menu. The LCD will display the screen as shown.



All data and events fields within a vending machine are assigned a unique code determined by the Standard. From this sub-menu the engineer can choose to

allow all fields to be available for download by pressing the START/? key or scrolling through the list and adding an X to the required fields.

3. **CA304 Data Type:** This sub-menu determines whether the the data will be displayed as currency or numerical, 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. When set to numeric it will read 3.

4. **Data Reset Mode:** This field can be set to either AUTO or SAVE from within the sub-menu. When set to AUTO, all resettable data will be reset after a successful read.

5. **Event Reset Mode:** This field can be set to either AUTO or SAVE from within the sub-menu. When set to AUTO, all event data will be reset after a successful read.

6. **Printer Baud Rate:** This allows the engineer to set the correct baud rate for a serial printer if one is to be used. It is important for this to be set correctly to ensure successful data transfer.

6. Serial Flash: This menu only becomes available when a serial flash card is inserted into plug J9A on the control board. It allows the engineer to upgrade the machine software or backup data. The following operations are supported:

- View data information
- Delete data
- Load data into the machine
- Save data back from the machine

The view, delete and load options will only become available when data is held on the card. Also, when backup data is added, a description can be entered to aid retrieval. The following types of data are supported:

- **Firmware** - The operating system and default factory machine set-up data
- **Default Data** - The default factory machine set-up data - eg canister and button layout, default run times etc.
- **Configuration Data** - Any machine set-up data that can be changed by the user
- **Configuration and Sales Data** - All sales data plus the set-up data that can be changed by the operator
- **Language Data** - Not currently used

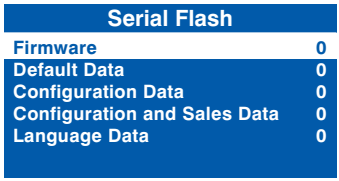
The serial flash card can hold the following amounts of data - 1 copy of the firmware, ***OR*** 4 copies of default data, and 16 copies of Config data, and 16 copies of config and sales data. The following example describes how the engineer can download Config.

Data to the serial flash card.

IMPORTANT: Before inserting the serial flash card, ensure machine is disconnected from the power supply.

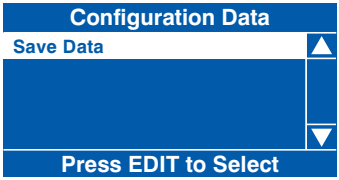
1. Open the door of the machine. Release the catch and open the monetary door. Remove the control board cover and insert the serial flash card into plug J9A. Close the door and restore power to the machine.

2. Enter the engineers program as previously described. Access the Systems Settings menu and using the ▼ (down) key highlight Serial Flash. Press the ↵ (Edit) key to enter the sub program. If an empty card is being used the LCD will display the screen as shown.

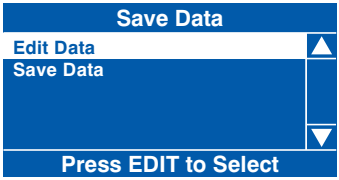


3. Using the ▼ (down) key highlight Configuration Data then press the ↵ (Edit) key to enter the sub program. As the card is empty of data the LCD will display the screen as shown.

   N.B. When a card with data loaded is used the menu will also include Image Info, Load Data and Delete Data along with the Save Data menu



4. To save data to the card press the ↵ (Edit) key. The Save Data screen will be displayed with 16 empty data fields available. Press the ↵ (Edit) key once more to enter the menu screen as shown. From this menu the engineer can either enter the Edit Data Screen and enter a description before saving the data (see page 43 for details) or scroll down and simply save the data.



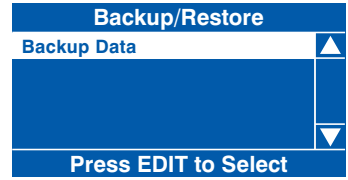
5. Press the ↵ (Edit) key to save the data to the card. The LCD will display the screen as shown before exiting to standby mode. Disconnect the machine from the power supply and open the door. Unplug the serial flash card and replace the control board cover. Close the monetary door and the door of the machine before restoring power to the machine.

7. Backup/Restore: This menu allows the engineer to manually backup information stored in the machines memory to the controller board.

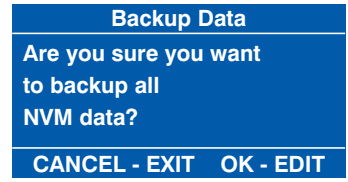
N.B. It is also possible for the engineer to programme Backup as a timed event, thus

ensuring even greater security for the information stored in memory. This ensures that the machine can easily be restored to its last operational state should the information be lost through corruption or power failure. For full details see page 60.

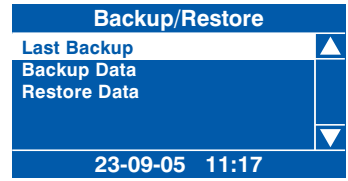
1. Scroll down and highlight Backup/Restore from the System Settings menu. Press the ↵ (Edit) key to access the menu. If this is the first time that a backup has been selected the LCD will display the screen as shown.



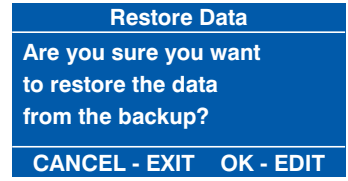
2. Press the ↵ (Edit) key to access the menu. The LCD will display the screen as shown. To backup the memory press the ↵ (Edit) key. After a few seconds the machine will beep once and the **Initialising** screen will be displayed before the machine returns to standby mode, ready to vend.



3. When accessing the Backup/Restore sub-menu after backups of the memory have been made, the information changes and the engineer is presented with the screen as shown. The first sub-menu, Last Backup is highlighted with the date and time this occurred displayed at the bottom of the screen.

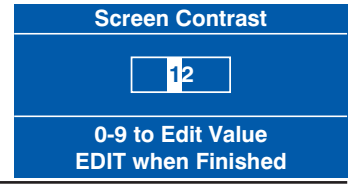


4. To restore the machines memory to the last available backup, scroll down using the ▼ (down) key, highlight Restore Data and press the ↵ (Edit) key to access the menu. The LCD will display the screen as shown. Press the ↵ (Edit) key to restore the backed up data. After a few seconds the machine will beep once and the Initialising screen will be displayed before the machine returns to standby mode, ready to vend.



8. Screen Contrast: Evolution machines are factory set with a default screen contrast setting of 12 which should be suitable for most installations. For installations with special considerations, e.g. very low or high ambient light levels, the engineer can adjust the screen contrast via this menu to improve screen legibility.

1. From the System Settings menu, scroll down using the ▼ (down) key to highlight the Screen Contrast menu and press the ↵ (Edit) key. The LCD will display the screen as shown opposite. Enter a new value between 05 - 20 using the



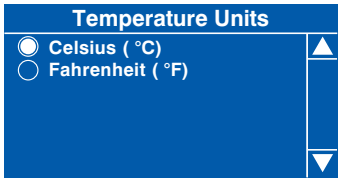
drink selection keypad.

2. Press the ↵ (Edit) key to save the new value and return to the System Settings menu. Verify that the number is displayed in the status line at the bottom of the display when Screen Contrast is highlighted.

9. Software Version: The Software version menu displays the version number of the software installed and is for information only. The menu also displays the current time and date.

10. I/O Board Software: This menu displays the version number of the I/O board software installed and is for information only.

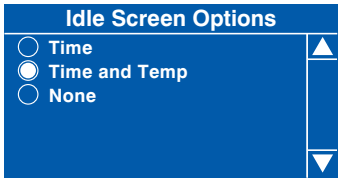
11. Temperature Units: This menu allows the engineer to change the way that the temperature is displayed, either °C or °F, on the LCD when the machine is in standby mode. Use the ▲ (up) or ▼ (down) keys to set the required option followed by the ↵ (Edit) key to store/save it (indicated by the filled radio button).



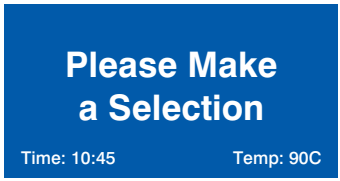
12. Idle Screen Options: This menu allows the engineer to configure the LCD so that it displays either the time or the time and water temperature with the standby message when idle. To configure the idle screen options, proceed as follows:

1. From the System Settings menu press the ▼ (down) key to highlight Idle Screen Options and press the ↵ (Edit) key to access the menu.

2. Press the ▼ (down) key to highlight the required option, eg Time and Temp (indicated by the filled radio button). The LCD will display the screen as shown opposite. Press the ↵ (Edit) key to return to the System Settings screen. With Idle Screen Options highlighted, verify that the status line confirms the option is set to Time and Temp.



3. Press the **X** (Exit) key until the machine exits the engineers program into standby mode. The LCD will display the standby message with the time and date as shown.



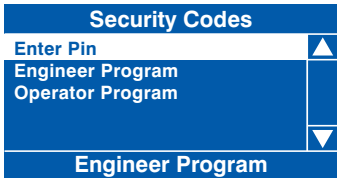
4.8 Security Codes Menu

This menu allows the engineer to change both the operator and engineer program

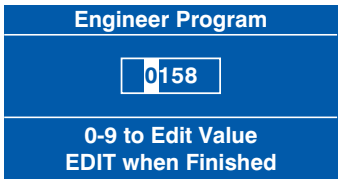
entry codes for the machine. These factory default codes are 1-1-1-1 (engineers) and 2-2-2-2 (operators). If either code is changed ensure that the new code is recorded and kept in a secure place.

To change either engineer or operator program entry codes, proceed as follows:

1. From the Main Menu screen press the ▼ (down) key until Security Codes is highlighted then press the ↵ (Edit) key to access the menu screen. The LCD will display the screen as shown.



2. To change the engineer entry code, press the ▼ (down) key to highlight Engineer Program then press the ↵ (Edit) key. The LCD will display the Edit Pin screen as shown. Enter a new pin number using the drink selection keypad and press the ↵ (Edit) key.



N.B. This security number is not displayed. Be sure to record the new pin code and keep it in a safe place.

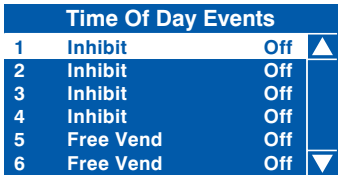
3. Highlight Operators Program and follow the above procedure to change the operator code. Ensure that all operators who use the machine are given the new code.

4.9 Timed Events Menu

1. Time of Day Events: From this menu the engineer can set up inhibited vend periods, free vend periods and discounted vend periods.

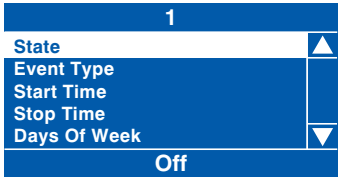
The following example describes how the engineer can program the machine to free vend specific drink selections between 10.30 am and 2:30 pm on week days.

1. From the Main Menu press the ▼ (down) key until Timed Events is highlighted then press the ↵ (Edit) key twice to access the Time of Day menu screen. The LCD will display the screen as shown.

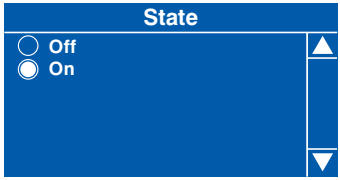


N.B. Although event 1 is shown as Inhibit, it is possible for the engineer to set event 1 as the first Free Vend (or Discounted Vend) period.

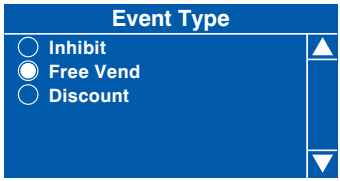
2. Press the ↵ (Edit) key to access the menu. The LCD will display the screen as shown. By default the current State is set to Off as indicated by the status line at the bottom of the screen.



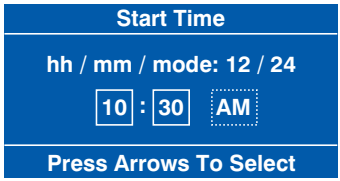
3. Press the ↵ (Edit) key to access the State sub menu. Using the ▼ (down) key, set the state to On (indicated by the filled radio button). Press the ↵ (Edit) key to return to the Event 1 screen. Verify that the status line confirms the State is set to On.



4. Press the ▼ (down) key to highlight Event Type and press the ↵ (Edit) key to access the menu. Using the ▼ (down) key, set the Event Type to Free Vend (indicated by the filled radio button). Press the ↵ (Edit) key to return to the Event 1 screen. Verify that the status line confirms the Event Type is set to Free Vend.

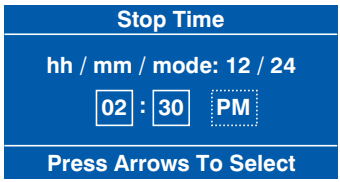


5. Press the ▼ (down) key to highlight Start Time and press the ↵ (Edit) key. From this menu the engineer sets the time at which the free vend period will start. Press the sequence 1-0-3-0, using the drink selection keypad, to set the time. If necessary use the ▲ (up) or ▼ (down) key until AM appears in the dotted box.



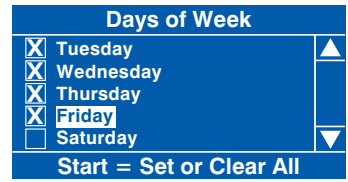
6. Press the ↵ (Edit) key to return to the Event 1 screen. Verify that the correct start time is displayed in the status line at the bottom of the screen.

7. Press the ▼ (down) key to highlight Stop Time and press the ↵ (Edit) key. From this menu the engineer sets the time at which the free vend period will end. Press the sequence 0-2-3-0, using the drink selection keypad, to set the time. If necessary use the ▲ (up) or ▼ (down) key until PM appears in the dotted box.



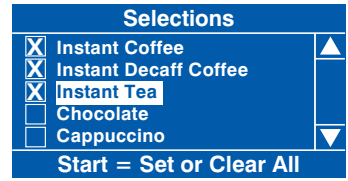
8. Press the ↵ (Edit) key to return to the Event 1 screen. Verify that the correct stop time is displayed in the status line at the bottom of the screen.

9. Press the ▼ (down) key to highlight Days Of Week and press the ↵ (Edit) key. The engineer can now set the days on which the free vend period will take place. Upon entry to the sub menu, the first day, Monday will be highlighted with an empty box. Pressing the ↵ (Edit) key will select the day, indicated by an X appearing in its adjacent box.



   Using the ▼ (down) key and the ↵ (Edit) key, highlight and select additional days of the week that the free vend period will take place. When complete press the **X** (Exit) key to return to the Event 1 screen.

10. Press the ▼ (down) key to highlight Selections and press the ↵ (Edit) key. The engineer can now set the drink selections that will be available during the free vend period. Upon entry to the sub menu, the Freshbrew Coffee selection will be highlighted with an empty box. Pressing the ↵ (Edit) key will select the day, indicated by an X appearing in its adjacent box.



   Using the ▼ (down) key and the ↵ (Edit) key, highlight and select additional drink selections that will be available during the free vend period.

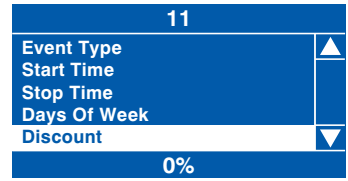
   Tip - Items 9 & 10: To set the required days/selections quickly, press the START/? key to check all boxes, then using the ▼ (down) key, scroll and highlight the days/selections not required and press the ↵ (Edit) key to remove the X from the corresponding box.

11. Press the **X** (Exit) key three times to return to the Timed Events Menu.

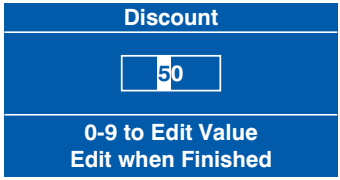
Using the previous sequence the engineer can quickly and easily set up additional free vend periods and inhibit vend and/or discount vend periods if required.

12. When setting up a discount price period it is necessary for the engineer to enter a value for the discount. Follow the procedure as described previously to enter a discount vend period and set the state, start time, stop time and days of the week that the event will occur.

13. The engineer can now enter a Discount menu in order to enter a discount value as a percentage (%). The LCD will display a screen similar to the one shown opposite. With Discount highlighted, press the ▼ (Edit) key to access the Discount screen.



14. To enter the discount value, e.g. 50%, press the sequence 5-0 using the appropriate number keys on the drink selection keypad. Press the ↵ (Edit) key to return to the 11 (Discount) screen and verify that the status line displays the discount percentage value entered.



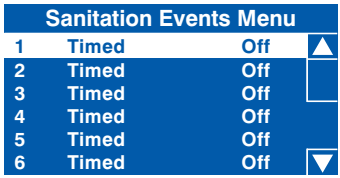
N.B. When machine is fitted with a coin mechanism, please ensure that discount value entered can be supported by the coin tubes.

15. Press the X (Exit) key three times to return to the Main Menu screen.

2. Sanitation Events Menu: This sub menu allows the engineer to select periods when the machine will automatically flush through the water system via the 6 timed and 6 post vend flush periods available. The default setting for all flush periods is Off.

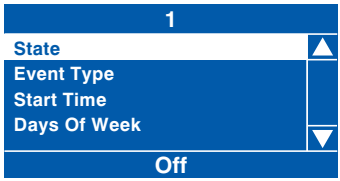
1. From the Main Menu press the ▼ (down) key until Timed Events is highlighted then press the ↵ (Edit) key.

2. Once in the Timed Events menu press the ▼ (down) key to highlight Sanitation Events Menu then press the ↵ (Edit) key. The LCD will display the screen as shown.

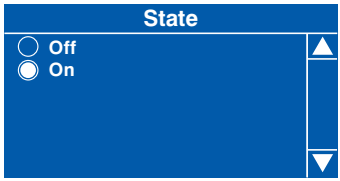


The following example describes how the engineer can program a timed event to flush the water system at 07.00 am, everyday.

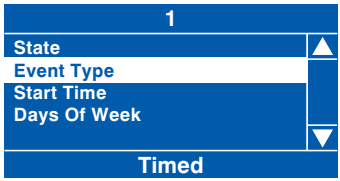
1. To set up the first timed flush, press the ↵ (Edit) key to access the 1 Timed sub menu. The LCD will change and display the screen as shown. By default the current State is set to Off as indicated by the status line at the bottom of the screen.



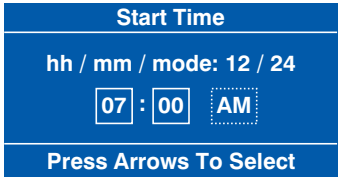
2. Press the ↵ (Edit) key to access the State sub menu. Using the ▼ (down) key, set the state to On (indicated by the filled radio button). Press the ↵ (Edit) key to return to the 1 (Timed) screen. Verify that the status line confirms the State is set to On.



3. Press the ▼ (down) key to highlight Event Type. By default the event is set to Timed as indicated by the text displayed in the status line at the bottom of the screen. Therefore it is not necessary for the engineer to enter this sub menu.

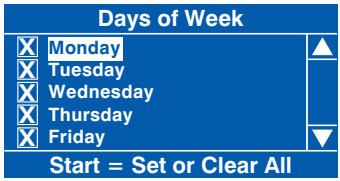


4. Press the ▼ (down) key to highlight Start Time and press the ↵ (Edit) key. From this menu the engineer sets the time at which the the sanitation event will start. Using the drink selection keypad, press the sequence 0-7-0-0 to set the time. If necessary use the ▲ (up) or ▼ (down) key until AM appears in the dotted box.



5. Press the ↵ (Edit) key to return to the 1 (Timed) screen. Verify that the correct start time is displayed in the status line at the bottom of the screen.

6. Press the ▼ (down) key to highlight Days Of Week and press the ↵ (Edit) key. From this menu the engineer can set the days on which the sanitation event will take place. To select everyday (Monday - Sunday), press the START key on the drink selection keypad. The program automatically places an X in every box indicating that each day is selected.

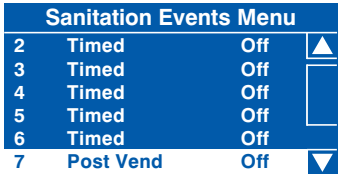


N.B. To select individual days, scroll through the menu using the ▲ (up) or ▼ (down) keys until the required day is highlighted. Press the ↵ (Edit) key to select the day, indicated by an X appearing in its adjacent box.

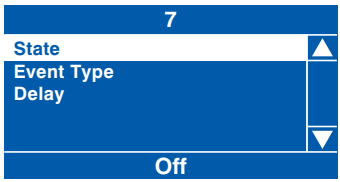
7. Press the **X** (Exit) key three times to return to the Timed Events Menu. Using the sequence described above the engineer can quickly and easily set up additional sanitation event periods for the machine.

It is also possible for the engineer to program up to six post vend sanitation events. The following example describes how the engineer can program a post vend event to flush the water system 12 minutes after each vend.

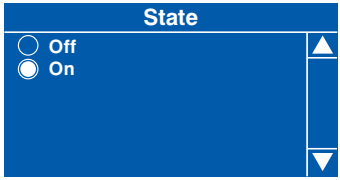
1. From the Main Menu press the ▼ (down) key until Timed Events is highlighted then press the ↵ (Edit) key. Once in the Timed Events menu press the ▼ (down) key to highlight Sanitation Events Menu then press the ↵ (Edit) key. Press the ▼ (down) key until the first Post Vend event is highlighted. The LCD will display the screen as shown.



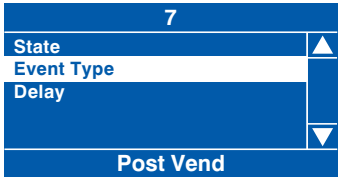
2. With Post Vend highlighted, press the ↵ (Edit) key to access the 7 Post Vend sub menu. The LCD will change and display the screen as shown. By default the current State is set to Off as indicated by the status line at the bottom of the screen.



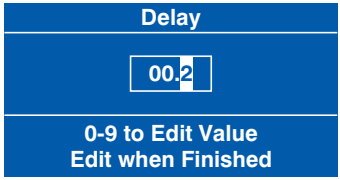
3. Press the ↵ (Edit) key to access the State sub menu. Using the ▼ (down) key, set the state to On (indicated by the filled radio button). Press the ↵ (Edit) key to return to the 7 (Post Vend) screen. Verify that the status line confirms the State is set to On.



4. Press the ▼ (down) key to highlight Event Type. By default the event is set to Timed as indicated by the text displayed in the status line at the bottom of the screen. Therefore it is not necessary for the engineer to enter this sub menu.



5. Press the ▼ (down) key to highlight Delay. The status line indicates the factory default delay which is set to 0.1hrs (6 minutes). To change the value so that the machine will self clean 12 minutes after a drink is vended press the ↵ (Edit) key to access the Delay sub menu. The LCD will display the screen as shown. Using the drink selection keypad, press the sequence 0-0-2 to set the new delay.



   Press the ↵ (Edit) key and verify that the status line confirms that Delay (when highlighted) is set to 0.2hrs.

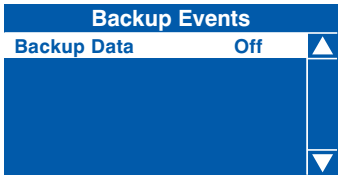
6. Press the **X** (Exit) key three times to return to the Timed Events Menu. Using the sequence described above the engineer can quickly and easily set up additional post vend sanitation event periods for the machine if required.

   N.B. A sanitation event, either timed or post vend, dispenses water into the drip tray. If the tray reaches its full limit the machine will be 'Out Of Service'.

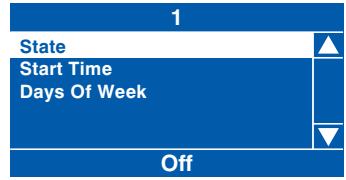
3. Backup Events Menu: This sub menu allows the engineer to program the machine to perform an automatic backup of all user configurable settings and sales data stored in its memory. The default setting for Backup Events is Off.

1. From the Main Menu press the ▼ (down) key until Timed Events is highlighted then press the ↵ (Edit) key.

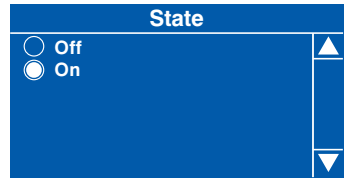
2. Once in the Timed Events menu press the ▼ (down) key twice to highlight Backup Events Menu then press the ↵ (Edit) key. The LCD will display the screen as shown.



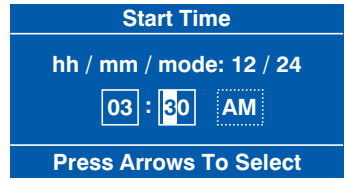
3. Press the ↵ (Edit) key to access the 1 Backup Data sub menu. The LCD will change and display the screen as shown. By default the current State is set to Off as indicated by the status line at the bottom of the screen.



4. Press the ↵ (Edit) key to access the State sub menu. Using the ▼ (down) key, set the state to On (indicated by the filled radio button). Press the ↵ (Edit) key and verify that the status line confirms the State is set to On.

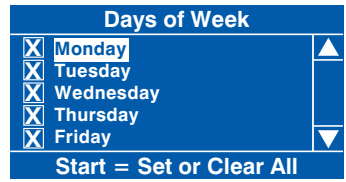


5. Press the ▼ (down) key to highlight Start Time and press the ↵ (Edit) key. Using the drink selection keypad, set the time at which the the Backup event will start. If necessary use the ▲ (up) or ▼ (down) key until AM appears in the dotted box.



6. Press the ↵ (Edit) key and verify that the correct start time is displayed in the status line at the bottom of the screen.

7. Press the ▼ (down) key to highlight Days Of Week and press the ↵ (Edit) key. From this menu the engineer can set the days on which the Backup event will take place. To select everyday (Monday - Sunday), press the START key on the drink selection keypad. The program automatically places an X in every box indicating that each day is selected.



N.B. To select individual days, scroll through the menu using the ▲ (up) or ▼ (down) keys until the required day is highlighted. Press the ↵ (Edit) key to select the day, indicated by an X appearing in its adjacent box.

Section 5 - Service Keypad Functions

Evolution machines are fitted with a service keypad mounted on the rear of the door (photo). This keypad contains the Engineers Program entry key and also allows the engineer/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 engineer to utilise the selection keypad and LCD mounted on the front of the door to access data. Please refer to Section 3 - Programming Mode for details of selection keypad layouts and functions.

When the safety key is inserted into the door switch and the machine is switched on, the service keypad allows the engineer to carry out the following functions:

5.1 Switch 1 - Program Entry

This switch allows the engineer to access the Engineers Program (Section 4, page 18).

5.2 Switch 2 - Brewer Open (Freshbrew Models)

This switch operates the brewer fitted to freshbrew machines and allows the engineer to open the brewer in order to replace the filter paper used in paper type brewers or remove the brewer chambers/wipe arms assembly of paperless brewers for cleaning purposes.

5.3 Switch 3 - Rinse/Flush

1. The flush sequence operates automatically and rinses the mixing bowls. Before the sequence begins, the system waits until the water in the boiler is at the correct temperature determined by the thermistor.

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 hot water valve and the corresponding whipper is switched on in sequence for a pre-set flush time. Once the flush cycle is complete the machine returns to standby mode, ready to vend.

4. To flush the machine:

    a. Open the front door of the machine and insert the safety key.

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.

b. Press and release the **Flush** switch (3). The flush sequence begins.

c. Empty the waste water container when complete.

5.4 Switch 4 - Brewer Clean (Freshbrew Models)

1. The brewer clean switch allows 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 cleaning cycle is complete, the boiler refills and when the water is at the correct temperature, the machine returns to standby mode, ready to vend.

4. To clean the brewer:

   a. Open the front door of the machine.

   Dual Paperless Brewer: Using the clamp supplied, close the tea outlet tube as shown. Insert the safety key.

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

   b. Pour the recommended amount of destaining fluid directly into the top of both brewer chambers. Remove the clamp from the tea dispense pipe.

   c. Press and release the Brewer Flush switch (4). The sequence will begin and the LCD will display the message as shown.

   d. Repeat step 'c' until all traces of the cleaning solution have been removed from the brewer chambers.

   e. Empty the waste water container when complete.

5.5 Switch 5 - View Counters

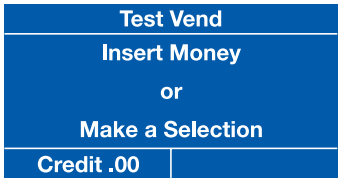
The **View Counters** switch (5) allows the engineer to access the Data Recall Menu. Entry into this menu allows the engineer to view Non-Resettable and Resettable Sales Data, view data relating to Timed Events and Identification Numbers of installed

components and (if feature enabled) view SureVend™ assisted vend information. The Resettable Sales Data and SureVend™ Data menus contain an extra sub-menu which allows the engineer to delete the current data from the machines memory. Full details relating to this menu and its contents can be found on pages 18 - 21.

5.6 Switch 6 - Test Vend

The **Test Vend** switch (6) allows the engineer to vend a drink from the machine to ensure correct operation after cleaning or maintenance.

1. When the switch 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 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.

5.7 Switch 7 - Cup Test

This switch allows the engineer to test the operation of the cup drop unit after refilling the cup stacks. When the switch is pressed the cup drop solenoid is operated and a cup is ejected from the cup drop unit. This function ensures that the mechanism is working correctly.

5.8 Switch 8 - Park Head

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

5.9 Switch 9 - Boiler Fill (Espresso Machines)

When this switch is pressed, the machine pumps a measured amount of water through the system - approximately 400ml, heating it as it does so. This ensures that heated water is immediately available when a drink is selected. This switch 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.

5.10 Switch 10 - Machine Cool Down (Espresso Machines)

This switch allows the engineer to purge water through the pressure boiler when system maintenance is required. When the switch is pressed, a fixed amount (370 ml)

is dispensed from the system. Ensure a container is placed under the dispense head to collect the water. When complete the LCD will display the message '**Machine Cooled**' and all switch inputs are disabled. Once the power to the machine is disconnected the engineer can then work safely on the water system.

5.11 Switch 11 - CoEx® Tablet Clean (Espresso Machines)

This switch 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. Proceed as follows:-

1. Open the front door of the machine and insert the safety key to restore power to the machine.

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

2. Press and release button 11 on the service keypad. The LCD will display the message '**Please Place Cleaning Tablet in Brewer**'.

   Take one cleaning tablet (supplied in packs of 30 - CMS part no. ZC10598000) and place it into the brewer piston chamber as shown.

3. Press the START/? key on the drink selection keypad to begin the CoEx® tablet cleaning routine.

4. The cleaning cycle lasts approximately 7 minutes and dispenses 850 ml of water through the dispense head. The LCD will display the message '**Cleaning in Progress**' throughout the cleaning cycle.

Safety First! Keep hands clear of the brewer mechanism during the cleaning routine.

5. When the cleaning cycle is complete the LCD will display the message 'Cleaning Cycle Complete'. Press the **X** (Exit) key on the drink selection keypad to return the machine to standby mode. Empty the water from the container. Remove the safety key and close the front door.

5.12 Switch 12 - Reset Waste Counter (F/Brew & Espresso Machines)

IMPORTANT: 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

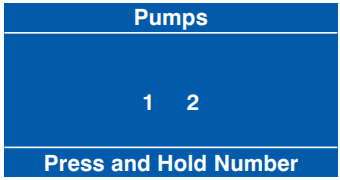
the counter has been reset to zero.

5.13 Switch 13 - Syrup Prime (Still/Carbonated Machines)

This switch allows the engineer to prime the syrup selections after replacing a syrup container.

1. 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 selection decals.

2. Prime the syrup selections ready for use. Insert the safety key into the door switch. The machine is now **ON**. When the machine enters standby mode, press button 13 on the service keypad. The LCD will display the screen opposite.



   N.B. Ensure that the waste bucket is empty and in place before priming the pumps

3. To prime syrup pump 1, press and hold button 1 on the drink selection keypad until the drink 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.

Section 6 - The Vend Cycle

6.1 Standby Mode

In standby mode the machine is idle, awaiting input from the drink selection keypad. The LCD will display to the customer one of a number of messages indicating the credit mechanism of the machine, the coin set, the time and if appropriate water temperature. The messages displayed are determined by the type of coin system which has been programmed via the System Settings menu (Section 4, page 45).

The credit mechanism is indicated by one of the following prompts:

1. **'No Money Required'** - indicates that a free vend tariff is in force.
2. **'Please Insert Card'** - indicates that a card system is attached.
3. **'Please Insert Coins'** - indicates that a coin mechanism is connected.
4. **'Please Insert Key'** - indicates that the machine is fitted with a key system.

In addition, the prompts 'Exact Change Please' or 'No Change Given' inform the customer whether change is available. If the mechanism is set to acceptor, the 'No Change Given' message will always be displayed. If the mechanism is set to change-giver, the prompt will depend upon how full the change tubes are. For more information please refer to the manual supplied with the change-giver.

The coin set accepted by the coin mechanism is also displayed. This is pre-set in the controller and outlined in the section covering the programming of the coin set in the engineer's program.

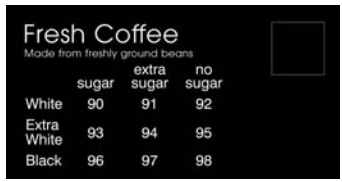
6.2 Selecting A Drink

Evolution machines are available with either a numeric keypad or an intuitive build a drink interface. Both selection methods allow the user to produce a drink to their preferred taste and strength.

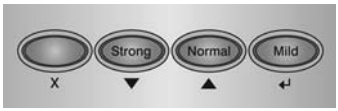
1. Selecting A Drink - Numeric Keypad

1. Drink selections are made by pressing the appropriate numbered buttons on the keypad which relate to the selections displayed on the drinks menu panel.

2. As an example, in order to obtain a fresh coffee selection made from fresh ground beans with extra sugar and extra white from an espresso machine set to '**Free Vend**', the customer presses button 9 followed by button 4 on the keypad. The LCD will display the number selected.



3. The **Strong**, **Normal** and **Mild** buttons incorporated into the keypad allow further options to suit the customers personal preference.



N.B. If a strength option is not selected within five seconds of the drink selection, the machine will automatically vend a Normal strength selection.

4. 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. Whilst this operation is in progress the LCD will display the screen shown opposite.

2. Selecting A Drink - Build A Drink

Drink selections are made by pressing the appropriate selection button on the keypad and then utilising the keypad selection buttons and the LCD display to alter the drink strength and add milk/sugar to suit the customers personal preference. When in standby mode, all drink selection buttons will be lit indicating that the drink is available to be selected. At this time the Milk, Sugar and Start buttons are not lit.

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

1. Press selection button 3, **Freshbrew Tea** on the keypad. All of the other selections buttons will be extinguished, the Milk, Sugar and Start buttons will light up and the machine exits from standby mode. The LCD will display the screen as shown opposite.

N.B. The default strength setting for this drink selection is **Normal** as shown.

2. To obtain a **Strong** or **Mild** beverage it is necessary to press the current drink selection button. Pressing once will toggle to the Strong selection. Pressing the button again will toggle to the **Mild** selection.

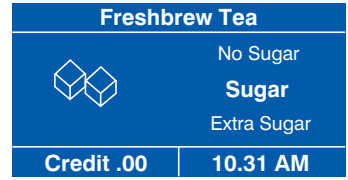
Pressing the current drink selection button again will revert to the Normal screen.

3. If milk and/or sugar is required, it is necessary to press the corresponding button on the keypad for each selection. When the Milk button is pressed the LCD changes and displays the default screen as shown opposite.

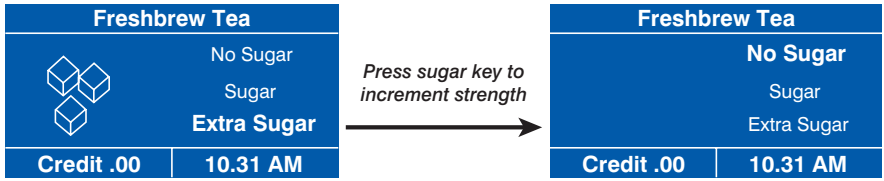
4. If **Extra Milk** is required the customer presses the milk button a second time. A third press will display the **No Milk** selection.

Pressing the milk button again will revert to the Milk selection.

5. If the customer requires sugar it is necessary to press the sugar button. The LCD changes and displays the default screen shown opposite.



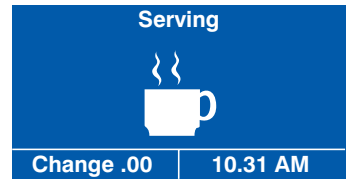
6. If **Extra Sugar** is required the customer presses the sugar button a second time. A third press will display the **No Sugar** selection.



Pressing the sugar button again will revert to the Sugar selection.

7. Once the required drink has been selected, press the Start button on the keypad. All lit buttons will be extinguished apart from the drink selection button which flashes indicating that the drink is being vended.

   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. Whilst this operation is in progress the LCD will display the screen shown opposite.

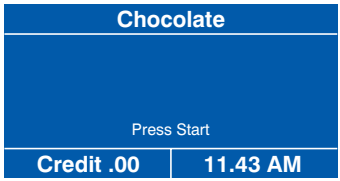


8. After the beverage has been dispensed the LCD will display the message **Thank**

You and the machine will beep once. The message on the display will change to read **Please remove cup**. The drink can then be carefully removed from the dispense area and the machine will return to standby mode.

9. Certain drink selections do not allow the strength option to be selected or milk added. For example, if the customer presses the **Cappuccino** selection button, all of the other selection buttons will be extinguished, the Sugar and START buttons will light up and the LCD will display the screen opposite. The customer can either press the START button to vend the drink or first press the sugar button in order to add sugar to their taste as described above.

10. Other drink choices do not allow the strength option or milk/sugar to be selected. For example, if the customer presses the **Chocolate** selection button, all of the other selection buttons will be extinguished, the START buttons will light up and the LCD will display the screen opposite. The customer simply presses the START button and the machine will vend the drink as described above.



3. Selecting A Drink - Cold Drink Selections

Evolution machines may be fitted with either a chiller or carbonator unit allowing cold water and flavoured drinks to be vended, either still or both still and sparkling.

The following example describes how to vend a cold flavoured drink from an Evolution machine fitted with a carbonator unit.

1. Press the selection button for the cold flavoured drink required on the keypad. All of the other drink selection buttons will be extinguished, the START button will light up and the machine exits from standby mode. The LCD will display the screen as shown opposite.

N.B. The default setting for cold drink selections is Still as shown.

2. To obtain a Sparkling drink press the current drink selection button. Pressing the button again will revert back to the Still setting.

3. Once the drink has been selected, press the START button on the keypad. The drink selection button will flash indicating that the drink is being vended. 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. Whilst this operation is in progress the LCD will display the "Serving" screen.

4. After the cold drink has been dispensed the LCD will display the message Thank You and the machine will beep once. The message on the display will change to read Please remove cup. The drink can then be removed from the dispense area and the machine will return to standby mode.

6.3 Replacing/Updating Drink Selection Decals

1. Numeric Keypad Models

Self adhesive drink selection and pricing decals are mounted onto the main graphic panel which is secured behind a removable transparent cover. To update drink pricing or replace drink description decals, proceed as follows:

1. Open the front door of the machine. Supporting the transparent graphic cover with your right hand, carefully undo and remove the three knurled thumb screws from the rear of the door which secure the graphic cover support strip.

2. Carefully remove the support strip, graphic cover and printed graphic from the machine. Place the graphic face-up on a clean, flat surface.

3. **Updating drink pricing:** Carefully remove the previous price decals from the drink selection decals. Update the prices where necessary using new self adhesive decals. (Refer to Spare Parts Section for part numbers).

4. **Updating drink selections and pricing:** When updating selection decals and prices it may be necessary to use a new graphic panel. These are available as spares from the manufacturer.

Peel the relevant drink selection decals from their backing sheet and apply to the graphic panel using the printed guides as shown (photo).

Important: Ensure that drink selections and numbering used relate to drink choices programmed into the machine software.

Apply price decals as described above.

5. Refit the printed graphic, transparent cover and graphic support strip to the door. Ensure that the transparent cover is correctly located in the fixed support strip before securing the removable support strip with the three knurled thumb screws.

6. Close the front door and ensure that the machine returns to standby mode.

2. Build A Drink Models

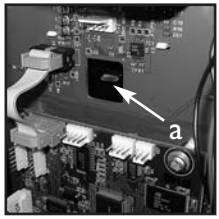
Self adhesive drink selection and pricing decals are mounted onto a paper backing sheet which is secured behind a transparent clip-in cover. To update drink pricing or replace drink description decals, proceed as follows:

1. Open the front door of the machine. Release the catch securing the coin mechanism cover and swing the cover to its open position.

2. Carefully remove the main controller board cover. Loosen the two screws above the keyhole slots which secure the cover and lift the cover out of the machine.

3. Referring to the photograph, carefully press down the snap fit clip (a) to release the transparent decal cover.

   Remove the transparent cover and decal sheet from the door moulding. Place the decal sheet face-up on a clean, flat surface.



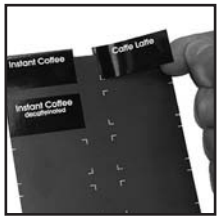
4. **Updating pricing:** Carefully remove the previous price decals from the drink selection decals. Update the prices where necessary using new self adhesive decals (Refer to Spare Parts Section for part numbers).

5. **Updating drink selections and pricing:** When updating selection decals and prices it will be necessary to use a new backing sheet. These are available as spares from the manufacturer.

   Peel the relevant drink selection decals from their backing sheet (part no. PR10233000 & PR10918000) and apply to the backing sheet using the printed guides as shown opposite.

   Important: Ensure that drink selections used relate to drink choices programmed into the machine software.

   Apply price decals as described above.



6. Place the decal carrier behind the transparent decal cover and refit complete assembly to the door. Ensure decal cover locating lugs are correctly located before pushing the snap fit clip into place.

7. Replace the main controller board cover and tighten the screws to secure. Close the coin mechanism cover ensuring that the catch is secured correctly. Close the front door and ensure that the machine returns to standby mode.

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 - 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.

5. 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 opposite.

N.B. An illustration showing the parts breakdown for the heater tank is included in Section 12 - page 161.

7.3 Hot Water System - Espresso (B2C) Machines

The water system fitted to espresso machines is described in detail in Section 8 of this manual (8.2 - System Overview).

7.4 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 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 in the engineers program - see page 31 for further details.

3. The required ingredients for each vend are delivered to a 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 cabinet door switch is in the on position.

5. **Espresso (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 - see page 31 for details.

7.5 Mixing System

1. The mixing system utilises a 24v DC 13,000 RPM motor assembly and mixes ingredient with hot water from the heater tank to make a drink.

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 from the front of the machine.

   N.B. An illustration showing the parts breakdown for the Mixing System is included in Section 12 - page 163.

7.6 Moving Dispense Head

1. Evolution 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 50 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. An illustration showing the parts breakdown for the Moving Dispense Head is included in Section 12 - page 159. Dispense pipe lengths are shown on pages 85 to 91.

7.7 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 six separator cams operated by a 230v AC solenoid, 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.

   N.B. An illustration showing the parts breakdown for the Cup Drop Unit is included in Section 12 - page 151.

7.8 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.

7.9 Brewer Unit - (Freshbrew Models)

1. Machines may be fitted with either a single, paper fed type brewer suitable for providing either freshbrew tea or fresh filter coffee or a dual brewer unit which provides both freshly brewed tea and filter coffee. The coffee and tea ingredients are dispensed into the brewer unit via separate canisters.

2. A 24v DC, 3.5 RPM motor, controlled by an index cam fitted to the drive shaft, operates the brewer unit. The cam operates a switch which sends a logic signal to the controller when the brewer is in the correct position. The brewer motor will timeout after 60 secs if the home switch is not seen.

1. Coffee Brewing - Dual Brewer

1. Water and coffee grounds are dispensed into the brewer top chamber and onto a filter mesh. The motor drives the piston up and mixes the ingredient and water.

2. The motor drives the piston down and the resulting vacuum pulls filtered coffee through the filter mesh. As the piston passes the outlet adaptor, coffee flows to the dispense head. The piston remains in this position for a set time to allow the vend to drain away.

   N.B. There are 4 programmable delay positions which can be set via the

freshbrew coffee selection timers. These delays are at zero by default but could be increased to gain maximum extraction.

3. A separate mechanism removes the coffee grounds. The coffee wipe arm wipes the grounds from the filter mesh. They then drop, via a deflector tray, into a waste bucket. The motor returns the piston to its parked position.

2. Tea Brewing - Dual Brewer

1. Water and tea are dispensed into the tea brewing chamber. The brewer stays shut until the required amount of water has passed through the system. When the tea chamber is empty, the motor operates the wiper arm and the used tea cake is removed from the tea filter mesh.

3. Coffee/Tea Brewing - Single Brewer

1. Water and ingredient (coffee grounds or fresh leaf tea) are dispensed into the brewer top chamber and onto special filter paper. The motor drives the piston up and mixes the ingredient and water.

2. The motor drives the piston down and the resulting vacuum pulls filtered coffee/tea through the filter paper. As the piston passes the outlet adaptor, the beverage flows to the dispense head. The piston remains in this position for a set time to allow the vend to drain away.

   N.B. There are 4 programmable delay positions which can be set via the freshbrew coffee/tea selection timers. These delays are at zero by default but could be increased to gain maximum extraction.

3. At the end of the vend the brewer opens allowing the filter paper with used coffee/tea waste to index out of the brewer. The waste then drops, via a deflector tray, into a waste bucket. The motor returns the piston to its parked position and the top of the brewer closes.

7.10 CoEx® Brewer (Espresso Models)

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 8 for full details of the CoEx® brewer and its operation.

7.11 Power Supply Unit

1. The 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. 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.

4. The PSU houses 5 fuses (6 for B2C machines). These are as follows.
   - Heater, 12 amp (T) (ceramic) - Heater Tank
   - 240v Auxiliary, 4 amp (glass)
   - 240v PSU, 4 amp (glass)
   - 240v Cold Unit, 4 amp (T) (glass)
   - 24v Coin Mech, 4 amp (T) (glass)
   - Heater, 12 amp (T) (ceramic) - Pressure Boiler, B2C Models

   N.B. Illustrations showing the parts breakdowns for the PSU and Fuse Plate Assembly are included in Section 12 - pages 165 and 167.

7.12 Mains Filter

A mains filter, mounted on the rear panel, prevents spurious voltages reaching the power supply, I/O board, controller boards and other sensitive components within the machine. It also prevents spurious voltages generated by the machine from reaching the mains supply.

7.13 Coin Mechanism Transformer

The coin mechanism transformer converts 230v AC to 24v AC for Executive protocol type coin mechanisms and cashless systems. The 24v AC supply is protected by an in-line 4 amp, glass fuse, which is located in the door assembly above the coin mechanism.

7.14 Coin and Card/Key Systems

The Evolution may be equipped with coin or card/key validation systems using either protocol 'A' or alternatively 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.

7.15 Change Giver

1. The Change Giver communicates with the vending machine controller through a serial communication interface. It will validate a coin and if accepted, send a signal to the vending machine controller indicating the total amount of money which has been tendered since the last vend.

2. Once sufficient credit has been accumulated a vend will be permitted. Where possible the change giver will return the appropriate amount of change to the customer.

7.16 Coin Blocker

For Evolution machines fitted with a change-giver, a logic 'low' level from the vending machine controller will disable any coin acceptance.

7.17 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 - Espresso (B2C) System

Evolution 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 can also vend high quality freshbrew coffee from pre-ground product.

8.1 Example Vend

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.

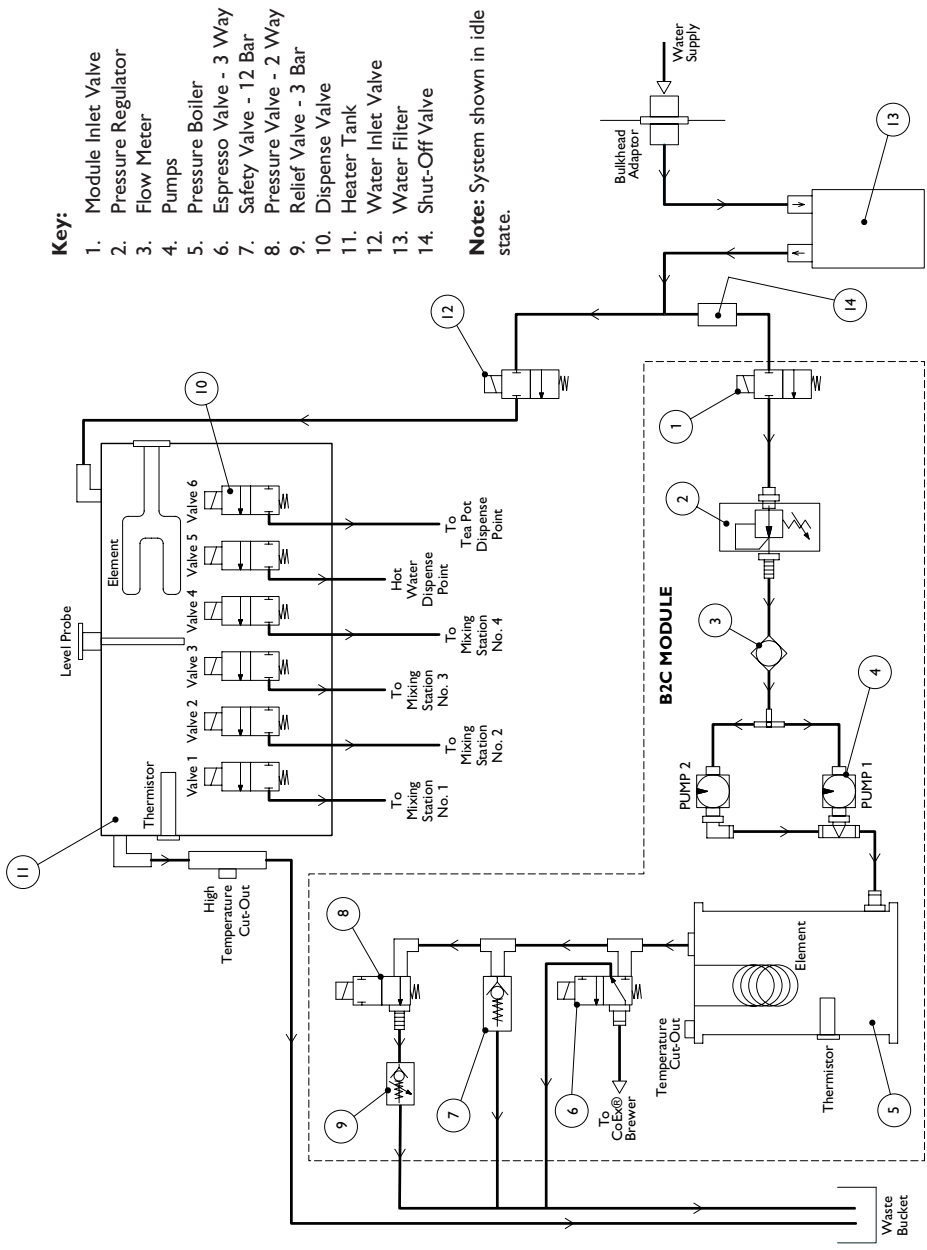
5. Once the required amount of water has been pumped through the system, the inlet valve closes and the pumps stop pumping water through the system. The brewer compresses the used coffee pellet, the pressure relief valve is opened and the espresso valve switched off.

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 Evolution B2C machines.

Evolution B2C Water Flow Diagram



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 Pumps - 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. Safety Valve - 12 Bar (Mechanical)

This valve provides overall system safety. The valve will open should the pressure within the system exceed 12 bar.

8. 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.

9. 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.

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

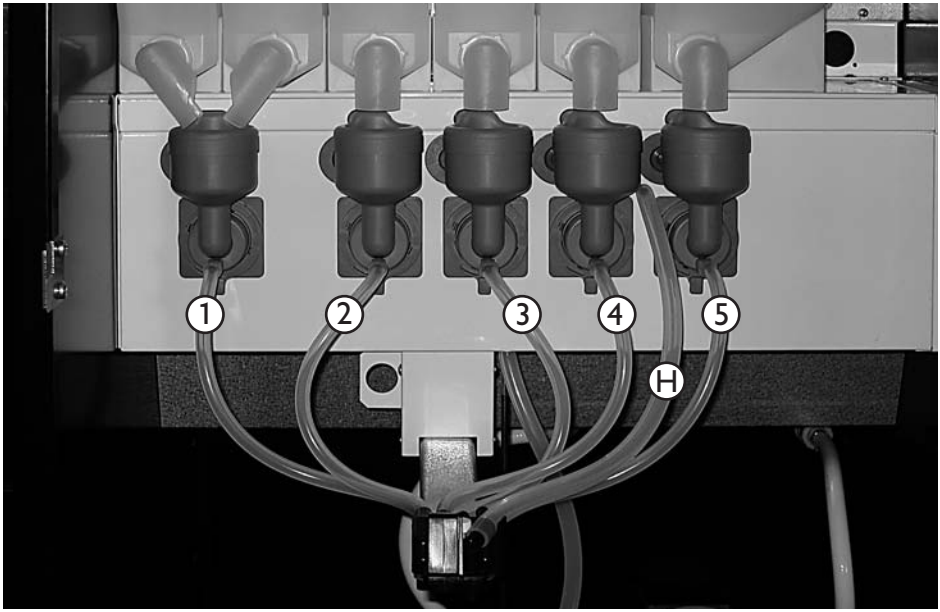
The grind mechanism consists of a 230V ac conical grinder with a manual adjustment. When an espresso based drink is selected the grinder will run for the programmed time, grinding beans and feeding the brewer at the same time. The grinder is fitted with a manual adjusting mechanism which allows the engineer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

11. 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.

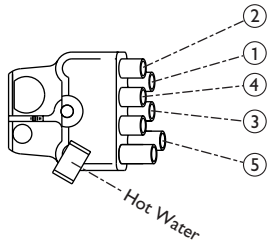
Section 9 - Dispense Pipe Lengths

9.1 Instant Machine - 6 Canister

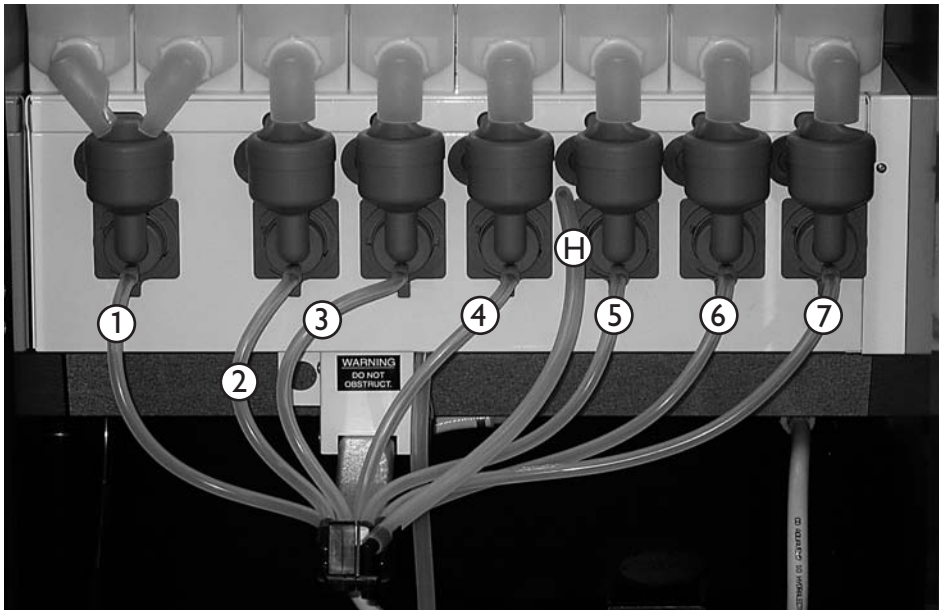


Pipe No	Diameter	Length
1	6 mm I.D. x 10 mm O.D.	350 mm
2	6 mm I.D. x 10 mm O.D.	300 mm
3	6 mm I.D. x 10 mm O.D.	300 mm
4	6 mm I.D. x 10 mm O.D.	320 mm
5	6 mm I.D. x 10 mm O.D.	350 mm

H = Hot Water Dispense Pipe

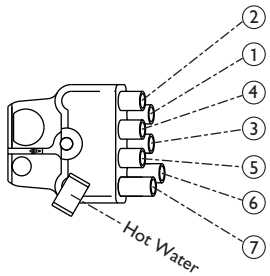


9.2 Instant Machine - 8 Canister

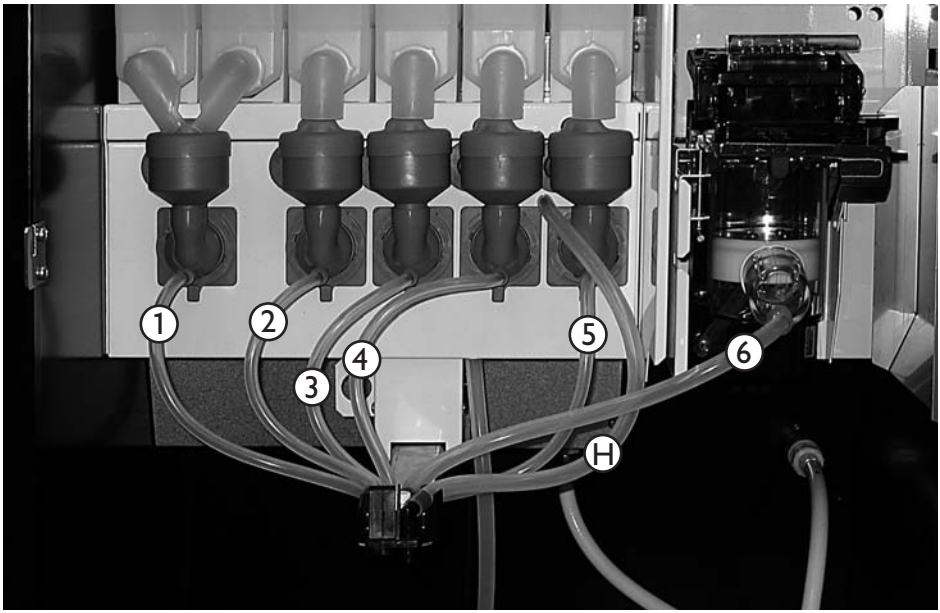


Pipe No	Diameter	Length
1	6 mm I.D. x 10 mm O.D.	350 mm
2	6 mm I.D. x 10 mm O.D.	300 mm
3	6 mm I.D. x 10 mm O.D.	300 mm
4	6 mm I.D. x 10 mm O.D.	320 mm
5	6 mm I.D. x 10 mm O.D.	360 mm
6	6 mm I.D. x 10 mm O.D.	410 mm
7	6 mm I.D. x 10 mm O.D.	460 mm

H = Hot Water Dispense Pipe

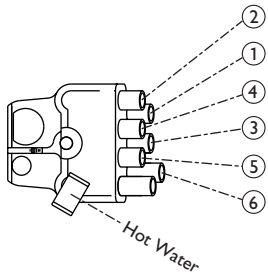


9.3 Single Freshbrew Machine - Paperless Brewer

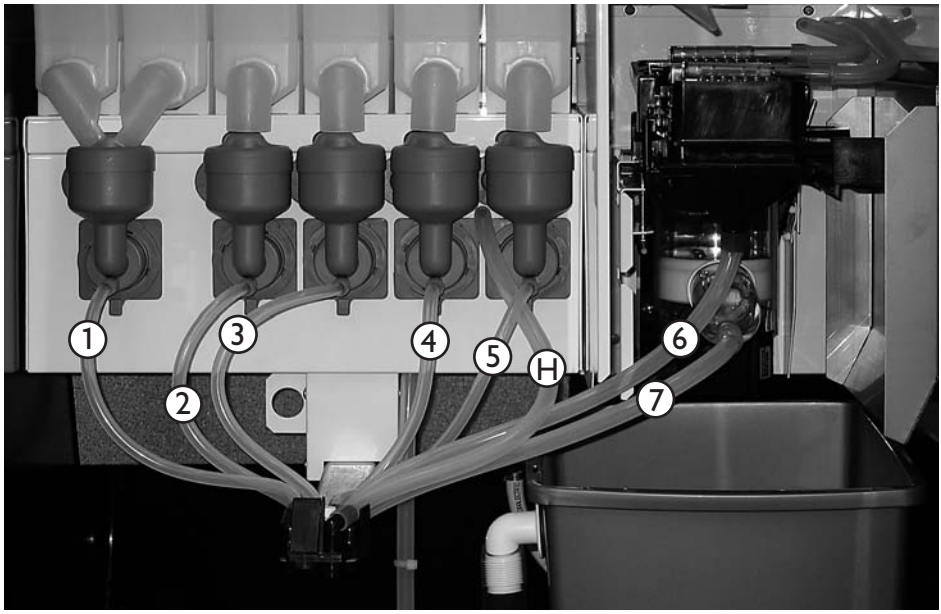


Pipe No	Diameter	Length
1	6 mm I.D. x 10 mm O.D.	350 mm
2	6 mm I.D. x 10 mm O.D.	300 mm
3	6 mm I.D. x 10 mm O.D.	300 mm
4	6 mm I.D. x 10 mm O.D.	300 mm
5	6 mm I.D. x 10 mm O.D.	330 mm
6	8 mm I.D. x 10 mm O.D.	370 mm

H = Hot Water Dispense Pipe

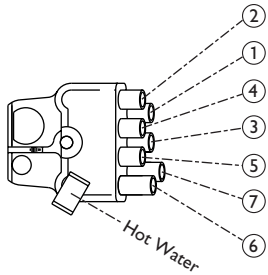


9.4 Double Freshbrew Machine - Paperless Brewer

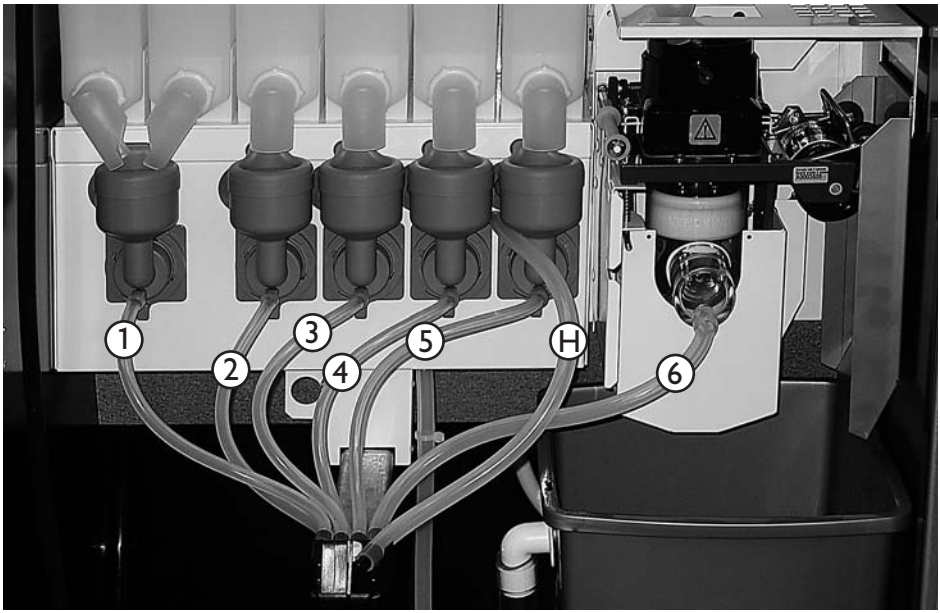


Pipe No	Diameter	Length
1	6 mm I.D. x 10 mm O.D.	350 mm
2	6 mm I.D. x 10 mm O.D.	300 mm
3	6 mm I.D. x 10 mm O.D.	300 mm
4	6 mm I.D. x 10 mm O.D.	300 mm
5	6 mm I.D. x 10 mm O.D.	330 mm
6	8 mm I.D. x 10 mm O.D.	390 mm
7	8 mm I.D. x 10 mm O.D.	370 mm

H = Hot Water Dispense Pipe

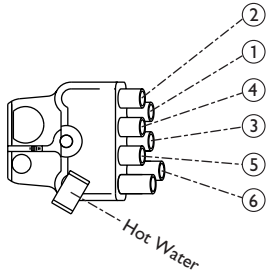


9.5 Freshbrew Machines - Paper Brewer (King)

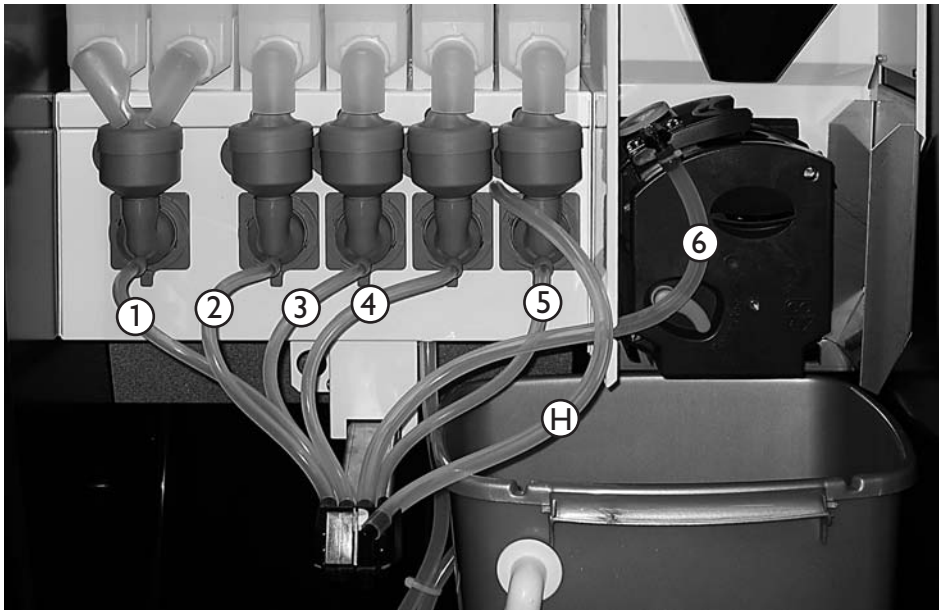


Pipe No	Diameter	Length
1	6 mm I.D. x 10 mm O.D.	350 mm
2	6 mm I.D. x 10 mm O.D.	300 mm
3	6 mm I.D. x 10 mm O.D.	300 mm
4	6 mm I.D. x 10 mm O.D.	300 mm
5	6 mm I.D. x 10 mm O.D.	320 mm
6	8 mm I.D. x 10 mm O.D.	350 mm

H = Hot Water Dispense Pipe

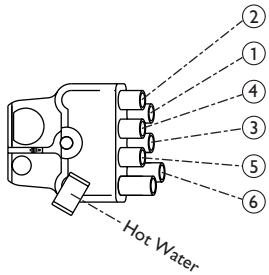


9.6 Espresso Machine

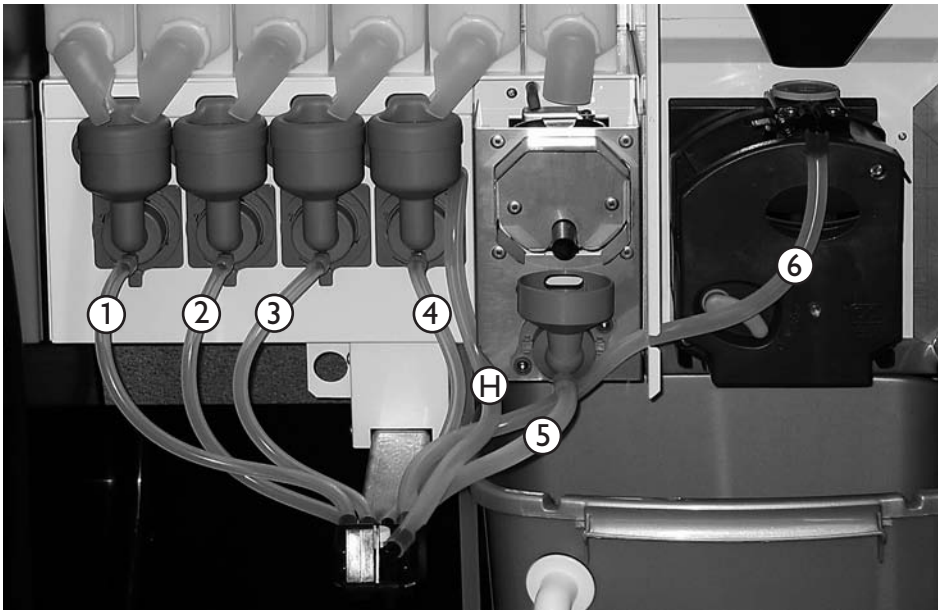


Pipe No	Diameter	Length
1	6 mm I.D. x 10 mm O.D.	350 mm
2	6 mm I.D. x 10 mm O.D.	300 mm
3	6 mm I.D. x 10 mm O.D.	300 mm
4	6 mm I.D. x 10 mm O.D.	300 mm
5	6 mm I.D. x 10 mm O.D.	330 mm
6	8 mm I.D. x 10 mm O.D.	450 mm

H = Hot Water Dispense Pipe

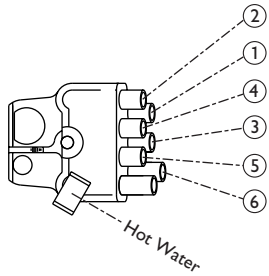


9.7 Espresso Machine Plus Teapot Option



Pipe No	Diameter	Length
1	6 mm I.D. x 10 mm O.D.	360 mm
2	6 mm I.D. x 10 mm O.D.	310 mm
3	6 mm I.D. x 10 mm O.D.	300 mm
4	6 mm I.D. x 10 mm O.D.	300 mm
5	6 mm I.D. x 10 mm O.D.	240 mm
6	8 mm I.D. x 10 mm O.D.	450 mm

H = Hot Water Dispense Pipe



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	Diagnostics Screen Text	Fault Description
Sorry Out of Service Head Not Homed	Head not homed	Dispense head has not returned to home position in expected time
Sorry Out of Service Head Not Extended	Head not extended	Dispense head has not fully extended in the expected time
Sorry Out of Service Waste Bucket Full	Waste bucket full	Waste bucket full
Temporarily Out of Service	Init failed restart	Machine failed on initialisation
Sorry Out of Service No I/O Comm	No I/O comm	Comms error detected between mpu and I/O board
Initialising	-	CoEx® brewer not situated correctly in the machine
Temporarily Out Of Service	All selections disabled	All drink selections have been disabled
Sorry Out of Service Rinsing	Rinsing	Automatic or manual rinse cycle in progress
-	Rinsing	A rinsing cycle was interrupted and not completed
Out Of Cups Please Insert Mug	Cup turret/no cups/ no cups	Unable to find cup stack. Cup turret has timed-out on initialisation
Sorry Out of Service No Cups	No cups and mug sensor failure	Machine is out of cups and mug sensor is faulty
Out Of Cups Please Insert Mug	No cups/no cups	No cups are available but the mug sensor is working
Out Of Cups Please Insert Mug	No cup delivered ring 1 SV on	Non fatal error detected with SureVend cup mechanism
Please Remove Cup	Mug sensor error/ please remove cup	An error has occurred with the SureVend sensor during a vend
Sorry Out of Service Mug Sensor Error	SureVend error and must SureVend	No cups remaining and fault with mug sensor
Please Remove Cup	Mug sensor error	Cup not removed from dispense area after vend completed or faulty mug sensor

Error Message	Diagnostics Screen Text	Fault Description
Sorry Out of Service Please Insert Mug	No cup delivered ring 1 SureVend on/SureVend error and must SureVend	Problem with CDU (cup jam) No more cups being dispensed
Sorry Out of Service Low Water	Low water	Low water level in heater tank
Sorry Out of Service Water Tank Heating	Water tank heating	Water in the heater tank is below the minimum vend temperature
Sorry Out of Service Fill Timeout	Fill timeout/ low water	Machine has been filling for 2 minutes and not reached optimum level
Sorry Out of Service Invalid Temp	Invalid temp	1. Comms error between I/O & MPU 2. Machine has exceeded optimum boiler temp 3. Temperature probe fault
Sorry Out of Service Brewer Jam	Brewer jam	Brewer has not moved from its home position and may be jammed
Sorry Out of Service Brewer Not Homed	Brewer not homed	Brewer has not returned to its home position and may be jammed
Sorry Out of Service No Monetary Device	Coin mech comm	Communication error detected between monetary device and machine
Sorry Out of Service No Monetary Device	No monetary device-fatal/No monetary device	Machine is configured for an incorrect monetary device, or the device is not responding
Temporarily Out Of Service	Coin mech ROM	MDB coin mech ROM checksum test failed (fatal error)
Temporarily Out Of Service	Coin mech accept unplugged	MDB coin mech is unplugged or faulty
Temporarily Out Of Service	Coin mech accept jam	Coin jam detected in coin acceptor
Temporarily Out Of Service	Coin mech payout jam	Coin jam detected in coin tube
Temporarily Out Of Service	Coin mech tube sensor	Coin tube sensor fault detected
Temporarily Out Of Service	Coin mech all tubes err	No useable coin tubes. Machine unable to pay out
Temporarily Out Of Service	Coin mech tube err	Problem with coin tube. Tube indicates full, but coin count is zero
Temporarily Out Of Service	Card reader comm	Fatal error. Cannot communicate with the card reader
Temporarily Out Of Service	Single card reader error	Transient error with card reader, but card reader in service. Unable to communicate with the card reader

Error Message	Diagnostics Screen Text	Fault Description
Temporarily Out Of Service	Card reader reports a comm error	Repeatable error with card reader, but card reader in service. Unable to communicate with card reader
Temporarily Out Of Service	Card reader error	Problem with card reader. Manufacturing error detected
Temporarily Out Of Service	Card reader failed OOS err	Card reader is out of service
Temporarily Out Of Service	Card reader reports comm error & is OOS	Comm error with card reader. Out of service
Temporarily Out Of Service	Card jammed in card reader	Card jam
Temporarily Out Of Service	Card reader failure	Problem with card reader. Manufacturing error detected
Temporarily Out Of Service	Card reader requests servicing	Card reader needs servicing
An Error Has occurred	-	Low water during a CoEx® brewer clean
Sorry Out Of Service No Water Available	No Water Available	No Water Available (B2C Machines Only)

10.2 Heater 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. We recommend and supply the Brita AquaQuell Compact water filter.

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 into a suitable water tight container.

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. Switch 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 - Freshbrew Machines Only

Freshbrew machines are fitted with either a dual brewer unit which produces freshbrew coffee and tea beverages from the same unit, a single chamber paper less unit or a single chamber paper type unit. Routine cleaning and maintenance instructions for these units can be found in the Evolution Operators Manual - Part No. PR10908000.

1. Removing The Brewer - Paperless Type

1. Open the door and insert the safety key. The machine is now on.

2. Using the service keypad mounted inside the door (see page 62), press and hold switch 2 until the brewer indexes to its fully open position. Remove the safety key to turn the power off. Remove the brewer guard to gain access to the brewer unit.

3. Carefully remove both the coffee and tea water inlet pipes (dual brewer)/water inlet pipe (single brewer). Remove the dispense pipe(s) from the brewer unit. Pull down the spring loaded brewer release pin and carefully remove the brewer unit from its locating bracket.

2. Removing The Filter Mesh Assemblies - Paperless Brewer

Both the coffee brewer and tea brewer (dual unit) contain fine screen mesh assemblies which ensure coffee and tea vends are produced to the highest standards. To remove the mesh assemblies, proceed as follows:

1. Remove the brewer unit from the machine as previously described and place on a flat surface. Lift the latch bar and remove the brewer chambers/wipe arms assembly.

2. **Removing the coffee filter mesh:** Using the coffee filter extractor tool, part

no. ME10385000, insert the tool into the output spout of the coffee brewer chamber with the tip pointing upwards.

3. With the tool to the rear of the chamber, gently push up on the rear of the filter assembly to unseat it. Remove the filter assembly from the brewer.

4. **Removing the tea filter mesh:** Using a small flat blade screwdriver or similar, insert the tool up through the tea outlet and carefully push the filter assembly up and out of its location.

5. If necessary, soak the filter mesh assemblies in a correctly diluted cleaning solution for a maximum of 30 minutes. Rinse the filters with clean water before refitting to the brewer unit.

6. Replacement filters are available from the manufacturer.
   Coffee Filter - Part No. PL07155000
   Tea Filter - Part No. ME1038000

3. Refitting The Filter Mesh Assemblies - Paperless Brewer

The following description applies to both the coffee and tea filter assemblies.

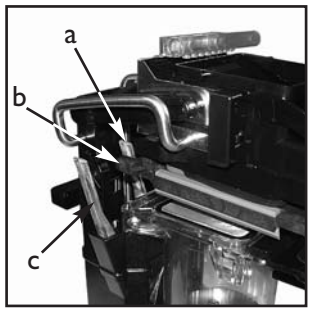
1. Ensuring that the gauze screen is to the top, align the filter assembly with its locating position above the brewer chamber. Ensure that the locating lip on the filter assembly lines up with its corresponding slot in the chamber.

2. Push down on the filter assembly to secure it in its locating position.

4. Re-assembling The Brewer To The Machine - Paperless Brewer

1. Carefully slide the brewer chamber/wipe arms assembly into the brewer unit.

   Important: The wiper arm lug (a) ***must*** be located between the stainless steel arms (b) as shown.



2. Line up the brewer unit with its mounting bracket ensuring that the drive shaft correctly engages with the brewer motor drive dog. Push the brewer unit into place and secure with the sprung pin.

3. Refit the coffee dispense pipe/outlet adaptor to the coffee brewer outlet and the tea dispense pipe to the tea brewer outlet. Re-assemble the coffee and tea water

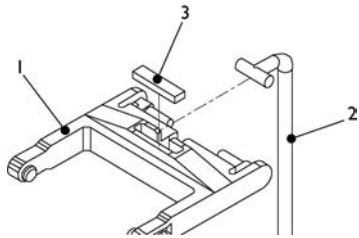
inlet pipes to their locating brackets. Refit the brewer guard and close the front door of the machine. The machine will power up and the brewer will index to its home position.

5. Brew Chamber Tension Adjustment - Paperless Brewer

If a leak develops between the brew chamber and the filter screen assembly during a brew cycle, it may be necessary to adjust the brew chamber tension arm. The leaking is an indication that the brew chamber is not closing correctly. Proceed as follows:

1. Open the door and insert the door switch safety key. The machine is now ***on***. Press the Brewer Open switch (2) located in the service keypad on the rear of the door. The brewer will index to its fully open position and stop. Remove the safety key.

2. Lift the latch bar and remove the brewer chambers/wipe arms assembly. Push down on the 'H' frame (1) and remove the T-bar (2) from the recess. Add a shim (3) into the recess and replace the T-bar.

   Important: Do not add several shims at once as assembly may become over tensioned, causing damage to the brewer bearings and vertical rod housings.

3. Re-install the brew chambers/wipe arms assembly into the brewer unit. Insert the door switch safety key and allow the machine to power up. Test vend several freshbrew drinks through the brewer to ensure that the brew chambers assembly closes correctly and does not leak.

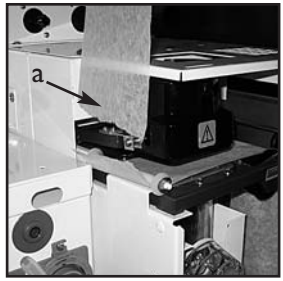
   N.B. In most cases this procedure is enough to stop the leaking. Should the brewer still leak, repeat the above procedure, adding one more shim. If the problem still persists, remove all of the shims and turn the T-bar one complete revolution clockwise. Re-insert the T-bar into the H frame and test vend as above.

4. If the tension is adjusted correctly but the brewer is still leaking, do not increase the brew chamber tension further. Check the brewer to ensure there is no loss of vacuum, usually caused by a cracked, worn or scored cylinder, or a worn teflon piston seal.

6. Removing The Brewer - Paper Type

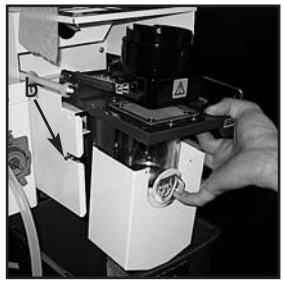
1. Open the door and insert the safety key. The machine is now ***on***.

2. Press and hold the Brewer Open switch (2) located in the service keypad on the rear of the door to index the brewer to its fully open position.



3. When the brewer reaches its fully open position, remove the safety key to switch off the power. Tear the filter paper above the brewer (a). Remove the used paper from the brewer unit.

4. Remove the brewer dispense pipe from the dispense head. Pull down the brewer release pin (b) and carefully lift the brewer unit up and clear of its locating bracket.



5. To refit the brewer, slide the brewer onto its mounting bracket ensuring that the drive dog engages with the brewer motor drive shaft. Refit the outlet pipe to the dispense head.

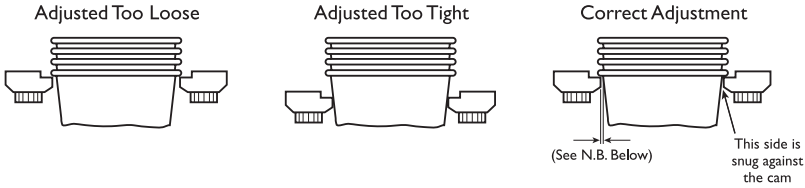
6. Feed the filter paper through the paper feed mechanism. Switch on the power to the machine using the safety key. Filter paper will index automatically and the brewer chamber will return to its closed position. Refit the brewer guard.

10.4 Adjusting The Cup Drop Mechanism

When changing the type or size of cup vended from the machine, it may also be necessary to adjust the cup drop mechanism to accommodate the new cups. Proceed as follows:

1. Open the front door. Release the catch and swing the cup turret assembly away from the door. Carefully lift and remove the four transparent cup sleeves from the cup drop unit. Discard any cups that may be left over.

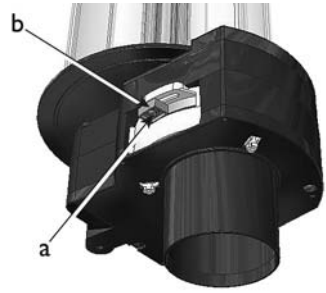
2. Place a minimum of 4 new cups into the cup splitter. Observe the clearance as shown in the illustration below.



N.B. Clearance indicated in Correct Adjustment diagram should be no more than half the diameter of the cup lip (maximum) but just enough to allow for smooth

cup ejection.

3. If necessary adjust the cup ring to obtain the clearance as shown. Loosen the adjustment arm screw (a) and move the adjustment arm (b) until the correct clearance is achieved. Hold adjustment arm in place and retighten the adjustment screw.



N.B. Move the arm clockwise if adjusting for larger diameter cups and anti-clockwise for smaller cups.

4. Switch ***on*** the power to the machine using the door switch safety key. Using the service keypad located in the rear of the door, press the cup test switch (7) and check that a cup is ejected correctly. Repeat this test several times to confirm that the mechanism is functioning correctly.

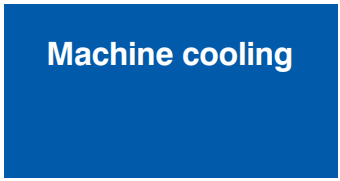
5. Refit the transparent cup sleeves to the cup drop mechanism ensuring that the flat on the turret motor lines up with the flat in the turret spigot moulding. Fill the cup sleeves with cups. DO NOT touch cups with your hands. Allow the cups to drop into the cup sleeves directly from the packaging.

6. Rotate the cup turret assembly back into its operating position, ensuring that the catch locks the unit into place. Remove the safety key and close the door.

10.5 B2C System Drain Down - Espresso Machines Only

Should it become necessary for the engineer to work on the B2C water system, eg pressure boiler maintenance etc, 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.

1. Open the front door of the machine and insert the door switch safety key. Using the service keypad located in the rear of the door, press the 'Machine Cool Down' switch (10) to ensure the system is cooled. The LCD will display the message shown opposite while approximately 400ml of cold water is flushed through the system and out to the waste bucket.



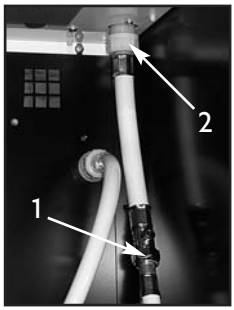
IMPORTANT: Pressing switch 10 also informs the machine software that the B2C system has been drained ensuring that the B2C system will automatically fill before heating on power up. This is very important and ***must not*** be overlooked.

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.

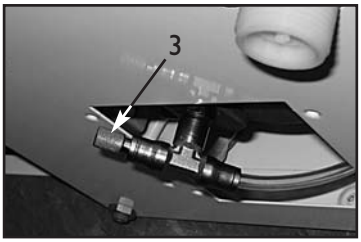
3. Remove the safety key from the door switch to turn off the power to the machine.

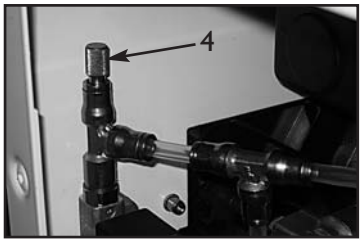
4. To remove the module for maintenance, proceed as follows:

   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. 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.



5. Loosen the two lower B2C module retaining screws and remove the top LH retaining screw. Carefully lift the module up and out of the machine. 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.





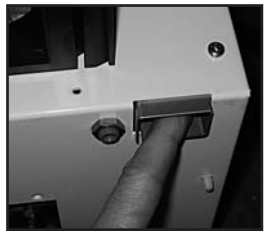
6. Remove the air intake blanking plug (4). Any remaining water will be ejected from the system allowing the engineer to safely work on system components.

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

   Remove the drain tube from the outlet and replace the blanking plug. Refit the air intake blanking plug. Refit the lower cover to the module.

8. 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.

9. Refit the RH boiler cover, fresh ground coffee canister and fresh beans container. Ensure fresh beans outlet slide is opened.



10. Before the machine is powered up it is important that any air is expelled from the system ensuring that the system is fully primed and free of any air pockets. Remove the water tray from the B2C module in order to gain access to the 3 bar valve shut off lever. Pull the lever down to open the valve.

11. Insert the door switch safety key. The machine will initialise, priming the system with 400ml of water before returning to standby. Hold a suitable container under the valve outlet during machine power up to collect any water ejected from the valve. Once in standby mode the valve shut-off lever should be closed. Place the brewer waste bucket into the machine and re-fit the water tray to the B2C module. Remove the safety key and close the door.

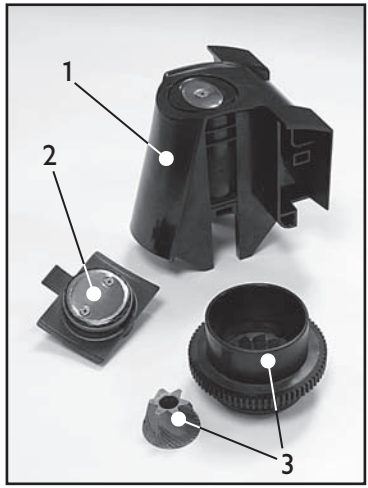
10.6 CoEx® Brewer/Bean Grinder Maintenance - Espresso Machines Only

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 Evolution Operators Manual - Part No. PR10908000.

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. PH10820000, 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.):

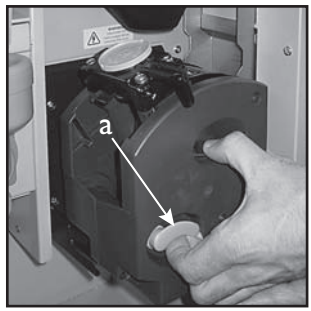
1. Lower piston and cylinder assembly - Pt. No. ME10592000
2. Filter head assembly - Pt. No. ME10284000
3. Grinder blades - Pt. No. ME07308000
4. 'O' ring - water inlet (not shown) - Pt. No. ME10595000

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 green locking ring anti-clockwise to its open position, indicated by the two arrows.

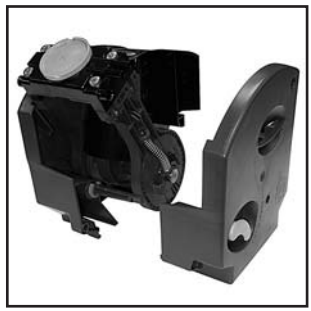
   Carefully remove the old filter unit down and out of the CoEx® brewer unit. Discard the used filter unit.

3. Using a 3mm allen key, 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.

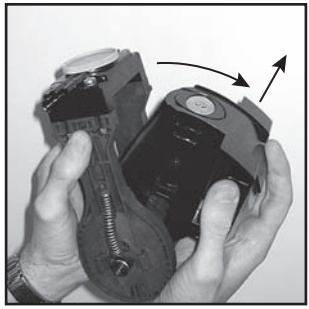
   Carefully ease both the front and rear brewer panels away from the central piston chamber/swing arms assembly.



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.

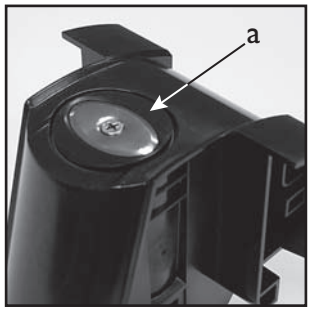
   Discard the used lower piston and cylinder assembly.

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



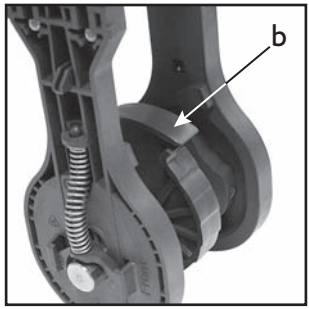
6. Take the new lower piston and cylinder assembly from the service kit.

   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.



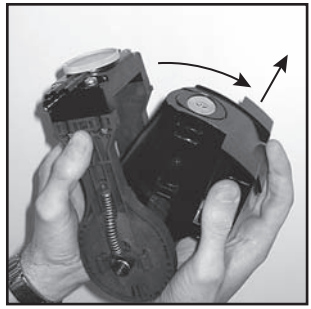
7. Ensure that the piston drive cam (b) is positioned as shown.

   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.

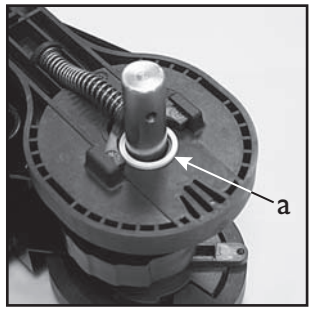
9. Check and ensure that the lower piston guide block (c) locates with the piston drive cam (d) as shown in the photograph.



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

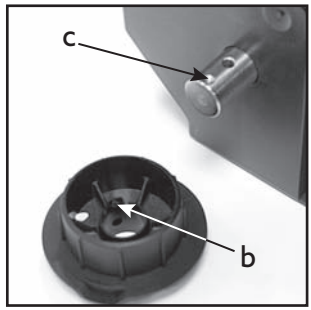
    Re-assemble the front and rear brewer panels to the central piston chamber/swing arms assembly using the three retaining screws/locknuts.

    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. Using a 3mm allen key, refit the bolt to secure the brewer drive coupling to the input shaft.



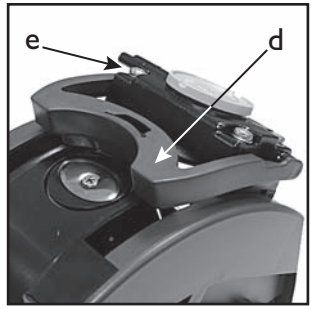
12. Take the new filter head assembly from the service kit.

    Holding the new filter assembly as shown, turn the green 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.

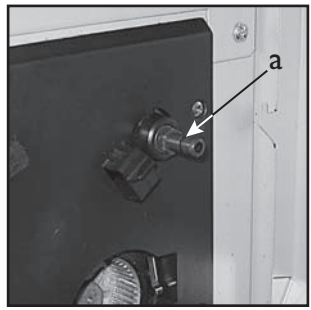
13. Re-assemble the wiper arm (d) to the filter holder assembly

    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.



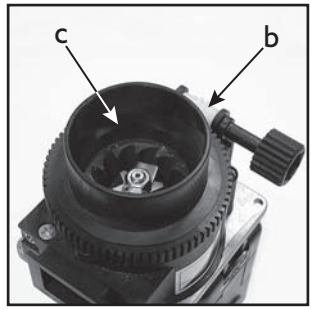
15. **Replacing The Grinder Blades.**

    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

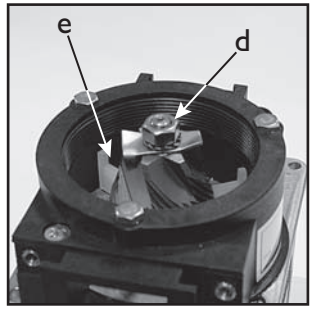


16. Unscrew and remove the nut, star washer and agitator (d) from the drive shaft.

    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.



17. 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.

18. Refit the fresh beans container to the machine. Pull the bean canister shut-off to its fully extended position.
19. Turn on the electricity supply to the machine.

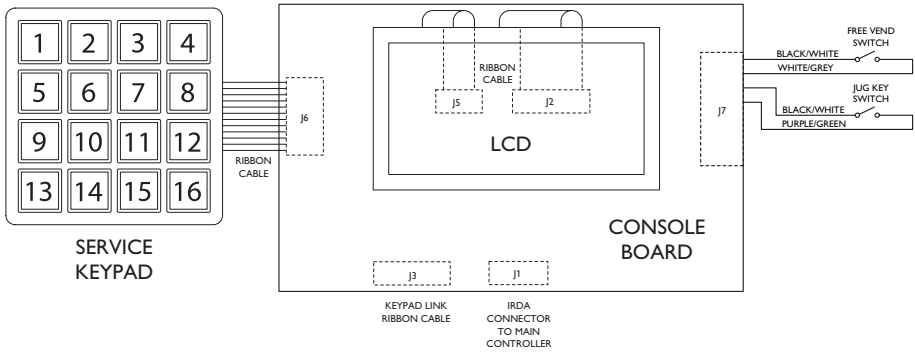
    Important! Before returning the machine to service, the engineer must carry out the Grinder Calibration routine described on pages 39 - 40 to ensure correct operation of the grinder with the type of beans used in the machine.

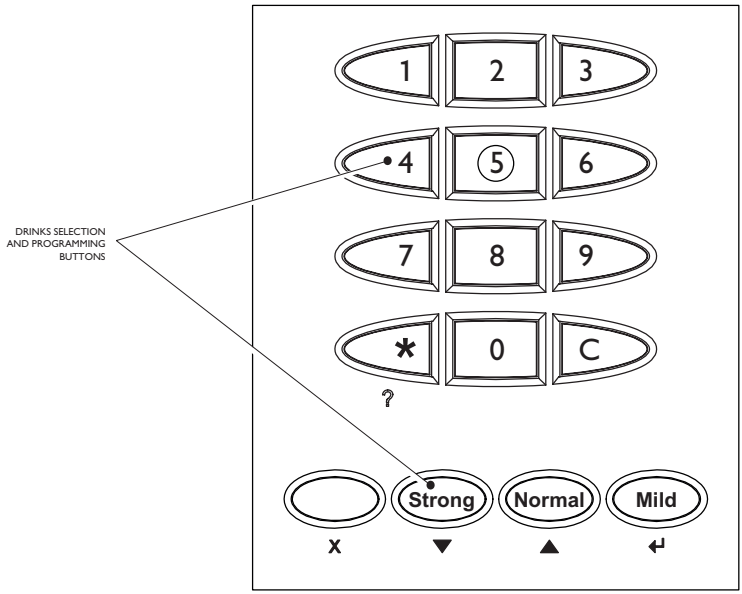
    Use the grinder adjuster wheel to fine tune the blade settings in order to obtain the desired grind quality.

Section 11 - Electrical/Electronic Diagrams

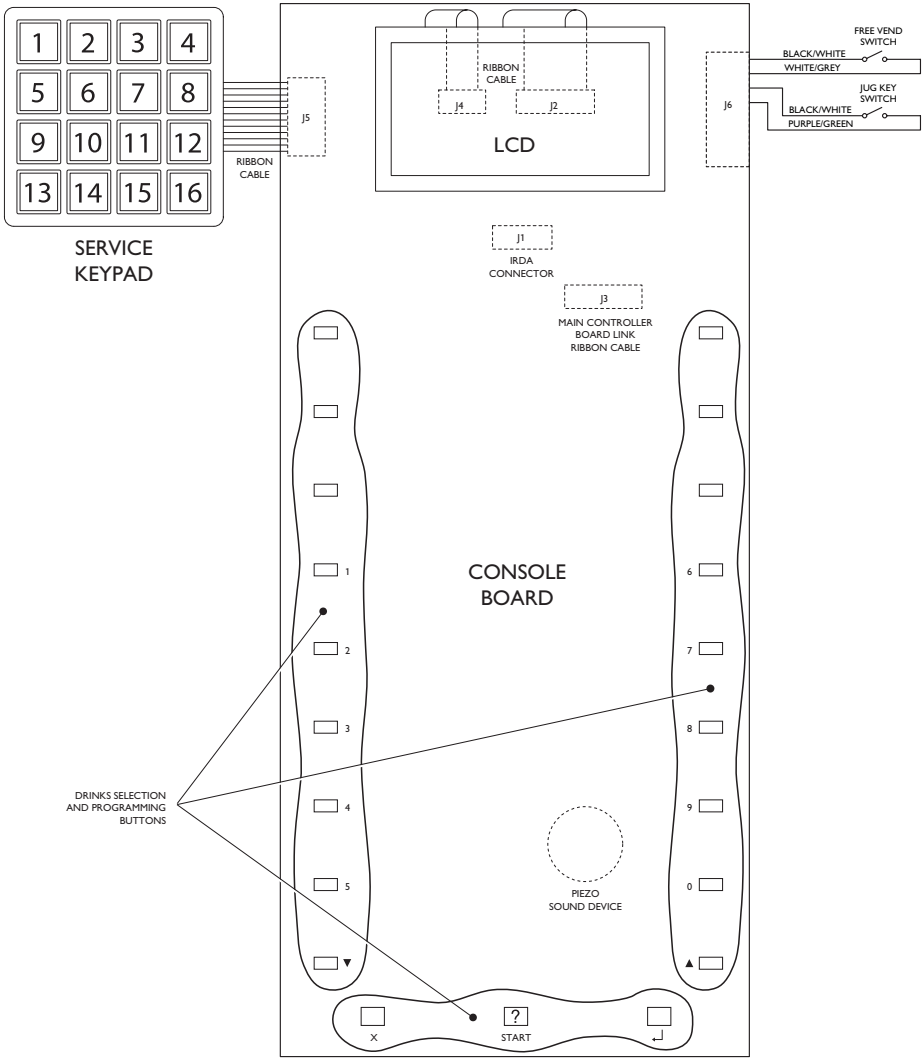
The diagrams shown on the following pages illustrate the layout of and the connections between the electrical and electronic components within Evolution machines. The following diagrams are common to all machines except where stated.

11.1 Console Board/Service Keypad - Numeric Keypad





11.2 Console Board/Service Keypad - Build A Drink Keypad

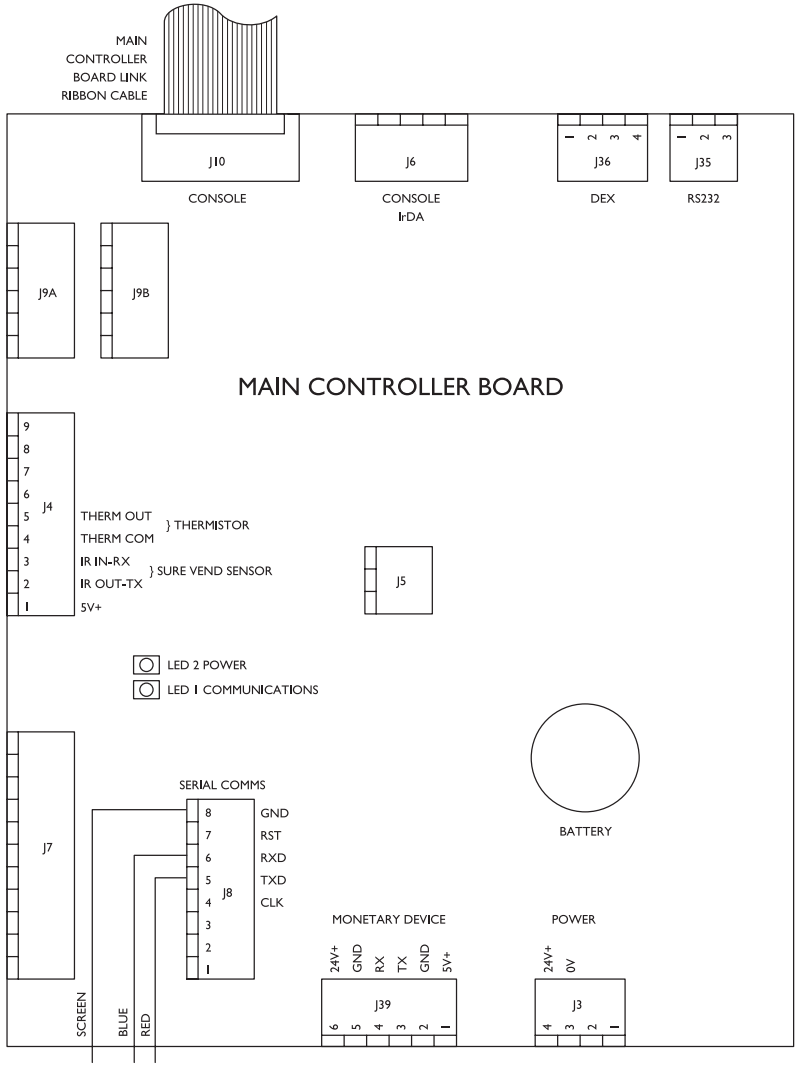


11.3 Control Board

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:-

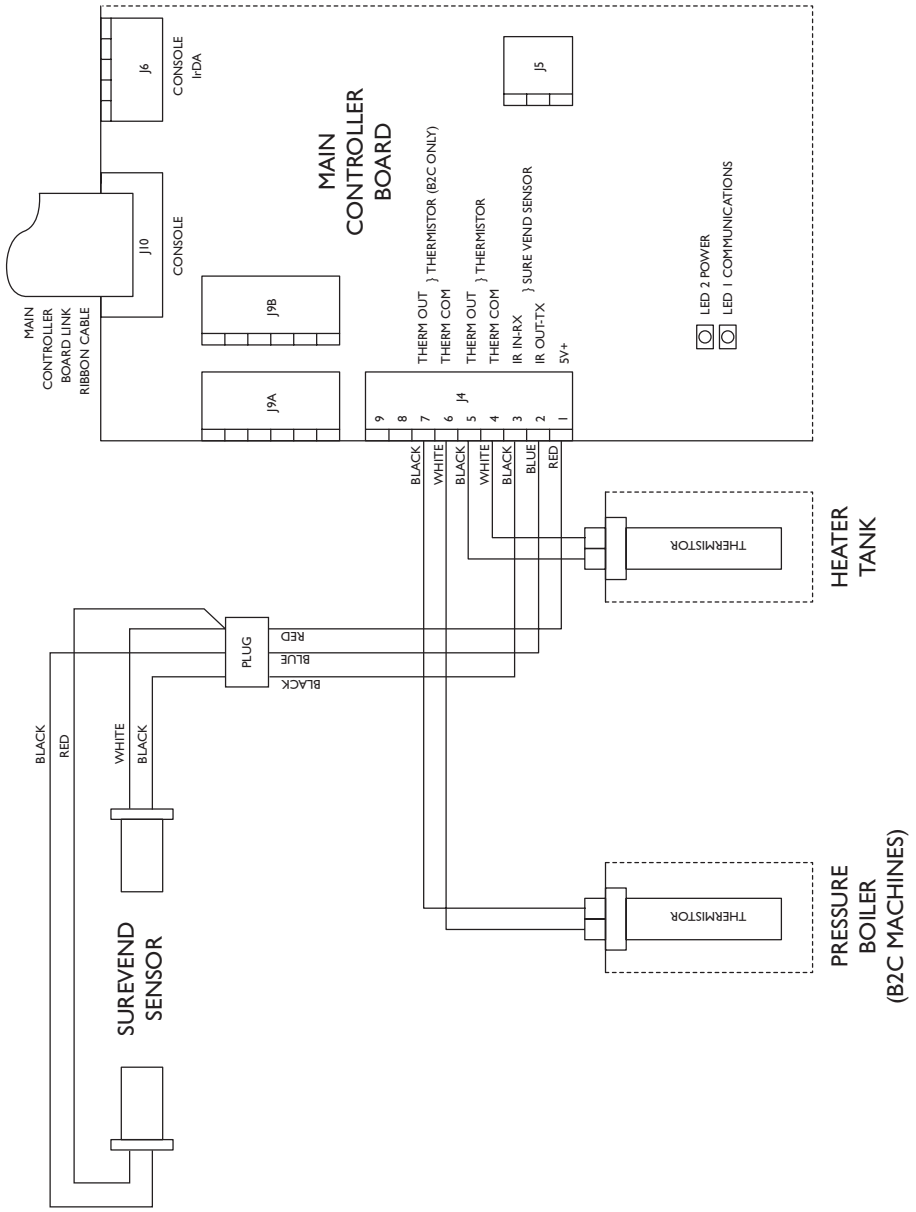
1. Switch off the power to the machine and open the front door. Release the catch securing the monetary cover.

2. Open the monetary cover. Unscrew and remove the two screws securing the control board cover. Carefully remove the control board cover.



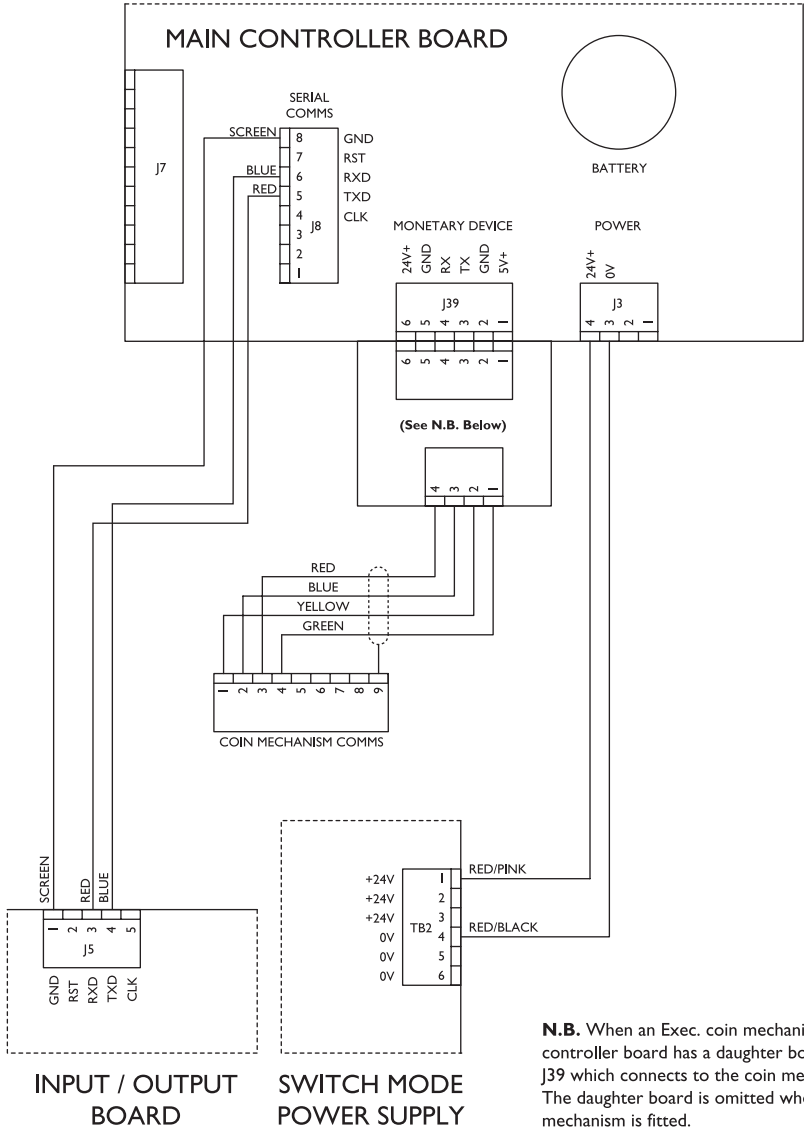
11.4 Control Board Connections - 1

The diagram below illustrates the connections between the control board and the console board, SureVend™ sensors and heater tank. There is also a connection shown to the pressure boiler which is fitted to B2C machines only.



11.5 Control Board Connections - 2

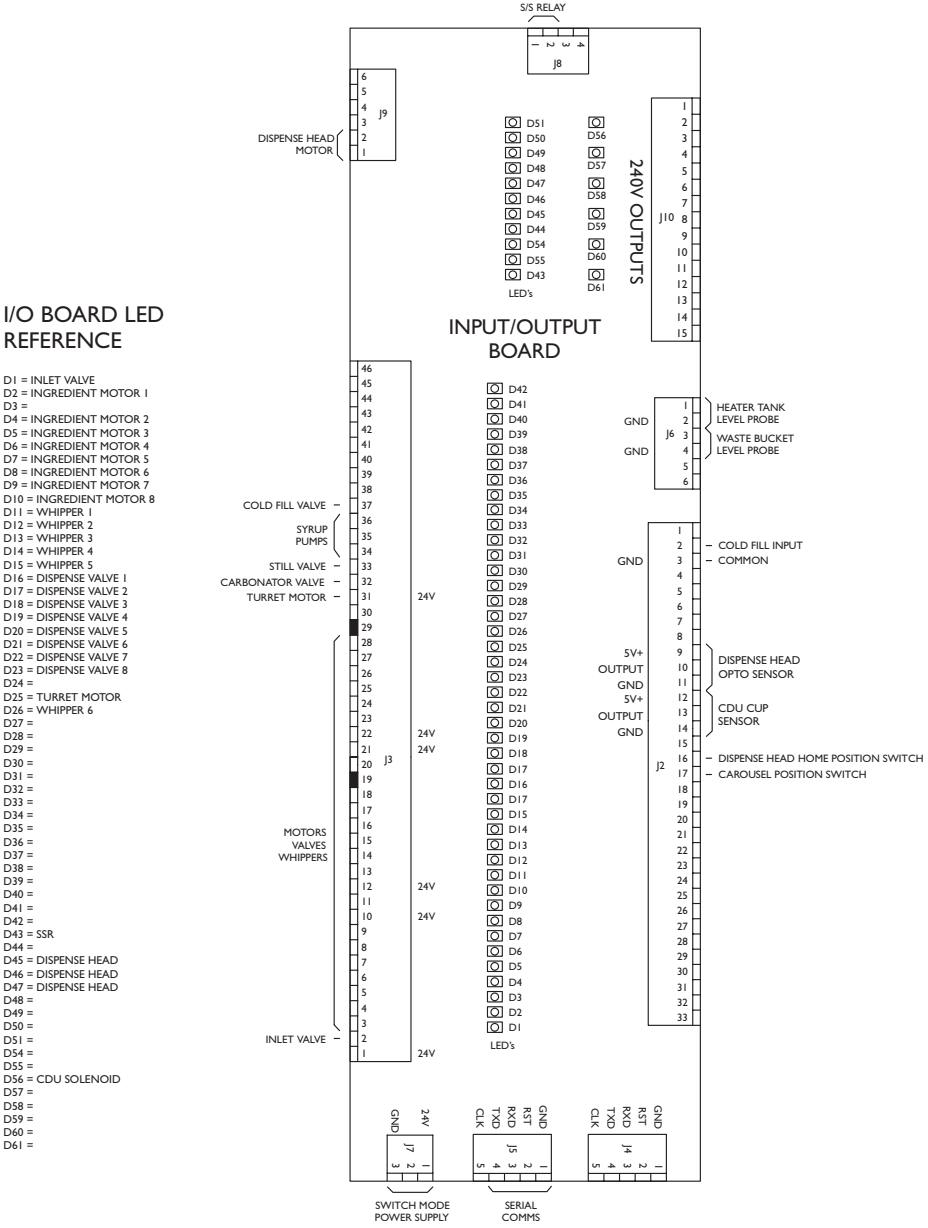
The diagram below illustrates the connections between the control board and the input/output board, coin mechanism communications and the switch mode power supply.



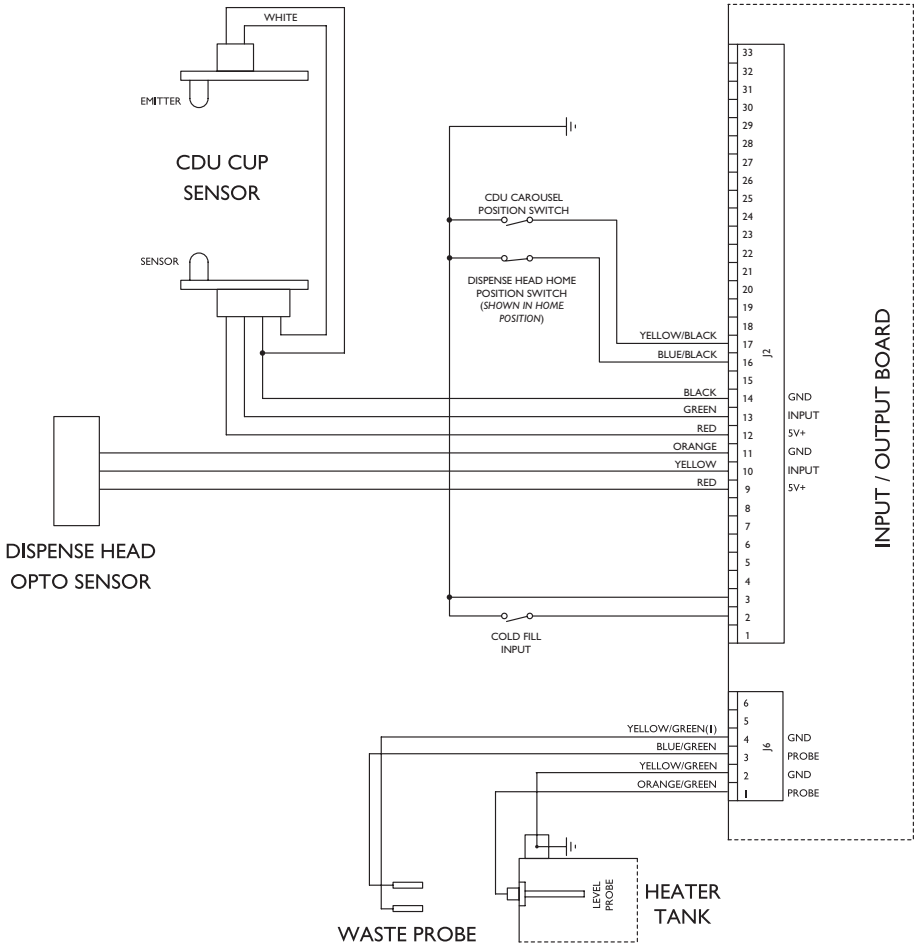
N.B. When an Exec. coin mechanism is fitted, the controller board has a daughter board attached at J39 which connects to the coin mechanism comms. The daughter board is omitted when an MDB mechanism is fitted.

11.6 Input/Output Board - Instant Machines

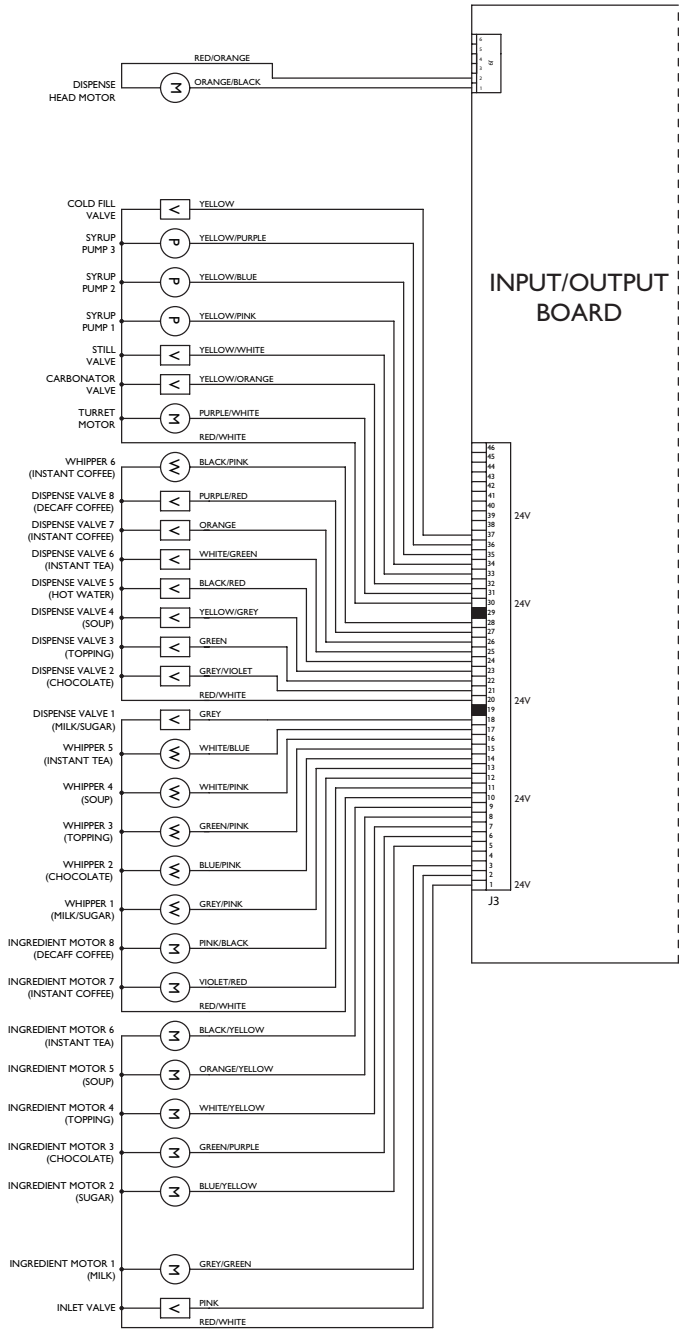
The input/output board is located at the top RH side of the machine. It is mounted onto the rear of the cabinet and can be accessed by removing the ingredient canisters and the RH boiler cover.



11.7 Input Circuit - Instant Machines

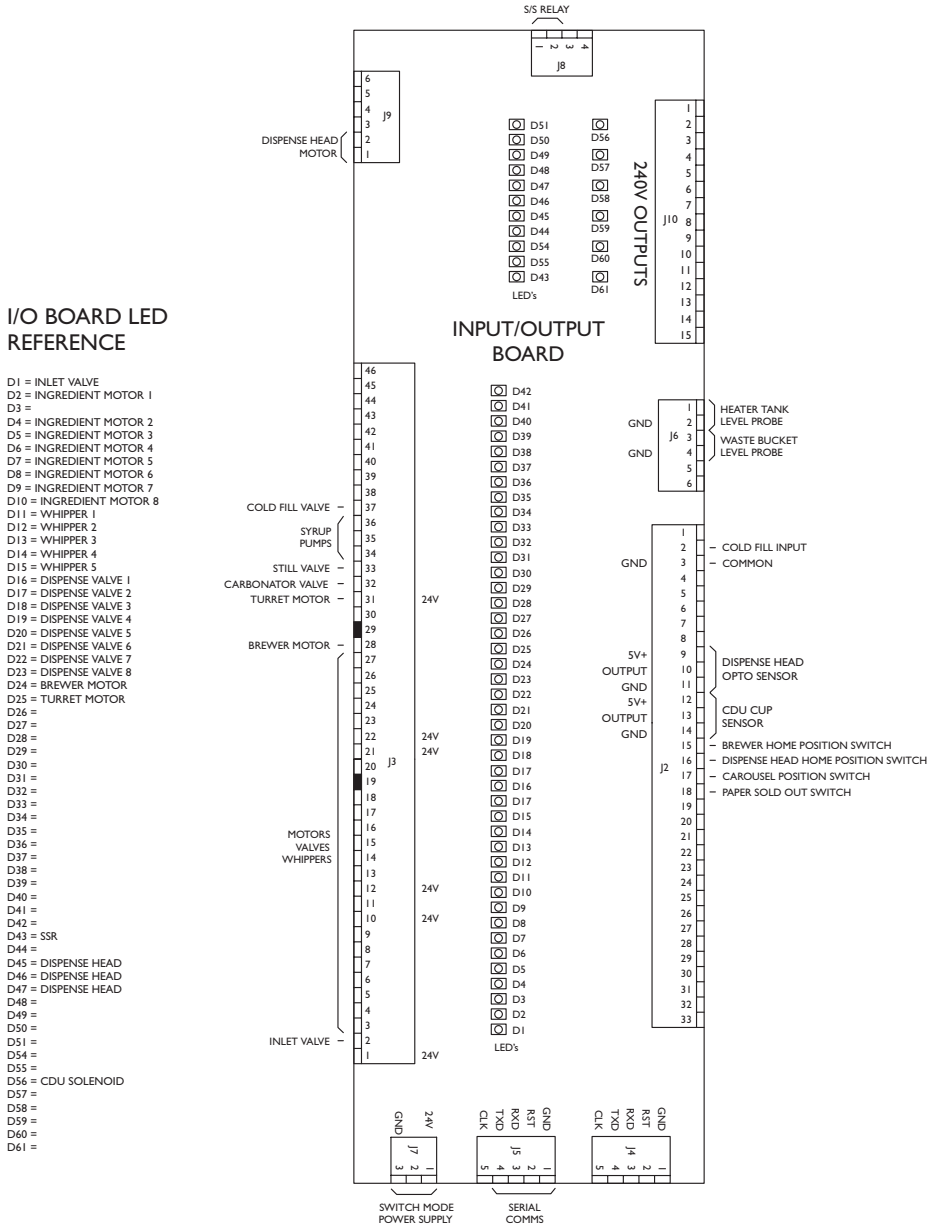


11.8 Output Circuit - Instant Machines

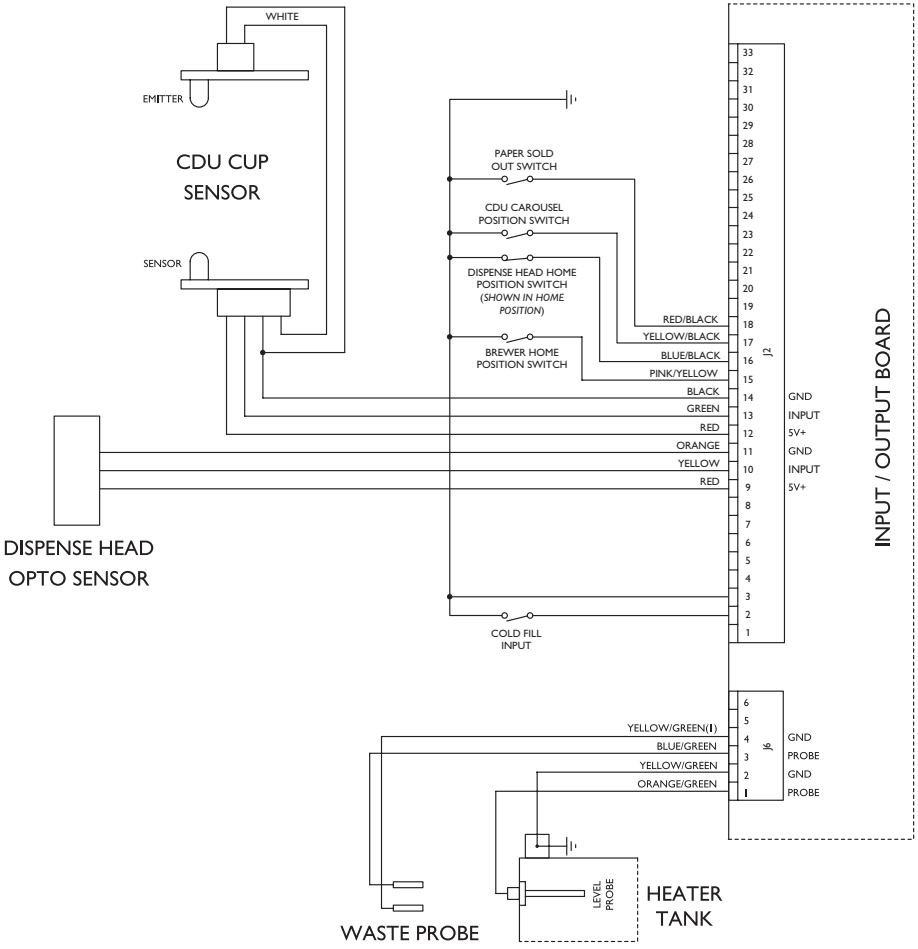


11.9 Input/Output Board - Freshbrew Machines

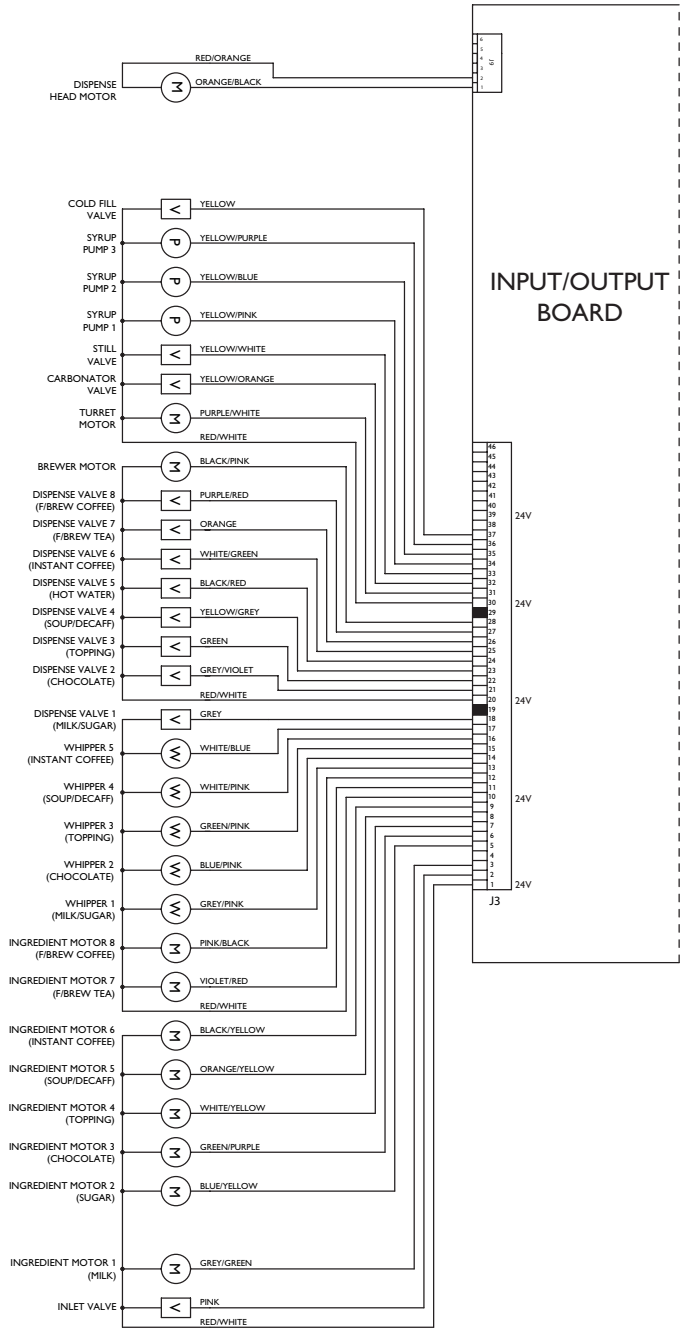
The input/output board is located at the top RH side of the machine. It is mounted onto the rear of the cabinet and can be accessed by removing the ingredient canisters and the RH boiler cover.



11.10 Input Circuit - Freshbrew Machines

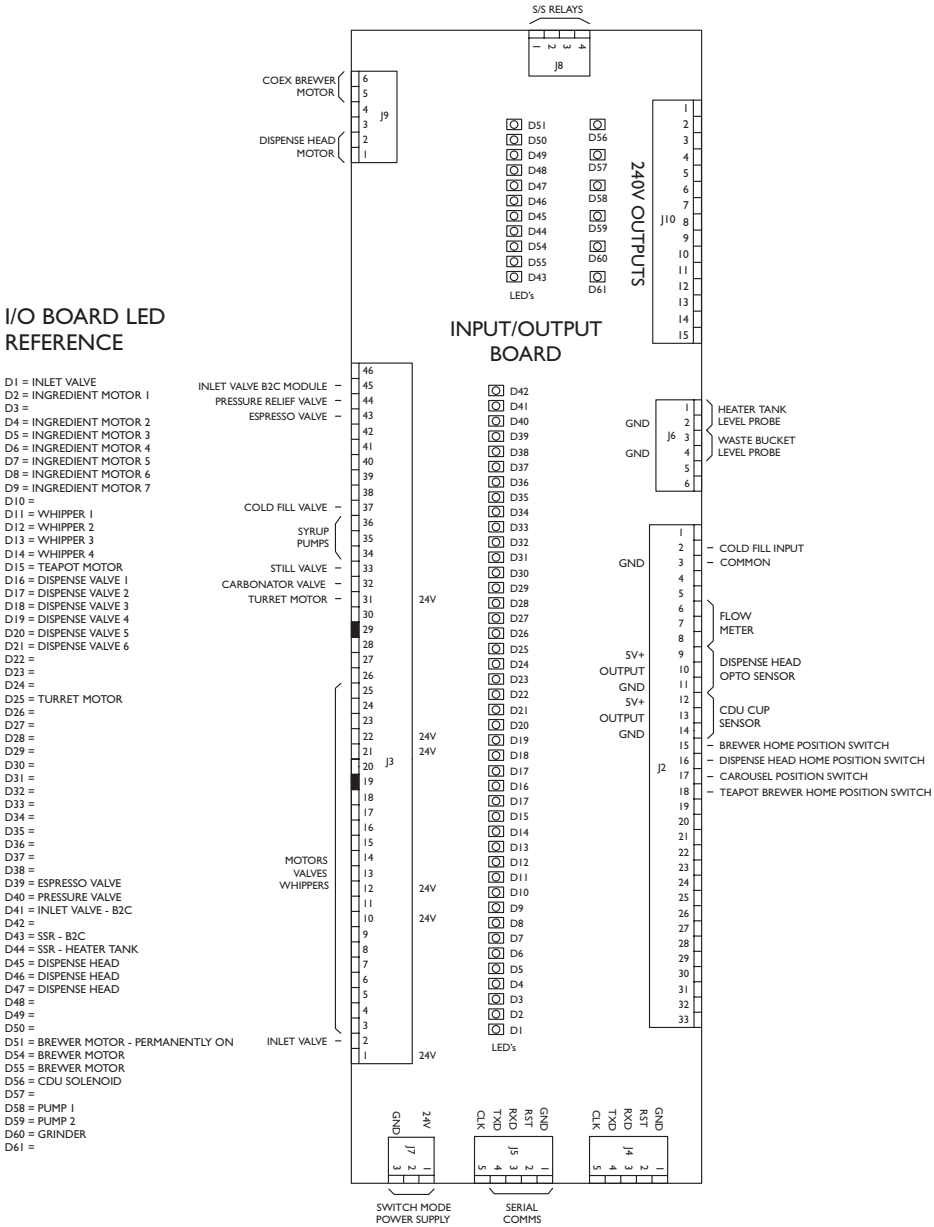


11.11 Output Circuit - Freshbrew Machines

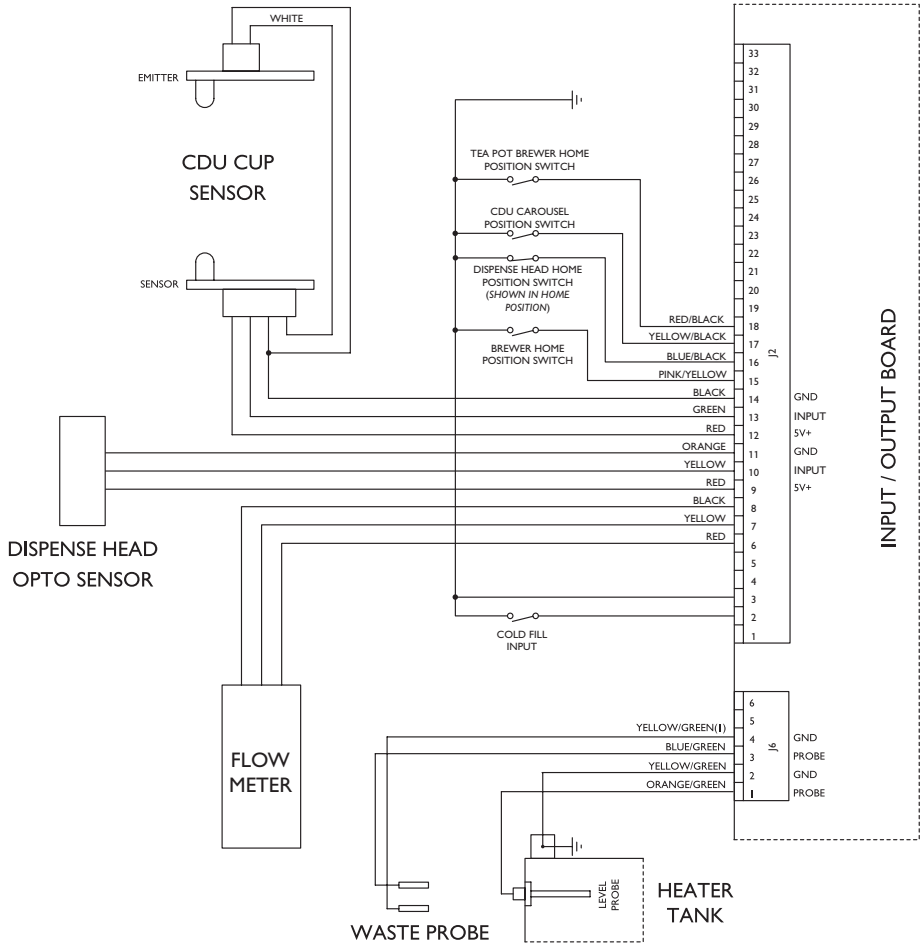


11.12 Input/Output Board - B2C Machines

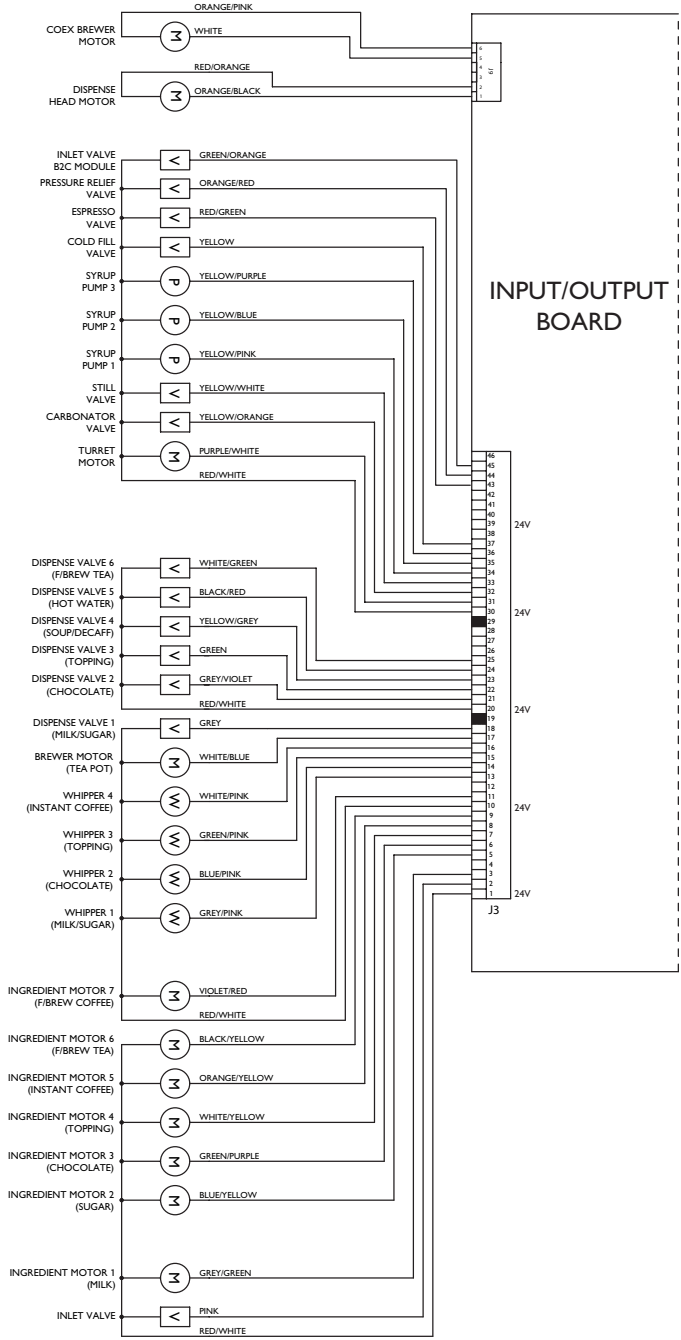
The input/output board is located at the top RH side of the machine. It is mounted onto the rear of the cabinet and can be accessed by removing the ingredient canisters/fresh beans container and the RH boiler cover.



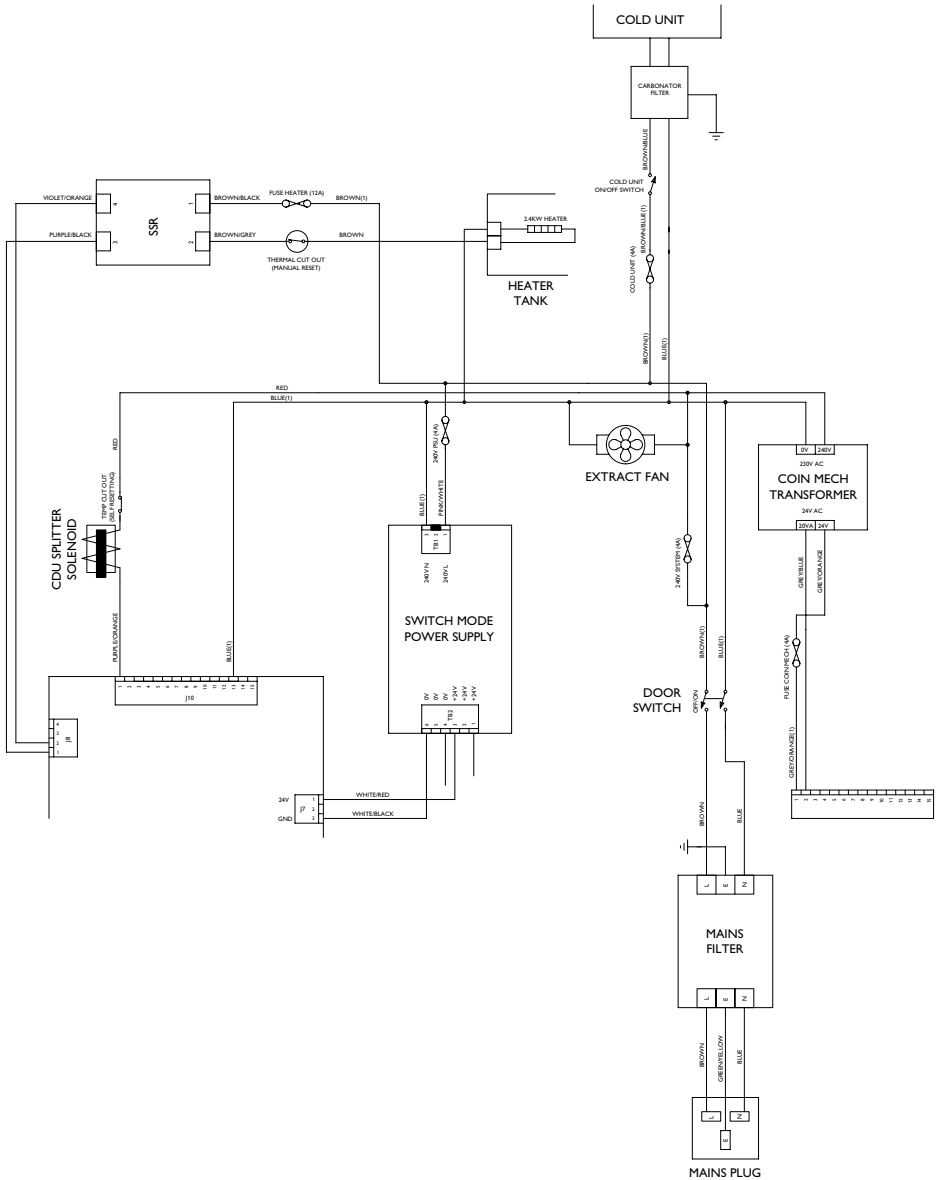
11.13 Input Circuit - B2C Machines



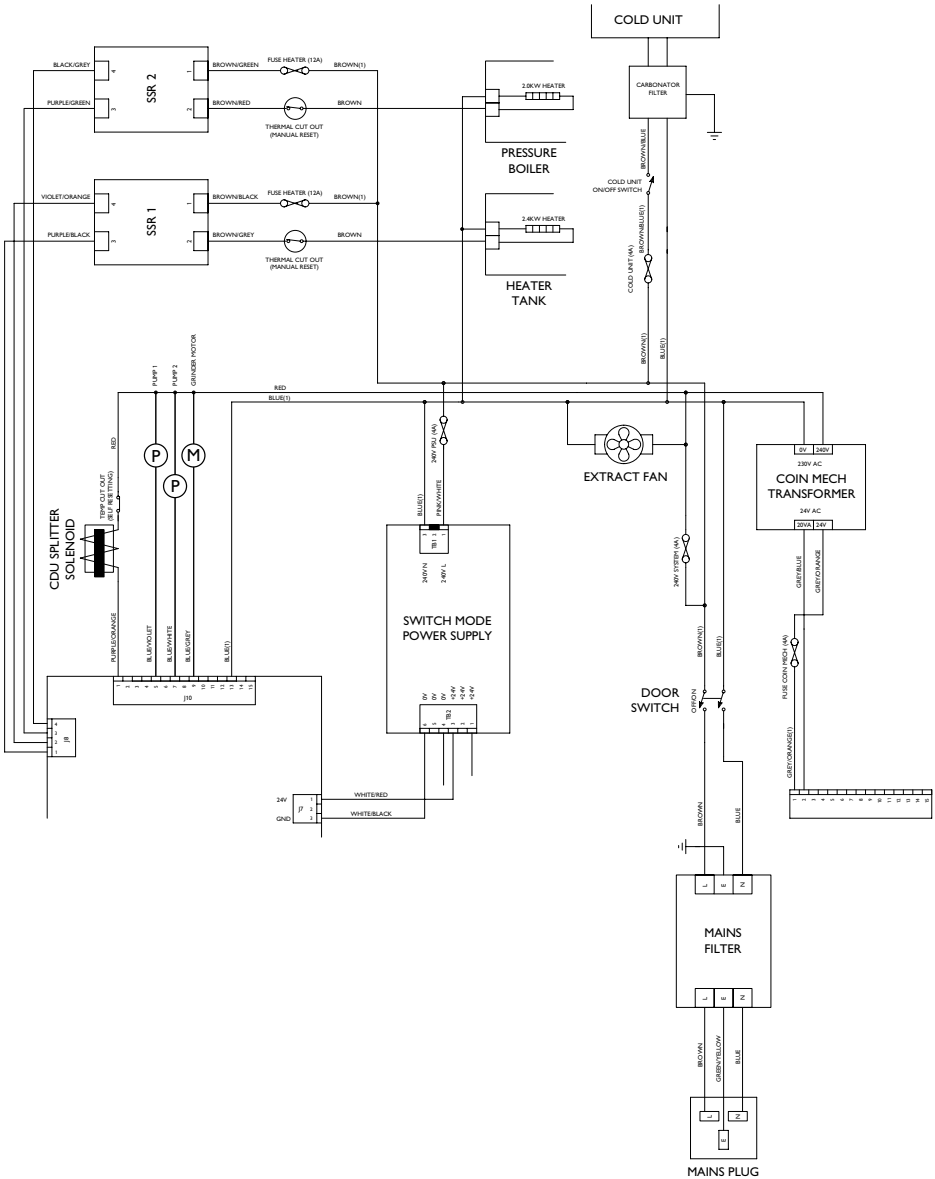
11.14 Output Circuit - B2C Machines



11.15 Power Circuit - Instant & Freshbrew Machines



11.16 Power Circuit - B2C Machines



11.17 Heater Circuit

Please refer to diagram on page 124.

1. The water temperature in the heater tank and pressure boiler(B2C machines) is controlled by the thermistor probe. The thermistor has a variable resistance - when cold it has a high resistance and when hot a low resistance.

2. The thermistor probe sits directly in the water and continuously senses the water temperature. The resistance of the thermistor is interpreted by the controller as a temperature reading.

   N.B. The resistance of the thermistor when at ambient (room) temperature should read approximately 3000 ohms. When hot (96°C) it should read approximately 220 ohms.

3. If the water needs to be heated, a signal from the controller is sent down the Comms. link to the I/O board (heater on signal). The I/O board then switches a 24 volt negative output to the solid state relay. This in turn switches a 240 volt supply to the heater element which heats the water.

   N.B. The heater element fitted to the heater tank is rated at 2.4kW. The element fitted in the pressure boiler (B2C machines only) is rated at 2kW.

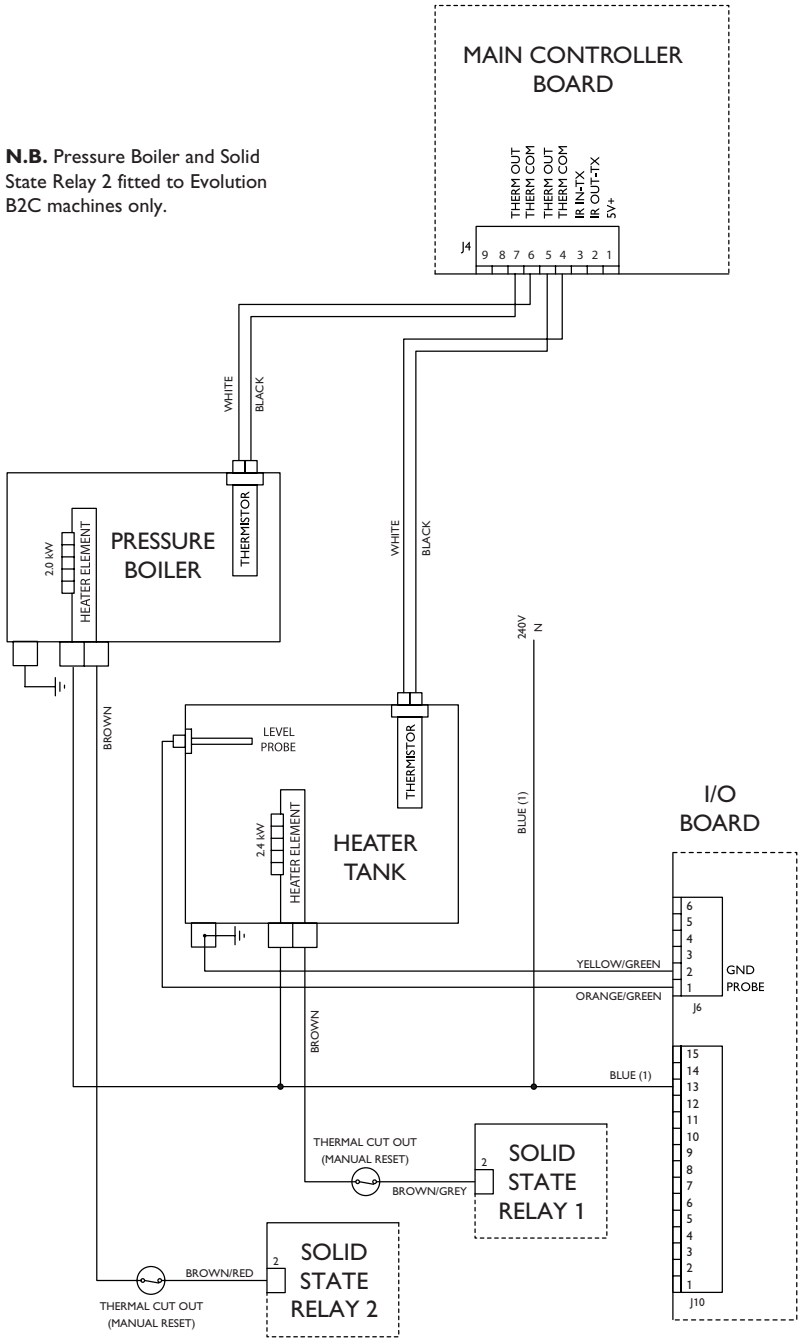
4. This process continues continues until the water has reached the temperature set in the temperature configuration program.

5. If the water in the heater tank should overheat and boil over, a high temperature cut out, positioned in the overflow pipe, will cut off the mains supply to the heater at approximately 90°C within 60 seconds.

6. When the maximum temperature (set in the temperature configuration program) has been reached the 'heater on' signal is removed from the Comms. link switching off the 24 volt negative output from the I/O board, the solid state relay and the heater element.

7. **B2C Machines:** Whenever an espresso based drink is selected, the water is heated in the pressure boiler throughout the vend.

N.B. Pressure Boiler and Solid State Relay 2 fitted to Evolution B2C machines only.



Section 12 - Spare Parts

The following section details the spare parts that are available for the Evolution. Use of these genuine components when servicing or repairing the machine will significantly increase the working life of the machine.

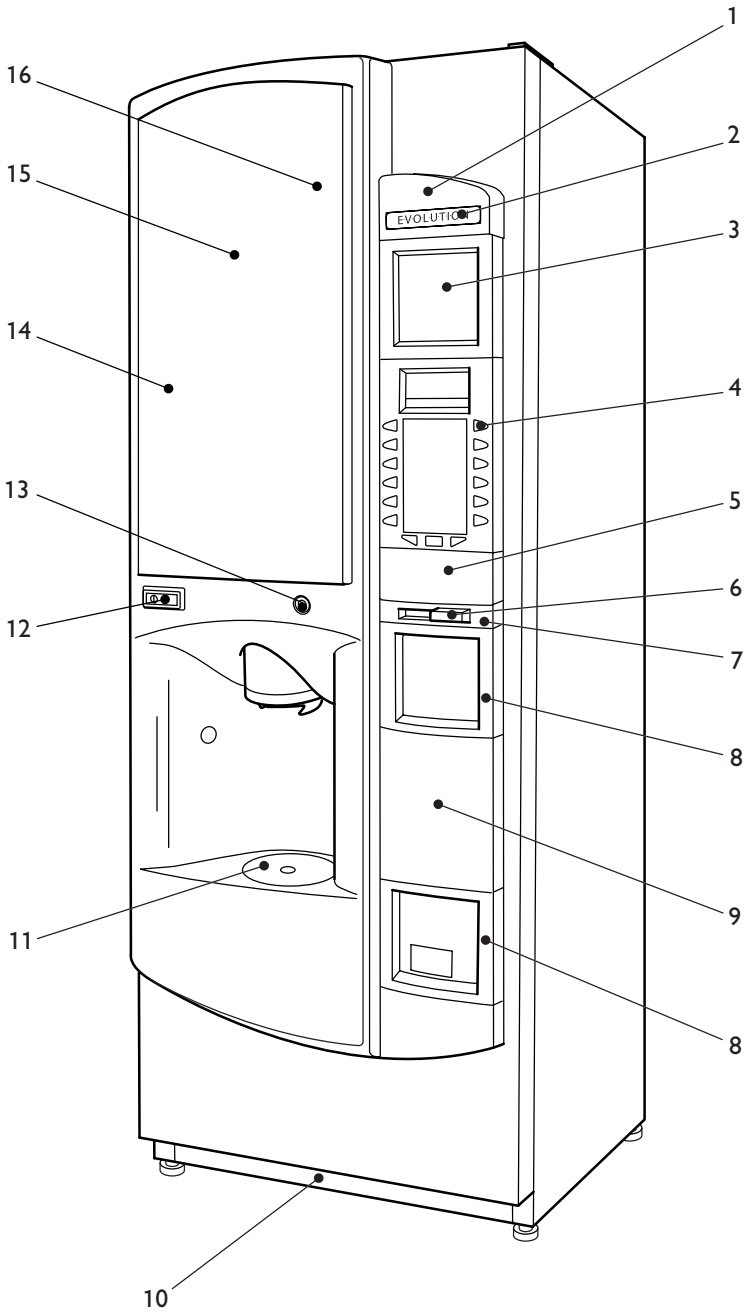
For all spare parts sales and enquiries:

Telephone: 01249 667321

Fax: 01249 461508

Email: spares@cranems.co.uk

Exterior View

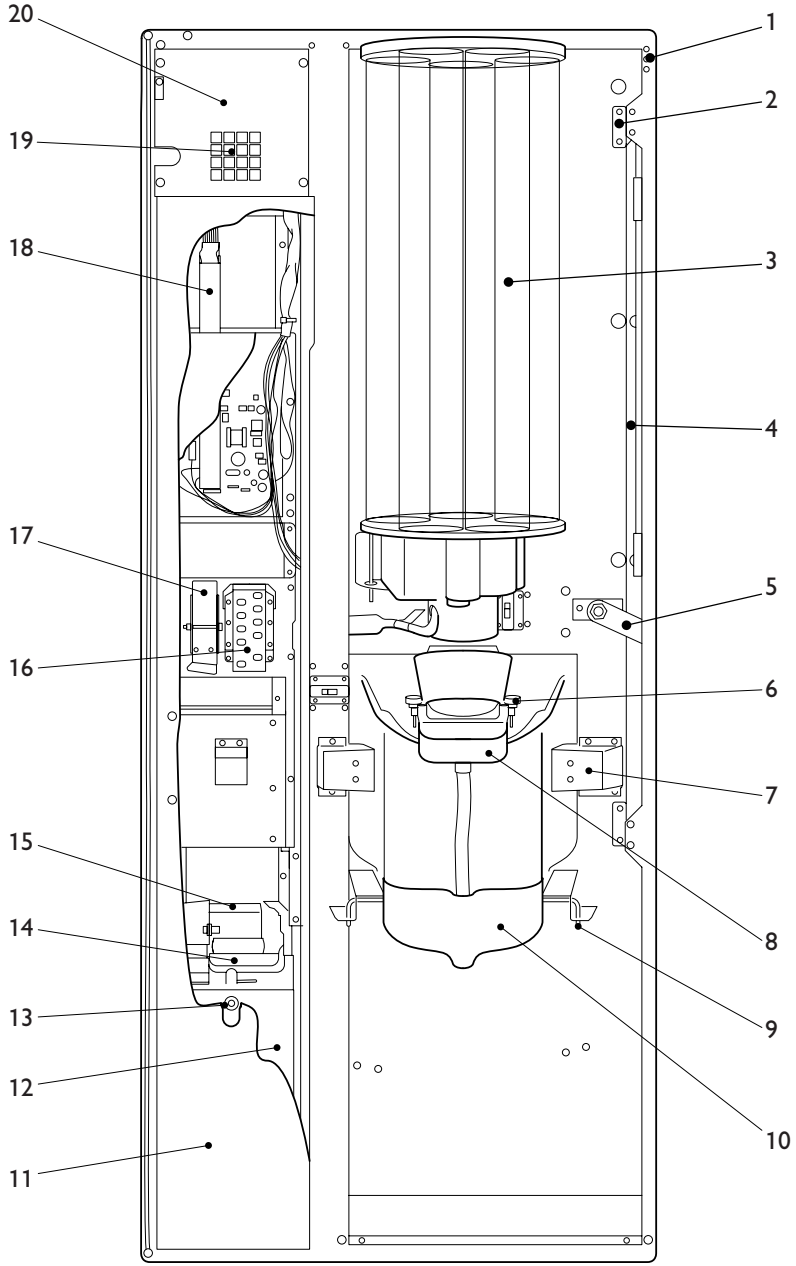


Exterior View

Ref No.	Part No.	Item Description
1	PL10272000	Door Moulding
2	PR10492000	Evolution Name Badge
3	(a) PR10915000	Instruction Decals - UK
	(b) PR11009000	Instruction Decals - German
4		User Interface Assly - See Pages 147 - 149
5	PL10271290	Door Blank Moulding - Small
6	PL10005290	Coin Reject Button - Black
7	PL10003290	Coin Entry Moulding - Black
8	PL10007290	Surround Moulding - Black
9	PL10270290	Door Blank Moulding - Large
10	MT10616290	Front Kick Plate
11	PL10274000	Drip Tray Grill Moulding
12	(a) C4322113	Door Lock Handle
	(b) ME03200000	Lock Insert
	(c) ME03274000	Key - No 3704
13	ME01166000	Jug/Free Vend Switch
14	PL10276000	Door Graphic Cover - Transparent
15	(a) GR10910000	Graphic Panel, Red - UK
	(b) GR10911000	Graphic Panel, Blue - UK
	(c) GR11077000	Graphic Panel, Red, B2C - UK
	(d) GR11078000	Graphic Panel, Blue, B2C - UK
	(e) GR11048000	Graphic Panel, Red - German
	(f) GR11049000	Graphic Panel, Blue - German
	(g) GR11050000	Graphic Panel, Red, B2C - German
	(h) GR11080000	Graphic Panel, Blue, B2C - German
16	(a) PR08561000	Price Decals, 1 - 30p - UK
	(b) PR08562000	Price Decals, 31p - £1 - UK
	(c) PR08687000	Price Decals - Euros

N.B. All Price Decals listed are for Numeric keypad machines only.

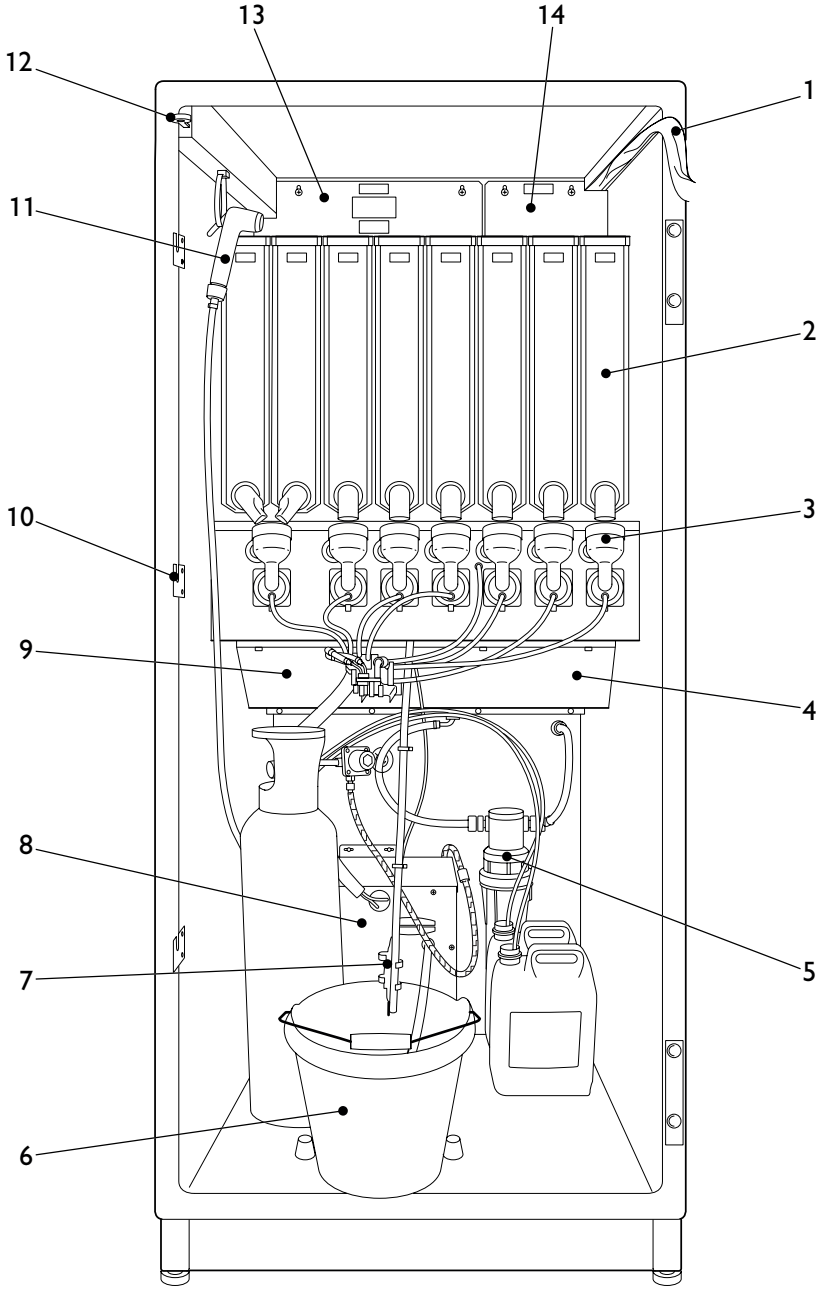
Door Assembly



Door Assembly

Ref No.	Part No.	Item Description
1	MT00011G29	Door Switch Actuator
2	MT10666000	Lock Bar Location Bracket
3		Cup Turret Assembly - See Page 151
4	MT10665000	Door Lock Bar
5	MT10667000	Lock Cam
6	FA01416000	M5 Thumb Nuts
7		SureVend™ Sensor Assly - See Page 187
8	(a) PH04863000	Cup Catcher Moulding - Squat Cup
	(b) PH04864000	Cup Catcher Moulding - Tall Cup
9	ME04926001	Spring Pin (Drip Tray Release)
10	PL10273000	Drip Tray Moulding
11	MT10648000	Monetary Door Assembly
12	C1671090	Cash Box Moulding
13	(a) ME01859000	Cash Box Lock
	(b)	Cash Box Key - No. 300245
14	PL10006290	Coin Return Bowl Moulding
15	MT10169290	Coin Return Flap
16	(a) MT10162250	Coin Chute Base
	(b) MT10163250	Coin Chute Cover
	(c) MT10164250	Coin Chute Bracket
17	MT10167250	Reject Paddle
18	LO10979000	Ribbon Cable Extension
19	EL10025001	Service Keypad
20	MT10652290	Top Rear Door Panel

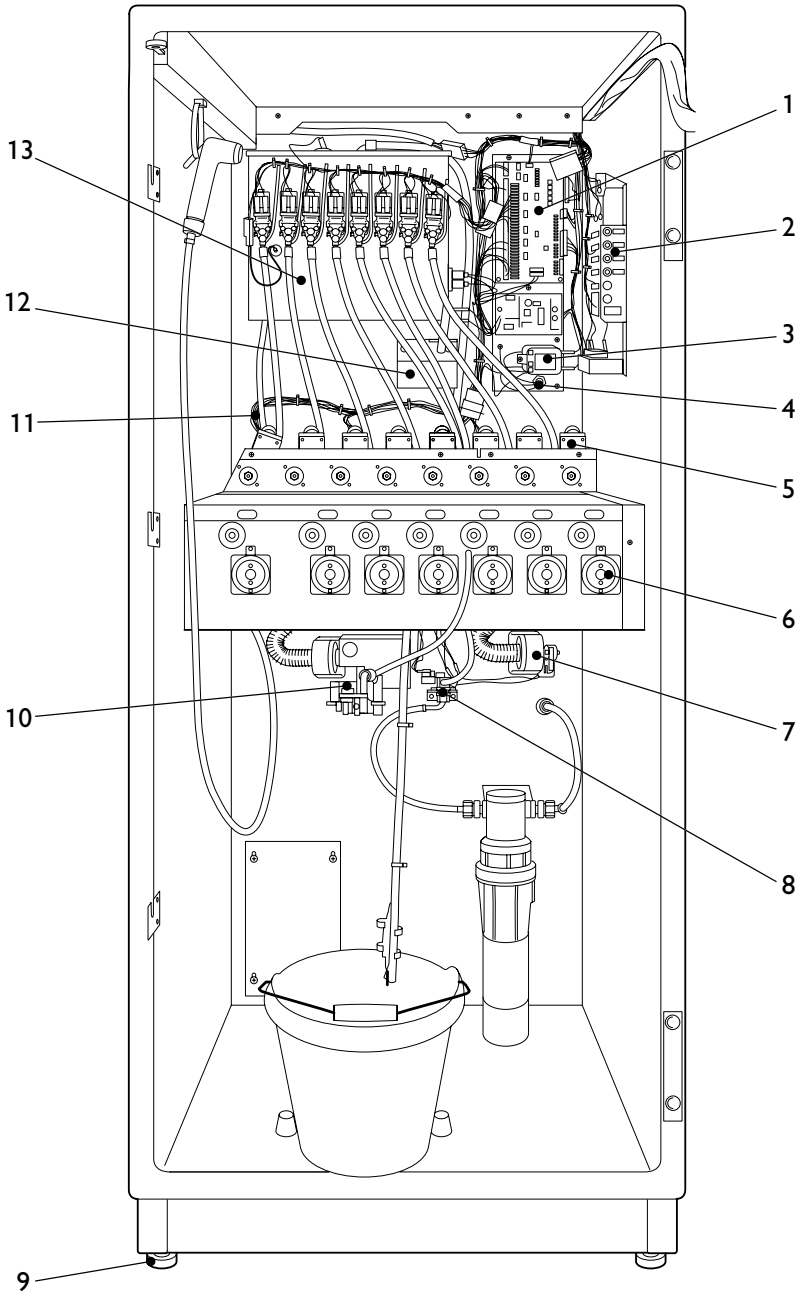
Interior View - Instant



Interior View - Instant

Ref No.	Part No.	Item Description
1	LO10569000	Main Loom
2		Canister Assembly - See Page 153
3		Mixing System - See Page 163
4	MT10700000	Lower Cover - RH
5		Water Filter - See Pages 193 - 197
6	PL01172000	Waste Bucket
7	WO05396000	Level Probe Assembly
8		Cold Unit Assembly
9	MT10699000	Lower Cover - LH
10	MT10636000	Door Lock Catch
11	PH03674001	Spray Hose Assembly
12	(a) WO10812000	Service Key c/w tie
	(b) PL06334000	Service Key
13	MT10705000	Boiler Cover - LH
14	MT10706000	Boiler Cover - RH

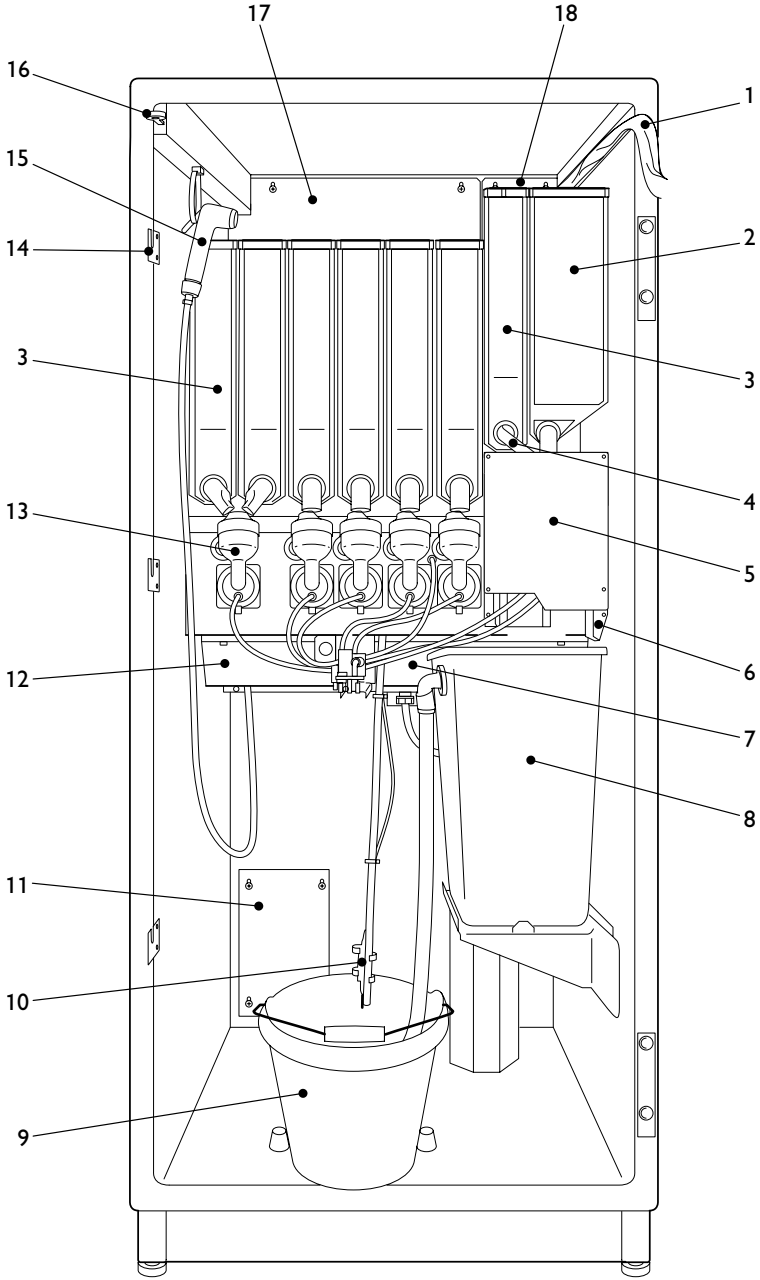
Interior View - Instant
(Covers Removed)



Interior View - Instant (Covers Removed)

Ref No.	Part No.	Item Description
1		PSU Assembly - See Page 165
2		Fuse Panel Assembly - See Page 167
3	EL11084000	Mains Filter
4	(a) LO10815000	Mains Lead - UK Machines
	(b) EL03991000	Mains Lead - European Machines
5	MO10152000	Ingredient Motor, 130 rpm
6		Whipper Motor - See Page 163
7		Extract Fan Assembly - See Page 189
8	(a) VA10147000	Inlet Valve (Hot Only Machines)
	(b) VA10769000	Inlet Valve, Double
9	ME10533000	Foot Assembly
10		Dispense Head Assly - See Page 159
11	(a) LO10570000	LH Module Harness
	(b) LO10571000	RH Module Harness (8 Canister Only)
12	MT10630080	Overflow Tray Bracket
13		Heater Tank Assly - See Page 161

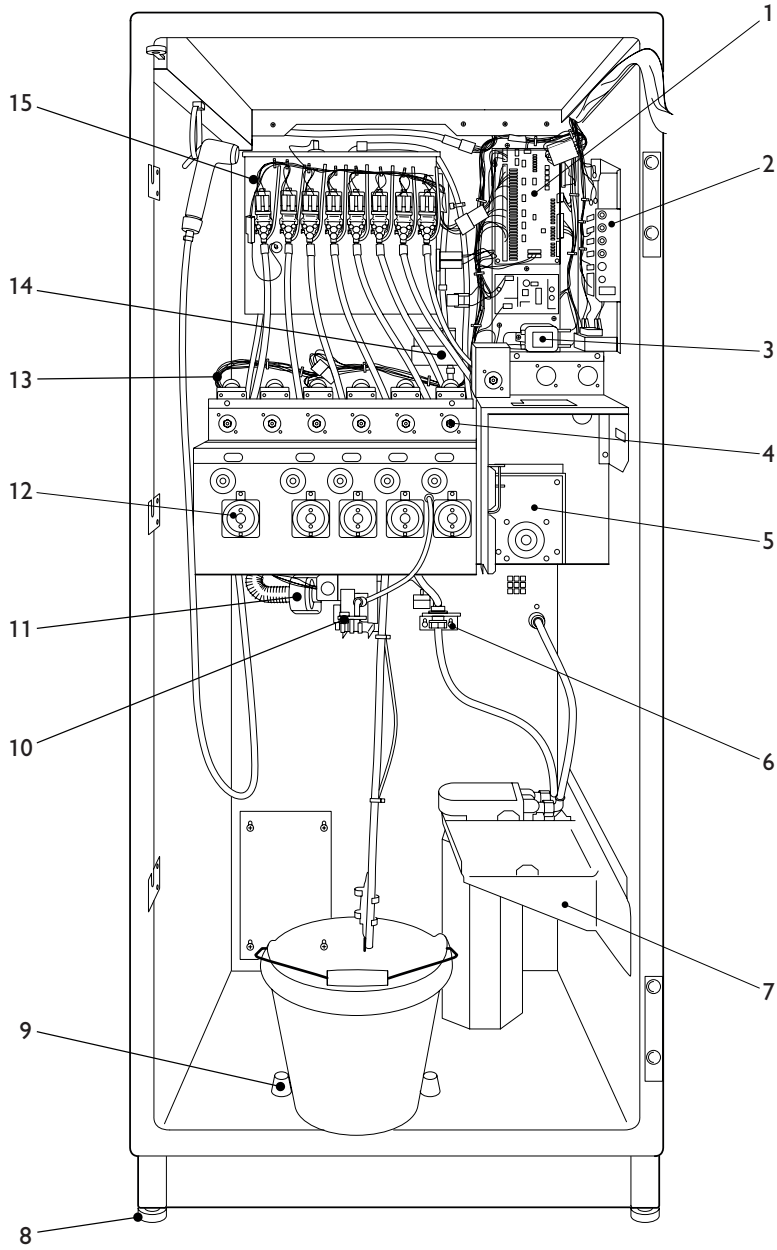
Interior View - Freshbrew (Paperless Zuma Brewer)



Interior View - Freshbrew (Paperless Zuma Brewer)

Ref No.	Part No.	Item Description
1	LO10569000	Main Loom
2		F/brew Canister Assembly - See Page 155
3		Canister Assembly - See Page 153
4	PL10297001	Extended Chute - Tea
5	MT10688080	Brewer Cover
6	MT10689000	Brewer Side Tray
7	MT10700000	Lower Cover - RH
8	WO10803000	Freshbrew Waste Bucket Assly
9	PL01172000	Waste Bucket
10	WO05396000	Level Probe Assembly
11	MT10628000	Blanking Plate (Hot Machines Only)
12	MT10699000	Lower Cover - LH
13		Mixing System - See Page 163
14	MT10636000	Door Lock Catch
15	PH03674001	Spray Hose Assembly
16	(a) WO10812000	Service Key c/w tie
	(b) PL06334000	Service Key
17	MT10705000	Boiler Cover - LH
18	MT10662000	Boiler Cover - RH

Interior View - Freshbrew
(Paperless Zuma Brewer - Covers Removed)

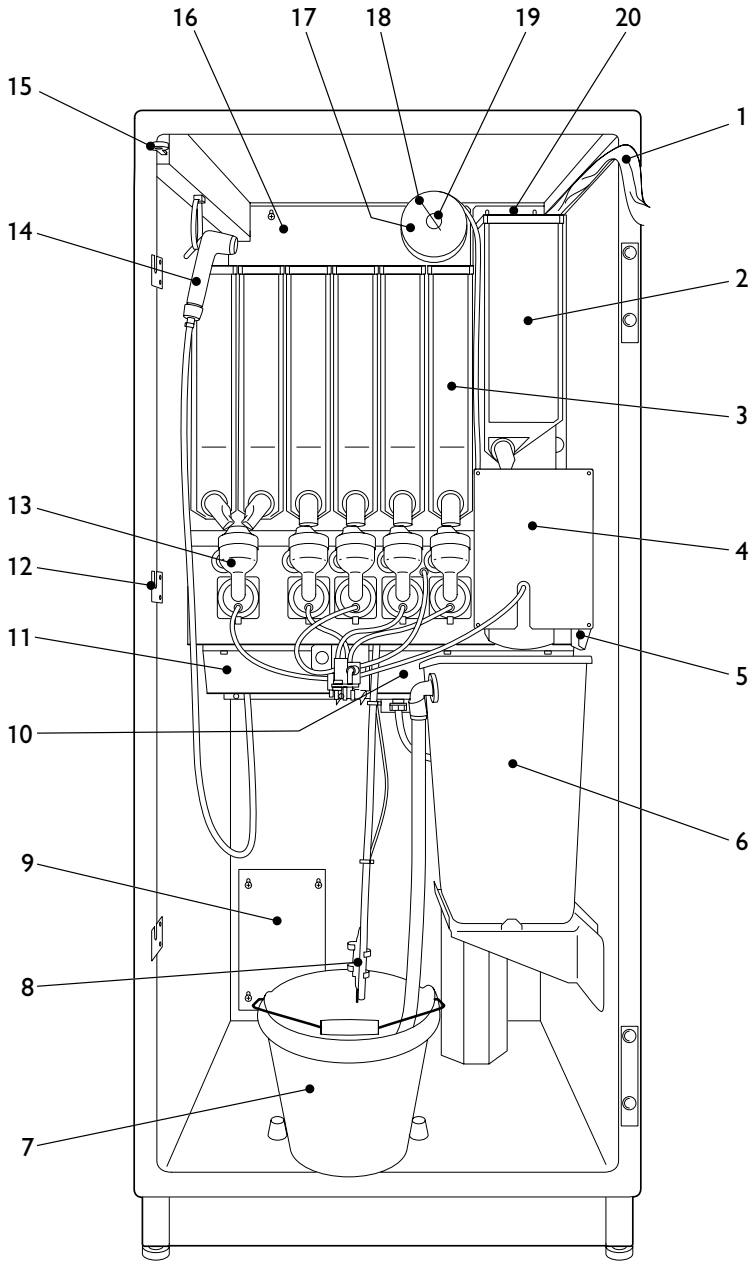


Interior View - Freshbrew
(Paperless Zuma Brewer - Covers Removed)

Ref No.	Part No.	Item Description
1		PSU Assembly - See Page 165
2		Fuse Panel Assembly - See Page 167
3	EL11084000	Mains Filter
	(a) LO10815000	Mains Lead - UK Machines*
	(b) EL03991000	Mains Lead - European Machines*
4	MO10152000	Ingredient Motor, 130 rpm
5		F/brew Motor Assembly - See Page 169
6	(a) VA10147000	Inlet Valve (Hot Only Machines)
	(b) VA10769000	Inlet Valve, Double
7	MT10737080	Bucket Stand Bracket
8	ME10533000	Foot Assembly
9	ME04280000	Bucket Positioner
10		Dispense Head Assembly - See Page 159
11		Extract Fan Assembly - See Page 189
12		Whipper Motor - See Page 163
13	(a) LO10570000	LH Module Harness
	(b) LO10571000	RH Module Harness
14	MT10630080	Overflow Tray Bracket
15		Heater Tank Assembly - See Page 161

* Not Illustrated

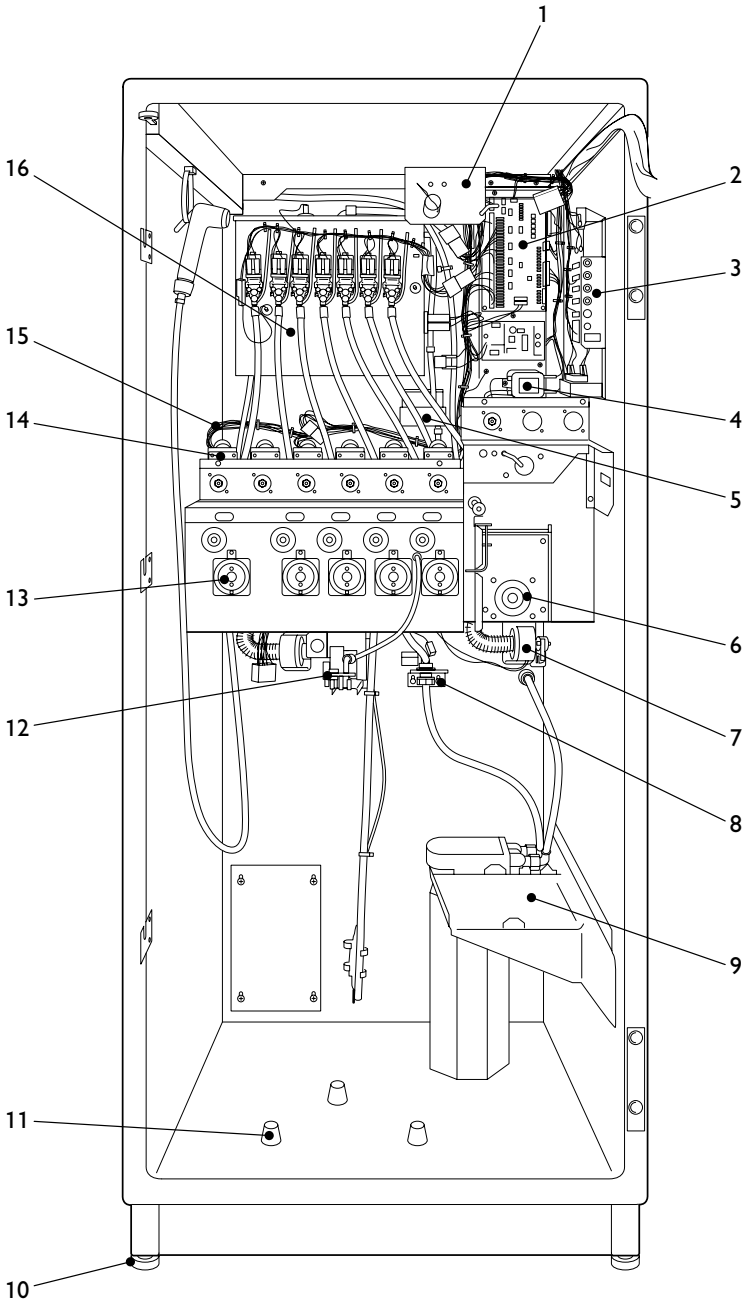
Interior View - Freshbrew
(King Brewer)



Interior View - Freshbrew (King Brewer)

Ref No.	Part No.	Item Description
1	LO10569000	Main Loom
2		F/brew Canister Assembly - See Page 155
3		Canister Assembly - See Page 153
4	MT10774080	Brewer Cover
5	MT10779000	Brewer Side Tray
6	WO10803000	Freshbrew Waste Bucket Assly
7	PL01172000	Waste Bucket
8	WO05396000	Level Probe Assembly
9	MT10628000	Blanking Plate (Hot Machines Only)
10	MT10700000	Lower Cover - RH
11	MT10699000	Lower Cover - LH
12	MT10636000	Door Lock Catch
13		Mixing System - See Page 163
14	PH03674001	Spray Hose Assembly
15	(a) WO10812000	Service Key c/w tie
	(b) PL06334000	Service Key
16	MT10705000	Boiler Cover - LH
17	WF01176000	Filter Paper Roll
18	ME01849000	Filter Roll retaining Clip
19	ME00038001	Filter Roll Bar
20	MT10662000	Boiler Cover - RH

Interior View - Freshbrew
(King Brewer - Covers Removed)

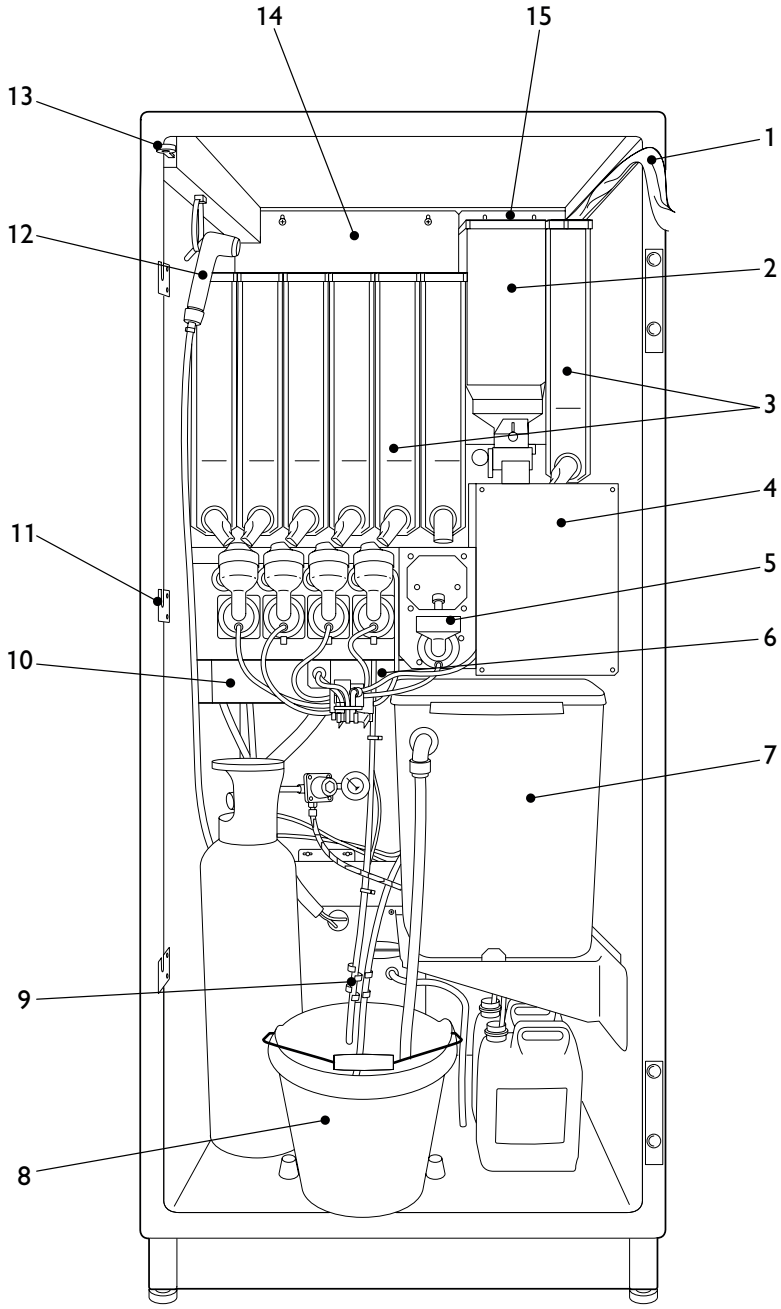


Interior View - Freshbrew
(King Brewer - Covers Removed)

Ref No.	Part No.	Item Description
1	MT04148080	Roll Holder Bracket
2		PSU Assembly - See Page 165
3		Fuse Panel Assembly - See Page 167
4	EL11084000	Mains Filter
	(a) LO10815000	Mains Lead - UK Machines*
	(b) EL03991000	Mains Lead - European Machines*
5	MT10630080	Overflow Tray Bracket
6		Freshbrew Motor Assly - See Page 169
7		Extract Fan Assembly - See Page 189
8	(a) VA10147000	Inlet Valve (Hot Only Machines)
	(b) VA10769000	Inlet Valve, Double
9	MT10737080	Bucket Stand Bracket
10	ME10533000	Foot Assembly
11	ME04280000	Bucket Positioner
12		Dispense Head Assembly - See Page 159
13		Whipper Motor - See Page 163
14	MO10152000	Ingredient Motor, 130 rpm
15	(a) LO10570000	LH Module Harness
	(b) LO10571000	RH Module Harness
16		Heater Tank Assembly - See Page 161

* Not Illustrated

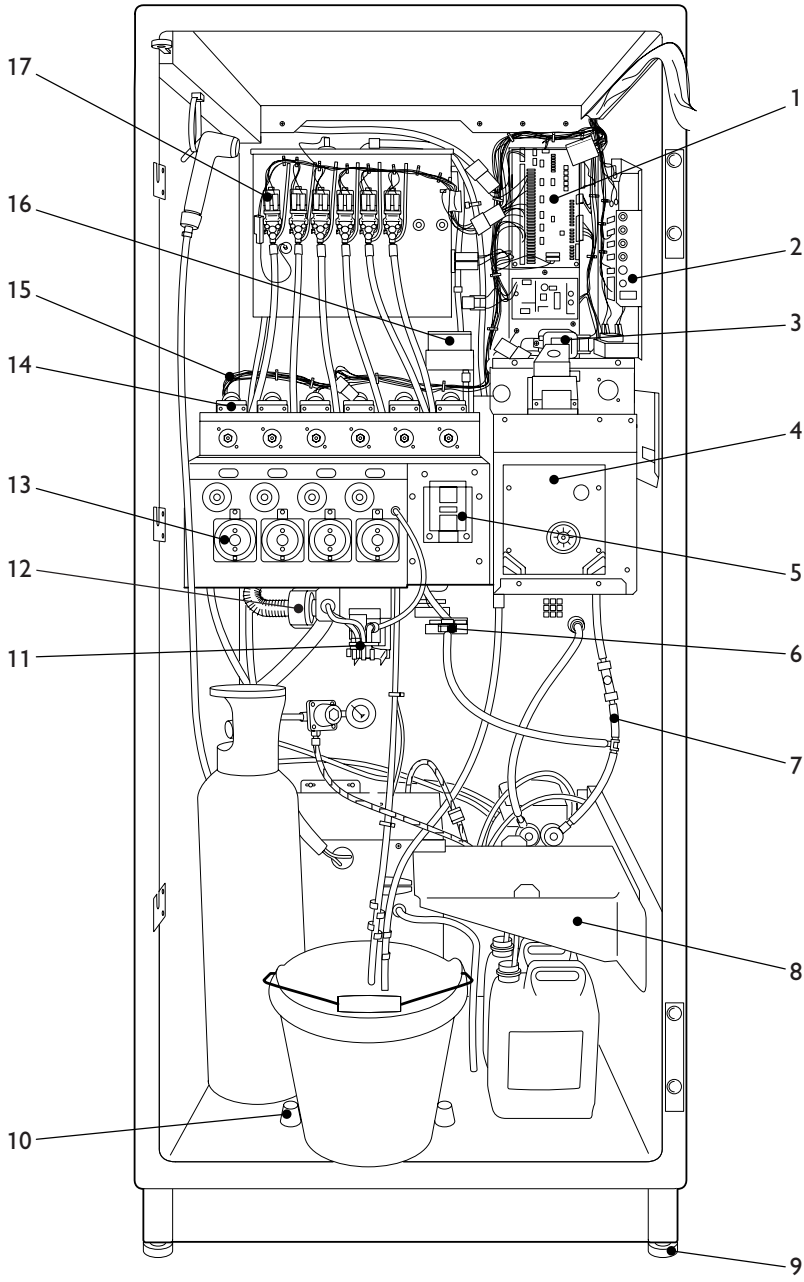
Interior View - B2C



Interior View - B2C

Ref No.	Part No.	Item Description
1	LO10786000	Main Loom - B2C
2	PL10792000	Fresh Beans Canister
3		Canister Assembly - See Page 153
4	MT10847080	Brewer Cover
5		Teapot Brewer Assembly - See Page 185
6	MT10701000	Lower Cover - RH
7	WO10804000	Waste Bucket Assembly - B2C
8	PL01172000	Waste Bucket
9	WO05396000	Level Probe Assembly
10	MT10699000	Lower Cover - LH
11	MT10636000	Door Lock Catch
12	PH03674001	Spray Hose Assembly
13	(a) WO10812000	Service Key c/w tie
	(b) PL06334000	Service Key
14	MT10705000	Boiler Cover - LH
15	MT10662000	Boiler Cover - RH

Interior View - B2C
(Covers Removed)

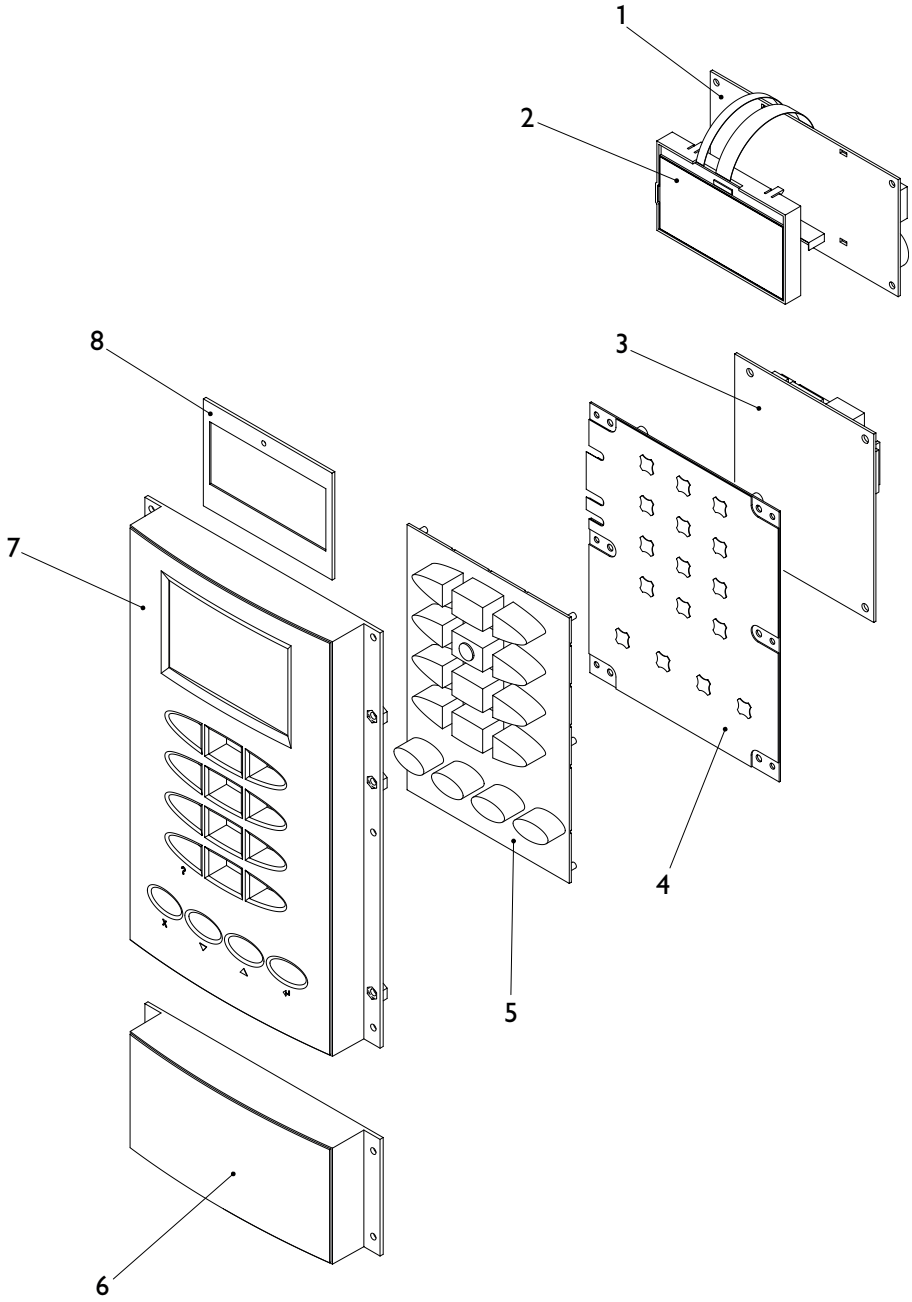


Interior View - B2C
(Covers Removed)

Ref No.	Part No.	Item Description
1		PSU Assembly - See Page 165
2		Fuse Panel Assembly - See Page 167
3	EL11084000	Mains Filter
	(a) LO10815000	Mains Lead - UK Machines*
	(b) EL03991000	Mains Lead - European Machines*
4		CoEx®Module Assembly - See Page 179
5		Teapot Brewer Assembly - See Page 185
6	(a) VA10147000	Inlet Valve (Hot Only Machines)
	(b) VA10769000	Inlet Valve, Double
7		B2C Hose
8	MT10739080	Bucket Stand Bracket
9	ME10533000	Foot Assembly
10	ME04280000	Bucket Positioner
11		Dispense Head Assembly - See Page 159
12		Extract Fan Assembly - See Page 189
13		Whipper Motor - See Page 163
14	MO10152000	Ingredient Motor, 130 rpm
15	(a) LO10570000	LH Module Harness
	(b) LO10782000	B2C Module Harness
16	MT10630080	Overflow Tray Bracket
17		Heater Tank Assembly - See Page 161

* Not Illustrated

Keypad - Numeric

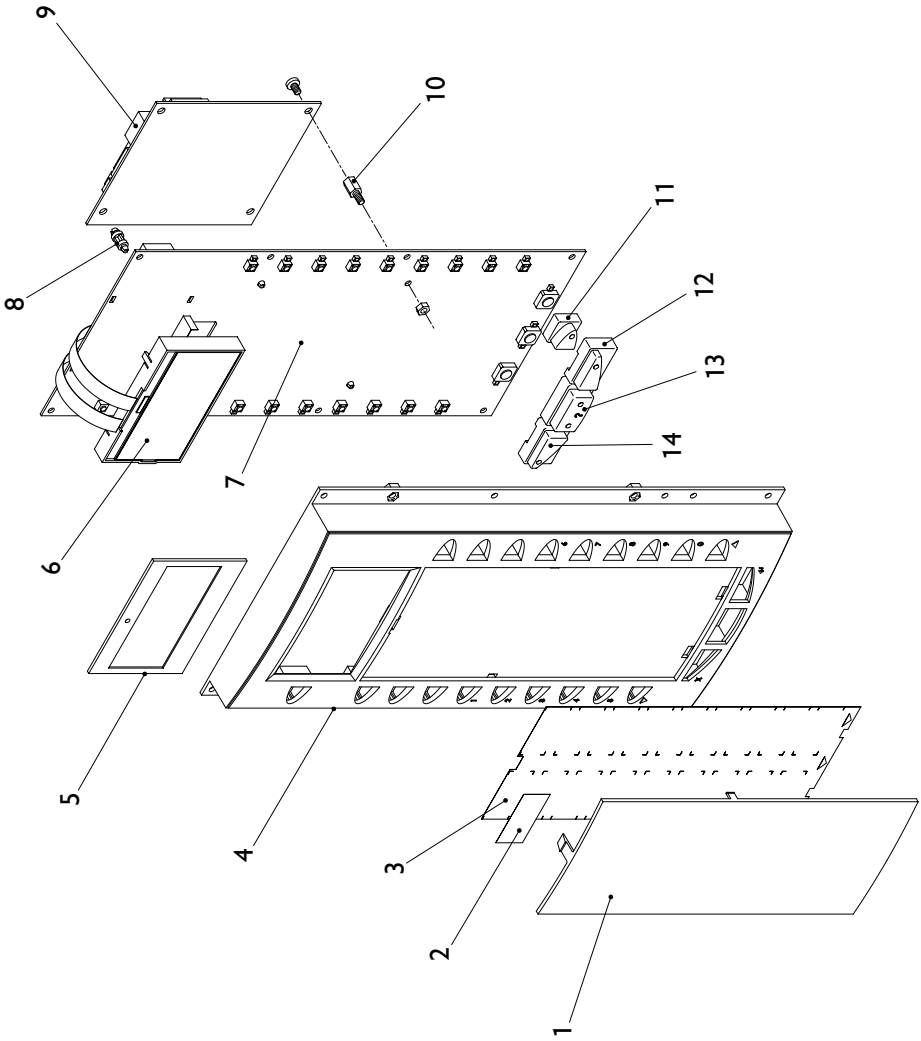


Keypad - Numeric

Ref No.	Part No.	Item Description
1	EL10462000	PCB Console Board - Numeric Keypad
2	EL10024000	LCD Display
3	EL10256000	MPU Board
4	SA10457000	Switch Pad - Numeric Keypad
5		Rubber Keypad
6	PL10271000	Door Blank Moulding - Small
7	PL10275000	Console Moulding
8	PL10040001	LCD Cover
	LO10225000	Link Loom - Console Board To MPU*
	LO10958000	Link Loom - IRDA*

* Not Illustrated

Keypad - 18 Button

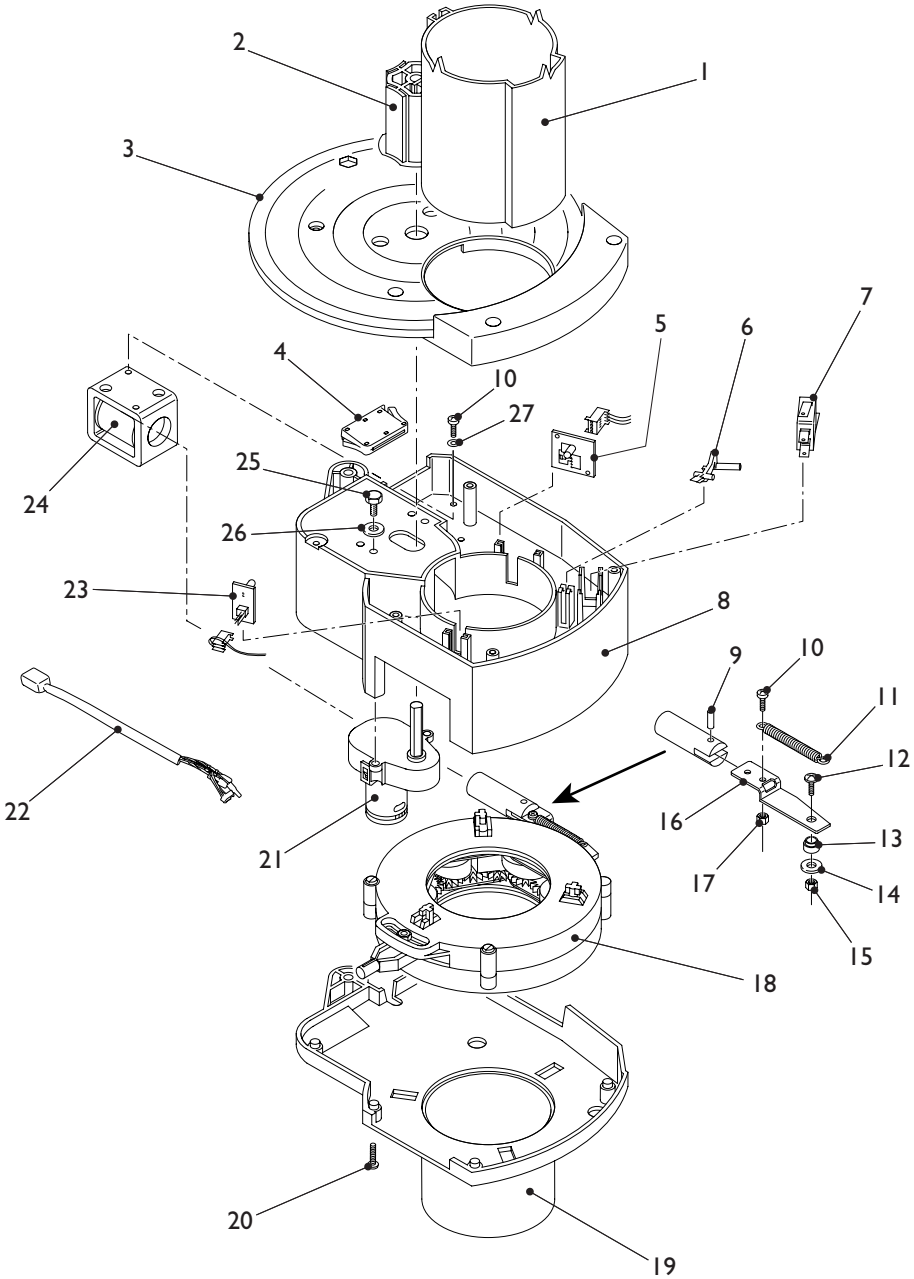


Keypad - 18 Button

Ref No.	Part No.	Item Description
1	PL10269000	Selection Cover Moulding - Transparent
2	(a) PR10233000	Selection Decals - UK
	(b) PR10918000	Selection Decals - UK
	(c) PR10234000	Price Decals - UK*
	(d) PR10310000	Selection Decals - German
	(e) PR11044000	Selection Decals - German
	(f) PR10235000	Price Decals - Euros*
3	(a) GR10917000	Selection Backer - UK
	(b) GR11001000	Selection Backer - German
4	PL10268000	Console Moulding - 18 Button
5	PL10040001	LCD Cover
6	EL10024000	LCD Display
7	EL10559000	Console PCB
8	FA10222000	PCB Stand Off
9	EL10256000	MPU Board
10	FA10223000	PCB Mount - Brass
11	PL10012000	Selection Button
12	PL10033000	Sugar Selection Button
13	PL10032000	Start Selection Button
14	PL10031000	Milk Selection Button
	LO10225000	Link Loom - Console Board To MPU*
	LO10958000	Link Loom - IRDA*

* Not Illustrated

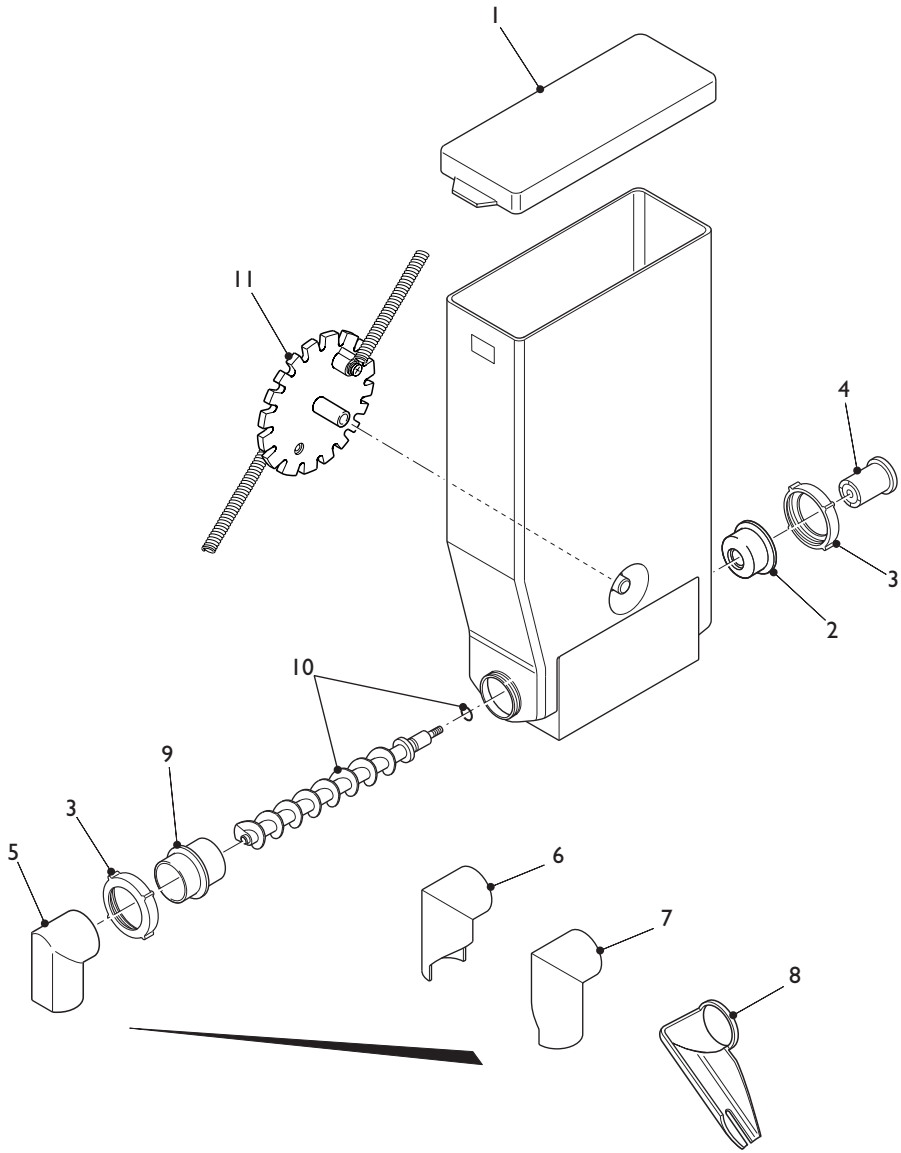
Cup Drop Unit Assembly



Cup Drop Unit Assembly

Ref No.	Part No.	Item Description
1	PH10247000	Turret Extrusion
	PL10830000	Cup Turret Lid - Not Illustrated
2	PH10030000	Turret Spigot
3	PL10029000	Top Moulding
4	ME10067000	Magnetic Catch
5	EL10038000	PCB Cup Detector
6	PL10018000	Microswitch Arm Moulding
7	EL04920000	Micro Switch
8	PL10016000	CDU Moulding
9	FA10204000	Spirol Pin, M4 x 14 mm
10	FA10205000	Screw, M3 x 10
11	ME05208000	Spring
12	FA03217000	Screw, M4 x 10
13	ME10201000	Spacer
14	FA01554000	Shakeproof Washer, M4
15	FA01506000	Locknut, M4
16	MT10066000	Bracket
17	FA10203000	Nyloc Nut, M3
18	PA10262000	Cup Splitter Assembly
19	PL10017000	Bottom Moulding
20	FA10202000	Screw, M3.5 x 20
21	MO10885000	Turret Motor, 2.2 rpm
22	LO10114000	Loom
23	EL10038000	PCB Cup Detector
24	EL10037000	Solenoid
25	FA02155000	Screw, M5 x 12
26	FA02142000	Shakeproof Washer, M5
27	FA10206000	Shakeproof Washer, M3

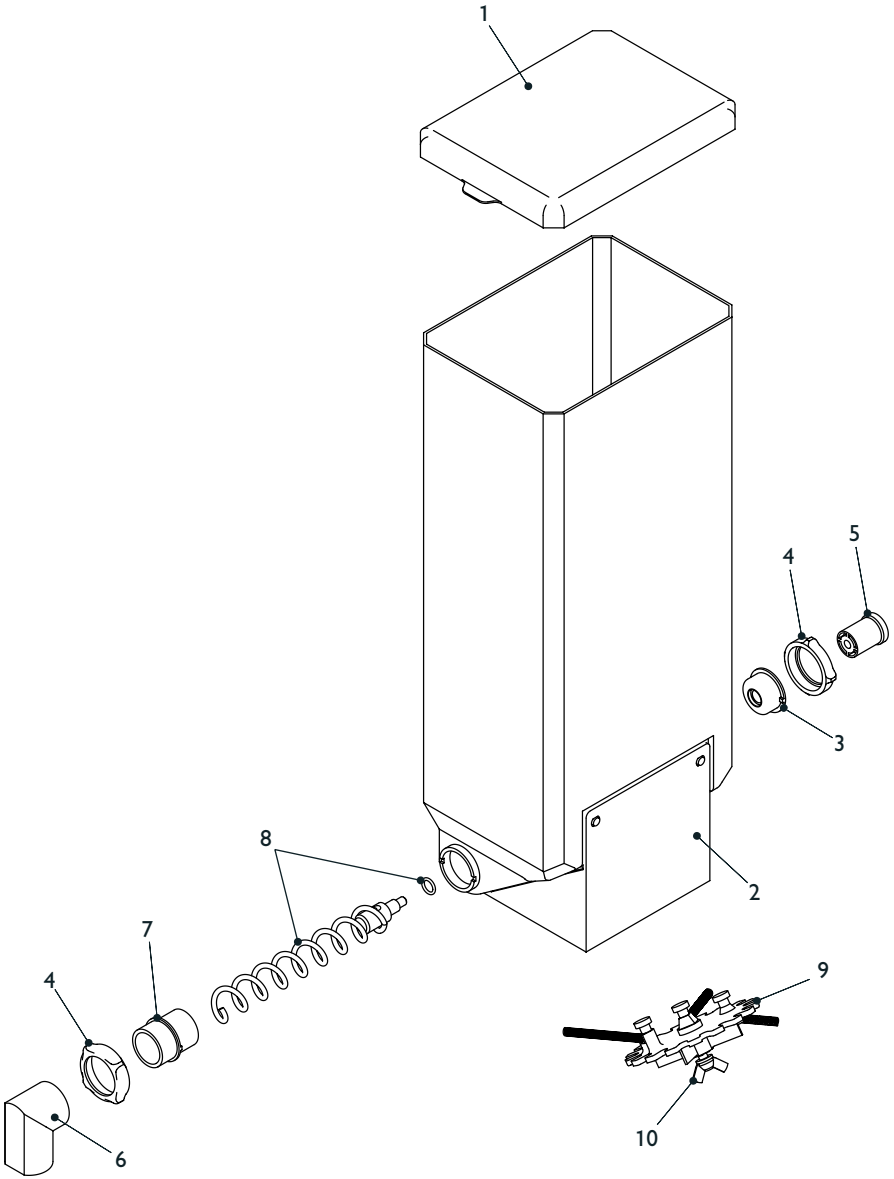
Canister Assembly



Canister Assembly

Ref No.	Part No.	Item Description
	PL11168000	Canister, 78mm wide c/w agitator
	PL11169000	Canister, 78mm wide - no agitator
	PL11170000	Canister, 67mm wide c/w agitator
	PL11171000	Canister, 67mm wide - no agitator
	PL11172000	Canister, 67mm wide c/w agitator and stainless steel auger
1	(a) PL11178000	Canister Lid - 78mm wide
	(b) PL11179000	Canister Lid - 67mm wide
2	PL10358000	Flange - Rear
3	PL10356000	End Cap
4	PL02711000	Canister Drive
5	PL01128000	Canister Chute - Central
6	PL01441000	Canister Chute, LH - Long
7	PL01442000	Canister Chute, RH - Long
8	PL10297000	Extended Chute (B2C Tea Canister)
9	PL10357000	Flange - Front
10	(a) ME02706000	Auger, Plastic c/w 'O' Ring
	(b) ME1038600	Auger, S/S Wire c/w 'O' Ring
	(c) SI02705000	'O' Ring
11	ME10388000	Agitator Assembly

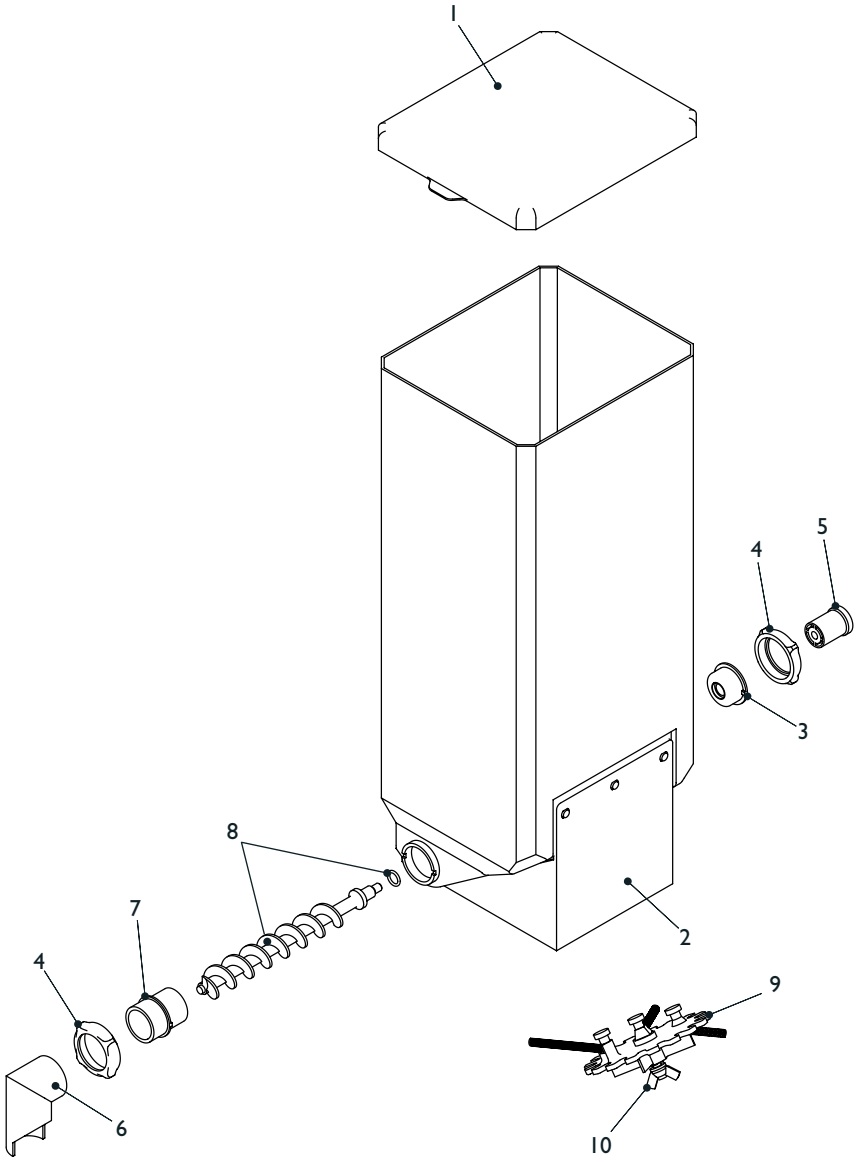
Canister Assembly - Freshbrew Coffee



Canister Assembly - Freshbrew Coffee

Ref No.	Part No.	Item Description
	PL10822000	Freshbrew Coffee Canister Complete
1	PL11180000	Canister Lid
2	PL11181000	Canister Base
3	PL10358000	Flange - Rear
4	PL10356000	End Cap
5	PL02711000	Canister Drive
6	PL01128000	Canister Chute - Central
7	PL10357000	Flange - Front
8	(a) ME1038600	Auger, S/S Wire c/w 'O' Ring
	(b) SI02705000	'O' Ring
9	PL11182000	Agitator Assembly
10	PL11183000	Agitator Fixing Nut

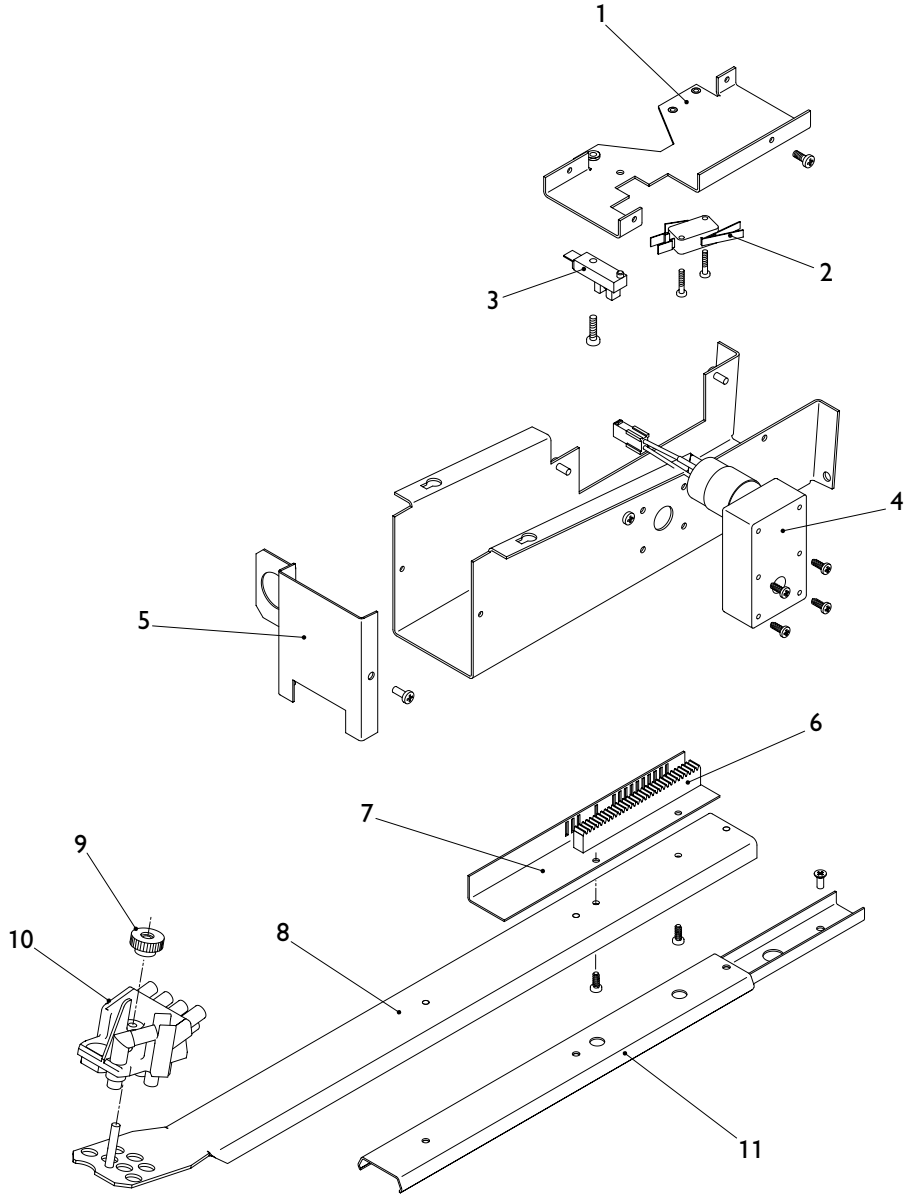
Canister Assembly - Chocolate/Freshbrew Tea



Canister Assembly - Chocolate/Freshbrew Tea

Ref No.	Part No.	Item Description
	PL10823000	Chocolate/FBrew Tea Canister Complete
1	PL11184000	Canister Lid
2	PL11185000	Canister Base
3	PL10358000	Flange - Rear
4	PL10356000	End Cap
5	PL02711000	Canister Drive
6	PL01128000	Canister Chute - Central
7	PL10357000	Flange - Front
8	(a) ME02706000	Auger, c/w 'O' Ring
	(b) SI02705000	'O' Ring
9	PL11182000	Agitator Assembly
10	PL11183000	Agitator Fixing Nut

Dispense Head Assembly

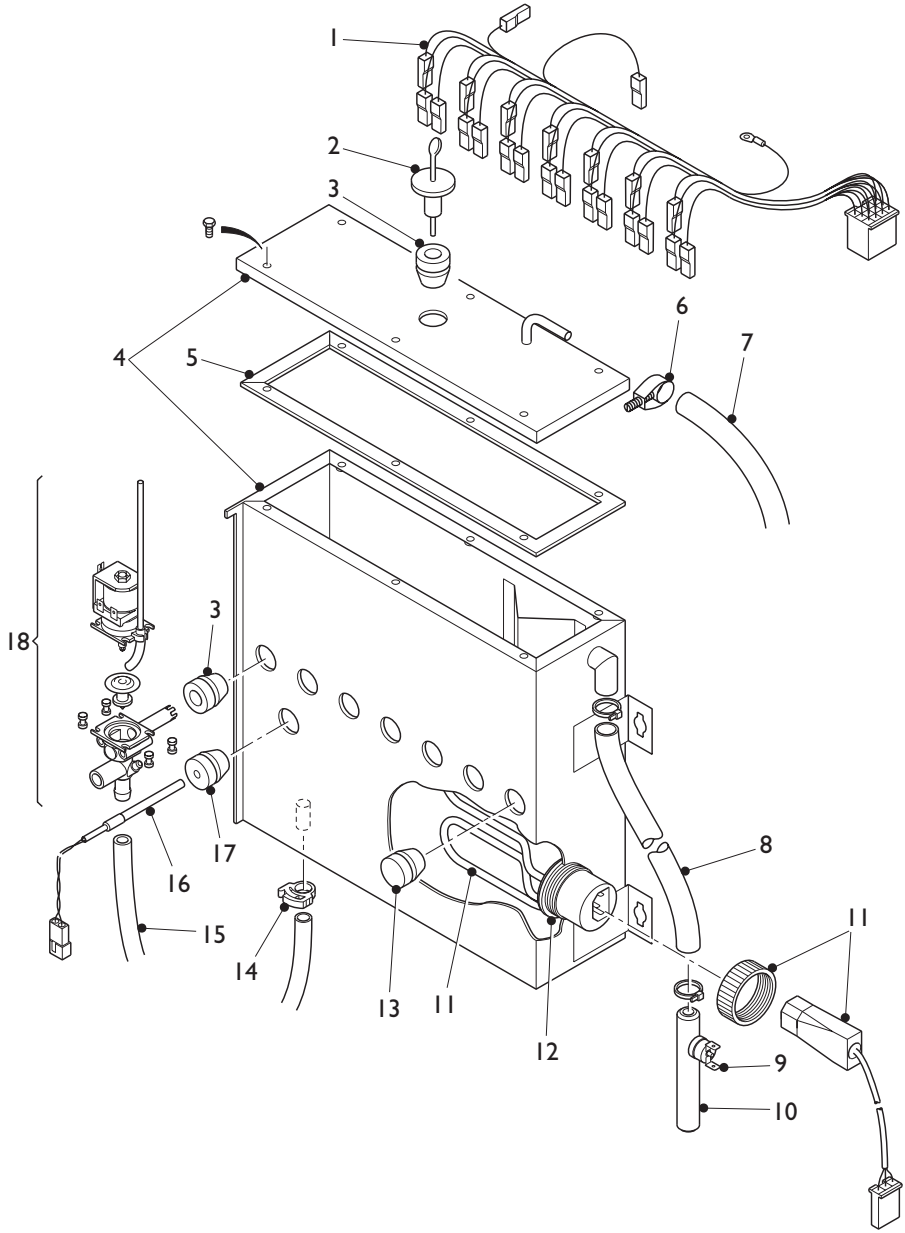


Dispense Head Assembly

Ref No.	Part No.	Item Description
1	MT10695000	Bracket
2	EL04920000	Micro Switch
3	EL10036000	Dispense Head Opto Sensor
4	MO10794000	Motor, 24v DC, 50rpm c/w Drive Pinion
5	MT10696080	Cover Plate
6	PL10035000	Rack Moulding
7	MT10697000	Decoder Bracket
8	MT10698000	Dispense Head Arm
9	FA01416000	Knurled Thumb Nut
10	PL05496000	Dispense Head Moulding
	PH05501000	Nozzle Set c/w Hot Water Nozzle*
11	ME04063000	Dispense Head Slide

* Not Illustrated

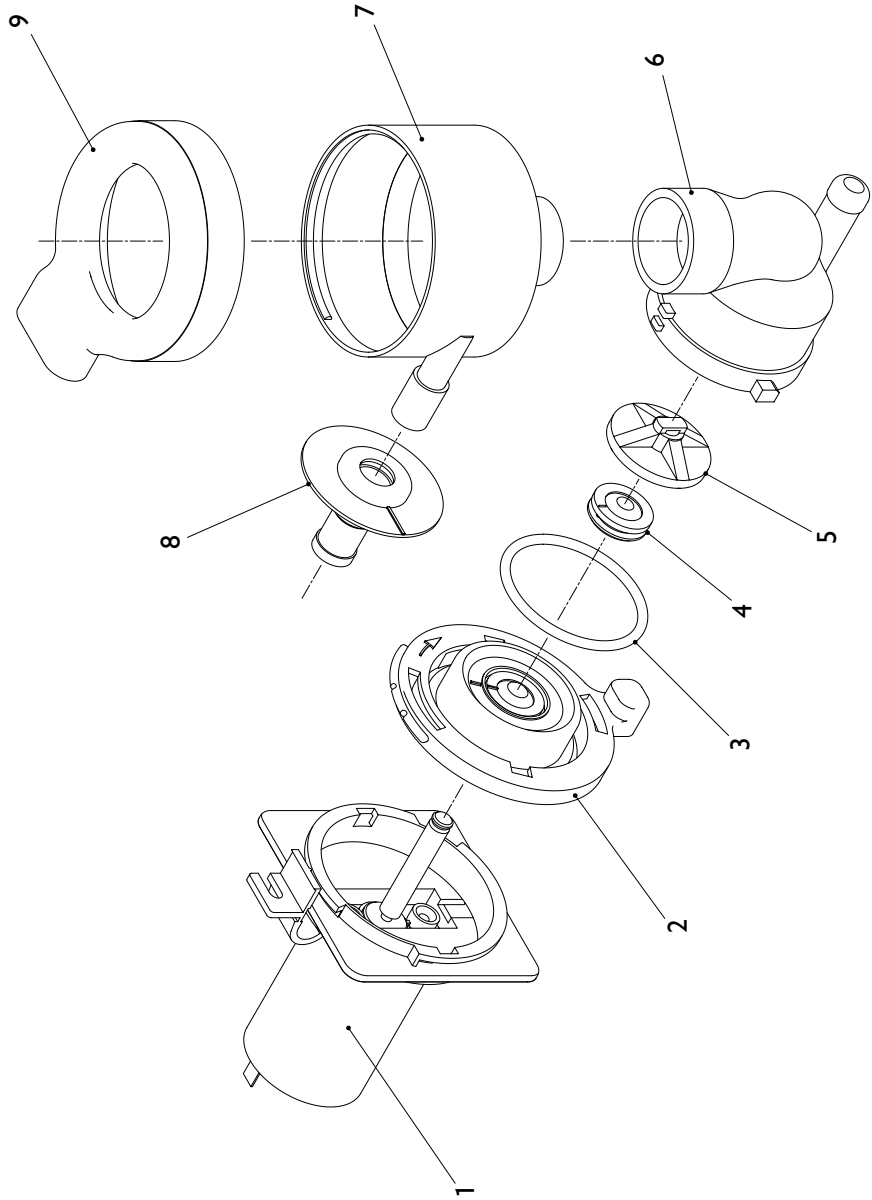
Heater Tank Assembly



Heater Tank Assembly

Ref No.	Part No.	Item Description
1	LO10573000	Boiler Harness
2	ME04550000	Level Probe Assembly
3	VA03377000	Valve Seal
4	BA10619000	Heater Tank c/w Lid
5	SI10627960	Heater Tank Seal
6	FA03227000	Unix Clip - 19mm
7	HO06632000	Inlet Hose
8	SI01142960	Silicone Pipe - 12mm i.d.
9	EL03378000	Temperature Cut-Out
10	ME00043001	Temperature Cut-Out Holder
11	EL02876003	Heater Element - 2375w
12		Element Seal
13	SI082760000	Boiler Seal - Blank
14	FA01185000	Snapper Clip, 30
15	SI01171960	Silicone Pipe - 8mm i.d.
16	PH03112000	Thermistor Assembly
17	SI06340000	Thermistor Seal
18	VA10148000	Dispense Valve, 24v DC

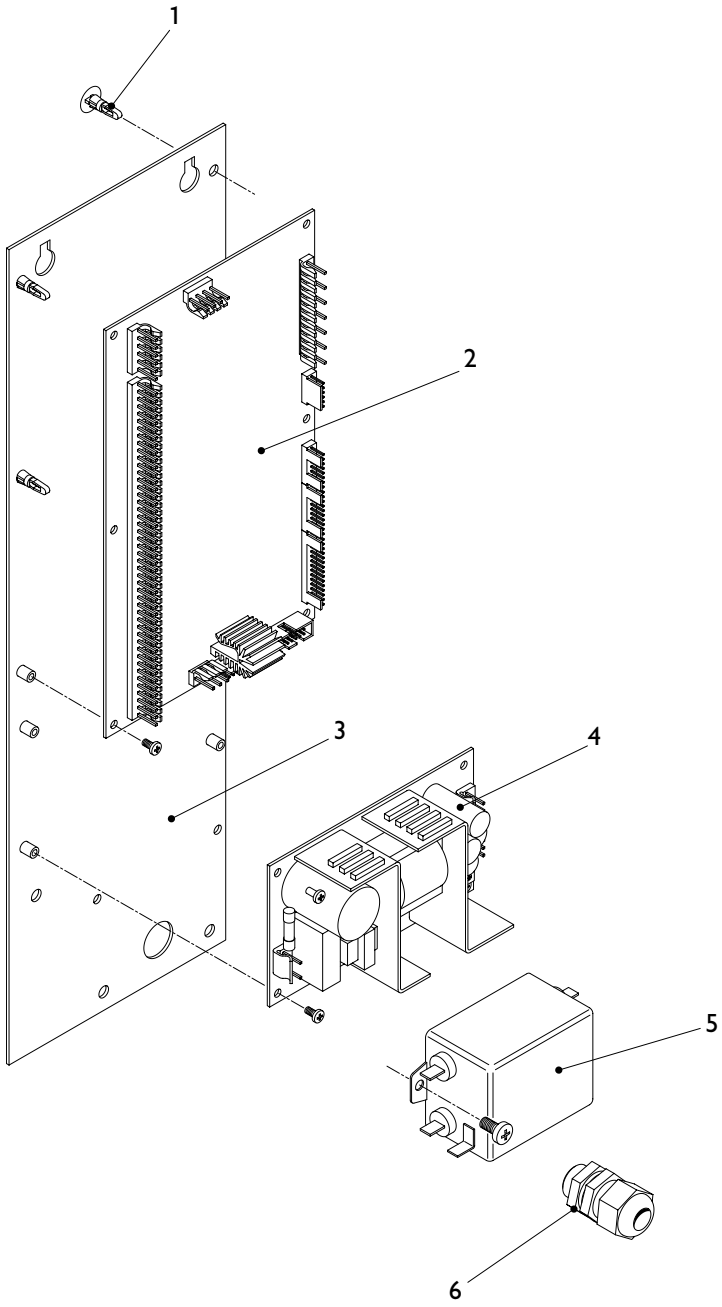
Mixing System



Mixing System

Ref No.	Part No.	Item Description
1	MO10991000	Whipper Motor c/w Fixing Plate
2	PL10188000	Whipper Base
3	SI10343000	Whipper Base 'O' Ring
4	SI10344000	Whipper Base Seal
5	PL01970000	Impeller
6	PL10992000	Whipper Body
7	PL01967000	Mixing Bowl
8	PL10183000	Bowl Adaptor
9	PL10187000	Steam Trap

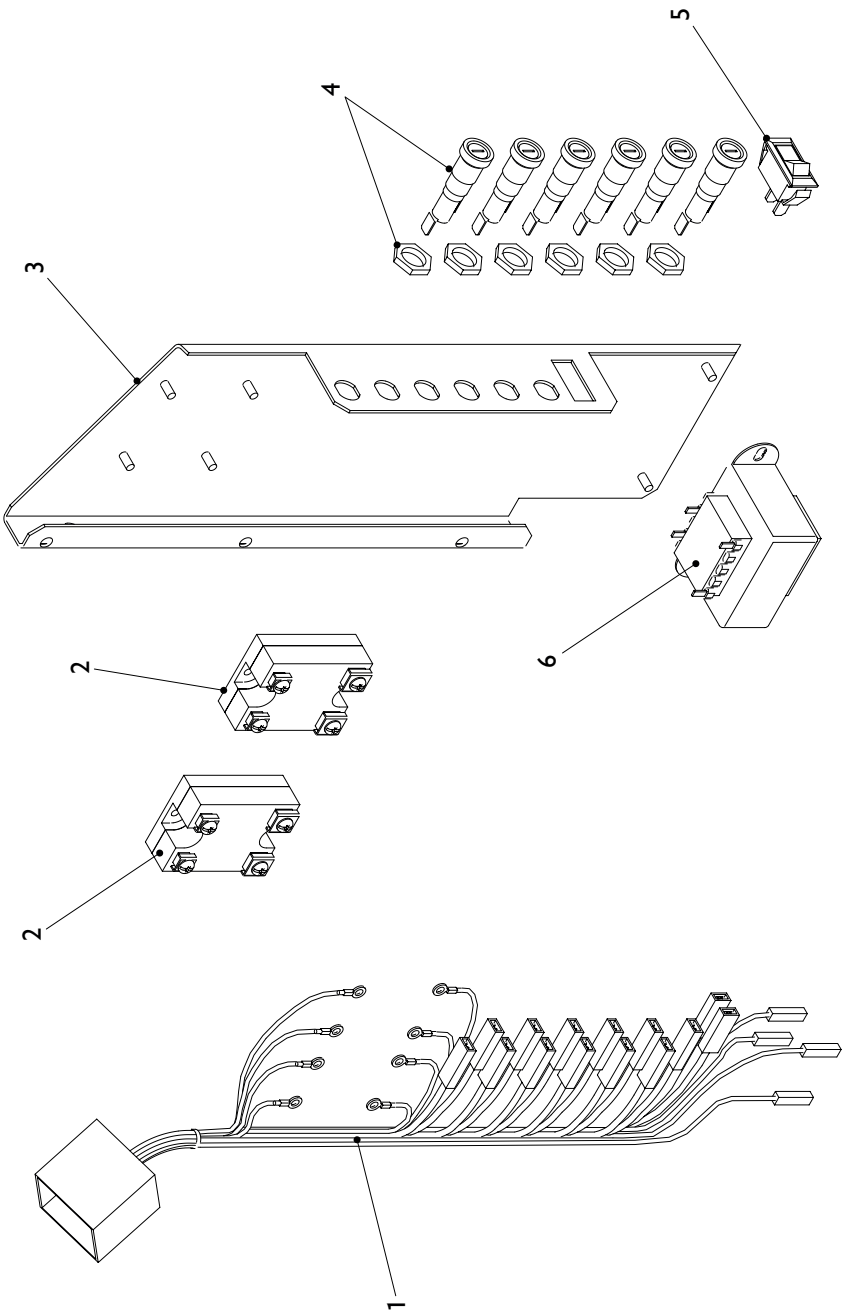
Power Supply Assembly



Power Supply Assembly

Ref No.	Part No.	Item Description
1	FA10866000	Support
2	EL10534000	I/O Board
3	MT10635000	Plate
4	EL10021000	Switch Mode Power Supply
5	EL11084000	Mains Filter
6	EL01164000	Cable Gland

Fuse Plate Assembly

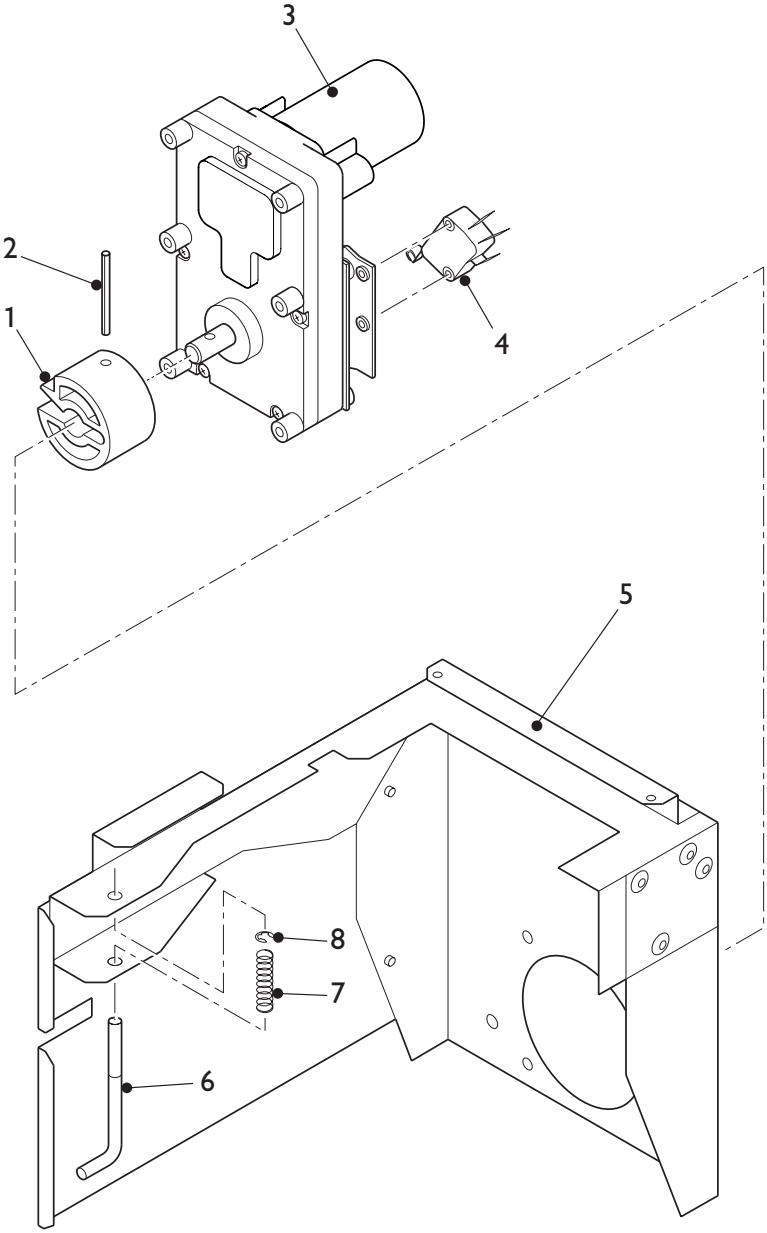


Fuse Plate Assembly

Ref No.	Part No.	Item Description
1	(a) LO10787000	PSU Loom - B2C machines
	(b) LO10572000	PSU Loom - Instant & F/brew machines
2	EL01152001	Solid State Relay*
3	MT10634000	PSU Bracket
4	EL01994000	Fuse Holder Assembly
5	EL01146000	On/Off Switch - Cold Unit Only
6	ME10267000	Transformer - Exec Mech.

* **N.B.** two relays fitted to B2C machines only

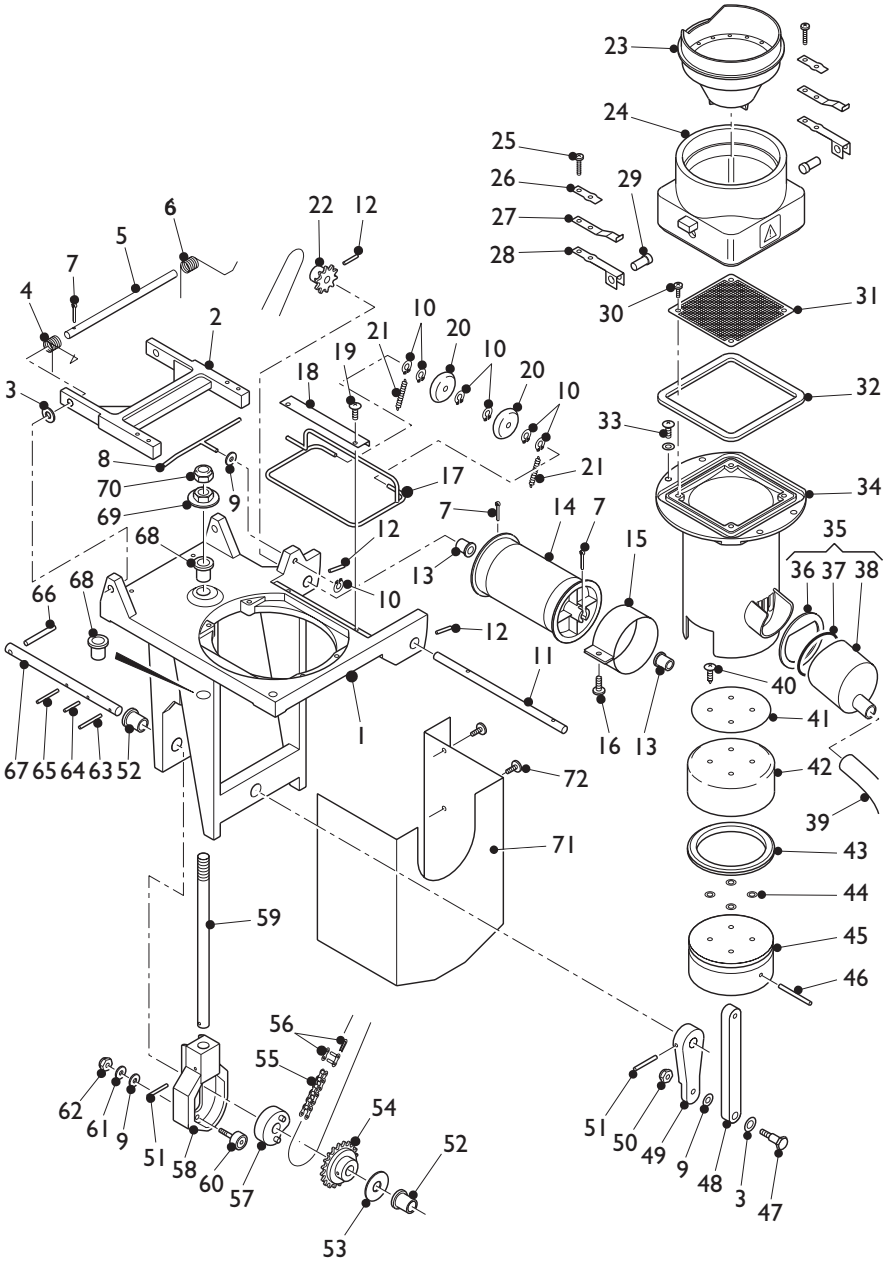
Brewer Motor Assembly
(Freshbrew Machines)



Brewer Motor Assembly (Freshbrew Machines)

Ref No.	Part No.	Item Description
1	PL03297000	Drive Dog
2	ME08734000	Roll Pin - 36 x 3mm
3	MO10023000	Freshbrew Motor
4	EL01148000	Micro Switch
5	(a) MT04936080	Brewer Bracket - King Paper Brewer
	(b) MT06562080	Brewer Bracket - Zuma Paperless Brewer
6	ME04926001	Brewer Retaining Pin
7	ME01162000	Spring
8	FA01136000	'E' Clip

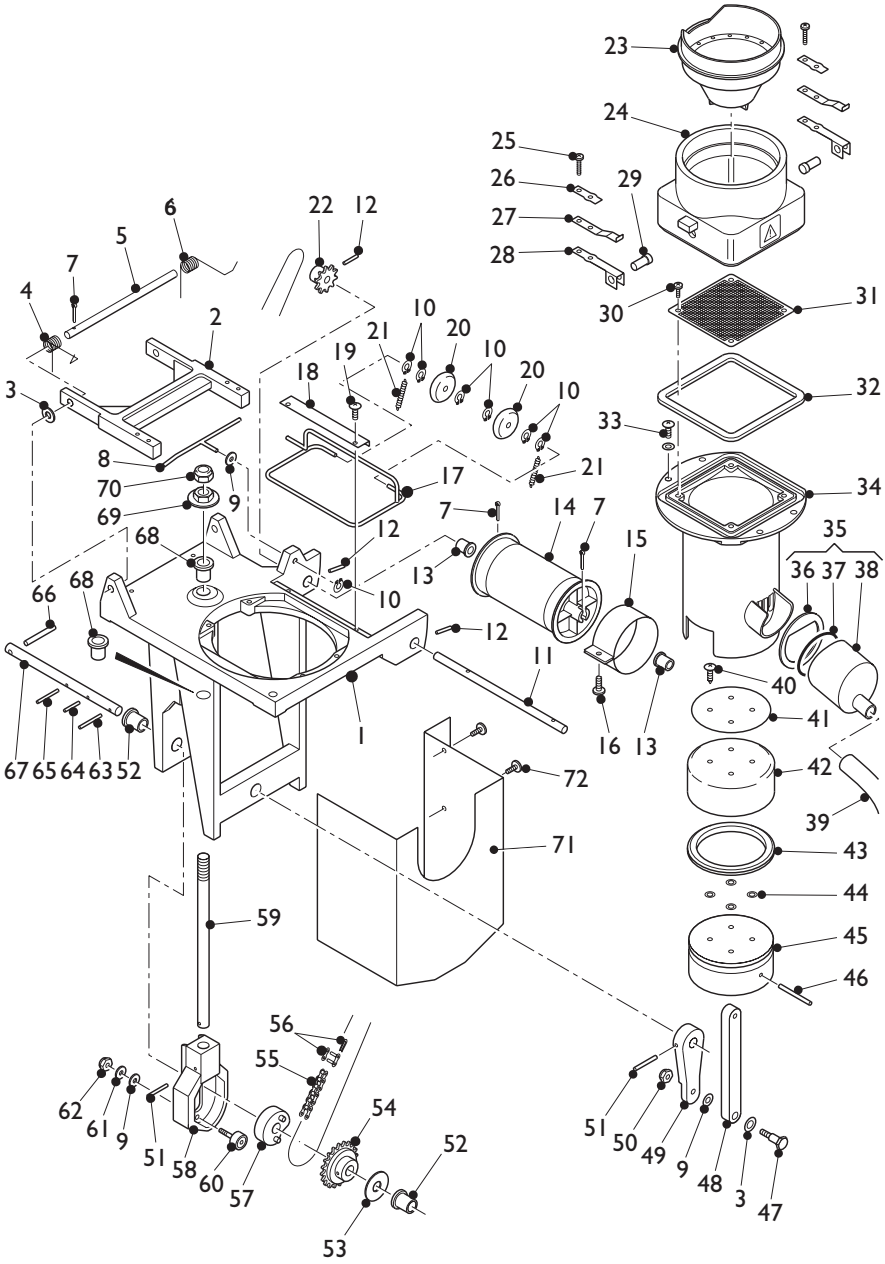
Brewer Assembly - Paper Type
(King Brewer)



Brewer Assembly - Paper Type (King Brewer)

Ref No.	Part No.	Item Description
	ME01159000	Brewer Complete
1	ME07136000	Chassis
2	ME06189000	'H' Frame
3	ME08137000	Plain Washer
4	ME08451000	Spring - RH
5	ME08452000	Shaft - 'H' Frame
6	ME08453000	Spring - LH.
7	ME06134000	Taper Pin - 3/32 x 1/2
8	ME08316000	Lift Rod
9	FA08393000	Plain Washer
10	ME08318000	Circlip
11	ME08454000	Shaft - Paper Drum
12	ME06132000	Spring Pin - 3/32 x 5/8
13	ME06713000	Bearing
14	ME06133000	Paper Feed Drum
15	ME08455000	Slide Band
16	FA08456000	Screw, 8-32 x 1/4
17	ME07734000	Yoke
18	ME08450000	Retainer Plate
19	FA08449000	Screw, 8-32 x 3/8
20	ME03954000	Paper Guide Wheel
21	ME03970000	Spring
22	ME06135000	Sprocket
23	ME03963000	Mixing Funnel
24	ME03964000	Mixing Bowl
25	ME06131000	Screw, 6-32 x 5/8
26	ME06712000	Support Plate
27	ME03968000	Plate Spring
28	ME03967000	Pressure Spring
29	ME03969000	Pin
30	ME06139000	Screw, 6 x 3/8
31	ME03966000	Filter Screen
32	ME03965000	Rubber Seal
33	ME06140000	Screw, 8-32 x 1/2
34	ME03958000	Brewer Cylinder
35	SA06075000	Outlet Adaptor Kit
36	SI06077000	Outlet Seal
37	FA01216000	'O' Ring

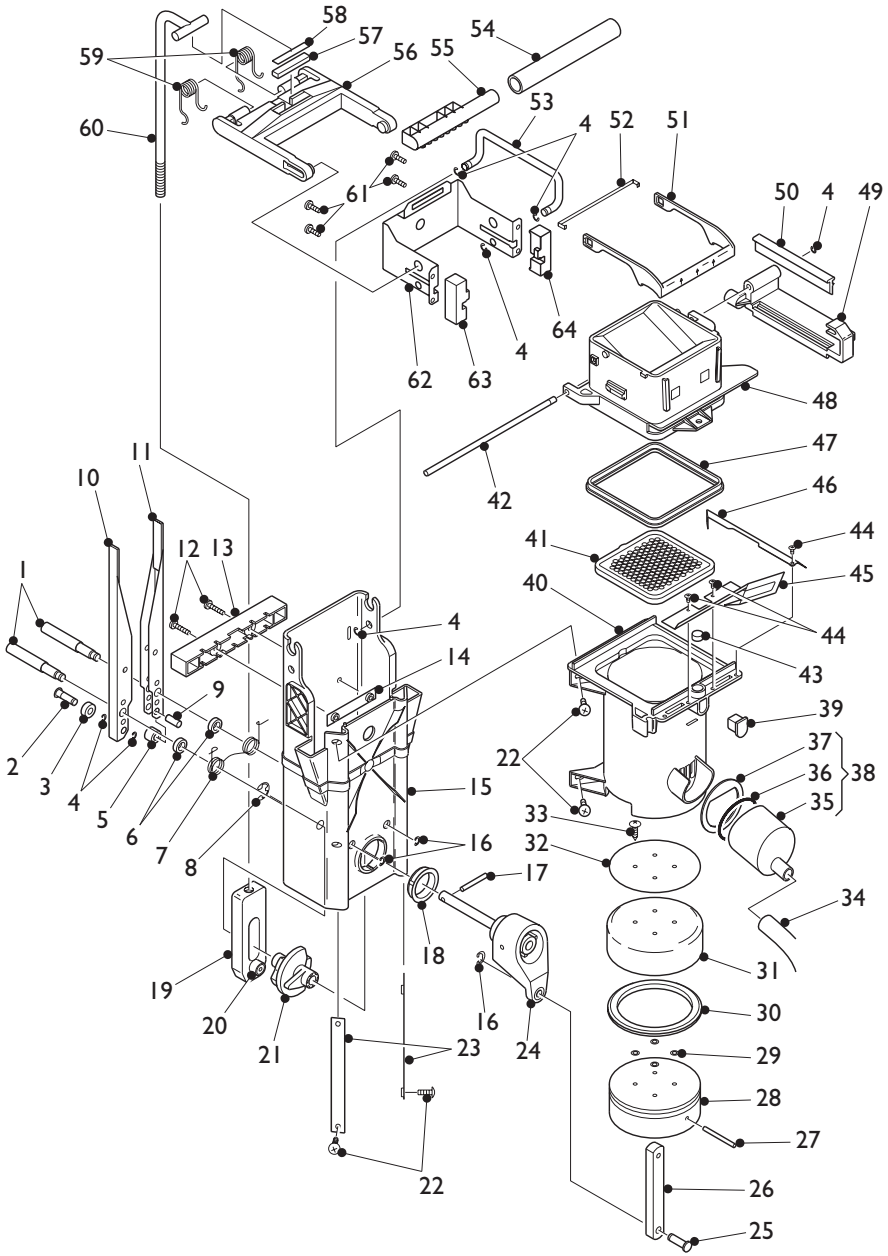
Brewer Assembly - Paper Type (Cont'd)
(King Brewer)



Brewer Assembly - Paper Type (Cont'd)
(King Brewer)

Ref No.	Part No.	Item Description
38	PL06075001	Outlet Adaptor
39	S101171960	Silicone Pipe - 8mm i.d.
40	FA08307000	Screw, 8 - ½
41	ME08308000	Piston Plate
42	ME03957000	Teflon Piston Seal
43	ME06138000	Rubber Piston Seal
44	ME08309000	'O' Ring
45	ME08310000	Piston
46	FA08311000	Spring Pin
47	FA06880000	Screw
48	ME08312000	Connecting Rod
49	ME03959000	Crank Arm
50	FA07446000	Nut, 10 - 24
51	ME03960000	Spring Pin - ⅛ x ⅞
52	ME03962000	Bearing
53	FA08457000	Plain Washer
54	ME08458000	Drive Sprocket
55	ME06136000	Drive Chain
56	ME06137000	Connecting Link - Drive Chain
57	ME03961000	Clutch Cam
58	ME06714000	Bearing Housing
59	ME08397000	Tie Rod
60	ME03962000	Bearing, Cam
61	FA08459000	Plain Washer
62	C9900164	Nut
63	FA08311000	Spring Pin
64	FA07447000	Spring Pin - ⅛ x ¾
65	FA08311000	Spring Pin
66	ME03955000	Spring Pin - 3⁄16 x 1¼
67	ME08460000	Main Drive Shaft
68	ME03962000	Bearing
69	FA08398000	Adjuster Nut
70	FA08399000	Lock Nut
71	MT04328000	Brewer Cover
72	FA01504000	Screw, M4 x 10

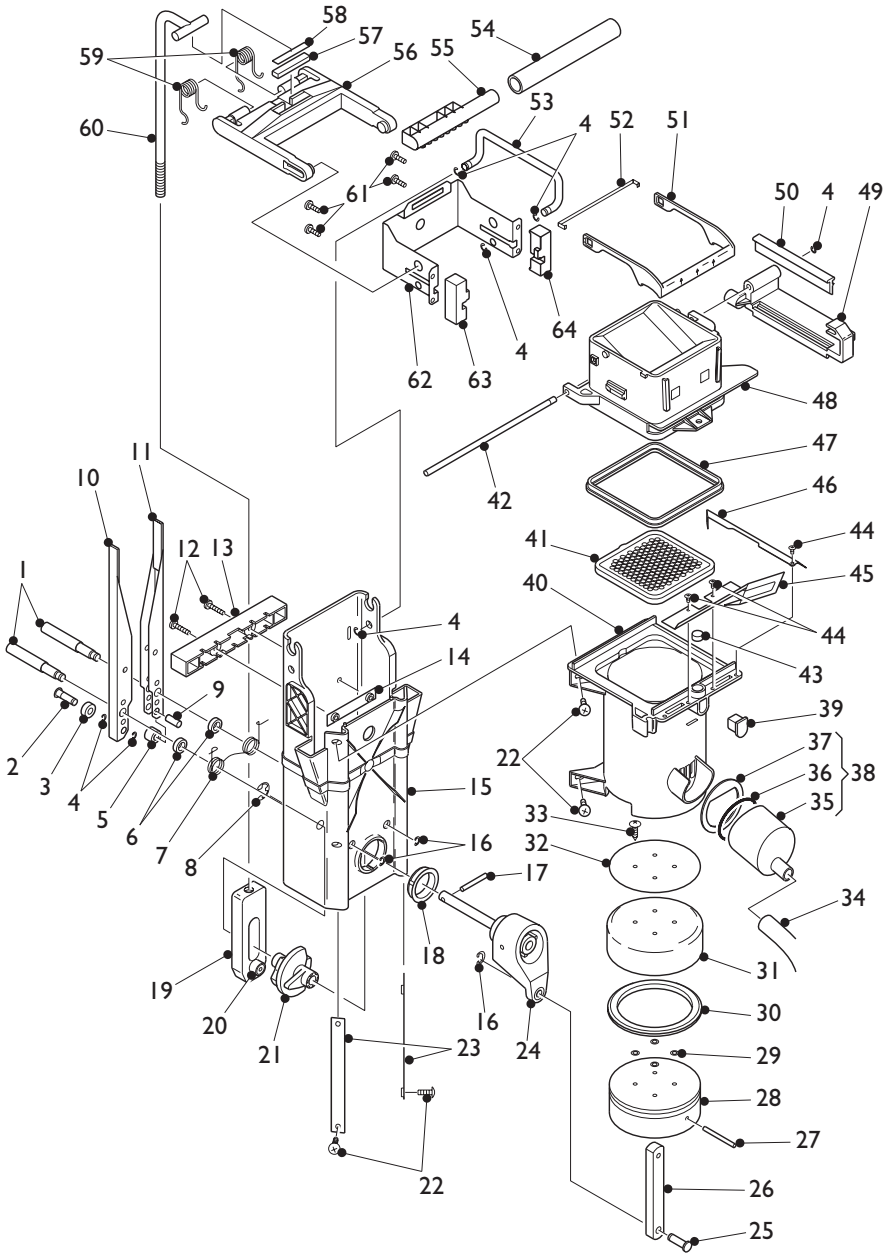
Brewer Assembly - Paperless Type
(Zuma Brewer)



Brewer Assembly - Paperless Type (Zuma Brewer)

Ref No.	Part No.	Item Description
	ME07000000	Brewer Complete - Single Chamber
	ME10022000	Brewer Complete - Dual Chamber
1	ME07448000	Wiper Arm Shaft
2	ME07449000	Wiper Arm Pin
3	ME07450000	Bearing
4	FA07668000	Retaining Ring
5	ME07451000	Roller
6	ME07452000	Wiper Arm Spacer
7	ME07453000	Wiper Arm Spring
8	FA07149000	Retaining Ring
9	ME07454000	Unwipe Arm Pin
10	ME07455000	Wiper Arm
11	ME07456000	Unwipe Arm
12	FA07669000	Screw, 8-32 x ¾
13	ME07457000	Support Bracket - Rear
14	ME07458000	Support Plate
15	ME07459000	Mainframe
16	FA07670000	Retaining Ring
17	ME03955000	Spring Pin - 3⁄16 x 1¼
18	ME07460000	Bearing Crank Arm
19	ME07245000	Housing c/w Bearing
20	ME03962000	Bearing
21	ME07461000	Cam
22	ME06140000	Screw
23	ME07462000	Brewer Chamber Retaining Plate
24	ME07463000	Crank Arm Assembly
25	ME07671000	Crank Arm Pin
26	ME07464000	Connecting Rod
27	FA08311000	Spring Pin
28	ME07465000	Piston
29	S107672000	'O' Ring
30	SI07466000	Rubber Seal
31	ME07673000	Teflon Seal
32	ME07467000	Piston Top Plate
33	FA07674000	Screw
34	SI01171960	Silicone Pipe
35	PL06075001	Outlet Adaptor
36	FA01216000	'O' Ring - Outlet

Brewer Assembly - Paperless Type (Cont'd)
(Zuma Brewer)

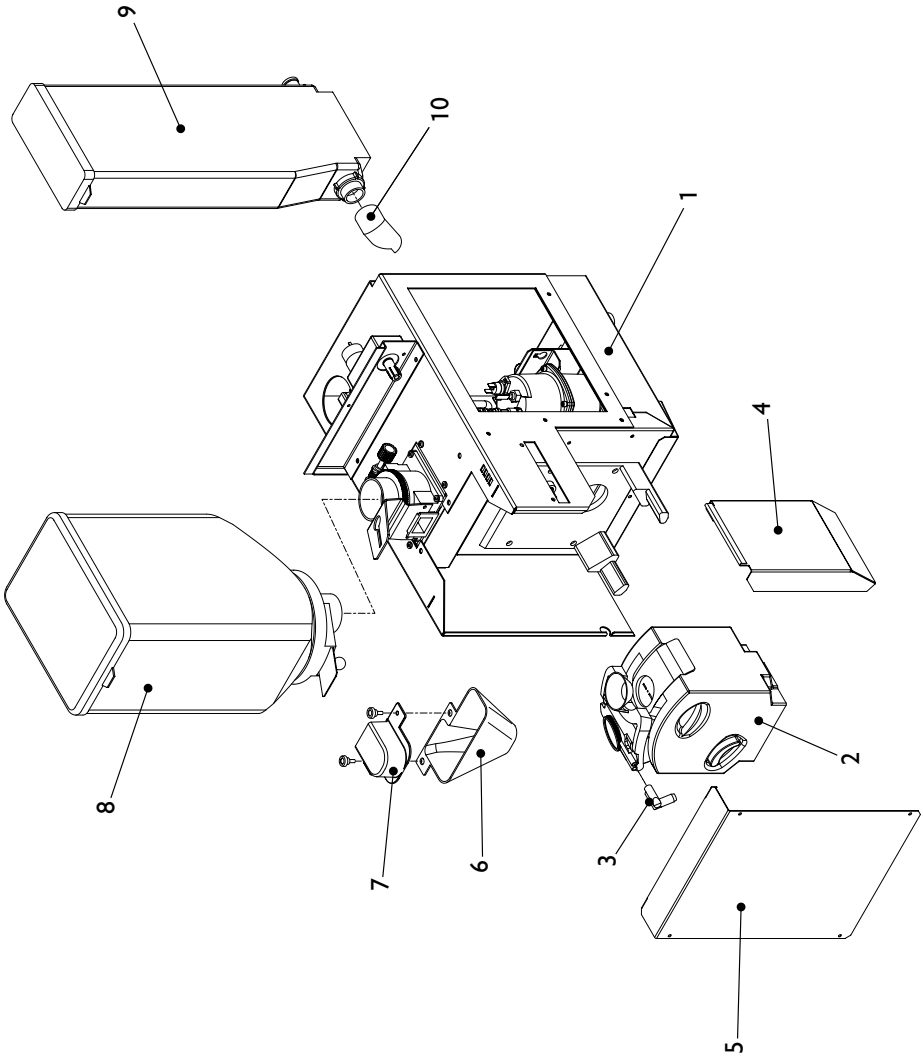


Brewer Assembly - Paperless Type (Cont'd) (Zuma Brewer)

Ref No.	Part No.	Item Description
37	SI06077000	Outlet Adaptor Seal
38	SA06075000	Outlet Adaptor Assembly
39	ME08285000	Brewer Chamber Vent Plug
40	PL07675000	Brewer Chamber
41	PL07155000	Mesh Filter
42	ME07148000	Pin
43	SI07468000	Vent Seal
44	FA07676000	Screw
45	ME07469000	Deflector - Front
46	ME07470000	Deflector - Side
47	(a) SI07150000	Brewer Seal - Single Brewer
	(b) SI10373000	Coffee Seal - Dual Brewer
	(c) SI10372000	Tea Seal - Dual Brewer
48	(a) PL07677000	Brewer Chamber - Single Brewer
	(b) PL10375000	Dual Brewer Chamber - Dual Brewer
49	(a) PL07678000	Wiper Carriage - Single Brewer
	(b) PL10377000	Wiper Carriage - Dual Brewer
	(c) SI10374000	Tea Wiper - Dual Brewer
50	S107152000	Wiper
51	PL07154000	Latch
52	ME07471000	Spring Clip - Latch
53	ME07472000	Bar
54	SI07642000	Silicone Pipe
55	PL07153000	Water Outlet Tube
56	ME07473000	'H' Frame
57	ME07474000	Spacer - Rubber
58	ME07679000	Shim
59	ME07475000	Spring
60	ME07476000	Threaded Rod
61	FA07680000	Screw
62	ME07477000	Brewer Chamber Support Bracket
63	ME07478000	Latch Block - LH
64	ME07479000	Latch Block - RH
65	ME10497000	Tea Funnel Assly c/w Filter - Dual Brewer*
66	ME10380000	Tea Filter Insert - Dual Brewer*
67	ME10496000	Dual Top Chamber c/w Seals - Dual Brewer*

* Not Illustrated

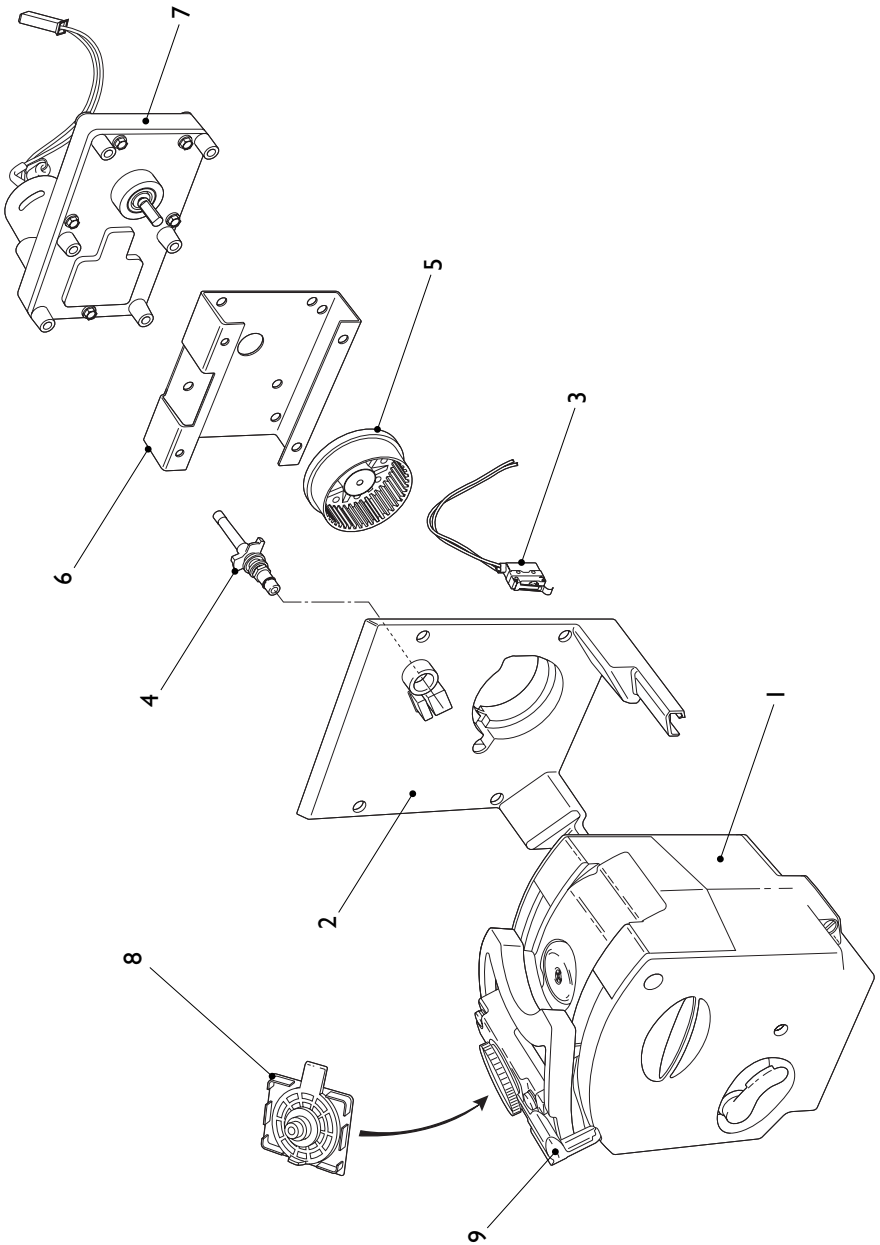
CoEx® Module Assembly
(B2C Machines)



CoEx® Module Assembly
(B2C Machines)

Ref No.	Part No.	Item Description
1		Module Assembly - See Page 183
2		CoEx® Brewer Assembly - See Page 181
3	PL10283000	CoEx® Brewer Spout
4	MT10811000	Side Tray
5	MT10847080	Brewer Cover
6	PL10580000	Grinder Chute
7	PL10282000	Grinder Chute Cover
8	PL10792000	Fresh Beans Canister c/w Lid
9	PL10824000	Freshbrew Canister c/w Lid
10	PL01442000	Freshbrew Canister Chute

CoEx® Brewer/Motor Assembly (B2C Machines)

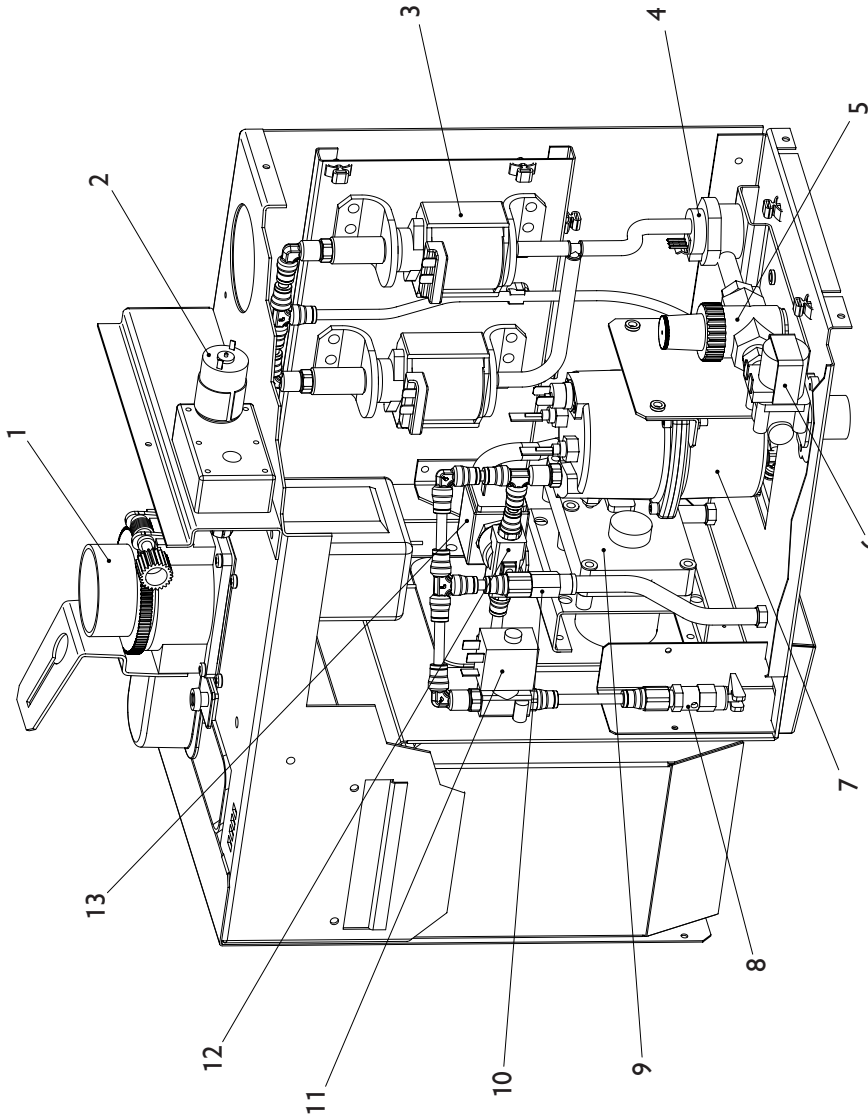


CoEx® Brewer/Motor Assembly (B2C Machines)

Ref No.	Part No.	Item Description
1	ME10190000	CoEx® Brewer Assembly*
2	ME10762000	Mounting Bracket
3	EL10587000	Microswitch
4	ME10763000	Water Inlet Connection
	ME10595000	'O' Ring - Water Inlet Connection
5	ME10597000	Drive Wheel
6	MT10978000	Motor Mounting Bracket
7	MO10191000	CoEx Brewer Motor
8	ME10284000	Filter Head Assembly
9	PL10283000	Coffee Outlet Spout

* Includes 2, 3, 4, 5 and 8

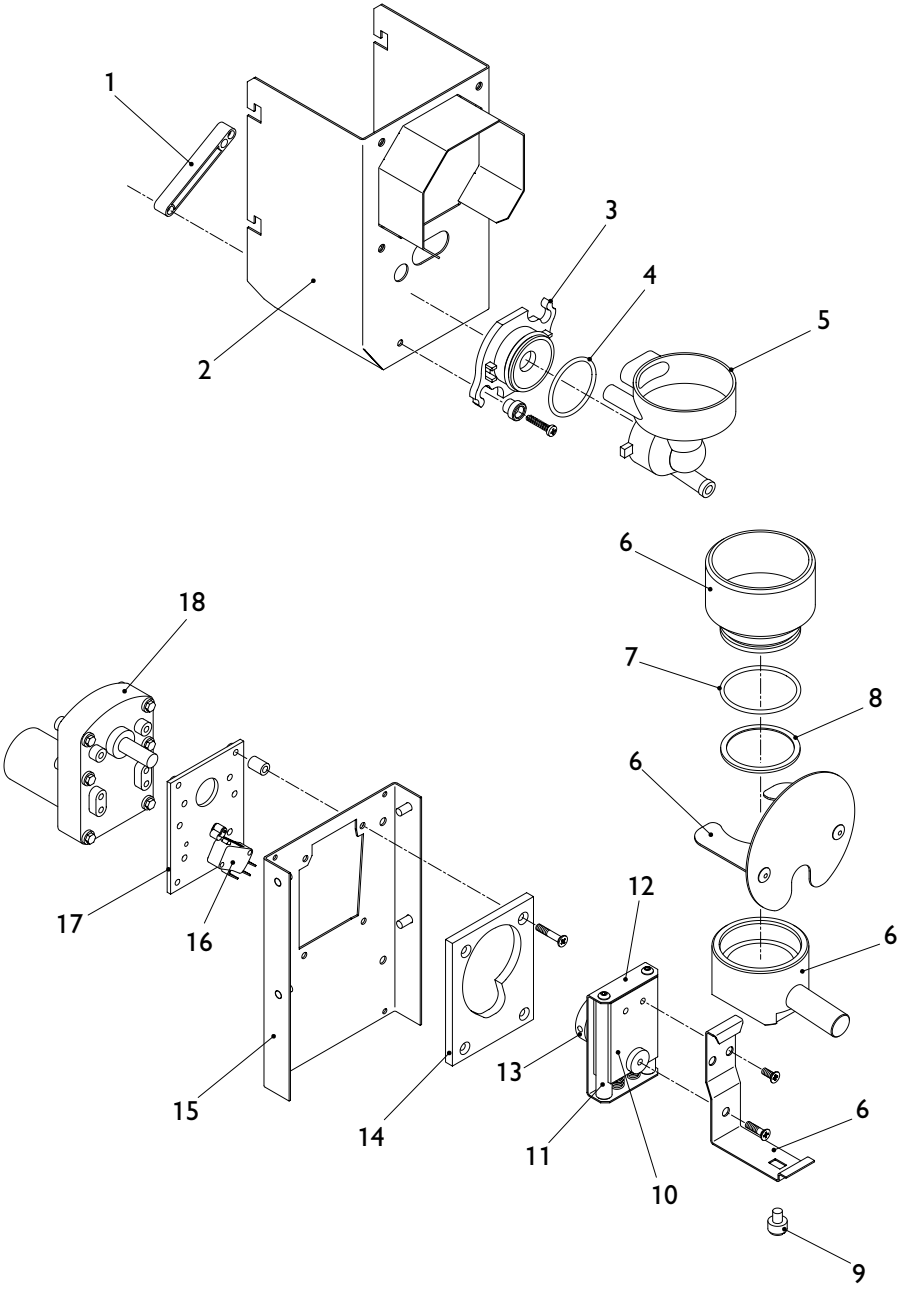
CoEx® Module Assembly
(B2C Machines)



CoEx® Module Assembly (B2C Machines)

Ref No.	Part No.	Item Description
1	MO10108000	Grinder, 230V
2	MO10152000	Ingredient Motor - 130rpm, 24V DC
3	ME10047000	Pump, 230V
4	ME10834000	Flow Meter
5	VA10048000	Pressure Reducing Valve, 0.5 Bar
6	VA10147000	Inlet Valve, 24V DC
7	BA10000000	Pressure Boiler Assembly
8	VA10044000	3 Bar Relief Valve
9	MO10191000	Brewer Motor, 24V DC
10	VA100430000	12 Bar Safety Valve
11	VA10042000	Espresso Valve, 2 Way
12	VA10535000	Espresso Valve Body, 3 Way
13	VA10536000	Espresso Valve Coil, 3 Way

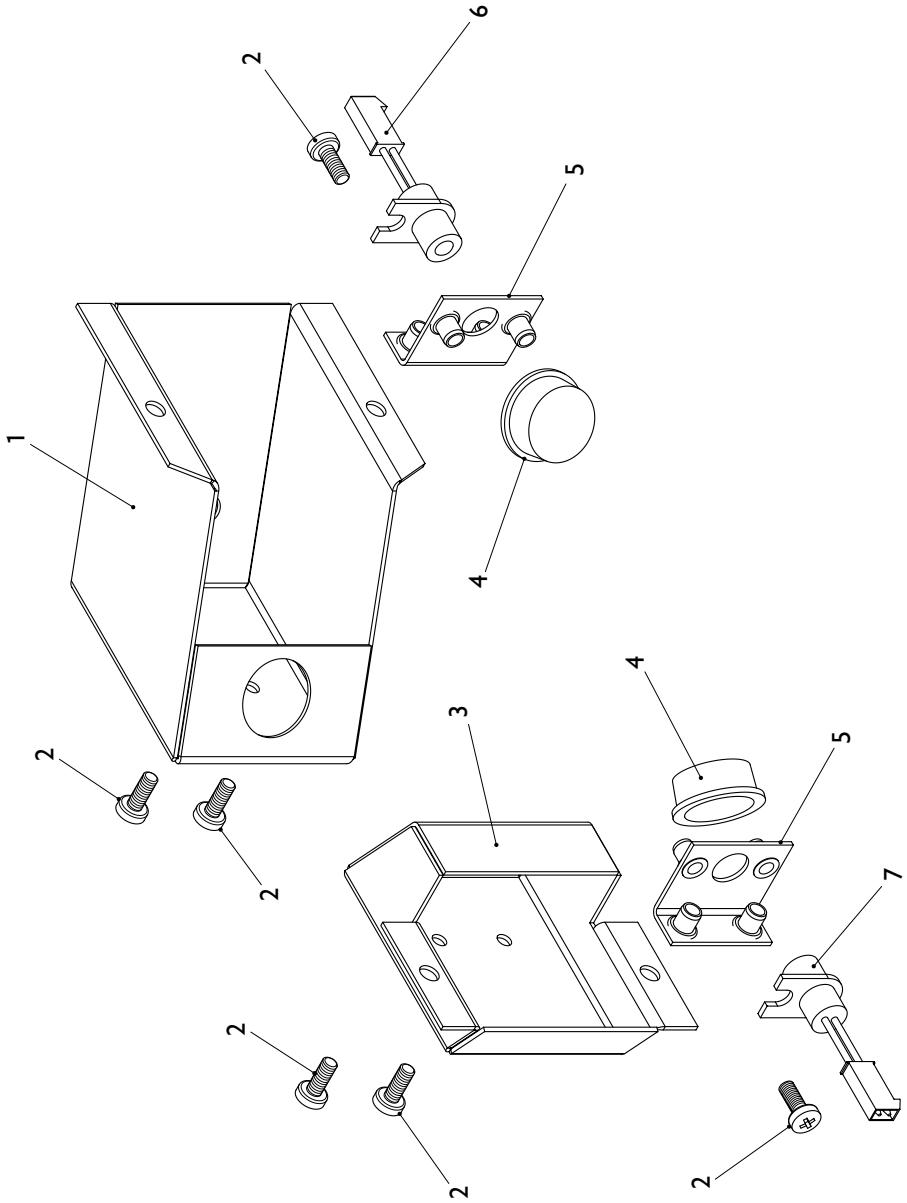
Teapot Assembly
(B2C Machines)



Teapot Assembly
(B2C Machines)

Ref No.	Part No.	Item Description
1	PL02278000	Fixing Strap
2	MT10760000	Teapot Cover
3	PL01972000	Whipper Base - Blind
4	SI01295000	'O' Ring
5	PL10819000	Mixing Bowl Chamber
6	PA10977000	Teapot Assembly c/w Mesh
7	SI01669000	'O' Ring
8	PL10975000	Filter Mesh
9	FA01855000	M8 Thumb Screw
10	ME00598000	Slider Block
11	ME00596000	Pivot Guide Pillar
12	ME05426000	Pivot Plate
13	ME00597000	Limit Switch Guide
14	ME00651000	Cam Plate
15	MT10757000	Mounting Plate
16	EL01148000	Micro Switch
17	MT00594000	Motor/Switch Mounting Plate
18	MO10764000	Teapot Motor

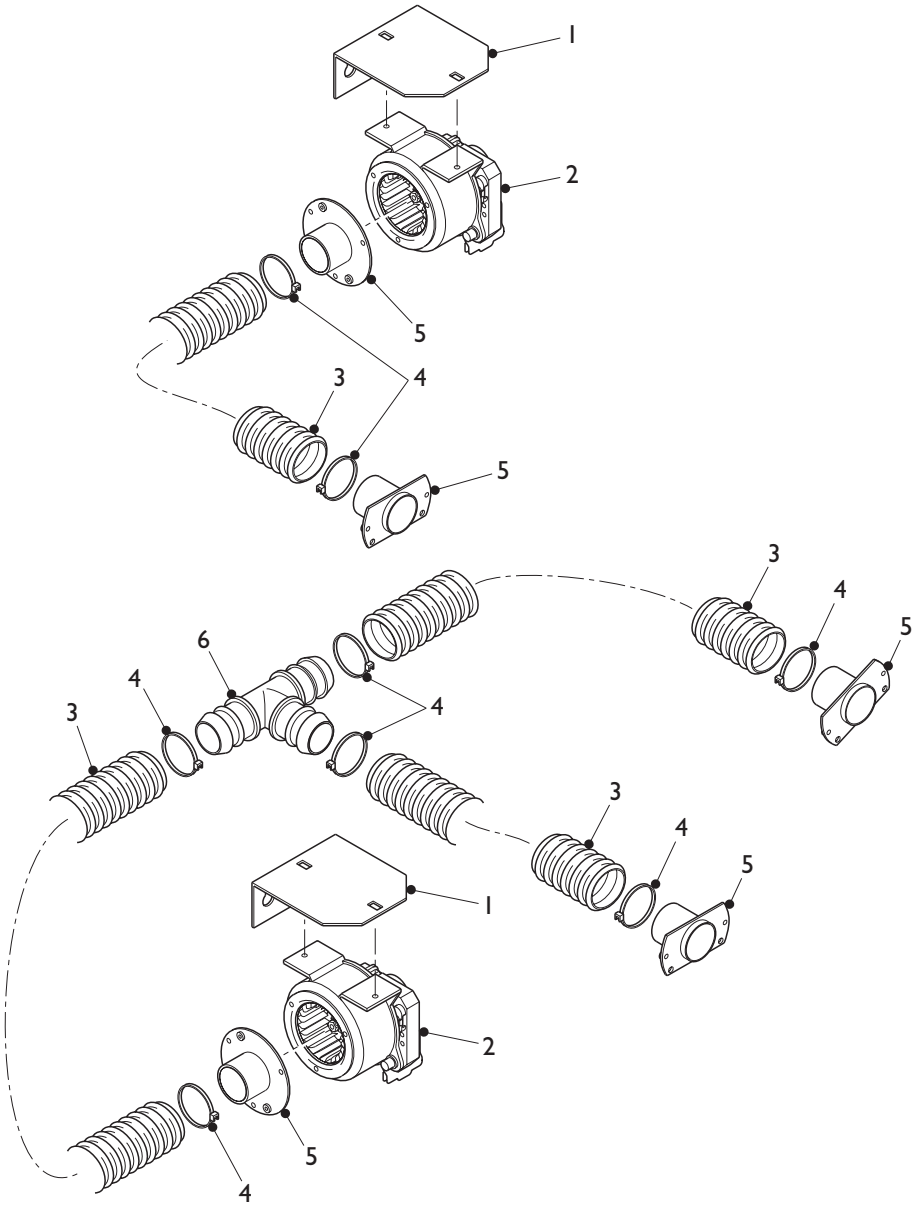
SureVend™ Sensors Assembly



SureVend™ Sensors Assembly

Ref No.	Part No.	Item Description
1	MT10671000	Cup Sensor Bracket - LH
2	FA01504000	Screw, M4 x 10 Posi Pan Head
3	MT10672000	Cup Sensor Bracket - RH
4	PL06909000	Cover Moulding
5	MT10673000	Cup Sensor Mounting Bracket
6	LO10575000	SureVend™ Sensor - Detector, White/Black
7	LO10575000	SureVend™ Sensor - Emitter, Red/Black

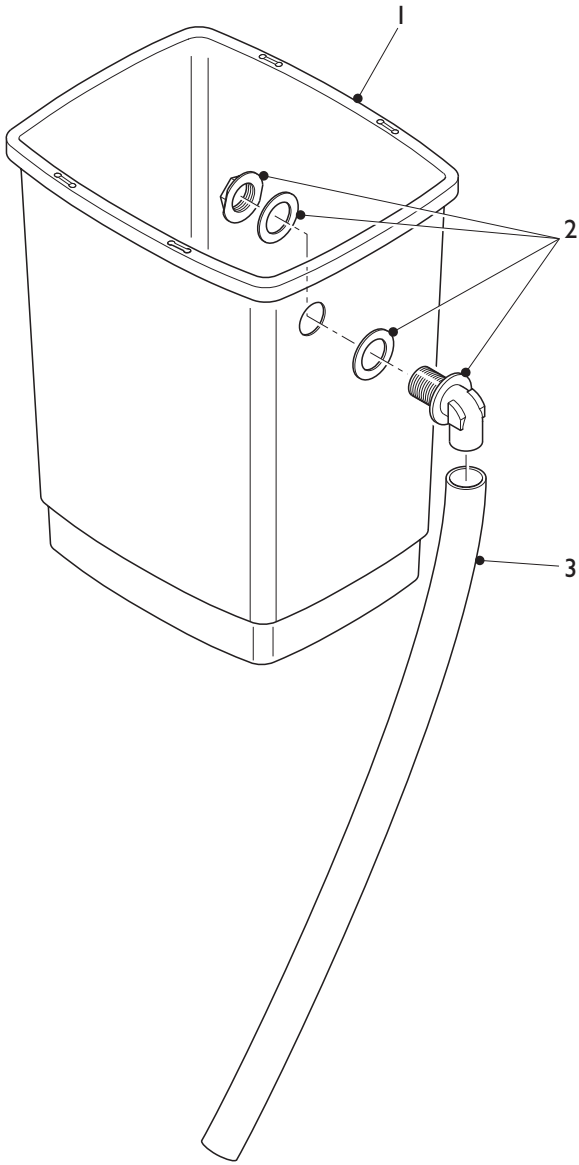
Extract System



Extract System

Ref No.	Part No.	Item Description
1	MT04132000	Mounting Bracket
2	ME10182000	Extract Fan
3	HO01139000	Hose
4	FA01188000	Cable Tie
5	PL03083000	Extract Hose Adaptor
6	PL04165000	'T' Piece - 1¼"

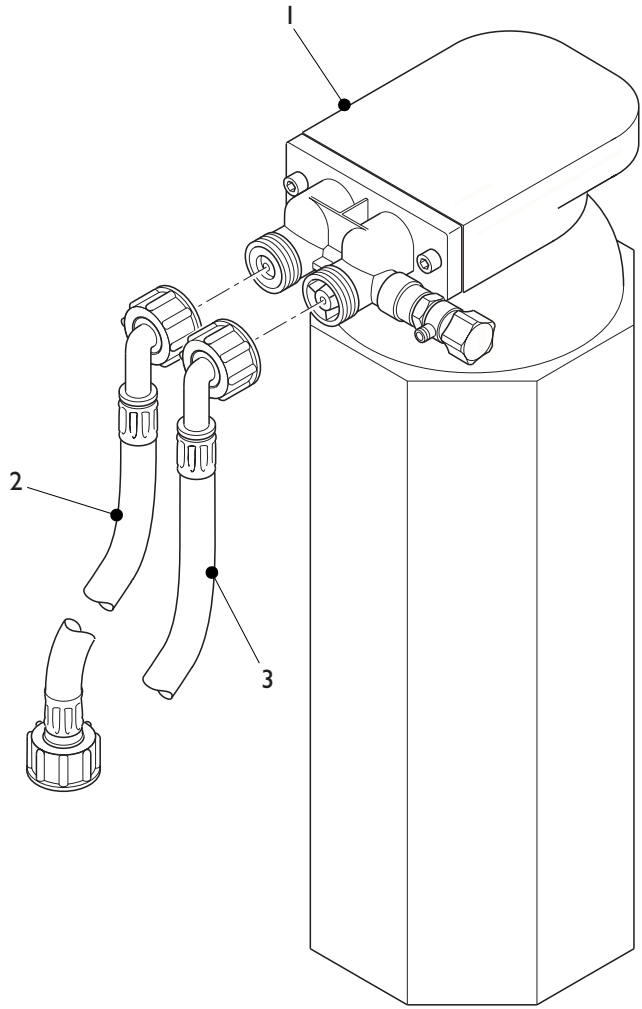
Waste Bucket Assembly



Waste Bucket Assembly

Ref No.	Part No.	Item Description
	(a) WO10803000	Freshbrew Waste Bucket Assembly
	(b) WO10804000	B2C Waste Bucket Assembly
1	(a) PL06672000	Freshbrew Waste Bucket
	(b) PL10806000	B2C Waste Bucket
2	PL04969000	Pipe Elbow Assembly
3	HO04970000	Waste Pipe - 24 mm i.d.

Water Filter Assembly - Brita 'Aquaquell'

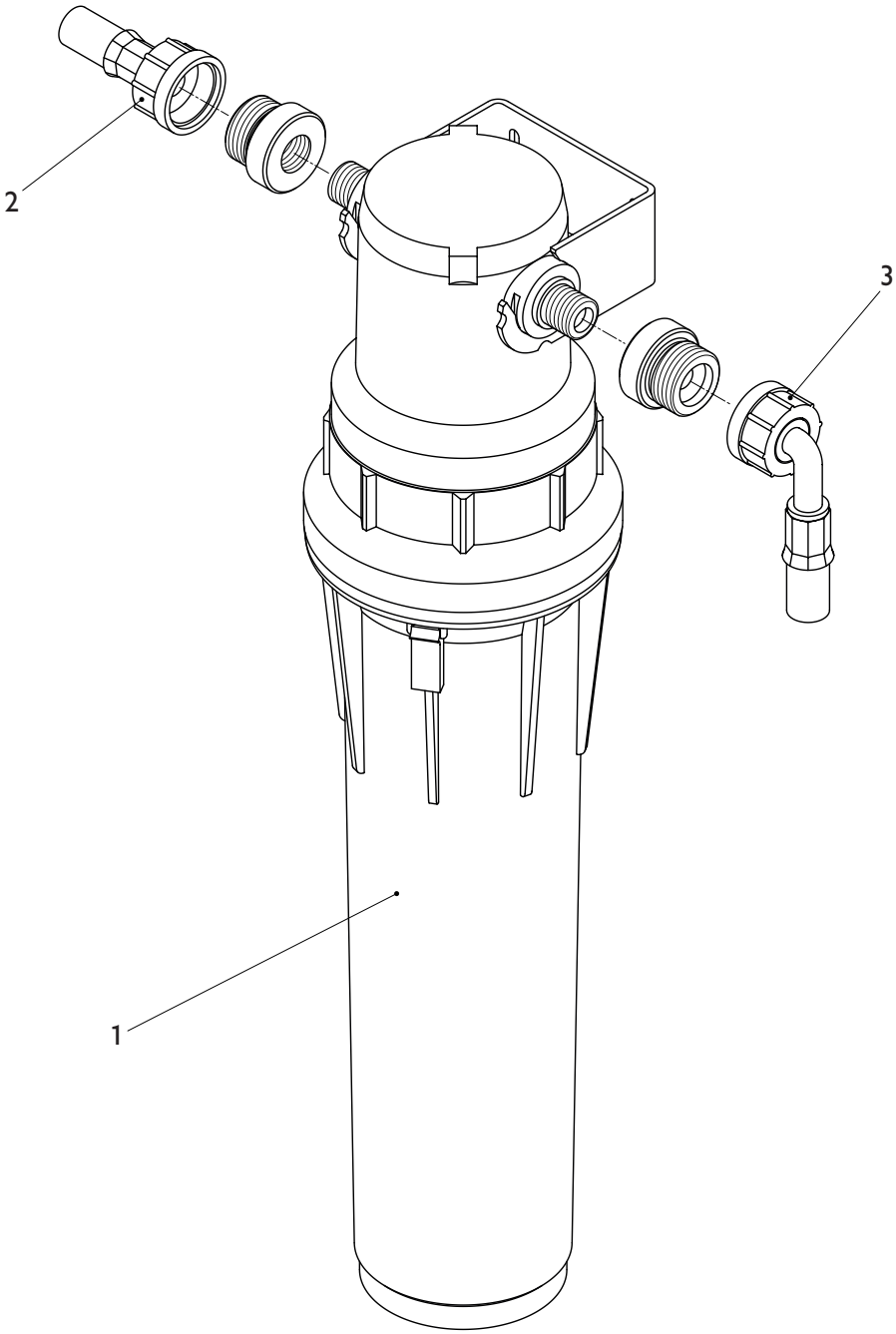


Water Filter Assembly - Brita 'Aquaquell'

Ref No.	Part No.	Item Description
1	WF04910000	Brita Filter c/w Head 'Aquaquell'
2	(a) HO10798000	Hose 3/4 BSPF-3/4 BSPF x 460mm*
	(b) HO10799000	Hose Assembly - B2C Models
3	HO10798000	Hose 3/4 BSPF-3/4 BSPF x 460mm

* Non B2C models only

Water Filter Assembly - Brita 1.5 Filter

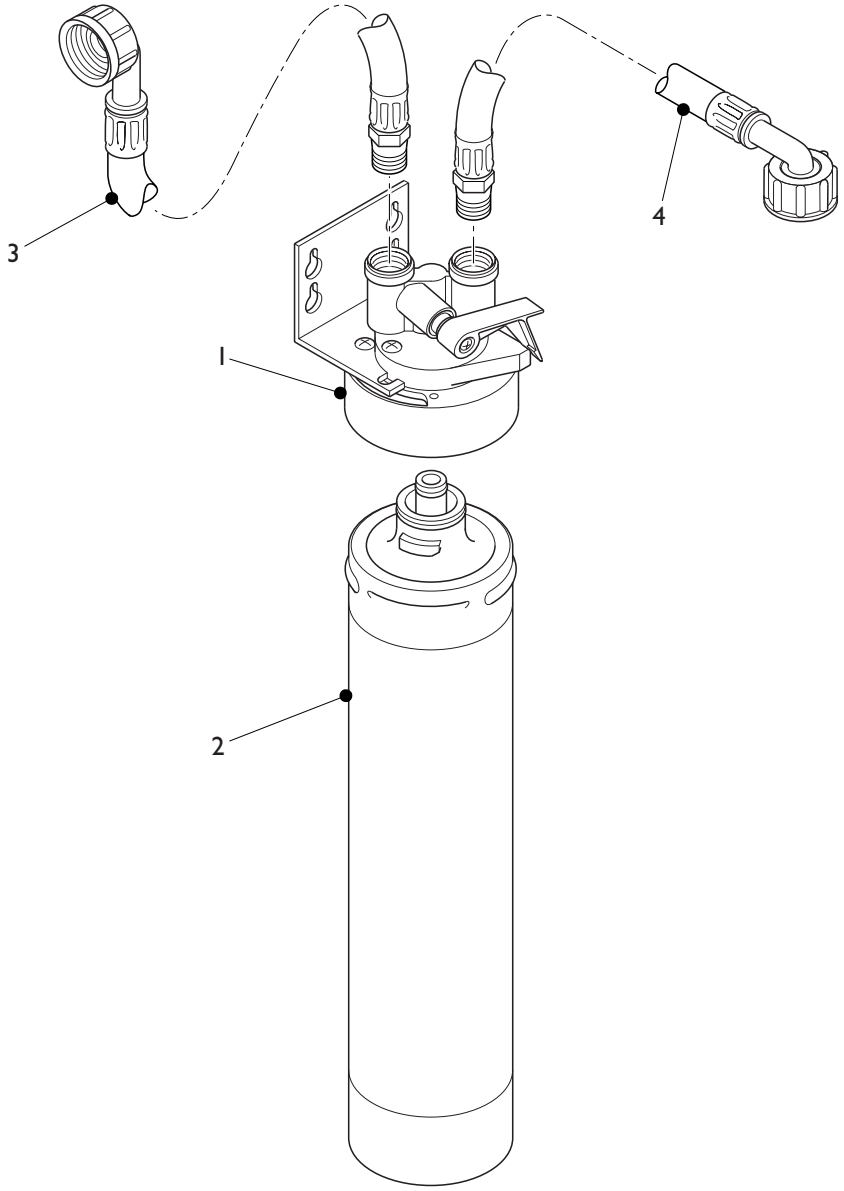


Water Filter Assembly - Brita 1.5 Filter

Ref No.	Part No.	Item Description
1	WF10791000	Brita 1.5 Filter Kit
2	(a) HO10798000	Hose 3/4 BSPF-3/4 BSPF x 460mm*
	(b) HO10989000	Hose Assembly - B2C Models
3	HO10798000	Hose 3/4 BSPF-3/4 BSPF x 460mm

* Non B2C models only

Water Filter Assembly - Everpure



Water Filter Assembly - Everpure

Ref No.	Part No.	Item Description
1	WF03116000	Filter Head - Everpure
2	WF03273000	Water Filter Cartridge - Everpure
3	HO10798000	Water Inlet Hose
4	HO10801000	Water Outlet Hose
	WF04246000	Diverter*

* Not Illustrated

Notes

E·V·O·L·U·T·I·O·N

CRANE® MERCHANDISING SYSTEMS™
A Crane Co. Company

Pipsmore Park, Bumpers Farm Industrial Estate,
Chippenham, Wiltshire SN14 6NQ
Tel: +44 (0)1249 444807 Fax: +44 (0)1249 444819
Email: sales@cranems.co.uk
Website: www.cranems.co.uk