



MEI CASHFLOW® 8000 SERIES CHANGE MANAGER



ENGINEERS HANDBOOK

MEI Cashflow® 8000 Series Change Manager Engineers Handbook

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DECLARATION OF CONFORMITY

National & International Standards Conformance

CashFlow® 8000 Series products operate at Safety Extra Low Voltage Level (SELV) as defined in IEC335/EN60335 '*Safety of Household and Similar Appliances*'. They may be designed into equipment complying with IEC335/EN60335 or IEC950/EN60950 '*Safety of Information Technology Equipment*'.

CashFlow® 8000 Series products are of Class 3 construction.

Rated Operating Voltage

The operating voltage of a CashFlow® 8000 Series is stated on the label attached to the product. It must not be used with any power source other than that indicated.

Dangerous Environments

The CashFlow® 8000 Series must not be operated in the presence of flammable gasses, fumes or water.

ABOUT THIS HANDBOOK

The CF8000 fitted to your vending machine incorporates the very latest developments in automatic payment systems technology. It provides high standards of security and reliability that has become the hallmark of MEI products.

This Engineers Handbook compliments your product training and provides you with the information you need to support the day-to-day use of your CF8000.

The Handbook has six sections:

Product Overview and Range – provides an overview of how the CF8000 is configured and information about the modules with which you will be concerned.

Installation and Power Up – describes how the CF8000 should be installed and how to power up and set up your changer.

Change Management – explains the new functions concerned with payout and auto float configurations.

Configuration Options – explains how to configure the CF8000 for the following options:

- **Cassette** – how to change the cassette type.
- **Float** – how to set the float style.
- **Coins** – how to enable and inhibit coins.
- **Tokens** - how to enable, teach and delete tokens.
- **Prices** – how to set prices.
- **Interface Setup** – how to configure your interface.
- **Peripherals** – how to connect different peripherals.
- **Audit** – how to connect and retrieve audit information.

Maintenance – explains the routine cleaning requirements.

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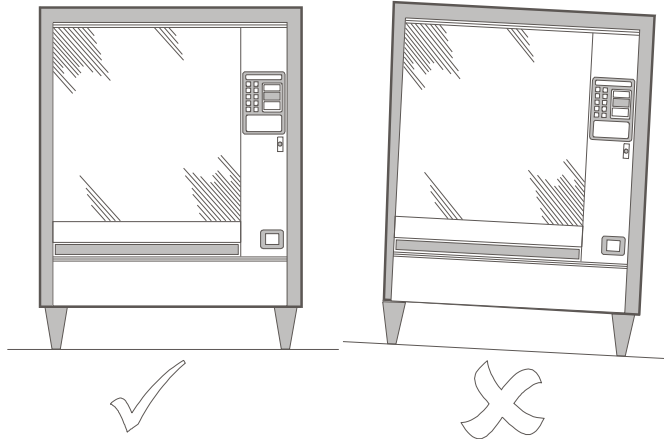
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INSTALLATION

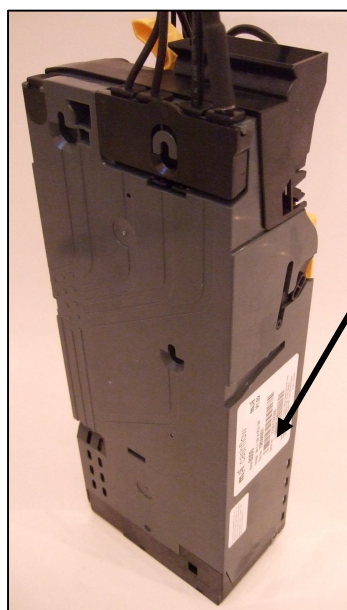
Preparing for Installation



- Turn OFF all power to the vending machine and isolate from supply.
- To ensure that the CF8000 performance is not affected, visually check the vending machine is upright, both from the front and side.

Note: To ensure that the CF8000 operates correctly it must be installed in a stable environment and mounted so that it hangs within $\pm 2^\circ$ of vertical from both front and side elevations.

Before mounting the CF8000 to the vending machine, check the supply voltage from the vending machine matches that stated on the product label.



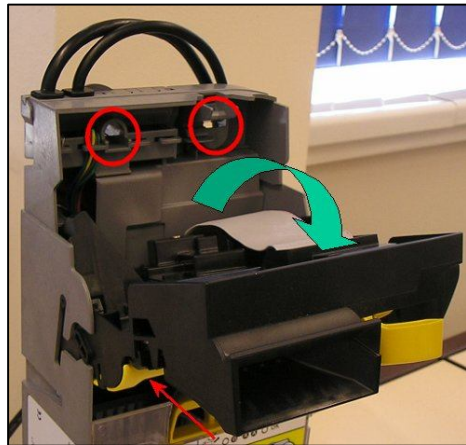
Label Information

mei cashflow™		CE
Model:	8000	
Voltage:	34v d.c. 12W	
Part No:	793436002	
Serial No:	4738R100013	
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www.meigroup.com		Made in Mexico

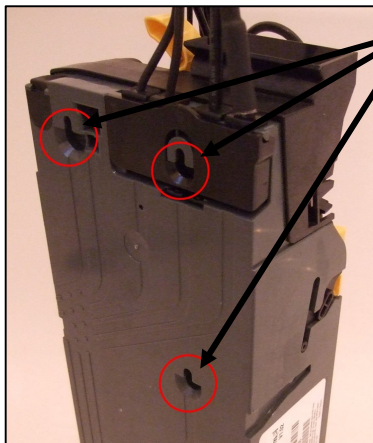
Installing the CF8000

The CF8000 is mounted onto the vending machine by hanging it onto three studs located on the vending machine. To do this you will need to open the discriminator assembly and line up the mounting keyholes of the coin manager with the vending machine studs.

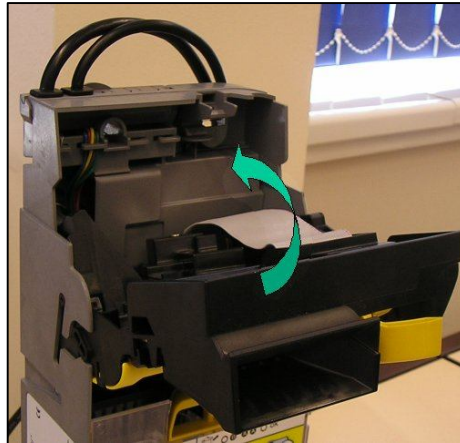
- Press the yellow button at the top of the coin manager and gently lift and pull the discriminator assembly forward. Once open, the mounting keyholes will be visible.



- To securely fix the CF8000 in place, partly unscrew the three machine studs.
- Line up the three mounting keyholes of the CF8000 with the studs and hang it in place ensuring that the changer is sitting flat against the machine back plate



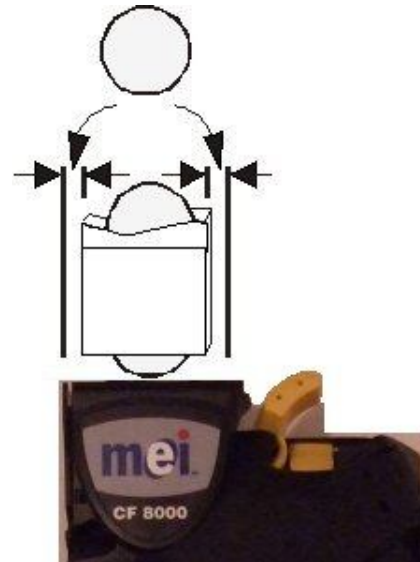
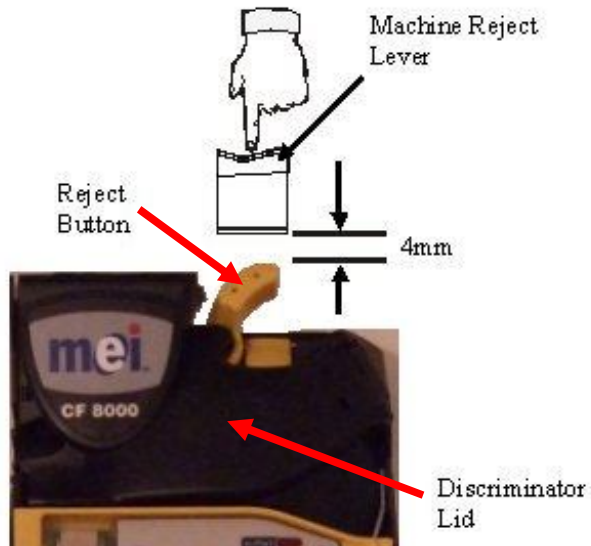
Mounting
Keyholes



- Tighten all three studs and return the discriminator back to its normal position.

Alignment Checks

Once the CF8000 has been securely fitted to the vending machine, check reject lever operation and coin chute alignment. Do this without any power applied to the machine.



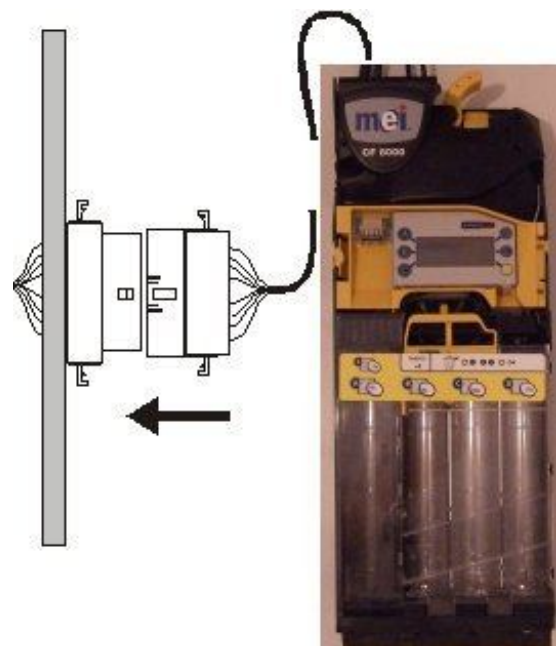
Check there is a minimum 4mm gap between the machines reject lever mechanism and the CF8000 reject button.
Press the machine lever a couple of times and ensure the lid of the discriminator opens and closes correctly.

Check machine coin chute alignment by inserting two of each coin denomination through the coin entry slot of the machine.

Ensure that the inserted coins fall freely into the CF8000 and exit out into the machines cash return cup

Cable Connection

The CF8000 may be fitted with more than one cable, these may be intended for TX-RX communications, drive an external display or to extract audit data. Once all relevant cables are connected and before closing the machine door, tuck any unused cables away tidily ensuring that none are trapped between the reject lever mechanism and the vending machine door.



Connecting Peripherals

Connect the Exec (or BDV) loom into the vending machine (shown in **red**)

Connect the MDB peripheral loom to the MDB loom on the cashless device. (shown in **blue**)



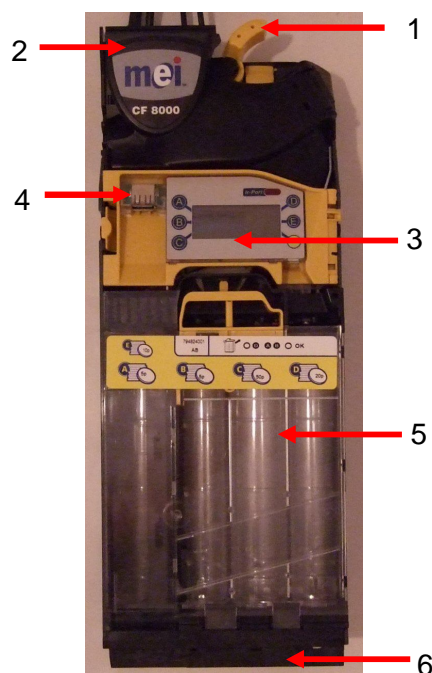
Power on the CF8000 and configure as required.

PRODUCT OVERVIEW

CF8000 Overview

This section introduces the CF8000 and its principle components.

The CF8000 is modular in structure. Six modules are of particular interest because they can be serviced in the field. These modules are identified in the illustration below and are described later in this section.



1	The Reject Lever can be used to clear obstructed coins from inside the discriminator and also (depending on the settings of the CF8000) return change after a vend.
2	Discriminator and Separator assembly. The discriminator is fitted with sensors that compare the characteristics of each coin/token inserted with those of a pre-programmed set. Inserted coins/tokens that conform are accepted and then passed through the separator to be routed into the change tubes or cash box. If the coin/token is rejected, it is routed via the reject chute inside the changer into the return cup of the vending machine.
3	The Man Machine Interface (MMI) includes Six Buttons and a Message Display . The buttons are used to access the CF8000 configuration menus and dispense coins from the coin tubes. The display allows for menu messages to be displayed and can also assist in troubleshooting.
4	The MMI is also fitted with a USB connector. This connector can be used to collect the combined Audit from the Changer and the VMC. The connector can also be used to update the configuration of the changer using a suitably programmed USB key.
5	Coin Tube Cassette . This is used to provide storage for a supply of coins for dispensing as change.
6	Dispenser module. This dispenses coins from the coin tube cassette to be returned as change.

Product Range:

MEI CASHFLOW™ 8000

With the highest coin capacity in the market and five active tubes the CF8000 virtually eliminates exact change situations on even the most demanding sites. However, by constantly monitoring the coin flow it can also work to reduce the cash tied up in the tubes where the vend price or coin throughput allows a more efficient level in each tube, even advising on a more suitable tube configuration when appropriate.

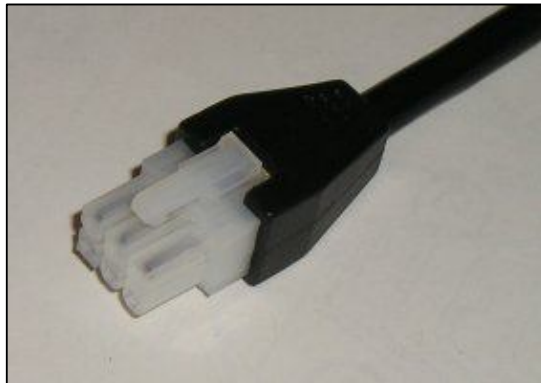
Machine Interfaces Available:

There are three types of Interface for the CF8000, these are:

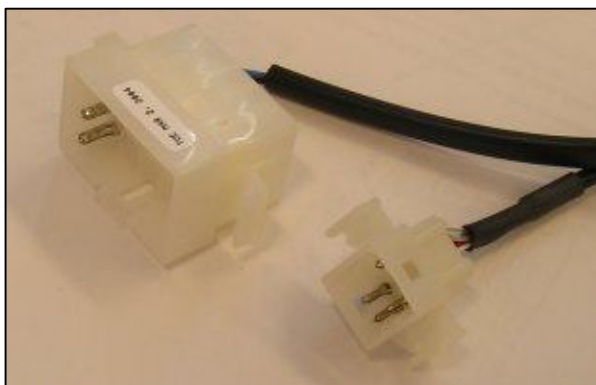
- MDB
- Executive
- BDV

The following leads are used for connection to the CF8000, depending on the electrical interface you are using:

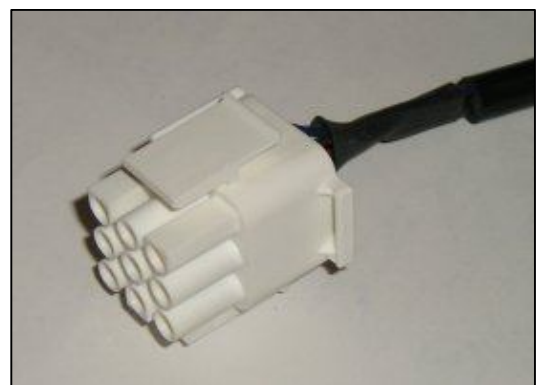
MDB



Executive Power + Comm Connector



BDV



Machine Peripherals Available:

There are three types of Peripheral options available for the CF8000, these are:

- Printer Kit
- MDB Peripheral
- DEX Audit

The lead used to connect to the CF8000 depends on the audit or cashless system that you are using:

Printer Kit Loom



MDB Peripheral Loom



DEX Audit



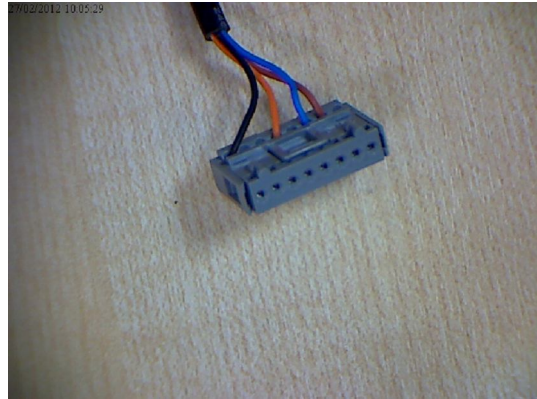
VMC Audit Looms Available

There are five types of VMC Audit looms available for the CF8000, these are:

V-Jack



Necta Direct



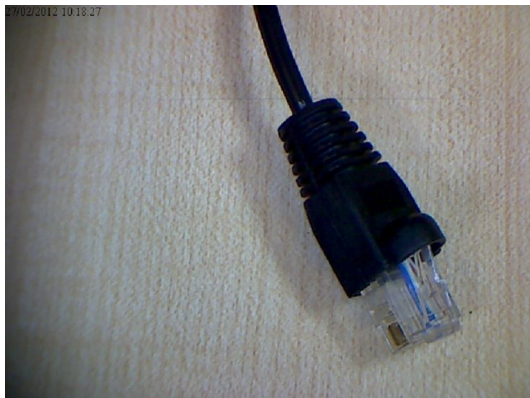
DB9 (Socket)



DB9 (Plug)



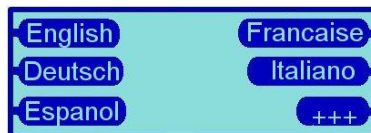
RJ45 (mei-pay Master Audit)



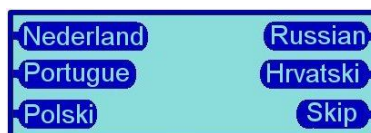
The lead used to connect to the Vending Machine Control board depends on the manufacturer of the vending machine:

Powering Up and Configuring the CF8000

At power up the CF8000 will run through a start up sequence. The Dispenser motor will sound and the Acoustics will measure the tube contents. If no language has been set as a default by MEI the display will then show the 'Set Language' screen:



The language selected will be used to display the CF8000 operating messages and will also be used as the audit report language. The desired language can be selected by pressing the appropriate MMI button (A, B, C, D or E) or by pressing the +++ button to see the other languages available.



Note: If you press 'Skip' the language will default temporarily to English (US). As soon as the power is cycled the 'Set Language' screen will be displayed again waiting for a language to be selected. The CF8000 will still operate with this message displayed but will be using English (US) as its message and audit report language.

Once the language has been selected the display will show the 'Operating OK' screen and indicate the initial tube status. The display will show that the three lowest value tube coins are low (e.g. A, B & C), if there are two coin tubes that have the same value coin (e.g. 5c in Tube A and Tube E) the display will only show the 1st tube position.



Note: MEI recommends that the coin tubes (stated by the display) be floated with at least a minimum number of coins (e.g. 5 of each) prior to leaving the machine. (Refer to the Float section – Page 32).

Within 30 seconds of applying power the CF8000 will Audit the VMC. This will take approximately 1 minute and once complete the display will revert to the 'Operating OK' screen.



Initial Checks & Tests

It is advisable to run a few minor checks / tests after the installation, to ensure that the CF8000 is going to operate correctly and thus reducing unexpected and unnecessary engineer call outs.

Reject Lever:

Operate the machine reject lever a couple of times to check the installation procedures have been followed correctly. Problems with the reject lever operation can result in coin acceptance issues and increased chances of coins jamming in the changer.

Display:

When the CF8000 is powered up the onboard display will indicate if, there are any issues with either the vending machine or the changer.



Language Setting:

The CF8000 uses its onboard display to show message information in several languages. At initial power up you would have selected the language to either be English, French, German, Italian, Spanish, Dutch, Portuguese, Polish, Russian or Croatian.

There are however three other languages that are available to you. These are: English US, French CN or Spanish US.

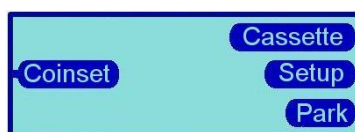
To select one of these other languages you will need to access the set-up mode menu and move to the language folder, select the required language and exit the menu.

All messages reported by the display will now be in the selected language.

Note: The new language setting will now be used for any audit printouts that are requested.

Dispenser (Park Arms):

The dispenser arms can be 'Parked' to make sure they are back in the correct position before re-positioning a removed or changed cassette. This can be achieved by pressing the Mode button on the MMI twice when the cassette is removed.



All the dispenser arms will rotate back to their home positions. When all five arms have rotated the cassette can be safely refitted.

Vend:

The following is a typical vend sequence and shows the messages that will be displayed on the changer as the sequence progresses. In this example it assumes prices are held in the changer, price display is on and that price 1 is €0.30.



When a coin is inserted a pop-up message will be briefly shown with the coin description and where it was routed too.



The total accumulated credit will be displayed on the machine and also shown on the changer display.



If a selection key is pressed on the machine for a product that costs more than the current credit, then a message will be shown confirming the selection number and price.



If more credit is added then a popup will be briefly shown with the coin description and where it was routed too.



The total accumulated credit will be displayed on the machine and also shown on the changer display.



If a selection key is pressed on the machine for a product that is equal or less than the accumulated credit then a message is shown confirming the selection and price.



The vend is authorised and a message displayed indicating this has occurred.



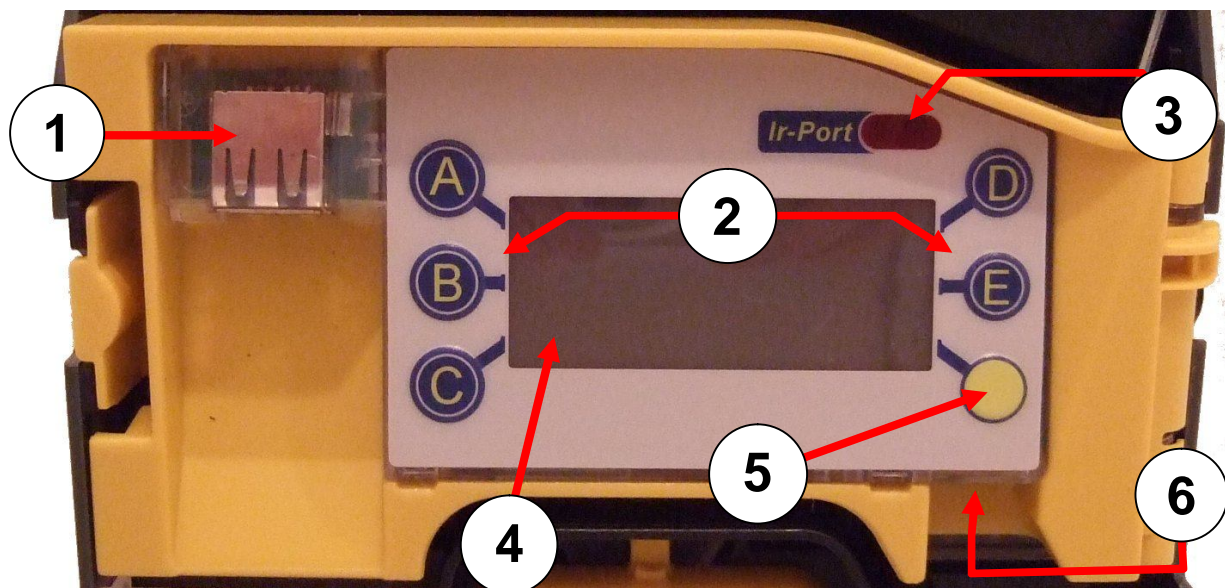
Any remaining credit will then be paid as change in coins.



HOW TO USE THE DISPLAY & SELECT MENUS

Man Machine Interface (MMI) Functions

On the front of the CF8000 there is a Man Machine Interface. The MMI has six function buttons and a large menu display. This MMI allows you to dispense coins from the five-tube dispenser, access & navigate through the configuration menus and monitor the status of the changer.



1	USB Socket	Audit, Configuration, Service
2	A to E	Dispense coins & navigate through menus
3	Irda Port	Infra-red Audit
4	Display (LCD)	Menu information & warning display
5	Mode Button	Access service mode & set-up mode menus
6	Service Connector	Mini USB link to PC

General MMI Button Operation:



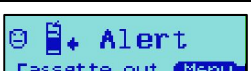

The blue keys (marked A to E) have two functions. When the CF8000 is in idle mode, pressing a blue button on its own will dispense a coin from that tube. When you press and hold the blue button for approx. 4 seconds, this activates auto dispense (latch dispensing of coins) until the tube is empty of coins.

General Operation of MMI Buttons			
A	Dispense coin from tube A	D	Dispense coin from tube D
B	Dispense coin from tube B	E	Dispense coin from tube E
C	Dispense coin from tube C	Mode Button	

If however, the yellow (mode) button is pressed the CF8000 will enter either **service** or **set-up** mode, the blue buttons are then used for navigation through these menus. (Refer to the Menu Structure section).

Alert Messages

An Alert message on the display allows you to pinpoint a fault that may have occurred on one of the modules of the change giver. These types of fault can be rectified at the machine and can be for example caused by; a coin jam, dirt built up or the cassette has been removed etc.












Alert Message	Change giver Maintenance
	Discriminator error
	Accept gate error
	Separator module top level sensor Tube cassette error
	Dispenser module error

General Mode Button Operation:

The mode button can be used to access the two configuration modes available. Service Mode and Set-up mode.

Service Mode Menus: gives access to the most frequently used product configuration options. i.e. Float Up (See Service Mode Menu Options)

Set-up Mode Menus: gives access to general product configuration options that are required when setting up your CF8000. i.e. Single Vend or Multi Vend (See Set-up Mode Menu Options)

Mode Button Operation Functions	
	Press once to access Service Mode menus
	Press and Hold for 2 seconds, will access the Set-up Mode menus without a pass code required. Note: If however the CF8000 had detected an error/fault, this action will take you to the test/diagnostic menu.
 	Access the Set-up Mode menus. You will be prompted for a pass code. Press   
 	Ensure tube cassette is fitted then press button twice to view CF8000 audit data
 	Remove tube cassette then press button twice to align all dispenser arms to their home position

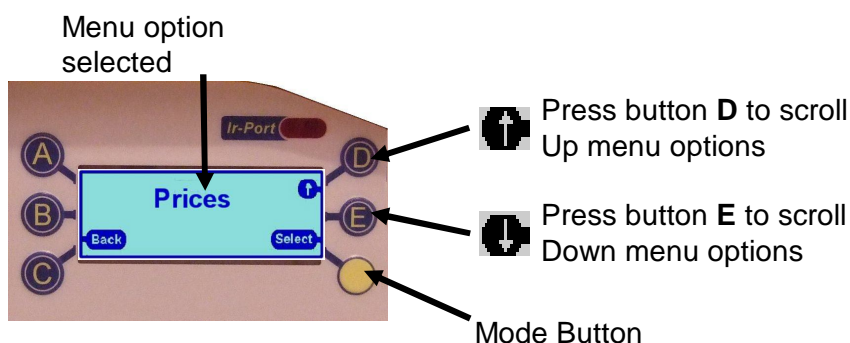
How to Access the Set Up Menu:

There are two ways to access the Set Up menus:

1. If you press and hold the mode button for 2 seconds, this will take you to the first menu options. *This is normally the “Prices” option.

Or

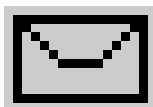
2. You can press the mode button once then the E button to select the “Setup” option. (The display will show a “Warning message” “pass code required”. Press buttons ABC).



***Note:** If however, the CF8000 has experienced a fault, the changer will automatically take you to the “Test” menu. This would then allow you to rectify the fault by running the specific tests. Once this has been rectified the menu will revert to it’s normal listing.

Message Waiting Icon:

Message Waiting Icon:- If there is a message waiting to be read, an envelope icon will be shown on the display.



This message is displayed when or if the CF8000 has detected that it can be optimised for better performance e.g. better tube combinations, payout mix etc. thus improving sales.

Reading the Message: Access the setup menu in the normal way (the display will show the word “messages”) and follow the instructions on the display.

The messages will be displayed in the order of, last in first out.

The CF8000 can store up to four messages at a time, when these have been read you can delete them by going through to the delete messages menu.

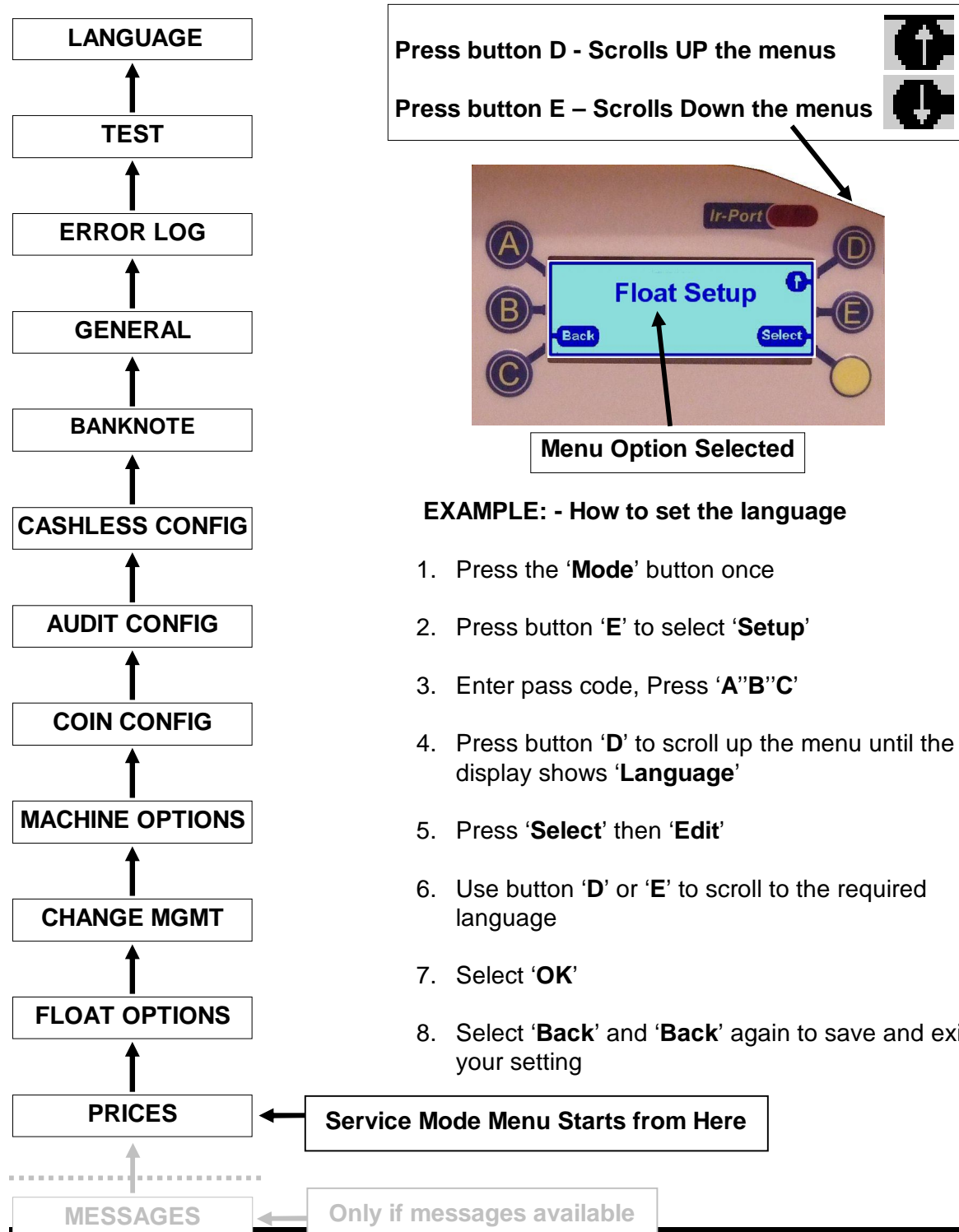
Menu Structure

The menu structure on the CF8000 is made out of two folder levels. The main menu folder (as shown below) and under this, the sub menu folders.

Service Mode Menu Options

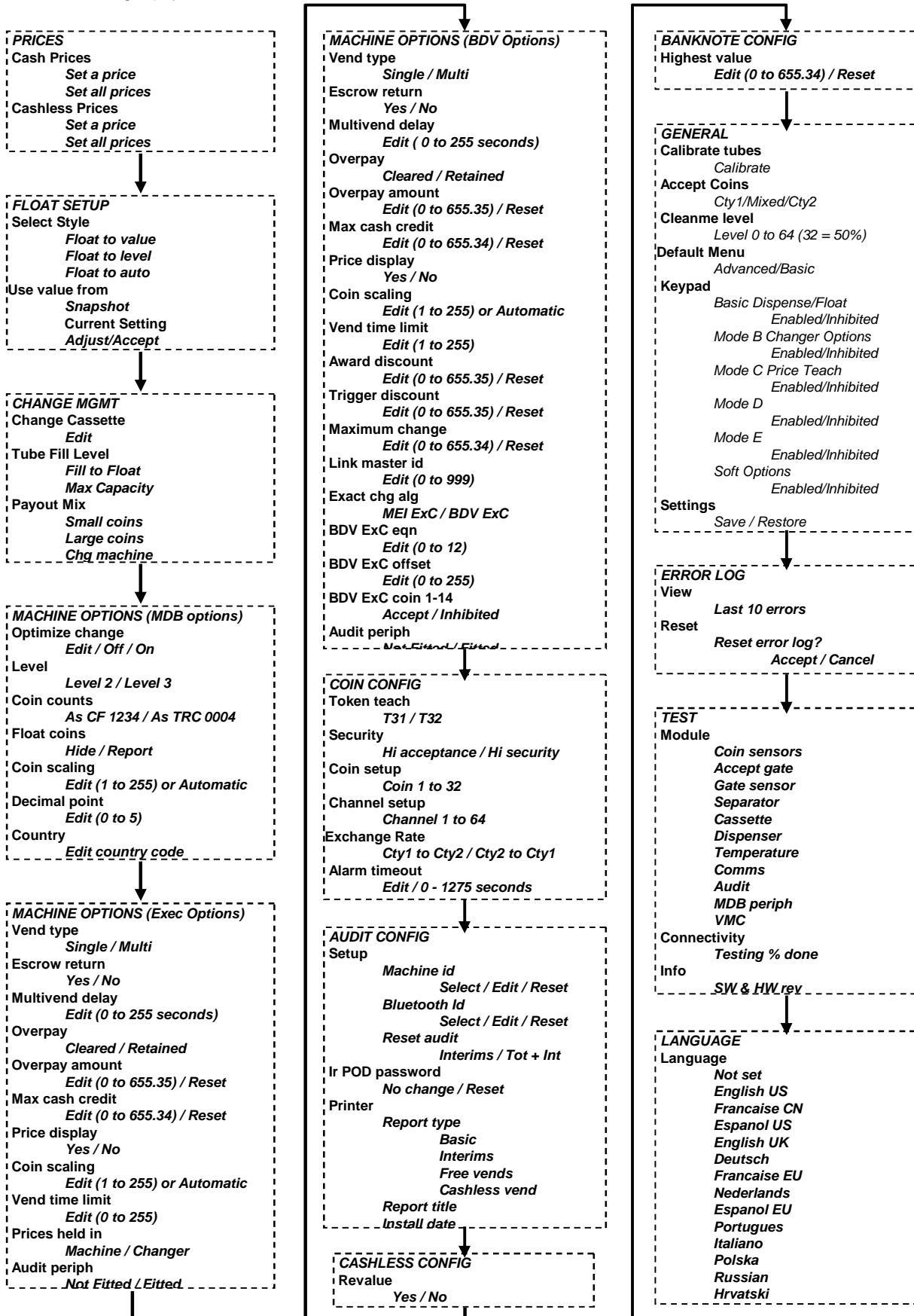
Service Mode Menu gives access to the most frequently used product configuration options.

Press the mode button once to access this. The structure is shown here.



Set-Up Mode Menu Options:

Set-up Mode Menu gives access to general product configuration options that are required when setting up your CF8000.



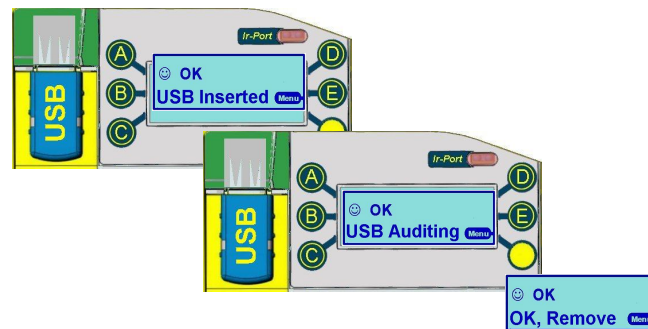
USB FUNCTIONALITY

Introduction

The CF8000 incorporates an industry standard USB connector. This USB connector can be used to collect Audit data, update the changer configuration or software and also assist the field engineers with a set of service functions.

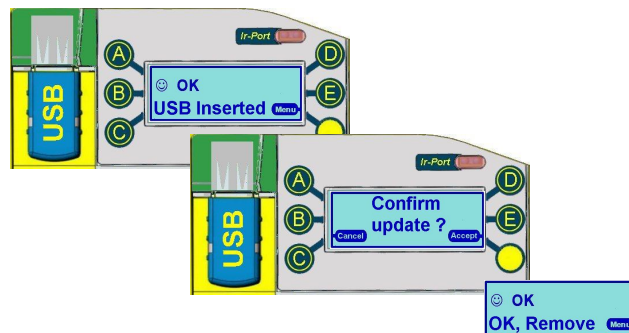
USB Audit Mode:

Auditing the CF8000 using an 'Audit' defined USB stick *



USB Configuration/Application Mode:

Updating the CF8000 using a 'Configuration/Application' defined USB stick *



USB Service Mode:

Additional configuration options available to a service engineer.

This menu is not available unless you have a 'Service' defined USB stick.*

Time and date	Time Back/ Select/ Edit Date Back/ Select/ Edit
Program clone	Select Cancel/Accept
Acquire clone	Acquire w/audit Back / Select Acquire wo/audit Back / Select
Update menu	Upd config Back / Select Upd firmware Back / Select Update all Back / Select
Retrieve logs	Select Retrieving data
Audit menu	Audit wo/reset Auditing Audit with reset Auditing
Setup menu	Prices....

* STS V7.00 required to define USB stick properties.

CHANGE MANAGEMENT

Introduction

The CF8000 has many new features that allow the product to be called a change manager rather than a change giver. In addition to the high capacity five tube cassette the new features enable the CF8000 to more effectively manage the operation of the unit and to optimise the float levels of the machine and the change payout. These new features provide an opportunity for the operator to optimise the vend revenue by minimising the amount of time the unit operates in exact change mode.

Float to Level

What is Float to Level?

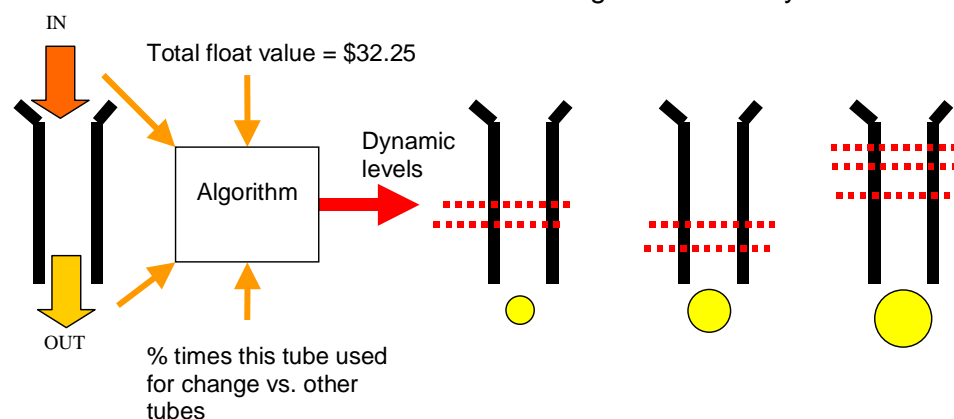
Each tube can be filled to a specific level, after which the coins are routed to the cash box. This is the traditional float style. To set this up, you enter the total number of coins of that type that you want to store in the changer. This level applies to all tubes holding the same type of coin. For example, if the level was 30, and the coins were stored in three tubes, there will be 10 coins in each tube.

Float to Value

What is Float to Value?

This feature gives the customer a simple set up and improved audit process i.e. they want €32.25 in the tubes but want the changer to compute and dynamically alter the ratio of coins in the tubes and give the best mix of coins ready for change.

How Does it work? The CF8000 continually computes coin levels for each tube based upon whether tubes are naturally replenished or depleted and how often the tube is used for change. It will always try and have at least 7 coins in any tube to ensure the exact change indication is kept off, it will continue to add more coins to the tubes until the overall value for the entire cassette matches the target value set by the customer.



Will it work immediately? Yes, however the initial mix of coins in the tubes may not be optimal.

How do you set it up? (Refer to the Float section – Page 32).

Auto-Float

What is Auto Float?

The aim of this feature is to have no settings for the customer to set up or compute and the changer to operate with the minimum amount of money in the tubes but ensuring the exact change light is rarely lit and that change is available for vends.

How Does it work? Auto float uses probability calculations to reduce the chance of the exact change light coming on and monitors prices and whether bills are used to determine the fewest number of coins with the best optimal mix.

- Auto Float is based on the last 64 coins in.
- Auto Float is calculated as a ratio of coins in and coins out.

Will it work immediately? Yes, however it requires some time to gather information on how the tubes are being used, during this time it will run the tubes at their maximum level to ensure there is always enough change.

- The consumer will notice no difference.
- Auto float will ask for a number of coins inserted to meet the auto float level. Any coins inserted once the float level has been achieved will be rejected – no overfill is possible.
- If a coin tube has more coins in it than is required by the auto float the tube will dispense coins until the correct calculated level is reached.
- There is no notification what the current auto float level is.
- The float level will change depending on the ratio of coins accepted and coins dispensed.
- Auto float only manages coins to cash box - it will stop coins being routed to the cash box if they are needed to keep the exact change light off.
- Float Up and Float Down do not operate in auto float mode.

How do you Set-up Auto Float? (Refer to the Float section - Page 32).

Snapshot Float

What is Snapshot Float?

When this function is triggered it takes a "snapshot" of the current cassette and uses that to setup the float settings.

How Does it work? The snapshot feature allows the operator to manually fill the coin cassette tubes to either a predetermined level or value and then save them as the operational float settings.

Will it work immediately? Yes, but the snapshot feature is only available when the unit is set to 'Float to Level' or 'Float to Value'.

How do you use Snapshot Float? (Refer to the Float section - Page 32).

Payout Mix

This feature determines the mix of coins that the customer will receive back once their vend is complete. There are three available settings with the CF8000.

- Large Coins
- Small Coins
- Change Machine

Large Coins:

This is the best option for the customer with fewer coins returned. This feature uses the same "weighted best change" function as the CF690 however the activation level is fixed at 15. It tries to prevent coin levels in a tube dropping below the trigger level and will use other coin denominations in preference.

Small Coins:

This is a new feature and is the best option for the operator. It is designed to keep the two lowest value tube coins out of the cash box. This is done by preferentially paying out any coins that are close to the maximum level from the two lowest value tubes. The trigger level is set to 88% of the maximum fill level. The decision process of which coins to pay out has 3 steps.

- 1) Paying any coins from the lowest value tube that is above the threshold.
- 2) Paying any coins from the second lowest value tube that is above the threshold.
- 3) Paying the remainder of credit by the "least coins algorithm", as described above.

Notes:

1. The trigger level is set by integer arithmetic. $\text{Threshold} = \text{max fill level} - (\text{max fill} / (2/3))$
2. The *maximum fill level* changes depending upon change management tube fill level. If this option is set to 'MAX CAPACITY' then maximum fill will equal the predefined max fill level for the coin / tube combination. If the option is set to 'Fill to Float' then the maximum fill level will be set to the float levels determined by the Float.

Change Machine:

This is a new feature. Designed to pay out one coin from each tube value allowing maximum flexibility for re-insertion. The change value is achieved by starting with one coin from the lowest value tube and one from the next value tube, up to and including the highest value tube. Then paying the rest with the minimum number of coins. The decision process regarding coins to pay out has 2 steps.

- 1) Paying one coin from each tube if value not greater than remaining credit, starting from the lowest value tube.
- 2) Paying the remainder of credit by the "least coins algorithm" as above.

Notes:

1. For all three algorithms they will work out which coins to pay, then pay them out in sequence from tube "E" to "A".
2. Multiple tubes of the same coin are treated as if they are one long tube with the individual tube counts and max fill levels added together.
3. With multiple tubes of the same coin the highest lettered tube will be emptied first.

Low Change

If the coin count of any of the lowest 3 denomination coin tubes is below 5 it signals low change. This is shown on the MMI display.



Optimise Change

This controls whether the changer tries to interpret specific coin payout commands from the machine and convert the amount to a better coin mix.

On = Level 2 dispense commands that request a specific quantity of a specific coin will be accumulated, the total payout computed and an optimal mix paid out based on the current payout (pay to) setting in the changer. This contravenes the MDB protocol specification but may give better payout with older machines that do not support the alternate payout command in level 3. A request to payout a single coin of one type will always be honoured exactly, as it is likely to be from a coin invent function on the machine.

Note: This is not compatible with MDB Audit.

Off = the changer will payout as requested.

Note: The factory default for Optimise Change is Off.

Cassette Wizard

The cassette wizard is a function within the CF8000 that monitors the throughput of coins and if applicable recommends a change to the cassette configuration being used. It bases its assessment on three factors:

Exact Change:	Time in Exact Change greater than 15 minutes in 28 days.
Tube Assessment:	Unused or duplicate tubes in current cassette.
Coin Assessment:	Tube coin net depleting or / coin count for a denomination less than 5 for more than 48 hours in 7 days or / number of cashbox coins of a denomination greater than 2% of all inserted coins.

It uses the assessments to create a proposal for a change in cassette using the following parameters:

Assemble proposed cassette contents

Use spare tubes first - then duplicate tubes

Compare proposed contents with pre-defined cassettes

If match found - get Cassette model number or/

Propose custom cassette configuration

Is proposed tube arrangement allowed within physical constraints of cassette?

Assemble SMS message

Passed to SMS system for display on MMI

Critical Business Statistics (CBS)

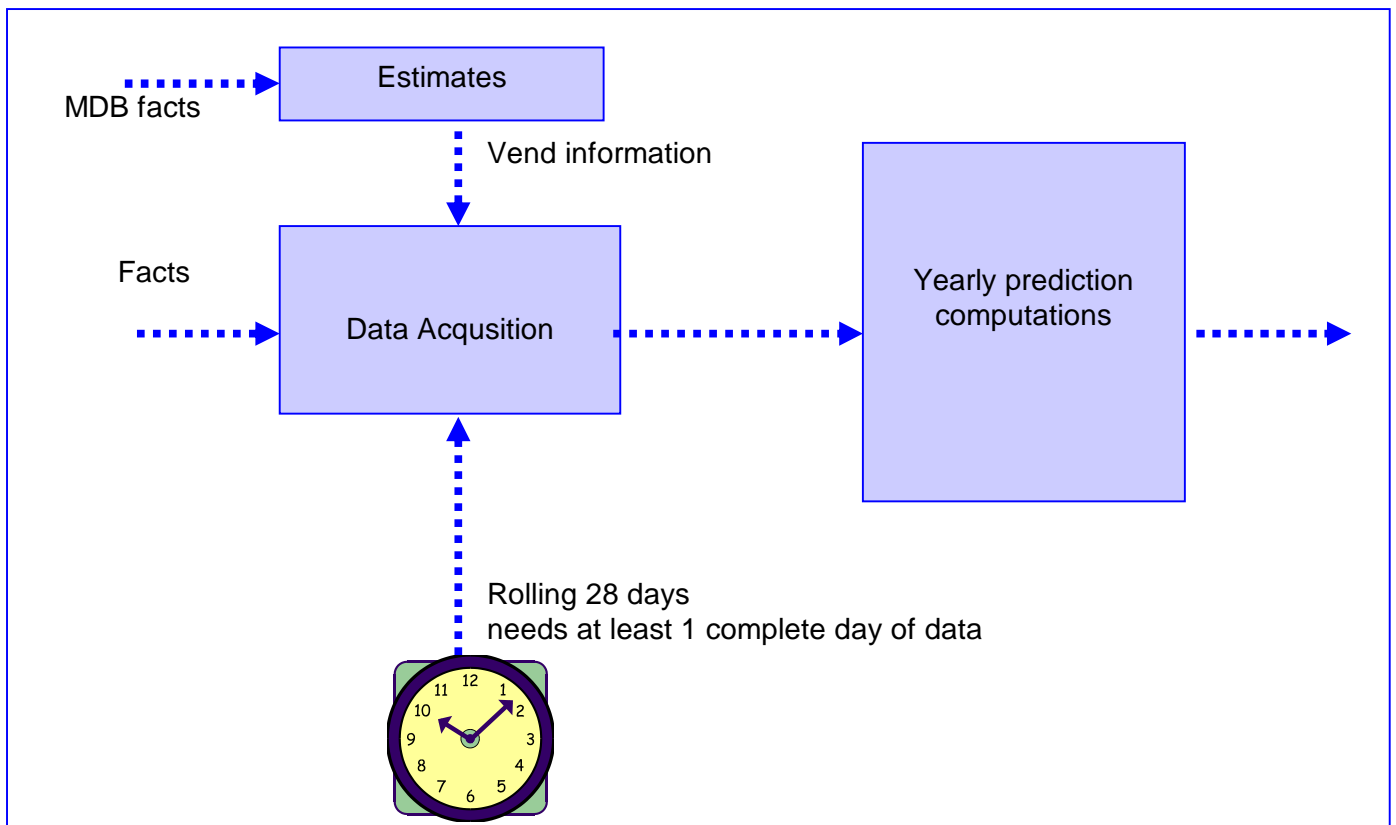
Monitors machine availability and operation over a period of time and then predict the sales statistics for a year.

Operation Time Period

- Based on the last 28 days data of:
- Value sales in Exact Change
- Number sales in Exact Change
- Value sales with change
- Number sales with change
- Time in Exact Change
- Time disabled

CBS Yearly Report Details

- Average price
- Sales lost when in Exact Change
- Duration disabled
- value sales in Exact Change
- value sales with change
- Duration in Exact Change
- Duration with change
- Number sales with change
- Number sales in Exact Change

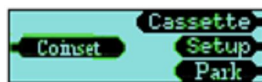


CONFIGURATION OPTIONS

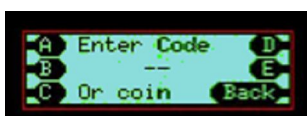
Cassette

Changing Cassette Configuration

Remove the fitted cassette and press the yellow mode button once. The display will show the following message:



Press the D (Cassette) and using the cassette option table below enter the required two digit code by pressing the corresponding letters on the MMI (A to E).



The screen will change to show the cassette payout for the option you have just entered. Press the yellow mode (Accept) button if this is correct.



Fit the new cassette with the selected payout option to the unit.

The CF8000 can store up to 5 cassette options in its internal memory and is supplied with only the fitted option stored. Therefore, if this is the first time the chosen payout option has been selected on the unit it will need to be calibrated. Once this option and up to four more have been calibrated the cassette can then be changed between these 5 payout options without having to be re-calibrated.

If the "Cassette calibration required" screen is displayed press the yellow Mode button.

You will then be asked to "Check cassette xx is empty". Once confirmed, press the yellow Mode button (Calibrate) - the unit will now calibrate the new cassette and on completion press the Mode button (OK).

The display will now show that the tube contents are Low and inform you which tubes need to be filled to turn off exact change.

The cassette model is clearly printed on the front of the cassette.

Cassette Teach

The CF8000 has the facility to let the operator 'teach' their own payout configuration. The CF8000 has a pre-defined set of rules that determine the permitted positions for each Euro coin and the MMI will display an error message indicating that the requested coin/tube position is not allowed.

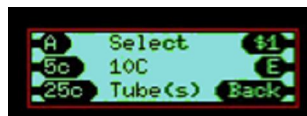
Remove the fitted cassette and press the yellow mode button once. The display will show the following message:



Press the D (Cassette) and rather than entering a cassette code drop any one of the coins that make up your custom cassette through the Discriminator.



Enter the required tube positions for the dropped coin (e.g. 10c) in your custom cassette. As you select the tube position, the screen will change from the selected letter to the coin value.



Once the custom payout has been completed the new cassette will need to be calibrated. Follow the same routine as for a changed cassette.

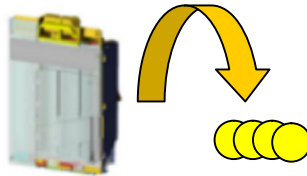
Cassette Calibration

Cassette calibration is necessary if you are creating your own tube configuration or there has been a significant variation in the operating temperature of the changer. The calibration makes sure that the acoustics module recognises the tube and base options fitted into all of the five tube positions. This will ensure that the CF8000 accurately keeps track of the coin counts for all the tubes in the cassette.

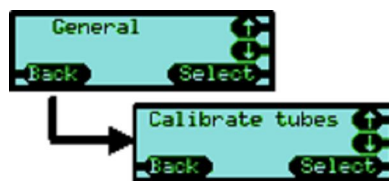
How do I calibrate a cassette? If the display indicates a cassette is un-calibrated or you want to improve the performance of the coin level sensing system by calibrating the exact cassette that is fitted to the changer then follow this procedure.



Remove the cassette and check it is empty then refit it.



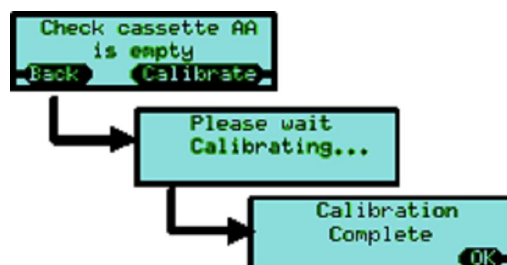
Press '**Menu**' then '**Setup**' then '**A**'**B**'**C**'
Scroll to the "**General**" menu then press '**Select**'



Scroll to the "**Calibrate tubes**" menu then press '**Select**'.

It will prompt you to check the corresponding cassette is fitted, if it is then press '**Calibrate**', otherwise press '**Back**' and program the correct cassette code before restarting this procedure.

The changer will check each tube at least twice so there will be at least 10 clicks. It will display a message when it has finished, press '**OK**'.



Press the '**Back**' key repeatedly to exit the menu, the main screen will now be shown with no un-calibrated warning.

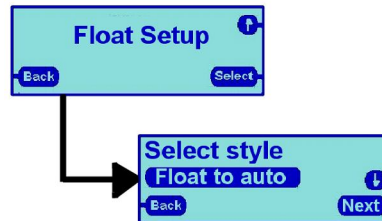


Float

Setting the Float Style

Press **'Menu'** then **'Setup'** then **'A''B''C'**.

Scroll to the **"Float Setup"** then press **'Select'**. (the current float style is shown).



Press **'E'** (Down) or **'D'** (Up) to change the Float style:



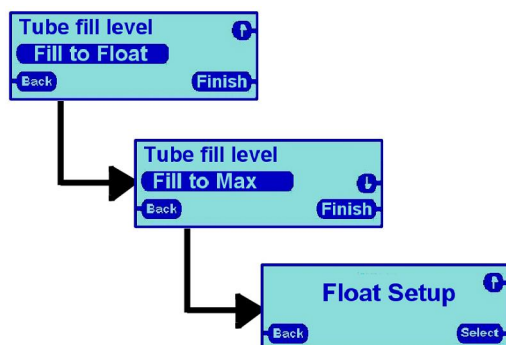
When the Float Style you require is highlighted Press **'Next'**

The next options are dependent on what Float Style you selected:

Float to auto

The Float to auto function monitors the coin history (coins inserted, coins dispensed, coins routed to tube, coins routed to cashbox) and from these determines the best float levels for each coin type in the cassette so that it maintains the optimum amount of change in the cassette and still keep the exact change light off.

When activated the function will start to fill the cassette to the Max Fill levels. After a while these float levels will start to be reduced and excess coins will be routed to the cashbox.



Tube contents will be limited to the calculated Auto float levels. Press **'Finish'** to select.

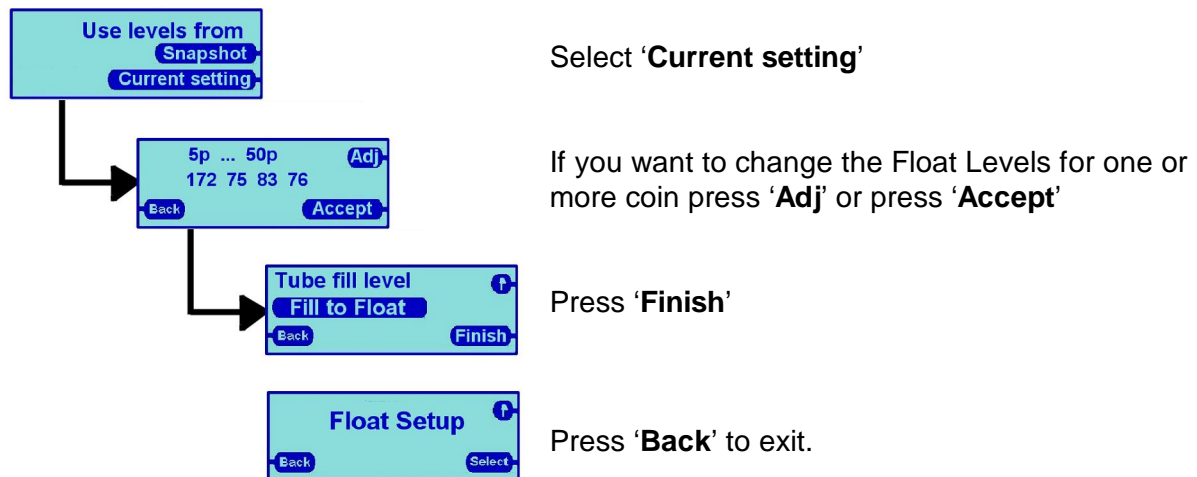
Tube contents will always attempt to fill the tubes to the Max level settings. Press **'Finish'** to select.

Press **'Back'** to exit.

Float to level

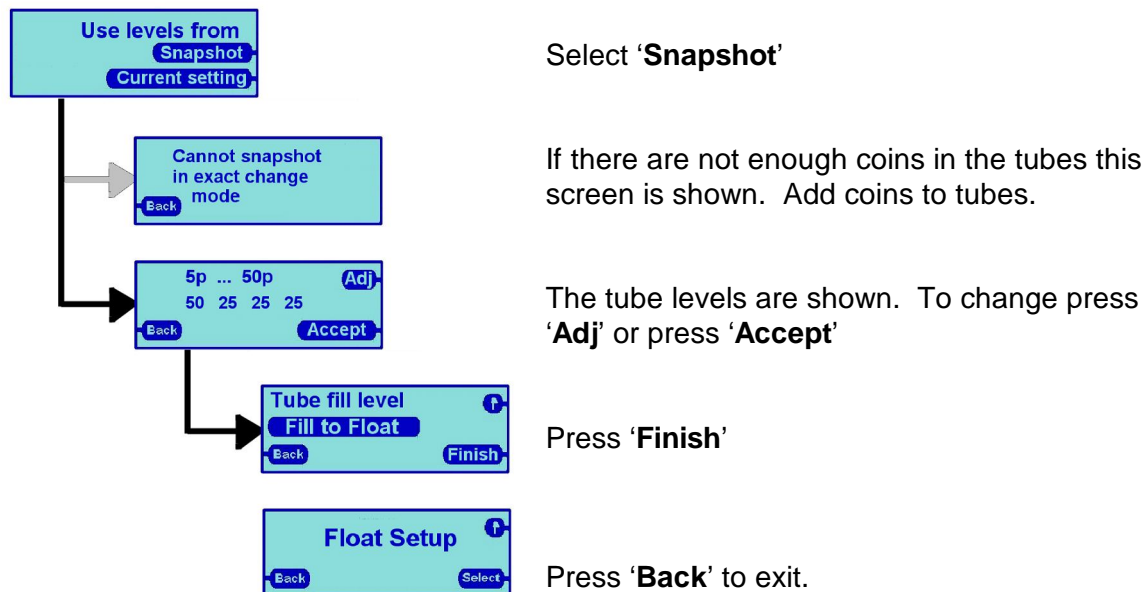
Current setting option:

The default float levels are set by MEI. These numbers are calculated for each coin type. If you have more than one tube present for a coin type (i.e. 2 x 5p tubes) then the float level entered is split between the two tubes (172 float coins is 86 coins in each tube)



Snapshot option:

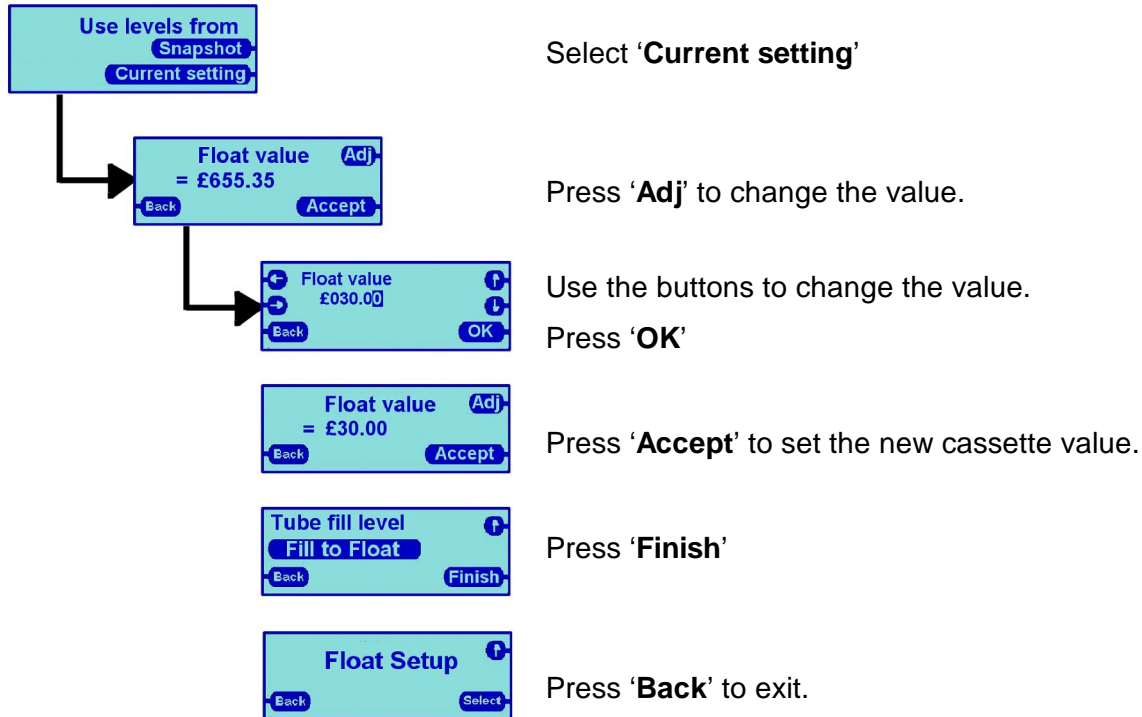
This will set the Float Levels to match the current tube contents. Coins can be manually added or removed from the tubes to reach the desired float levels. Or the levels can be adjusted during the procedure.



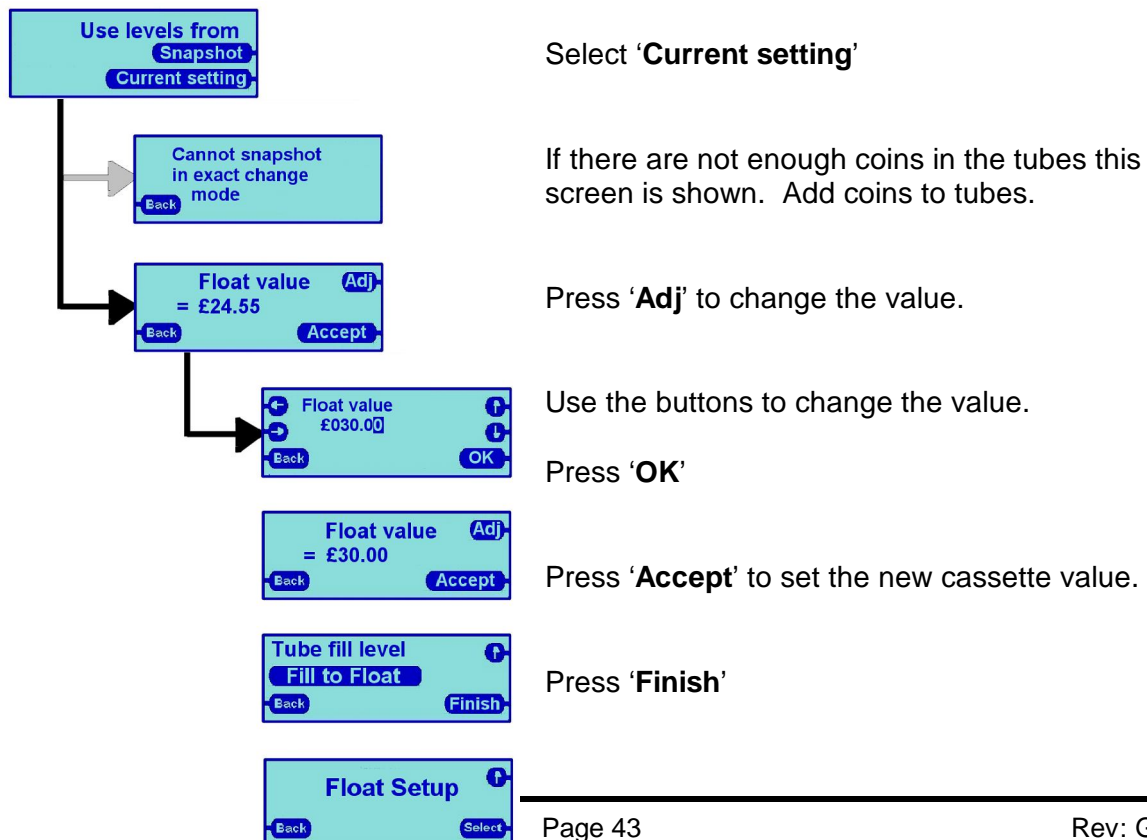
Float to value

This function allows you to specify a total value of change that will be held in the cassette. Once this value is achieved all subsequent coins inserted will be routed to the cashbox.

Current setting option:



Snapshot option:



Press '**Back**' to exit.

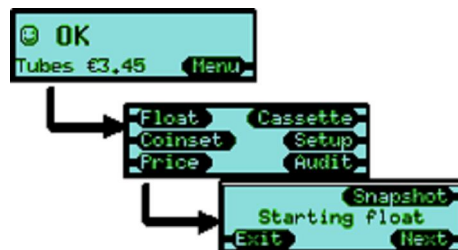
Configuring the Float

The float process involves two stages:

- Dispense of Excess coins
- Addition of insufficient coins

If there is no action to be performed for a stage then it will automatically move onto the next stage.

Press '**Menu**' then '**Float**'.



The changer will display a screen indicating it is about to start the float process. Either wait 2 seconds or press '**Next**'

If the float style has been set to "**Auto Float**" then the following message may be flashed on the display after pressing '**Float**'

insufficient data
for auto float on
tubes ABCDE

As auto float needs to gather information on how the tubes are being used it wants to run the tubes at their maximum level to ensure there is always enough change.

The changer will now dispense any excess coins. That is extra coins in the tubes that are above the float setting (level or value).

Float to level
Dispensing excess
Pause Skip

The dispensing of these excess coins can be paused to facilitate the emptying of the coin return by either pressing '**Pause**' or the Reject Lever.

When all the excess coins have been dispensed the changer will move onto the next stage and ask the user to insert any additional coins it requires to achieve the float condition.

Insert following qty
of coins to
float changer

50 x 136	100 x 54
200 x 49	500 x 29

Skip

Insert the requested coins into the changer through the discriminator, the count of how many coins are required will decrease as coins are inserted. When sufficient quantity of a coin have been inserted it will stop prompting for that coin and reject any more that are inserted.

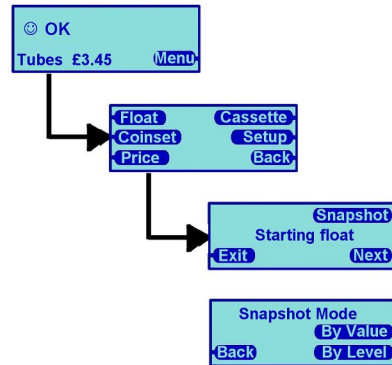
When all coins have been inserted it will display a message indicating that the float condition has been achieved.

Float complete
Finish

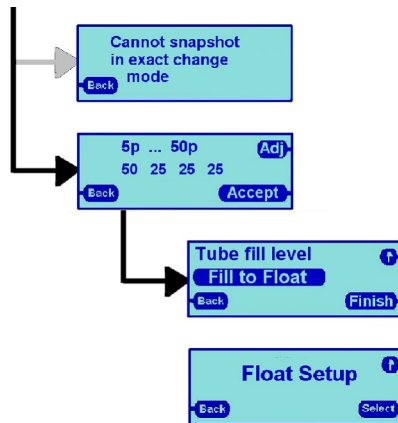
It is possible to **'skip'** stages and not insert all the required coins. If this is done a different message will be shown at the end indicating that the float condition was not achieved.

Using Snapshot Float

Press **'Menu'** then **'Float'** then **'Snapshot'**



If operating in **"float to level"** the screen will show the current levels in the tubes.



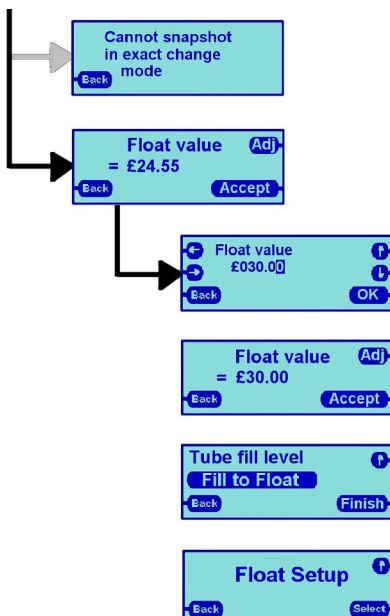
If there are not enough coins in the tubes this screen is shown. Add coins to tubes.

The tube levels are shown. To change press **'Adj'** or press **'Accept'**

Press **'Finish'**

Press **'Back'** to exit.

If operating in **"float to value"** the screen will display the total value of coins currently in the cassette.



If there are not enough coins in the tubes this screen is shown. Add coins to tubes.

Press **'Adj'** to change the value.

Use the buttons to change the value.
Press **'OK'**

Press **'Accept'** to set the new cassette value.

Press **'Finish'**

Press '**Back**' to exit.

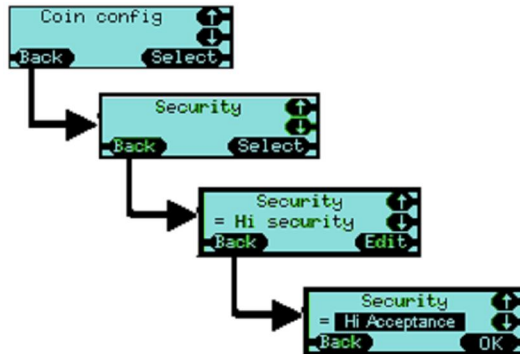
Coins

Acceptance Modes

The changer has two modes of acceptance it can operate in:

- **High Acceptance** - Operation optimised for high levels of coin acceptance.
- **High Security** - Operation optimised for high levels of slug rejection. This mode may reduce the acceptance levels of valid coins.

Setting Acceptance Mode



Press '**Menu**' then '**Setup**' then '**A**'**B**'**C**'
Scroll to "**Coin config**" and press '**Select**'

Scroll to "**Security**" and press '**Select**'

Press '**Edit**'

Scroll to desired security setting and press '**OK**'

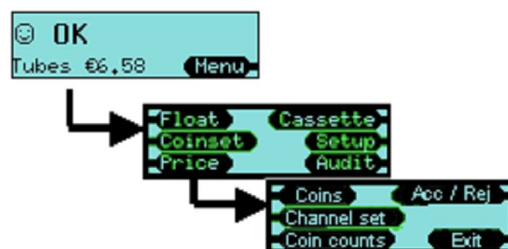
Press '**Back**' repeatedly to exit.

The changer will reset then operate in the new acceptance mode.

Inhibit or Enable Coins

The CF8000 provides two methods of inhibiting or enabling the acceptance of a valid coin. The first method can be used only if you have one of the coins available that you wish to inhibit /enable. The second method is via the set up menu and does not require any coins.

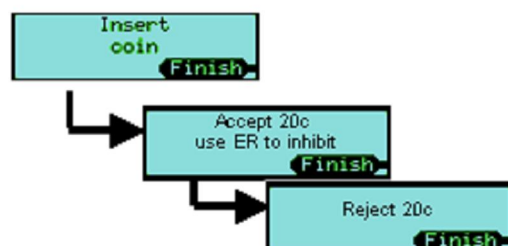
With coin sample.



Press '**Menu**'

Press '**Coinset**'

Press '**Acc / Rej**'

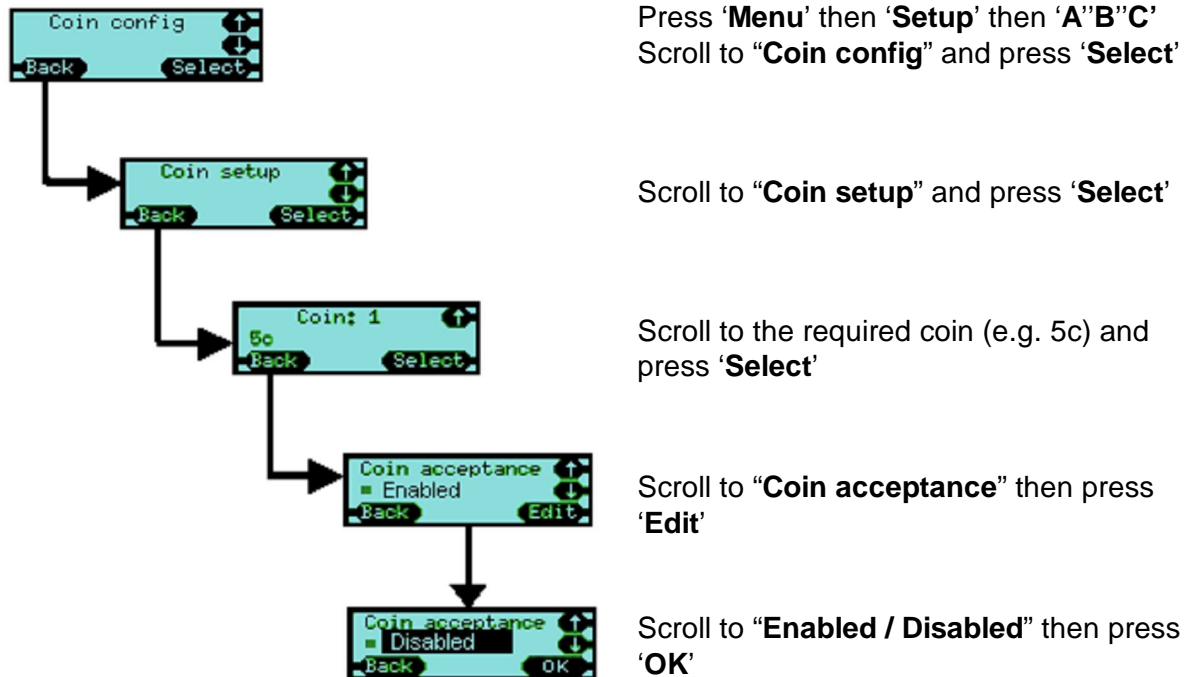


Drop the coin you wish to Inhibit / Enable through the discriminator.

- Inhibit the coin press the Reject Lever.
- Enable the coin press '**Finish**'

Press '**Finish**'

Without coin sample



Press **'Back'** repeatedly to exit.

Tokens

CF8000 has the capacity for 32 pre-programmed tokens and can have up to 6 tokens active at any time. Of which, four can be pre-programmed tokens that are 'enabled' in the field and two that can be 'taught' in the field (by dropping samples).

A pre-programmed token has factory optimised validation data but requires the customer to set its token type.

All pre-programmed tokens are disabled by default.

Token Types

Value Token

The object has a credit value but is not stored in a tube and no change is returned from remaining token credit. (Value tokens are not supported within the MDB protocol so in order to allow a value token to be used within an MDB system the CF8000 will allow a token to be taught and assigned a value. This will be reported to the MDB VMC as a coin, however it will show as a token on audits taken directly from the changer).

Vend Token

The object allows a vend on a particular product line (if the value is set to the appropriate product line), or a free vend on any product line (if the object value is set to zero).

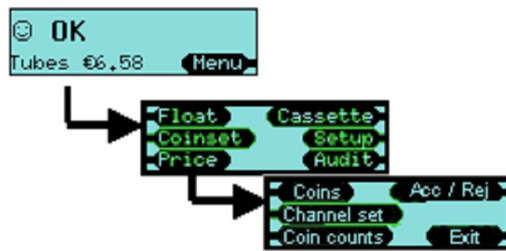
Reject Token

The object will be credited but not accepted, i.e. routed to the reject path. This may be useful to have a special token to open a machine. (e.g. A sidewalk newspaper vendor).

Slug

The object has no credit value and may be rejected or accepted to cashbox (swallowed).

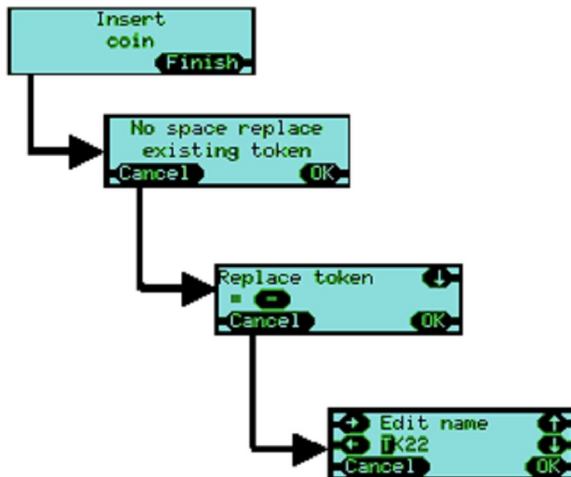
Enable a Pre-programmed Token



Press **'Menu'**

Press **'Coinset'**

Press **'Acc / Rej'**



Drop the token you wish to enable through the discriminator.

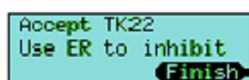
The changer can have up to 4 pre-programmed tokens active at any one time. Select one of the token slots for the dropped token to use, which may overwrite any existing token already in that slot.

You can optionally change the name that will be used for this token or simply press **'OK'**



Select the Token Type you require:

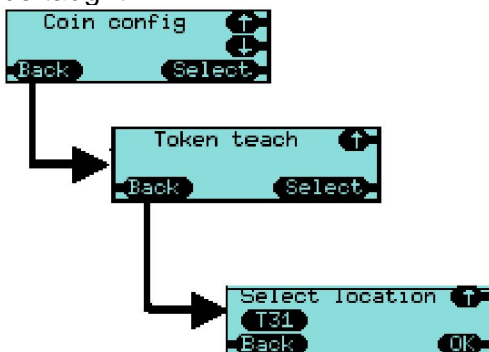
Value Token; Vend Token; Reject Token; Slug



The token will be accepted by default, if you want the token to be rejected the press the reject lever when prompted. Otherwise press **'Finish'**

Token Teach

This feature allows the field to manually program two further tokens into the changer that have not been pre-programmed. Slots 31 and 32 are reserved for the two tokens that can be taught.



Press **'Menu'** then **'Setup'** then **'A"B"C'**
Scroll to **"Coin config"** and press **'Select'**

Scroll to **"Token teach"** and press **'Select'**

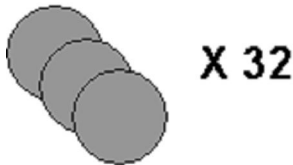
Scroll to the required slot (T31 or T32) and press **'OK'**



Select the Token Type you require:
Value Token; Vend Token; Reject Token; Slug



You can now alter the name that will be displayed when the token is finally set-up, by default it will be named "T" followed by the slot number e.g. **T31**. Use the cursor keys to alter the name then press '**OK**'



You will now be prompted to insert 32 samples of the token. Although you do not need to drop 32 the changer will perform significantly better if you drop as many as you can. You should not drop the same token repeatedly but use a collection of tokens of the same type.

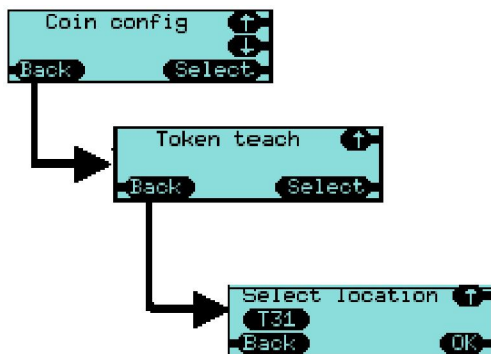


When 32 tokens have been dropped a screen will be displayed, simply press '**Finish**'.

The screen will then go to the beginning ready for another token type to be taught, if you have no more to teach then press '**Back**' repeatedly to quit the menu.

Delete a Token

This feature allows the operator to delete a token that has been previously been 'taught' (slot T31 and T32). You cannot delete pre-programmed tokens.



Press '**Menu**' then '**Setup**' then '**A**'**B**'**C**'
Scroll to "**Coin config**" and press '**Select**'

Scroll to "**Token teach**" and press '**Select**'

Scroll to the required slot (T31 or T32) and press '**OK**'



Select the type of token as '**Delete**' and Press '**OK**'



A confirmation screen will be displayed.
Press '**Accept**' to delete the token.

When a token has been deleted it will clear all stored settings (token type, token description and the coin drop information that was used to validate the token).

Prices

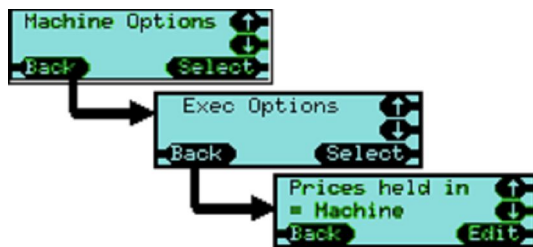
Price Holding:

The CF8000 has two methods of controlling the prices when being operated in Executive mode. These are 'Prices Held in Machine' (VMC) and 'Prices Held in Changer'. The default for this option is 'Prices Held in Machine'

Prices Held in Machine:

The Prices are set up in the host machine to match the selection numbers, only the price information is sent to the changer so it can audit the value of products sold but not which product.

i.e. The changer does not know if product 2 or product 6 was sold only that it was €0.20 in price.



- Press '**Menu**' then '**Setup**' then '**A**'**B**'**C**'
- Scroll to the "**Machine options**" menu then press '**Select**'
- Scroll to "**Exec options**" then press '**Select**'
- Scroll to "**Prices held in**" then press '**Edit**'
- Use the **up** and **down** keys to select '**Machine**'
- Press '**OK**'

Prices Held in Changer:

The advantage of this setting is that the changer can provide more accurate audit information, giving data by selection rather than grouped by products sold at the same price.

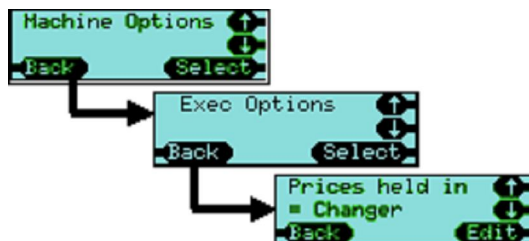
The 'prices' in the host machine need to be set up such that the value of each selection corresponds to the selection number.

e.g. Selection 1 has a value of 1, selection 7 has a value of 7.

The prices in the changer now need to be set up to the correct values.

e.g. Price 1 set to €0.10, Price 7 set to €0.45

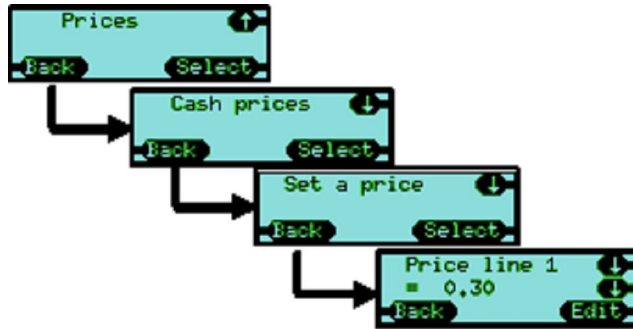
The CF8000 can support up to 100 selections with a different price.



- Press '**Menu**' then '**Setup**' then '**A**'**B**'**C**'
- Scroll to the "**Machine options**" menu then press '**Select**'
- Scroll to "**Exec options**" then press '**Select**'
- Scroll to "**Prices held in**" then press '**Edit**'
- Use the **up** and **down** keys to select '**Changer**'
- Press '**OK**'

Setting Prices

This is assuming the CF8000 has already been placed into “**Prices Held in Changer**” mode.



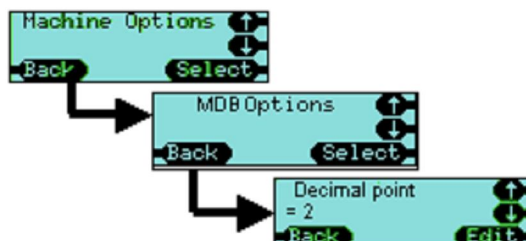
- Press '**Menu**' then '**Setup**' then '**A**'**B**'**C**'
- Scroll to the “**Prices**” menu then press '**Select**'
- Scroll to “**Cash prices**” then press '**Select**'
- Scroll to “**Set a price**” then press '**Select**'
- Scroll to the required selection number then press '**Edit**'
- Use the **up** and **down** keys to set the required price
- Press '**OK**'

Repeat for each price, if all selections are the same price then use the “**Set all prices**” menu rather than “**Set a price**” option.

Interface Setup

Decimal Point Position (DPP):

The value of this setting controls where the decimal point is displayed on a currency value. This setting is used when a value is shown on the internal MMI display and on any external display that may be connected.



e.g. for a value of 12345

if DPP = 0 value is shown as 12345

if DPP = 1 value is shown as 1234.5

if DPP = 2 value is shown as 123.45

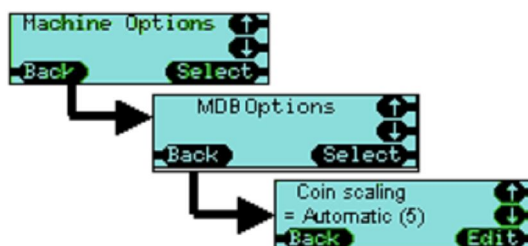
if DPP = 3 value is shown as 12.345

Note: Changes to the setting of the decimal point position from the MDB Options menu are also applied to the other operating options Executive and BDV.

Coin Scaling Factor:

Without the use of a coin scaling factor the CF8000 would only be able to have a maximum vend price of €2.54 (assuming the 1c coin is accepted by the changer).

All numbers in the CF8000 are 'scaled' by the coin scaling factor.



The default coin scaling factor is set to Auto, this allows the CF8000 to automatically adjust the coin scaling factor according to the payout cassette fitted.

e.g.

If an 'AB' cassette is fitted the coin scaling factor is set to 1.

Maximum price can be set to €2.54

The 1c and 2c coins will be enabled.

If an AA cassette is fitted the coin scaling factor is set to 5.

Maximum price can be set to €12.70

The 1c and 2c coins will be inhibited.

MDB

Level 2 or 3

This feature has been introduced to cope with machines and changers that are older Level 2 versions and hence increase backward compatibility of the changer. The default is Level 3. Only use Level 2 if the vending machine has a bug/issue with operating at Level 3.

Level 2 – The changer will pretend to work at Level 2.

Level 3 – The changer will work at Level 2 or 3 as requested by the vending machine.

Optimise Change (level 2)

This is a new feature. It only affects MDB Level 2 dispense commands from the vending machine. Most machines (newer ones) use Level 3 so they are not affected.

The default for this feature is OFF, only switch to ON if you are having problems, for example short change on older machines.

ON – The changer will work out the total change required (e.g. 3 x 10c), then compute a better mix and pay that instead (e.g. 1 x 50c & 1 x 10c).

OFF – The changer will pay exactly what is requested by the vending machine.

NOTE: If enabled this feature will affect the coin audit results stored by the host machine

as the coins paid out by the changer are not those logged in the audit report.

Float Coins (Hide/report)

Reporting float coins can help with audit on the few machines that can cope with this option. The default is Hide.

Hide – Any coins accepted in float mode are not reported to the vending machine (and hence not credited).

Report – Report any coins to the machine that are accepted in float mode.

Coin Counts

Some machines coin count themselves and only use the changer counts if they differ by more than 2 coins. The 0 to 4 transition in TRC mode can resynchronise these machines to the same counts as the changer.

TRC 0004 – as per the TRC report, zero coin counts below a level of 4.

CF 1234 – as per CF560/690, reports the exact number of coins.

Country

This code identifies the country by using the international telephone dialling code. It does not indicate what coin set is in the product and is typically only used for audit purposes to track which country a changer is in. (E.g. 0001 = USA.)

Some changers use the currency codes (e.g. 1978 = EURO currency code).

EXEC

Price Holding

This determines where the price is held.
(see Prices on page 38).

Max Credit

On Single Vend it is typically set to just above the vend price (or to allow a bank note or bill).

€0 to €655 – Available range allowed for Max Credit setting.

Price Display

This allows the user to see a price for a selection without having to insert any money. They can do this by pressing the selection key.

Yes – Show price when selection pressed.

No – Don't show price.

Vend Type

This determines what the changer will do with any excess credit once a Vend cycle has been completed. There are two settings available, Single Vend and Multi Vend.

Single Vend – Does one vend then pays change automatically.

Multi Vend – Holds onto the excess credit after the initial vend and allows the customer to either request another vend or vends (credit permitting) or press the reject lever. Once the reject lever is pressed the remaining credit is returned.

This setting also returns the excess credit to the customer if there is no activity for a time after the initial vends.

Overpay and Overpay Amount

Any excess credit that the customer has inserted into the machine will not be received as change.

e.g. customer inserts €2 and makes a €1 vend

there is only 75c of change in the coin tubes which is paid back

hence customer has overpaid by 25c

This overpay value can be handled in two ways:

Retained - the value is left within the system and is available for the next vend/customer.

Cleared - any outstanding credit that cannot be repaid is reset to zero.

€0 to €655 – The amount of money the changer will potentially not pay back to the customer. €0 indicates that the customer will never be short changed. The exact change light will be on in these conditions. Typical use will depend on the cassette. For example, if the lowest tube coin is 10c, it may allow an overpay of 5c (so 1c, 2c, 5c still accepted to cash box but may not be able to pay back).

Any cleared overpay is typically recorded in an audit field otherwise balancing the money taken and product sold would be impossible.

There may be legal ramifications for different countries as to whether overpay can be cleared or retained.

Escrow Return

This is used to stop people entering lots of small change, pressing reject to get a few large coins back and emptying the changer of coins.

Yes – The reject lever can be used to request money returned.

No – The reject lever is ignored.

Vend Time Limit

This sets the amount of time the host machine has to complete the vend cycle (e.g. brew coffee) and report the end of vend to the changer.

0 – 255 (seconds) - Available range allowed for Vend Time Limit setting.

BDV**Award Discount**

This is the credit amount at which a discount is triggered.

€0 to €655.35 – Available range allowed for Discount Amount setting.

Trigger Discount

This is the amount of discount awarded when the award discount is reached.

€0 to €655.35 - Available range allowed for Trigger Discount setting.

Max Change

The maximum value of change that can be paid back following a vend

€0 to €655.35 – Available range allowed for Max Change setting.

Link Master ID

This is the communication ID of the master (controlling node) in the communication network

0 to 255 – Available range allowed for Link Master ID.

Exact Change Equation

This defines the set of conditions (low tubes) which indicate an exact change condition.

The customer enters a value (defined by BDV 001 spec) which defines the conditions.

NOTE: This function was designed when changers only had three coin tubes. On four and five tube changers it has been interpreted that BDV tubes 'A'B'C' refer to the lowest three coin denomination tubes (excluding multiple coin tubes) e.g. 5c 5c 10c 10c 25c.

'A' refers to 5c, 'B' refers to 10c, 'C' refers to 25c.

The changer will effectively treat duplicate coin tubes as a single entity hence will only report a tube as empty when both tubes are empty.

BDV eqn – Use the equation defined in the BDV equation. There are a lot of set up options as follows:

- Equation – What tubes are checked (you will need to refer to a specification).
- Offset – The level the tubes must be at.
- Coin Inhibits (x14) – Whether a coin is inhibited when the exact change condition is reached.

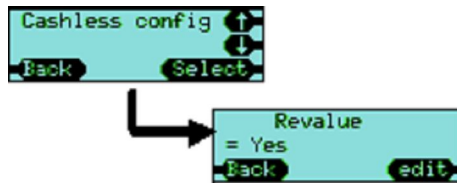
MEI eqn – Use the simpler MEI equation (no set-up required). This will indicate the exact change when any of the lowest 3 tubes have less than 5 coins. It will automatically inhibit coins based on the overpay value.

Peripherals

Card or Key System (Exec and BDV Only)

Cashless Revaluation

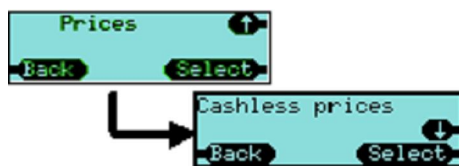
If you want to be able to add money to a cashless key or card then set Revalue to 'Yes',



- Press 'Menu' then 'Setup' then 'A"B"C'
- Scroll to "Cashless config" then press 'Select'
- Press 'Edit'
- Use the **up** and **down** keys to select 'Yes'
- Press 'OK'

Discounted Price

If you want to charge a different price for a product when it is paid for with a cashless key or card then set-up a cashless price which will be used instead of the cash price.

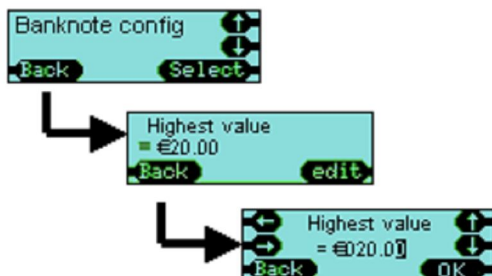


- Press 'Menu' then 'Setup' then 'A"B"C'
- Scroll to "Prices" then press 'Select'
- Scroll to "Cashless prices" then press 'Select'
- Scroll to "Set a price" or "Set all prices" then press 'Select'
- Use the **up** and **down** keys to select price line and set price or set all prices.
- Press 'OK'

Bill Validator (Exec and BDV Only)

Highest Value

To set the highest value of bills that can be accepted.



- Press 'Menu' then 'Setup' then 'A"B"C'
- Scroll to "Banknote config" then press 'Select'
- Press 'Edit'
- Use the **up/down & left/right** keys to set the required value.
- Press 'OK'

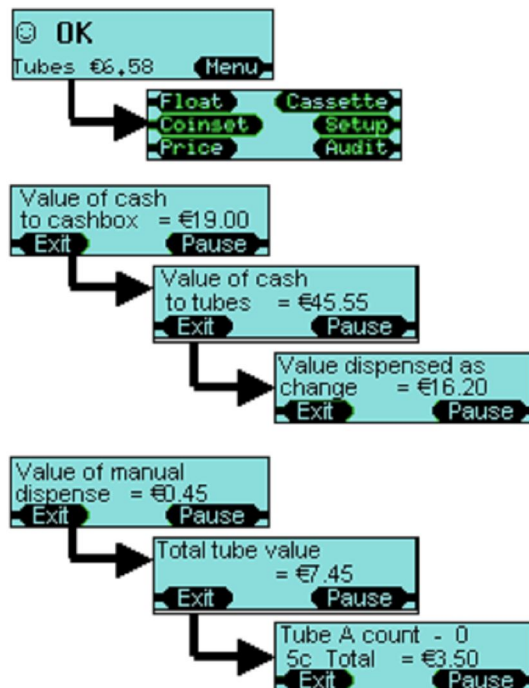
Audit

The CF8000 supports various methods of gathering the audit data.

Audit Types

- **Visual** - Provides the facility to get quick audit information from the CF8000 just by pressing two buttons. Audit data is presented to the operator on the LCD display, with a pause facility to enable the operator to record the information.
- **Printer** - Uses RS232 communication established between the CF8000 and a serial printer to provide a print out of audit and configuration data.
- **DEX** - Abbreviation for Direct Exchange, a US protocol used in the grocery industry. Adopted as part of the D.T.S. by the E.V.A.
- **DDCMP** - Abbreviation for Data Transfer Standard, specification maintained by the EVA for the format and transfer of audit and configuration data between vending equipment and a business computer.

How to take a Visual Audit



Press '**Mode**' then '**Mode**'

Note: Cassette must be fitted. If the cassette is missing the dispenser arms will home.

The display will cycle through 10 audit screens. Each screen is displayed for approx. 5 seconds.

You can '**Pause**' each screen to allow data to be copied. Press '**Resume**' to continue the audit.

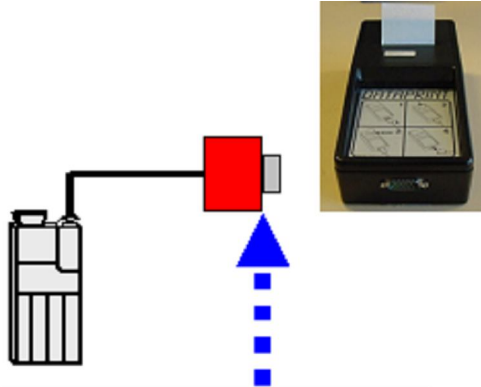
The display will show audit data for Tube 'A' through to Tube 'E'.

The display will then show a series of screens containing 'Annualised estimates follow' data:

- Sales lost in exact change
- Percentage time in exact change
- Value of sales in exact change
- Value of sales with change available
- Number of sales in exact change
- Number of sales with change available
- Average price with change available
- Time in exact change

- Time with change available
- Time disabled by VMV

How to take an Audit using a Printer



Pin	Function
1	0V
2	Tx (transmit output)
3	CTS (input to changer)
4	Not connected
5	Not connected
6	Not connected
7	Not connected
8	Not connected
9	+Supply (+24V nominal)
10	Not connected
11	Rx (receive input)
12	Ident
13	Not connected
14	+12V
15	Not connected

Ensure the changer has a printer loom fitted (this has a **red** 15 way D type connector)

Connect a compatible printer:

Or a printer that conforms to the following specification:

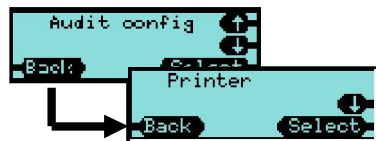
- Has a 15 way D type plug
- Uses pin 1 for ground
- Receives data on pin 2 at 1200 baud, 1 start bit, 8 data bits, no parity bit and 2 stop bits as RS232 polarity but TTL levels (i.e. 0V and 5V)
- Sends a BUSY (unable to print) indication on pin 3 at RS232 levels, (i.e. -13V to 0V, +1V to +13V)
- Is internally powered or uses pin 9 (24V) from the changer for power (optional)

The changer automatically detects connection of the printer when there is a temporary indication of BUSY at plug in, this is done automatically on the MEI DataPrinter, on other printers you may need to switch them **offline** for 2 seconds then **online**.

© OK
Printing in progress

When the printer is detected and the changer is sending data to the printer it will display a message. If this message is not shown check the cables to the printer.

How to setup a printer ticket



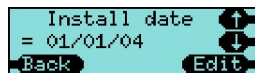
Press **'Menu'** then **'Setup'** then **'A"B"C'**
 Scroll to **"Audit config"**, press **'Select'**
 Scroll to **"Printer"**, press **'Select'**

Optional 1 line header for ticket



Back-slash '\' converted with the MEI
 printer into time and date

Installation date can be entered via
 keypad/display

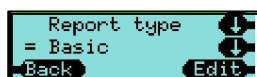


Language of printout matches display
 language which can be set to

- English
- French
- Spanish
- German
- Dutch
- Italian
- Portuguese

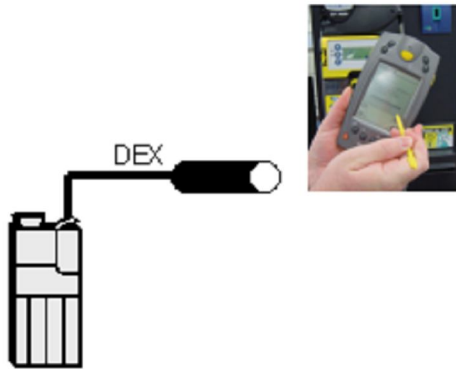
Printout type can be selected:

- Basic
- Interims
- Free vends
- Cashless



=====	=====
=====	J BLOGGS
=====	=====
=====	MEI .
=====	CASHFLOW AUDIT DATA
CASHF	DATE-TIME\
DATUM	MACHINE I
AUTOM	MEI 5138R101050
MEI 51	PRINTOUT NO.
AUSDR	4
6	PAY VENDS TOT
VK. -W	1.25
1.55	NO. OF VENDS TOT
VERKA	5
6	TUBE CONTENTS
TUBEN	9.30
9.10	POWER INTERRUPTIONS
NETZA	0
0	ON-TIME
BETRI	12:12
12:18	-----
-	SINCE INSTALLATION
SEIT	DATE
DATUM	01/01/04
01/01	PRINTOUT INST
AUSDR	3
5	PAY VENDS VAL
VK. BE	0.00
0.30	NUMBER OF VENDS
VERKA	0
1	-----
----	----
-	INTERIM MONEY REPORT
ZWIS	SINCE PRINTOUT NO.
SEIT	3
5	TO CASHBOX
GELD	0.00
0.00	TO TUBES
ZU DE	0.10
0.00	CHANGE
AUSC	0.10
	MANUAL FILL

How to take an Audit using a DEX device



Ensure the changer has a DEX loom fitted (this is a quarter inch, 1/4", stereo jack socket)

If a printer loom (red connector with 15 way D type) is fitted then it is possible to fit an adapter to convert this into a DEX socket.

The changer works with various audit devices and different protocols and these are detected completely automatically, there is no need to configure any settings in the changer.

The changer will act as a DEX master and send audit information to the handheld, following this, the handheld can optionally send any configuration data to the changer.



While communication is in progress between the changer and the handheld a message will be shown on the display.

Sample data from a DEX

```
DXS*9252131001*VA*V1/6*1
ST*001*0001
CA1**CF8000EXEC*107*1711
CA2*0*0*0*0
CA3*0*0*0*0*2700*0*0*27
CA4*0*0*0*0
...
TA5*0*0
TA6*0*0*0*0
VA1*3042*117*26*1
VA3*0*0*0*0
AM1**CF8000EXEC*V1.07.XX
MA5*1*STATUS*CM0300
MA5*2*CAS*0
MA5*LAST*CBS*0*0.00*0*0*0*
0*0*0*0*0
G85*E304
SE*1*0001
DXE*1*1
```

The audit data conforms to the EVA/NAMA Data Transfer Standard (DTS) Version 6 used in the vending industry, for more information website <http://www.eva.be>

MAINTENANCE

Cleaning

Safety

BEFORE YOU BEGIN, SWITCH OFF THE POWER SUPPLY TO THE VENDING MACHINE

Dirt is a major cause of malfunctioning and therefore cleaning is a prominent aspect of field servicing. Apart from general cleaning near the CF8000, the coin path, dispenser arms and guides must also be cleaned on a regular basis.

What to use

Use only a soft damp cloth, cotton buds or a soft brush with a foam cleaner (i.e. Amberclens or similar)

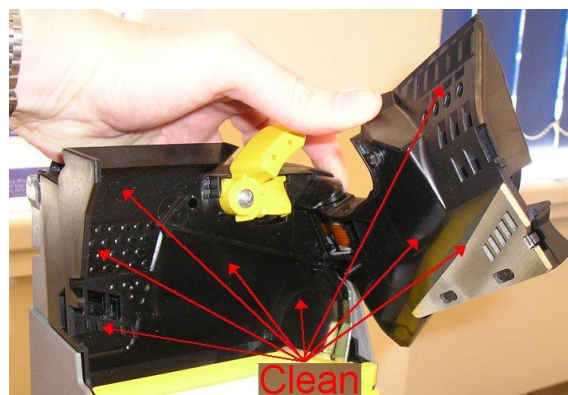
DO NOT USE SOLVENTS OR ABRASIVES

Cleaning the Acceptor module

The acceptor module on the CF8000 combines the coin path, accept gate, routing gates and reject path. All these areas can be cleaned at the same time.

Cash Path

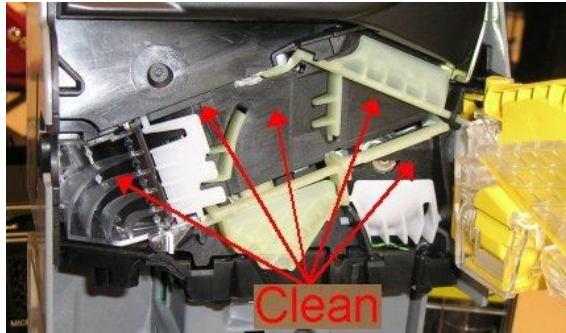
- Open the acceptor by pulling on the left-hand side and lifting upwards and to the right.
Note: The acceptor lid does not remain open and may trap fingers if released.
- Clean the areas shown below, leaving the surfaces clean and dry.
- Do not scratch or damage the coin path as this will lead to poor acceptance.



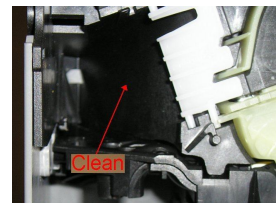
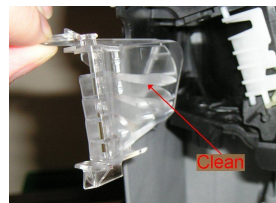
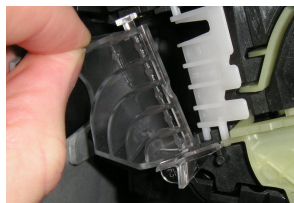
- Ensure lid closes fully after cleaning.

Accept Gate and Routing Gates

- Open the MMI by releasing the clip on the left-hand side and swing the MMI out to the right.
- Clean the areas shown below, leaving the surfaces clean and dry.
- You will need to manually press in the accept gate solenoid to get access behind the gate. A cotton bud may be used to access some areas.



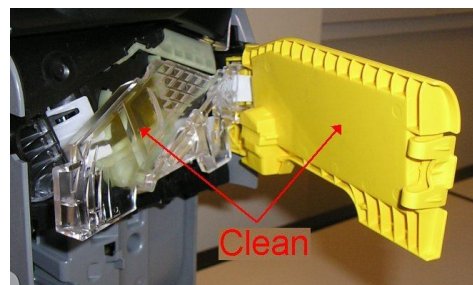
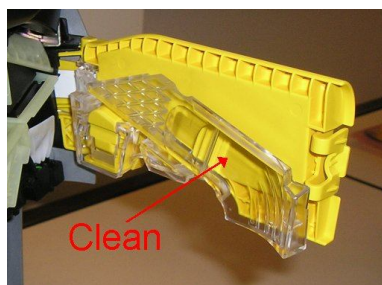
- Remove the 'E' tube route cover by releasing the clip and pulling forward. Clean both sides of the route cover and the exposed deck (as shown).



- Ensure surfaces are clean and dry and refit the route cover. Ensure the route cover is correctly fitted and fully clipped home.
- Ensure all gates move freely after cleaning.

Reject Path

- Open the MMI by releasing the clip on the left-hand side and swing the MMI out to the right.
- Move the reject slide away from the MMI module.
- Clean both sides of the reject slide and the back of the MMI as shown, leaving all areas clean and dry.

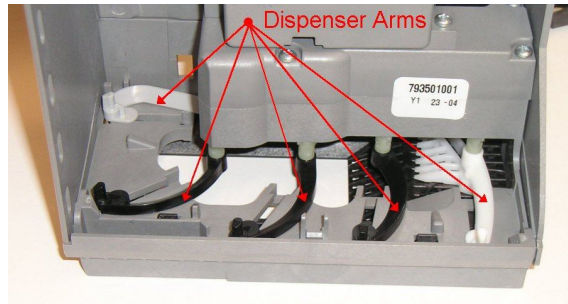


- Ensure MMI fully clips back into place.

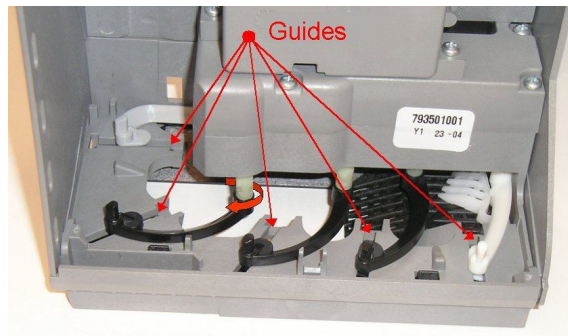
Dispenser Arms and Guides

To clean the dispenser arms and guides:

- Remove the coin tube cassette.
- Without removing the dispenser from the CF8000, carefully clean the dispenser arms using a soft brush.



- Carefully rotate each of the dispenser arms in the direction shown and clean the guides.



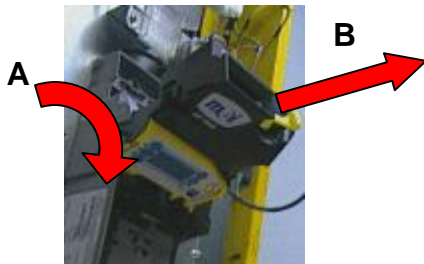
- If the dispenser is excessively dirty, replace the module.
- Switch on the power to the CF8000 and wait for the start-up sequence to be completed.
- Press the '**Mode**' key twice to park the dispenser arms.
- Replace the coin tube cassette.

Changing the Discriminator.



Power off the changer

Press the yellow clip to the right of the reject lever

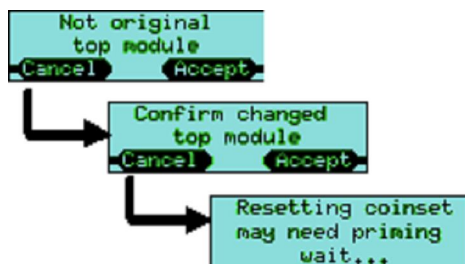


Hinge the acceptor module forwards

Unplug the ribbon cable

Remove the acceptor module

Refit a new acceptor module, reversing the steps described above.



Power on the changer

The display will show a warning message that the acceptor module has been swapped. Press '**Accept**'

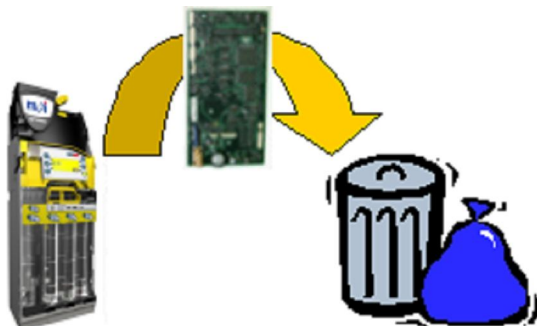
The display will show a message asking for this to be confirmed, press '**Accept**'

The changer will now restart and should show a standard (OK or Alert) message.



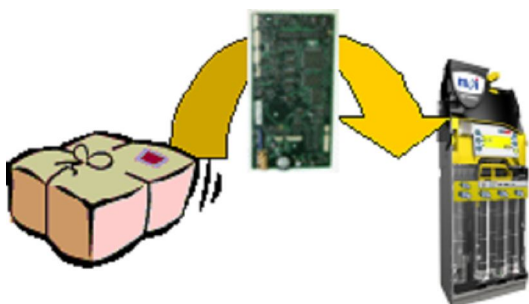
If the changer shows a different message indicating an incompatible top module is fitted then the new part that has been fitted is of a different type or version that is not compatible. Remove the new part and contact MEI for further assistance.

Changing the Control PCB.



Remove the old PCB by:

- Remove the cassette
- Remove the acceptor module (swing forward and unplug the ribbon cable)
- Remove the PCB covers
- Unplug all the cables/looms
- Unscrew and remove the acoustic manifold
- Remove the PCB



Fit the new PCB by:

- Place the PCB into the chassis
- Plug all cables/looms into the PCB
- Connect and fit the acoustic manifold then screw it in place
- Fit the PCB covers
- Connect the ribbon cable to the acceptor module and swing it up into place
- Refit the cassette



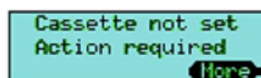
Power on the changer and check

- The display shows the power up screen

Before doing any further steps update the software, coinset and product options using a USB loaded with the appropriate applications (Application/Configuration files).



If you are prompted to select a language then press the key next to the required language, if the language you require is not listed then press '+++' which will show further options.



You will be prompted that no cassette code has been defined, acknowledge this by pressing 'OK' then enter the code printed on the front of the cassette e.g. "AA" then press 'Accept'



Temperature: 66.6C
Min: 12C Max: 99C
Back Calibrate

The changer may warn that the maximum temperature has been exceeded, so calibrate the temperature sensor,

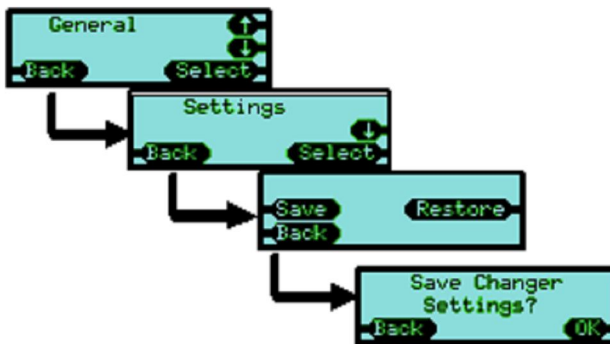


Calibrate tubes ↑
Back Select ↓

Calibrate the coin level sensing system



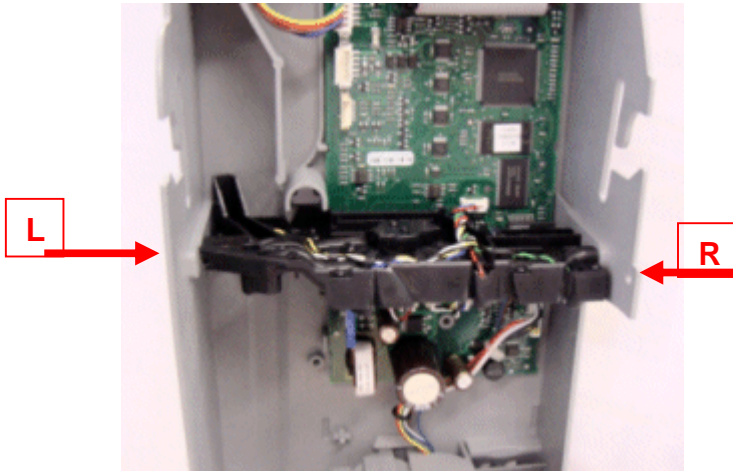
Test coin acceptance



Finally save the current changer configuration, by:

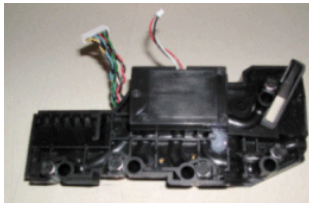
Press 'Menu' then 'Setup' then 'A"B"C'
Scroll to "General" then press 'Select'
Scroll to "Settings" then press 'Select'
Press 'Save'
Press 'OK'

Changing the Acoustic Module.



Disassemble the changer by:

- Remove the acceptor module
- Remove the cassette
- Remove the grey PCB covers (above and below the acoustic module)
- Unplug the three acoustic module looms from connectors on the board.
- Remove the screws from the left and right side of the chassis that hold the acoustic module.



Pull the acoustic module forwards and remove it, dispose of appropriately.



Fit the new acoustic module by reversing the above steps.



Delete any existing acoustic calibration data in the changer by using a USB loaded with a special application to perform this function. Plug the USB into the changer, confirm the download, wait to complete and the changer to restart.

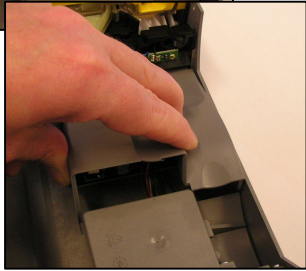
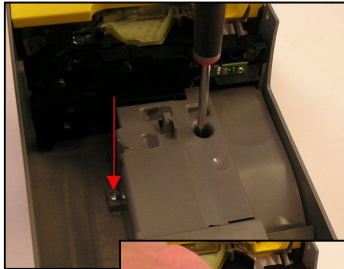


Calibrate the temperature sensor.



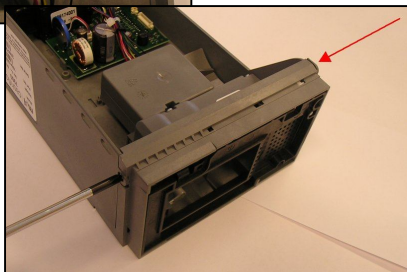
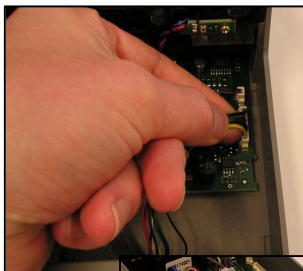
Calibrate the cassette.

Changing the Dispenser.



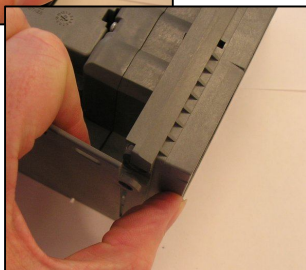
- Remove the cassette.
- Remove the two screws securing the lower PCB cover.

- Lift the bottom of the PCB cover so that it clears the dispenser and remove.

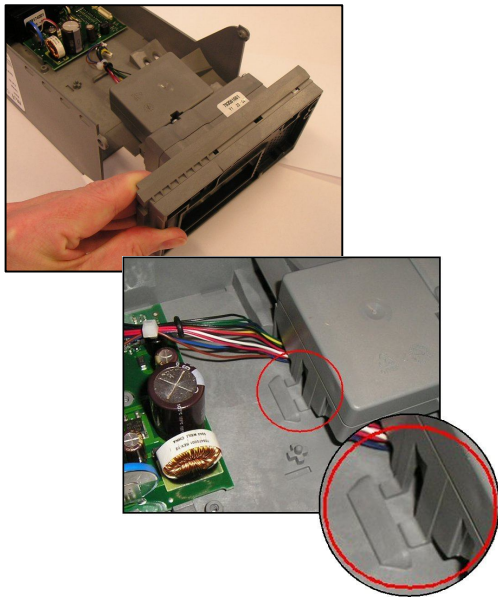


- Carefully unplug the two dispenser looms from the connectors on the board.

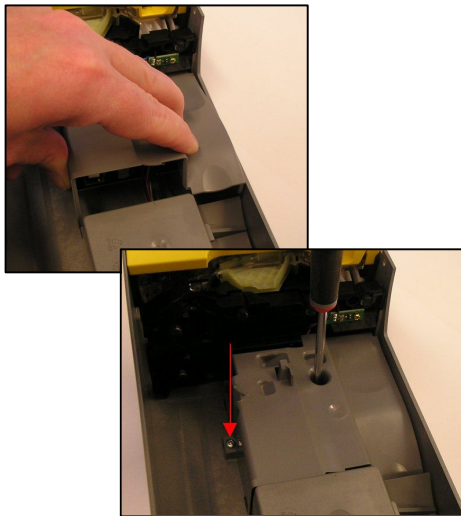
- Remove the screws from the left and right side of the chassis that hold the dispenser.



- Release the two clips on either side of the dispenser and pull away from the chassis.



- Fit the new dispenser into the chassis.
- Ensure the two lugs on the top of the dispenser locate into the moulded housing on the back of the chassis.
- When correctly fitted the two side clips on the chassis will fully locate on the dispenser and can be secured with two screws.



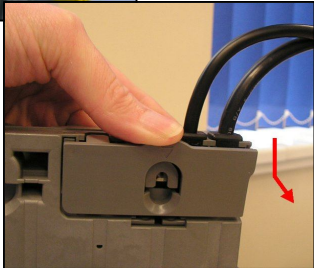
- Refit the cassette.

- Reconnect the two looms.
- Locate the top of the PCB cover first and lower the bottom of the cover past the dispenser.
- Secure the PCB cover with two screws.
- Power on the changer and press '**Mode**' twice. The dispenser arms will all rotate to home.

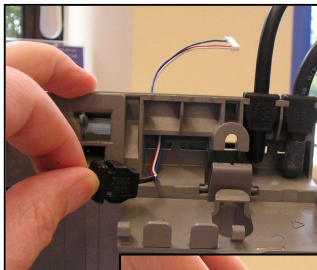
Adding Looms.



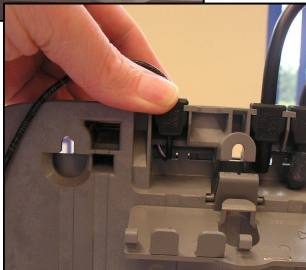
- Remove the cassette.
- Remove the discriminator.



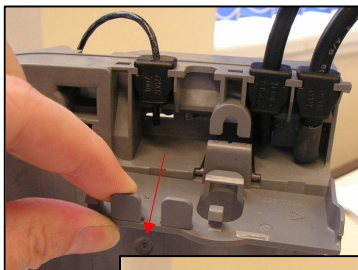
- Press the cable entry cover down and pull backwards to access the loom area.



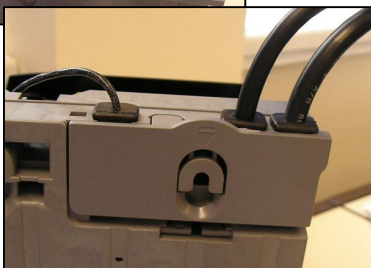
- Pass the loom through the slot beneath the grommet socket.



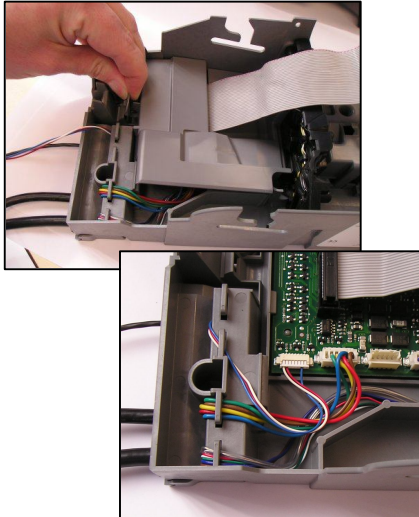
- Press the grommet firmly into the socket. Ensure it is fully home.



- Snap off the appropriate tab on the cable entry cover.

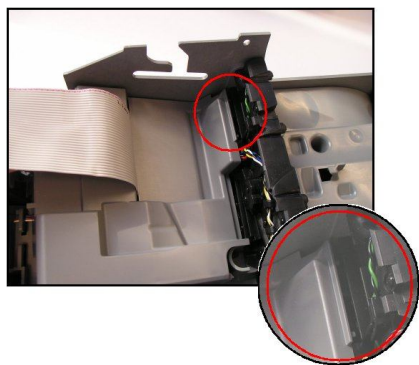


- Close the cable entry cover. Ensure it seats correctly and locks in place.



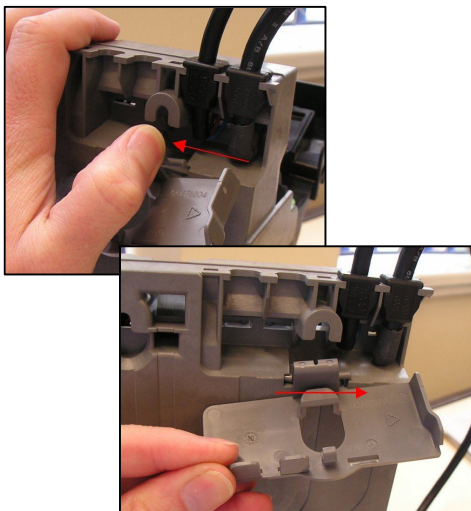
- Release the clip holding the top PCB cover and lift out of place.

- Connect the loom to the appropriate connector.
- Ensure the loom passes round the edge of the ridge on the chassis. This will prevent the wires being damaged by the PCB cover.



- Ensure the two lugs on the PCB cover fit under the acoustic module.
- Lower and clip the PCB cover into position, ensuring the discriminator loom is pulled through and no loom wires are trapped.
- Refit the discriminator.
- Refit the cassette.

Removing Looms.



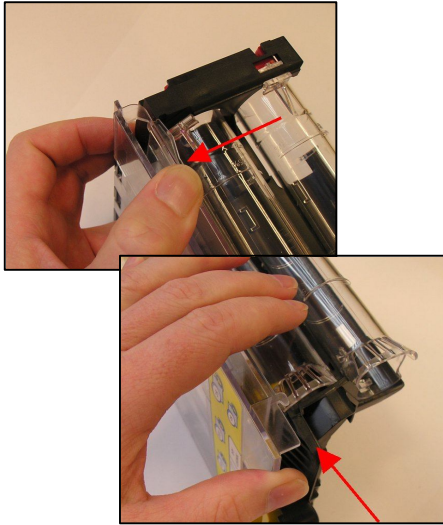
- Disconnect the required loom from the PCB.
- Release the cable entry cover and press the retaining clip to the left to clear the chassis.

- Move the retaining clip to the right and remove the cable entry cover.
- Remove the unwanted loom from the grommet socket and pull the loom through the chassis.

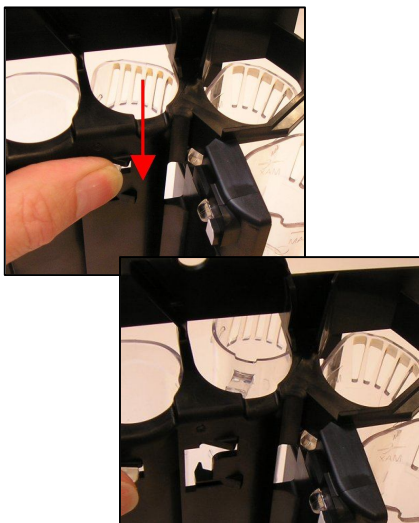


- Fit a new cable entry cover (reverse of removal) and press firmly into place.
- Ensure it seats correctly and locks in place.

Replacing Coin Tubes.



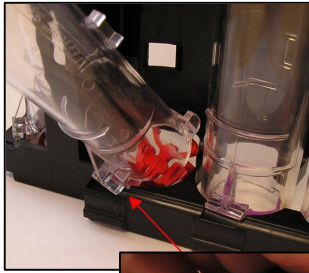
- Release the clip holding the bottom of the cassette front plate.
- Press the cassette front plate in the direction shown to release the retaining clips.
- Remove the cassette front plate.



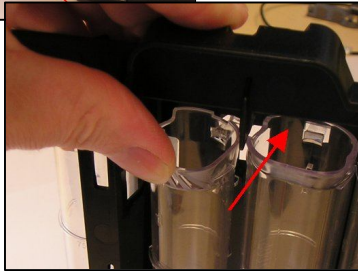
- Press the retaining clip on the tube to be replaced downwards to release.
- Once released the tube will fall forwards.



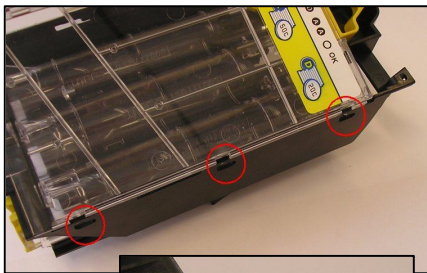
- Pull the released tube forwards until the bottom tube clip clears the dispenser base plate.



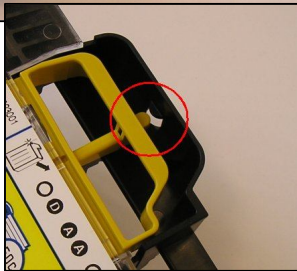
- Position the replacement tube so that the tube clip locates onto the dispenser base plate.



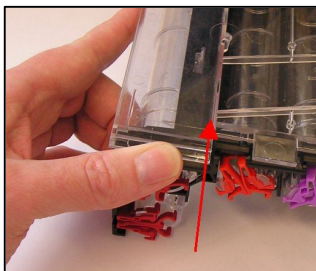
- Raise the tube into position and press firmly until the retaining clip locks into place.



- Position the three lugs on the cassette front plate into the three slots on the cassette chassis.
- Lower the cassette front plate onto the chassis.



- Ensure that the cassette release handle clears the retaining lug on the chassis.



- Press the cassette front plate in the direction shown to lock it into position.
- Check that the cassette release handle operates correctly.

Updating Software



- Make sure the changer is powered on.



- Plug the USB into the socket on the front of the changer.
- Press Confirm to start the update.

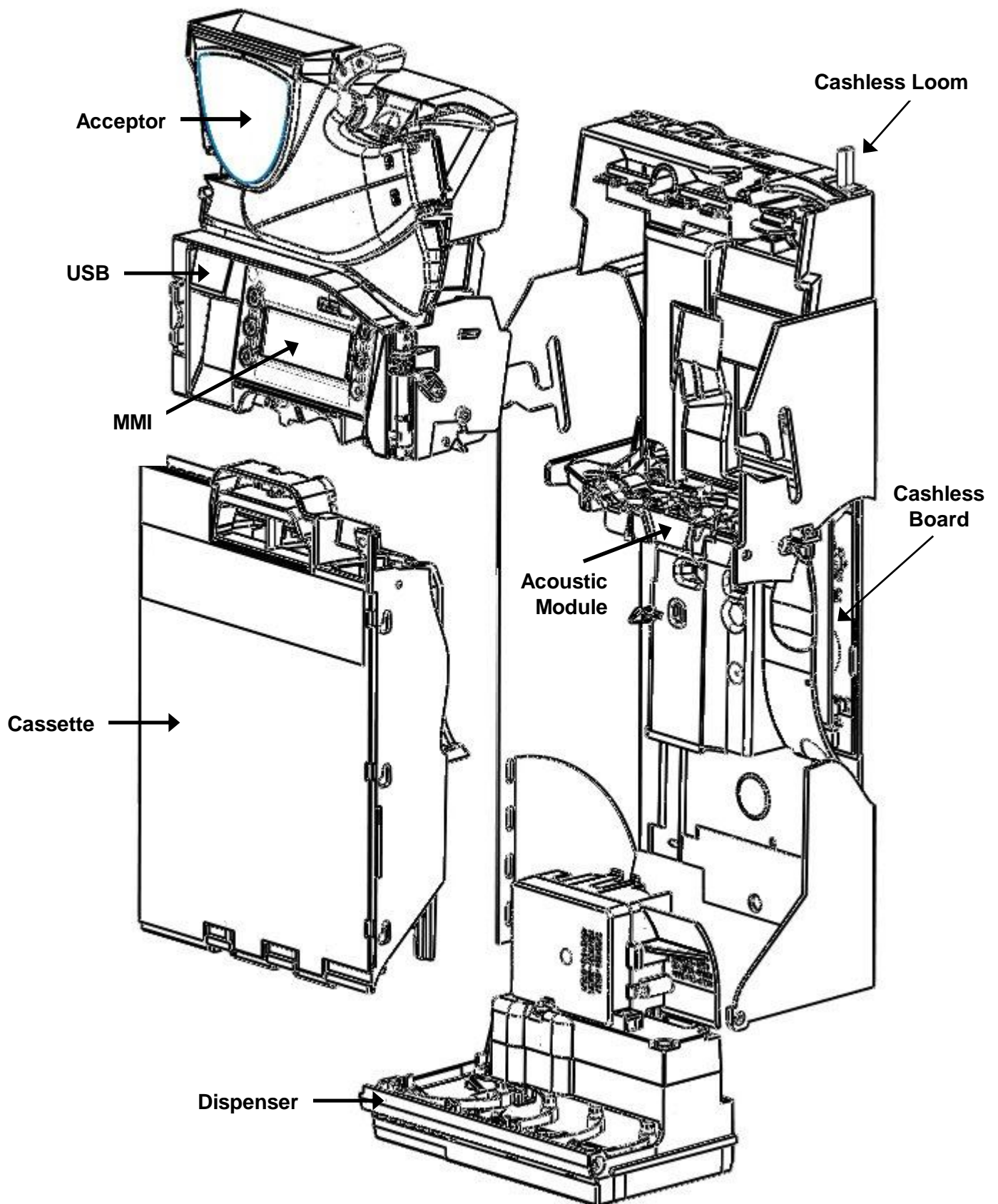


- As the software is updated a progress bar will be shown on the display.

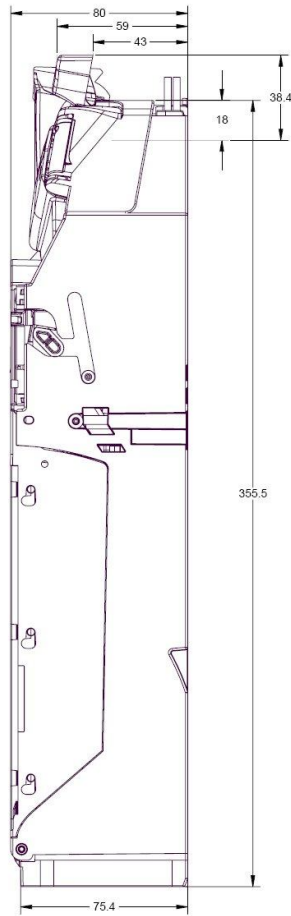
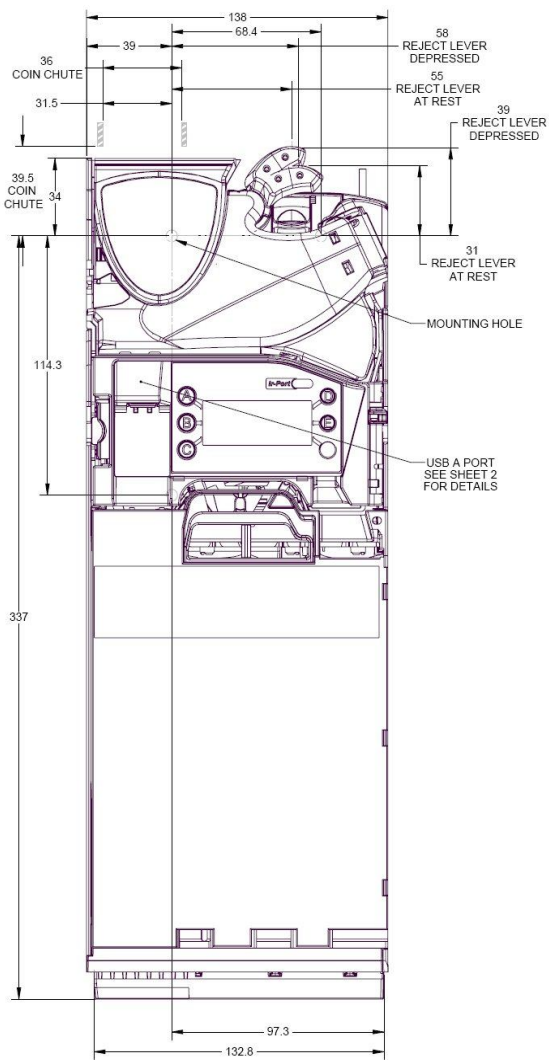


- When the update has finished the changer will reset and show the new version number on the display as it starts.
- When complete the display will say OK and USB, Remove.

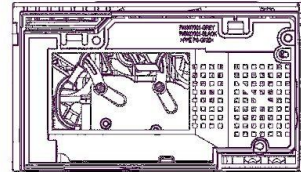
CF8000 Exploded View



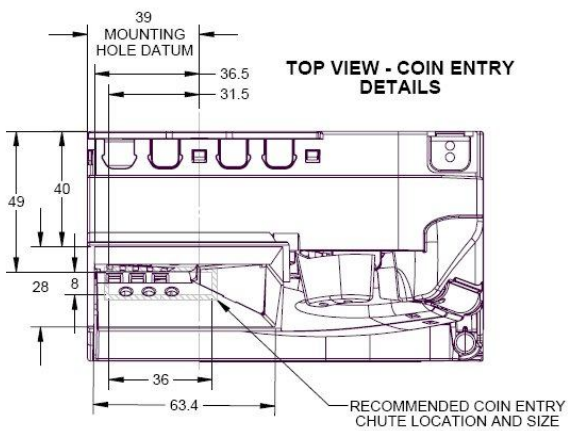
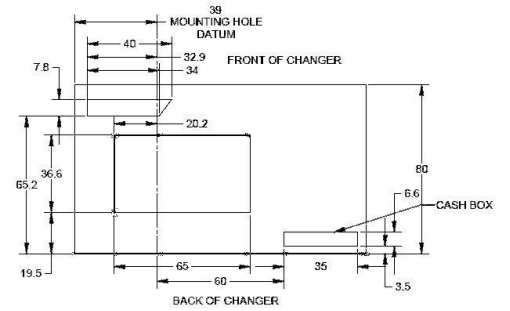
CF8000 Dimensions



BOTTOM VIEW - COIN EXIT DETAILS

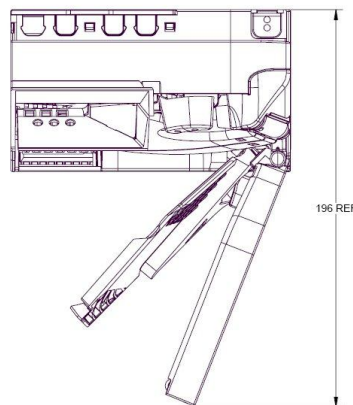


**BOTTOM VIEW - DISPENSED COIN EXIT DETAILS
LINES REMOVED FOR CLARITY**

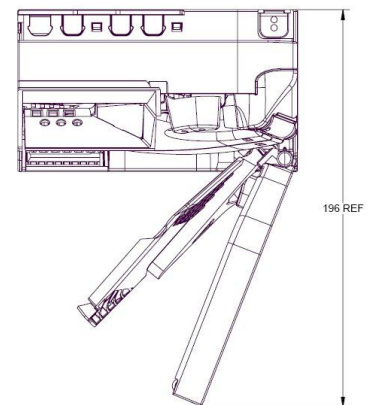


**TOP VIEW - COIN ENTRY
DETAILS**

**TOP VIEW - COIN ENTRY
(REJECT PLATE/MMI OPEN)**



**TOP VIEW - COIN ENTRY
(REJECT PLATE/MMI OPEN)**



PRODUCT SUPPORT

In addition to the MEI offices around the world an international network of Distributors and Approved Service Centres can offer you technical support and other services as well. These services include repairs, re-programming of your CF8000 products with new coinsets, replacing damaged modules, and the supply of a range of spare parts.

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