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Contents

Contents	iii
Safety	vii
National & International Standards Conformance.....	vii
Rated Operating Voltage.....	vii
Dangerous Environments.....	vii
Product Disposal	vii
About This Handbook.....	ix
Related Publications	x
Servicing Strategy.....	1
Minor Faults.....	1
Complex Faults	1
Change giver Overview	3
Configuration	3
Mechanical Configuration	3
Electronic Configuration.....	4
Keypad and Display	5
LED (1)	5
Display (2).....	6
Mode Key (3)	6
Blue Keys (4)	6
Coin Tube Cassette.....	6
Acceptor/Separator	7
Dispenser	7
Change giver Replacement.....	9
Before You Begin	9
Fixing	10
Removing	11

Installing	12
Installation Checks.....	12
Connecting.....	12
Floating the tubes with coins	13
Module Replacement	15
Coin Tube Cassette.....	16
Removing.....	16
Installing.....	16
Acceptor/Separator	17
Removing.....	17
Installing.....	17
Keypad Assembly.....	18
Removing.....	18
Installing.....	19
Transformer.....	20
Removing.....	20
Installing.....	20
Dispenser	21
Removing.....	21
Installing.....	22
Replacing Fuses.....	23
Troubleshooting.....	25
Overview	25
Amber LED On or Flashing	26
Amber LED Steady.....	27
Amber Flash x 1	28
Amber Flashes x 2	29
Amber Flashes x 3	30
Amber Flashes x 4	30
No LED On	31
Further Diagnostic Information.....	32

Cleaning	35
Requirements	35
Safety.....	35
What to Use	35
Acceptor	36
Dispenser Arms and Guides	37
Service Procedures	39
Accessing the Service Mode	39
Service Mode Functions.....	39
Options	40
Options Overview	41
Float.....	42
Configure.....	43
Price Teach	44
Cassette Set.....	45
Audit	46
Manually Filling Coin Tubes	46
Emptying Coin Tubes	47
Configuration Procedures	49
Accessing Setup.....	49
Setup Options.....	50
Prices	53
Options	53
Procedures	53
Setup	54
Options	54
MDB Procedures	55
EM Procedures	57
EXEC Procedures.....	60
BDV Procedures	62
Common Procedures.....	66

Cassette Payout.....	69
Options	69
Procedures	70
Coin Configuration.....	74
Options	74
Procedures	74
Audit Configuration.....	77
Options	77
Procedures	77
Card Configuration	82
Options	82
Procedures	82
Bill Configuration	84
Options	84
Procedures	84
Errors.....	86
Appendix A: Service Procedures Overview.....	87
Appendix B: SetUp Mode - Menu Overview	88
Appendix C: Configuration Procedures Overview	89
Appendix D: Example Audit Printouts	91
Appendix D: Example Audit Printouts	92
Appendix E: Cassette Codes	93
Product Support.....	95
MEI Regional Offices	Error! Bookmark not defined.
Index.....	96

Safety

National & International Standards Conformance

CashFlow® 690 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® 690 Series products are of Class 2 construction.

Rated Operating Voltage

The operating voltage of a CashFlow® 690 Series changeover is stated on the product. The changeover must not be used with any power source other than that indicated.

Dangerous Environments

The CashFlow® 690 Series changeover must not be operated in the presence of flammable gasses, fumes or water.

Product Disposal

Do not dispose of any part of a CashFlow® 690 Series changeover by incineration.

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About This Handbook

The CashFlow® 690 Series change giver incorporates the very latest developments in automatic payment systems technology. It provides high standards of security and reliability that have become the hallmark of MEI products.

This Field Service Engineer's Handbook compliments your product training and provides you with the information you need to support the servicing of the CashFlow® 690 Series change giver.

The Handbook has eight sections:

Servicing Strategy – outlines a recommended servicing strategy.

Change giver Overview – provides an overview of how the change giver is configured and information about the modules with which you will be concerned.

Change giver Replacement – explains how to replace a change giver.

Module Replacement – explains how to replace modules.

Troubleshooting – explains how problems are automatically identified and tells you what corrective action you can take.

Cleaning - describes how to clean modules to ensure they function correctly.

Service Procedures - describes the how to carry out servicing procedures using the software Service mode.

Configuration Procedures – describes how to carry out configuration procedures using the software Setup mode.

There are four variants of the CashFlow® 690 Series change giver. Various cabling arrangements are available to meet specific installation requirements, these being identified by a variation to the 690 number. The variants and the cabling options available with each of them are as follows:

- 690 Exec/MDB/BDV
- 691 MDB 1 price
- 694 MDB 4 price

Not all of the information in this Handbook applies to all the variants. Consequently, you need to know which one you are servicing. You can find this out by looking at the display just above the keypad (see pages 4 and 5). When the change giver is switched on ready to use, included in the string of displayed text you will see the product version details.

Related Publications

The following CashFlow 690 Series change giver documents are available from the Technical Service Manager:

- Installation Guide*
- Operator's Handbook*
- Operator's Notice*
- Field Service Engineer's Quick Reference Guide*

The contact address is given at the front of this Handbook.

Servicing Strategy

This section outlines a recommended approach to field servicing.

Minor Faults

Experience shows that the majority of call-outs are for minor faults, principally involving coin jams and coin routing problems. These faults invariably result from a lack of routine servicing, in particular that of cleaning. Problems of this nature can usually be rectified quite quickly with the minimum of dismantling and without the need for module replacement.

Complex Faults

When faults that are more complex occur, the recommended strategy is that you should replace the module rather than spend time attempting to repair it on site. You can then return the faulty module to your service centre where it can be serviced in conditions that are more favourable.

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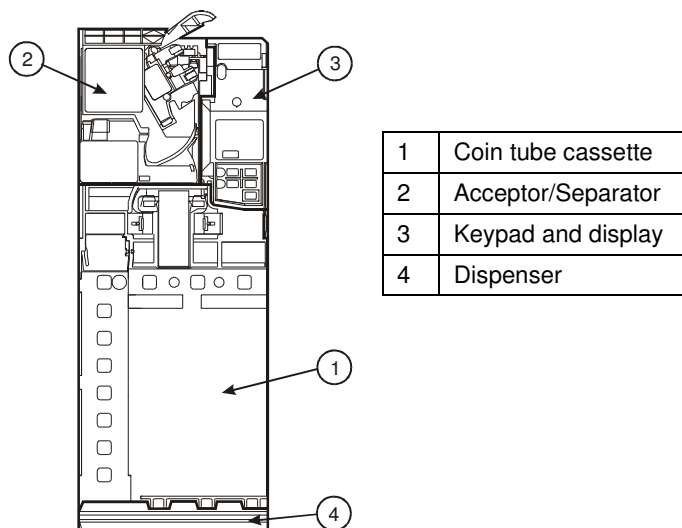
Changegiver Overview

This section introduces the CashFlow® 690 Series changegiver and its principal components.

Configuration

Mechanical Configuration

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



In addition to the modules identified above, other parts with which you need to be familiar are the:

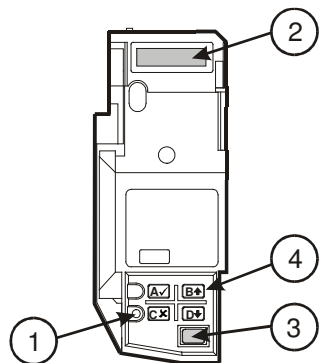
- ❑ Transformer – this is located underneath the keypad
- ❑ Fuses – these are located in a recess underneath the acceptor/separator assembly and are then accessed by lowering a small hinged flap

Electronic Configuration

The change giver is electronically configured before dispatch but changes can be made to the configuration on site as described in *Service Procedures* and *Configuration Procedures* later in this Handbook.

Keypad and Display

You use the keypad when you carry out servicing and configuration procedures. The principle features of the keypad assembly are identified in the illustration below.



1	LED
2	Display
3	Mode key
4	Blue keys

LED (1)

The LED can be green, amber or red. Each colour indicates the status of the changegiver.

- Red/Amber/Green (alternating)** – occurs briefly when the changegiver is first switched on or after resetting.
- Green** – indicates that the changegiver is ready for use
- Green (flashing)** – occurs when operating and configuration procedures are being carried out
- Amber (steady)** – indicates coin acceptance inhibited by the vending machine (no blocker present on EM machine)
- Amber (flashing)** – indicates there is a fault that can be rectified, the flashing sequence identifies the faulty module
- Red** – indicates there is a fault with the acceptor module
- Red/Green (alternating)** – indicates there is a serious hardware or software fault and that the changegiver must be replaced

More detailed information about the LED is given in *Troubleshooting* which begins on page 25.

Display (2)

The one-line display indicates the status of the change giver, including displaying error messages when there is a fault. It also works in conjunction with the keypad, displaying the servicing or configuration options currently selected, and any entries or selections you make in the course of carrying out servicing or configuration procedures.

Mode Key (3)

The yellow **Mode** key is used to enter either the Service or Configuration modes. If you press the **Mode** key quickly, you enter a Service mode. If you press the key and hold it for more than 1.5 seconds, you enter the Setup mode.

Blue Keys (4)

The four blue keys labelled **A✓**, **B↑**, **CX** and **D↓** are used in conjunction with the **Mode** key. Depending on the mode selected, they have several functions: For example:

- Pressing each blue key intern will dispense coins from each of the coin tubes.
- When in the Service mode, each key enables you to select a particular Service function.
- When in the Setup mode:

The **B↑** and **D↓** keys enable you to scroll up or down through lists of functions or options

The **A✓** key enables you to select an option or toggle between options

The **CX** key enables you exit from a mode or option

Coin Tube Cassette

The function of the coin tube cassette is to provide a supply of coins for dispensing as change, thus enabling coins of high denomination to be accepted.

Acceptor/Separator

The acceptor and separator are assembled as one unit.

The acceptor has sensors that compare the characteristics of each coin or token inserted with those of a pre-programmed set.

If they conform to the pre-programmed set, they are accepted. They then pass, via the separator, into the change tubes or into the cashbox.

If they do not conform to the pre-programmed coin set, they are rejected and pass through a reject chute inside the changegiver and then into the return cup of the vending machine.

Dispenser

The dispenser dispenses coins being returned as change.

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Changegiver Replacement

This section tells you how to replace a changegiver.

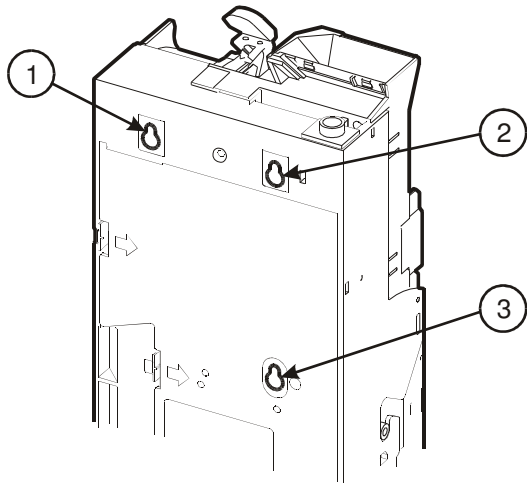
Before You Begin



- 1 TURN OFF THE POWER SUPPLY TO THE VENDING MACHINE**
- 2 Check the voltage of the replacement changegiver. Be sure that it is the same, as the vending machine will supply to the changegiver. You will find the information you need on the label attached to the side of the changegiver. Please refer to the vending machines documentation where necessary.

Fixing

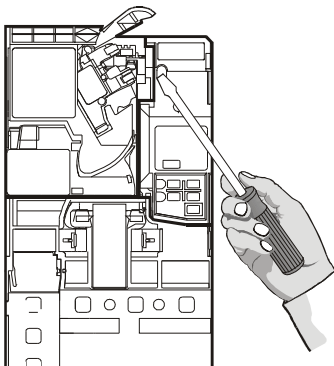
The changeover has three fixing keyholes as shown below.



The vending machine is fitted with three screws in matching locations. Alternatively, there may be two location studs and one retaining screw, or a similar arrangement. Whatever the arrangement, there must be a retaining screw in the upper right-hand position.

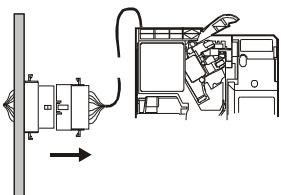
- 1 Partly unscrew any screws fitted so that the distance between the underside of the screw head and the vending machine panel is approximately 4 mm
- 2 Locate the changeover on the three screws, or on two studs and one screw, ensuring that it is flat against the vending machine

- 3 Tighten the upper right-hand screw (looking from the front). You can access the screw through the hole in the keypad assembly



Removing

- 1 Disconnect the power cable connecting the change giver to the vending machine. Also disconnect the comms cable and the display cable if they are fitted



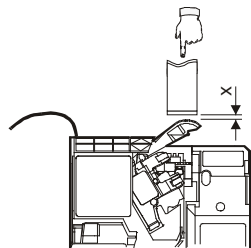
- 2 Loosen the upper right-hand retaining screw. You can access it through the hole in the keypad assembly – see illustration above
- 3 Lift the change giver off the location screws or studs

Installing

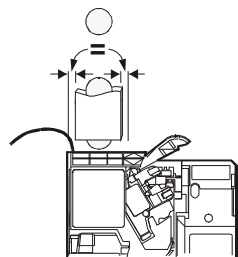
- 1 Locate the change giver on the screws fitted to the vending machine, making sure it is flat against the vending machine panel
- 2 Retighten the upper right-hand retaining screw

Installation Checks

- 1 Check that when the change giver is idle there is a gap (dimension x) between the lever on the vending machine and the lever on the change giver



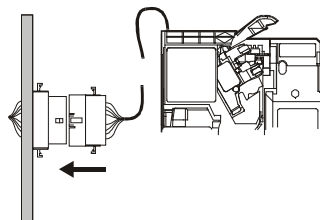
- 2 Check the alignment of the coin chutes. Insert two coins of each denomination into the vending machine and check that they cleanly enter the change giver acceptor and exit from the change giver into the coin return cup



Connecting

- 1 Plug in the change giver power lead (comms and display cables if applicable) to the vending machine, as shown here.

The change giver is supplied fitted with up to six cables. Normally only one of the end connectors will match the power socket on the vending machine, this being the power lead



If the vending machine has a comms socket, or a display jack,

there will be cables attached to the change giver with matching connectors which you must also plug in

- 2 Tuck the unused cables away tidily. Make sure they will not be trapped when the change giver lever is pressed or when the vending machine door is closed
- 3 Switch on the power to the vending machine
- 4 Check that after an initial multi-colour flashing sequence the LED on the change giver keypad settles to green. This will indicate the change giver is functioning correctly and **the installation is then complete**

If the green LED does not come on, or is amber, refer to *Troubleshooting* on page 25.

Floating the tubes with coins

Once the above procedure has been correctly carried out, the change giver will then need to be filled with coins, this process is called "Float Up". This operation must be carried out when the change giver is first installed. Thereafter it can be carried out as required, e.g. to replenish coin tubes if insufficient coins are held. For more information, refer to page 42

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Module Replacement

This section tells you how to remove and replace individual modules.

The section also tells you how to change a transformer assembly and replace fuses.

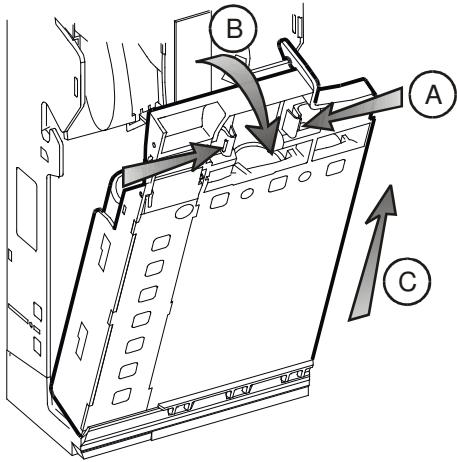


BEFORE YOU REMOVE ANY MODULE, TURN OFF THE POWER SUPPLY TO THE VENDING MACHINE.

Coin Tube Cassette

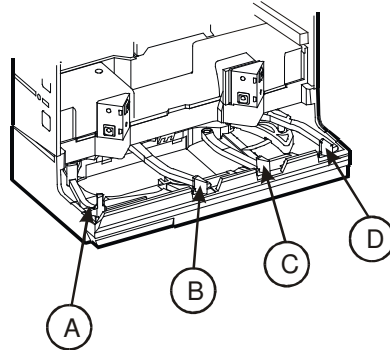
Removing

Press the blue tabs together, then lift the cassette outwards and upwards – steps A, B and C below



Installing

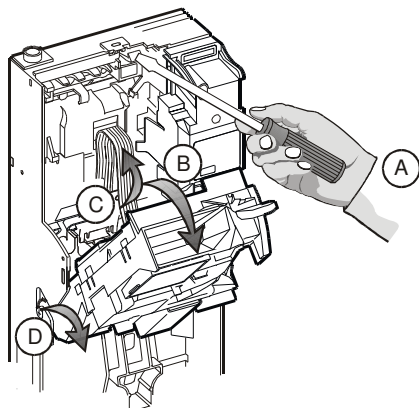
- 1 Check that the white dispense arms, A B C and D, at the bottom of the changeover are fully forward. If not, carefully move them forward manually
- 2 Locate the cassette in the bottom of the changeover and then gently push it at its upper end until both clips click into position



Acceptor/Separator

Removing

- 1 Remove the coin tube cassette – see page 16
- 2 Unlatch and lower the acceptor/separator. To do this, press the blue release tab at the top of the changegiver with a small screwdriver, and then pull the acceptor forward on its hinges until it comes to rest – steps A and B below
- 3 Disconnect the loom C at the rear of the acceptor



- 4 Lift the acceptor from its hinge slots – step D

Installing

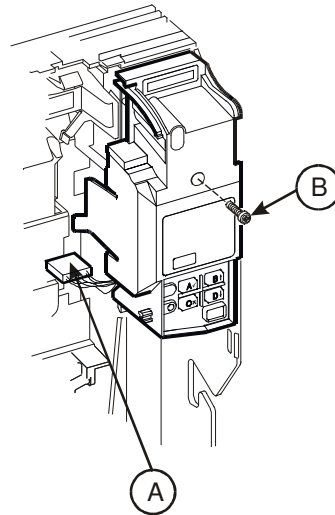
- 1 Reposition the acceptor in the hinge slots
- 2 Plug in the loom to the back of the acceptor so that it loops vertically as shown in the diagram above
- 3 Push the acceptor back until it clicks and locks in position
- 4 Replace the coin tube cassette - see page 16

Keypad Assembly

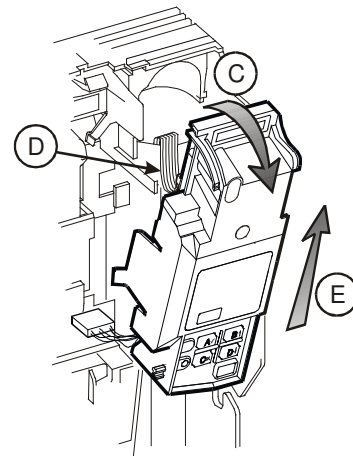
Removing

- 1 Remove the coin tube cassette – see page 16
- 2 Remove the acceptor/separator – see page 17

- 3 Unplug the loom A connecting the keypad to the printed circuit board and remove the keypad fixing screw B



- 4 Tilt the keypad assembly outwards, unplug the display loom, and then lift upwards to unhook the lower retaining lugs from the spine – steps C, D and E



Installing

If required, refer to the diagrams in the previous section.

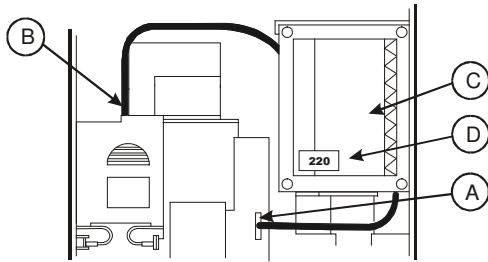
- 1 Connect the loom to the display PCB
- 2 Hook the lower end of the assembly into the recesses in the changeover casing and then push it forward into position
- 3 Replace the retaining screw
- 4 Plug in the loom attached to the keypad assembly into the printed circuit board
- 5 Replace the acceptor/separator assembly - see page 17
- 6 Replace the coin tube cassette - see page 16

Transformer

Note: The following applies to Electro Mechanical changeovers only.

Removing

- 1 Remove the coin tube cassette – see page 16
- 2 Remove the acceptor/separator assembly – see page 17
- 3 Remove the keypad assembly – see page 18
- 4 Disconnect two looms, one connecting the transformer to the PCB alongside the transformer housing, the other to the PCB under the fuse cover – steps A and B below. Then lift the transformer C out from its housing. Note voltage label of transformer D and direction of placement.



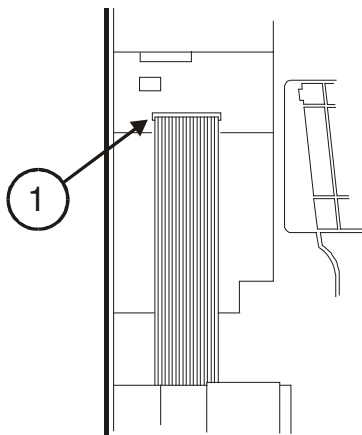
Installing

- 1 Replace the transformer (approved spare part) with the correct type and rating and place in its housing
- 2 Plug in the two looms – one to the PCB alongside the transformer housing and the other to the PCB under the fuse cover
- 3 Replace the keypad assembly – see page 19
- 4 Replace the acceptor/separator assembly - see page 17
- 5 Replace the coin tube cassette - see page 16

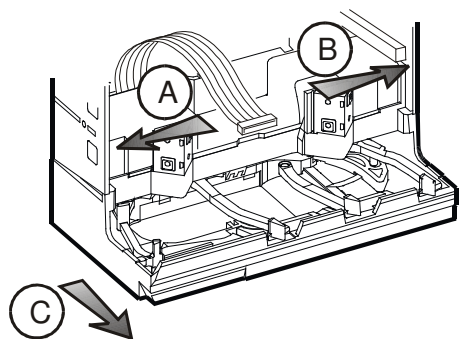
Dispenser

Removing

- 1 Remove the coin tube cassette – see page 16
- 2 Unplug the loom, 1, connecting the dispenser to the interface PCB



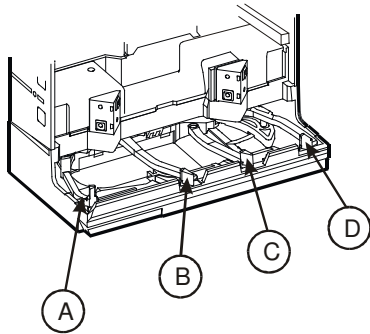
- 3 Carefully spring the sides of the changegiver slightly outwards to release the two lugs holding the dispenser in position, and then slide the dispenser out – steps A, B and C below



Installing

If required, refer to the diagrams in the previous section.

- 1 Locate the dispenser in the runners at the bottom of the spine, and press it gently forward until it clicks in position. Check that the lugs holding it are at each side are fully engaged
- 2 Connect the dispenser loom to the interface PCB
- 3 Check that the white dispenser arms A, B, C and D are engaged in their guides, as far forward as they will move. If not, carefully move them manually

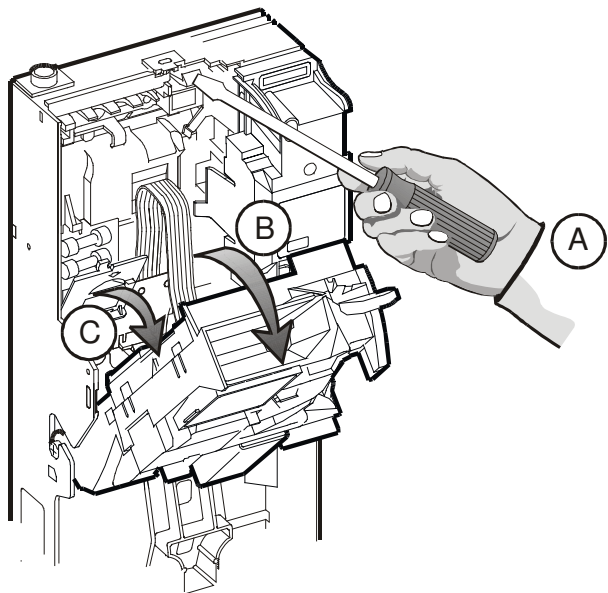


- 4 Switch on the power to the vending machine, wait until the changegiver start-up completes and the LED settles to green
- 5 On the keypad, press the yellow **Mode** key twice to park the dispenser arms. *
- 6 Replace the coin tube cassette - page 16

*When the dispenser arms are parked, they should be fully located in the coloured inserts at the bottom of the coin tube cassette

Replacing Fuses

- 1 Remove the coin tube cassette – see page 16
- 2 Release the retaining catch and lower the acceptor/separator – steps A and B below



- 3 Push the fuse cover downwards to unlatch it and then pull it forward – step C above
- 4 Replace the blown fuse(s) with recommended type (see fuse cover label for rating)
- 5 Close the fuse cover – make sure it clicks into place
- 6 Reposition the acceptor/separator, pushing it gently until it clicks into place (ensure loom loops vertically)
- 7 Replace the coin tube cassette – see page 16

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Troubleshooting

This section describes how you can use the changegiver built-in diagnostic facilities.

Overview

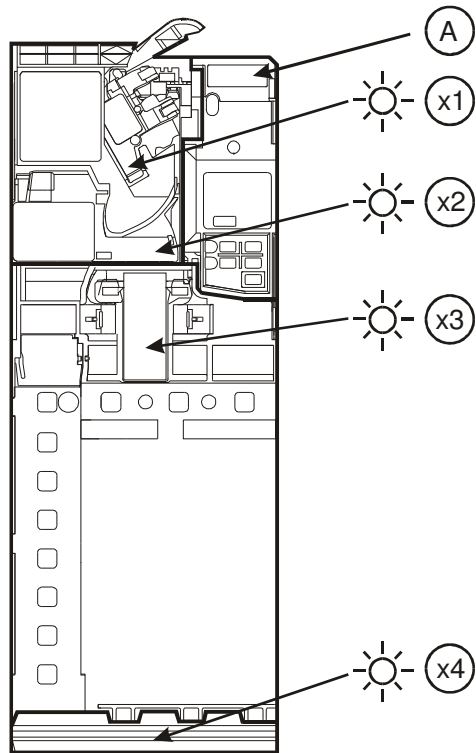
The status of the changegiver is indicated by the colour of the LED on the keypad.

- ❑ **Red/Amber/Green (alternating)** – occurs briefly when the changegiver is first switched on, or after it has reset
- ❑ **Green** - the changegiver is working correctly
- ❑ **Green (flashing)** – occurs when the keypad is in either the Service or Setup mode and procedures are being carried out
- ❑ **Amber** – changegiver not operating due to a vending machine command error or fault –see page 27
- ❑ **Amber (flashing)** – the changegiver has a fault that can be rectified, possibly on site. The location of the fault is indicated by the number of flashes - see pages 28 to 30 and message on the changegiver display
- ❑ **Red (steady)** – there is a fault with the acceptor module
- ❑ **Red/Green (alternating)** – there is a serious hardware or software fault and the changegiver must be replaced
- ❑ **No LED on** – possible power supply problem - see page 31

Amber LED On or Flashing

When there is a fault, the amber LED comes on. It may be steady or flash in a sequence of one to four flashes. At the same time, an error message is shown on the display (A).

The number of flashes identifies the problem module as illustrated below.



Each sequence, the likely cause of the problem and the action you must take are described in the following sub-sections.

After clearing an error, insert a coin in the changeover to check that it is working properly.

Multiple errors are reported in sequence. The system requires you to clear one error before you can move on to the next.

Some errors may clear automatically after a short time delay when the change giver is operated. If an error persists and you cannot clear it as described below, replace the faulty module or the complete change giver.

Amber LED Steady

Displayed message: *"Inhibited by VMC"*

Problem: vending machine

Effect: no coins accepted

Possible causes:

- 1 Faulty connection to the vending machine; not communicating with the change giver
- 2 No merchandise available
- 3 Jammed or faulty merchandise dispenser
- 4 Vending machine controller problem

Action to take:

- 1 Check the loom connecting the change giver to the vending machine is secure
- 2 Check the comms lead, if fitted
- 3 Reset the power
- 4 If appropriate, advise the operator to replenish the vending machine

Amber Flash x 1

Four messages can appear as follows:

Displayed message: *"Coin Jam"*

Faulty module: discriminator

Effect: no coins are accepted

Possible cause: coin jam

Action to take:

- 1 Check for a coin jam
- 2 Check that the reject lever mechanism is functioning freely
- 3 Check there is clearance between the changegiver and vending machine escrow levers – see page 12

Displayed message: *"Clean-Me"*

Faulty module: discriminator

Effect: coin acceptance decreased to below an acceptable level

Possible cause: dirty coin paths or high slug rejection

Action to take:

1. Clean the coin paths—see *Cleaning* page 34 On the keypad, press **Mode A✓ Mode** to clear the fault report and return the LED to green
2. Check the cashbox and coin tubes for slugs
3. Check coin acceptance threshold

Displayed message: *"Escrow pressed"*

Faulty module: discriminator

Effect: no coins accepted

Possible cause: escrow lever partially depressed or stuck

Action to take:

- 1 Check the flight deck
- 2 Check the changeover escrow lever is functioning freely
- 3 Check the escrow lever on the vending machine is functioning freely
- 4 Check there is clearance between the changeover and vending machine escrow levers – see page 12
- 5 Reset power to the changeover

Displayed message: *"Coin Sensor Error"*

Faulty module: discriminator

Effect: no coins accepted

Possible cause: electronics error

Action to take: switch the power off and then on again. If the error fails to clear, replace the Discriminator

Amber Flashes x 2

Message: *"AGM error"*

Faulty module: accept gate module

Effect: coins not accepted

Possible cause: coin jam or debris in the accept gate area; accept gate failing to open

Action to take:

- 1 Open the acceptor (see page 36) and clear the jam
- 2 Check the acceptor gate mechanism is clean and there are no coins holding the gate
- 3 Close the flight deck – be sure to close it fully

Amber Flashes x 3

Error message: "Separator error x" (x can be A, B, C or D)

Problem module: separator

Possible cause: coin jam at the top of a coin tube; coin jam in a tube; cassette not fully installed; dirt on the top-level sensor; cassette not assembled correctly

Action to take:

If possible, remove the coin tube cassette as described on page 16, clear the jam and/or clean the top level sensor and prisms, then replace the cassette.

If you cannot remove the cassette, the cause is likely to be a coin jam at the top of a tube. To free the jam:

- 1 Remove the changegiver – see page 11
- 2 Lay the changegiver on its back until the jammed coin slides back into the separator. You can then remove the cassette to check there are no other jammed coins
- 3 Check the screws at the top of the coin tubes are fully tightened
- 4 Clean the top-level sensor if necessary
- 5 Reinstall the cassette – see page 16
- 6 Reinstall the changegiver –see page 12

Amber Flashes x 4

Error message: "Dispenser error x" (x can be A, B, C or D)

Problem module: dispenser

Effect: No change given from tube x

Possible cause: coin jam at the bottom of the indicated coin tube; loom not fitted correctly

Action to take:

- 1 Remove the coin tube cassette - see page 16
- 2 If there is a coin jam, free it, check that all coins are seated flat in the coin tubes
- 3 Check the loom is connected correctly
- 4 Press the **Mode** key twice to park the dispenser arms
- 5 Replace the cassette - see page 16

No LED On

If the LED on the keypad does not come on at all:

- 1 Visually check the power supply to the vending machine – there may be a power-on light or other indication
If there appears to be a power supply problem, carry out the necessary steps to rectify this
- 2 Check the cable connection between the change giver and the vending machine is secure
- 3 If the vending machine has power, the change giver fuses may be blown. Replace the fuses – see page 23



Further Diagnostic Information

In addition to the amber LED sequences and the display messages to help diagnose problems, you can access further diagnostic information via the Setup mode. To do so:

- 1 Press the **Mode** key and hold it down for 1.5 seconds to access the Setup mode. The display will show the first Setup option, **Prices**
- 2 Press the **D↓** key once to access the **Errors** option
- 3 Press the **A✓** to access the **View current Errors** option
- 4 Press the **D↓** key to scroll down through the list of status messages. The meaning of the messages are listed in the table on page 33. In some instances, you can press **A✓** for more information.
- 5 To exit and return to normal operation, press the **Mode** key

Status Message	Description
View Current Errors	Enables you to access a list of error messages. Press the D↓ key to scroll through the list: e.g. CM1110 = coin jam
View SW Version	Software Version Number. Press Av to see which software version and chips are installed.
View VMC Type	VMC=Vending Machine Controller. Shows interface currently active. Can be BDV, MDB or EM.
Strobe Status	Status of accept gate strobes. Normal display reads DU PU, where D = Direction strobe (nearest the accept gate), P = past gate strobe (furthest from the accept gate), U = uncovered. C = covered, covered strobes (could indicate a coin jam in the acceptor module)
Battery Status	Status of the back-up battery. OK = normal reading. If Not OK, replace the discriminator and arrange for the battery to be replaced by an approved service centre.
Power Status	Percentage of power being supplied. Normal = 100%. If above or below 100% by more than 10%, check the VM voltage is correct.
Temperature (Min/Max/ Reset)	Approximate temperature. – Normal temperature is 21°C (room Temp.) High or Low temperature can be a reason for poor coin acceptance
EA Line	For EM 1 price/4 price changeovers only. Normally used on can vending machines to indicate a failed vend. Active = escrow accept from VM is present. Inactive = escrow accept from VM is not present.
Blocker	For EM 1 price/4 price changeovers only. Normally used on vending machines to indicate an inhibit line. Active = blocker from VM is present. Inactive = blocker from VM is not present.
Printer CTS	Status of printer Clear To Send line. Active = printing Inactive = not printing or no printer detected
TLS Status	Status of the Top Level Sensors for the coin tubes A, B, C and D, which may be Uncovered (U) or Covered (C). Normal reading AU BU CU DU. (a covered sensor could indicate a coin jam/sensor error/dirt on the indicated tube or prism problem)
LLS Status	Status of the Low Level Sensors for the coin tubes A, B, C and D, which can be Uncovered (U) or Covered (C). Normal reading is AC BC CC DC, indicating there are coins in each tube. If the tubes are empty, the reading will be AU BU CU DU. (if there are no coins and the sensor shows covered, this can indicate sensor error or minor problem)

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Cleaning

This section describes the cleaning procedures you can carry out on site.

Requirements

Apart from general cleaning near the change giver, the coin pathways, dispenser arms and guides must also be kept clean.

The operator is advised to do this on a regular basis, but dirt is a major cause of malfunctioning and therefore cleaning is a prominent aspect of field servicing.

Safety



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

What to Use



Use only a soft damp cloth or a soft brush.

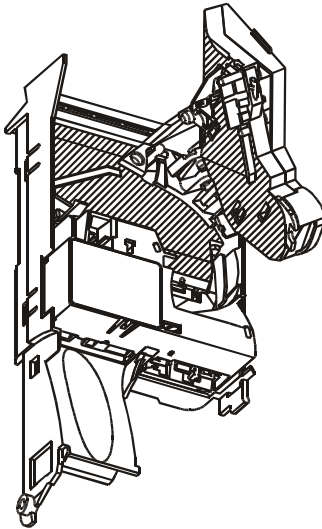
DO NOT USE SOLVENTS OR ABRASIVES

Use of any such chemicals will invalidate your warranty!!!

Acceptor

To clean the acceptor:

- 1 Switch off the power supply to the vending machine
- 2 Open the acceptor by pulling on the left-hand side and lifting upwards and to the right
- 3 Clean the shaded areas shown below, leaving the surfaces clean and dry



- 4 Close the acceptor. Make sure the lid is fully closed
- 5 Switch on the power



**IF ANY DROPS OF WATER ENTERED THE CHANGEGIVER,
DELAY SWITCHING ON UNTIL IT HAS DRIED OUT**

Dispenser Arms and Guides

To clean the dispenser arms and guides:

- 1 Switch off the power to the change giver
- 2 Remove the coin tube cassette – see page 16
- 3 *Without removing the dispenser from the change giver,* carefully clean the arms and guides using a soft brush. If the dispenser is excessively dirty, replace the module – see page 22
- 4 Switch on the power to the change giver and wait for the start-up sequence to be completed
- 5 Press the **Mode** key twice quickly to park the dispense arms
- 6 Replace coin tube cassette – see page 16

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Service Procedures

This section describes procedures you can carry out, via the keypad, using the Service mode. It also includes one procedure, "emptying the coin tubes" that does not involve entering the Service mode.

Accessing the Service Mode

To access the Service mode, you press the yellow **Mode** key quickly, without holding it down for more than 1.5 seconds. The green LED will flash continually and the display will show that you are in the Service mode. If you do not press another key within 15 seconds the keypad automatically reverts to its normal operating state.

Service Mode Functions

Within the Service mode, there are five functions:

- Float
- Config
- Price Teach
- Cassette Set
- Audit

To access a service function, press the **Mode** key followed by a single press of a service function key listed below.


- A✓** for Float
- B↑** for Config
- CX** for Price Teach
- D↓** for Cassette Set
- Mode** for Audit

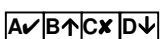
Each function is independent. To move from one function to another, you must first press the **Mode** key to exit from the current function and begin again. You cannot step through the functions.

Options

Within some of the Service mode functions, there are servicing options. They are indicated by the clear boxes in the options overview diagram on page 41.

The procedures associated with each option are described on subsequent pages. In the descriptions, graphics are used to indicate the following:

-  Press the **Mode** key *quickly*, to enter the Service mode and again at the end of a procedure to exit and return to normal operation



Press each key in turn

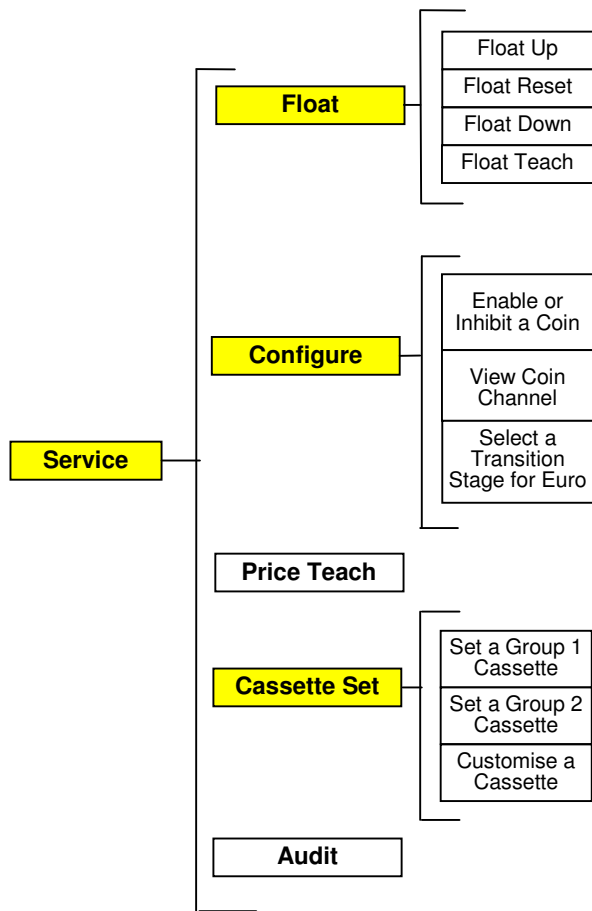


Move to the next stage



Mode or option selected/action to take

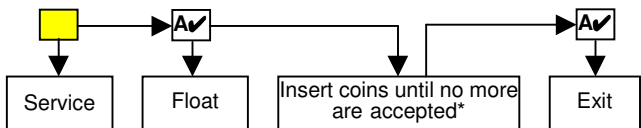
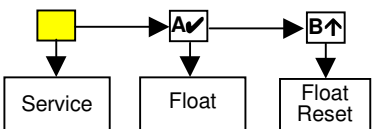
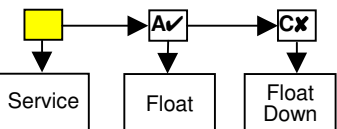
Options Overview



For more details, see Appendix A.

Float

Note: Exiting from "Float mode" clears any existing credit (EM variants) and resets the "Clean Me" errors message – see page 28.

Option	What it enables you to do
Float Up	To fill each tube (to the programmed float level) with coins. This operation must be carried out when the change giver is first installed. Thereafter it can be carried out as required, e.g. to replenish coin tubes if insufficient coins are held.
 <p>* Check that the first two coins inserted in each tube are lying flat</p>	
Float Reset	To reset the coin counters to float level after manually floating the change giver. Note: - Ensure the number of coins in the tubes = programmed Float number.
	
Float Down	To automatically dispensed coins from the tubes that are above the programmed, float level. Note: This option only works if coin tube(s) are configured to fill to maximum during normal operation (see page 70)
	

Option	What it enables you to do
Float Teach	To reconfigure the float level. This may be necessary if the coins in the coin tubes are more than is necessary or insufficient to meet trading needs.
<pre> graph LR Start[Service] --> A[A✓] A --> D[D✓] D --> ABCD[A✓ B↑ C× D✓] ABCD --> Note[Insert coins, or press each key in turn to release surplus coins, to reach the level required] Note --> End[Float Teach] </pre> <p>If no coin is inserted or key pressed for 45 seconds, the change giver returns to normal operation</p>	

Configure

Option	What it enables you to do
Enable or Inhibit a Coin	To enable or inhibit a specific coin or series of coins, e.g. all types of penny
<pre> graph LR Start[Service] --> B[B↑] B --> Config[Config] Config --> Enable[Insert a coin to enable it] Config --> Inhibit[Insert a coin and press the escrow lever to inhibit it] Enable --> Exit[Exit] Inhibit --> Exit </pre>	
Channel Details	To see a description of the channel and whether it is enabled or inhibited
<pre> graph LR Start[Service] --> B[B↑] B --> Config[Config] Config --> A[A✓] A --> Display1[Display first channel] Display1 --> BD[B↑ D✓] BD --> Display2[Display the required channel] Display2 --> Exit[Exit] </pre>	

Option	What it enables you to do
<p>Select a Euro Transition Stage (1 to 4)</p>	<p>To select a transition stage for the Euro from the following options:</p> <p>Transition Stage 1 (accept national only, pay out in National only - press key A)</p> <p>Transition Stage 2 (accept national and Euro, pay out in National only – press key B)</p> <p>Transition Stage 3 (accept National and Euro, pay out in Euro only – press key C)</p> <p>Transition Stage 4 (accept Euro only, pay out in Euro only - press key D)</p>

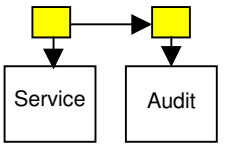
Price Teach

Option	What it enables you to do
<p>Price Teach</p>	<p>To set or amend the price of merchandise. This procedure must be completed before the change giver can be used</p> <p>This procedure is applicable to the EM variant, and to the EXEC variant when set to Price Hold only (see page 61)</p>

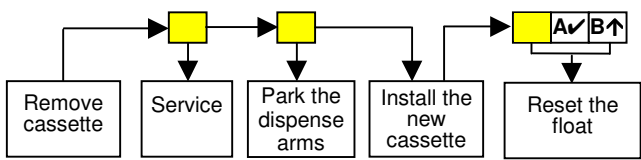
Cassette Set

Option	What it enables you to do
<p>Select a Group 1 Cassette</p>	<p>To select a Group 1 (National) cassette and make it active. The code you must enter is printed on the label, stuck on the side of the tube cassette. A list of all the available codes is given in Appendix E NOTE:-Once a code is entered, previous configuration will be overwritten.</p>
<pre> graph TD Start(()) --> Install[Install the new cassette] Install --> Enter[Enter the code shown on the cassette label] Enter --> Return[Press escrow return] </pre>	
<p>Select a Group 2 Cassette</p>	<p>To select a Group 2 (Euro) cassette and make it active. The code you must enter is printed on the label, stuck on the side of the tube cassette. A list of all the available codes is given in Appendix E NOTE:-Once a code is entered, previous configuration will be overwritten.</p>
<pre> graph TD Start(()) --> Install[Install the new cassette] Install --> Enter[Enter the code shown on the cassette label] Enter --> Return[Press escrow return] </pre>	
<p>Customise a Cassette</p>	<p>To change the combination of coins accepted into the cassette. You can set a different coin for each tube, or you can set a coin to be accepted by more than one tube. Once you have entered the configuration option, you should set-up all four tubes, otherwise the changegiver will only use the tube(s) you have configured and will disable any remaining. IF A TUBE IS NOT TAUGHT, IT WILL NOT BE USED. Ensure the correct coin tubes and designators are fitted before configuring this option</p>
<pre> graph TD Start(()) --> Service[Service] Start --> Cassette[Cassette Set] Start --> Exit[Exit] Cassette --> Coin[Insert a coin and press the key for the tube(s) required to accept it.] Coin --> Exit subgraph Buttons A[A ✓] B[B ↑] C[C ×] D[D ↓] end </pre>	


Audit

Option	What it enables you to do
Audit	Displays a quick audit that shows the total money value of the coins held in all the coin tubes, followed by the number of physical coins held in each tube. This information will not be displayed if the tube cassette is not fitted as this procedure will park the dispense arms.
<p>Press mode key twice within 2 seconds</p>  <p>This sequence is only available when the tube cassette is fitted to the Change giver</p>	

Manually Filling Coin Tubes

Option	What it enables you to do
Manually Fill Coin Tubes	To replace the existing cassette with a manually filled cassette. This procedure can be used instead of floating up the coin tube counts automatically with the cassette in position, thus reducing on-site servicing time. Before installing, fill the cassette to the float level
	

Emptying Coin Tubes

Option	What it enables you to do
Empty the Coin Tubes	To empty the coin tubes – for instance if the cassette is being replaced or simply to empty a coin tube Example:- If Key A✓ is pressed coins will be dispensed from tube A
<div data-bbox="416 427 707 464" style="text-align: center;"></div> <p data-bbox="176 504 940 651">Press the key for the tube required to be emptied. If you hold this key pressed for at least 3 seconds, the dispenser will latch. To stop the automatic dispensing of coins, press the key again. If you do not press a key, the dispenser will automatically stop when the tube reaches the safe count. To dispense a single coin from a tube press and release the relevant key once. The change giver display will always show the number of coins in the tube been activated.</p>	


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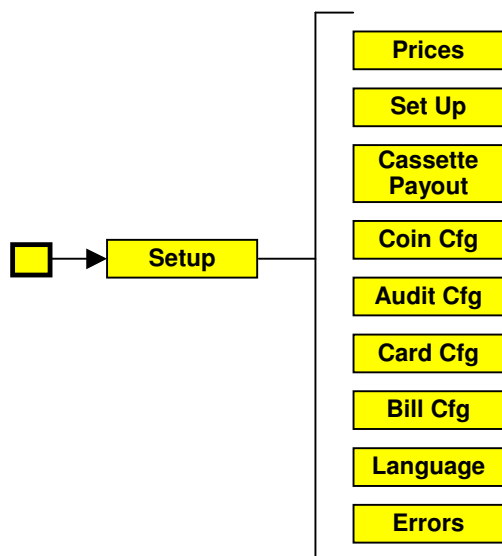
Configuration Procedures

This section provides an overview of the configuration procedures you can carry out using the Setup mode.

For an overview of the configuration options, see Appendix B.

Accessing Setup

To enter the Setup mode, you press the **Mode** key for  1.5 seconds. The green LED will flash and the display will show you have accessed the first of the Setup functions shown below.



If you do not press another key within 15 seconds, the keypad reverts to its normal operating state.

After accessing the Config mode:

- ❑ Press **B↑** or **D↓** key to scroll up or down through the list of functions
- ❑ Press **A✓** to accept the displayed function
- ❑ Press **C✗** to cancel and exit without accepting the changes made
- ❑ Press **B↑** and **D↓** together to set any value to zero or any variant to its default value

Setup Options

Each Setup function includes configuration options. After you have selected a function, the first option is displayed. The options and the associated configuration procedures are described in subsequent sections. At the start of each section there is a graphic overview of the options available. In the descriptions, graphics are used to depict the following:



Press the Mode key for 1.5 seconds to access the Setup mode functions.



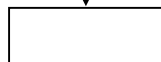
Press the **B↑** and **D↓** keys to scroll through the list of options and then press **A✓** to make a selection.



Press each key in turn



Move to the next stage



Mode or option selected/action to take



Press, the **Mode** key *quickly*. (Do not hold it down) to exit and return to normal operation.

To exit without keeping the changes, you can press **CX** key at any time.

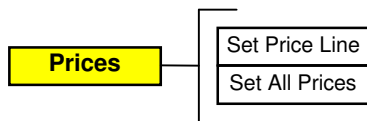
The following table lists all the configuration options in alphabetical order, together with the number of the page on which the procedure is described.

Option	Function	Page
Acceptance	Coin Cfg	75
Award Discount	Setup – BDV Config	62
Change Delay	Setup - EM, EXEC and BDV Config	57
Change Installation Date	Audit Cfg	81
Channel Configuration	Cassette Payout - Coin Cfg	76
Coin Scaling Factor	Setup -MDB Config	56
Coin Setup	Coin Cfg	75
Country	Setup	66
Credit Display Message	Setup	67
Currency Conversion Factor	Bill Cfg, Card Cfg	82,84
Currency Nat	Coin Cfg	74
Decimal Point Position	Setup	66
Diagnostic Display Message	Setup	68
Dispense To	Cassette Payout	73
Escrow Return	Setup - EM, EXEC and BDV Config	57
ExC. Algorithm	Setup - BDV Config	64
ExC. Coins	Setup - BDV Config	65
ExC. Equation	Setup - BDV Config	64
ExC. Offset	Setup - BDV Config	65
Fill To	Cassette Payout	72
Float Report	Setup - MDB Config	55
Fraud Timeout	Setup	66
Hardwire Protocol	Audit Cfg	81
Highest Value to Accept	Bill Cfg	85
ID 101 VMC Indent	Audit Cfg	79
Keypad	Setup	67
Link Master ID	Setup - EM Config	63
Loom	Setup - EM Config	58

Option	Function	Page
Maximum Card Credit	Card Cfg	83
Maximum Change	Setup - EM Config	63
Maximum Credit	Setup - EM, EXEC and BDV Config	58
Maximum Total Bill Credit	Bill Cfg	84
MDB Level	Setup - MDB Config	55
Mode	Coin Cfg	75
Overpay	Setup - EM, EXEC and BDV Config	57
Overpay Amount	Setup - EM, EXEC and BDV Config	58
Price Display	Setup - EM, EXEC and BDV Config	58
Price Hold	Setup - EM Config	61
Print Language	Audit Cfg	78
Print Logo	Audit Cfg	80
Report Style	Setup - MDB Config	55
Reset Audit Data	Audit Cfg	78
Reset Mode	Setup - EM Config	59
Reset Optical Password	Audit Cfg	80
Revalue	Card Cfg	82
Select Report	Audit Cfg	77
Set a Customised Cassette	Cassette Payout	72
Set Active Cassette	Cassette Payout	71
Set All Prices	Prices	53
Set Group	Cassette Payout	70
Set Price Line	Prices	53
Settings	Setup	67
Trigger Discount	Setup - BDV Config	63
Tube Configure	Cassette Payout	70
Vend Timeout	Setup	61
Vend Type	Setup - EM, EXEC and BDV Config	57

Prices

Options

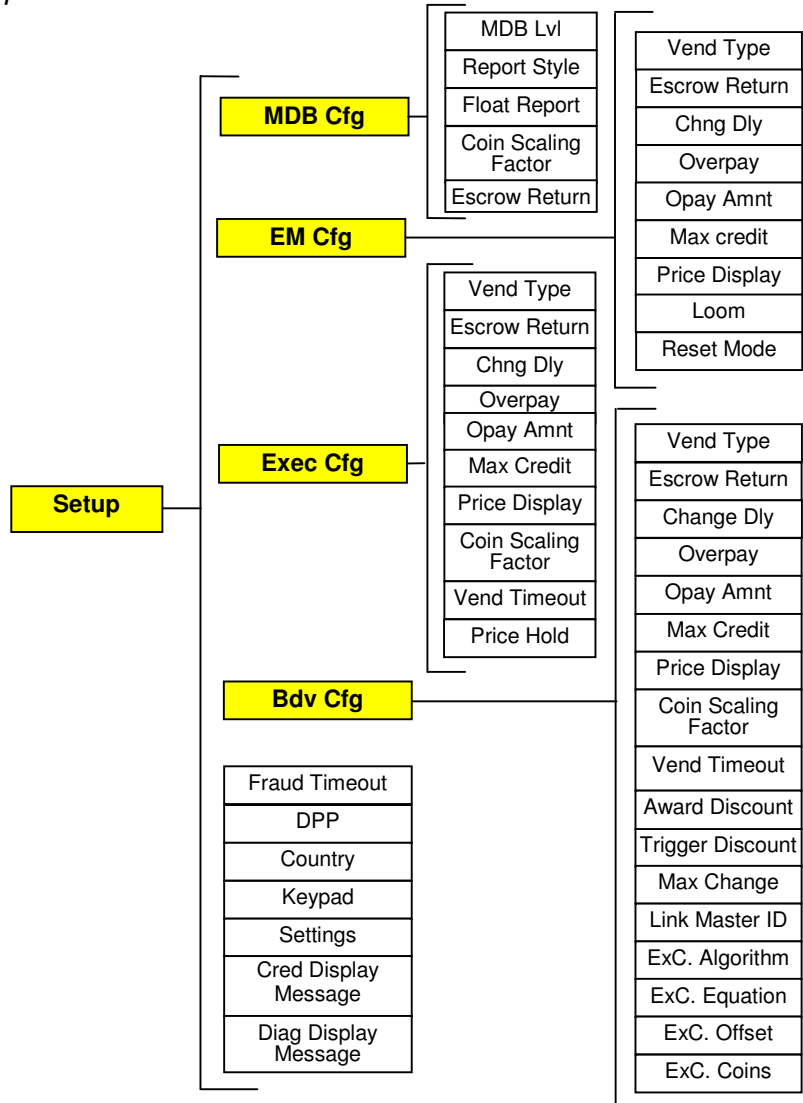


Procedures

Option	What it enables you to do
Set Price Line	To set or change a price
Set All Prices	To set all prices to one value

Setup

Options



Note: Only one changegiver variant can be active at one time.
 The displayed message for the current variant includes the word 'Active', for example **MDB cfg: Active**

MDB Procedures

Option	What it enables you to do
<p>MDB Lvl (MDB Level)</p>	<p>To select a level from the following options: Lvl 2 Lvl 3 No Feat (no features, that is, as Lvl 2) Lvl 3 All Feat (all features, that is, it supports the MDB alternative payout - recommended setting)</p>
<p>Report Style</p>	<p>To select a style in which the tube contents will be notified to the vending machine. The options are: CF Hide Safe (recommended option) CF Inc Safe TRC Inc Safe TRC Hide Safe Examples of reports are included in Appendix A</p>
<p>Float Report</p>	<p>To set the float report option to On or Off Recommended setting = OFF</p>

Option	What it enables you to do
<p>CSF (Coin Scaling Factor)</p>	<p>To set a coin scaling factor, e.g. in the UK, 1 (for one penny). Options: Recommended setting = 0. Auto (will show "Auto (x)" where x is the value being used which is computed by the system. Factor (in the range 0 –255)</p>
<p>Escrow Return (Yes or No)</p>	<p>Reports Escrow return (Reject Lever pressed) to the vending machine. Recommended setting = YES</p>

EM Procedures

Option	What it enables you to do
Vend Type	Set the changegiver to set as single vend or multiple vend
Esc Return (Escrow Return)	Reports Escrow return (Reject Lever Pressed) to the vending machine. (Recommended setting =Yes)
Cnge Dly (Change Delay)	Set the time that will elapse before change is dispensed from 1 to 250 sec in 1 sec increments, or to infinity, providing the changegiver is not configured to single vend (see above) Default = 0
Overpay	Set any overpayment made by the customer to be Retained or Cleared at the end of a vend after change has been paid out

Option	What it enables you to do
<p>Opay Amnt (Overpay Amount)</p>	<p>Set the maximum overpay allowed, that is, the amount that can be accepted over and above the price of the merchandise when the exact change mode is active. Thus if it was set to 5p, a 50p coin would be accepted for a 45p vend but not for a 40p vend</p>
<p>Max Cred (Maximum Credit)</p>	<p>To set the maximum amount of credit to be accumulated in a single transaction</p>
<p>Price Display</p>	<p>To display or hide the external display of the price of the merchandise when a selection button is pressed</p>
<p>Loom</p>	<p>To set the change giver to work with a standard loom, or to make a T4 loom work as a T3 loom; that is, a 4-price Jones plug operates as a 1-price plug. Applies to 4 price change giver only</p>

Option	What it enables you to do
<p>Reset Mode</p>	<p>To set the blocker reset. The options are:</p> <p>Blk reset (EU) - Recommended for can machines</p> <p>30ms Delayed blocker reset (EU) (EU = European) - Recommended for the majority of machines</p> <p>200ms Delayed blocker reset (EU)</p> <p>Blk hold reset (EU) - Recommended for some snack machines</p> <p>Escrow accept (EU)</p> <p>US 1 Price (TRC6800) (1-price pulsed output, ignores blocker and simulates permanent sense) - Recommended for 1 price can machines</p> <p>MC5807 Blocker, 2s (US) (not used in Europe)</p>
<pre> graph LR Start[Yellow Square] --> Step1[B↑ D↓ A✓] Step1 --> Step2[B↑ D↓ A✓] Step2 --> Step3[B↑ D↓ A✓] Step3 --> Step4[B↑ D↓ A✓] Step4 --> End[Yellow Square] Step1 --> Setup[Setup] Step2 --> EM[EM config] Step3 --> Reset[Reset Mode] Step4 --> Select[Select a mode] End --> Exit[Exit] style Setup fill:#fff,stroke:#000 style EM fill:#fff,stroke:#000 style Reset fill:#fff,stroke:#000 style Select fill:#fff,stroke:#000 style Exit fill:#fff,stroke:#000 </pre>	

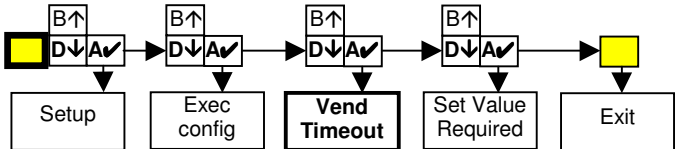
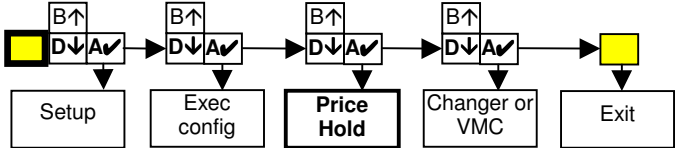
EXEC Procedures

For information on the following options, see EM Configuration beginning on page 57.

- Vend Type
- Escrow return
- Chng Dly
- Overpay
- Opay Amnt
- Max Credit
- Price Display

For information on Coin Scaling Factor, see MDB Configuration, page 55.

The procedures are the same for both variants with the exception that Exec Config must be selected instead of EM Config or MDB Config.

Option	What it enables you to do
<p>Vend Timeout</p>	<p>Set the length of time the changegiver will wait for a vending machine to reply to a vend command. (in the event of a protocol error)</p> <p>Default = 180 seconds</p>
 <p>The diagram shows a sequence of five steps: 1. A yellow square with 'B↑' above it and 'D↓A✓' below it, with an arrow pointing to a box labeled 'Setup'. 2. A white square with 'B↑' above it and 'D↓A✓' below it, with an arrow pointing to a box labeled 'Exec config'. 3. A white square with 'B↑' above it and 'D↓A✓' below it, with an arrow pointing to a box labeled 'Vend Timeout'. 4. A white square with 'B↑' above it and 'D↓A✓' below it, with an arrow pointing to a box labeled 'Set Value Required'. 5. A yellow square with an arrow pointing to a box labeled 'Exit'. Arrows connect the steps from left to right.</p>	
<p>Price Hold</p>	<p>To set the Changer or the VMC to hold the prices</p>
 <p>The diagram shows a sequence of five steps: 1. A yellow square with 'B↑' above it and 'D↓A✓' below it, with an arrow pointing to a box labeled 'Setup'. 2. A white square with 'B↑' above it and 'D↓A✓' below it, with an arrow pointing to a box labeled 'Exec config'. 3. A white square with 'B↑' above it and 'D↓A✓' below it, with an arrow pointing to a box labeled 'Price Hold'. 4. A white square with 'B↑' above it and 'D↓A✓' below it, with an arrow pointing to a box labeled 'Changer or VMC'. 5. A yellow square with an arrow pointing to a box labeled 'Exit'. Arrows connect the steps from left to right.</p>	

BDV Procedures

For information on the following options, see EM Configuration beginning on page 57.

- Vend Type
- Escrow return
- Chng Dly
- Overpay
- Opay Amnt
- Max Credit
- Price Display

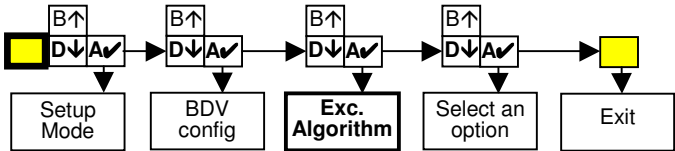
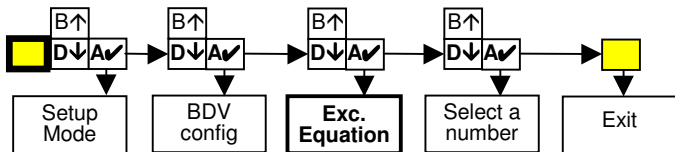
For information on Coin Scaling Factor, see MDB Procedures, page 55.

For information on Vend Timeout, see Exec Procedures, page 61.

The procedures are the same for both variants with the exception that BDV Config must be selected instead of EM Config or MDB Config.

Option	What it enables you to do
Award Discount	To set a discount (value, not percentage) on the price of the merchandise awarded when the trigger level is reached (see the following procedure)
<pre> graph LR Start[Yellow Box] --> Step1["B↑ D↓Av"] Step1 --> Step2["B↑ D↓Av"] Step2 --> Step3["B↑ D↓Av"] Step3 --> Step4["B↑ D↓Av"] Step4 --> End[Yellow Box] Step1 --- Label1[Setup Mode] Step2 --- Label2[BDV config] Step3 --- Label3[Award Discount] Step4 --- Label4[Select zero or a value] style Label3 fill:#000,color:#fff </pre>	

Option	What it enables you to do
Trigger Discount	To set the value at which the discount will be awarded (see the previous procedure)
<pre> graph LR Start[Setup Mode] -- B↑ --> BDV[BDV config] BDV -- D↓ --> TD[Trigger Discount] TD -- A✓ --> Sel[Select zero or a value] Sel -- B↑ --> Exit[Exit] </pre>	
Max Change	To set the maximum change limit in the range of 0 - 65535 Default = 65535
<pre> graph LR Start[Setup Mode] -- B↑ --> BDV[BDV config] BDV -- D↓ --> MC[Max Change] MC -- A✓ --> Sel[Set Value Required] Sel -- B↑ --> Exit[Exit] </pre>	
Link Master ID	To select a link master in the range 0 – 65535. Normally a default value of 30 is used
<pre> graph LR Start[Setup Mode] -- B↑ --> BDV[BDV config] BDV -- D↓ --> LMI[Link Master ID] LMI -- A✓ --> Sel[Select a number] Sel -- B↑ --> Exit[Exit] </pre>	

Option	What it enables you to do
<p>ExC. Algorithm (Exact Change Algorithm)</p>	<p>To select an exact change algorithm. There two options: BDV (details are set manually) CF690 (recommended – automatically calculated) NOTE: - If the CF690 is set, Overpay must be set to an appropriate value</p>
 <p>The diagram shows a sequence of five steps: 1. A yellow square icon. 2. A box with 'B↑' above and 'D↓A✓' below. 3. A box with 'B↑' above and 'D↓A✓' below. 4. A box with 'B↑' above and 'D↓A✓' below. 5. A box with 'B↑' above and 'D↓A✓' below. 6. A yellow square icon. Below each step is a box: 'Setup Mode', 'BDV config', 'ExC. Algorithm', 'Select an option', and 'Exit'. Arrows connect the boxes from left to right.</p>	
<p>ExC. Equation (Exact Change Equation)</p>	<p>To select an exact change equation in the range 0 – 255, usually 236 and 237. These two addresses set two change tube combinations from which change is dispensed if the quantity of coins in a specific tube falls below the low-level sensor level. The exact change equation ensures the optimum combination of change coins are dispensed by using coins from other tubes for the minimum amount of time possible</p> <p>Only applicable if ExC. Algorithm is set to BDV – see page previous procedure</p>
 <p>The diagram shows a sequence of five steps: 1. A yellow square icon. 2. A box with 'B↑' above and 'D↓A✓' below. 3. A box with 'B↑' above and 'D↓A✓' below. 4. A box with 'B↑' above and 'D↓A✓' below. 5. A box with 'B↑' above and 'D↓A✓' below. 6. A yellow square icon. Below each step is a box: 'Setup Mode', 'BDV config', 'ExC. Equation', 'Select a number', and 'Exit'. Arrows connect the boxes from left to right.</p>	

Option	What it enables you to do
<p>ExC. Offset</p>	<p>To select an offset in the range 0 – 255</p> <p>The offset is the value added to the low count at which the exact change condition is triggered. Thus if the low coin count is 12 and the offset is 3, the exact change condition is triggered when the coin count drops to 15</p> <p>Only applicable if ExC. Algorithm is set to BDV – see page 65</p>
<p>ExC. Coins (Exact Change Inhibits)</p>	<p>To select the coins you want to inhibit being dispensed as change</p> <p>Scroll through the list and select all the coins you wish to inhibit before you exit</p> <p>Only applicable if ExC. Algorithm is set to BDV – see page 64</p>

Common Procedures

The following procedures are applicable to all change giver variants.

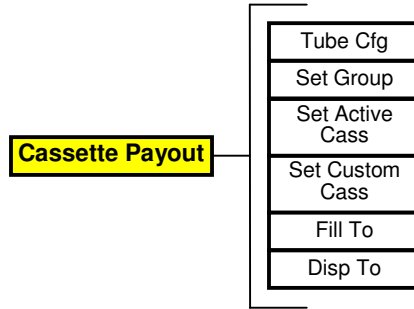
Option	What it enables you to do
Fraud Timeout	To set a time that will disable the acceptance of all coins if a fraud attempt has been detected. Default value = 0
DPP (Decimal Point Position)	To set the decimal point position, in terms of places from the right (for example, DPP of 2 = 1.23) to meet the national currency and Euro pricing requirements. There are two options: Nat Euro
Country	To select the dialling code for the country, e.g. 44 for the UK. For reference purposes only, there is no phone connection

Option	What it enables you to do
<p>Keypad</p>	<p>To enable or inhibit the following keypad options: Basic (Dispense, Float) Mode B (Changer Options) Mode C (Price Teach) Mode D (Cass Teach) Soft Option Menu</p>
<p>Settings</p>	<p>To select settings. The options are: Save = Save current memory settings to flash memory. Restore = Restore flash memory settings to RAM memory. (not normally used) If Save has not been used, Restore will load "Factory Default Setting" to memory.</p>
<p>Cred Display Message</p>	<p>To allow the user to input a string of characters (max.31) e.g. company name that will be displayed on the vending machines credit display.</p>

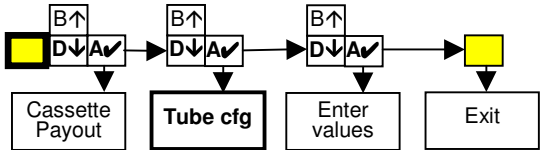
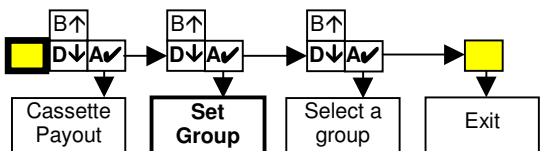
Option	What it enables you to do
Diag Display Message	To allow the user to input a string of characters (max.31) e.g. company name that will be displayed on the change giver diagnostic display.
<pre> graph TD Start[Yellow Square] --> B1[B↑] B1 --> D1[D↓A✓] D1 --> B2[B↑] B2 --> D2[D↓A✓] D2 --> B3[B↑] B3 --> D3[D↓A✓] D3 --> End[Yellow Square] D1 --> Setup[Setup] D2 --> Diag[Diag Display Message] D3 --> Enter[Enter your message] End --> Exit[Exit] </pre>	

Cassette Payout

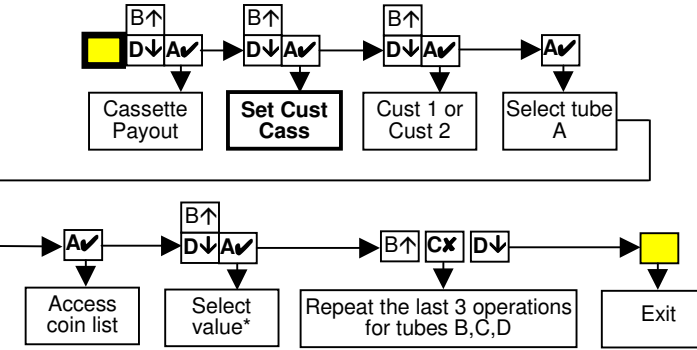
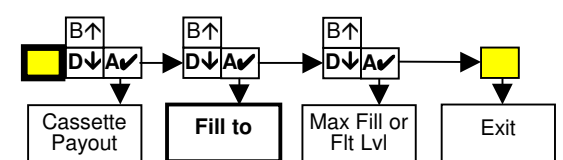
Options



Procedures

Option	What it enables you to do
<p>Tube Cfg (coin routed) (Tube Configuration)</p>	<p>Set the following for each coin tube:</p> <p>Full – the number of coins that can be stored before the top level sensor is covered and coin tube registers as being full, e.g. 72</p> <p>Max – the maximum number of coins that will be routed to a tube, e.g. 69</p> <p>Fit – the number of coins to be held as a float</p> <p>Low – the number of coins in coin tube when the low level sensor becomes uncovered</p> <p>Safe – the number of coins that must always remain in coin tube, e.g. 2, to ensure correct dispense operation</p> <p>Weight – the number of coins left in a tube that will trigger the software to look for alternative payout coins, e.g. 15</p> <p>Designator – the designator allocated to coin tube A, B, C or D (for information only)</p> <p>Tube Type – for information only, no setting required</p>
 <p>The flowchart for 'Tube Cfg' starts with a yellow square icon. An arrow points to a control panel with 'B↑' above and 'D↓A✓' below. Below this panel is a box labeled 'Cassette Payout'. Another arrow points to a second control panel with 'B↑' above and 'D↓A✓' below. Below this panel is a box labeled 'Tube cfg'. A third arrow points to a third control panel with 'B↑' above and 'D↓A✓' below. Below this panel is a box labeled 'Enter values'. A final arrow points to a yellow square icon. Below this icon is a box labeled 'Exit'.</p>	
Set Group	To select a Group and make it active
 <p>The flowchart for 'Set Group' starts with a yellow square icon. An arrow points to a control panel with 'B↑' above and 'D↓A✓' below. Below this panel is a box labeled 'Cassette Payout'. Another arrow points to a second control panel with 'B↑' above and 'D↓A✓' below. Below this panel is a box labeled 'Set Group'. A third arrow points to a third control panel with 'B↑' above and 'D↓A✓' below. Below this panel is a box labeled 'Select a group'. A final arrow points to a yellow square icon. Below this icon is a box labeled 'Exit'.</p>	

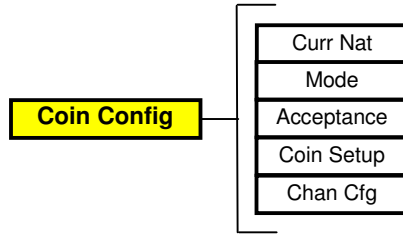
Option	What it enables you to do
<p>Set Active Cass (Set Active Cassette)</p>	<p>Select a standard cassette and make it active. There are two methods:</p> <ol style="list-style-type: none"> 1. Select a cassette number from the changeover display 2. Use the Service mode and enter the code printed on the side of the cassette. A list of codes for standard cassettes is given in Appendix B <p>Both methods are shown below</p>
<pre> graph LR Start(()) --> B1[B↑] B1 --- DA1[D↓ A✓] DA1 --> CassSet[Cass Set] CassSet --> B2[B↑] B2 --- DA2[D↓ A✓] DA2 --> SelectCass[Select a cassette] SelectCass --> End(()) End --> Exit[Exit] style Start fill:#ffff00 style End fill:#ffff00 </pre>	
<pre> graph LR Install[Install the new cassette] --> Start(()) Start --> EnterCode[Enter the code shown on the cassette side] EnterCode --> PressReturn[Press escrow return] style Start fill:#ffff00 </pre>	

Option	What it enables you to do
<p>Set Custom Cass (Set Customised Cassette)</p>	<p>To programme two cassettes (in addition to the pre-set cassette) with payout combinations If required, after a cassette is selected for use, the payout combination can be changed – see recommended method for Customise a Cassette on page 45</p>
 <pre> graph TD Start(()) --> B1[B↑] B1 --> D1[D↓] D1 --> A1[A✓] A1 --> P1[Cassette Payout] A1 --> B2[B↑] B2 --> D2[D↓] D2 --> A2[A✓] A2 --> S1[Set Cust Cass] A2 --> B3[B↑] B3 --> D3[D↓] D3 --> A3[A✓] A3 --> C1[Cust 1 or Cust 2] A3 --> B4[B↑] B4 --> A4[A✓] A4 --> S2[Select tube A] S2 --> A5[A✓] A5 --> CL[Access coin list] A5 --> B5[B↑] B5 --> D5[D↓] D5 --> A6[A✓] A6 --> S3[Select value*] S3 --> B6[B↑] B6 --> C2[C✗] C2 --> D6[D↓] D6 --> R[Repeat the last 3 operations for tubes B,C,D] R --> Exit1[Exit] </pre> <p>*You can also select No Set or Delete</p>	
<p>Fill To</p>	<p>Set the level to which a tube fills. The options are: Float level – tubes fill to float level number selected Maximum fill level – tubes fill to the max fill number</p>
 <pre> graph TD Start(()) --> B1[B↑] B1 --> D1[D↓] D1 --> A1[A✓] A1 --> P1[Cassette Payout] A1 --> B2[B↑] B2 --> D2[D↓] D2 --> A2[A✓] A2 --> F[Fill to] A2 --> B3[B↑] B3 --> D3[D↓] D3 --> A3[A✓] A3 --> M[Max Fill or Fit Lvl] A3 --> Exit2[Exit] </pre>	

Option	What it enables you to do
<p>Disp To (Dispense To)</p>	<p>Set the level to which coins will be dispensed from a tube. The options are: Empty level Safe level Setting to the safe level is recommended to ensure correct operation of the dispenser</p>
<pre> graph LR Start[Yellow Square] --> C1["B↑ D↓ A✓"] C1 --> C2["B↑ D↓ A✓"] C2 --> C3["B↑ D↓ A✓"] C3 --> End[Yellow Square] C1 --> CP["Cassette Payout"] C2 --> DT["Disp To"] C3 --> SE["Safe or Empty"] End --> Exit["Exit"] </pre>	

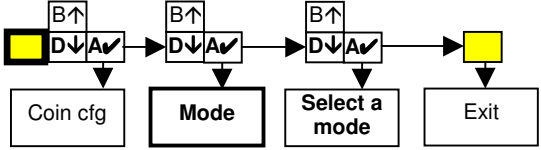
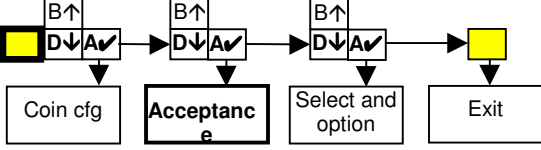
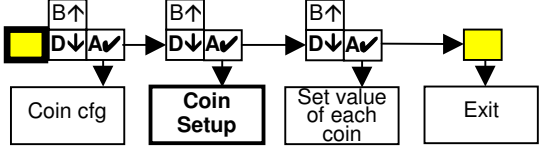
Coin Configuration

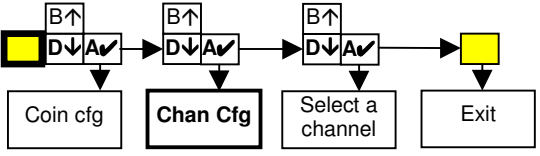
Options



Procedures

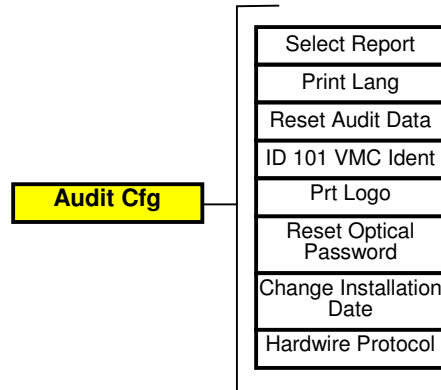
Option	What it enables you to do
Curr Nat (Currency National)	Set up the currency to be accepted. This configuration is linked to the Cassette Payout. A Euro Transition Stage can also be set using the recommended Service Mode
<pre> graph LR Start[] --> Nav1[B↑ D↓ A✓] Nav1 --> CoinCfg[Coin Cfg] Nav1 --> Nav2[B↑ D↓ A✓] Nav2 --> CurrEuroNat[Curr Euro/Nat] Nav2 --> Nav3[B↑ D↓ A✓] Nav3 --> Select[Select either Euro or National from the list] Nav3 --> Exit[Exit] </pre>	

Option	What it enables you to do
Mode	To set the operating mode as either a High Acceptance or High Security. (For when tight or normal coin limits are used)
	
Acceptance	To set the currency to be accepted from the options listed below. The type of cassette that must be fitted to the changegiver is shown in brackets. Nat – National currency (National) Nat+EU – National currency and the Euro EU – Euro (Euro)
	
Coin Setup	Set up the value of each numbered coin, e.g. Coin 1: 1p Scroll through the list and enter the value of all coins before you exit
	

Option	What it enables you to do
Chan Cfg (Channel Configuration)	To link a channel to a specific coin type. The channel can then be made active or inhibited
 <pre> graph LR Start[] --> Menu1["B↑ D↓ A✓"] Menu1 --> CoinCfg[Coin cfg] Menu1 --> Menu2["B↑ D↓ A✓"] Menu2 --> ChanCfg[Chan Cfg] Menu2 --> Menu3["B↑ D↓ A✓"] Menu3 --> SelectChan[Select a channel] Menu3 --> Menu4["B↑ D↓ A✓"] Menu4 --> Exit[] </pre>	

Audit Configuration

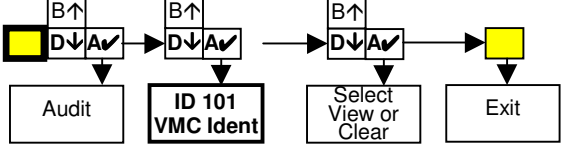
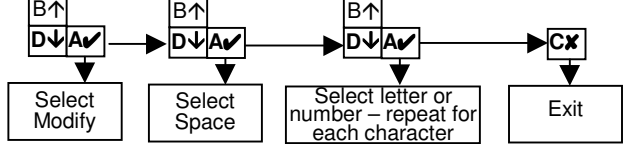
Options

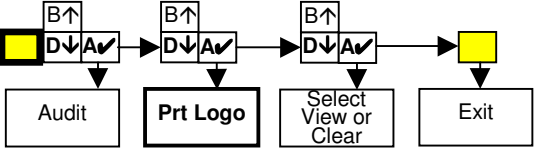
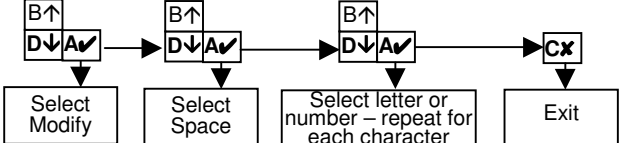
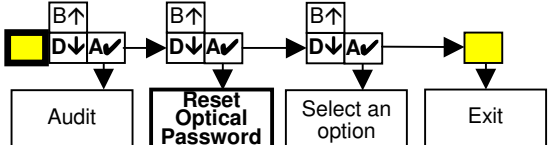


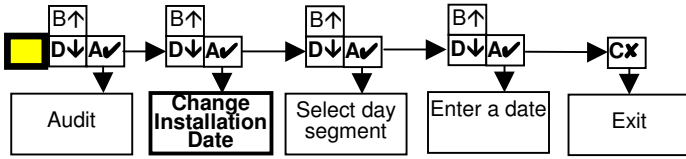
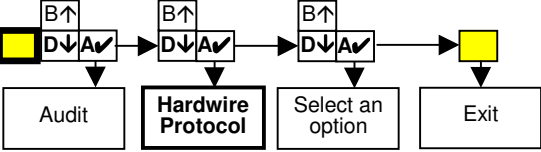
Procedures

Option	What it enables you to do
Sel Report (Select Report)	To select the type of audit to be gathered which can be: Free Vnd Interims Basic Examples of the above reports are included in Appendix C
<pre> graph LR Start[] --> AC[Audit Cfg] AC -- "B↑, D↓, Av" --> SR[Sel Report] SR -- "B↑, D↓, Av" --> SRT[Select a report type] SRT -- "B↑, D↓, Av" --> Exit[Exit] </pre>	

Option	What it enables you to do
<p>Print Lang (Print Language)</p>	<p>To select the language in which an audit report will be printed. Options: Spanish Dutch German French English</p>
<p>Reset Audit Data</p>	<p>To reset audit data from the following options: No Reset – all data is retained Interims Reset – interim data is cleared Totals Reset – totals are cleared Int and Tot Reset – interim data and totals are cleared Reset takes place immediately an option is selected</p>

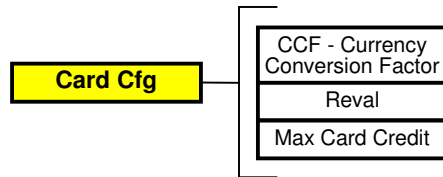
Option	What it enables you to do
ID 101 VMC Ident (change giver identity)	To select from the following options: View Clear Modify The change giver identity is printed on the audit report and on the DEX or DDCMP reports
<p>View and Clear</p>  <p>Modify</p> 	

Option	What it enables you to do
<p>Prt Logo (Print Logo)</p>	<p>To select from the following options: View Clear Modify</p> <p>The Print Logo is printed at the top of the audit report and is the same as the change giver identity – see previous procedure</p>
<p>View and Clear</p>  <p>Modify</p> 	
<p>Reset Optical Password</p>	<p>To reset the optical password used in DDCMP comms. There are two options: Confirm - the password is reset and can be used Cancel – password is not reset</p>
	

Option	What it enables you to do
<p>Change Installation Date</p>	<p>To change the installation date. The description below is for setting the day. After you enter a day, scroll through the list and repeat the process for the month and year before you exit</p> <p>If a change is made to the day, month or year, some audit values are reset to zero</p>
 <p>The flowchart shows a sequence of steps: 1. A yellow square icon with 'B↑' above and 'D↓A✓' below. 2. A box labeled 'Audit'. 3. A box labeled 'Change Installation Date' with 'B↑' above and 'D↓A✓' below. 4. A box labeled 'Select day segment' with 'B↑' above and 'D↓A✓' below. 5. A box labeled 'Enter a date' with 'B↑' above and 'D↓A✓' below. 6. A box labeled 'Exit' with 'Cx' above. Arrows connect the icons and boxes in sequence.</p>	
<p>Hardwire Protocol</p>	<p>To select a protocol to be used by the 1/4-inch socket option (normally set to DEX)</p>
 <p>The flowchart shows a sequence of steps: 1. A yellow square icon with 'B↑' above and 'D↓A✓' below. 2. A box labeled 'Audit'. 3. A box labeled 'Hardwire Protocol' with 'B↑' above and 'D↓A✓' below. 4. A box labeled 'Select an option' with 'B↑' above and 'D↓A✓' below. 5. A yellow square icon with 'B↑' above and 'D↓A✓' below. 6. A box labeled 'Exit'. Arrows connect the icons and boxes in sequence.</p>	

Card Configuration

Options



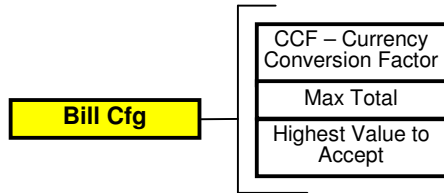
Procedures

Option	What it enables you to do
CCF – Currency Conversion Factor	To set a currency conversion factor. (Normally this is set to 100. Thus the displayed value = CCF x value of the card)
Reval (Revaluation)	To allow or prohibit a credit addition on a card Note: Even if this option is selected, not all card readers allow this feature

Option	What it enables you to do
Max Card Credit	To set the maximum credit reported by a card
<pre> graph LR Start[] --> Menu1["B↑ D↓ A✓"] Menu1 --> CardCfg[Card cfg] Menu1 --> Menu2["B↑ D↓ A✓"] Menu2 --> MaxCardCredit[Max Card Credit] Menu2 --> Menu3["B↑ D↓ A✓"] Menu3 --> EnterAmount[Enter an amount] Menu3 --> Exit[Exit] </pre> <p>The flowchart illustrates the configuration steps for Max Card Credit. It begins with a yellow square representing the start of the process. The first step is a menu box containing 'B↑' above 'D↓ A✓'. From this menu, pressing 'D' leads to 'Card cfg', while pressing 'A' leads to the next menu box. This second menu box also contains 'B↑' above 'D↓ A✓'. Pressing 'D' here leads to 'Max Card Credit', and pressing 'A' leads to a third menu box. The third menu box contains 'B↑' above 'D↓ A✓'. Pressing 'D' here leads to 'Enter an amount', and pressing 'A' leads to 'Exit'. The process concludes with a final yellow square.</p>	

Bill Configuration

Options



Procedures

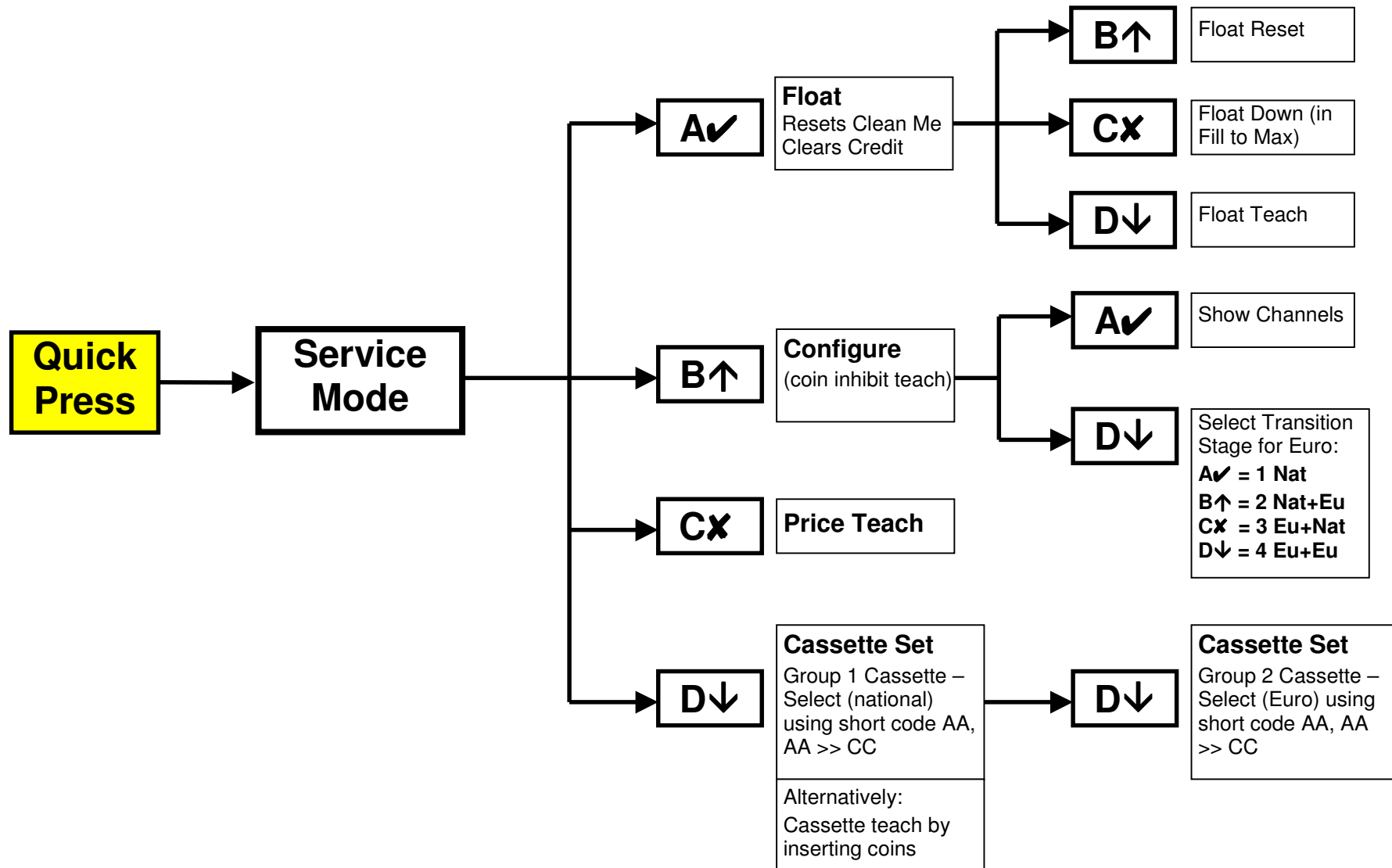
Option	What it enables you to do
CCF – Currency Conversion Factor	To set a currency conversion factor This is normally set to 100. Thus the displayed value = CCF x value of the bill
<p>The flowchart shows a sequence of four boxes: "Bill cfg", "CCF", "Enter a factor", and "Exit". Above each box is a navigation control consisting of a yellow square, a "D" with a downward arrow, and an "A" with a checkmark. Above the "D" and "A" is a "B" with an upward arrow. Arrows connect the boxes from left to right.</p>	
Max Total Bill Credit	To enter the maximum bill credit allowed
<p>The flowchart shows a sequence of four boxes: "Bill cfg", "Max Total Bill Credit", "Enter an amount", and "Exit". Above each box is a navigation control consisting of a yellow square, a "D" with a downward arrow, and an "A" with a checkmark. Above the "D" and "A" is a "B" with an upward arrow. Arrows connect the boxes from left to right.</p>	

Option	What it enables you to do
Highest Value to Accept	To set the highest value bill that can be accepted, e.g. £10 in the UK, shown as 10

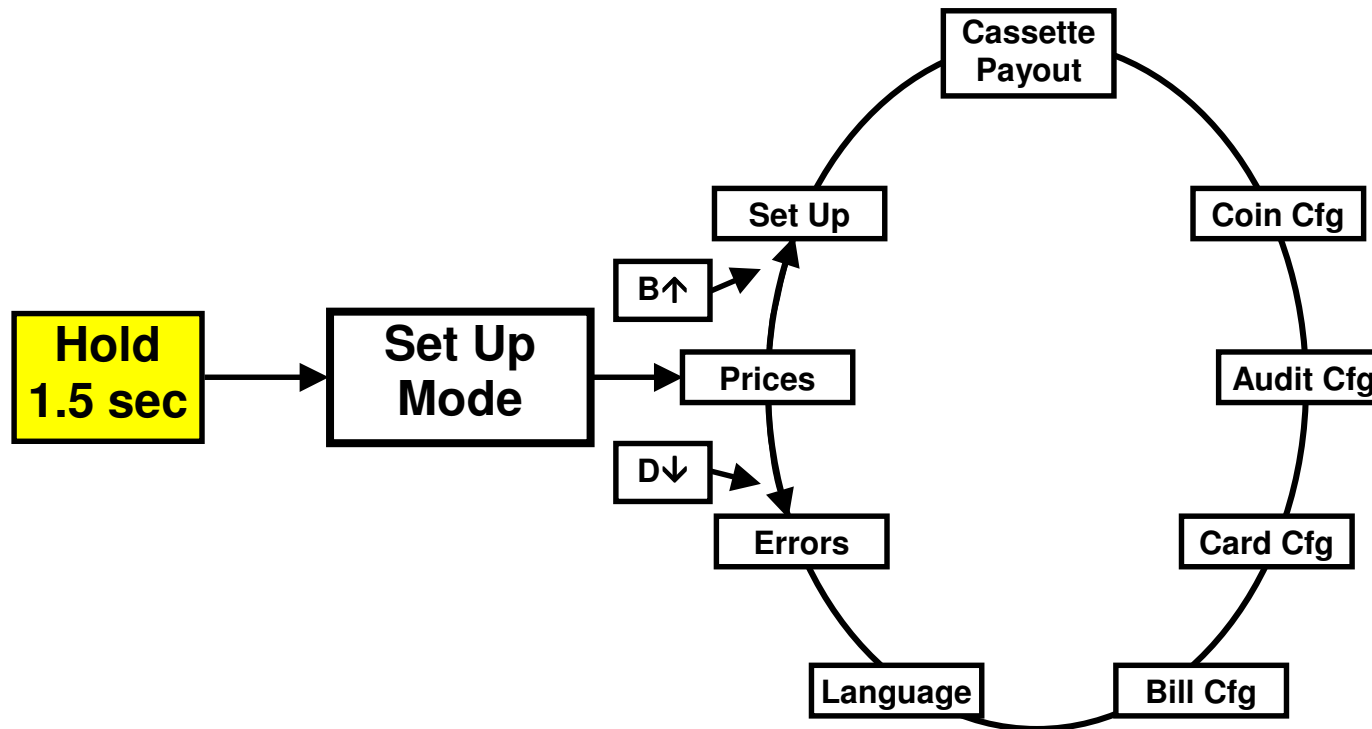
Errors

For information about Errors, see *Troubleshooting – Displayed Errors* on page 32.

Appendix A: Service Procedures Overview

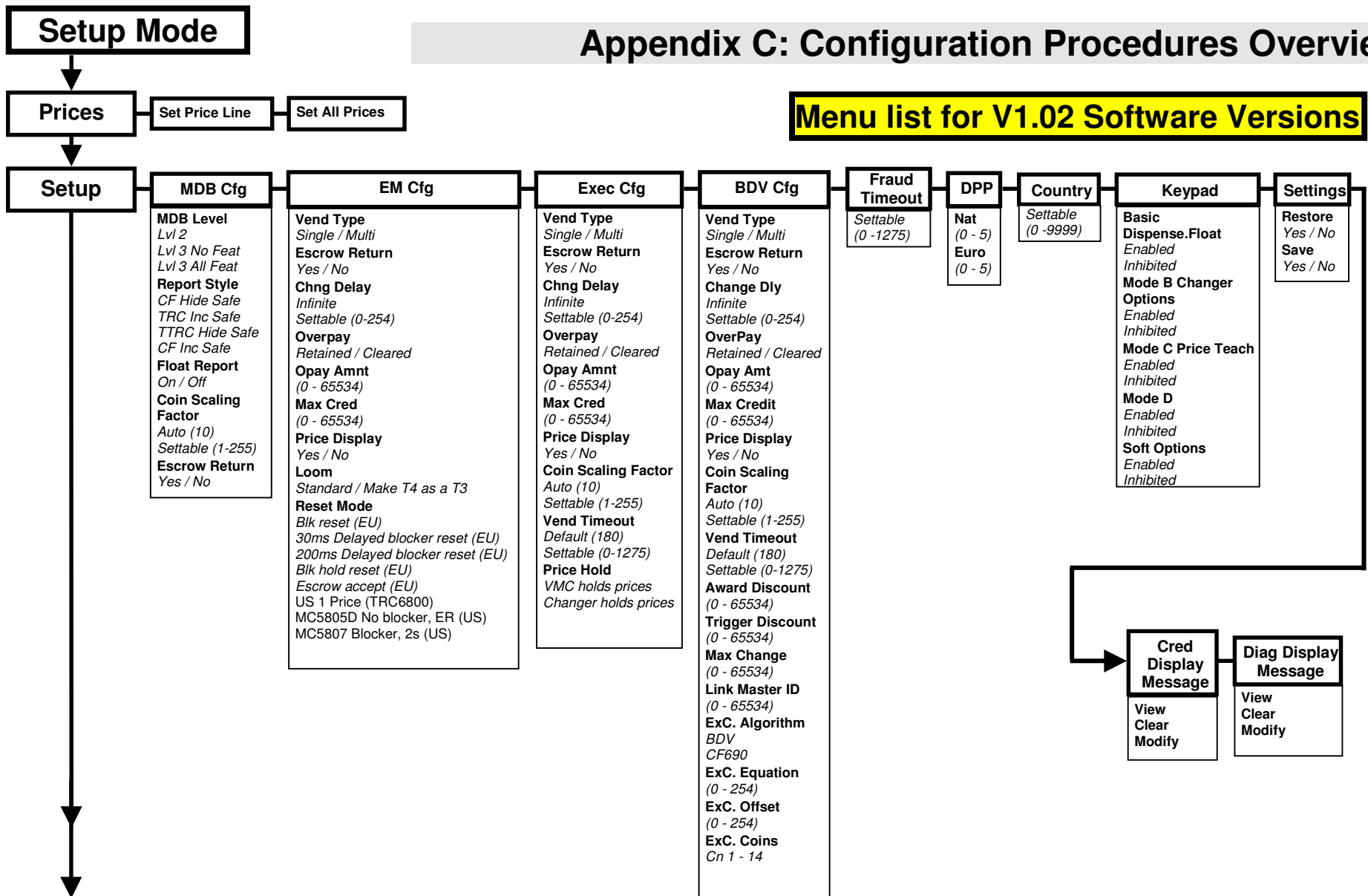


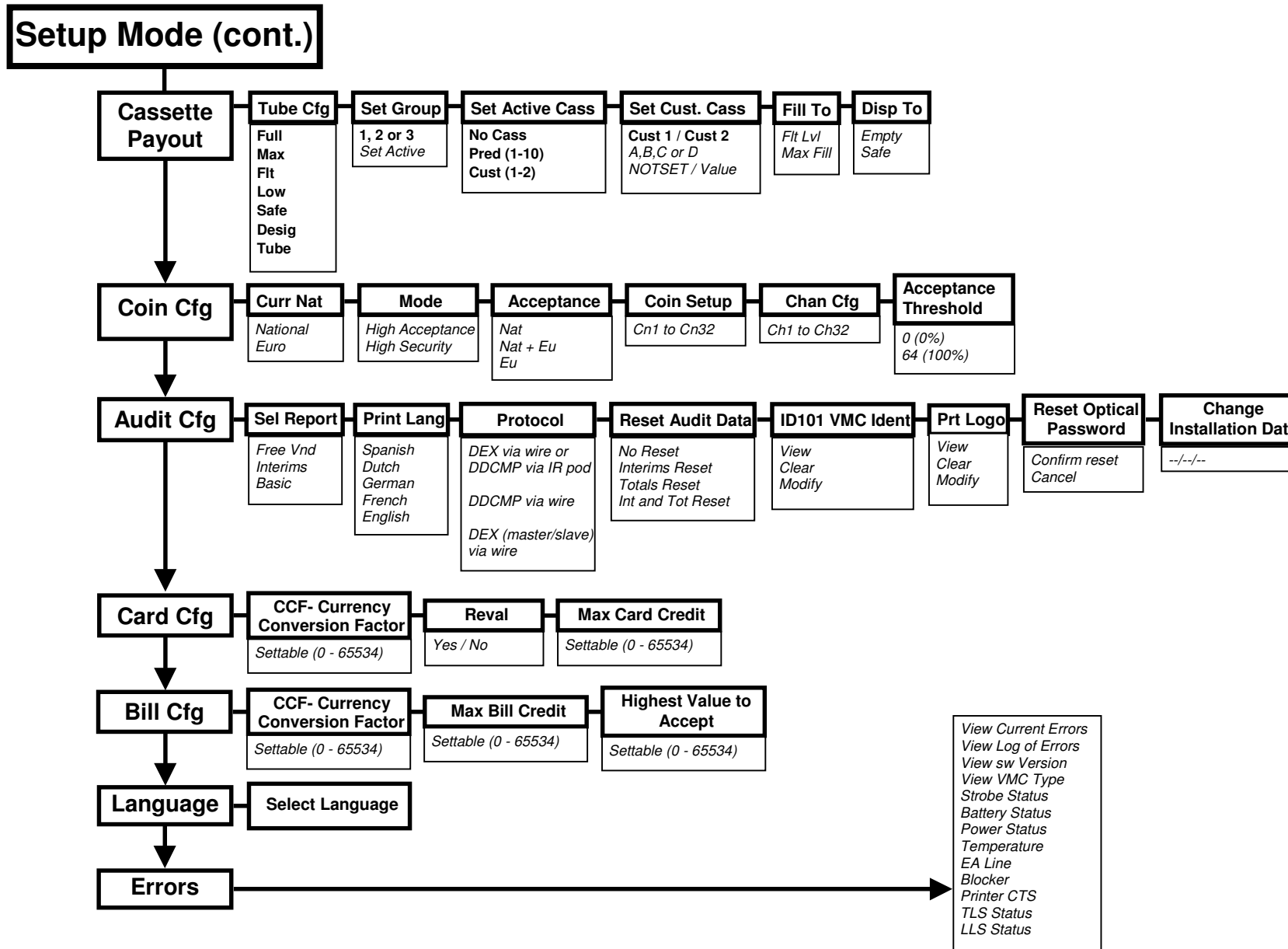
Appendix B: SetUp Mode - Menu Overview



Appendix C: Configuration Procedures Overview

Menu list for V1.02 Software Versions





Appendix D: Example Audit Printouts

English

```

=====
MARS ELECTRONICS.
CASHFLOW AUDIT DATA
DATE-TIME-----
MACHIN MEI----- 1
PRINTOUT NO.      1
PAY VENDS TOT    0.00
NO. OF VENDS TOT 0
TUBE CONTENTS    0.00
POWER INTERRUPTIONS 1
ON-TIME          0-00:00
-----
SINCE INSTALLATION
DATE             00/00/00
PRINTOUT INST    1
PAY VENDS VAL    0.00
NUMBER OF VENDS 0
-----
INTERIM MONEY REPORT
SINCE PRINTOUT NO. 0
-----
TO CASHBOX       0.00
TO TUBES         0.00
CHANGE           0.00
MANUAL FILL      0.00
MANUAL DISPENSED 0.00
PAY VENDS VAL    0.00
NUMBER OF VENDS 0
OVERPAY          0.00
TOKENS           0.00
NOTES            0.00
-----
INTERIM VENDS REPORT
NO SALES PRICE
VALUE
 1 0 1.00 0.00
 2 0 1.00 0.00
 3 0 1.00 0.00
 4 0 1.00 0.00
 5 0 1.00 0.00
 6 0 1.00 0.00
 7 0 1.00 0.00
 8 0 1.00 0.00
 9 0 1.00 0.00
10 0 1.00 0.00
11 0 1.00 0.00
12 0 1.00 0.00
-
-
-
97 0 1.00 0.00
98 0 1.00 0.00
99 0 1.00 0.00
100 0 1.00 0.00
-----
PRICES ALTERED    NO
=====

```

INTERIMS WILL BE CLEARED

24

French

```

=====
MARS ELECTRONICS.
AUDIT CASHFLOW
DATE-HEURE-----
NO MAC MEI----- 2
NO RELEVÉ        2
CA TOT VENTES   0.00
NO TOT VENTES   0
CONTENU TUBES   0.00
MISE HORS TENS  1
DUREE SOUS TENS. 0-00:06
-----
DEPUIS MODIF NO MACHINE
DATE             00/00/00
RELEVÉ MODIF     2
CH. AFFAIRE      0.00
NOMBRE VENTES    0
-----
MONTANTS
DEPUIS RELEVÉ NO. 0
-----
EN CAISSE       0.00
VERS TUBES      0.00
RENDU CLIENT    0.00
REPLISSAGE TUBE 0.00
ESSAIS TUBES    0.00
CH. AFFAIRE     0.00
NOMBRE VENTES   0
SURPAIEMENT     0.00
JETONS           0.00
BILLETS         0.00
-----
VENTES INTERIMS
NO VENTES  PRIX  CH. AFF
 1 0 1.00 0.00
 2 0 1.00 0.00
 3 0 1.00 0.00
 4 0 1.00 0.00
 5 0 1.00 0.00
 6 0 1.00 0.00
 7 0 1.00 0.00
 8 0 1.00 0.00
 9 0 1.00 0.00
10 0 1.00 0.00
11 0 1.00 0.00
12 0 1.00 0.00
-
-
-
97 0 1.00 0.00
98 0 1.00 0.00
99 0 1.00 0.00
100 0 1.00 0.00
-----
PRIX MODIFIES    NON
=====

```

INTERIMS SERONT EFFACES

81

Appendix D: Example Audit Printouts

German

```

=====
MARS ELECTRONICS.
CASHFLOW VERKAUFS-
DATEN
DATUM-ZEIT\
AUTOMA MEI-----
AUSDRUCK-NR      3
VK-WERT GES.    0.00
VK-ANZAHL      0
TUBENINHALT     0.00
NETZAUSFALL     1
BETRIEBSZEIT    0-00:18
-----
SEIT INBETRIEBNAHME
DATUM            00/00/00
AUSDRUCK-NR SEIT INST.  3
VK-BETRAG SEIT INS  0.00
VK-ANZAHL SEIT INST.  0
-----
ZWISCHENBETRAG
SEIT AUSDRUCK-NR.      0

GELD ZUR KASSE      0.00
ZU DEN TUBEN        0.00
AUSGEZ. RESTGELD    0.00
MANUELLE FLLUNG     0.00
MAN. AUSZAHLUNG     0.00
VK-BETRAG           0.00
VK-ANZAHL           0
BERZAHLUNG          0.00
TOKEN               0.00
BANKNOTEN           0.00
-----
VK-ZWISCHENBERICHT
NR  ANZ.  PREIS  BETRAG
1   0    1.00   0.00
2   0    1.00   0.00
3   0    1.00   0.00
4   0    1.00   0.00
5   0    1.00   0.00
6   0    1.00   0.00
7   0    1.00   0.00
8   0    1.00   0.00
9   0    1.00   0.00
10  0    1.00   0.00
11  0    1.00   0.00
12  0    1.00   0.00
-
-
-
97  0    1.00   0.00
98  0    1.00   0.00
99  0    1.00   0.00
100 0    1.00   0.00
-----
PREISNDERUNG      NEIN
=====
WERTE WERDEN GELSCHT
    
```

97

Spanish

```

=====
MARS ELECTRONICS.
DATOS CONTABLES CASHFLOW
FECHA-HORA\
NUMERO MEI-----
IMPRESION NUMERO    4
VALOR VENTAS        0.00
NUMERO DE VENTAS    0
DINERO EN TUBOS     0.00
N DEXCONEXIONES ALI 1
TIEMPO CONEXION    0-00:24
-----
DESDE INSTALACION
FECHA                00/00/00
IMPRESION NUMERO    4
VALOR DE VENTAS     0.00
NUMERO DE VENTAS    0
-----
VALORES PARCIALES MONEDA
DESDE IMPRESION NO.  0

DINERO A HUCHA      0.00
DINERO A TUBOS      0.00
CAMBIO DEVUELTO     0.00
LLENADO MANUAL      0.00
DISP.MANUALMENTE    0.00
VALOR DE VENTAS     0.00
NUMERO DE VENTAS    0
SOBREPAGO           0.00
FICHAS              0.00
BILLETES            0.00
-----
VALORES PARCIALES VENTAS
NO  VENTAS  PRECIO  VALOR
1   0       1.00   0.00
2   0       1.00   0.00
3   0       1.00   0.00
4   0       1.00   0.00
5   0       1.00   0.00
6   0       1.00   0.00
7   0       1.00   0.00
8   0       1.00   0.00
9   0       1.00   0.00
10  0       1.00   0.00
11  0       1.00   0.00
12  0       1.00   0.00
-
-
-
97  0       1.00   0.00
98  0       1.00   0.00
99  0       1.00   0.00
100 0       1.00   0.00
-----
PRECIOS ALTERADOS    NO
=====
SE BORRARA LOS PARCIALES
    
```

43

Appendix E: Cassette Codes

National Currency		GB	ES	FR	AU	DE	Euro Currency		EU
No	Cassette Code Mode	Specified Cassette Configurations					No	Cassette Code Mode	Specified Cassette Configuration
1	DAA	1,2,5,20	5,25,5,100	0.5,1,5,2	0.5,1,5,1	50,10,1DM,10	13	DDAA	5,10,50,20
2	DAB	5,10,50,20	5,25,25,100	0.5,0.1,5,1	1,5,20,10	50,1DM,5DM,2DM	14	DDAB	1,5,50,10
3	DAC	5,1,2,20	5,25,500,100	0.1,0.2,5,1		50,10,2DM,1DM	15	DDAC	1,2,50,10
4	DAD	5,20,50,10	100,25,500,25	0.5,1,1,5		10,10,1DM,10	16	DDAD	5,10,50,10
5	DBA	5,20,20,10	100,25,500,200	1,1,5,2		50,2DM,2DM,1DM	17	DDBA	10,10,50,20
6	DBB	5,20,2,1		0.5,1,2,1		10,10,50,1DM	18	DDBB	5,10,20,10
7	DBC	10,20,50,£1		0.5,0.5,5,1			19	DDBC	5,5,50,10
8	DBD	1,20,2,10		0.5,0.1,0.2,1			20	DDBD	1,5,2,10
9	DCA			0.5,0.1,2,1			21	DDCA	1,5,20,10
10	DCB			0.5,1,2,5			22	DDCB	10,20,50,1EU
		Currency units (unless stated)							
		GB=p Es=Pts FR=F							
		AU=Sch DE pf							

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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 CashFlow® products with new coinsets, replacing damaged modules, and the supply of a range of spare parts.

For more information of our products and services, contact your local MEI regional Office.

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Index

A

Acceptor/separator	
installing.....	17
removing	17
Audit configuration	
options.....	77
procedures	77
Audit gathering	46

B

Bill configuration	
options.....	84
procedures	84

C

Card configuration	
options.....	82
procedures	82
Cassette group, selecting.....	45
Cassette payout	
options.....	69
procedures	70
Changegiver overview	
acceptor/separator.....	7
coin tube cassette.....	6
electronic configuration.....	4
keypad and display	5
mechanical configuration	3
Changegiver replacement	
fixing	10
installation checks	12

installation procedure	12
preliminary checks.....	9
removal procedure	11
Changegiver status	25
Changegiver variants	x
Channel, enable/inhibit	43
Cleaning	
acceptor	36
dispenser arms and guides	37
requirements overview	35
safety precautions	35
what to use.....	35
Coin configuration	
options	74
procedures	74
Coin group, enable/inhibit	43
Coin tube cassette	
installing	16
removing.....	16
Coin tubes	
emptying.....	47
manually filling	46
Coin, enable/inhibit.....	43
Configuration functions	
audit configuration	77
bill configuration	84
card configuration.....	82
cassette payout.....	69
coin configuration.....	74
overview	49
prices	53
setup	54
Conformance Standards	vii

D

Dispenser	
installing	22

removing 21

E

Error messages 32

Euro transmission stage 44

F

Float procedures

float down 42

float teach 42

float up 42

Fuse replacement 23

H

Hardwire protocol 81

K

Keypad

amber LED flashing 28

amber LED steady 27

Keypad assembly

installing 19

removing 18

O

Option location quick reference 51

P

Price teach 44

Prices configuration

options 53

procedures 53

Product disposal vii

S

Service mode

accessing 39

functions 39

options overview 41

Service mode procedures

cassette set 45

configure 43

float 42

float up 42

gathering an audit 46

price teach 44

Servicing procedures 39

Setup

BDV procedures 62

EM procedures 57

EXEC procedures 60

MDB procedures 55

options 54

Setup mode

accessing 49

T

Transformer

installing 20

removing 20