

Operator's Manual Mektek Programmer "Plus"

Software Version 1.81 onwards

Reprogramming coin mechanisms

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Installation

Minimum PC requirements

IBM PC or compatible, Pentium 100MHz or faster 16 Mbyte RAM (32 Mbyte recommended) 20 Mbytes free hard disc space Windows 95, 98, ME or XP

One free RS232 serial port with 9-pin connector

(If only USB ports are fitted use a USB/Serial converter)

VGA display (800 x600, 256 colours) minimum

Standard Keyboard and Mouse

CD Rom drive

Microsoft Word or similar

Internet & Email links are recommended for credit requests & software downloads.

Software installation

?? Insert the Installation CD and select Run from the Start menu. Select file name Setup.exe from the CD drive and click on OK. Follow the on-screen instructions.

Connecting Programmer:

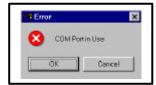
- ?? Connect the RS232 cable from Programmer to PC serial port. (eg COM1) - if a USB/serial converter is to be used see Notes below.
- ?? Connect the external power supply unit to the programmer and check the LED illuminates.
- ?? Connect the specified loom from the Programmer to the coin mechanism.
 eg: X3 for the MEI 126 25way D connector on the programmer to both the 17way machine interface connector and the 6way square validator programming connector.



Note: when using a USB/Serial converter firstly identify the COM port to be used. Attach the converter and reboot the PC. Go to Control Panel/System/Devices (or similar) and identify to which COM port the converter is assigned. This is the COM port to be used for the Mektek Plus.

Configuration:

- Run the Programmer software from Windows by clicking on Start, Programs, Mektek and Programmer Plus.
- ?? When the Main Menu appears select the COM port to be used.
- Exit the Programmer Software by clicking on the Windows X icon in top right hand corner.
- If an incorrect COM port has been selected an error message will appear when restarting the program. To bring up the Main Menu again delete the file "config0000.txt" in the folder containing the Mektek Program software and restart the program.



Principles of operation

Coin mechanism Validator:

In principle, validators measure various outputs from in-built sensors as a coin passes them. The values are compared with a table of preset values - called coin limits – held in memory. If the sensor outputs are all within the limits specified for one of the coins in the table an accept signal is generated. If a coin is not accepted a reject signal is generated. Types of coin may also be inhibited from acceptance by the validator or by signals from the host machine via the validator. Once through the validator the type of accepted coin is signalled to the host machine using the appropriate Coin Output Line (or lines in Binary Code Output). The monetary value of the coin and extra features such as bonus play etc may be defined in the mechanism or in the host machine depending on the mechanism type.

Coin mechanism Router:

Some mechanisms are fitted with coin routers that route the coins from the validator exits to either 6 or 8 other exit paths. The path of individual coins is controlled from the validator either by settings in the validator or by the insertion of a routing plug which overrides the settings.

Validator LED: (CF126 only)

A green LED on the front of the validator provides useful information about the acceptance/rejection of a coin passing through. See Appendix for a description.

Mektek programmer:

Coin programming:

The Mektek Programmer takes the outputs from the measuring sensors in a validator as coins are dropped through, performs a statistical analysis on the values and generates Coin Limits appropriate to the validator and the coins to be programmed. The new limits are then programmed into the memory of the validator and the results verified. Coins are passed through the validator to confirm the acceptance/rejection performance.

Settings:

Other settings in the validator can also be changed manually if required in the Settings menu. For a description of these see the relevant section.

Credits

What is a credit?

Each time the programmer is used for a chargeable operation a credit is deducted from the total held in the Programmer in a similar manner to a prepay mobile telephone. A warning message is displayed when the credits need replenishing. Credits can only be purchased from the supplier of your Programmer.

Credit usage

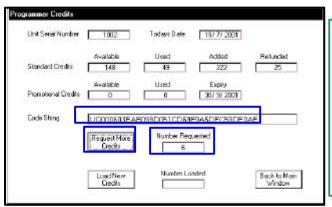
The routine of programming up to 16 coin channels, testing coin acceptance and changing settings if performed in one operation on one coin mechanism consumes 1 credit. Changing of settings only consumes 1 credit.

Checking credits

To check the number of credits remaining in the Programmer or to order more credits start the Programmer & click on Load Credits. The number of credits available is shown along with the total number used.

Loading credits

- ?? To replenish credits start the Programmer and click on Load Credits.
- ?? Click on the Number Requested box and enter the amount required
- ?? Click on Request More Credits and a unique code message of up to 40 characters will appear in the Code String box. Copy (double click on the box to select the field, right click on the mouse and click on Copy) then paste this number into an Email or Fax and send to your supplier.
- $\ref{eq:condition}$ A similar Code String will be returned subject to payment conditions.



NOTE:

Do not request further credits if an outstanding credit request exists.

If a Fault Message such as "Not a Valid Credit Issue Message" appears check the Message Table overleaf for details.

- ?? Paste the new code message into the box and click on Load New Credits.
- ?? The Number Loaded will be displayed and added to those available.
- ?? Click on Back to Main Window to exit.

Loading Credits Message Table

Message	Cause/Action
Not a valid credit issue message Checksum error Message not accepted	Invalid code string - incomplete or wrongly entered Code String. Check & re-enter figure.
Credit Issue Message not for this serial number	Each Programmer has a unique serial number. This Code String is only valid for the box from which it was requested.
Incorrect VAR code	Credit issue has the wrong Programmer supplier code. Contact your Programmer supplier or Mektek.
Incorrect code	Security code does not match. An old Code String has been entered.

Getting started

- Read the remainder of this guide
- ?? Using the Loom Selection guide in the Appendix check that you have the required loom for the mech to be programmed
- ?? Obtain 20 coins of each denomination to be programmed.
- ?? Use the Mektek Universal stand to mount the mechanism in the correct alignment.

Basic programming routine (CF115/126 & 330)

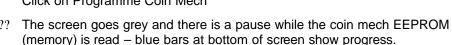
- ?? Clean and dry the path of the coins through the validator using a soft cloth and a foaming non-solvent cleaner.
- ?? Connect the validator to programmer using appropriate loom (Refer to the "Connecting loom selection" section)
- ?? Mount the validator in the stand in the correct alignment.

Start the Programmer system from Start, Programs, Mektek, Programmer Plus and the Main Selection menu will

appear.

?? Select the correct type of mechanism. (For CF330 select the Discriminator Type - see Appendix for description) and click on Test Coin Mech.

- ?? Drop current coins through the mech and check acceptance to confirm that the validator is working.
- ?? Return to the main selection. Click on Programme Coin Mech



NOTE:

Once the EEPROM has been read the Programme Coin screen appears and the Serial number of the unit is displayed.

?? The first time a particular discriminator is read a Backup file of the original data is

automatically created. This can be used to restore the original configuration. See Appendix for details.

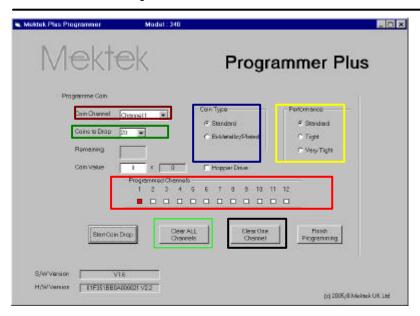


If a coin is being inhibited by the

details of LED codes.

validator it will not show as accepted

on the screen. Check the validator LED to confirm. See Appendix for



NOTES:

Coin channel – using the Drop Down select the coin channel to be programmed (from 1 to 16 for a CF126)

Coins to drop -20 coins is recommended.

Coin type – select either standard or Bi-metallic/plated dependent on the material of the coins.

Performance – the Coin Limits can be made tighter to reduce the chance of false coins, or slugs, being accepted. This will also mean that some genuine coins may not be accepted.

Programmed Changels, where a Changel is released PED a gain has already been

Programmed Channels – where a Channel is coloured RED a coin has already been programmed into that channel.

Clear ALL Channels – all Coin Channels currently programmed will be cleared.

Clear ONE channel – the Coin Channel currently selected will be cleared.

?? If the coin mechanism is to be completely reprogrammed – clear all Coin Channels by clicking on Clear ALL Channels. Click on OK when this message appears.



?? If selected Channels only are to be programmed, select the first one in Coin Channel, then click on Clear ONE Channel. A similar message will appear. Click on OK to proceed. Repeat for any other Channels to be cleared.

- ?? Click on Start Coin Drop.
 The quantity of Coins to Drop appears in the Remaining window.
- ?? Drop coins through the mechanism –as each coin passes through the Remaining quantity reduces.
- ?? When all coins have been dropped the Remaining value will be zero and the message Data Gathered appears.
- ?? Click on OK to return to the Coin Programme screen.



The Coin Channel will have stepped on to the next Channel automatically.

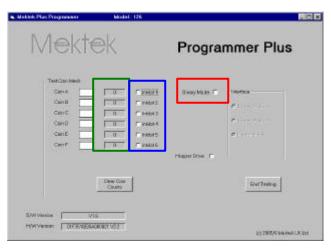
- ?? To programme more coins repeat the Coin Drop procedure for each type of coin required.
- ?? When all the required coins have been programmed click on Finish Programming.
- ?? Click on OK to write the new data to the coin mech EEPROM.
- ?? The Deduct Credits message appears. At this stage a Credit will be deducted from the total held in the Programmer. Click on OK to proceed.
- ?? The screen goes grey and there is a pause while the programmer writes the new data to the coin mech EEPROM (memory) – blue bars at bottom of screen show progress.
- ?? This is followed by a similar process to verify that the data has been correctly written.
- ?? When completed click on OK to complete.
- ?? The screen now reverts to Main Selection.
- ?? Click on Test Coin Mech to verify the performance of the newly programmed coins and the Test Coin Mech screen appears. Note: The example shown is for the CF126 & 330 series – for CF340 see the relevant chapter.







- ?? Select the type of ouput to be used – Parallel or BCO (binary) using the Binary mode tick box. For an explanation of output modes see the next chapter on "Settings"
- ?? Drop a coin through the mechanism. If it is accepted the appropriate Coin
 - box will light up green. Allow time for the light to extinguish before dropping the next coin.
- ?? To test the inhibit line for the channel, tick the Inhibit box and drop a coin. The green
 - light should not light but the green LED on the validator should flash 3 times to verify the inhibit line is OK. This does not mean that the channel will be inhibited after programming.
- ?? Repeat for all coins to verify the performance of the programming.
- ?? If known false coins (slugs) are available drop these through the mech to verify that they are rejected.
- ?? Click on End Testing to return to the Main Selection menu.



NOTE

If a coin is inhibited it will not show as accepted on the screen but the validator LED will flash off four times.

NOTE

If false coins are being accepted on one channel, the Coin Limits for this coin can be tightened by going back to the Main Selection menu, then Programme Coin Mech. Tick the Tight box in the Performance section and then repeat the programming & test routines for the Channel. No additional Credit is deducted for this action.

Settings (CF126 & 330)

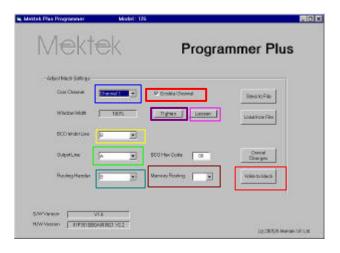
Depending on the type of mechanism being programmed some or all of the settings below can be adjusted for each coin channel. Further information on all the settings can be found in the relevant manufacturer's Design Guide and User Guide.

- 1. Enable channel
- 2. Window width
- 3. Output line
- 4. BCO Hex Code
- BCO inhibit line
- 6. Routing header
- 7. Memory routing

Note: Items 6 & 7 are available only in the CF115/126

Changing settings - standard routine

- ?? Click on Adjust Settings in the Main selection menu.
- ?? The screen goes grey and there is a pause while the coin mech EEPROM (memory) is read blue bars at bottom of screen show progress.
 Once the EEPROM has been read the Adjust Mech Settings screen appears.
- ?? Make all the required changes to the Coin Channels as described below.
- ?? Click on Write to Mech to save the changes.



Description of settings:

In each case select the Coin Channel to be set from the Coin channel drop-down menu

- 1. Enable the channel: coins will be accepted in this channel.
- ?? Tick the **Enable Channel** box to allow coins to be accepted.
- Window width: increases or deceases the discrimination of the channel.
- ?? Click on **Tighten** to decrease the width of the coin limit window in 2% increments.
- ?? Click on Loosen to increase the window width in 2% increments.
- 3. Output Line: (Parallel output) Used when the mech is to be fitted to a host machine that requires a parallel output from the machine interface connector. In parallel output mode, when a valid coin has been accepted by the validator a signal is sent down the Coin Output line associated with that coin's channel to the host machine. Each of the 16 Coin Channels is associated with one of the 6 Coin Output lines.

Eg Coin Channels 9 & 10 could be programmed to the same £1 coin but with Channel 10 set to tight Window Width for use in high risk areas. Both of the Coin Channels would then be associated with the same Coin Output line.

NOTE: In the standard GB coinset mech there is the additional option of MPE in the Output Line drop-down menu. This will pulse the GB 50p coin output line four times on validation of a GB £2 coin.

To assign a Coin Channel to a particular Coin Output line;

- ?? Select the required Coin Channel
- ?? Click on the Output Line drop-down menu
- ?? Click on the required Output line A to F

NOTE: Inhibit lines - in parallel output mode the inhibit lines are fixed to the coin output lines. e.g. Inhibit Line A will inhibit the acceptance of all channels associated with Coin Output line A.

4. BCO Hex Code: Used when the mech is to be fitted to a host machine that requires a Binary Coded Output (BCO) from the machine interface connector. In the BACTA Standard Definition BCO mode, when a valid coin has been accepted by the validator a binary code, dependent on the coin accepted, is sent down Coin Output lines F,E,D,B&C to the host machine. Each of the 16 Coin Channels can have a separate binary code if required. The required binary code for a coin channel can be set by inputting the corresponding Hex Code.

- ?? Select the required Coin Channel
- ?? Click on the BCO Hex code box.
- ?? Input the required Hex code.

CAUTION: Incorrect setting of the BCO Hex Code will lead to problems when the mech is fitted to the host machine. Change these settings only if you are fully conversant with the process.

- 5. BCO Inhibit Line: Used when the mech is to be fitted to a host machine that uses a Binary Coded Output (BCO) from the machine interface connector. There are 6 inhibit lines labelled A to F. Each of the 16 Coin Channels must be assigned to one of these inhibit lines.
- ?? Select the required Coin Channel
- ?? Click on the BCO Inhibit Line drop-down menu
- ?? Click on the required inhibit line.

ROUTING: (Available in the CF126 only) A "Separator" may be fitted to the mech to route accepted coins from the validator to various exits from the router which correspond to hoppers on the host machine. The routing of the coins is be set in one of two ways: Memory – the routing is written to the validator EEPROM.

Routing Plug – a 22-way connector is hard-wired with the required combinations and inserted into the validator (Insertion of a Routing Plug will override Memory settings.) For details of how to wire a Routing Plug consult the relevant manufacturer's design guide.

- 6. Routing header: (the header into which the routing plug is inserted) A routing plug can route up to 8 different coin types (A to H) into 4 or 8 different exits depending on the type of router fitted. As the mech can accept up to 16 different coins each coin must be assigned to one of the coin types A H in the routing header.
- ?? Select the required Coin Channel
- ?? Click on the Routing Header drop-down menu
- ?? Click on the required coin line.
- Memory routing: If a Routing Plug is not inserted the routing can be set in the validator EEPROM.
- ?? Select the required Coin Channel
- ?? Click on the **Memory Routing** drop-down menu
- ?? Click on the required exit.

Once all required changes have been made click on Write to Mech to save the information in the validator.

CF340 Creditor - Extra features, reprogramming & settings

Interface board

The CF340 is fitted with an RVCI (Robust Video Credit Interface) PCB attached directly to the rear of the acceptor underneath the plastic cover. There are two modes of the RVCI – single player and 4 player – with appropriate dispense inputs and outputs. Both provide a player lamp output (P Lamp), entry lamp output (E Lamp), a coin meter output and an auxiliary credit input.



RVCI Function

The RVCI performs credit accumulation and host interface functions. On receipt of a coin accepted signal from the acceptor, the unit assigns the appropriate value to the coin and adds this value to the accumulated credit. If the coin meter is enabled, the unit will send an appropriate number of pulses to the coin meter output.

Single & multi player forms

In the single player form, the unit can be configured for either automatic or manual credit dispense. In automatic credit dispense the appropriate number of game pulses will be dispensed when the accumulated credit exceeds the game price. In manual credit dispense a single game pulse will be sent to the appropriate player output each time the corresponding Player input becomes active and enough game credits are available.

In multi player form only manual credit dispense can be used. In manual credit dispense mode, the creditor will drive the Player Lamp output to indicate that there are game credits available. The lamp(s) will flash when game credits exist.

Bonuses

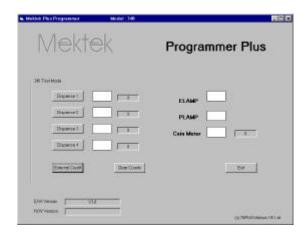
The creditor can be configured to give additional games at two defined bonus credit levels. The number of additional games for each bonus level is programmable. The additional games will be given when the bonus credit level is reached within a programmable time limit.

Reprogramming

The routine for reprogramming is similar to that described for the 126/330 with the exception of the Test Coin function and the Discriminator Type selection detailed below.

Test function

When a coin is inserted, the Elamp lights and stays on. The value of the coin is added to the accumulated credit. The Coin Meter lamp will flash and the Coin Meter counter will increase by the value of the coin divided by the coin ratio. Once the accumulated credit equals or exceeds the game price the Plamp will flash. In Manual Dispense setting, each click on Dispense 1 will send a single game pulse to Player 1 and the number of



game pulses sent will appear in the adjacent window. Similarly Dispense 2 will send a pulse to Player 2 etc.

Settings

Depending whether the mechanism being programmed is a 1 or 4 player type the settings described below can be read and, in most cases, adjusted. Further information on all the settings can be found in the relevant manufacturer's Design Guide and User Guide.

By coin channel:

Enable Channel

Coin value

Window width

By mechanism:

Scaling factor

Game price

1 or 4 player

Coin meter value

Coin meter enable

Manual or automatic dispense

External credit value

Credit input enable

Alarm enable

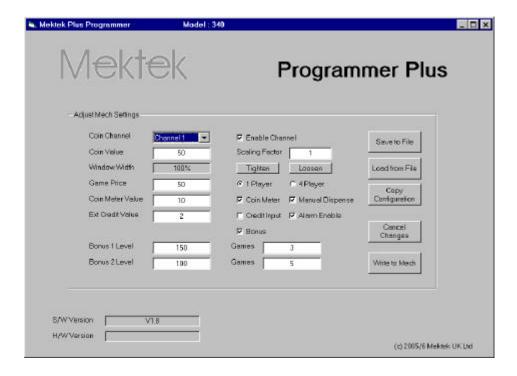
Bonus enable

Bonus 1 level & Bonus 1 games

Bonus 2 level & Bonus 2 games

Changing settings - standard routine

- ?? Click on Adjust Settings in the Main selection menu.
- ?? The screen goes grey and there is a pause while the coin mech EEPROM (memory) is read blue bars at bottom of screen show progress.
 Once the EEPROM has been read the Adjust Mech Settings screen appears.
- ?? Make all the required changes as described below.
- ?? Click on Write to Mech to save the changes.



Description of settings:

For the following settings first select the coin channel to be set from the Coin Channel drop-down menu.

- 1. Enable the channel: coins will be accepted in this channel.
- ?? Tick the Enable Channel box to allow coins to be accepted.
- Coin Value: the value of the coin.
- ?? Enter the real value of the coin divided by the Scaling Factor.
- 3. Window width: increases/deceases the discrimination of the channel.
- ?? Click on Tighten to decrease the width of the coin limit window in 2% increments.
- ?? Click on Loosen to increase the window width in 2% increments.

The remainder of the settings apply to the entire mechanism rather than to each coin.

- 4. Scaling factor: Payment scaling factor applied to coin value
- ?? Enter the required scaling factor.
- 5. Game Price: the required credit for a game output.
- ?? Enter the required value.
- 6. 1Player/4 player: Select the mode of operation.
- 7. Coin meter: Enables or disables the Coin Meter function.
- ?? Tick the box for Enable or untick for Disable
- 8. Coin meter value: Number of pulses = credit divided by this value.
- ?? Enter required scalar value.
- 9. Manual Dispense: Manual Dispense mode to be enabled. (Manual mode must be selected for 4 player mechs)
- ?? Tick box to select Manual Dispense mode or untick for Automatic.
- 10. Credit Input: Enables auxiliary credit input.
- ?? Tick box to enable auxiliary credit input.
- 11. Ext credit value: Value of external (auxiliary) credit.
- ?? Enter the value required divided by the Payment Scaling Factor.
- 12. Alarm enable:
- ?? Tick box to enable detection of coin stringing etc. (which will flash the ELAMP if detected).
- 13. Bonus: Enables or disables the use of Bonus Games.
- ?? Tick the box to enable bonus games.
- 14. Bonus 1 Level: When accumulated credit reaches this level the number of bonus games in Bonus 1 Games is awarded.
- ?? Enter the value of credit required to trigger Bonus 1 games.
- 15. Bonus 1 Games: When the value of credit set in Bonus 1 Level is reached this number of bonus games will be awarded.
- ?? Enter the number of bonus games to be awarded at Level 1.
- 16. Bonus 2 Level & Games: As Bonus 1 above.

Utilities

- 1. Save to file: Saves the entire contents of the memory of the mechanism. With the mechanism connected to the programmer, Click on Adjust Settings, and then on Save to File once the Adjust Mech Settings screen appears. Enter a convenient name and folder and save. By saving the information a mechanism can be restored to this configuration if required. NOTE: The first time a particular serial number discriminator is read a backup copy of the original data is automatically saved. See Appendix for details.
- 2. Load from File: Replaces the entire contents of the memory of the mechanism with the information in a Saved File (See above). With the mechanism connected to the programmer, Click on Adjust Settings, and then on Load from File once the Adjust Mech Settings screen appears. When the dialogue box appears, select the required saved file and then Open.
- 3. Copy Configuration: This special utility enables mechanisms that have corrupt memory or incorrect settings which result in the mechanism malfunctioning to be corrected by reference to a known working mechanism. Connect a known working mechanism of the same configuration as the malfunctioning mechanism to the programmer. Click on Adjust Settings and then Save to File (See above). Remove the mechanism.

Connect the malfunctioning mechanism and click on Adjust Settings. Click on Copy Configuration and follow the instructions.

Note: Copy Configuration copies everything except the serial number, coin windows and coin reference data. (Note - it does change the coin enable/inhibits) After using the Copy Configuration utility it is vital to check that the correct coin channels are enabled and that the channels are correctly assigned to the expected output. It is also recommended that all the coins be reprogrammed.

Appendix

Validator LED code (115/126 only)

A green LED is visible on the front of the validator once power has been applied. As a coin is passed through the validator the LED will flash a number of times depending on the status of the coin.

Flash off once: the coin is valid and has been accepted

Flash off twice: the coin is outside the programmed coin limits and is rejected

Flash off three times: the coin has been rejected by the fourth sensor Flash off four times: the coin has been inhibited by hardware or software.

Discriminator Type selection: (CF330 & CF340)

Some older discriminator modules have different sensor scaling values. It is important that the correct type is selected to ensure successful programming.

Type 2: The discriminator part number is 15990951 and the issue is Y2 or Y3. In the example below, the part number is 15990951 and the issue Y2 appears in the middle of the serial number.

Type 1: all other 330/340 discriminators



Backup File & Restoring Original Configuration

The first time a particular serial number discriminator is read a backup copy of the original data is automatically saved in the folder

C:\ProgramFiles\Xprogrammer\Backup\. The file name is NNNNxxNNNNN.txt where NNNNNNNNN matches the serial number on the discriminator label. (the bottom number on the angled barcode label on a 330 or 340 or on the LHS of a 126.) For example: for discriminator number 1913Y504930 the filename is 1913xx04930.txt (The Y5 is not readable through the HI2 connector). The Backup file can be used to restore a unit to its original configuration if required)

Keeping up to date

?? New features, improvements and support of more types of coin mechanism are regularly being added to the Programmer operating system in response to user feedback. Contact us for the latest updates free of charge.

Technical Help & Fault Reporting

?? If you require help or advice relating to the operation of the programmer contact us by telephone or Email.

Tables:

Fault-finding:

Description	Cause/Action
No response from programmer	Incorrect COM port selected
box	Check PSU connected.
	Comms fault - switch box off/on
	Disconnect mech then if OK = faulty mech
	Reboot system
	Check PC to box loom
	Operating system conflict for selected COM port
Failure to connect to coin mech	Check box to mech loom
	Comms fault - switch box off/on
Coins not recognized when	Wrong looms used or looms not fitted
Coins not recognised when dropped during programming	Wrong looms used or looms not fitted 6-way square connector on loom not fully seated in the front of
dropped during programming	the validator.
	the validator.
Mech fails validator test	Coin inhibit applied – check the code of the LED flashes
	Switch box off/on and retry
	Mech incorrectly fitted to stand when programmed or tested –
	reprogram and retest.
Mech passes validator test but	Settings incorrect – check outputs if BCO used.
rejects coins on host machine.	

Connecting loom selection

Depending on the type of mechanism and the interface board fitted different looms may be required

The square 6way connector on one branch of the X3 and X4 looms that plugs into the front of the mechanism can become insecure during programming leading to a lack of communication with the programmer. Always ensure that the connector remains fully home and in the horizontal position.

CF115/126

Use loom X3 – connect both branches.

Do not connect here - it will damage the mechanism

CF330

The CF330 series may have one of six different standard interfaces fitted. Check the connectors on the interface at the bottom of the validator to help determine which one to use. Refer to the MEI Cashflow 330 Product Maintenance Handbook for full information.

Interface 112 16 pin connector in 2 rows Loom E20 & X3

10 way ribbon connector

(Use X3 6w ay connector branch only)

Interface 124

Refer to Mektek

Interface 212

Loom E10 & X3

(Use X3 6way connector branch only) Refer to Mektek

Interface 312

Dual polarity

17 pin connector in 1 row Loom X3 only







Dual polarity pin layout

Version 212 pin layout

Version 112 pin layout

CF340

Use loom X4 - connect both branches. The 6-way square connector fits into the front of the mechanism and the 19 way connector fits onto the RVCI interface board on the rear.

Coin mech type	Loom number
MEI CF126 series Note:CF115 is a CF126	X3 (17 pin connector in 1 row & 6way square connector).
without separator	
MEI CF330 series	E10(10 way ribbon) or E20(16 way ribbon) and X3(6 pin square connector) See above
MEI CF340	X4 (19 pin connector in 1 row & 6way square connector)