

Model 35

SINGLE HOPPER COIN CHANGER



Operators Manual (Manual - A)

Contents

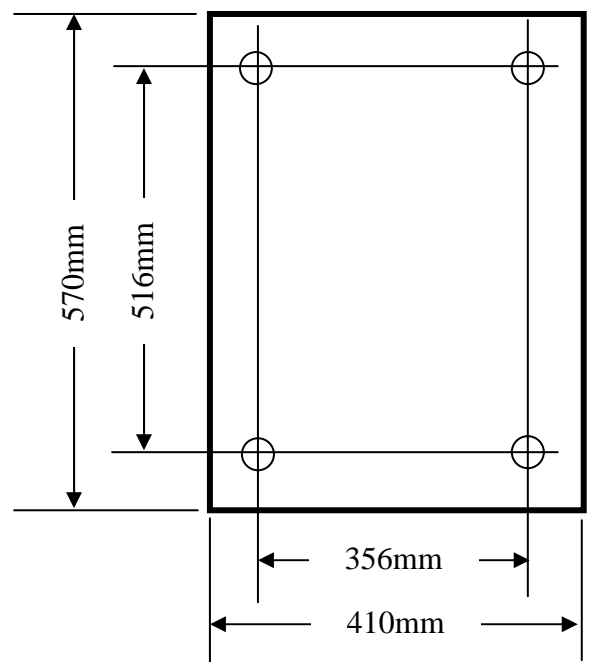
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A1 Scope

This manual (Manual-A) describes the mechanical details, user functions and operations specific to the Model 35 Coin Changer. This machine is fitted with the A47-026 logic board and so this manual should be read in conjunction with the A47-026 logic board manual (Manual-B) to gain details of the operation of the software and programming.

A2 Specifications

Hieght : 570 mm
Width : 410 mm
Depth : 170 mm
Empty Weight : 20 kg
Loaded Weight : about 40 kg
Power : 85-265V 1A AC 47-63Hz





A3 Installation

3.1 Unpacking and Inspection

The Model 35 is supplied boxed for transport and should be carefully removed from its packaging and inspected. A small plastic bag containing two keys and this manual should be found within the box. All the packaging should be kept in case it is necessary to return the machine for service. Packing material is used inside the Model 35 to protect the internal parts during transport. Ensure that all this material is removed.

3.2 Opening and Closing the Door

To access the internal parts of the machine the door must be opened in the following way:

- 1 Insert one of the supplied keys into the upper lock and turn the key one quarter turn **anti-clockwise** .
- 2 Remove the key and perform the same operation on the lower lock to release the door. The locks may be quite stiff because the locking mechanism is very positive and holds the door firmly.
- 3 To close the door reverse the operations, turning the keys **clockwise** .

3.3 Hopper Removal

In order to service the hopper or remove jammed coins it may be necessary to remove the hopper from the machine. After switching the main power off the hopper should be removed in the following way:

- 1 Lift and remove the hopper extension bin.
- 2 Use a medium size cross-point (Phillips) screwdriver to remove the payout chute locking bolt, and then lift and remove the payout chute.
- 3 Grasp the hopper firmly and slide the hopper about 25mm to the right along its mounting plate until it comes free of its electrical connections.
- 4 Lift the hopper and remove it from the cabinet.
- 5 Refitting is the reverse of removal. The hopper should be pushed firmly to the left against the back of the hopper mounting plate so that the electrical connections are fully home. Ensure that no coins or other bodies are trapped behind the hopper.

3.4 Installation

The Model 35 has mounting holes on the back. The machine is designed to be wall mounted. When choosing a location for mounting it is important to remember that, when full, the Model 35 can weigh in excess of 40 kg. Care should be taken that the structure and mounting points are robust enough to support the weight. All installations will be different and this manual can only give general guidance.

- 1 Mark out and drill four holes in a secure wall on a 356mm wide by 516mm high rectangle. The top of the machine will be 27mm above the centres of the top row of holes. It is recommended that 10mm bolts or other robust fixing be used into a brick or similar wall.
- 2 Open the door and remove the coin collection bin, hopper extension bin and the hopper in order to expose the various mounting holes in the cabinet.
- 3 Fix the machine to the wall.
- 4 The mains lead is fixed to the Model 35 cabinet and should be routed so that it is not trapped between the machine and its mounting support.
- 5 Ensure that the cabinet is secure and then refit the internal parts.

3.5 Electrical Connections

For installation in the United Kingdom the Model 35 is fitted with a standard BS1363 plug fused at 3 Amps.

For other countries observe all local rules and the following wiring colours:

Brown - to the terminal marked L or Live or coloured red

Blue - to the terminal marked N or Neutral or coloured black

Yellow/Green - to the terminal marked \equiv or E or Earth or coloured Green

This equipment must be earthed

3.6 Initial Test of Machine

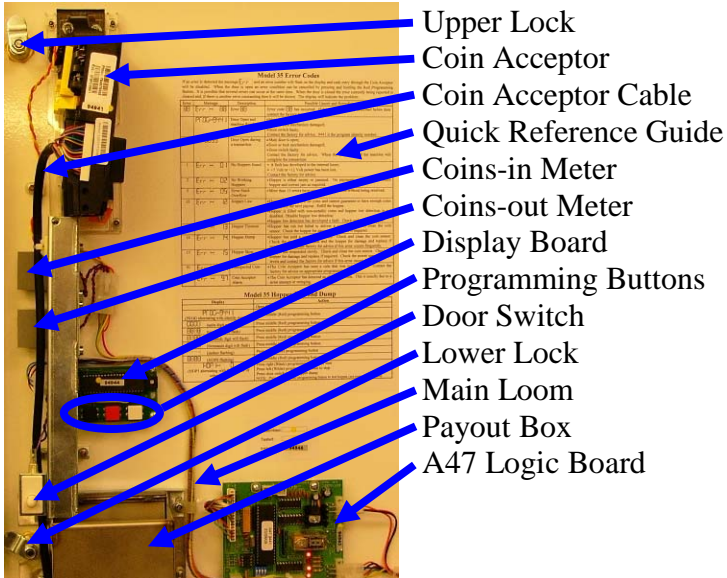
After connection of the Model 35 to mains power (but before switching the power on) proceed as follows:

- 1 Open the door and perform a visual check of the internal parts. Ensure that no foreign bodies or packing material are present.
- 2 Switch on the mains power to the Model 35 and then switch the Model 35 on at its main switch, which should illuminate.
- 3 The door illumination will come on and the main display will cycle through its test sequence and after a few moments the machine will be ready for operation. The main display will show **PF00-8841** to indicate that the door is open. 8841 is an example software program number and may differ for different machines. The control board has several red power indicator LEDs on it. These should illuminate.
- 4 Fill the machine with coins as detailed in the relevant section of this manual.
- 5 Close the door and the Model 35 is now ready for use. The display will show the time, or **000**, or **CASH-HERE** depending upon the option settings, and the note path entrance will light up to indicate that the Model 35 is ready for use.
- 6 Confirm the payout settings are correct by testing the Model 35 with a range of different coins. Confirm that the payouts are as required.

A4 Anatomy of the Machine

The working parts of the Model 35 change machine are in two regions.

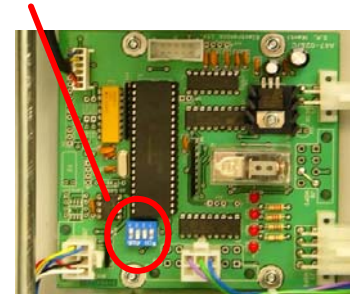
1) Door electronics



The inside of the door is where most of the control electronics and the coin acceptor is mounted. The main circuit board has a bank of 4 switches, with functions as shown below.

Switch bank

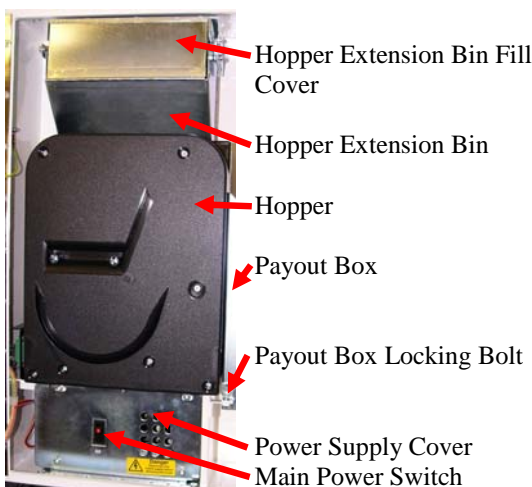
Pole	Function
1	Unused
2	Unused
3	OFF Hopper Low Detected ON Hopper Low ignored
4	Unused



The display board has the four digit 7-segment LED display mounted on one side so it is visible from outside the machine, and three programming buttons mounted so they are only accessible from inside the machine. The three buttons, white (left), red (middle), and black (right) are used during testing, programming and engineering mode.

The door switch and coins-in and coins-out counters are also mounted on the door. The coins-in counter usually counts in units of 10s of the currency base, for example a 20p coin counts 2 or a 0.50¢ coin counts 5. The coins-out counter counts individual coins.

2) Cabinet



The power supply, power and door switches, counters and the hopper are mounted into the bottom of the cabinet. The hopper is referred to as hopper 1 in programming and engineering modes. Below the hopper are the mains power switch and power supply unit, behind its protective cover.

A5 Normal Operations

The Model 35 needs no special servicing or maintenance. It may be switched off and on whenever necessary and will retain all settings and configuration. If power is removed during a payout that payout will not be restarted when the power is reconnected.

The operator controls the functions of the Model 35 through the buttons mounted on the display board that is located on the inside of the door. Using these buttons the operator can:

- 1) Change the currency setting to enable different currencies to be accepted. Note that the Coin Acceptor may need to be reprogrammed separately in order for it to accept other currencies;
- 2) Test the Coin Acceptor;
- 3) Change the way coins are accepted and routed within the machine;
- 4) Test and configure the Hopper;
- 5) Determine the cause of machine faults;
- 6) Change the payments system to alter the coins that are paid out;
- 7) Read and reset audits;
- 8) Control the machine environment.

The Model 35 is fully programmable on site and gives the operator considerable flexibility in setting how many packets will be paid out under different circumstances. Details of all programming and control functions are given in the A47-026 logic board manual (Manual-B).

A6 Filling The Hopper

The hopper used in the Model 35 uses a pair of shorting plates to detect the presence of coins. When sufficient metal coins are placed in the hopper the coins connect the two plates together electrically and the Model 35 detects the current that flows. As coins are paid out from the hopper a time will occur where there are not enough coins to bridge the gap between the plates and the logic board will indicate a “Hopper Low” error. It is possible to disable the hopper low sensing system for the hopper, see the section “Programming Hoppers” for details. This coin sensing technique means that:

1. In order for the Model 35 to detect coins in the hopper they must be made from a conductive material. If non-conductive tokens are to be dispensed, the Model 35 hopper low detectors must be disabled, please contact the factory for advice about using non-conductive tokens with the Model 35.
2. In order for the Model 35 to detect coins in the hopper there must be sufficient to cover the plates. 50 to 70 coins are usually the minimum.

To refill a hopper proceed as follows:

- 1 Open the door and the display will show the error message.
- 2 If the Model 35 has stopped during a payout and indicated that no hoppers are available (error code 02), a hopper-low (error code 12) or hopper-timeout (error code 13) error **DO NOT TURN THE POWER OFF**. If the Model 35 has indicated an error at switch on, or some other time when no payout is in progress, or if the hoppers are being topped up without being empty first then it is recommended that the power be switched off at the main switch inside the Model 35 before filling.
- 3 Open the hopper extension bin fill cover.
- 4 Be certain that the correct coins are being used to fill the hopper. The Model 35 will pay out correctly only if the hopper contains the correct coins. Fill the hopper slowly with coins, being careful to ensure that no coins fall behind the hopper where they may interfere with the electrical connections to the hopper. If the hopper is being filled from bagged coins it is vital that no bags fall into the hopper. The Model 35 cannot protect itself against objects placed inside the hopper that will jam the mechanism.
- 5 Record the values shown on each of the meters for auditing purposes.
- 6 If necessary switch the Model 35 back on.
- 7 The A47-026D logic board used in the Model 35 records audits electronically. If audits are being maintained then follow the instructions given in the section “Filling the Dispensers” in the Manual B that accompanies this manual
- 8 When the door is closed any partial payout will be completed and the Model 35 is ready for use.

Note: Although a small current flows through the coins at all times, there is no electric shock risk associated with coin handling in the Model 35. Operators should be aware that it is possible for the hoppers to run while the door is open and hands or objects placed deep inside a hopper may be at risk of becoming trapped.

A7 Coin Acceptor Maintenance

The Model 35 is usually fitted with a Mars CashFlow CF9520 coin acceptor.

7.1 Servicing a Mars CashFlow CF9520 coin acceptor

The pictures below show a coin acceptor mounted in a machine that may not exactly match with the look of the Model 35. The pictures should be treated as a general guide.



This picture shows a CF9520 coin acceptor in position on a machine. Before removing the acceptor, switch the mains power off at the machine's main switch and unplug the coin acceptor's connecting cable.



In order to remove the Coin Acceptor squeeze the two amber plastic clips towards each other between fore-finger and thumb while supporting the coin acceptor with the other hand. The clips must be bent some 3mm before the coin acceptor will be released. This requires some force and care must be taken to ensure the clips are not damaged in the process. Replacement clips are available from the factory. It may be easier to bend the clips one at a time and release the coin acceptor from one end before the other end.



To replace the coin acceptor, position the front face of the acceptor against the mounting plate so that the two plastic pegs in the mounting plate align with the two holes in the front of the acceptor (as shown in the picture). Then press the acceptor against the mounting plate until both amber clips spring into place and the acceptor is held firmly. After replacement it should be possible to press the coin reject button (on the outside of the machine door) in by about 1mm **BEFORE** the coin acceptor side gate begins to move. If the coin acceptor is not in the correct position and the side gate is held slightly open then the coin acceptor will not operate correctly and will not accept coins.

It will sometimes be necessary to clean the coin path within the CF9520 coin acceptor. Access to the coin path is easily gained after the acceptor has been removed from the machine. Liquids should not be used when cleaning the coin path. A dry cloth or blower brush can be used to remove dust and deposits. If the coin path parts are damaged or scratched then the acceptor should be returned for service.



Once the coin acceptor is removed from the machine the side gate may be opened to expose the upper part of the coin path just by forcing against its return spring. To expose the lower part of the coin path the side plate must be removed. The side plate is held by single screw that may be removed with an appropriate screwdriver. Be careful when replacing the side plate not to damage the plastic mouldings by over-tightening the screw.