

GEMINI

DUAL HOPPER NOTE & COIN CHANGER



Operators Manual (Manual – A)

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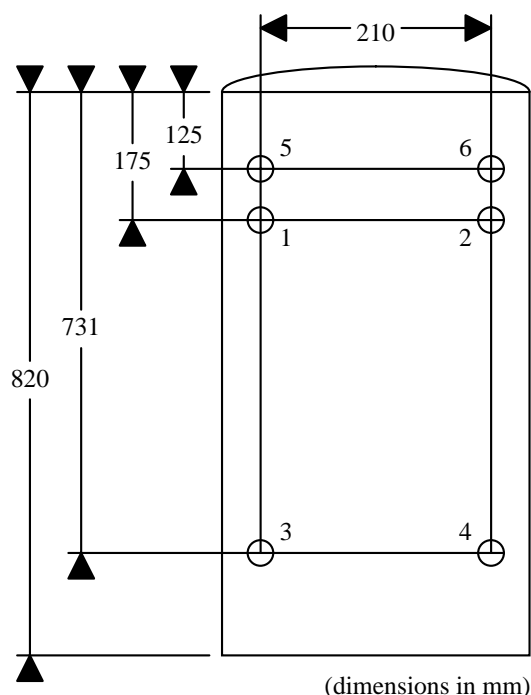
A1 Scope

This manual (Manual-A) describes the mechanical details, user functions and operations specific to the Gemini Dual Hopper Note and Coin Changer. This machines 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

Height: 830 mm
Width: 335 mm
Depth: 330 mm
Empty Weight: 40 kg
Loaded Weight: about 100kg
Capacity: 5000 10p coins per hopper
Power: 220/240V 1A AC 50Hz

Stand Height 830 mm
Stand Width 335 mm
Stand Depth 330 mm
Stand Weight 20 kg





A3 Installation

3.1 Unpacking and inspection

The Gemini is supplied boxed for transport and should be carefully removed from its packaging and inspected. A small plastic bag containing two keys, two mounting bosses (unless the Gemini is supplied with a stand) 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 Gemini 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 the supplied key into the T-Bar lock and turn the key one quarter turn **clockwise**  to release the sprung T-Bar handle.
- 2 Turn the T-Bar handle one-quarter turn **anti-clockwise**  to release the door. The handle might be quite stiff because the locking mechanism is very positive and holds the door firmly.
- 3 To close the door, push the door firmly closed and hold it as the T-Bar handle is turned one quarter turn **clockwise** to lock it.
- 4 Finally push the T-Bar home and turn the key to lock the T-Bar into position.

3.3 Installation on a wall

When choosing a location for wall mounting it is important to remember that, when full, the Gemini can weigh in excess of 100kg. Care should be taken that the wall and mounting points are robust enough to support the weight. All installations will be different and this manual can only give general guidance.

- 1) Open the Gemini and remove the top cover (slides forward), coin box (tip forward and lift out), extension bins (lift to disconnect side catches and remove) and hoppers (pull to disconnect electrical connections and lift forward) from the machine in order to expose the mounting holes at the back of the cabinet.
- 2) Mark out and drill holes 1 and 2 suitable for M10 bolts as shown in the diagram. Use rawlbolts designed for the task for solid masonry and suitable fixings for other surfaces.
- 3) Mount the supplied wall bosses into holes 1 and 2 with the smaller diameter side of the boss against the wall. Use M10 threaded bolts.
- 4) Lift the Gemini onto the wall bosses ensuring that it is located properly and fully.
- 5) Using the Gemini as a template mark out holes 3 and 4 suitable for M10 bolts. Holes 5 and 6 may be used in situations where additional support is required. Remove the Gemini in order to drill the holes out and fit rawlbolts designed for the task for solid masonry and suitable fixings for other surfaces.
- 6) Refit the Gemini and fix M10 bolts at the other mounting locations.
- 7) Ensure that the cabinet is secure and remove any brick dust or other contamination that entered the cabinet during installation. Then refit the hoppers, extension bins, coin box and top cover.


3.4 Free Standing Installation

The Gemini stand is provided with four 10mm diameter holes in its bottom end to enable it to be firmly fixed to a floor. Use a fixing bolt compatible with the floor material and ensure that underlying services and any damp proof membranes are not damaged. Large washers should be used to spread the load from the bolt heads to the stand base.

Four M10 threaded holes are provided in the base of the Gemini for fixing it to its stand. A separate hole is provided in the top of the stand for the mains cable to pass through. Carefully position the Gemini on its stand so that the mains cable passes into the stand without damage as the two are placed together. Removing the internal parts of the Gemini will lighten it and may make the process easier. Use the supplied M10 bolts and washers to fix up from the inside of the stand into the threaded holes in the Gemini. Longer bolts will penetrate too far into the Gemini and may damage the hoppers. The mains cable can be routed through a hole at the back of the stand shelf and down to one of the three holes in the sides and back of the stand, near the floor.

3.5 Electrical Connections

After installation in the UK, the Gemini should be fitted with a standard BS1363 plug fused at 3 Amps using the following wiring colours:

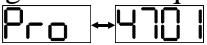
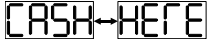
- Brown - to the terminal marked L or Live or coloured Red
- Blue - to the terminal marked N or Neutral or coloured Black
- Yellow/Green - to the terminal marked  or E or Earth or coloured Green

This equipment must be earthed

In other countries local rules should be observed.

3.6 Initial test of machine

After installation and connection of the Gemini to mains power (but before switching the power on) proceed as follows:

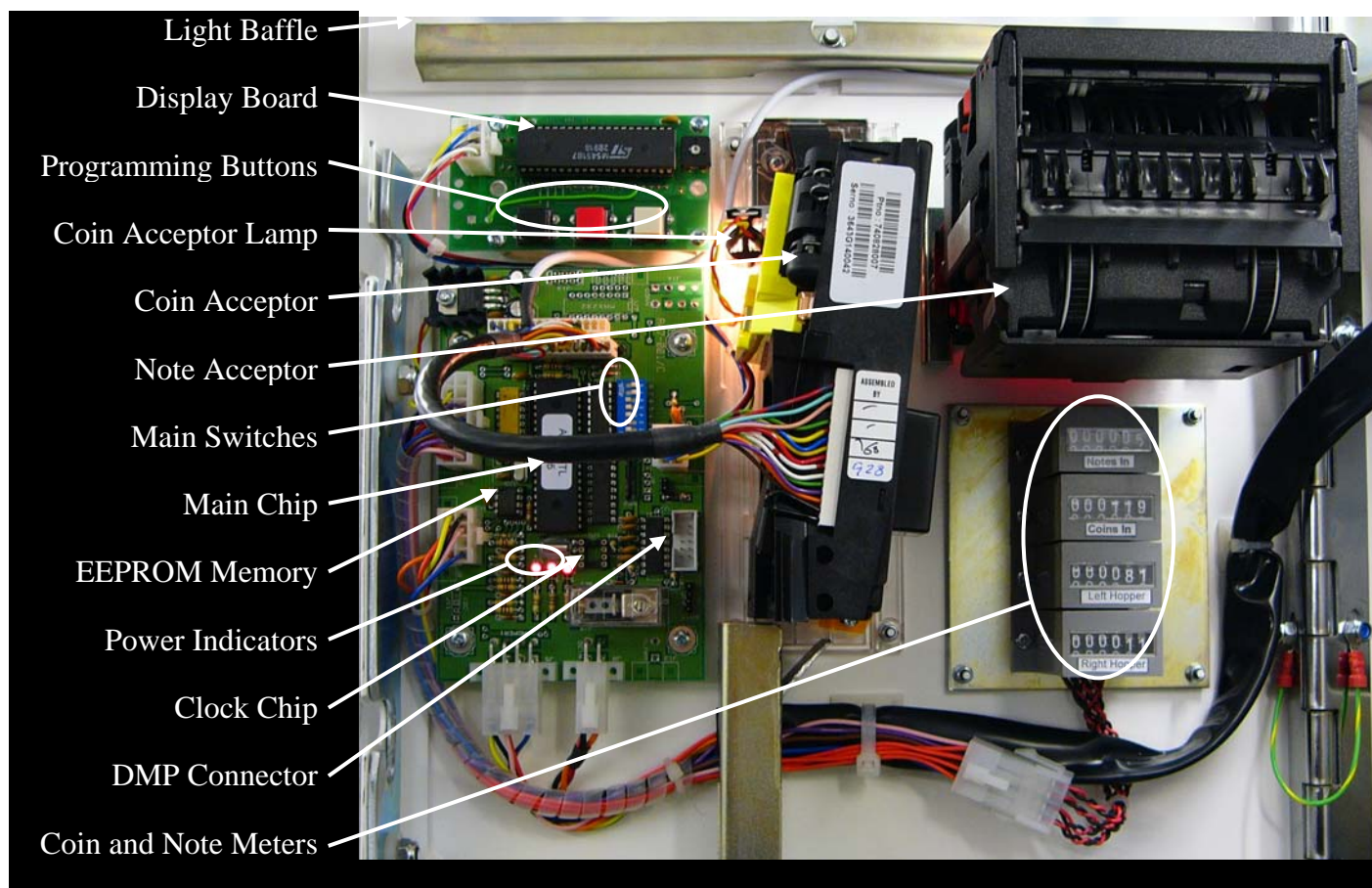
- 1) Open the door and perform a visual check of the internal parts, check the hoppers are fully home and the extension bins, coin box and top cover are in position. Ensure that no foreign bodies or packing material are present.
- 2) Switch on the mains power to the Gemini and then switch the Gemini on at its main switch, which should illuminate.
- 3) The door illumination will come on and noises should be heard from the Note Validator as it tests itself. The main display will cycle through its test sequence and after a few moments the machine will go silent. The main display will show  to indicate that the door is open. 4701 is an example software program number and may differ for different machines. The A47 control board has 3 red power indicator LEDs on it. These should illuminate.
- 4) Fill both hoppers as detailed in the relevant section of this manual and close the door.
- 6) The display will show  (or local variations) and the note path entrance (if fitted) and coin path entrance (if fitted) will illuminate. If the machine is fitted with a real-time clock and the clock display is enabled then the time in hours and minutes will appear on the display. It is now ready for use.
- 7) Confirm the payout settings, operating mode and currency selections are correct by testing the Gemini with a range of different notes and coins. Confirm that the payouts are as required.

A4 Anatomy of the Machine

The Gemini is divided internally into two regions:

1) Door Electronics Region

The inside surface of the main door is where most of the control electronics and the Coin Acceptor and Note Validator are mounted.



The Main Electronics Package on the inside of the upper part of the door.

2) Hoppers and Dispensers

The two hoppers are mounted onto the base of the inside of the cabinet. The left hopper is referred to as hopper 1 in programming and engineering modes and the right hopper is hopper 2. On top of the hoppers are fitted a pair of coin bins which hook into catches on the left and right sides of the cabinet. Between the hoppers is the cash box where incoming coins are collected. A horizontal plate covers the hopper extension bins and prevents foreign objects from falling into the bins. The left side of the cover plate has the cash box where incoming notes are collected integrated into it. This cash box extends into the left hand hopper.

A5 Normal Operations

The Gemini 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 Gemini 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 Note Validator may need to be reprogrammed separately in order for it to accept other currencies;
- 2) Test the Coin Acceptor and Note Validator;
- 3) Change the way coin and notes are accepted and routed within the machine;
- 4) Test and configure the Hoppers;
- 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 Gemini 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 Hoppers

The hoppers used in the Gemini use 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 Gemini detects the current that flows. As coins are paid out from the hoppers 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” in the Manual B that accompanies this manual for details. This coin sensing technique means that:

1. In order for the Gemini to detect coins in the hopper they must be made from a conductive material. If non-conductive tokens are to be dispensed, the Gemini hopper low detectors must be disabled, please contact the factory for advice about using non-conductive tokens with the Gemini.
2. In order for the Gemini to detect coins in the hopper there must be sufficient to cover the plates. 40 to 50 coins are usually the minimum.

To refill a hopper proceed as follows after the door has been opened as fully as possible:

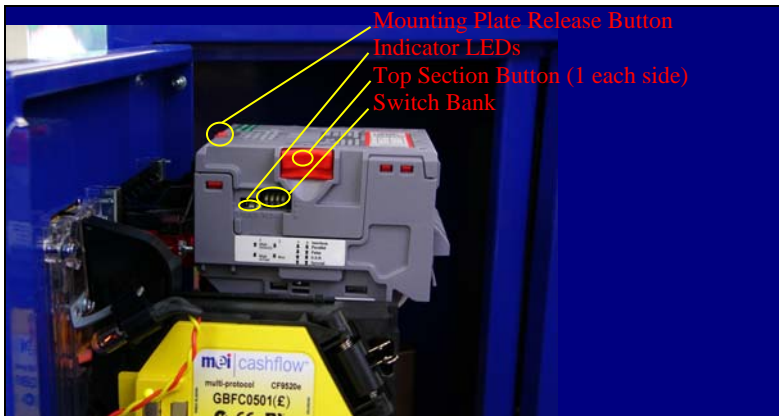
- 1) If the Gemini has stopped during a payout and indicated a hopper-timeout (error codes 13, or 23) or hopper-low (error codes 12, or 22) error **DO NOT TURN THE POWER OFF**. If the Gemini has indicated a hopper-low error at switch on, or some other time when no payout is in progress, or if the hoppers are being topped up without being empty first then it is recommended that the power be switched off at the main switch inside the Gemini before filling.
- 2) Remove the note cash box and the extension bin lid.
- 3) Be certain that the correct coins are being used to fill the hopper. The Gemini will pay out correctly only if the hoppers contain the correct coins. Fill the correct 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. It may be best to scoop coins into the hopper either by hand, or with a tool. Alternatively chutes and slides may be easily made from heavy duty card or other materials to ease hopper filling. If the hopper is being filled from bagged coins it is vital that no bags fall into the hopper. The Gemini cannot protect itself against objects placed inside the hopper that will jam the mechanism.
- 4) Fill extension bins to a maximum height of ½ inch (10 mm) below the top rim.
- 5) Replace the extension bin lid and the note cash box.
- 6) Record the coin counts shown on each of the meters built into the front of the hopper control box for auditing purposes.
- 7) If necessary switch the Gemini back on.
- 8) The A47-026D logic board used in the Gemini 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.
- 9) When the door is closed any partial payout will be completed and the Gemini is ready for use.

A7 Note Acceptor Maintenance

The Gemini Note and Coin Changer may be fitted with either Innovative Technology NV8 or NV10 note acceptors, or Astro-Systems GBA note acceptors.

7.1 Servicing Innovative Technology NV8 / NV10 note acceptors

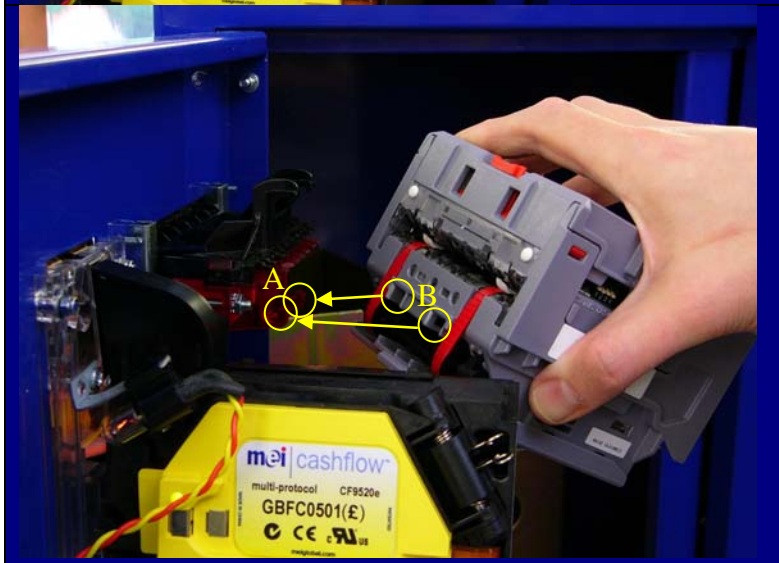
The pictures below show a NV10 note acceptor mounted in a machine that may not exactly match with the look of the Gemini. The pictures should be treated as a general guide.



This picture shows a NV10 note acceptor in position on a machine. Before removing the acceptor, switch the mains power off at the machine's main switch and unplug the note acceptor's connecting cable (not shown in this picture.)


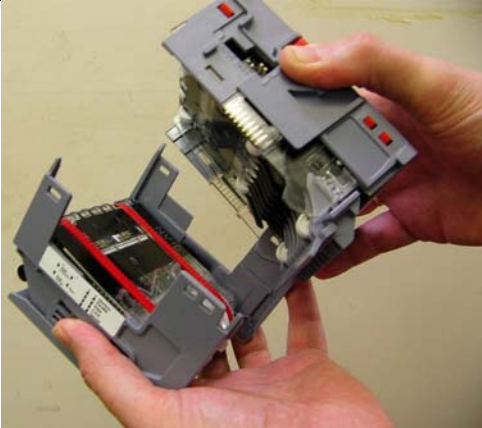


To remove the acceptor press the "Mounting Plate Release Button" towards and then down, as shown by the arrow 1. Then hinge the validator down as shown by arrow 2. Finally pull the validator gently off its mounting point in the direction shown by arrow 3.



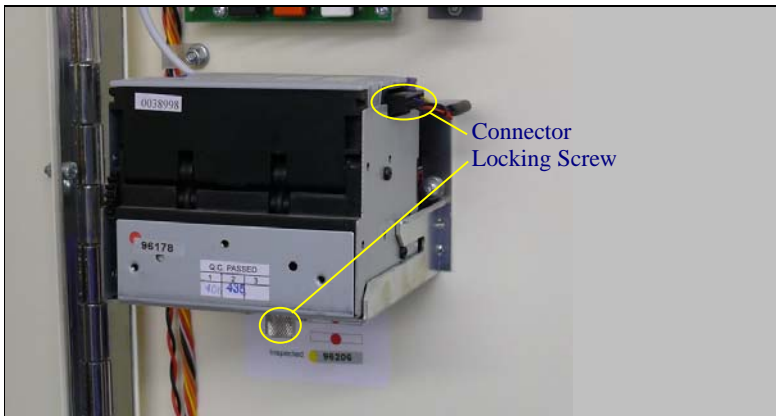
To refit the NV10 acceptor first locate the two red plastic hooks in the mounting plate (A) within the two holes in the front of the acceptor (B). Using these as a hinge, swing the acceptor to the horizontal until the "Mounting Plate Release Button" clicks into place. Finally reconnect the note acceptor's connecting cable.

It will sometimes be necessary to clean the note path within the NV8 or NV10 note acceptor. Access to the note path is easily gained after the acceptor has been removed from the machine. Liquids should not be used when cleaning the note path. A dry cloth or blower brush can be used to remove dust and deposits. If the note path parts are damaged or scratched then the acceptor should be returned for service.

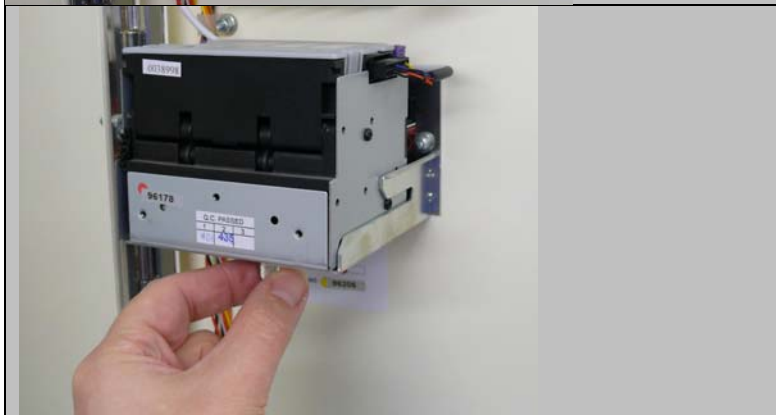
	<p>Hold the lower part of the acceptor in one hand and the upper part of the acceptor with the other hand, by its two release buttons. Press the buttons down and in.</p>
	<p>Separate the two halves of the acceptor to expose the red drive belts (in the lower half), the drive wheels (in the upper half) and the note path itself. Assembly is the reverse of disassembly. Be careful that no dust or foreign objects interfere with the two sets of electrical connection pins (eight pins each side) when reassembling the two halves.</p>

7.2 Servicing Astro-Systems GBA note acceptors

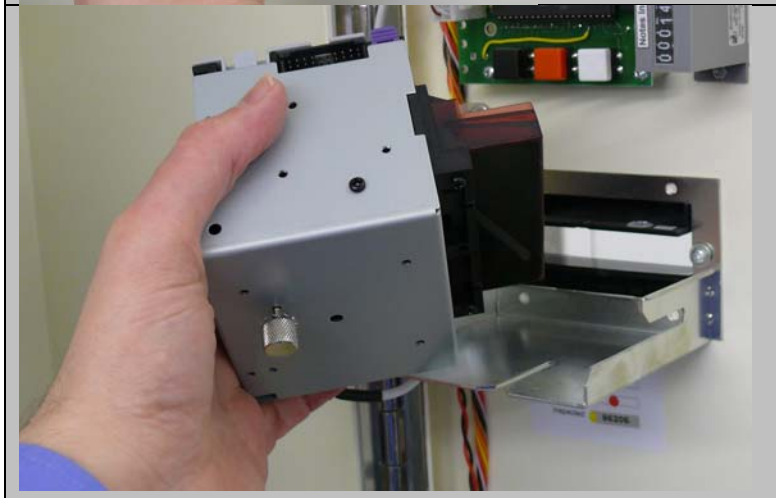
The pictures below show a GBA note acceptor mounted in a machine that may not exactly match with the look of the Gemini. The pictures should be treated as a general guide.



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



To remove the acceptor turn the Locking Screw a couple of turns anti-clockwise to release it. Do not attempt to completely unscrew the Locking Screw.

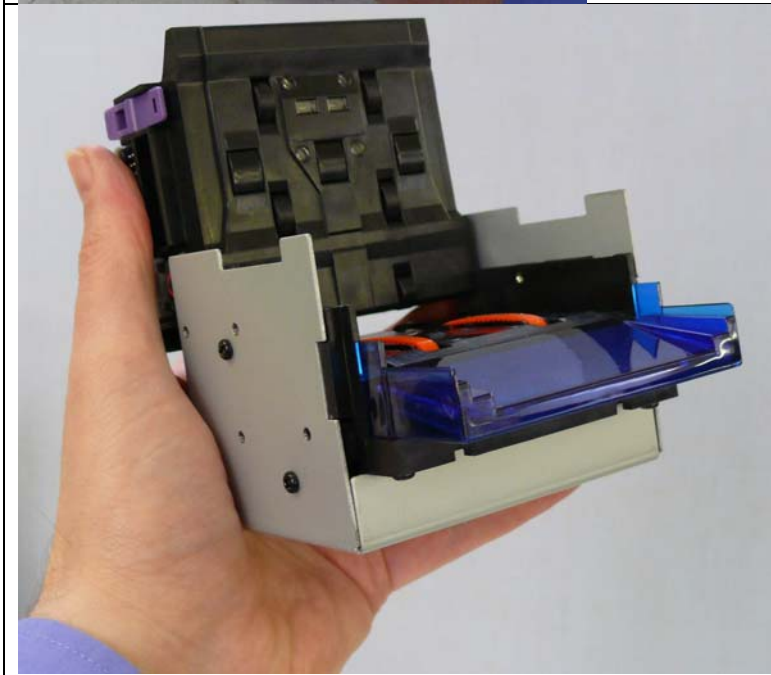


The GBA validator slides off its mounting plate.

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



Locate the two purple coloured release buttons and press them together as indicated in the picture.



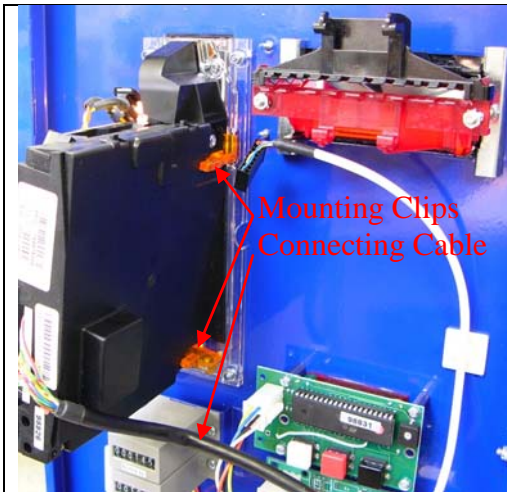
The GBA hinges open along its back edge to reveal the note path.

A8 Coin Acceptor Maintenance

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

8.1 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 Gemini. The pictures should be treated as a general guide. In some models with note acceptors it may be easier if the note acceptor is removed in order to gain better access to the clips that lock the coin acceptor into place. See Section A7 of this manual for details on note acceptor removal.



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.