Thrifty

SINGLE HOPPER NOTE CHANGER

Operators Manual
(Manual - A)

Thomas & Anca Club Supplies Ltd Units 18-21 Victory Park, Trident Close
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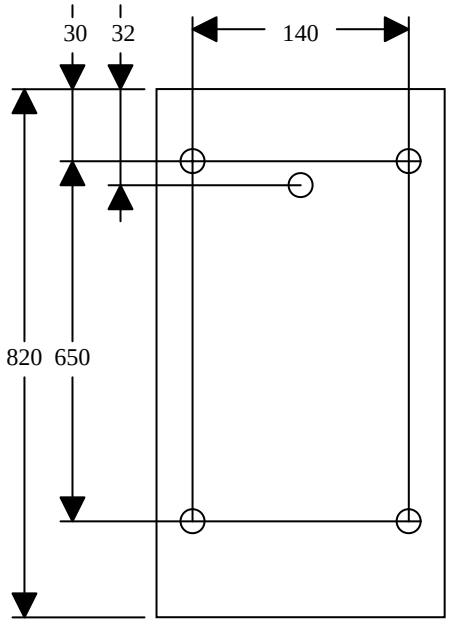
Contents

A1 Scope

This manual (Manual-A) describes the mechanical details, user functions and operations specific to the Thrifty Single Hopper Note 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:	820 mm
Width:	200 mm
Depth:	310 mm
Empty Weight:	27 kg
Loaded Weight:	about 50kg
Capacity:	3000 10p coins
Power:	220/240V 1A AC 50Hz



(dimensions in mm)

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A3 Installation

3.1 Unpacking and inspection

The Thrifty is supplied boxed for transport and should be carefully removed from its packaging and inspected. A small plastic bag containing two keys, a mounting boss, 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 Thrifty 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 The door releases from the top edge so allow the door to swing down. The door is hinged along its bottom edge. Two side supports prevent the door from being lowered further than the horizontal.

WARNING:

After unlocking the door it is free to fall. The door weighs in excess of 7 kg and care should be taken when lowering it. If it is allowed to drop freely the cabinet and hinge may be damaged.

4 To close the door, lift it back to the vertical position and hold it as the T-Bar handle is turned one quarter turn **clockwise** to lock it.

5 Finally push the T-Bar home and turn the key to lock the T-Bar into position.

3.3 Installation

The Thrifty 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 Thrifty can weigh in excess of 50 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 one hole in a secure wall 32 mm below the required top surface of the cabinet. Use this hole to firmly attach the supplied mounting boss to the wall. The smaller diameter side of the boss should be against the wall. 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 note collection bin, hopper extension bin and the hopper in order to expose the various mounting holes in the cabinet.

3 Lift the Thrifty onto the boss and then use the cabinet as a template to mark the four supporting points.

4 The mains lead is fixed to the Thrifty 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.

3.4 Electrical Connections

After installation in the UK. the Thrifty 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.

3.5 Initial test of machine

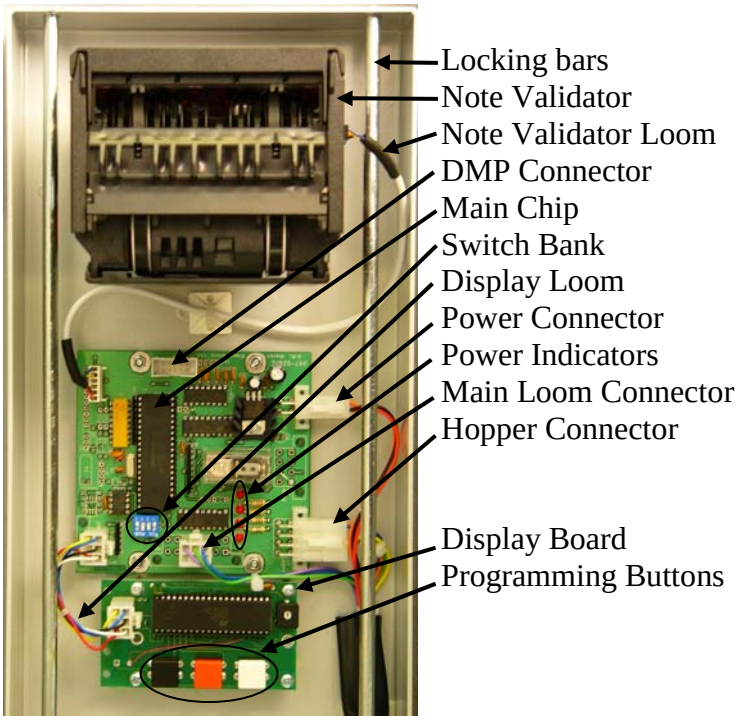
After installation and connection of the Thrifty to mains power (but before switching the power on) proceed as follows:

1) Open the door and perform a visual check of the internal parts, check the hopper is fully home and the extension bins are in position. Ensure that no foreign bodies or packing material are present.
2) Switch on the mains power to the Thrifty and then switch the Thrifty on at its main switch, which should illuminate.
3) 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 Pro ↔4701 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 three red power indicator LEDs marked "24V", "12V" and "05V" on it. These should illuminate.
4) Fill the hopper as detailed in the relevant section of this manual and close the door.
6) The display will show CASH↔HERE (or local variations) and the note path entrance 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 Thrifty with a range of different notes and coins. Confirm that the payouts are as required.

A4 Anatomy of the Machine

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

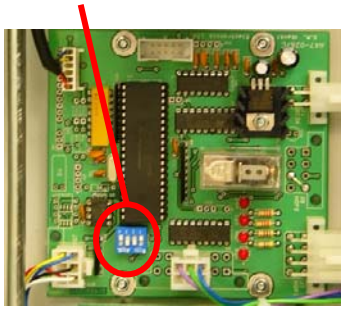
1) Door Electronics Region



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

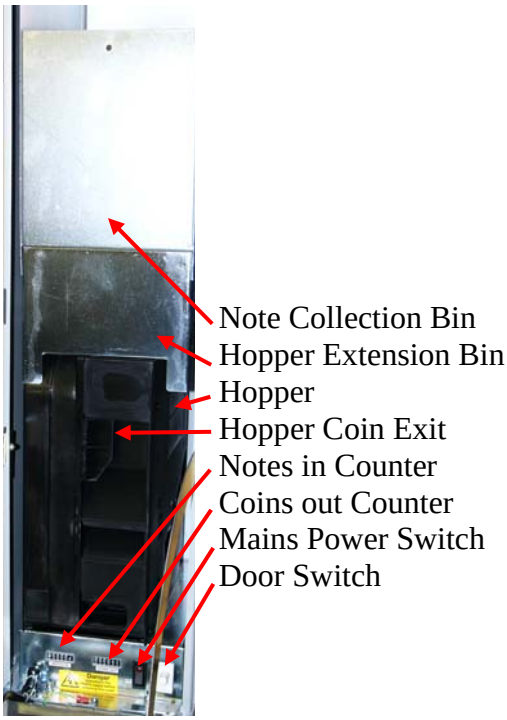
Switch bank

Pole		Function
1		Unused
2	ON	Validator Enable, must be ON
3	OFF	Hopper Low Detected
	ON	Hopper Low ignored
4		Unused



2) Hopper Base

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 and to the right of the hopper are the black illuminated mains switch and the white door switch. Below and to the left of the hopper are the notes in counter and the coins out counter. The notes in counter usually counts in units of the base currency, for example a £5 note counts 5 or a €20 note counts 20. The coins out counter counts individual coins.



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A5 Normal Operations

The Thrifty 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 Thrifty 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 Note Validator;
3) Change the way notes 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 Thrifty is fully programmable on site and gives the operator considerable flexibility in setting how many coins 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 Thrifty uses a pair of shorting plates to detect the presence of coins. When sufficient metal coins are placed in the hoppers the coins connect the two plates together electrically and the Thrifty 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" in the Manual B that accompanies this manual for details. This coin sensing technique means that:

1. In order for the Thrifty to detect coins in the hopper they must be made from a conductive material. If non-conductive tokens are to be dispensed, the Thrifty hopper low detectors must be disabled, please contact the factory for advice about using non-conductive tokens with the Thrifty.
2. In order for the Thrifty to detect coins in the hopper there must be sufficient to cover the plates. 70 to 100 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 Thrifty 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 Thrifty 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 Thrifty before filling.

3 Remove the note bin.

4 Be certain that the correct coins are being used to fill the hopper. The Thrifty 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 Thrifty 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 Thrifty back on.

7 The A47-026D logic board used in the Thrifty 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.

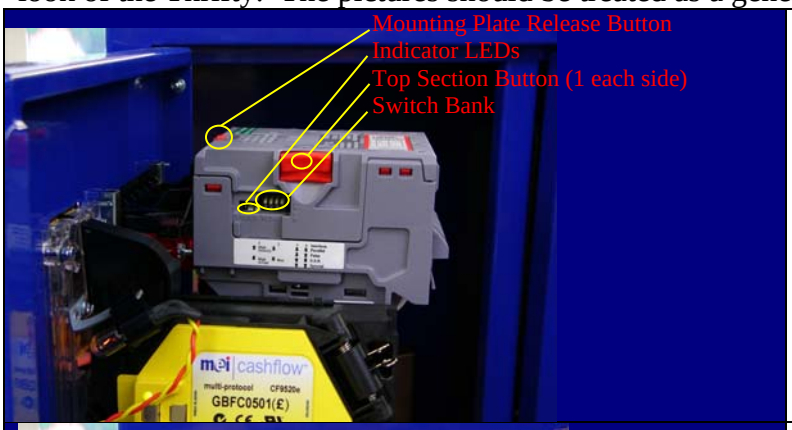
8 When the door is closed any partial payout will be completed and the Thrifty is ready for use.

A7 Note Acceptor Maintenance

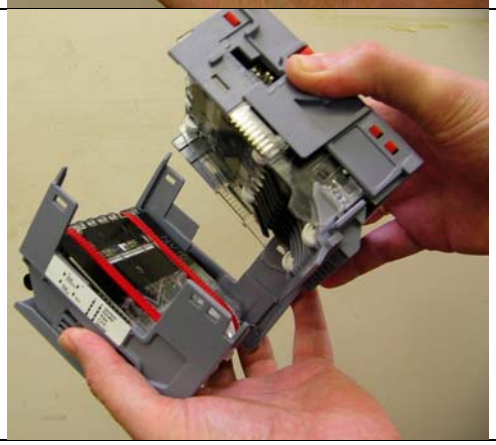
The Thrifty may be fitted with either Innovative Technology NV8 or NV10 note acceptors, or Astro-Systems GBA note acceptors.

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 Thrifty. The pictures should be treated as a general guide.

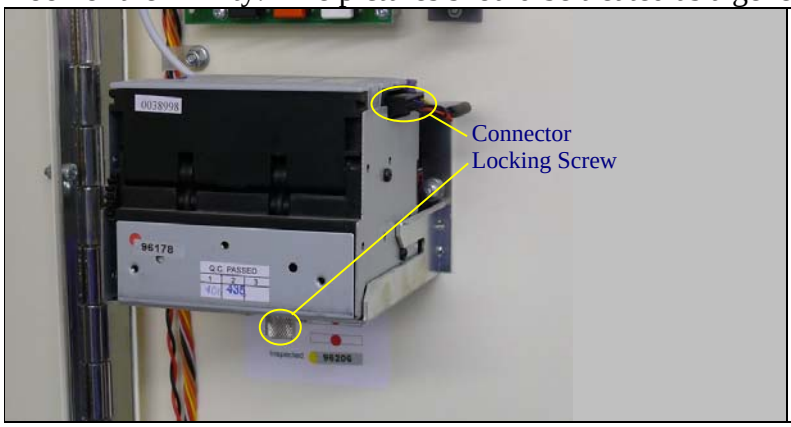
<table>
<tr>
<td> 
</td>
<td>This picture shows a NV10 note acceptor in position on a machine. Before removing the acceptor, switch the mains power off at the machine's main switch and unplug the note acceptor's connecting cable (not shown in this picture.)</td>
</tr>
<tr>
<td> 
</td>
<td>To remove the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

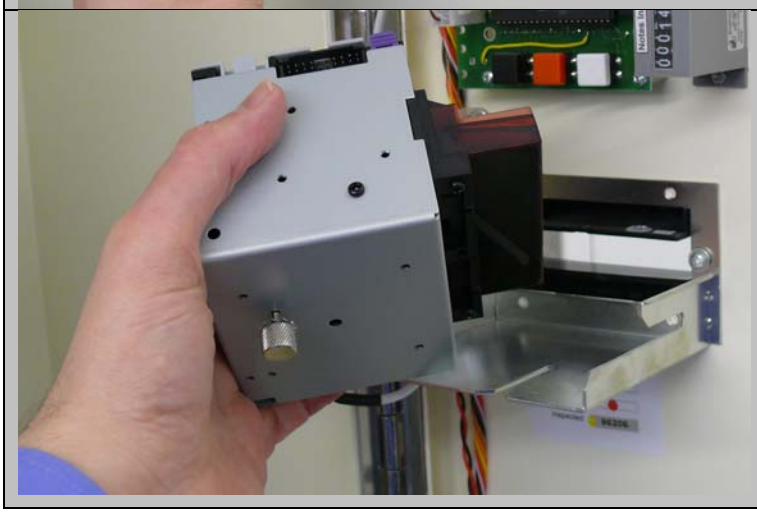
It will sometimes be necessary to clean the note path within the NV8 or NV10 note acceptor. Access to the note path is easily gained after the acceptor has been removed from the machine. Liquids should not be used when cleaning the note path. A dry cloth or blower brush can be used to remove dust and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

	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.
	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.

7.2 Servicing Astro-Systems GBA note acceptors

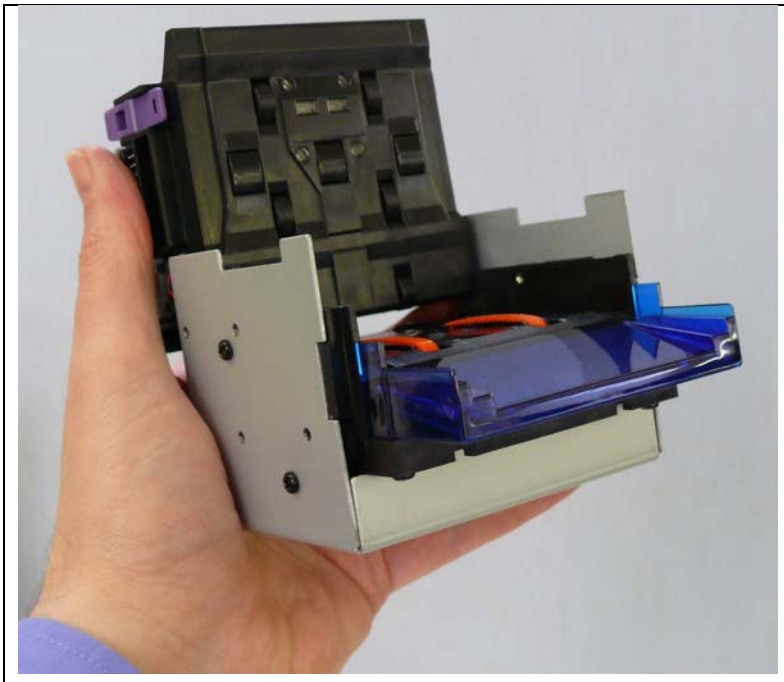
The pictures below show a GBA note acceptor mounted in a machine that may not exactly match with the look of the Thrifty. The pictures should be treated as a general guide.

	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.

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