

Banknote Counter

INSTRUCTION MANUAL

2009 Edition (V1.2)

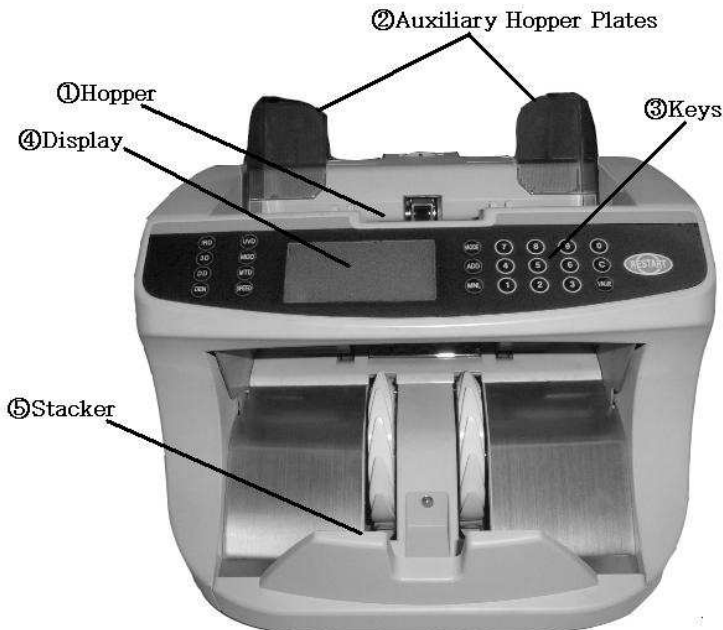
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1. OVERALL DESCRIPTIONS

1-1. Names and Functions of Parts

■ Front View



① **Hopper**

The counted notes are placed in it.

② **Auxiliary Hopper Plates**

Used for leading the notes to the feeding mechanism.

③ **Keys**

Refer to page 5 for description of each key.

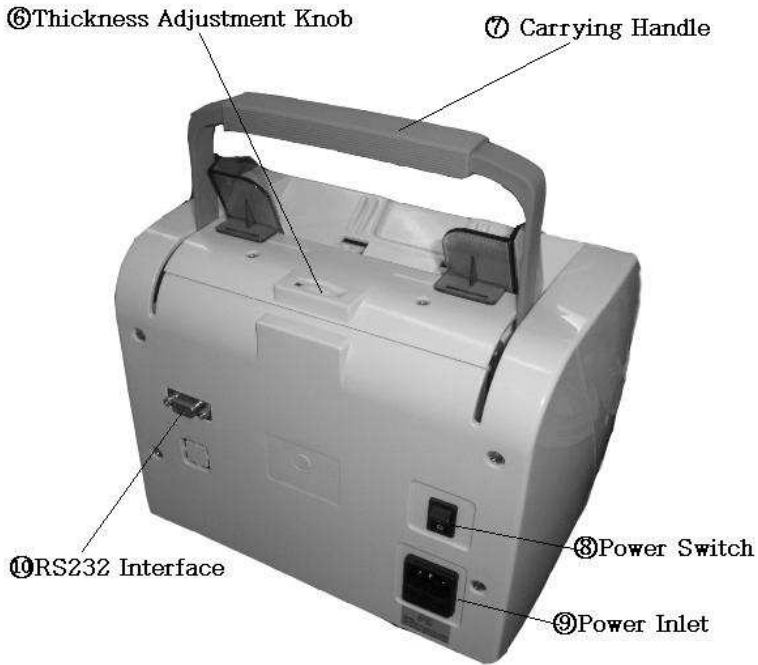
④ **Display**

The Display shows all the messages.

⑤ **Stacker**

Counted notes are stacked onto the Stacker.

■ Rear View



- ⑥ **Thickness Adjustment Knob**
Used to adjust the Feed Gap to make the counting smooth. To widen the Feed Gap by turning the Knob towards “+” sign, and to narrow the Feed Gap towards “-” sign.
- ⑦ **Carrying Handle**
Used for carrying the machine.
- ⑧ **Power Switch**
Used to turn on or off the machine.
- ⑨ **Power Inlet**
Used to connect the Power Cable.
- ⑩ **RS232 Interface**
Used to connect the machine to a computer.

1-2. Names and Functions of Keys

ADD

By this key, each counted result will be added to the previous one.

MNL

Auto start and Manual start can be selected by this key.

C

This key can clear counted result, batch number or exit denomination setting in that order.

SPEED

An appropriate speed can be chosen by this key, changeable in three levels (Slow, Normal, Fast).

BATCH

Used to switch the batch number between 10, 25, 50, and 100.

DEN

By this key the reference level for two sheets detection can be changed according to the density of the notes to be counted.

UVD

By this key the machine is set to detect counterfeit notes by the detection of fluorescence. (option)

MGD

By this key the machine is set to detect counterfeit notes without magnetism. (option)

\$

Used to select the denomination of notes to be counted.

VALUE

Used to check the total value after counting notes of the selected denomination.

RESTART

Used to initiate a counting operation, or clear an error message.

0



9

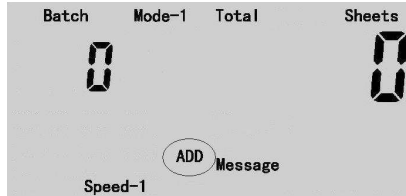
To set the batch number with 0-9 keys.

2. FUNCTIONS

■ ADD Function

ADD

Press **ADD** key to turn on or off this function. **ADD** will be shown on display when it's on.



Every time the machine has completed counting, the Display will show accumulated count. Press **C** key to clear the accumulated count.

■ Auto and Manual Start Functions

MNL

Auto Start and Manual Start can be chosen by pressing MNL key.

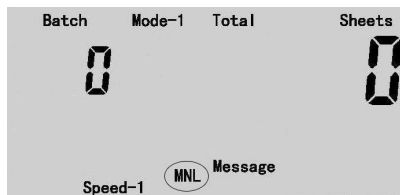
● Auto Start

Counting starts automatically after loading notes onto the Hopper.

● Manual Start

Start counting by pressing **RESTART** key.

When "MNL" is shown on the display, the **Manual Start** function is activated. When **MNL** is not shown on the display, the **Auto Start** function is selected.

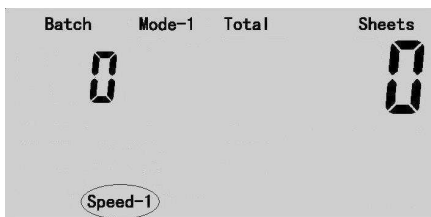


■ Counting Speed Function

SPEED

An appropriate speed can be chosen by pressing this key, changeable in three levels (Slow, Normal, Fast):

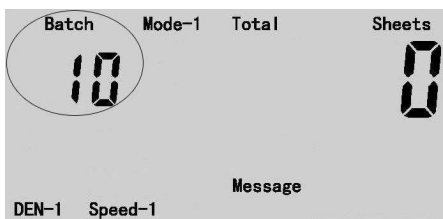
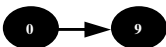
| | |
|---------------------------|--------------------------|
| Speed-1 | 900 notes/min. (Slow) |
| Speed-11 (Default) | 1200 notes/min. (Normal) |
| Speed -111 | 1600 notes/min. (Fast) |



■ BATCH Function

BATCH

Machine will count notes by batch if batch function is activated. After counting every batch of notes, the machine will stop. Then continue the counting by taking away the notes from the Stacker, or by pressing RESTART key.



● The BATCH key is used to set 4 pre-programmed batch numbers. The batch number will switch among 10, 25, 50, 100 everytime BATCH key is pressed. To clear the batching, press BATCH key for 3 seconds.

| | |
|--------------|--------------|
| “BATCH” key: | 10→25→50→100 |
|--------------|--------------|

● The 0-9 keys are used to set any batch number from 0 to 999.

■ Double Feeding Detection Function

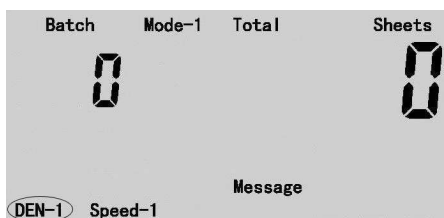
DEN

Machine detects Double Feeding by **DEN** function. The detection level can be selected by **DEN** key depending on the density of the notes.

Four different levels can be chosen by pressing **DEN** key in the following sequence:

DEN-1 → DEN-11 → DEN-111 → DEN-1111

| | |
|-------------------|---|
| DEN-1 | Level 1: To count dark-colored (thick) notes. |
| DEN-11 | Level 2: To count high density notes. |
| DEN-111 | Level 3: To count median density notes. |
| DEN-1111 | Level 4: To count light-colored (thin) notes. |
| OFF(Blank) | When counting very dark-colored notes or very thick notes, this function should be turned off. But machine can not detect Double Feeding. |



■ UV Detection Function (option)

UVD

UVD function is to detect the fluorescence on notes. A counterfeit note that generates fluorescence under the ultraviolet rays can be detected when this function is set ON. The machine will stop, showing message “**CF1**”. The suspected note is the last one in the stacker. Take the suspected one away and press **RESTART** key to continue the counting. The suspected one isn’t included in the counted result. Four sensitivity levels can be selected by pressing **UVD** key.

UVD-1 → UVD-11 → UVD-111 → UVD-1111

| | |
|-------------------|--|
| UVD-1 | Level 1: To count notes of the lowest UV sensitivity level. |
| UVD-11 | Level 2: To count notes of middle UV sensitivity level. |
| UVD-111 | Level 3: To count notes of high UV sensitivity level. |
| UVD-1111 | Level 4: To count notes of the highest UV sensitivity level. |
| OFF(Blank) | Function inactive. |

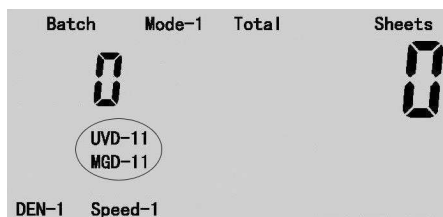
■ MG Detection Function (option)

MGD

This function is to detect the magnetism on notes. Through this function, the machine can detect counterfeit notes without magnetism. When a counterfeit note is detected, the machine will stop and show the error message “CF2”. The suspected note is the last one in the stacker. Take the suspected one away and press **RESTART** key to continue the counting. The suspected one isn’t included in the counted result. Four sensitivity levels can be selected by pressing **MGD** key.

MGD-1 → MGD-11 → MGD-111 → MGD-1111 → (Blank)

| | |
|-------------------|--|
| MGD-1 | Level 1: To count notes of the lowest magnetic sensitivity level. |
| MGD-11 | Level 2: To count notes of middle magnetic sensitivity level. |
| MGD-111 | Level 3: To count notes of high magnetic sensitivity level. |
| MGD-1111 | Level 4: To count notes of the highest magnetic sensitivity level. |
| OFF(Blank) | The function should be turned off when counting notes without magnetism. |



■ Value Calculation Function

\$

VALUE

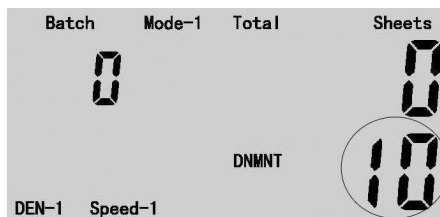
This function is to select the denomination of notes to be counted and check total value after counting notes of the selected denomination.

| | |
|-----------|-------------------------------------|
| “\$” key: | DNMNT 1→2→5→10→20→50→100→blank(off) |
|-----------|-------------------------------------|

Step 1: Switch to the denomination of notes you are going to count by pressing “\$” key.

Step 2: Count notes of the selected denomination.

Step 3: Press “VALUE” key to check the total value when counting stops.



3. BASIC OPERATION

Step 1. Turn on the Power Switch.



ON



OFF

Step 2. Set batch number by pressing 0-9 keys if necessary.

Step 3. Set Counting Speed, Auto or Manual Start function, DEN, UVD, MGD functions if necessary.

Step 4. Load the notes onto the Hopper and set the right position to the Auxiliary Plates. Then press **RESTART** key to start counting if necessary.

4. DEFAULT SETTINGS IN FACTORY

- Turn the Power Switch on, the machine will be in the previous setting.
- Turn on the Power Switch while pressing the **RESTART** key for 2 seconds, and the machine will be in the default settings.

The default settings in factory are as follow:

| Function | Settings | Descriptions |
|----------|-----------------|---|
| DEN | DEN-1 | Level 1: To count dark-colored (thick) notes. |
| UVD | UVD-11 | Level 2: To count notes of middle UV sensitivity. |
| MGD | MGD-11 | Level 2: To count notes of middle magnetic sensitivity. |
| ADD | OFF | ADD function is off. |
| SPEED | Speed-11 | 1200 notes/min. |
| MNL | OFF | Auto Start is on. |
| Batch | 100 | 100 sheets |

5. SPECIFICATIONS

| | |
|-----------------------------|--|
| Ambient Temperature | 0 ~ 40°C |
| Ambient Humidity | 20 ~ 80% |
| Feeding System | Roller Friction System |
| Hopper Capacity | 400 notes |
| Stacker Capacity | 200 notes |
| Size of Countable Note | 50×90 ~ 110×185(mm) |
| Thickness of Countable Note | 0.05 ~ 0.2(mm) |
| Batch Number Displayed | Three Digits (LCD) |
| Counting Number Displayed | Seven Digits (LCD) |
| Message Displayed | Three Digits (LCD) |
| Power Source | AC110 ~ 220V, 50 ~ 60Hz |
| Power Consumption | ≤55W |
| Dimensions | 272mm×235mm×239mm |
| Weight | 5.5Kg |
| Counting Speed | Speed-1 900 notes/min. Speed-11 1200 notes/min. Speed-111 1600 notes/min. |

6. ADJUSTMENT OF THE FEED GAP

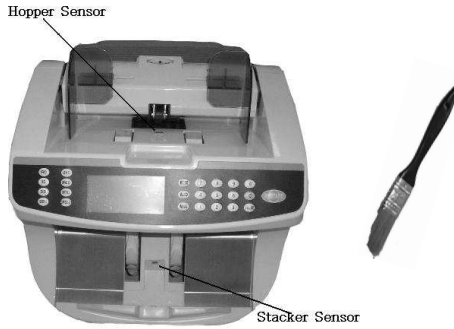
- The correct Feed Gap is vitally important to the smooth functioning of the machine. After a long-term usage, the rubber components of both the Feed Roller and the Friction Roller may be subject to natural wear. Under this condition, the Feed Gap may become too wide and, as a result, Error Codes will be generated and note feeding will become erratic.
- To check and adjust the Feed Gap to counteract this simple wear condition, follow the 3 steps below, in conjunction with the photograph:
 1. Manually insert a genuine banknote into the Feed Gap and move it back and forth. If you don't feel any resistance, it indicates the gap is too wide; if the resistance is very strong, it indicates the gap is too narrow.
 2. If the Feed Gap is found to be too wide, adjust the Thickness Knob counter-clockwise to reduce the Feed Gap until the proper slipping-resistance is achieved with your banknote.
 3. If the Feed Gap is found to be too narrow, adjust the Thickness Knob clockwise to increase the Feed Gap until the proper slipping-resistance is achieved with your banknote.



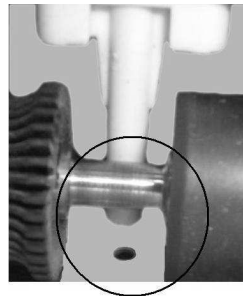
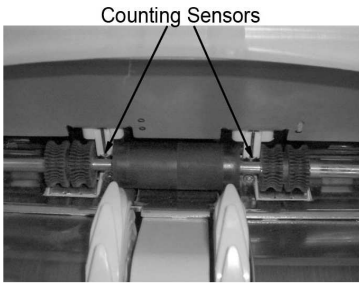
7. DAILY CARE

Clean the following Sensors with a brush periodically

- Hopper Sensor and Stacker Sensor



- Counting Sensors



8. ERRORS AND REMEDIAL MEASURES

When an error occurs during counting, the LCD Display will flash the error code. Clear the error in accordance with the following procedures.

| Error Code | Cause of Error | Remedial Measures |
|------------|--|---|
| EA | Hopper Sensor is covered. | Remove what is covering the Hopper Sensor. |
| E1 | 1, One or both of Counting Sensors are damaged if E1 appears when power on. 2, Counting Sensors are dirty. 3, Notes are jammed in the roller. | 1, Replace the damaged Counting Sensor. 2, Clean the Counting Sensors. (Refer to Chapter 7) 3, Take away jammed note(s) with hand. When there is a difficulty in taking away the jammed notes, turn Drum Rollers by hand. |
| E2 | 1, Notes on Stacker when power on. 2, Stacker Sensor is dirty. 3, Stacker Sensor is damaged. | 1, Remove the notes placed on the Stacker. 2, Clean the Stacker Sensor with the brush. (Refer to Chapter 7) 3, Replace the damaged Stacker Sensor. |
| E3 | 1, Hopper Sensor is covered when power on. 2, Hopper Sensor is dirty. 3, Hopper Sensor is damaged. | 1, Remove what is covering the Hopper Sensor. 2, Clean the Hopper Sensor with the brush. (Refer to Chapter 7) 3, Replace the damaged Hopper Sensor. |
| EH | 1, Half-sized note is fed. 2, A small note passes from the left or right side. 3, One of Counting Sensors is damaged. | 1, Take away the half-sized note. 2, Let the note pass in the middle. 3, Replace the damaged Counting Sensor. |
| Ec | More than two notes are fed in chain. | If this error happens very often, the Feed Gap might be too wide. Adjust the size of the gap. (Refer to Chapter 6) |
| Ed | Two notes are fed at a time or a dirty note is fed. | If this error happens very often, adjust the DEN Function. (Refer to Chapter 6 of the Service Manual) |
| CF1 | Suspected counterfeit note is detected by UV detection. | 1, Take away the last note from the Stacker and make sure that it is the same note as the others. 2, Press RESTART key. 3, Recount the last note taken away from the Stacker. |
| CF2 | Suspected counterfeit note is detected by MG detection. | 1, Take away the last note from the Stacker and make sure that it is the same note as the others. 2, Press RESTART key. 3, Recount the last note taken away from the Stacker. |

9. ACCESSORIES & OPTIONS

9-1 Accessories

1. Power Cable.....1
2. Instruction Manual.....1
3. Brush.....1

9-2 Options

1. External Display

An option of the External Display is available, which will show the counting results synchronizingly when connected to the RS232 interface of the banknote counter.

2. NCC Driver and RS232 Serial Cable for connecting the banknote counter to a computer

- 1) Connect one end of the serial cable to the serial port of your computer, and the other end to the RS232 port of the banknote counter.
- 2) Install the NOTE COUNTER CONTROLLER (NCC) Driver in the computer.
- 3) Run the NCC.EXE, and the computer will be connected to the banknote counter.