

CR2

www.carnation-inc.com

Warning: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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## Preface

- Accurate, reliable currency counter with automatic double, short, half and chain banknote detection.
- High accuracy, detects banknote's magnetic ink, width, paper quality etc.
- Advanced algorithm for improved reliability and counterfeit banknote detection.
- Variable batch selection (1-9999 notes) by step through and incremental adjustment auto-stop when selected preset bill count is reached.
- USD, CANADIAN DOLLAR, EURO, MEXICAN PESO, Most Other Currencies.
- Easy to operate.
- Adjustable feeder for banknotes of various sizes.
- Cash counter's self-diagnostic function helps easy maintenance and trouble-shooting.
- Infra-red, UV, magnetic, and bill size detection functions.
- Modern ergonomic design, compact shape.

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- Counting speed: 800/1200/1500 notes/min,selectable.

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## Unpacking

The package includes the following:



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Power Cable



USB cable (optional)

User's Manual



External LED display (optional)

Cleaning Brush

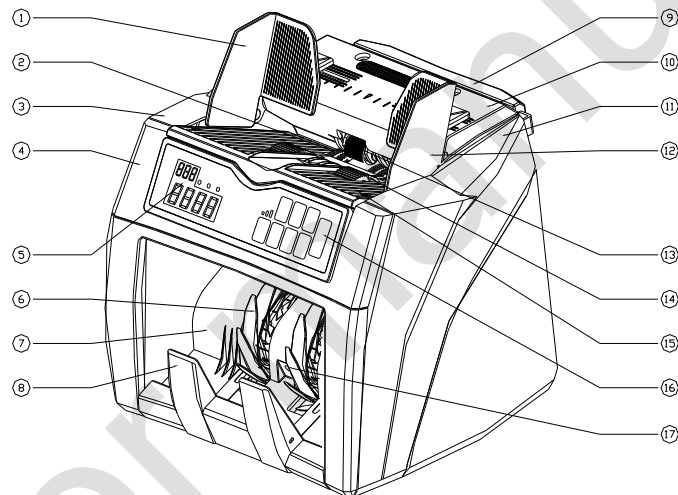


Fuse

RS-232 cable

## Parts

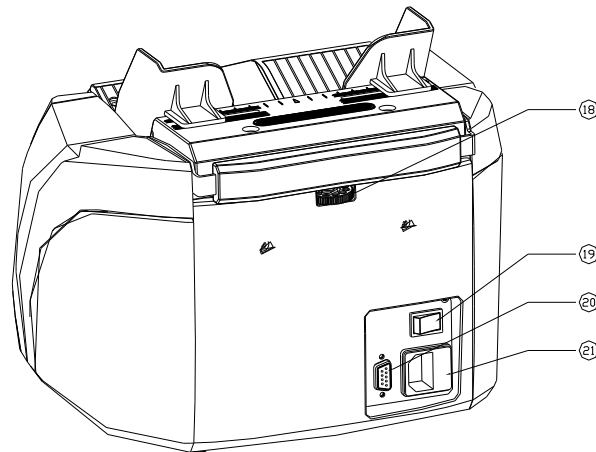
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- |                                 |                         |                                |
|---------------------------------|-------------------------|--------------------------------|
| (1) Left hopper guide           | (7) Stacker panel       | (13) Banknote feeding sensor   |
| (2) Banknote transporting wheel | (8) Stacker             | (14) Banknote feeding wheel    |
| (3) Left cover                  | (9) Handle              | (15) Hopper                    |
| (4) Control panel cover         | (10) Top cover          | (16) Control panel             |
| (5) LED screen                  | (11) Right cover        | (17) Banknote receiving sensor |
| (6) Banknote stacker wheel      | (12) Right hopper guide |                                |

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## Back view



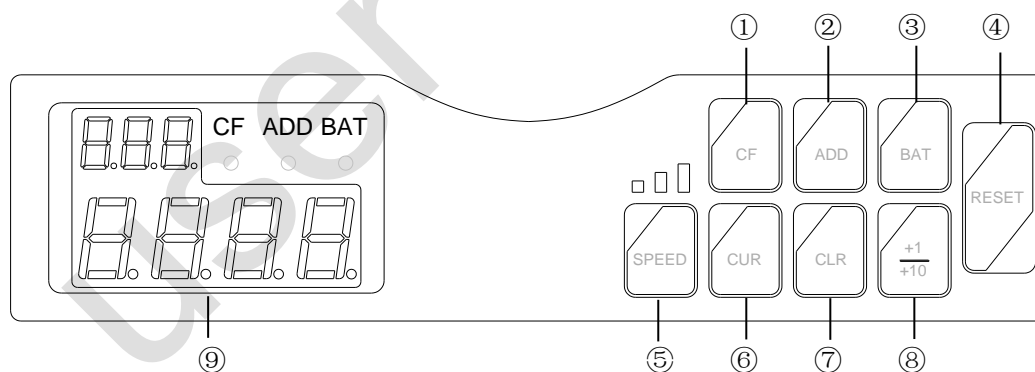
(18) Adjusting Screw

(21) Power Cable Socket

(19) Power Switch

(20) Multi-purpose Interface

## Control Panel



① CF: Switch working state

② ADD: Add function (Accumulative counting)

③ BAT: Batch function

④ RESET: Start counting

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- ⑤ SPEED: Set counting speed. (L= Low, M=Medium and H=High)
- ⑥ CUR: Select currency
- ⑦ CLR: Clear count memory
- ⑧ +1/+10: Set batch number
- ⑨ LED: Displays total number of the counted banknotes or the error code

## Operating instructions

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For US dollar, please align the hopper guides with the "\$" symbol position on the top cover.

### Correct Way to Place Banknotes in Feeder



Figure 1

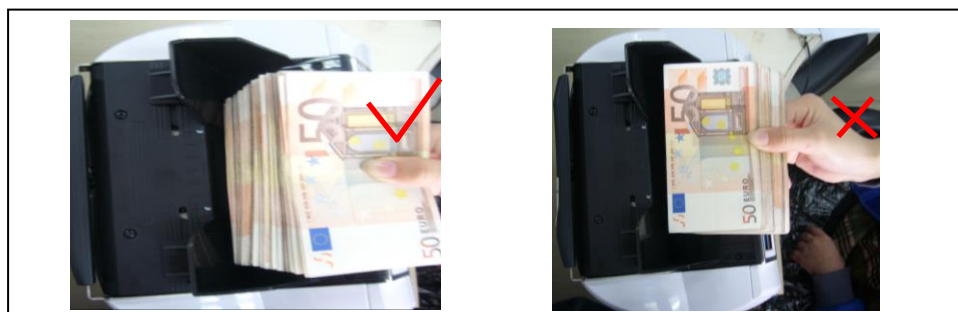


Figure 2



Figure 3

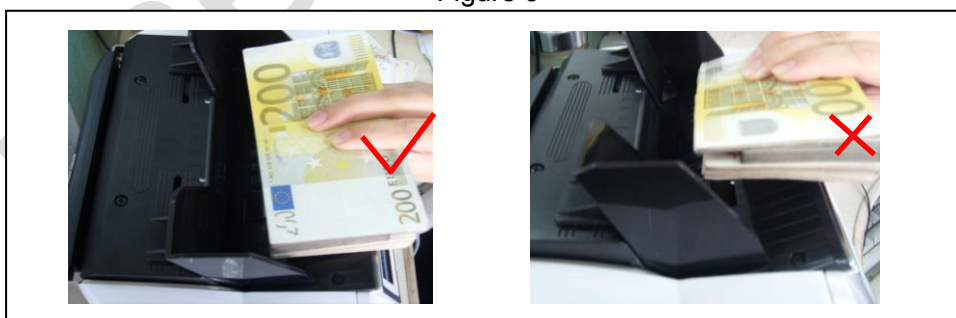


Figure 4



Figure 5

When a counterfeit banknote is found, the machine will stop and beep. The top bill on the stacker is a counterfeit or suspicious banknote (see figure 6). Take out the counterfeit banknote, press "RESET" key, and the machine will continue the counting.



Figure 6

**Note:** In case of stoppage caused by one of the error codes, please re-count the batch of banknotes.

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## Functions

### 1. Select Counting Mode

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Press the "CF" button. If "CF" light is on, the machine will count the banknotes of same denomination and detect the counterfeit ones. If "CF" light is turned off, the machine will count the banknotes without counterfeit detection.

## 2. Select Currency

After turning the machine on, the symbol of current currency will be displayed. If you need to count another currency, press "CUR" key. The currency symbols will be displayed in turn.

-EU for Euro

-US for US Dollar

-CAD for Canadian Dollar

...etc.

After the banknote counting is finished, the number displayed in the counting window is the total number of banknotes that have been counted.

## 3. Select ADD function

This function allows the user to add to a total several batches of banknotes. When enabled (LED light is ON), the current batch total remains on the display, even if bills are removed from the banknote stacker. The next batch will be added to the current count.



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When the number of bills reaches 9999+1, the display is reset to 0. When ADD function is disabled, the total will return to 0 when the new batch is run.



## 4. Select BATCH function

This function is used to set the batch limit. When "BAT" button is pressed, "100" is displayed on the preset display. Each time "BAT" is pressed, the displayed value will change to 50, 20, 10 and blank. When preset display is blank, batch value is disabled. By pressing "+1/+10" button the user can increase the batch limit in increments of 1 or 10.

## 5. Select Counting Speed

Press "SPEED" key to select the counting speed. There are 3 speed modes - low, middle, and high speed corresponding to 800, 1200, and 1500 bills/minute, respectively.

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## Counterfeit Detection Functions

CR2 has three counterfeit detection functions – Ultra-Violet, Infra-Red, and Magnetic. When you select a currency by pressing CUR button, the counterfeit detection functions relevant for that currency will be activated.

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When the machine encounters a counterfeit banknote, it will stop and beep. The suspicious banknote is the top banknote in the banknote stacker. Counting can be resumed by pressing "RESET" button.

## 1. Infra-Red function

The counter will check the infra-red ink feature of the counted banknotes.

## 2. Ultra-Violet function

The counter will check the ultra-violet feature of the counted banknotes.

## 3. Magnetic function

The counter will check the magnetic ink of the counted banknotes.

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## Troubleshooting

### 1. Self test error codes and solutions

The machine will automatically perform a system self-test after it is turned on. Most error codes are caused by banknote jam or dusty sensors. Check for banknote jams and use a brush to clean the sensors, then restart the machine.

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| Error code | Problem                           | Solution                                                             |
|------------|-----------------------------------|----------------------------------------------------------------------|
| E00        | Fluorescence sensor               | Adjust the top cover to the right position to avoid direct sunlight. |
| E10        | Banknote feeding sensor           | Remove the banknote and clear the dust from sensor.                  |
| E11        | Banknote receiving sensor         | Remove the banknote and clear the dust from sensor.                  |
| E30        | Left counting sensor              | Same as above, or aim at the axes of the light beam                  |
| E31        | Right counting sensor             | Same as above.                                                       |
| E50        | Main motor or rotate speed sensor | Clean the code wheel and sensor, or replace the rubber belt          |
| E80        | Internal memory fault             | Return to default settings.                                          |

## 2. Detection error codes and solutions

If the following error message is displayed on the initializing window during the course of counting, you can resolve them in one of the following ways:

| Error Code | Causes and Solutions                                                      |
|------------|---------------------------------------------------------------------------|
| Eh         | Half-piece or torn banknote. Remove and press RESET to continue counting. |

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|                               |                                                                                                                                                                                                         |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EJ                            | Some banknotes are glued together. Redo counting. If EJ code is displayed often, adjust the vertical adjusting screw clockwise.                                                                         |
| ES                            | Banknote at the wrong angle. Press RESET to continue counting.                                                                                                                                          |
| Ed                            | Banknote(s) of non-uniform size, remove it and press RESET to continue.                                                                                                                                 |
| F-P F-F<br>F-C F-1<br>F-2 F-3 | Counterfeit or suspicious banknote. Remove and press RESET to continue counting. If the machine stops frequently (regards real banknotes as counterfeit ones), adjust the sensitivity to a lower level. |
| FUL                           | Stacker is full. There are more than ~ 220 notes in the stacker.<br><br>Remove the banknotes and continue counting.                                                                                     |

**Note:** The banknotes should be re-counted if one of the above errors has occurred.

## Feeder Adjustment

The position of the hopper adjusting screw has already been set for optimal performance. If errors codes occur frequently (i.e. Double notes/chain notes), the hopper may need to be adjusted in order to optimize the banknote passage.

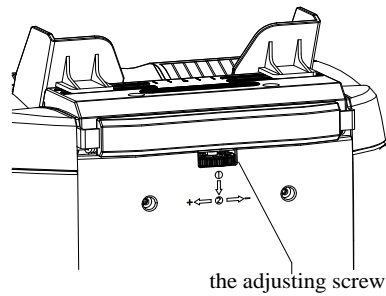
- When the notes can not be counted smoothly, increase the hopper aperture.
- When the machine stops and displays the codes “Double notes” or “Chained notes”, decrease the hopper aperture.

Turn the screw clockwise to increase the hopper aperture, turn the screw

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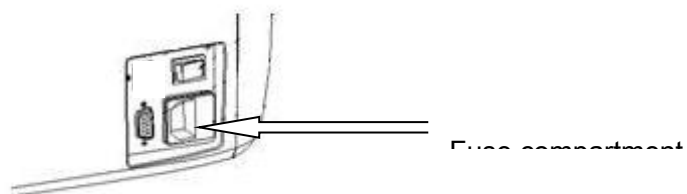
counter-clockwise to decrease the hopper aperture. The adjustment screw is very sensitive, so the adjustments must be made in very small increments.



## Replacement of fuse

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The fuse can be replaced if it has been burned. Open the cover of fuse compartment and insert a new one, then recover it.



Fuse Replacement

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## Maintenance Instructions

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### 1. Maintenance

- 1.1 If operated at temperatures below 20°C, please allow three minutes for warm-up before counting.
- 1.2 The machine must be operated in a well-ventilated area. Keep it away from direct sunlight and strong magnetic fields.
- 1.3 The power plug of the machine must be inserted in the electrical socket with safe grounding.
- 1.4 The power supply of the machine must be within the range of 100-240V.
- 1.5 No machine part must be ever oiled, as it will lead to malfunctioning.
- 1.6 Ultraviolet LED, IR, and magnetic sensors should be thoroughly cleaned from dust once a week using the included dust brush.

**NOTE: DO NOT USE ANY CHEMICALS TO CLEAN THIS MACHINE.**

### 2. Software Update

For data downloading, please use the **provided** downloading cable to connect COM1 or COM2 port on the PC with the banknote counter.

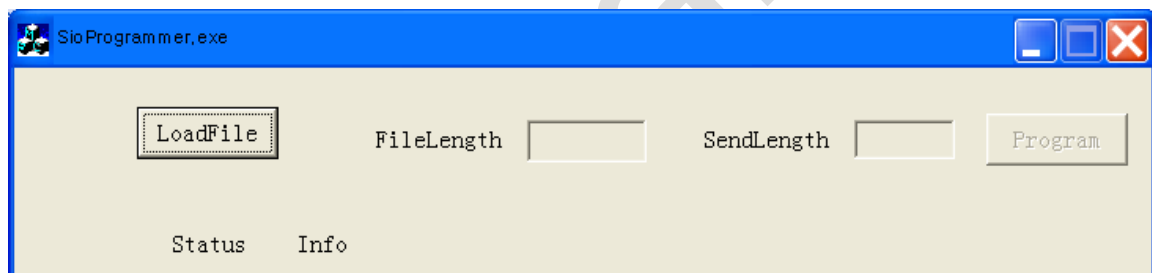
#### 2.1 Downloading mode

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Press "RESET" and at the same time turn on the machine. When all the LED display "-", the machine is in the downloading mode, and is ready to establish communication with software.

## 2.2 Download the software

Open the "SioProgrammer.exe" Program on the PC. Click "LoadFile" button to select the "EUP" file, then click the "Program" button and it starts to download the program automatically.



## Specifications

Note Size Range: 50mm(Width)×110mm(Length) ~ 90mm(Width)×175mm(Length)

Stacker Capacity: 250 Notes

Hopper Capacity: 300 Notes

Power Supply: AC 100V-240V 50/60Hz

Power Consumption: 60W

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Temperature: 0 ~ 40°C

Humidity: 40% ~ 90%

Dimensions: 248(Length)×287(Width)×243(Height) mm

Weight: 14.5 lb (6.5 kg)

Counting Speed: 800/1200/1500 notes/min

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