

BANKNOTE COUNTER

OPERATION MANUAL

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I . USE

Model VE870 series banknote counter is precise financial machine for quickly counting. It is mainly used for checking amount. It suits for banks and commercial departments. It can count various notes like bill such as securities, paper. By using this machine the working efficiency can be evidently raised, the labour intensity lightened and the working quality improved. This model have many performance patterns, besides amount checking,

This model has multi-functions. Besides amounting checking, batch counting, it can process batch accumulation, counting accumulation, loose accumulation etc. Also you can choose to add other functions such as fake checking, stamp and exterior display. This model uses small vacuum pump, run stably and has low noise. Meanwhile using electronic fix, record the amount by air pressure, big screen display and other new technologies. The whole machine appearance is beautiful.

II . CHARACTERS

High speed	Counting speed up to 100 sheets/4.5sec
Without untie	Banknotes can be counted without untie
Simple operation	Automatically start after the banknotes have been put in the note clamp, and automatically stop when the counting is finished
Dust absorption	The machine posses of dust exhaust apparatus to keep good working environment
Warn alarm	When there is error in the amount of the banknotes checked, the pilot lamp of the machine blinks to inform the operator, and the note clamp does not open
High reliability	This model use single chip control circuit and advanced mechanical-electrical integration technology

III. SPECIFICATION

Counting speed	100 pcs/4sec
Loading capacity	200 pcs (new banknote)
Applicable dimensions	Width 45-100mm Length 100-240mm
Power supply	AC220V \pm 10% 50Hz \pm 10%
Display:	LCD
Weight:	Net: 40Kg Gross: 45Kg
Dimensions	350mm \times 310mm \times 855mm

IV. FUNCTIONS

Free counting	Count any number of banknote. When counting is finished, the note clamping plate is always opened automatically
Check function	To check whether the number of banknote is 100 sheets. If it is not 100 sheets, the machine will give a warning and the note clamping plate does not open
Fixed number accumulation	Automatically record summation of many counts that are 100 sheets
ACCUMULATION	the amount for 100 sheet several times
DUSTPROOF AND REDUCE NOISE	when use this function, the automatic shutter will close to separate counted money from outside, that can prevent dust and reduce noise. It can provide good and health condition for operators

V. APPEARANCE AND CONSTRUCTION

Figure: VE870 outside view (see Fig.1)



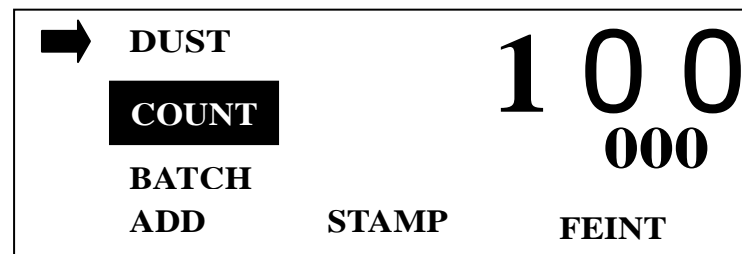
Fig.1

The function of reset key: the reset key is on the left of the up cover, on the counting state, when some unusual machine stop appeared, press this key and return back to the current chosen state.

Figure 2: VE870 LCD:



Figure 3: VE650 LCD:



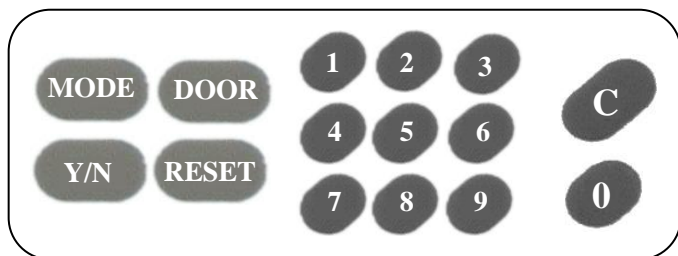
LCD selection is lattice number 192×64,

On the left of LCD is the cursor, use mode key to move the cursor to process choosing. When the cursor is on some item, this item is reverse video. You can only choose only between amount checking and batch checking. When the cursor is on fake checking, you can use number key from 1-8 to choose fake checking sensitivity, in total 8 levels.

On the right upper of LCD is 32×32 lattice four digits big number display, it is used to display the note counting number for every time, when another counting is processed, the number reset from 0.

On the right down of LCD is 16×16 lattice four digits small number display, it is used to display the total amount after accumulation.

Figure 4: VE870 series operation panel



Operation panel keys functions:

1. Mode key

Press this key, the cursor guide finger choose dust proof, amount checking, batch, accumulation, stamp, fake checking and other items from the top down.

2. Y/N key

When the cursor guide figure appoint on some item, press this key to confirm, when this item is converse video, it means this item is chosen. When the fake checking sensitivity is chosen, the showing number is “5”, the default fake checking sensitivity is Level 5. The fake checking sensitivity is displayed by number 1-8, in total 8 levels. You can choose either of amounting checking or batch. If you choose amount checking, you can't choose batch checking, also if you choose batch checking, you can't choose amount checking. Stamp only can be chosen only in the amount checking state, not batch checking. In the reverse video state, press the reset key, then it will come back to the normal state, achieving switch on. You can adjust the number value only when the cursor in on this item and this item is chosen.

3. Door key

When press this key, the dust proof will be closed, press this key again, it will be opened. In any options, no matter if the dust proof is chosen, the door can be opened and closed freely when press this key.

4. Reset key.

In any state, press this key, it can back to the original counting state.

5. 0-9 number key

When the mode key is on counting or batch, use the number key to set three digits significant figure. When the cursor is on fake checking, use the number key to choose fake checking sensitivity, one digit significant figure.

6. Clear key

Press this key in batch state, the display number will be zero. Press this key on counting state, the display number will be counting resetting value 100. It is useless in other state.

VI. VE870 SERIES BANKNOTE COUNTING

MACHINE TYPE TABLE

Basic type	Basic function/optional function			
	Shutter	Feint/C	Stamp/Y	Display/W
VE650	√	√	√	√
VE870	√		√	√
VE980			√	√

Type choosing example 1:

VE870/Y.W, it means besides the basic function, VE870 also add stamp and display function.

VII. OPERATING METHOD

Figure 4: operation panel

1. Origin state (Default counting state)

When the machine power switch is on, the machine is on initial state, that is the cursor on the dust proof position, and this item shows reverse video. When other functions have not been chosen, it will display normally. At that time, the four small digits shows "000", and four big digits shows: "100". Move the cursor to counting item, you can set the counting number freely within the capacity range by number key. Then put 100 pieces notes which are in batches in the machine, press the starting switch, the note clip moves to clip the note, and the auto door begins to close, the number recording head rolls back 0.2 seconds, then begin to count the notes. Then the big number begins to accumulate, when the number reaches the setting number or the default number 100, the note will return to its original position, and one time counting is finished. If the counting result is not the setting number or 100, the note clip will not move, and the alarm will make long alarm to tell you the counting result is not the setting one or 100, you can press the reset key on the machine cover, then it will alarm and the note clip opens.

2. Free counting state

In the original state (default counting state), press the manner key, move the cursor to the counting position, and the counting show is reverse video, then press enter key, counting shows normally, so the counting is not chosen, it is in the free counting state. Put the notes in, when touch the start key, it will begin to count until it is finished. The big number will show the last counting accumulating number, then the note clip opens, and the counting result doesn't relate to 100.

3. Free accumulating state

In the free accumulating state, press the manner key, the cursor will move to the accumulation state then press enter key, this item will show reverse video. Then begin to count the note, the upper big number changes gradually and shows the counting number at last, and the down small number will show last counting finishing number in one time. When the note counting is finished, the note clip will go back to original position. When another counting is processed, and the upper number resets, the upper number will record the new counting result from zero, but the down number will accumulate two counting results together and shows.

4. Counting accumulation state

When use the manner key to choose counting and accumulation and begin to count the note, the upper big number will change base on it gradually, and the last counting result shows 100. And the down small number will change only one time and shows 100. When counting another time, the upper big number will set from zero and changes gradually and shows the counting result in 100, but the down small number will change only one time to be 200. If counting in 10 times, the upper big number will change 10 times, and show the same number 100, and the down small number will change 10 times, and shows orderly 100, 200, 300..... and the show the last result 1000, the biggest showing number is 9900.

5. Batch state

When choose batch, if set the batch to 50 by the number key, start the machine to count the note, then the down small number will shows from 0 to 50, and the machine stops, but the upper big number will show 50 by changing one time, and the machine stops, the batch electromagnet action will be separated, and the note clip keeps stable, when press the reset key, the note clip will go back to its original position. When counting the notes in another time, the down small number will go back to zero and changes gradually to 50 and machine stops, at that time, the upper big number will still show 50, press the reset key, the note clip will go back to its original position. The biggest setting number for batch is 150. When in the batch state, if not set the batch number, that is the small number is 0, when put the notes in, it will count.

6. Batch accumulation state

a. batch accumulation

When use the manner key to choose batch and accumulation state synchronously, and begin to count, the down small number will show as the batch state, and changes gradually, and the upper big number will shows the last result in one time, accumulating the total number of every counting result. For example, if the batch setting number is 50, and counting note in five times, the upper big number will show 50, 100, 150, 200 and 250 when every counting is finished.

b. Several number recording to batch numbers

When the counting number is less than the batch number, when the counting is finished, the note clip will open automatically and alarm . You can put the notes in again, and go on counting, the big number will accumulate to the last displayed number. For example, when the batch setting number is 150, for the first time, put 50 pieces notes in, start the machine, and record the counting result as 50, press the reset key, the note clip opens, remove these notes, then put 50 pieces for the second

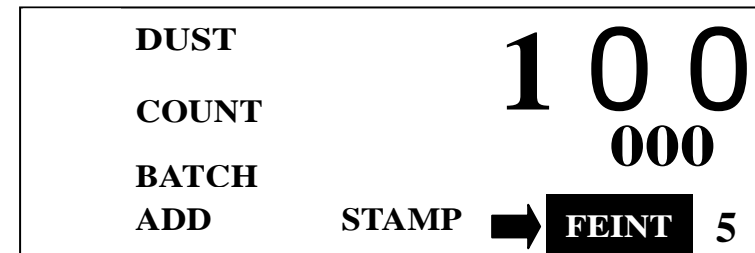
time, then it will accumulate to 100, and the machine stops, then repeat it for the third time, at last it will show 150 and machine stops.

7. Fake checking state

When fake checking is chosen, the displayed number will be 5, you can choose number key1-8 to choose the fake checking sensitivity.

During the counting state, when fake note is checked out, the machine will stop, and the batch electromagnet will act, and transfer to fault menu to show fake note and tell the fake note position, for example, if the fifteenth piece is fake one, when counting to the fifteenth piece, it will recognize the fake one and machine stops, the LCD will shows fake note. See Figure5.

Figure 5: LCD display when fake note is checked out

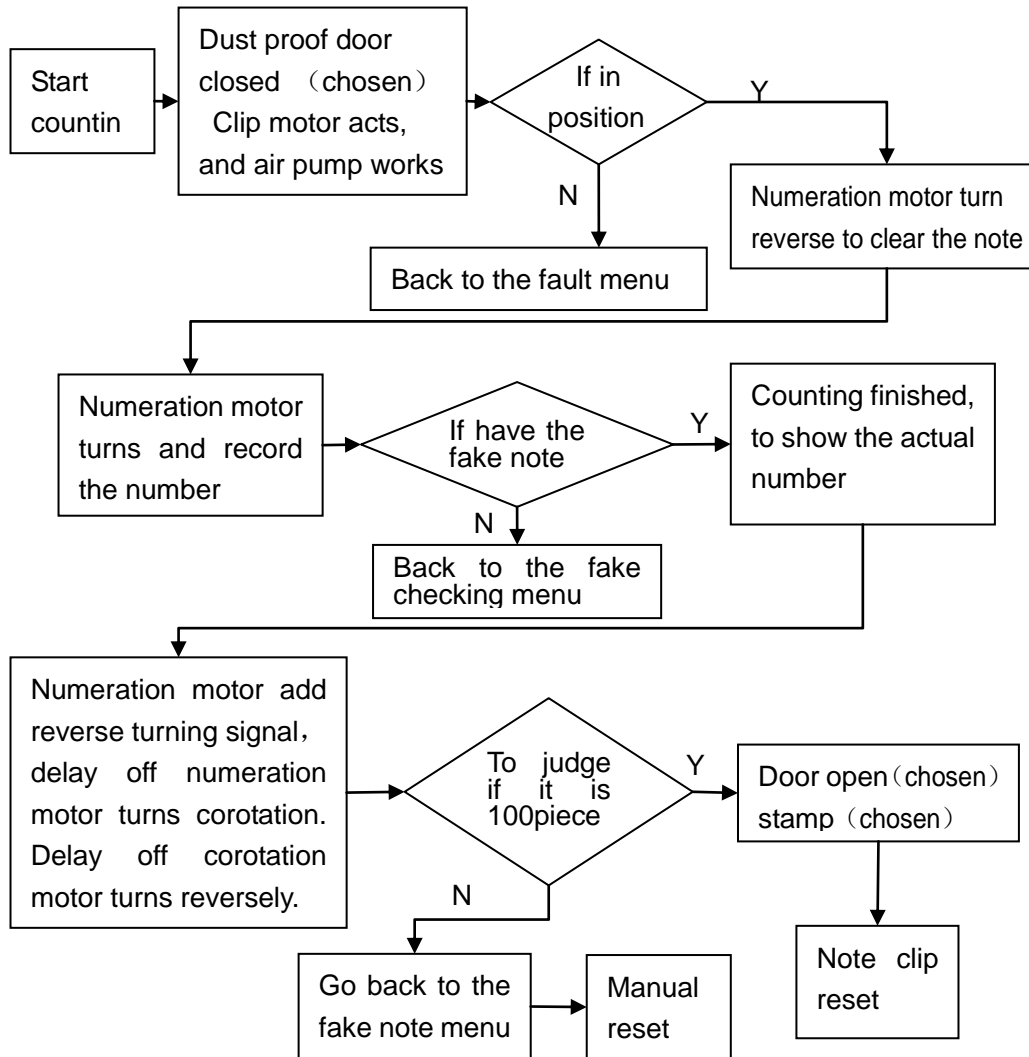


8. Stamp state

When this function is chosen, it will shows reverse video. When the counting result reaches the setting number or 100, the machine stops, and the note clip doesn't open, the stamp electromagnet will act, after printing is finished, the stamp electromagnet will release, and note clip will open.

VIII. MACHINE ACTION FIGURE

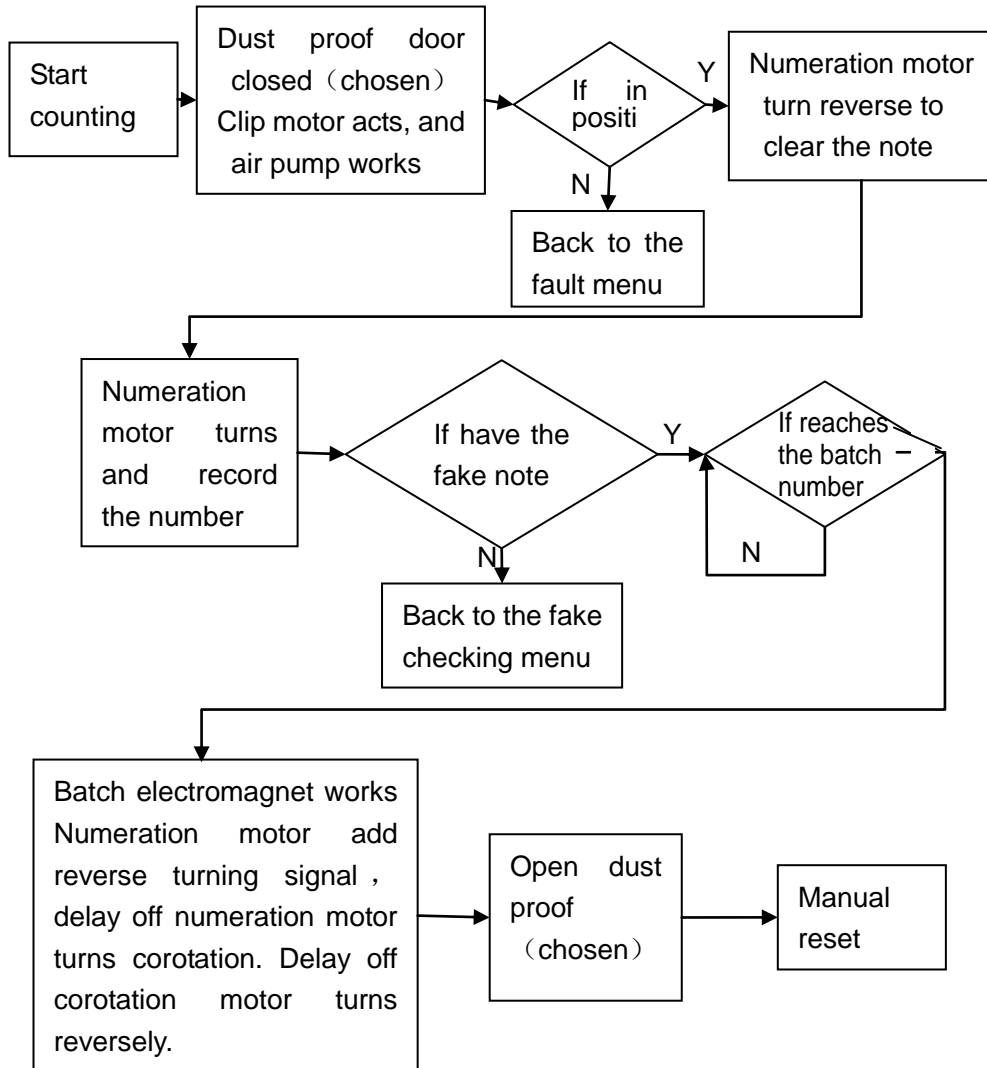
1. counting & accumulation state



Note:

- Only when the dust proof is chosen, it will work.
- Only fake checking is chosen, it can judge, or it will over the fake checking judge frame.
- Only when the stamp is chosen, it can work.
- After note counting is finished, the numeration motor will stop firstly, then add numeration motor reverse turn signal, the motor drives. When the note clip back to the original position, add the numeration motor reverse turn signal, it can be adjusted in the time delay programme.
- In the counting state, when recording the number, the big number will show the actual counting number orderly, and the small number will show zero. In the accumulation state, the big number will show the actual counting number base on the changing, and the small number will change only one time and shows the accumulating number, if the counting number is not 100, it will alarm, and the small number will not accumulate.

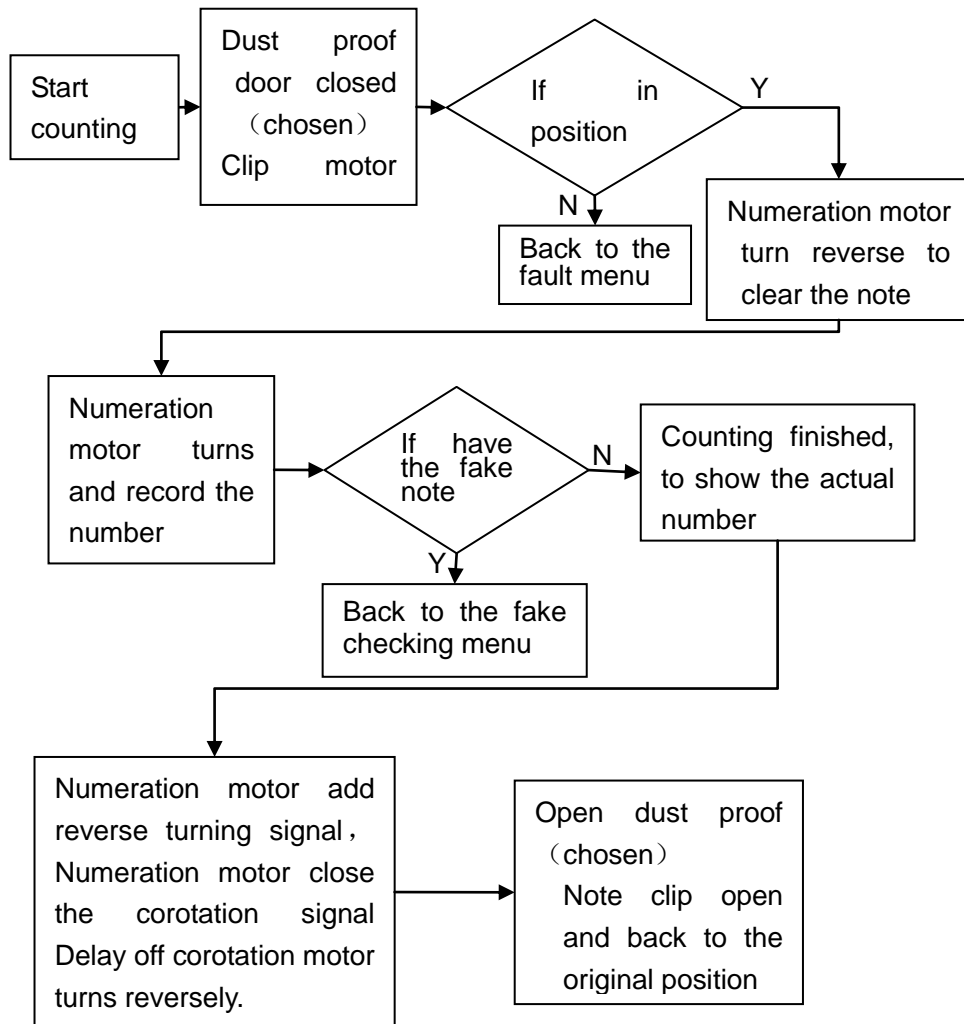
2. batch & accumulating state



Note:

- Only when the dust proof is chosen, it will works.
- Only fake checking is chosen, it can judge, or it will over the fake checking judge frame.
- Meanwhile add the numeration motor reverse turn signal and batch electromagnet action signal.
- Small number will reset from the presetting number to zero, and changes gradually, then shows the batch number, the big number will change to accumulation number by one time, if accumulation is not been chosen, it will not accumulate.

3. free counting & accumulation



Note:

- a. After counting finished, the machine stops, and shows the actual counting number.
- b. Only when the dust proof is chosen, it will work.
- c. Only fake checking is chosen, it can judge, or it will over the fake checking judge frame.
- d. Big number changes gradually to show the actual counting number, and small number shows the accumulating number changing of one time.

4. Numeration motor action figure

When the number recording is finished, the Numeration motor will add reverse turn signal, after time delay, turn off the reverse turn signal, two delay time is adjustable in the program, and the least time delay is 0, see Figure as below.

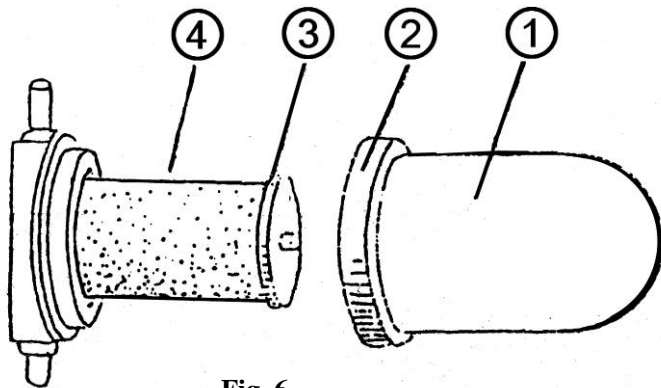
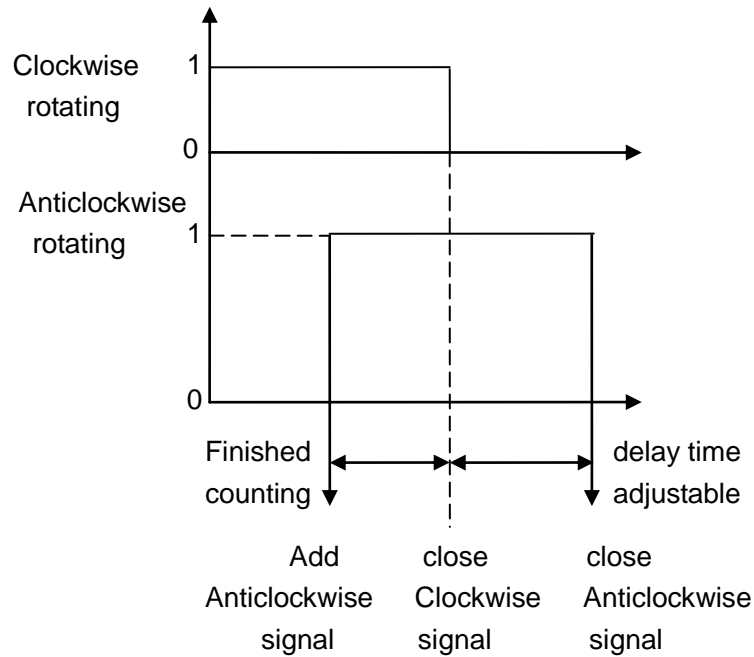


Fig. 6

IX. OPERATION NOTICE

1. The notes put in the note clip should be clear and neat.
2. The notes shouldn't be damaged.
3. When the note is folded, it may cause the wrong counting, should make the folded corner flat or change to another side to avoid the folded corner.
4. When put the notes in the note clip, should make the note forward end to touch the note blocking board, and start the microswitch, but shouldn't be too tight.
5. Do not put heavy things on the machine cover to prevent the cover distortion which may cause the difficulty to open the shutter.
6. When the power cut is happened, you can open or close the shutter by hands as you need.
7. The power voltage should be within $220V \pm 10\%$, and have good ground wire.

X. MACHINE MAINTENANCE

Because of a lot of dust on note, there are dust filtration in note suck head and vacuum pipeline, these dust filtrations are cleared at fixed periods to ensure machine to run normally and count exactly and prolong machine's life.

(1) clear filter

There are two filters in cabinet (Fig. 6) to prevent dust into vacuum pump and keep air pressure 's stability and reduce noise. To ensure vacuum tube smooth, it need to be cleared every half month, or observe filter cartridge ④, if there are a lot of dust on it, please clear immediately. Disassembly order is following:

Open back door and revolve diaphaneity cap 2 at anticlockwise, then take off diaphaneity cover 1, clear it with brush. When refixing it, please pay attention to fix seal ring well, and then revolve the cap tightly.

(2) clear filtering net

Filtering net is put in five note suck heads to filter dust from note, the order to clear dust is following:

- ① open top cover of every note suck head with special cap opener in order.
- ② take off filter net with hook;
- ③ clear filter net with brush;
- ④ fix every spare parts in proper order to ensure seal of cap of note suck head.

(3) clear dust bag

Dust bag is in cabinet, and covers on axial flow fan, is used to collect dust from dust exhaust apparatus. neck of bag uses elastic, it can be taken off and cleared. In addition to these parts above to be cleared, environment also affects machine life, so please pay attention to the following points:

- ① Clear dust in cabinet in time to keep machine clean. Dirt on axoplast of shutter is erased at fixed periods. when erasing, belt is taken away from pulley, after erasing, a little oil is smeared on it, and then put belt, but the belt is not too tight.
- ② Machine need to avoid insolation from sun shine, especially when using fake note function, must avoid strong light into counting note place.
- ③ when moving machine, avoid sharp pounding or impingement.
- ④ avoid to use other equipment with strong power on the same power socket at the same time.

XI. FAULT PROCESSING METHOD

When machine has fault, display screen will show fault menu as follows. Please check as fault reason displayed.

(1) fake note display

When machine checks fake note, it will stop and alarm, LCD display as Fig.5, display digit is the place where fake note is.

(2) shutter fault

When dusting shutter can not reach left and right place, i.e. can not check photoelectricity signal from left and right, there are faults as follows: please check as fault reason displayed:

Shutter can not reach the place

1. check mechanical drive part.
2. check photoelectricity switch.
3. check motor's plug, wiring, work voltage.

(3) note clamp motor

When note clamp motor does not reach the correct place, there are faults as follows: please check as fault reason displayed.

No counting

- 1、 check pump head of air pump motor.
- 2、 check counting motor, air pressure switch.
- 3、 check channel for air.

(4) no counting

When no counting, machine shows fault as follows: please check as fault reason displayed.

XII. TOOL AND EXPLANATION OF SPARE PARTS

- 1) protector tube : There are two protector tubes (10A) as spare parts, if the fuse blows, operator changes with them. Protector tube in cabinet, after opening machine's back door, "FUSE" on power board will be seen.
- 2) cap opener: Special tool to open top cover of note suck head.
- 3) hook: Tool to take filtering net off, and adjust potentiometer on air pressure switch with another end of the hook.
- 4) brush: Clear dust.