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**C-1000**

**CASH COUNTER**

*Repaired Manual*

# Repaired Manual

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## 1. NECESSARY TOOLS&MEASURING INSTRUMENTS

- 1、 2.5 inch screwdriver
- 2、 2.5 inch cross screwdriver
- 3、 Oscillograph(dual-trace 20MHz)
- 4、 Multimeter
- 5、 Pliers
- 6、 Tweezers
- 7、 3mm Allen wrench

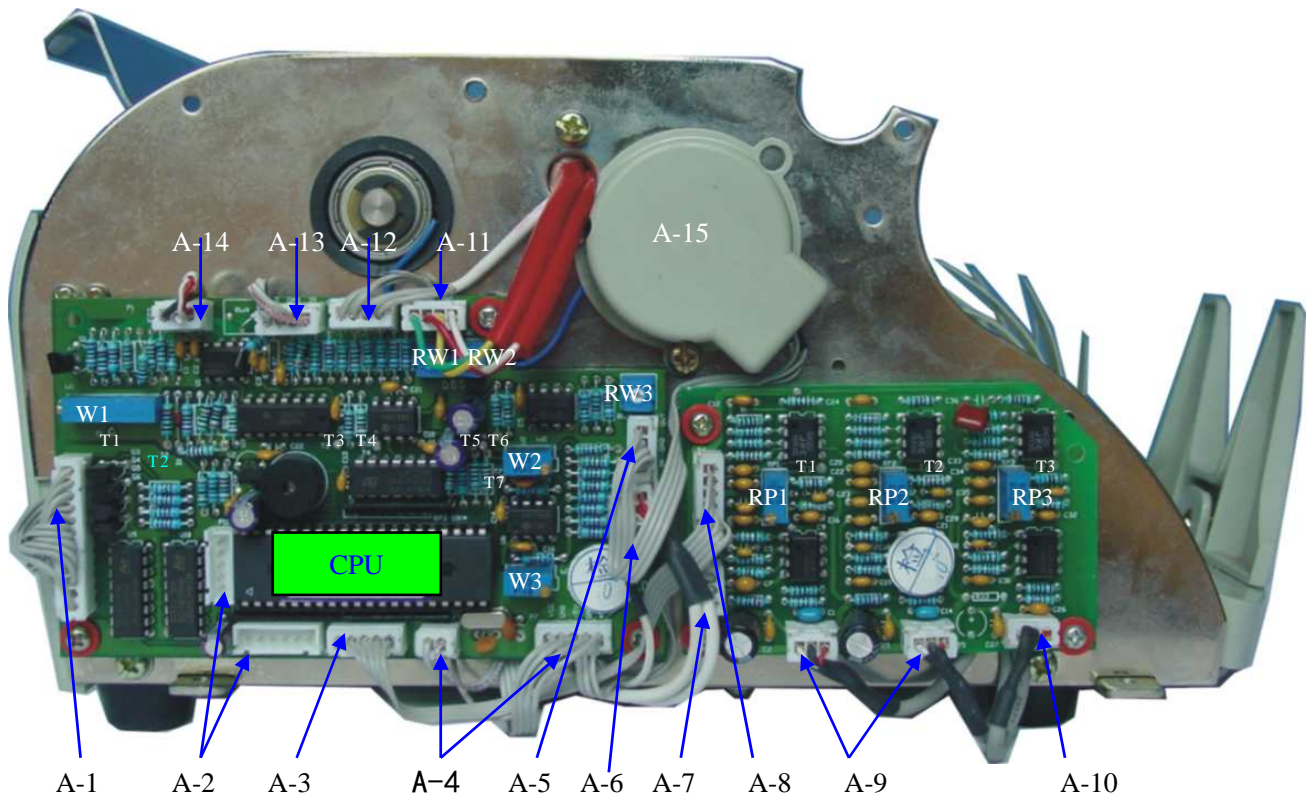
## 2、 Specification:

Counting Speed	>1000 pcs.
Banknotes Sizes	100 x 50 ~ 173 x 85 mm
Banknotes Thickness	0.075 ~ 0.015 mm
Hopper Capacity	130 pcs.
Display	LED 999
Alarm Display	1 LED Display
Batch Display	3 LED Display
Environmental Temperature	0 ~ 40 °C
Moisture	30 ~ 90%
Power Source	110 V/ 60 Hz, 220 V/ 50 Hz
Power Consumption	<70W (In operation), <10W (not in operation )
Net Weight, Gross Weight	6.5 kg, 7.0 kg

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## 3、 circuit joint and adjusting of Voltage

### 3.1 Circuit joint of machinery



A-1、 Connect of external display

A-2、 Connect of preset board

A-3、 Input of magnetism

A-4、 Supply input and control by motor A-5、

Connect of coded disk

A-6、 Connect of nether counting tube A-7、

Power input of magnetic board

A-8、 Input of magnetism

A-9、 Input of min-magnetic head

A-10、 Bulky magnetic head

A-11、 Connect of upper counting tube

A-12、 Connect about photoelectric switch

of classification

A-13、 Connect about photoelectric switch of hopper plate

A-14、 Connect of silicon photovoltaic cell

A-15、 Coded disk

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## 3.2 Measure and adjustment of circuit parameter

### 3.2.1 Adjustment of sensitivity for UV test

Check connecting wire of UV test inboard, when the money counter is in trouble or sensitivity is not high, if the pin is get loose; If the both sockets of UV tube is strike fire and UV tube is aging. If you can't solve the trouble above checking the points, adjust potentiometer of UV in the main-board (W1). Circumrotate towards clockwise, sensitivity is raising; Circumrotate towards anti-clockwise, sensitivity is playing down. Put function of money counter into gear of light test and put note or practicing paper to test, adjust potentiometer of light test (W1) When pass the note and advance sensitivity of UV test to make practicing paper and note alarm of UV test put the potentiometer (W1) and adjust the potentiometer downwards to 5-6 circles, depress sensitivity of UV test to make note and practicing paper can't be alarm.

(Attention: pick out washed practicing paper and note before test.)

### 3.2.2 Adjustment of counting

- a、 Check if fray is serious of resistance rubber in feed roller firstly, when the counting is not right; lingua of feeding is right position; Dust of upper and nether counting tube. After solve all troubles, adjust elasticity of hopper plate, and make correct require of counting.
- b、 Adjustment of hopper plate.

Check magnitude of voltage: Put the red pen stick into the 1P, 2P of mainboard (connect nether counting tube) black pen stick is a good ground, the magnitude of test is  $4.7 \pm 0.1V$  ( no note ward off counting tube ) ,if note ward off the counting tube, magnitude of

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voltage is 0.1-0.5V. Adjust counting potentiometer of corresponding in the mainboard and make it normal.

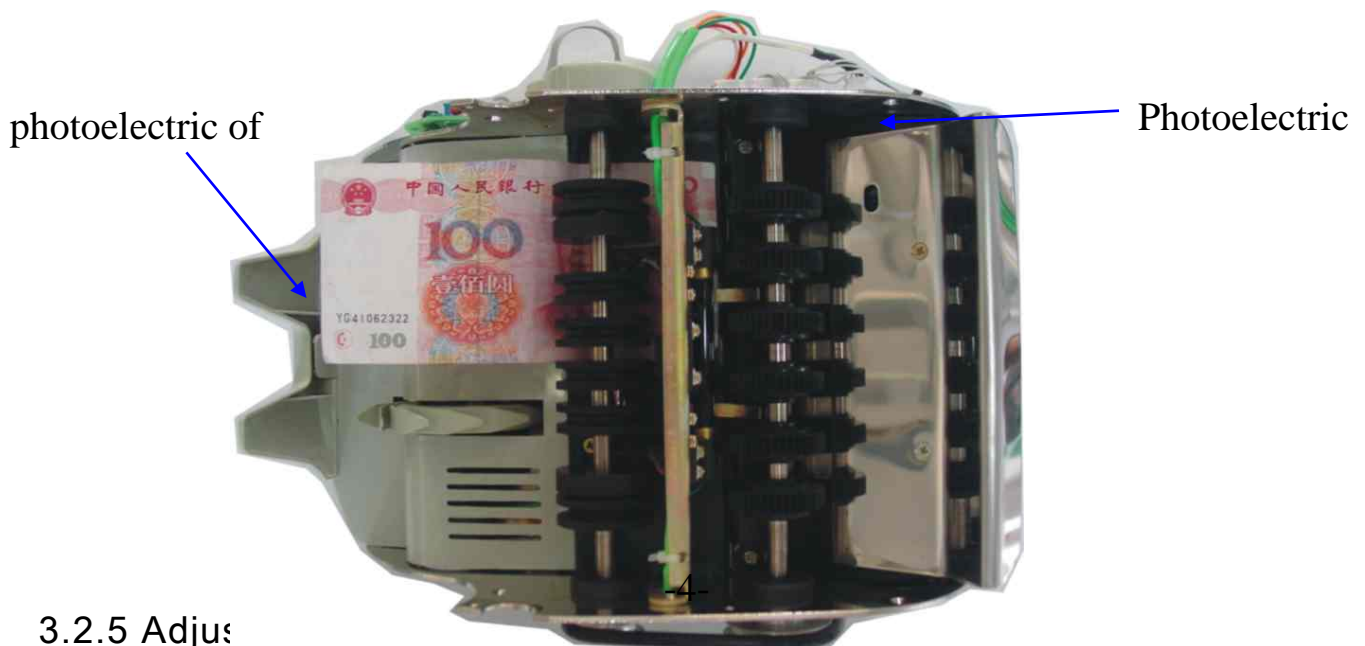
## 3.2.3 Measure and adjustment of infrared signal

Methods of measure magnitude of infrared signal with multimeter: Put head photo ward off infrared counting tube of the fifth edition hundred note, put red pen stick of numeration table connect measure point of infrared voltage on the mainboard (T5, T6), connect black pen stick into grounding. Magnitude of voltage for measuring is  $2.3 \pm 0.2V$ .

Adjust infrared voltage of the other side counting tube with the same method.

## 3.2.4 Classification

The preset function can't be stopped with standard or don't pass note after take out notes when stop, check the photoelectric switch of classification. Measure the voltage of T3 on mainboard with multimeter. When note ward off classification sensor, it should be low level, no ward off sensor, it is high level.



## 3.2.5 Adjust

When money counter start self-test, it shows "ER8" re-adjust potentiometer of coded disk (RW3).

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The following is method of adjustment:

Turn dominical motor slowly, measure voltage of (T7) on mainboard with multimeter and it shows change of or low high measure the wave shape of (T7) on the mainboard with oscillograph after start the machine, and adjust the potentiometer of mainboard (RW3) to make width of up and down impulse the same.

## 1.2.6 Adjustment of magnetic sensitivity

Check connected line of MG test firstly, if embolic pin is loose, the distance from the good place is thickness of one or two notes among big magnetic head, small magnetic head and sheave pulley. If it can't solve the trouble and adjust potentiometer of MG test entrails.

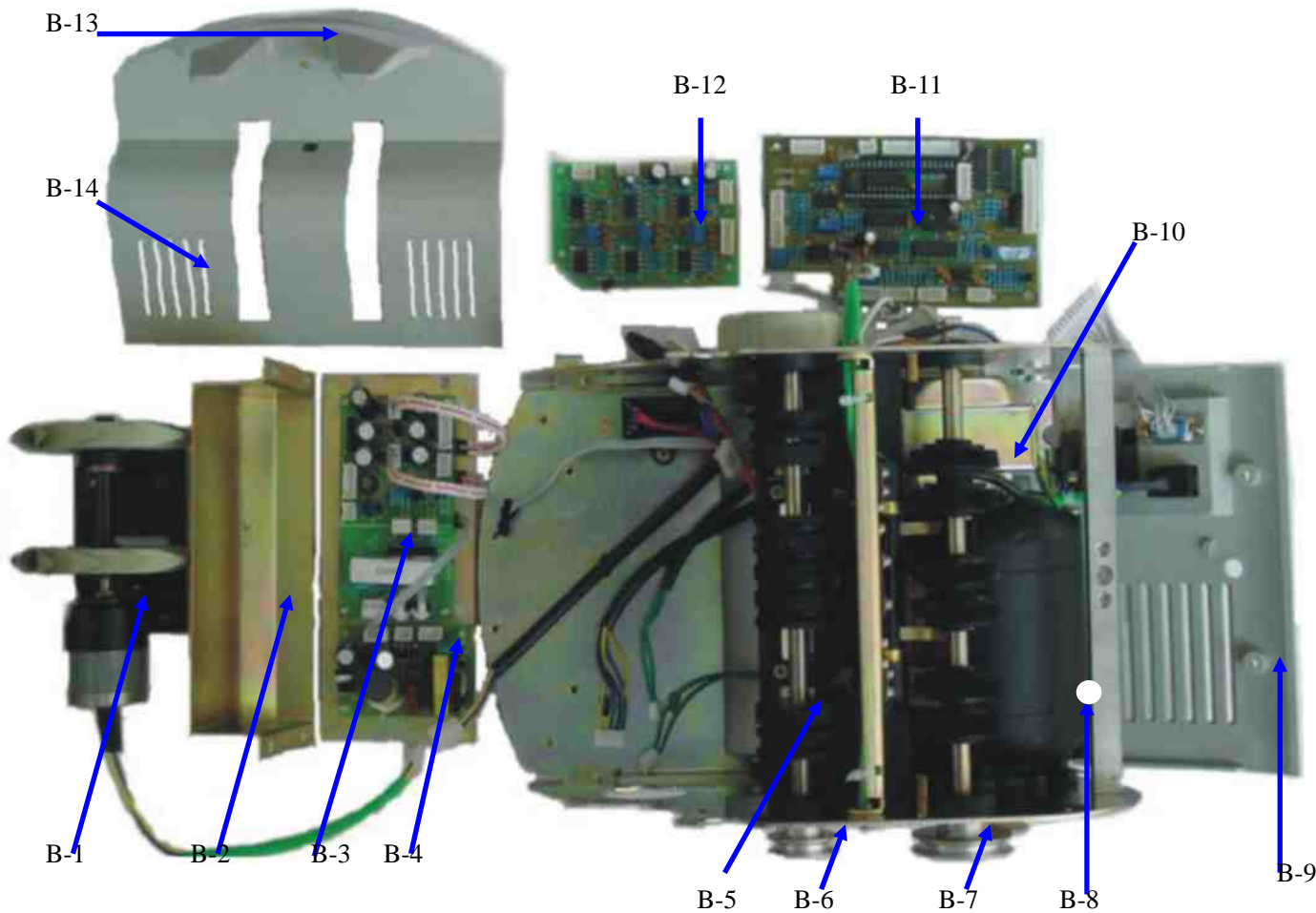
Put red pen stick of numeration table connect measure point about voltage of big magnetic head of magnetic board(T3), and black pen stick is connected ground wire of circuit, magnitude of voltage should be about 2.0v-2.8v. Measure voltage of small magnetic head, red pen stick of numeration table connected metrical point of (T1,T2), and black pen stick is connected ground wire, metrical magnitude of voltage is about 1.7-V2.3V. Potentiometer of magnetic voltage turns clockwise, magnitude of MG test is rising, and sensitivity of MG test is high; Contrariwise, potentiometer of magnetic voltage turns anti-clockwise, magnitude of MG test is fallen, sensitivity of MG test is low.

## 4、 Introduction and adjustment of machinery

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### 4.1 Structure of machinery

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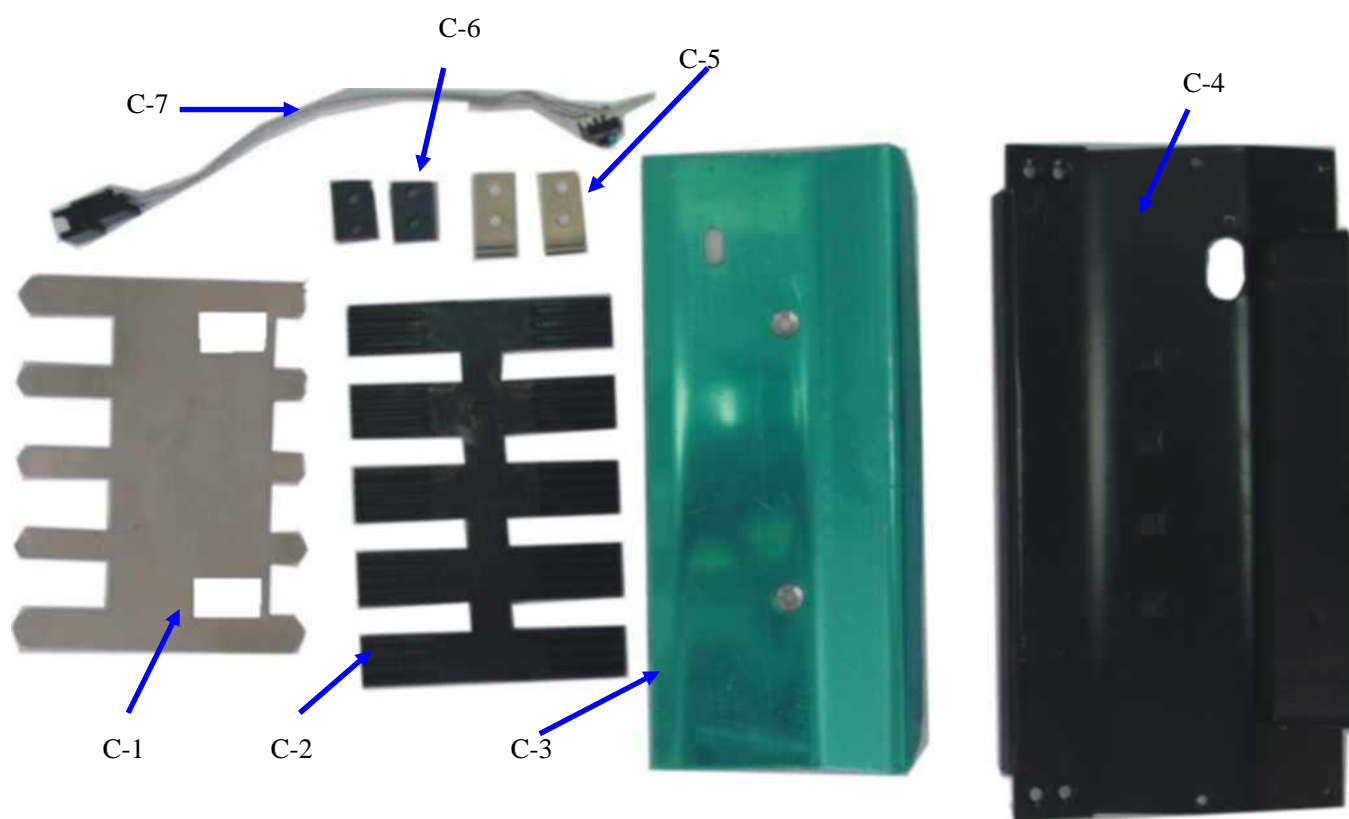
Serial number	Name of parts	-6-	Remark
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B-1	Groupware of deferent roller		
B-2	Circuit box		
B-3	Circuit board of power supply		
B-4	Circuit board of strap lamp		
B-5	Groupware of 2# shaft		
B-6	( small ) aluminous belt pulley		
B-7	( big ) aluminous of belt pulley		
B-8	big motor		
B-9	Back cover board		
B-10	Groupware of 1# shaft		
B-11	Main circuit board		
B-12	Magnetic circuit board		
B-13	Plastic stacker plate		
B-14	Plastic bridge plate		

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Serial number	Name of parts		Remark
C-1	Steel plate of the five fingers		
C-2	Resistance rubber		
C-3	Corrosion-resistance plate		
C-4	Motherboard of hopper		
C-5	Spring leaf of hopper		
C-6	Plastic cushion of hopper		
C-7	Photoelectric switch of hopper		

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## 5、 Adjustment and test of machinery

### 5.1 Adjusting methods of hopper plate

#### a. Adjust assembly of hopper plate

It is easy to adjust hopper plate, adjust up and down screw to get the result of pass notes.

#### b. Adjusting resistance rubber

Take out screw of hopper plate, when abrasion of resistance rubber is serious to replace it, and take out screw of pressboard it is ok. (structure of hopper plate)

#### c. Adjustment of tongue of feeding

Pay attention to the position of hopper tongue, when replace resistance rubber (it is 10mm-12mm from resistance rubber), look at 5 , Resistance rubber is ahead it will cause counting is so good, if it is behind it will cause not fluent for counting

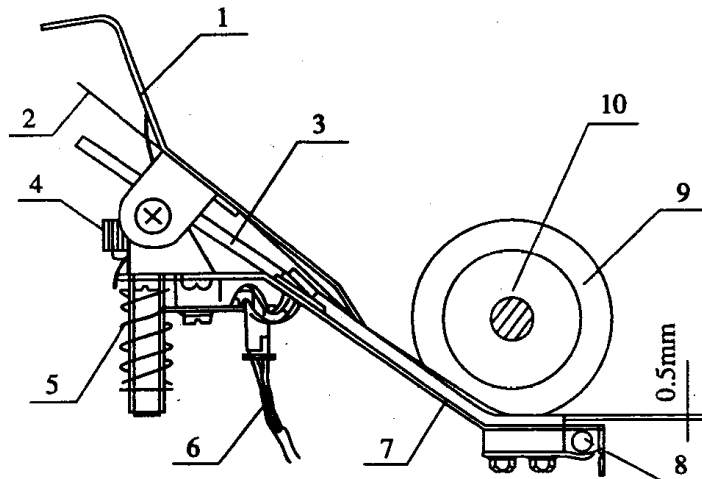


图 (5)

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| 1. Hopper steel plate           | 2. Hopper shrapnel(hopper tongue) |
| 3. Resistance rubber            | 4. up and down adjusting screw    |
| 5. up and down adjusting spring | 6. Hopper sensor                  |
| 7. Motherboard                  | 8. 5×5Pintle                      |
| 9. Feed reel                    | 10. Core of feed reel             |

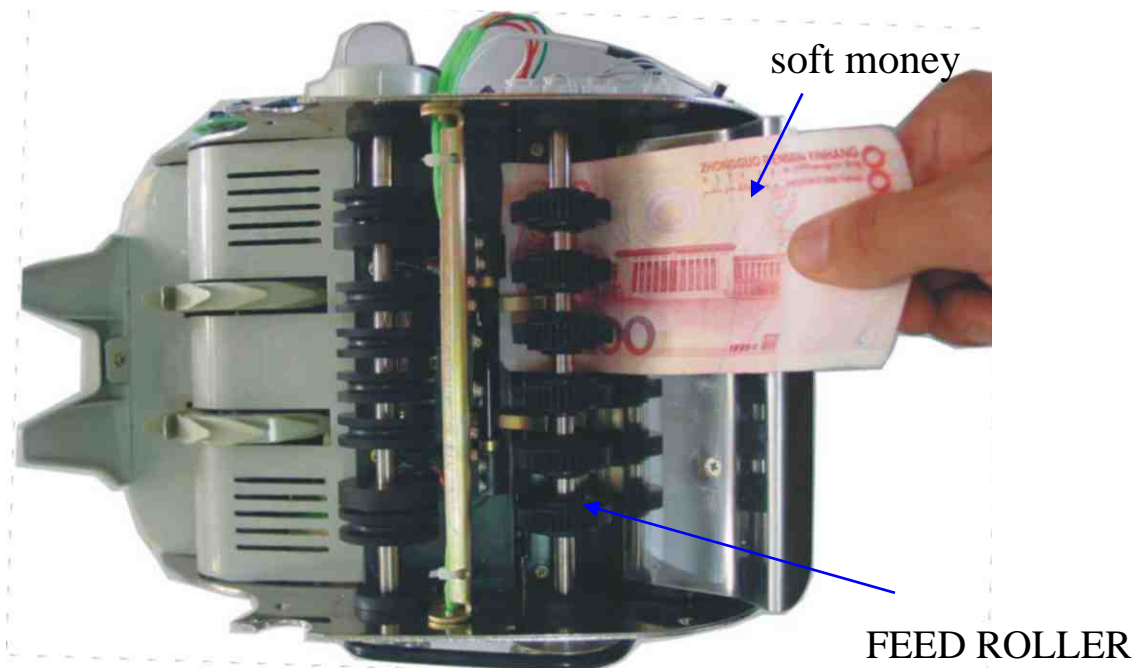
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## d. Adjustment of resistance during passing notes

Start the money counter ,put one side of a note into base of feed reel, feeling its press of feed reel, the force of twist note is adjusted through circumrotating (up ~~and~~ down screw), it is tight when turn clockwise, and it is loose to turn anti-clockwise. Check and if right-and-left press is balance

Through moving note. (according with method of c) adjust the balance of twist-note press on adjusting resistance rubber. Then try to check if counting is right and it isn't defective When passing notes.



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## 6、Methods of solving common trouble-10-

You must turn off the power and take out connecting plug before solving trouble of machine

### 1.Feeding notes

Trouble	Cause	Remedies
Counting is inaccurate.	1.Friction between feed reel and resistance rubber is insufficient.	to turn the fluctuating adjustable screw anti-clockwise to increase friction(Illustration 5)
	2.the cusp of feeding-notes rubber wheel is frayed much.	Replace new gear
	3. resistance rubber become thin	Take out the other side for use or replace it
	4.Position of feeding tongue is too ahead	To adjust proper position with Illustration 5.
Dropping notes is not fluent	1.Friction between feed reel and resistance rubber is too tight	to turn the fluctuating adjustable screw clockwise to increase friction(Illustration 5).
	2. the cusp of feeding-notes rubber wheel is frayed much.	Replace new wheel
	3.Resistance rubber is frayed.	Take out the other side for use or replace it.
	4.Position of feeding tongue is too back.	Adjust feeding tongue to proper position refer to Illustration 5.
The notes is not center.	1.both sides' friction between resistance rubber and feed reel is not same.	Re-adjust the position of both sides of resistance.
	2.Fixing Screw didn't fix hopper plate well.	Tighten the fixing screw.

### 2. Controlled notes

Trouble	Cause	Remedies
Notes are jammed out.	1.There are worn notes、coiled notes among the counted notes.	Count the notes again after taking worn and coiled notes out.

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	2.Don't press notes when put the notes	Let the notes pass automatically.
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## 3. Drivivg

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Trouble	Cause	Remedies
Motor doesn't run.	1.photoelectric eye on the hopper plate with much dust or damaged.	Clear or replace the photoelectric eye.
	2.Connection is broken.	Check every connection from power to motor, welding the break.
	3.Starting capacitor of motor is damaged.	Replace capacitor (start the motor by hand to improve that the capacitor is damaged or secondary winding is burn-out)
	4.Winding of motor is burnt-out or cut.	Replace new motor
Motor works but driving wheel doesn't run or run slowly.	Rotating band aged or Broken.	Replace new rotating band
There is noise between rollers	1.Driving roller isn't close to bearing so that the driving shaft moves left and right.	Let driving roller close to bearing and tighten fixing screw
	2. Driving bearing aged and frayed.	Replace new bearing.
when it reaches preset number, It doesn't start after taking away the notes	Leakproof sensor( preset photoelectric eye) doesn't align the light or covers much dust	Align the preset electric eye or clean dust

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## 4. Counting and display

Trouble	Cause	Remedies
It shows "0" but it does not count(without decimal point)	1. Counting tube is covered with dust or broken.	Clean dust or replace
	2 Counting tube doesn't align the light.	Adjust opposite position of two sondes to make axes beam of light correct position
It doesn't display "0" when starts and motor doesn't run	Power cord is cut or protector tube is burnt-out.	Replace power cord or protector tube "A".
It counts improperly.	1. hopper plate is adjusted improperly.	adjust hopper plate
	2. counting light sensitive tube is covered with dust	Clean dust

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## 5.Discriminator and alarm

Trouble	Cause	Remedies
It doesn't stop but alarm when meeting fake notes.	Control circuit of motor goes wrong.	Check whether power board is good or not, repair or replace it.
It alarms when meeting the original note.	1. original note respond to UV too strongly.	Reduce UV sensitivity.
	2.original note with white paper which has UV reaction.	Remove these notes
It doesn't alarm when meeting fake note.	1. UV light aged or can't light.	Push out UV light from the left or the right for change (1.5W)
	2. Sonde and UV light is covered with dust.	Clean dust with soft brush
	3.Sensitivity of UV is low	Adjust sensitivity of UV higher.
	4. Fake note becomes black, whose reaction of UV is weak.	Increase sensitivity of UV or pick out these notes.

## 6. Error code with self-test, solve it as follows:

Error code	Cause	Remedies
ER0	Left counting sensor is dust or broken	Clean dust or replace
ER1	Right counting sensor is dust or broken	Clean dust or replace
ER2	Hopper sensor is dust or broken, not positioned	Clear dust or replace
ER3	Stacker sensor is dust, not positioned or broken	Clear dust proofread or replace
ER4	UV sensor is dust or broken	Replace sensor or strap lamp
ER8	Width detection sensor not have enough voltage or broken	Replace or adjustment