

YBQD-20A
COIN COUNTER

MAINTENANCE MANUAL



CONTENTS

1. Introduction (P2)

1.1 Main specifications (P2)

2. Removal, installation and adjustment of main assemblies (P2)

2.1 Upper cover & bottom cover (P2)

2.2 Feed mechanism (P4)

2.3 Thickness adjusting mechanism (P5)

2.4 Cam assembly (P6)

2.5 Rotating disc (P6)

2.6 base plate and related parts (P6)

2.7 Minor cone gear assembly (P6)

2.8 Lower motor assembly (P6)

2.9 Solenoid mechanism (P7)

2.10 Count sensor assembly (P7)

3. Electrical part (P7)

3.1 Power supply system (P7)

3.2 Control and display system (P7)

3.3 Motor (P8)

3.4 Count sensor (P8)

3.5 Electro-magnetic coin stopper (P8)

4. Maintenance (P8)

5. Troubleshooting table (P9)

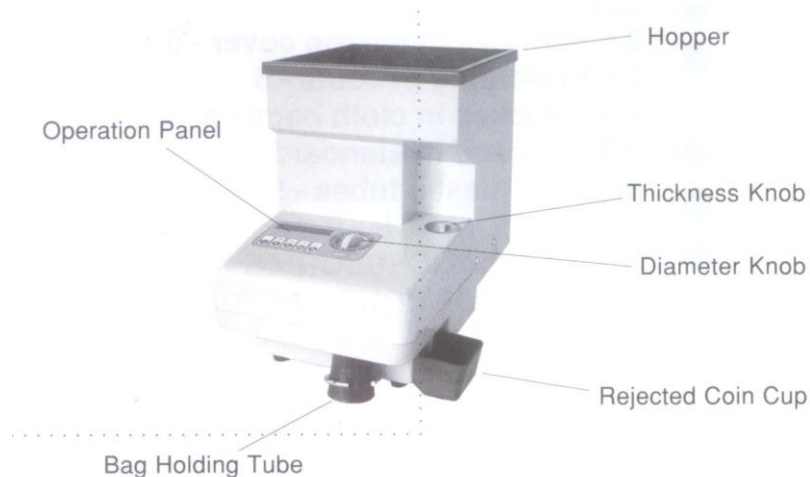
6. Tools for maintenance (P11)

Appendix one: List of parts and assemblies (P12)

Appendix two: Attached figures (P16)

1. Introduction

Thank you for selecting the YBQD-20A coin counter. In addition to normal counting, adding, and batching, the YBQD-20A can also provide advanced functions such as memory, automatic stop and automatic reverse to remove jammed coins. The large capacity coin hopper and belt-disc two stage coin feeding system make the counting more smooth and effective. The YBQD-20A is the perfect solution for fast, accurate and reliable coin counting.



1.1 Main specifications

Counting speed	< 3000 coins/ min
Hopper capacity	4000 coins ($\Phi 25 \times 2$ mm)
Coin diameter range	14 - 34 mm
Coin thickness range	1.0 - 3.5 mm
Display	6 digit LED
Batch range	1 – 9999
Power supply	220V 50 Hz (or 110V 60 Hz)
Power consumption	55 W
Dimensions	258 (W) X 418 (D) X 380 (H) mm
Weight	12. 5 Kg

2. Removal, installation and adjustment of main assemblies

2.1 Upper cover & bottom cover

Press the two sides of upper cover by hands and at the same time lift the cover. Then, the cover will be removed from the machine by overcoming the magnetic attractive force and friction force.

Remove the hopper from its cover and then loosen off four M4X16 screws which connect the main body with bottom cover. Place the machine upside down and then

remove the bottom cover.

2.2 Feed mechanism

Remove the extension spring and spring pin (No.85 and No.84, Att.Fig.4) and loosen off two M5X12 screws to remove feed mechanism (No.56, Att. Fig.4). Refer to Att. Fig.5.

2.2.1 Disassembly / Assembly of feed mechanism

Refer to Att. Fig.5.

2.2.2 Replacement of coin conveying belt

When the coin conveying belt has been worn out or after processing approx. one million coins, the coin conveying belt should be replaced.

Do as follows (refer to Fig.1):

Raise the front pulley and then lift up the back pulley with a finger from the indicated place. Replace the belt.

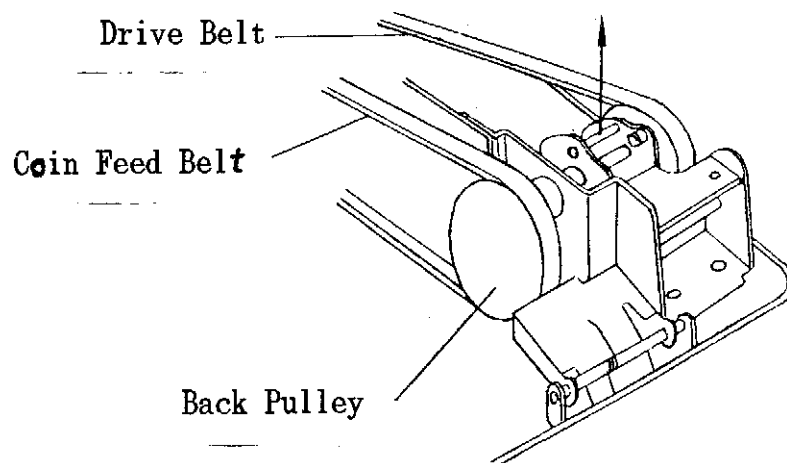


Fig. 1

2.2.3 Tension adjustment of coin conveying belt

The coin conveying belt should be in proper tension. If the belt is too tight it may cause an unwanted low speed and overlapped coins may occur when too loose. Loosen the fixing nut at the front pulley and adjust it to achieve proper belt tension.

2.2.4 Height adjustment of coin conveying belt

A proper height of coin conveying belt is necessary to ensure highest counting speed. Carry out adjustment with the help of a thinnest coin to be counted as the belt position should correspond to the thickness of coins.

The height of the front and back pulleys can be adjusted via two adjusting screws (refer to Fig.2, Screw I and Screw II). Normally, the coin channel gap directly under the pulleys

should be 0.5mm less than the thickness of thinnest coin to be counted.

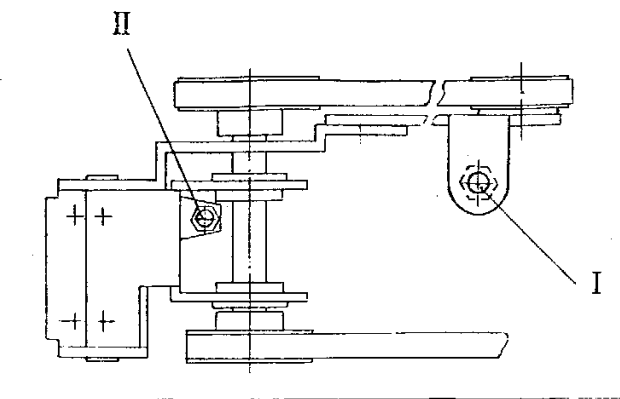


Fig.2

A more practical adjustment method: turn clockwise the adjusting screw I or screw II to raise the coin conveying belt and at the same time make a coin go through the channel for test until the coin will not move with the belt. Then, turn anti-clockwise the adjusting screw I or screw II until the coin moves with the belt. Finally fasten tightly the lock nuts for the two screws.

2.2.5 Adjustment of the drive belt

The tension level of the drive belt (refer to Fig.1) can be adjusted via the tension roller (No.74, Att. Fig.4). Three different positions for the tension roller are provided. The drive belt should not be too tight.

2.3 Thickness adjusting mechanism

Refer to Fig.3. Raise the front pulley fixing plate. Pull the lever with one hand and lift up the thickness adjusting mechanism with the other. For installing the mechanism, pull the lever with one hand and put on the mechanism along the two guide pillars to a proper position with the other and then release the lever. Make sure the lower end of the lever is clicked into the groove on the lower end of the spiral pillar (No.114, Att Fig.6).

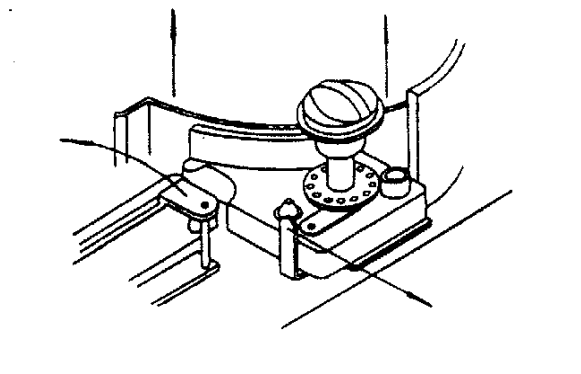


Fig. 3

2.3.1 Adjustment of thickness adjusting mechanism

If there is a need to replace the thickness adjusting mechanism, please pay attention to the follows during installation:

- (1) After unlocking the thickness adjusting mechanism by pulling rightwards the above lever, this mechanism should be able to be easily moved up and down along the two pillars. Otherwise, loosen the nut at the lower end of the pillar (No.121, Att. Fig. 6), adjust the gap between the lower part of the pillar and its guide sleeve fitted in the supporting base (No. 116, Att. Fig.6) is achieved, and then tighten the nut.
- (2) The value on thickness dial should correspond to the height of the thickness channel. For example, turn the thickness knob until the distance between the lower apron (No.117, Att.Fig.6) and the rotating disc (No.59, Att.Fig.4) is 2.2 – 2.35mm (can be controlled with a coin of similar thickness) and then the indicating line on the thickness knob should point to “2.0” on thickness dial. Otherwise, take off the thickness dial and re-attach it properly.
- (3) The position pin (No.53, Att.Fig.4) should be fitted into a proper hole at equalizing disc (No.112, Att.Fig.6) so that the rotation of the knob will be limited to a range between “1.0 – 3.4+0.2”. When the position is located, fit the position pin into the hole with “Glue 502” .

2.3.2 Disassembly/ Assembly of the thickness adjusting mechanism

Refer to Att. Fig.6. in order to remove or fit the spiral pillar conveniently, it's better to lock the pin (No. 123) first by inserting the special retaining plate into its 0.7 mm groove which is at the lower end. Withdraw the retaining plate after removing or installing the spiral pillar.

2.4 Cam assembly

Adjust the diameter channel to the maximum, pull out the open ring from the lower end of the shaft of cam, loosen off the two fixing screws of the cam assembly (No.42, Att. Fig.4), and then remove the assembly.

2.4.1 Installation and adjustment of the cam assembly

- (1) Put the lower end of the cam assembly into the shaft hole of the base plate assembly and fit on the open ring.
- (2) Fit on two M4X12 screws and the sprig washers (don't tighten the screws).
- (3) Turn the diameter knob to adjust the distance between the movable coin rail (No.45, Att.Fig.4) and fixed coin rail (No.48, Att.Fig.4) to 22.25+0.1mm which can be controlled by a special gauge.
- (4) Slightly move the cam bracket (No.126, Att. Fig. 7) to have the front pointed end of the setting head (No. 128, Att. Fig. 7) firmly sat in between two teeth of the setting roller. Then tighten two M4X12 screws and apply red locking paint to the screws.
- (5) The setting head should be carefully adjusted to guarantee setting reliably and with proper tightness. After adjustment, tighten firmly the lock nut and apply red locking

paint to it.

- (6) Check and adjustment of diameter dial: fit on the chassis and covers. The indicating line on diameter knob should point to "25" on dial. Otherwise, take off the dial and re-attach it properly.

2.4.2 Disassembly / assembly of cam assembly

Refer to Att. Fig.7.

2.5 Rotating disc

Refer to Att. Fig.4 for removing and installing methods.

The rotating disc should be 0 -0.2 above the base plate (No 40, Att. Fig 4). If the disc is lower than the plate, place or exchange thin washers (No 60, Att. Fig 4) below to achieve a proper level. The surface jump of the disc should not be greater than 0.1mm.

2.6 Base plate and related parts

2.6.1 Disassembly of base plate and related parts

- (1) Remove the feed mechanism assy (No 56, Att. Fig 4), thickness adjusting mechanism (No 54) and cam assy (No 42).
- (2) Loosen off the 5 M4×12 fixing screws, and then remove the base plate (No 40, Att. Fig 4) and related parts.
- (3) Remove the other parts by referring to Att. Fig 4.

2.6.2 Main points for installing the base plate and related parts.

- (1) The parallelism between the coin guiding side of the fixed coin rail and the coin guiding side of the movable coin rail should be 0.1mm.
- (2) When installing the base plate, make sure that the gap between the circular arc of the base plate and the edge of rotating disc should be even, and then fix the base plate with 4 M4×12 screws.
- (3) Under co-action of the cam and extension spring, the movable coin rail should move reliably and smoothly.

2.7 Minor cone gear assy

When installing the cone gear assy (No 77, Att. Fig 4) make sure that the gear pair should be in correct mesh and their normal side gap should be Refer to Att. Fig 8 for disassembly/ assembly.

2.8 Lower Motor assy

When installing the lower motor assy, the axes of the two pulleys should be parallel and the tension of the timing belt should be proper. Refer to Att. Fig 8 for disassembly / assembly.

2.9 Solenoid mechanism

When installing the solenoid mechanism, the coin stopper should be able to move

forward and backward nimbly. The relative position between the front end of the claw (No 44, Att. Fig 4) and the fixed coin rail should be in conformity with Fig 4 before closure of the coin stopper.

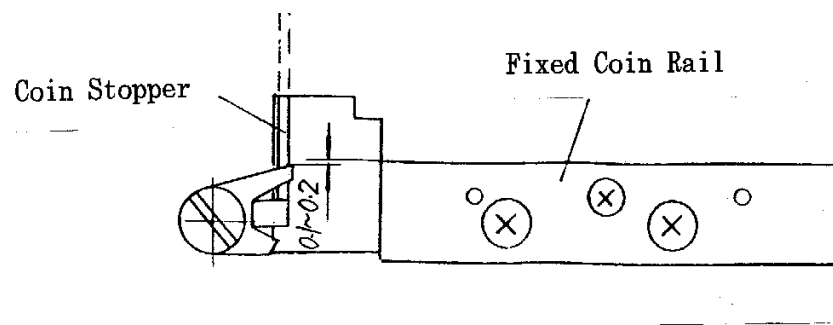


Fig. 4

2.10 Count sensor assy

When installing the count sensor assy, the lower operating surface of the count sensor should be lower than the surface of the base plate while the distance between its upper operating surface should be greater than 3.5mm.

3. Electrical part

The electrical part of this machine consists of power supply system, control and display system, upper and lower motors, count sensor and elector- magnetic coin stopper (solenoid mechanism).

3.1 Power supply system

- (1) The power supply system includes power cord, transformer, AC power supply board and DC power supply board. For wiring diagram refer to Att. Fig 19, and for circuits diagram refer to Att. Fig 12 & Fig 14.

This system provides the motor with operating voltage of 220V / 110VAC, the coin stopper with operating voltage of +24VDC, and the control board and count sensor with operating voltage of +5VDC.

- (2) check of power supply system

Measure the voltage between XS7-1# and XS7-3# with an AC voltage meter, and the value should be 205 - 235VAC (100 -120VAC).

Measure the voltage between XS15 -3# and XS15-4# with a AC voltage meter, and the value should 8.2-9.8VAC; the voltage between XS15-1# and XS15-2# should be 22 -26VAC.

Measure the voltage between XS17 - 1# and XS14 -3# with a DC voltage meter, and the value measured should be 4.85 -5.25VDC.

The above voltage are not adjustable. When the value measured is not in conformity with the above requirements, check the power cords and connectors or if necessary remove the power supply board to find out and replace the defective components.

3.2 Control and display system

This system consists of control board, display board, display cable and control panel.

- (1) The control system adopts the microprocessor 89C51 (4K ROM, 128 bit RAM). For its principle circuits diagram refer to Att. Fig 16.
- (2) Six-digit LED display is adopted. The maximum number of coins to be displayed is 999,999. The display board is connected with the control board via a 20 pin flat cable. For principle circuits diagram refer to Att. Fig 18.
- (3) Check of the control board
Measure XS 21-1# with a DC voltage meter. The value measured should be 4.85 -5.10VDC; measure D2 -7# with a DC voltage meter, the value measured should be $4.75 \pm 0.01V$. Otherwise, adjust WR1.

3.3 Motor

This machine uses a 220V/ 110VAC single -phase capacitor-operated motor. Its start and brake are controlled by 89C51.

3.4 Count sensor

- (1) The count sensor is connected to XS16, and connected to the interruption input 1 (D1 -13#) of microprocessor 89C51 via XS17. When a coin passing through the count sensor, a pulse signal will occur and will be sent to the interruption input 1 for counting.
- (2) Check of count sensor
Switch on the machine and then measure XS16-2# with a DC voltage meter. When the sensor is covered by a coin the value measured should be greater than 4.5V while when not covered the value should be less than 50mV. Otherwise, check the related connectors or if necessary replace the sensor.
- (3) Self-detection of count sensor
When the machine is switched on, the count sensor will be automatically detected. When " EAO " appears in display window refer to " Item 7 of Section 5 Trouble shooting " for removal method. " EAO " will disappear automatically after removal of trouble.

3.5 Electro-magnetic coin stopper

The coin stopper is a very important part for accurate counting. It is connected to its operating circuits through XS13. Its operating voltage is 24VDC. During normal counting operations, the interval between closure and release of the coin stopper is very short. To avoid being damaged turn off the main switch at once when it does not release.

▲ Caution!

The electrifying time for the coin stopper should be less than 5 seconds.
For wiring diagram of this machine refer to Att. Fig 19.

4. Maintenance

Regular maintenance will ensure high counting performance.

- (1) Clean frequently the coin track and the operating surfaces of count sensor. Refer to

Fig 3. Raise the front pulley fixing plate and pull the lever to remove the thickness adjusting mechanism to gain access to the coin track. Clean the count sensor with a small brush.

- (2) Check diameter and thickness settings. Refer to Section 2.4 and Section 2.5 for adjusting methods if necessary.
- (3) Check the coin feed belt and timing belt. When the belt is worn out it must be replaced. No grease spots are allowed on the surface of coin feed belt.
- (4) Check all connectors and fastenings to ensure in a good state.

5. Trouble shooting table

No	Problem	Cause	Remedy
1	Blank display & no closure of solenoid mechanism	1. Fuse blown. 2. Poor contact of mains cord. 3. Poor contact of connectors on power supply board.	1. Replace fuse (2A). 2. Check soldering points and connectors of mains cord. 3. Ensure good contact.
2	Normal display but no closure of solenoid.	1. Poor contact of XS13. 2. Solenoid damaged.	1. Ensure good contact. 2. Replace solenoid mechanism.
3	Function keys don't work.	Poor contact of control panel.	Open the top cover and make connector contact firmly.
4	Blank display or abnormal display.	Poor contact of 20 - pin flat cable.	Open the top cover and make the flat cable contact firmly.
5	Motor does not start.	1. Poor contact of 12 -pin cable between control board and power supply board, or poor contact of connectors of control panel. 2. Motor defect. 3. Power supply board problem. 4. Safety switch defect.	1. Make the relative connectors contact firmly. 2. Replace motor. 3. Remove and check the power supply board. Replace the damaged components or power supply board 4. Replace safety switch.

6	EA0 appears	<ol style="list-style-type: none"> 1.Dust on count sensor surface or sensor covered by a coin . 2.Count sensor defect. 	<ol style="list-style-type: none"> 1. Clean the sensor with a brush or remove the coin. 2. Replace count sensor.
7	Over-count in batch mode.	<ol style="list-style-type: none"> 1. NO closure of solenoid mechanism. 2. Unproper adjustment of back pulley. 3.Coin conveying belt is too loose. 	<ol style="list-style-type: none"> 1. Refer to Item 2. 2.Properly lower down the back pulley. 3.Properly increase the tension of coin conveying belt.
8	Under-count in the first batch.	Operator's failure (the batch quantity register is not reset).	Refer to Item (2) or (4) of Section 2.2.2, Operating Manual.
9	Low counting speed; coins transported by conveying belt with slippage or difficult to be fed into coin track.	<ol style="list-style-type: none"> 1. Unproper adjustments. 2.Grease spots on coin conveying belt or track. 	<ol style="list-style-type: none"> 1. Check rotating disc adjustment (Refer to Section 2.5). Check coin conveying belt adjustment (Refer to Section 2.2.4).I Check thickness track adjustment. 2. Wipe out grease spots.
10	Coin jamming at thickness track,	<ol style="list-style-type: none"> 1.Lower apron (No., 117) not parallel with rotating disc. 2.Jump of rotating disc surface too large. 	<ol style="list-style-type: none"> 1. Adjust the parallelism by placing washers at one end of the apron. 2. Adjust or replace rotating disc.
11	Coin jamming at coin rail.	<ol style="list-style-type: none"> 1.Unproper width of coin track. 2. Two coin rails not parallel. 3. Worn coin rails. 	<ol style="list-style-type: none"> 1. Check for proper diameter adjustment. 2.Adjust movable coin rail. 3. Replace coin rails.

6. Tools for maintenance

(1) Special tools

No	Part No.	Description	Quantity	Notes
1	00GJ-1	V-iron	1	
2	00GJ-2	Retaining plate	1	
3	00GJ-01	Gauge for diameter track	1	
4	00GJ-03	Puller (removing cone gear)	1	
5	00GJ-3	Soft drift	1	
6	00GJ-5	Punching pin ($\Phi 2$ & $\Phi 2.5$)	2	
7	00GJ-6	Narrow V-iron	1	

(2) General tools

No	Description	Quantity	Notes
1	Crosshead screw driver	1	150mm
2	Crosshead screw driver	1	100mm
3	Standard screw driver	1	75mm
4	Two -head spanner	1	7 × 8mm
5	English spanner	1	150mm
6	Hammer	1	1/ 2'
7	Wooden hammer	1	
8	Tweezers	1	
9	Long - nosed pliers	1	160mm
10	Cutting pliers	1	160mm

Appendix One: List of parts and assemblies

No	Part No	Description	Qty	Location
1	20A/02-1	Upper Cover	1	Att. Fig 1
2	10 / 00-07	Control Panel	1	Att. Fig 1
3	10 / 00-3	Diameter Dial	1	Att. Fig 1
4	10 / 00-4	Thickness Dial	1	Att. Fig 1
5	10 / 00-03	Display Board	1	Att. Fig 1
6	DCJ-20/ 003/4	Spacer Ring	2	Att. Fig 1
7	10 / 00-18	Protective Plate	1	Att. Fig 1
8	20A / 02-01	Magnetic Assy	1	Att. Fig 1
9	20A/ 00-011	Hopper (with a bar)	1	Att. Fig.1
10	20A/ 03	Bottom Cover Assy(Incl No11, 12, 14, 15)	1	Att. Fig 2
11	10 / 03-1	Bag Holder	1	Att. Fig 2
12	10 / 03-2	Holder Ring	1	Att. Fig 2
13	10 / 00-1	Reject Cup	1	Att. Fig 2
14	20A / 03-03	Exterior Display Port Assy	1	Att. Fig 2
15	20A / 03-02	Power Switch Assy	1	Att. Fig 2
16	20A / 04A/ B	Transformer (A: 220V; B: 110V)	1	Att. Fig 3
17	20A / 00-08	CW7805C Assy	1	Att. Fig 3
18	10 / 00-13	Screw Bolt	4	Att. Fig 3
19	10 / 00-2	Space Ring	4	Att. Fig.3
20	10 / 00-12	Spacer Ring	1	Att. Fig 3
21	20A / 00-02	DC Power Supply Board	1	Att. Fig 3
22	20A/ 00-01	Control Board	1	Att. Fig 3
23	20A / 00-06	Short Connection Cable	1	Att. Fig 3
24	20A / 00-05	Display Cable	1	Att. Fig 3
25	10 / 00-8	Protective Cover	1	Att. Fig 3
26	20A / 00-5	Bracket	1	Att. Fig 3
27	20A/ 00-07	Safety Switch Assy	1	Att. Fig 3
28	20A / 00-3	Bracket	1	Att. Fig 3
29	20A/ 00-09A/B	Capacitor Assy (A: 220V; B:110V)	1	Att. Fig 3
30	20A/ 00-4	Minor Cover	1	Att. Fig 3
31	20A/00-010	Connection Cable	1	Att. Fig 3
32	20A/ 00-11	Grounding Leaf	1	Att. Fig 3
33	20A/00-03	AC Power Supply Board	1	Att. Fig 3
34	DCJ-40/00-7/L=9	Spacer Ring	4	Att. Fig 3
35	20A/ 00-04	Connection Cable	1	Att. Fig 3
36	20A/01-02	Chassis	1	Att. Fig 4
37	10/ 01-16	Pillar	1	Att. Fig 4
38	10/ 0104	Sorting Chute Assy	1	Att. Fig 4
39	10/ 01-02	Sliding Plate Assy	1	Att. Fig 4
40	20A/ 01-01	Base Plate Assy	1	Att. Fig 4

41	10/ 01-15	Extension Spring	1	Att. Fig 4
42	10/ 0103	Cam Assy	1	Att. Fig 4
43	10/01-54	Pin Screw	1	Att. Fig 4
44	10/ 01-53	Claw	1	Att. Fig 4
45	10/ 01-5	Movable Coin Rail	1	Att. Fig 4
46	10/ 01-4	Paper Washer	1	Att. Fig 4
47	10 / 01-3	Plate Washer	1	Att. Fig 4
48	10 / 01-2	Fixed Coin Rail	1	Att. Fig 4
49	10 / 01-37	Washer	2	Att. Fig 4
50	20A/ 01-11	Left Spring Clip	1	Att. Fig 4
51	10 / 00-2	Spacer Ring	4	Att. Fig 4
52	20A / 01-4	Left Bracket	1	Att. Fig 4
53	10 / 00-11	Position Pin	1	Att. Fig 4
54	20A/ 0102	Thk Adjusting Mechanism	1	Att. Fig 4
55	10/ 01-49A	Toothed V- belt	1	Att. Fig 4
56	10/ 0101A/B	Feed Mechanism Assy (A:220V; B:110V)	1	Att. Fig 4
57	10/ 01-49B	Long Toothed V- belt	1	Att. Fig 4
58	20A/ 01-16	Cap	1	Att. Fig 4
59	10 / 01-04	Rotating Disc	1	Att. Fig 4
60	10/ 01-11	Adjusting Washer	1	Att. Fig 4
61	20A/ 01-2	Central Shaft	1	Att. Fig 4
62	6001-2RS	Bearing	1	Att. Fig 4
63	20A/ 01-10	Right Spring Clip	1	Att. Fig 4
64	20A/ 01-3	Right Bracket	1	Att. Fig 4
65	20A/ 01-8	Apron	1	Att. Fig 4
66	20A/ 01-7	Detecting Head	1	Att. Fig 4
67	20A / 01-03	Connection Wire	1	Att. Fig 4
68	20A / 0101A/B	Feed Belt Assy (A:220V; B: 110V)	1	Att. Fig 4
69	20A/ 01-12	Plate	1	Att. Fig 4
70	20A / 01-13	Stand	1	Att. Fig 4
71	20A / 01-15	Knurled Nut	1	Att. Fig 4
72	20A / 01-14	Supporting Bar	1	Att. Fig 4
73	HTD-240-3M-6	Timing Belt	1	Att. Fig 4
74	10/ 01-31	Tension Roller	2	Att. Fig 4
75	10/ 01-32	Shaft	1	Att. Fig 4
76	20A/ 0103 A/B	Lower Motor Assy (A:220V; B: 110V)	1	Att. Fig 4
77	10 / 0105 A/ B	Minor Cone Gear Assy(A:220V;B:110V)	1	Att. Fig 4
78	10/ 01-12	Adjusting Washer	1	Att. Fig 4
79	10/ 01-33	Sleeve	1	Att. Fig 4
80	62800-2RS	Bearing	1	Att. Fig 4
81	10/ 01-10	Adjusting Washer	1	Att. Fig 4
82	10/ 01-05	Cone Gear	1	Att. Fig 4
83	10/ 0108	Count Sensor Assy	1	Att. Fig 4
84	10/ 01-13	Spring Pin	1	Att. Fig 4

85	10/ 01-14	Extension Spring	1	Att. Fig 4
86	10/ 0106	Solenoid Mechanism	1	Att. Fig 4
87	10/ 0101-01	Fixing Stand Assy	1	Att. Fig 5
88	10/ 0101-2	Pillar	1	Att. Fig 5
89	10/ 0101-5	Shaft	1	Att. Fig 5
90	10/ 0101-4A	Pulley	1	Att. Fig 5
91	10/ 0101-9	Shaft	1	Att. Fig 5
92	10/ 0101-14	Washer	1	Att. Fig 5
93	10/ 0101-03	Fixing Plate Assy	1	Att. Fig 5
94	10/ 0101-10A	Shaft	1	Att. Fig 5
95	10/ 0101-7A	Pulley	1	Att. Fig 5
96	628/6X2-2Z	Bearing	2	Att. Fig 5
97	10/ 0101-27	Ring	1	Att. Fig 5
98	10/ 0101-8A	Shield Ring	2	Att. Fig 5
99	10/ 0101-13	Extension Spring	1	Att. Fig 5
100	10/ 0101-04A	Bracket Assy	1	Att. Fig 5
101	10/ 0101-6A	Roller	1	Att. Fig 5
102	10/ 0101-24A	Shaft	1	Att. Fig 5
103	10/ 0101-12	Extension Spring	1	Att. Fig 5
104	10/ 0101-26	Sleeve	1	Att. Fig 5
105	10/ 0101-3	Pillar	1	Att. Fig 5
106	10/ 0101-02	Movable Stand Assy	1	Att. Fig 5
107	10/ 0105-6	Sleeve	2	Att. Fig 5
108	628/8-2Z	Bearing	2	Att. Fig 5
109	10/ 0101-11A/B	Pulley (A:220V; B:110V)	1	Att. Fig 5
110	10/ 0101-1	Shaft	1	Att. Fig 5
111	10/ 0102-1	Thickness Knob	1	Att. Fig 6
112	10/ 0102-03	Equalizer Assy	1	Att. Fig 6
113	10/ 0102-3	Bracket	1	Att. Fig 6
114	10/ 0102-6	Spiral Pillar	1	Att. Fig 6
115	20A/ 0102-01	Border Plate	1	Att. Fig 6
116	10/ 0102-02	Supporting Base	1	Att. Fig 6
117	20A/ 0102-1	Lower Apron	1	Att. Fig 6
118	10/ 01-6	Extension Spring	1	Att. Fig 6
119	20A/ 0102-02	Pillar Base Plate Assy	1	Att. Fig 6
120	20A/ 0102-2	Guide Pillar	1	Att. Fig 6
121	20A/0102-3	Guide Pillar	1	Att. Fig 6
122	10/ 0102-5	Spring	1	Att. Fig 6
123	10/ 0102-4	Lock Pin	1	Att. Fig 6
124	10/ 0103-04	Diameter Knob	1	Att. Fig 7
125	10/ 0103-01	Setting Roller	1	Att. Fig 7
126	10/ 0103-1	Bracket	1	Att. Fig 7
127	10/ 0103-02	Cam	1	Att. Fig 7
128	10/ 0103-03	Setting Head	1	Att. Fig 7

129	10/ 0105-1	Minor Cone Gear	1	Att. Fig 8
130	628/8-2Z	Bearing	2	Att. Fig 8
131	10/ 0105-6	Sleeve	2	Att. Fig 8
132	10/ 0105-2	Stand	1	Att. Fig 8
133	10/ 0105-4	Timing Pulley	1	Att. Fig 8
134	10/ 0105-7	Pulley (220 V)	1	Att. Fig 8
	10/ 0101-11B	Pulley (110V)	1	Att. Fig 8
135	10/ 0105-3	Shaft	1	Att. Fig 8
136	10/ 0105-5	Pillar	1	Att. Fig 8
137	20A/ 0103-01A/B	Lower Motor (A: 220V; B: 110V)	1	Att. Fig 9
138	10/ 0107-1	Stand	1	Att. Fig 9
139	10/ 0107-2	Timing Pulley	1	Att. Fig 9
140	122MXL-95	Wide Timing Belt	1	Att. Fig 10
141	F1480	Bearing	4	Att. Fig 10
142	20A/0101-8	Timing Pulley	10	Att. Fig 10
143	20A/ 0101-6	Driven Shaft	1	Att. Fig 10
144	20A/ 0101-7	Roller	30	Att. Fig 10
145	20A/ 0101-3	Shaft	1	Att. Fig 10
146	20A/ 0101-4	Shaft	5	Att. Fig 10
147	20A/ 0101-2	Post	2	Att. Fig 10
148	20A/0101-1L	Left Plate	1	Att. Fig 10
149	20A/ 0101-5	Driving Shaft	1	Att. Fig 10
150	20A/ 0101-01A/B	Upper Motor Assy (A: 220V; B: 110V)	1	Att. Fig 10
151	20A/ 0101-1R	Right Plate	1	Att. Fig 10
152	20A/ 0101-9	Gear	1	Att. Fig 10
153	20A/ 0101-10	Gear	1	Att. Fig 10

Appendix Two: Attached figures

Fig 1 Exploded diagram of upper cover assy & hopper

Fig 2 Bottom cover assy and rejected coin cup

Fig 3 Electrical assys and related parts

Fig 4 Exploded diagram of main body

Fig 5 Exploded diagram of feed mechanism assy

Fig 6 Exploded of thickness adjustment block

Fig 7 Exploded diagram of cam assy

Fig 8 Exploded diagram of minor cone gear assy

Fig 9 Exploded diagram of lower motor assy

Fig 10 Exploded diagram of conveying belt assy

Fig 11 Component installing diagram of AC power supply board

Fig 12 Electric circuit diagram of AC power supply board

Fig 13 Component installing diagram of DC power supply board

Fig 14 Electric circuit diagram of DC power supply board

Fig 15 Component installing diagram of control board

Fig 16 Electric circuit diagram of control board

Fig 17 Component installing diagram of display board

Fig 18 Electric circuit diagram of display board

Fig 19 Wiring diagram of the machine