A7&V7&N7&S7
Bill Acceptor
Service Manual

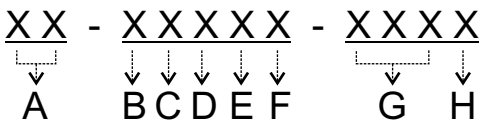
International Currency Technologies
www.ictgroup.com.tw

Contents

Model Number :

A7/V7/S7/N7 Model Number Detail

Model Number Configuration :



A : Model Number
B : Voltage
C : Stacker
D : Bezel
E : Feature
F : Communication Interface
G : Currency
H : Number of Denomination

Example : V 7 - 3 4 D 1 M - USD 3

1. Model Number :

(A). Product Name :

Code	Product Name
A7	Amusement BA
N7	NISR BA
P7	Plastic BA
S7	Power Saving BA
V7	Vending BA

(B). Voltage

Code	Voltage
1	AC 110V
2	DC 12V
3	AC 24V / DC 34V

(C). Stacker Size :

Code	Stacker Size
0	No Cassette
1	100 Note
2	200 Note
4	400 Note
8	800 Note

(D). Bezel :

Code	Bezel
A	Compact Bezel + Frame Style Mounting Kit
B	Compact Bezel + Cover Style Mounting Kit
C	Compact Fitted Bezel + Frame Style Mounting Kit
D	Two-Sided Bezel + Frame Style Mounting Kit
E	Compact Fitted Bezel + Cover Style Mounting Kit
F	Compact Fitted Bezel
H	For Horizontal Stacker Bezel
I	TOB
S	Compact Bezel
T	Two-Sided Bezel

●Mounting kit see P.6

(E). Feature :

Code	Feature	
0	Without Magnetic Sensor.	A7/V7/N7/P7
1	With Magnetic Sensor.	A7/V7/N7/P7
3	With Magnetic Sensor (Water Proof).	A7/V7/S7
5	With Green Sensor.	V7G
6	Without Magnetic Sensor (Water Proof).	A7/V7/S7
7	With UV Sensor.	V7UV
8	With Magnetic Sensor for Plastic Note.	P7
9	Without Magnetic Sensor for Plastic Note.	P7

(F). Protocol :

Code	Protocol	
1	ICT001 + Pulse	(Phone-Card Protocol)
3	ICT003 + Pulse	
4	ICT004 + Pulse	
C	C.C.Talk + Pulse	
E	5V Enable + Pulse	
L	Parallel + Pulse	(Need Parallel Board)
M	MDB + Pulse	(AC 24V / DC 34V or Power Saving)
N	NISR	
P	Pulse	
R	ICT001 + Pulse	(Rs232)

(G). Currency (For Example : USD=US Dollar, EUR= Euro) :

(H). Number of Denomination (Ex. 3 = 3 denominations) :

General Specifications :

Acceptance Rate

96% or greater

Bill insertion

4-way Acceptance

Acceptance Speed

Approx. 3 seconds (including bill stacking)

Bill box Capacity

Approx. 100 bills (80~120) 3MB-SBX100XX
200 bills (200~300) 3MB-SBX050XX
400 bills (350~450) 3MB-SBX060XX
800 bills (750~850) 3MB-SBX090XX

Weight

Approx. 2kg (shipping)

Power Sources

12V DC, 3Amp
24V AC, 2 Amp
34V DC (24V~45V), 1.5Amp
117V AC, 0.2Amp

Power Consumption

Max 50 watts

Environment Range

Operating Temperature 0°C ~ 55°C
Storage Temperature -30°C ~ 70°C
Humidity : 30%~85% RH (no condensation)

A7

Power Sources

110V AC
12V DC

Interface

Pulse
ICT Protocol

N7

Power Sources

117V AC, 0.2Amp (60Hz)

Interface

Pulse
ICT Protocol

V7

Power Sources

34V DC
24V AC
12V DC

Interface

M.D.B (Multi-Drop Bus)
Pulse

S7

Power Sources

12V DC (9V~15V)

Interface

M.D.B (Multi-Drop Bus)
Pulse

Power Consumption

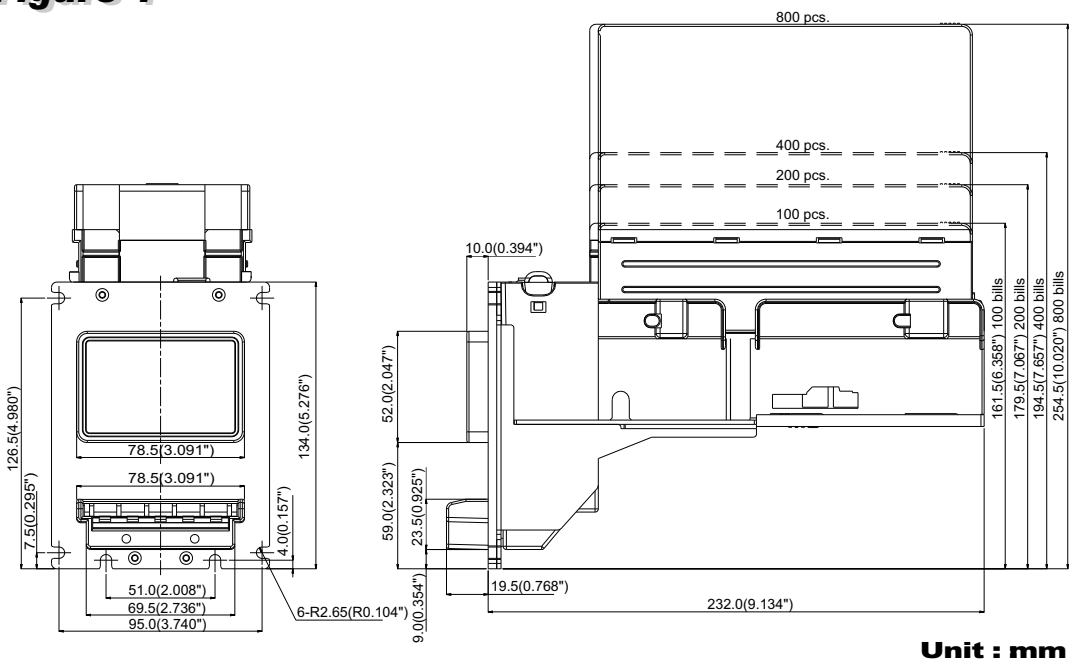
Action mode 12V, 2A(peak), 650mA(average)
Standby mode 12V, 205mA (Max)
Power saving mode 12V, approx. 40 μ A

Environment Range

Operating Temperature -15°C ~ 55°C
Storage Temperature -30°C ~ 70°C
Humidity : 30%~85% RH (no condensation)

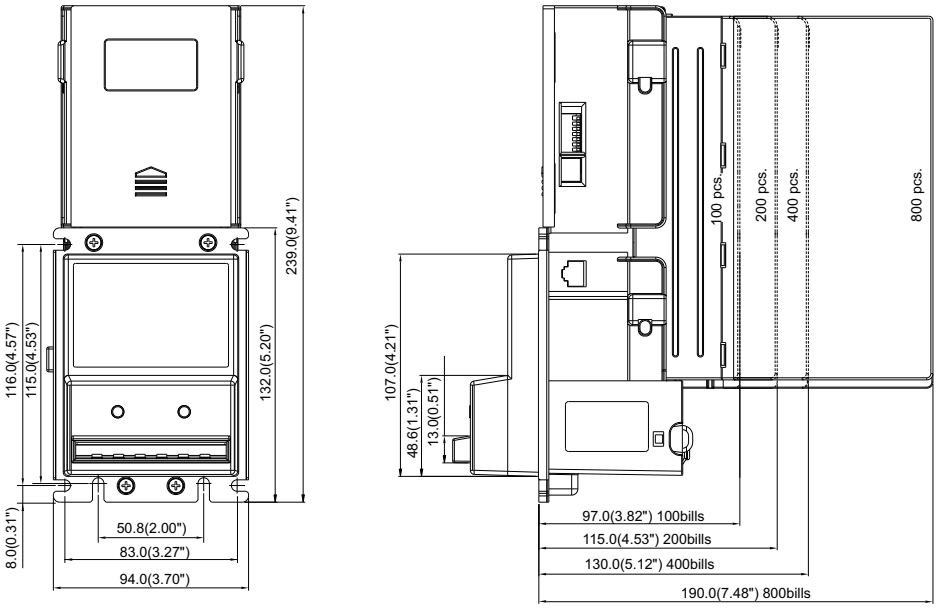
Dimensions :

▶ *Figure 1*



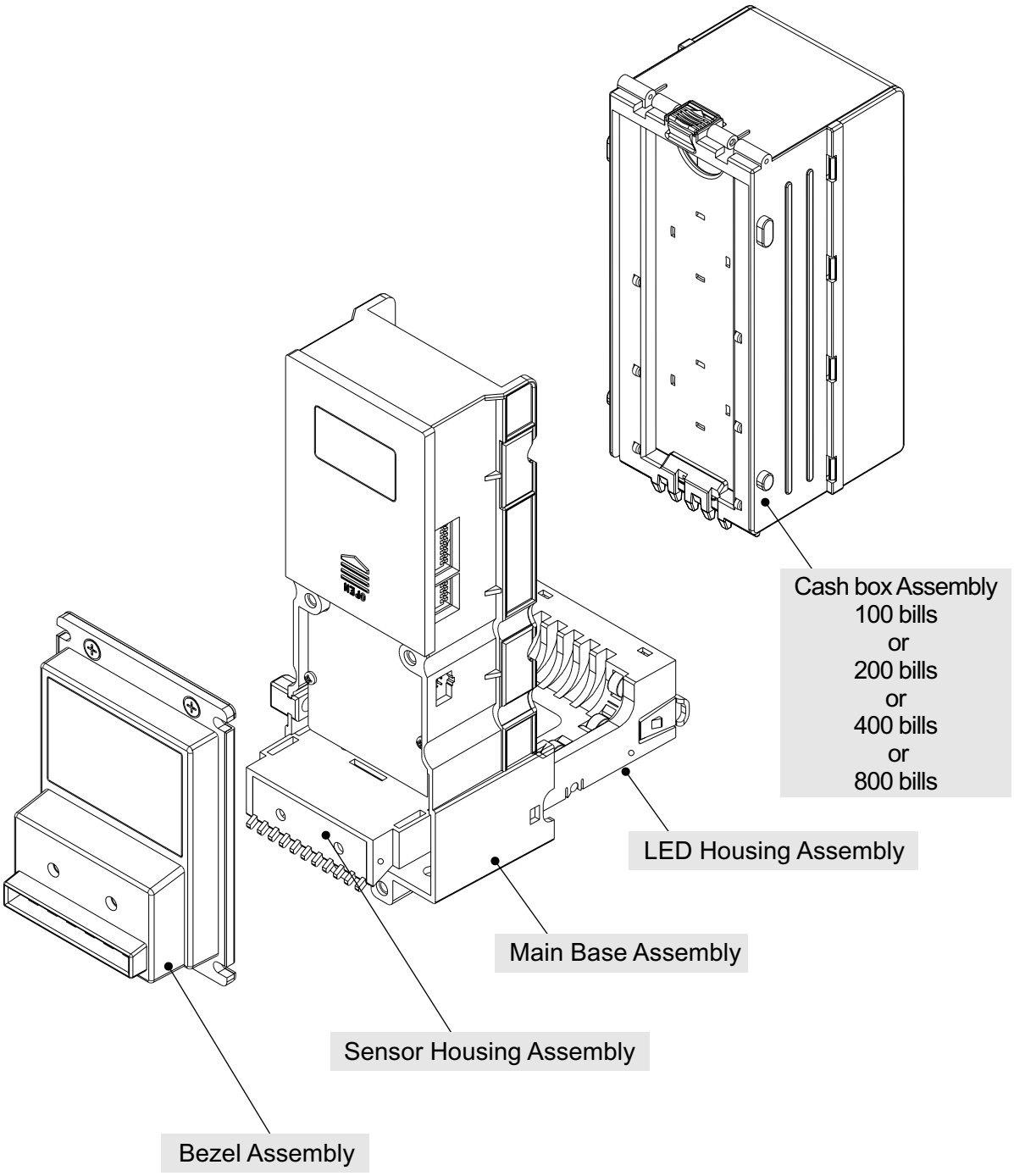
Unit : mm
( ) : in

▶ *Figure 2*



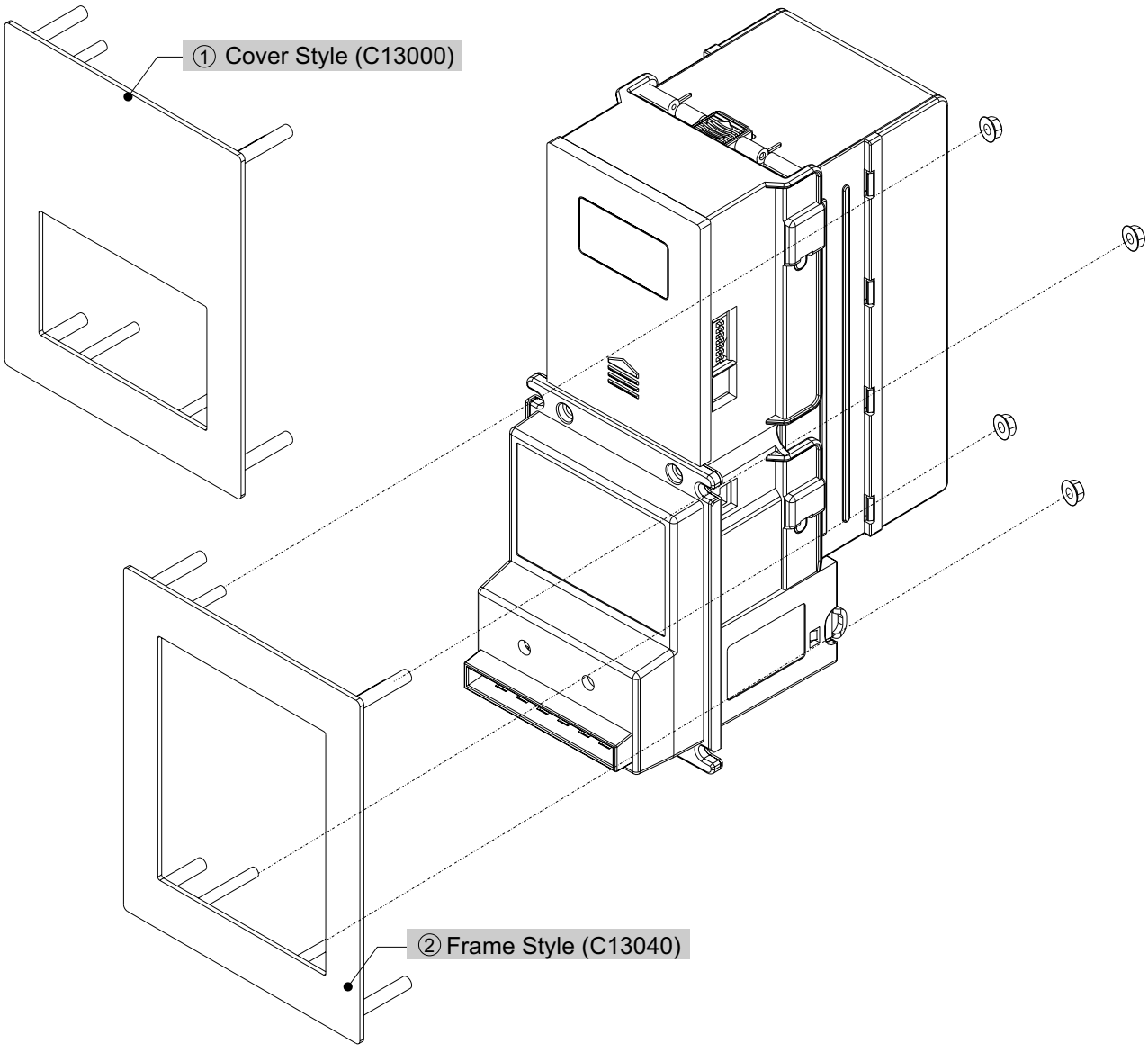
Unit : mm
( ) : in

Component Names :

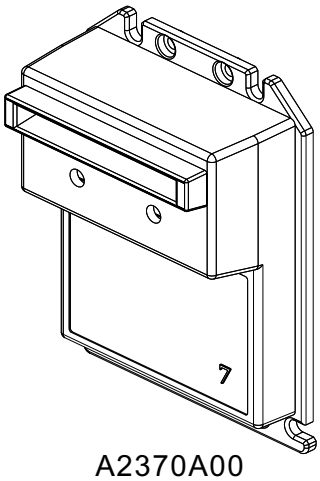


Installation :

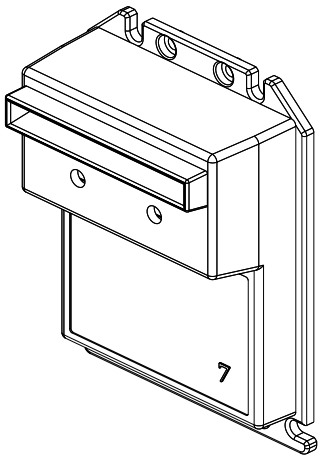
There are two kinds of mounting kits.



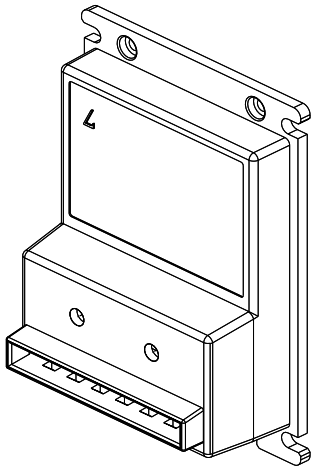
Bezels :



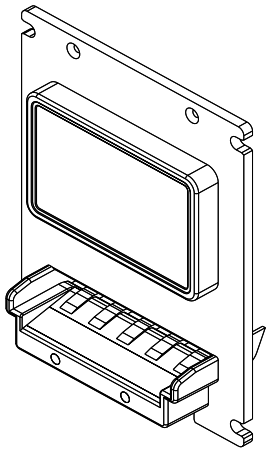
A2370A00
Compact Fitted Bezel for U.S Dollar
Mouth Witdth:67mm



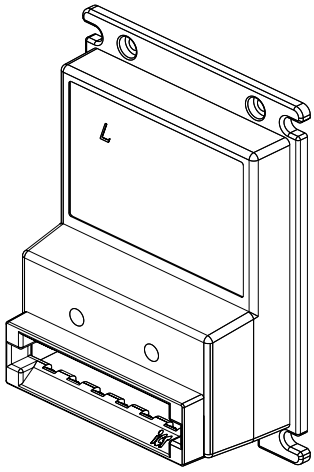
A2324A00
Compact Fitted Bezel
Mouth Witdth:72.8mm



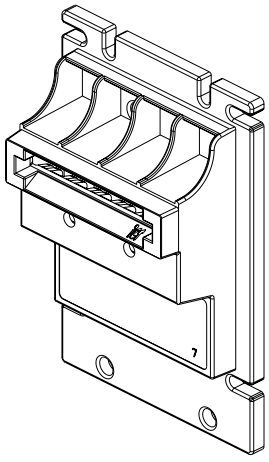
A2209A00
Compact Bezel



A24260
Horizontal Stacker Bezel



A2242B00
Two Sided Bezel



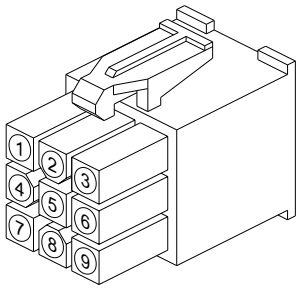
A2582000
TOBI

A7 Pin-out Assignments (Pulse for 12V DC) :

For the ***12V DC*** version of the A7 bill validator, the harness (***part no. WEL-M007***, see page. 17 For pin-out information) has a dual-in-line 30-pin peripheral connector at one end and a 9-pin mating connector at the other end. Connect the 30-pin connector to the side of the bill validator and the 9-pin mating connector to the 12V DC power harness (***part no.CU-961-1***, see page.18 for pin-out information).

◈ 9-pin mating connector pin-out assignments:

Pin 1 INHIBIT +
Pin 2 INHIBIT -
Pin 3 Reserved
Pin 4 Reserved
Pin 5 12V DC (Power)
Pin 6 Reserved
Pin 7 CREDIT_RELAY(N.O.)
Pin 8 CREDIT_RELAY(Common)
Pin 9 GND (Power)



◈ Dual-in-line 30-pin peripheral connector (A7, 12V DC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Pin 1 - CREDIT_RELAY(Common)
Pin 2 - 12VDC (Power)
Pin 3 - ENABLE -
Pin 4 - Reserved
Pin 5 - INHIBIT +
Pin 6 - KEY
Pin 7 - Reserved
Pin 8 - Reserved
Pin 9 - Reserved
Pin 10 - GND (Power)
Pin 11 - Reserved
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - Reserved
Pin 15 - Reserved
Pin 16 - CREDIT_RELAY(N.O.)
Pin 17 - Reserved
Pin 18 - ENABLE +
Pin 19 - KEY
Pin 20 - INHIBIT -
Pin 21 - Reserved
Pin 22 - Reserved
Pin 23 - Reserved
Pin 24 - Reserved
Pin 25 - Reserved
Pin 26 - Reserved
Pin 27 - Reserved
Pin 28 - Reserved
Pin 29 - Reserved
Pin 30 - Reserved

Caution

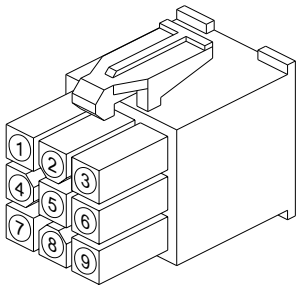
Turn off power before connecting or disconnecting the bill validator.

A7 Pin-out Assignments (Pulse for 117V AC) :

For the ***117V AC*** version of the A7 bill validator, connect the 30-pin peripheral connector on one end of the harness (***part no. WEL-M008***, see page.19 for pin-out information) to the side of the unit and the 9-pin mating connector to the 117V AC power harness (***part no. WEL-M010 and WEL-M012***, see page.20, 21 for pin-out information).

◈ 9-pin mating connector pin-out assignments:

Pin 1 NEUTRAL INHIBIT
Pin 2 NEUTRAL ENABLE
Pin 3 HOT ENABLE
Pin 4 117V AC HOT(Power)
Pin 5 **Earth - Ground**
Pin 6 117V AC HOT(Power)
Pin 7 CREDIT_RELAY(N.O.)
Pin 8 CREDIT_RELAY (Common)
Pin 9 GND (Power)



◈ Dual-in-line 30-pin peripheral connector (A7, 117V AC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Pin 1 - CREDIT_RELAY(Common)
Pin 2 - Reserved
Pin 3 - NETURAL ENABLE
Pin 4 - 117V AC NETURAL(Power)
Pin 5 - NEUTRAL INHIBIT
Pin 6 - KEY
Pin 7 - Reserved
Pin 8 - Reserved
Pin 9 - Reserved
Pin 10 - Reserved
Pin 11 - Reserved
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - Reserved
Pin 15 - Reserved
Pin 16 - CREDIT_RELAY(N.O.)
Pin 17 - Reserved
Pin 18 - HOT ENABLE
Pin 19 - KEY
Pin 20 - 117V AC HOT(Power)
Pin 21 - ERATH GROUND
Pin 22 - Reserved
Pin 23 - Reserved
Pin 24 - Reserved
Pin 25 - Reserved
Pin 26 - Reserved
Pin 27 - Reserved
Pin 28 - Reserved
Pin 29 - Reserved
Pin 30 - Reserved

Caution

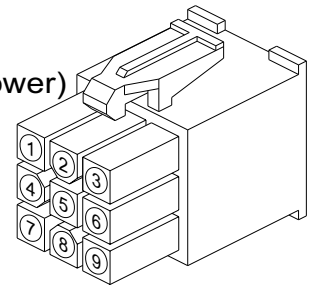
Turn off power before connecting or disconnecting the bill validator.

A7 Pin-out Assignments (NISR for 117V AC) :

For the 117V AC version of the A7 bill validator with ***NISR*** interface, the harness (***part no. WEL-M013***, see page.30 for pin-out information) has a dual-in-line 30-pin peripheral connector that connects to the side of the B.A , a 9-pin mating connector for connecting to the 117V AC power harness , and a 18-pin interface connector see next page for pin-out information to connect to the controller.

◈ 9-pin mating connector pin-out assignments:

Pin 1 Reserved
Pin 2 Reserved
Pin 3 Reserved
Pin 4 117V AC HOT(Power)
Pin 5 Reserved
Pin 6 117V AC NETURAL(Power)
Pin 7 CREDIT_RELAY(N.O.)
Pin 8 CREDIT_RELAY (Common)
Pin 9 Reserved



◈ Dual-in-line 30-pin peripheral connector (A7, 117V AC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Pin 1 - CREDIT_RELAY(Common)
Pin 2 - Reserved
Pin 3 - Reserved
Pin 4 - 117V AC NETURAL(Power)
Pin 5 - Reserved
Pin 6 - Reserved
Pin 7 - Reserved
Pin 8 - /INTERRUPT
Pin 9 - Reserved
Pin 10 - GND
Pin 11 - /DATA
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - Reserved
Pin 15 - Reserved
Pin 16 - CREDIT_RELAY(N.O.)
Pin 17 - Reserved
Pin 18 - Reserved
Pin 19 - Reserved
Pin 20 - 117V AC HOT(Power)
Pin 21 - Reserved
Pin 22 - /OUT_OF_SERVICE
Pin 23 - Reserved
Pin 24 - /ACCEPT_ENABLE
Pin 25 - Reserved
Pin 26 - /SEND
Pin 27 - Reserved
Pin 28 - Reserved
Pin 29 - Reserved
Pin 30 - Reserved

Caution

Turn off power before connecting or disconnecting the bill validator.

A7 Pin-out Assignments (NISR for 117V AC) :

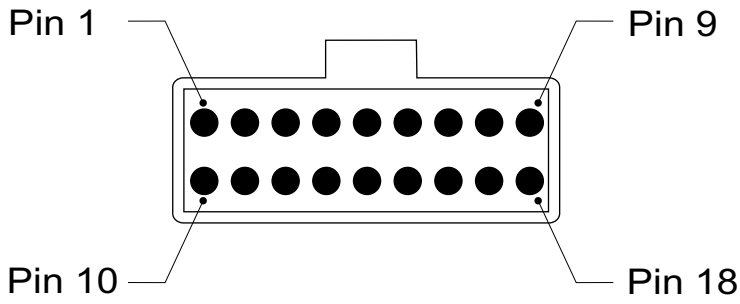
NISR CONNECTOR

INTERFACE CONNECTOR :

◈ 18-pin mating connector pin-out assignments:

Pin 1 / $ 1 CREDIT	Pin 10 /OUT-OF-SERVICE
Pin 2 INTERRUPT	Pin 11 /DEBUG DATA
Pin 3 / $ 5 CREDIT	Pin 12 /ACCEPT ENABLE
Pin 4 GROUNG	Pin 13 / $ 2 CREDIT
Pin 5 /DATA	Pin 14 /SEND
Pin 6 ESCROW . HIGH .	Pin 15 $ 1 ENABLE , Low
Pin 7 $ 5 ENABLE , High	Pin 16 $ 2 ENABLE , Low
Pin 8 $ 2 ENABLE , High	Pin 17 $ 5 ENABLE , Low
Pin 9 $ 1 ENABLE , High	Pin 18 ESCROW , Low

NISR PIN LOCATIONS

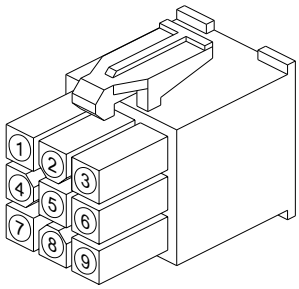


V7 Pin-out Assignments (Pulse for 12V DC) :

For the ***12V DC*** version of the V7 bill validator, the harness (***part no. WEL-V701***,see page.22 for pin-out information) has a dual-in-line 30-pin peripheral connector at one end and a 9-pin mating connector at the other end. Connect the 30-pin connector to the side of the bill validator and the 9-pin mating connector to the 12V DC power harness (***part no.CU-961-1***, see page.18 for pin-out information).

◈ 9-pin mating connector pin-out assignments:

Pin 1 INHIBIT +
Pin 2 INHIBIT -
Pin 3 Reserved
Pin 4 Reserved
Pin 5 12V DC (Power)
Pin 6 Reserved
Pin 7 CREDIT_RELAY(N.O.)
Pin 8 CREDIT_RELAY (Common)
Pin 9 GND (Power)



◈ Dual-in-line 30-pin peripheral connector (V7, 12V DC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Pin 1 - CREDIT_RELAY(Common)
Pin 2 - CREDIT_RELAY(N.O.)
Pin 3 - Reserved
Pin 4 - INHIBIT +
Pin 5 - KEY
Pin 6 - Reserved
Pin 7 - Reserved
Pin 8 - Reserved
Pin 9 - Reserved
Pin 10 - Reserved
Pin 11 - Reserved
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - Reserved
Pin 15 - Reserved
Pin 16 - Reserved
Pin 17 - Reserved
Pin 18 - INHIBIT -
Pin 19 - Reserved
Pin 20 - GND (Power)
Pin 21 - KEY
Pin 22 - Reserved
Pin 23 - 24V AC(HOT)
Pin 24 - Reserved
Pin 25 - Reserved
Pin 26 - Reserved
Pin 27 - Reserved
Pin 28 - Reserved
Pin 29 - Reserved
Pin 30 - Reserved

Caution

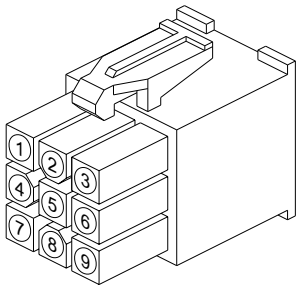
Turn off power before connecting or disconnecting the bill validator.

A7 Pin-out Assignments (Pulse for 24V AC) :

For the ***24V AC*** version of the V7 bill validator, the harness (***part no.WEL-V703***, see page. 25 for pin-out information) has a dual-in-line 30-pin peripheral connector at one end and a 9-pin mating connector at the other end. Connect the 30-pin connector to the side of the bill validator and the 9-pin mating connector to the 24V AC power harness (***part no.WEL-V702***, see page.23 for pin-out information).

◈ 9-pin mating connector pin-out assignments:

Pin 1 Reserved
Pin 2 INHIBIT+
Pin 3 Reserved
Pin 4 CREDIT_RELAY(N.O.)
Pin 5 CREDIT_RELAY(Common)
INHIBIT -
Pin 6 Reserved
Pin 7 24V AC (RET)
Pin 8 24V AC (HOT)
Pin 9 Reserved



◈ Dual-in-line 30-pin peripheral connector (V7, 24V AC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Pin 1 - CREDIT_RELAY(Common)
Pin 2 - CREDIT_RELAY(N.O.)
Pin 3 - Reserved
Pin 4 - INHIBIT +
Pin 5 - Reserved
Pin 6 - Reserved
Pin 7 - Reserved
Pin 8 - Reserved
Pin 9 - Reserved
Pin 10 - Reserved
Pin 11 - Reserved
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - Reserved
Pin 15 - Reserved
Pin 16 - 24V AC(RET)
Pin 17 - Reserved
Pin 18 - INHIBIT -
Pin 19 - Reserved
Pin 20 - Reserved
Pin 21 - Reserved
Pin 22 - Reserved
Pin 23 - 24V AC(HOT)
Pin 24 - Reserved
Pin 25 - Reserved
Pin 26 - Reserved
Pin 27 - Reserved
Pin 28 - Reserved
Pin 29 - Reserved
Pin 30 - Reserved

Caution

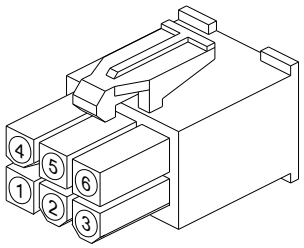
Turn off power before connecting or disconnecting the bill validator.

A7 Pin-out Assignments (M.D.B System for 34V DC) :

For the ***M.D.B*** interface V7 bill validator, connect the 30-pin peripheral connector on one end of the harness (***part no. WEL-M006***, see page.15 for pin-out information) to the side of the unit and the standard 6-pin M.D.B connector to the power/interface connector.

◈ The standard 6-pin MDB connector pin-out assignments:

Pin 1 34V DC
Pin 2 34V DC Power Return
Pin 3 N/C
Pin 4 Master Receive
Pin 5 Master Transmit
Pin 6 Communications



◈ Dual-in-line 30-pin peripheral connector (V7, M.D.B) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

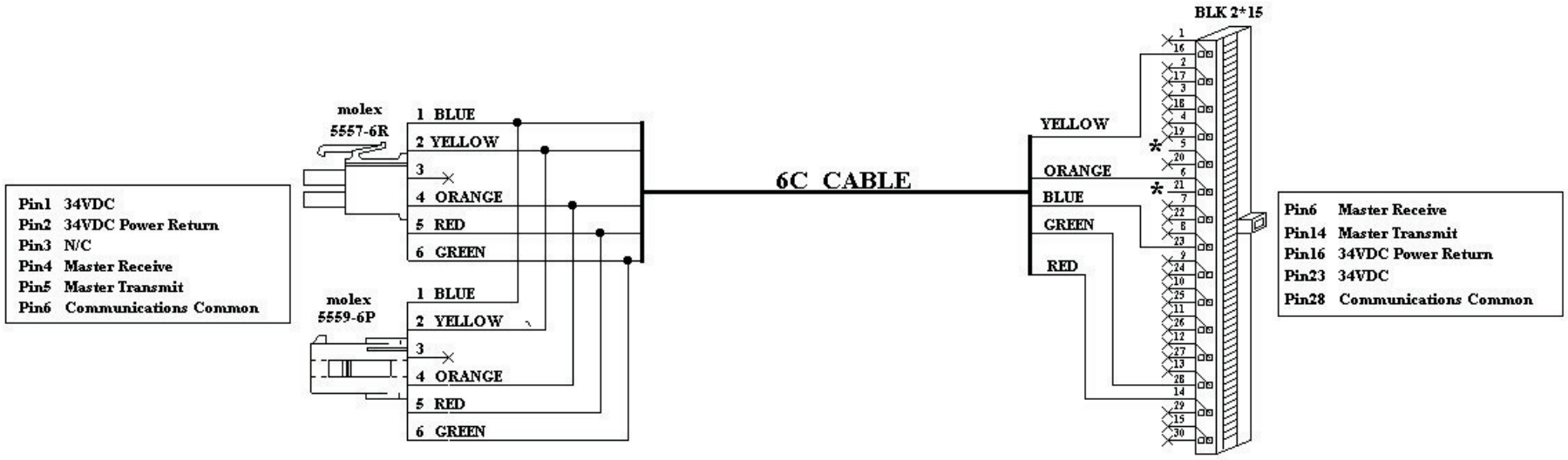
Pin 1 - Reserved
Pin 2 - Reserved
Pin 3 - Reserved
Pin 4 - Reserved
Pin 5 - KEY
Pin 6 - MDB_MASTER_RXD
Pin 7 - Reserved
Pin 8 - Reserved
Pin 9 - Reserved
Pin 10 - Reserved
Pin 11 - Reserved
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - MDB_MASTER_RXD
Pin 15 - Reserved
Pin 16 - 34V DC_RETURN
Pin 17 - Reserved
Pin 18 - Reserved
Pin 19 - Reserved
Pin 20 - Reserved
Pin 21 - KEY
Pin 22 - Reserved
Pin 23 - +34V DV
Pin 24 - Reserved
Pin 25 - Reserved
Pin 26 - Reserved
Pin 27 - Reserved
Pin 28 - MDB_GND
Pin 29 - Reserved
Pin 30 - Reserved

Caution

Turn off power before connecting or disconnecting the bill validator.

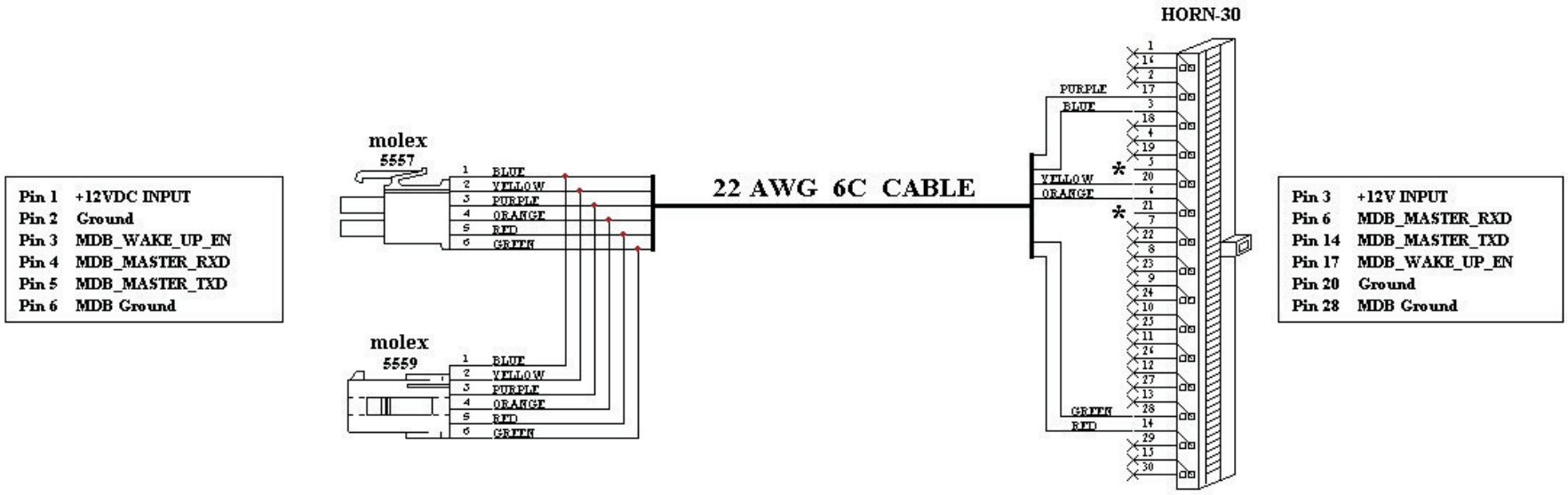
WEL-M006

(M.D.B. System for 34V DC)



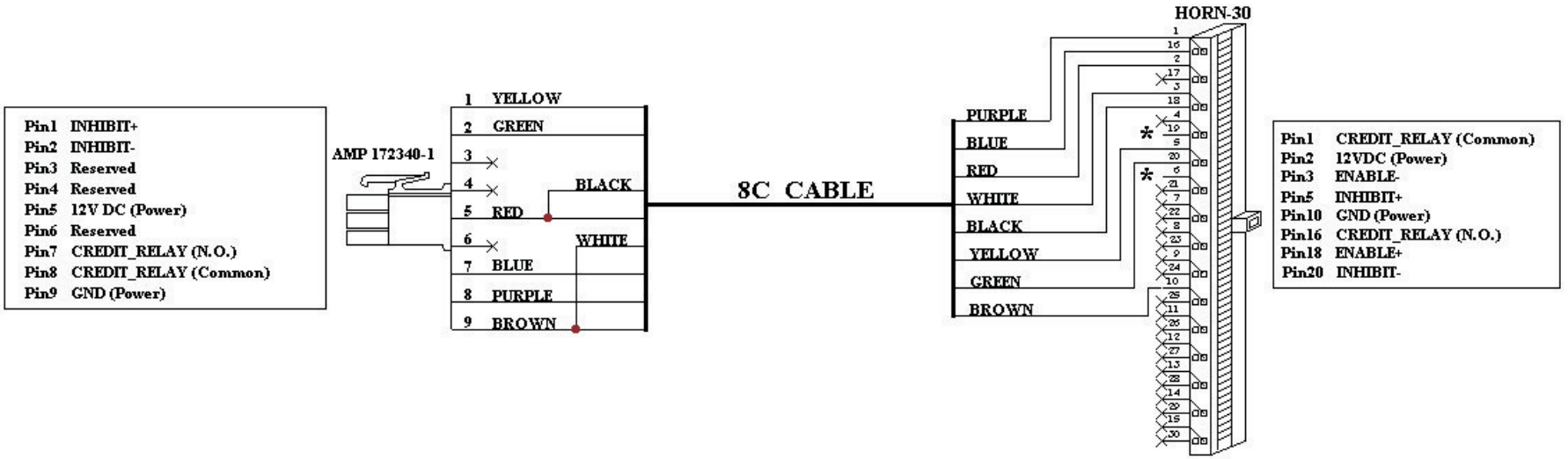
WEL-V705

(S7 MDB for 12V DC)



WEL-M007

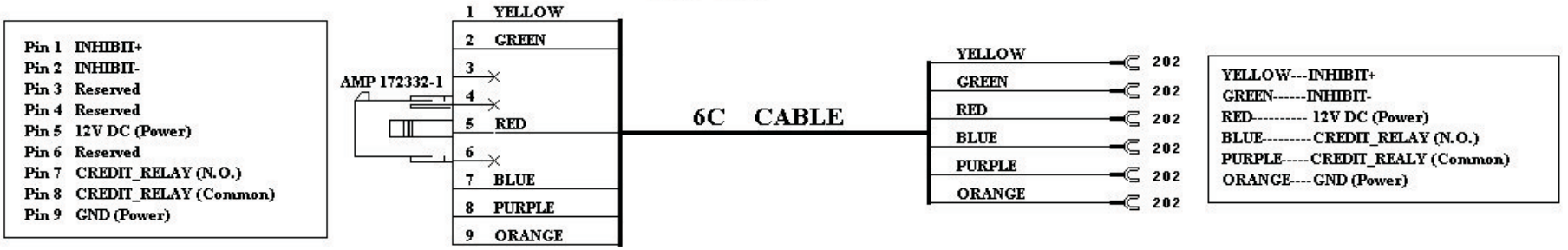
(Pulse for +12VDC)



CU-961-1

(Pulse FOR 12 VDC)

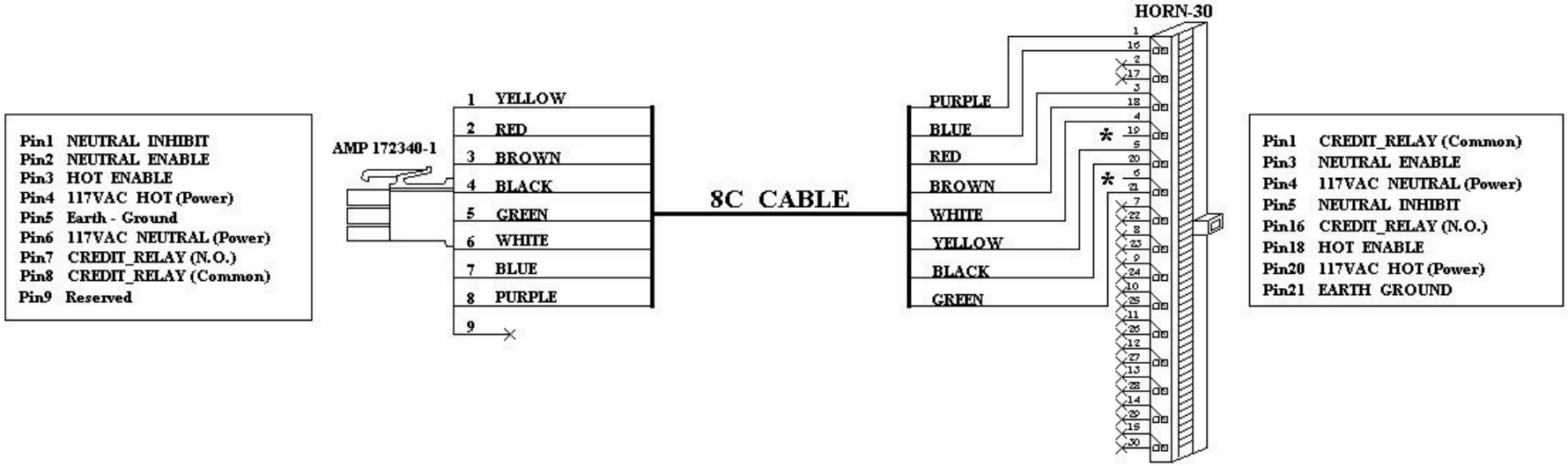
WEL-M007 extension harness
WEL-V701 extension harness



CU-961-1 Length: 750 mm
CU-961-11 Length: 1800 mm

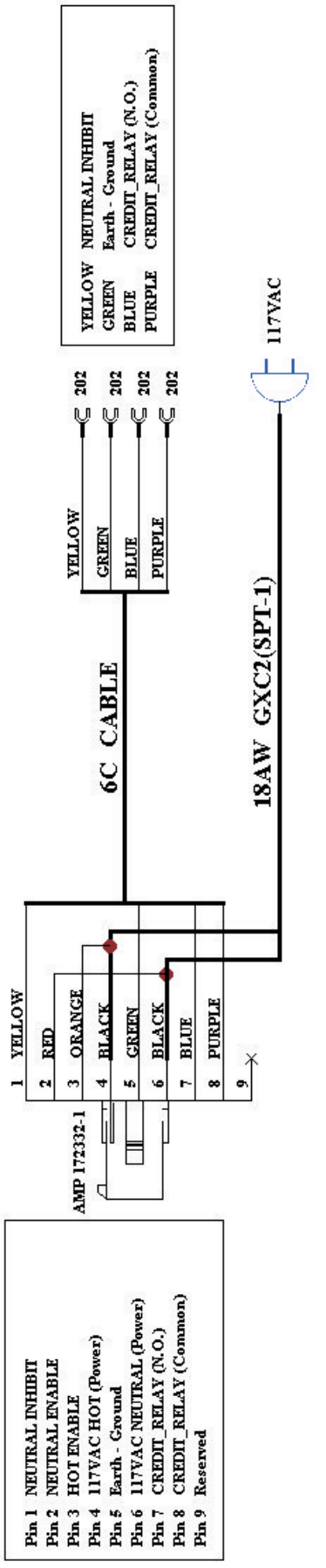
WEL-M008

(Pulse for 117VAC)



WEL-M010

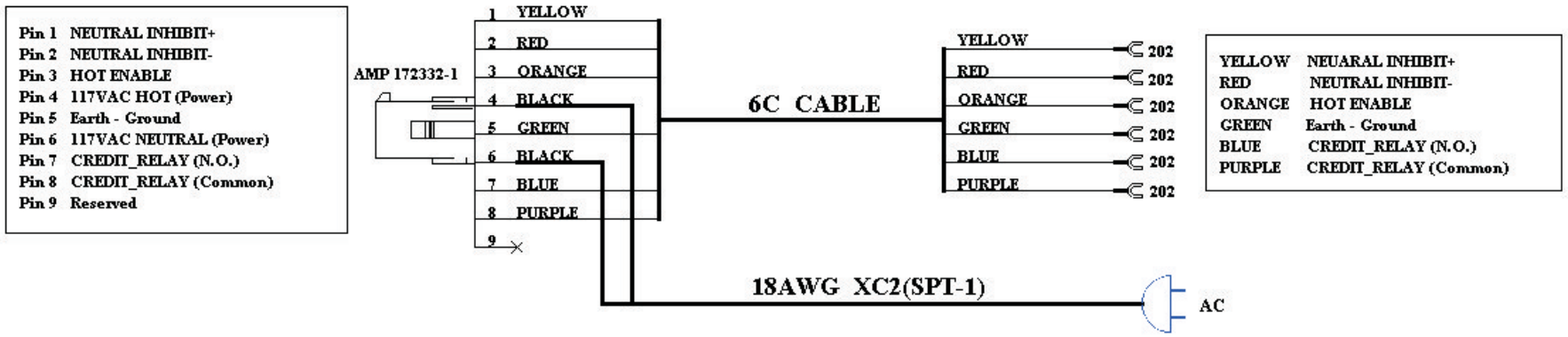
(pulse FOR 117 VAC)



WEL-M012

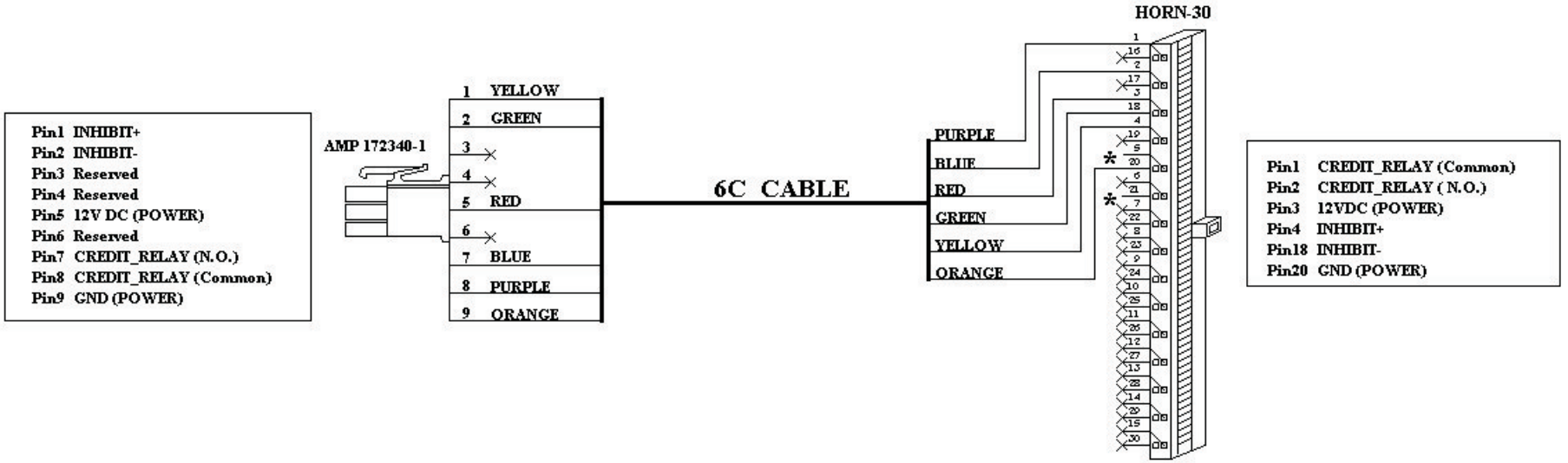
(pulse FOR 117 VAC)

WEL-M008 extension harness



WEL-V701

(Pulse FOR 12 VDC)

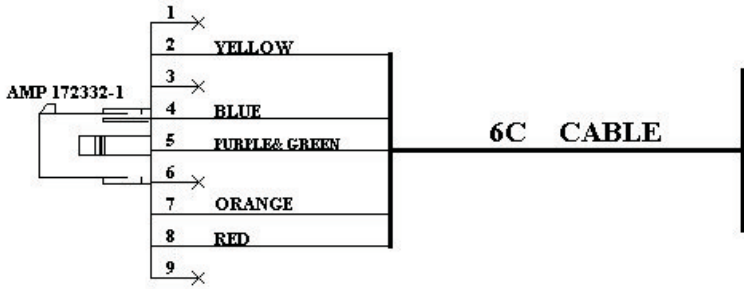


WEL-V702

(pulse FOR 24 VAC)

WEL-V703 extension harness

Pin1	Reserved
Pin2	INHIBIT+
Pin3	Reserved
Pin4	CREDIT_RELAY (N.O.)
Pin5	CREDIT_RELAY (Common)
Pin5	INHIBIT-
Pin6	Reserved
Pin7	24V AC (RET)
Pin8	24V AC (HOT)
Pin9	Reserved



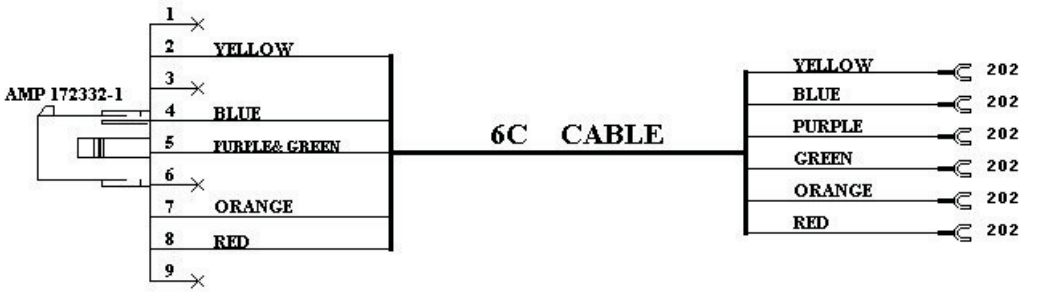
YELLOW-	INHIBIT+
BLUE-------	CREDIT_RELAY (N.O.)
PURPLE---	CREDIT_RELAY (Common)
GREEN-----	CREDIT_RELAY (Common)
ORANGE--	24V AC (RET)
RED--------	24V AC (HOT)

WEL-V702-1

(pulse FOR 24 VAC)

WEL-V703 extension harness

Pin1	Reserved
Pin2	INHIBIT+
Pin3	Reserved
Pin4	CREDIT_RELAY (N.O.)
Pin5	CREDIT_RELAY (Common)
Pin5	INHIBIT-
Pin6	Reserved
Pin7	24V AC (RET)
Pin8	24V AC (HOT)
Pin9	Reserved



YELLOW- INHIBIT+

BLUE-------CREDIT_RELAY (N.O.)

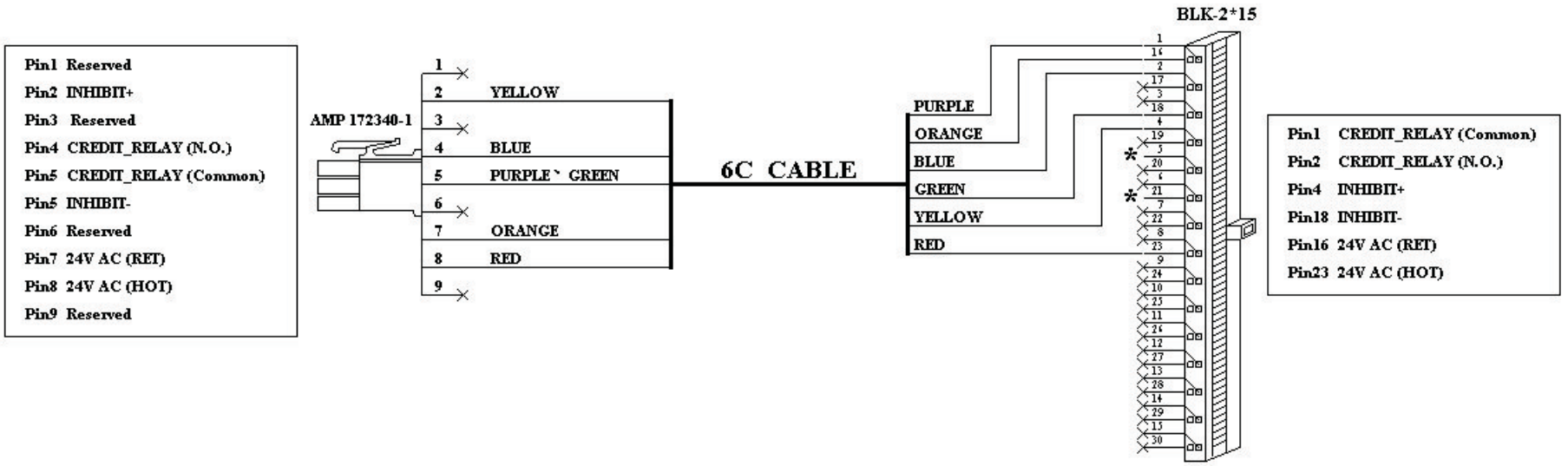
ORANGE--24V AC (RET)

RED---------24V AC (HOT)

Length: 1200 mm

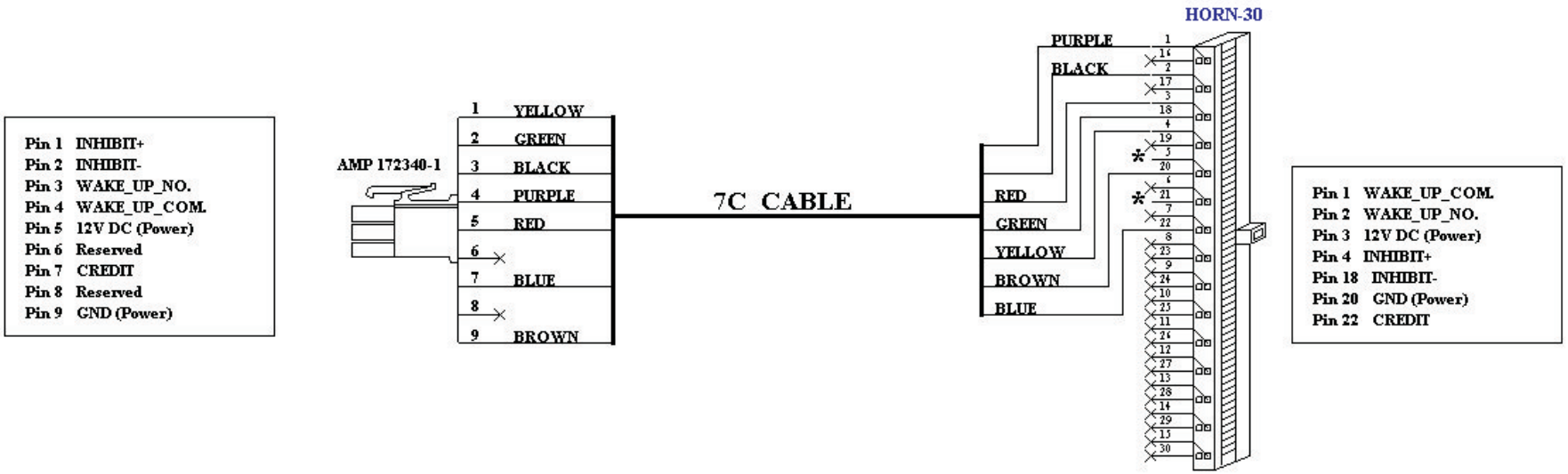
WEL-V703

(pulse FOR 24 VAC)



WEL-V707

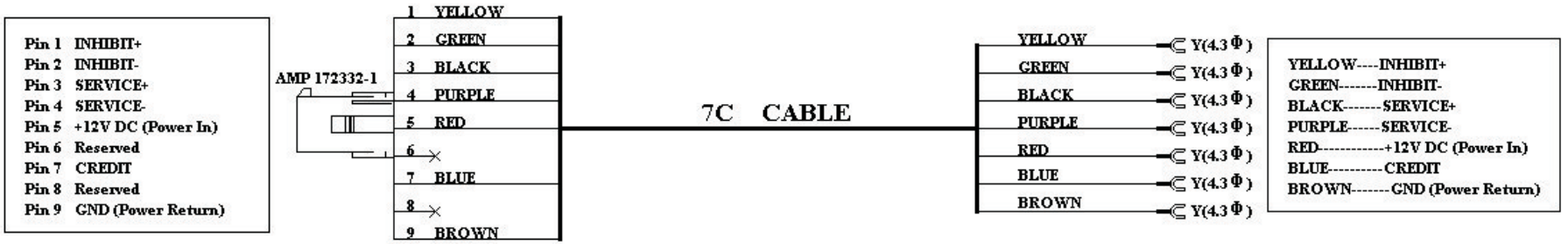
(PULSE FOR 12 VDC)



WEL-V708

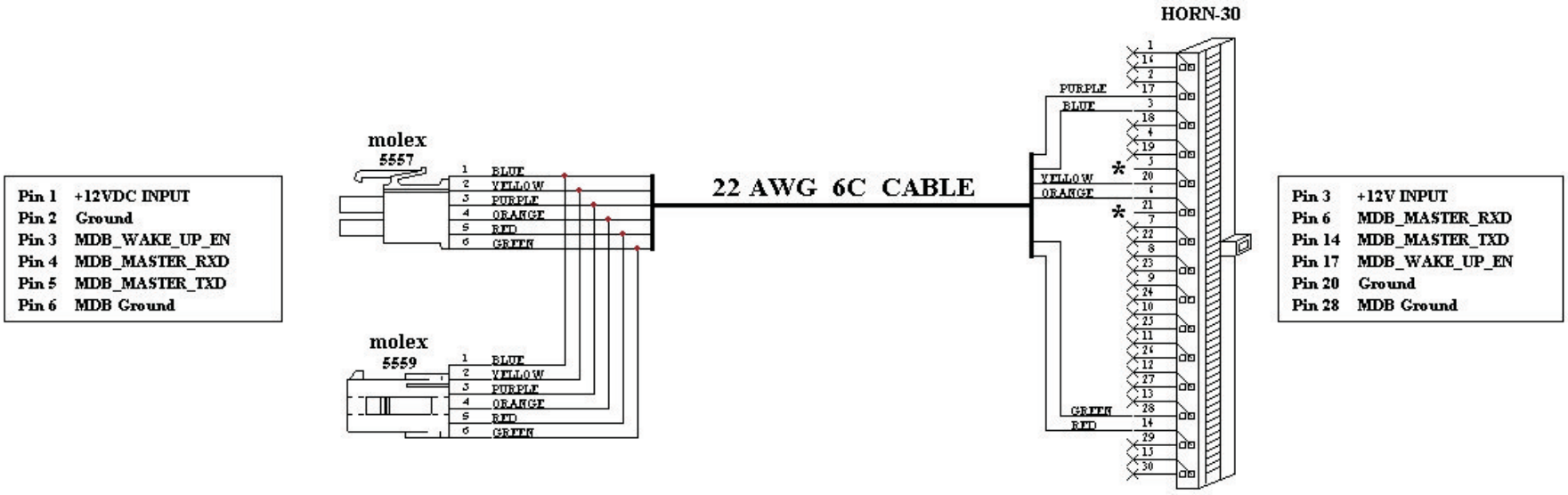
(WAKE_UP pulse For 12V DC)

WEL-V707 extension harness

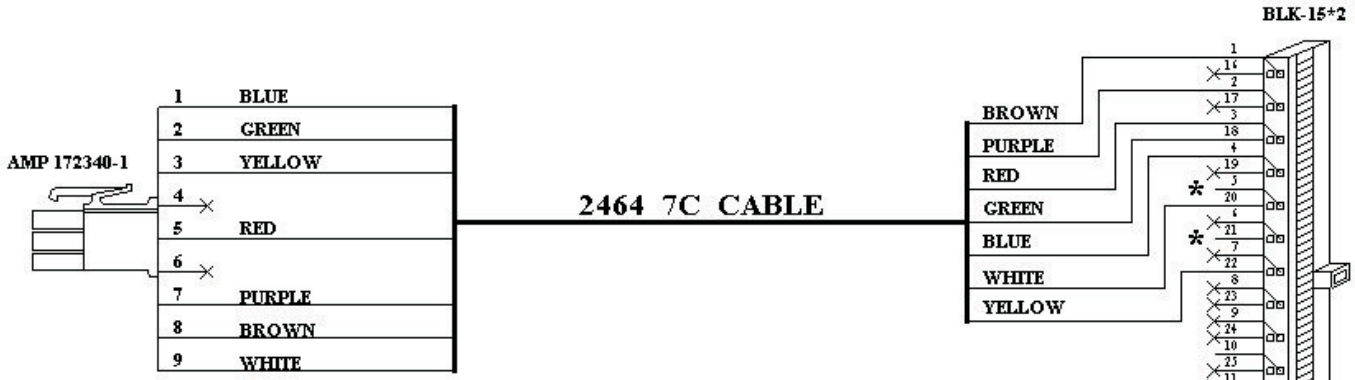


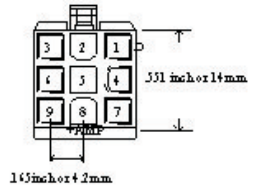
WEL-V705

(S7 MDB for 12V DC)



WEL-S701



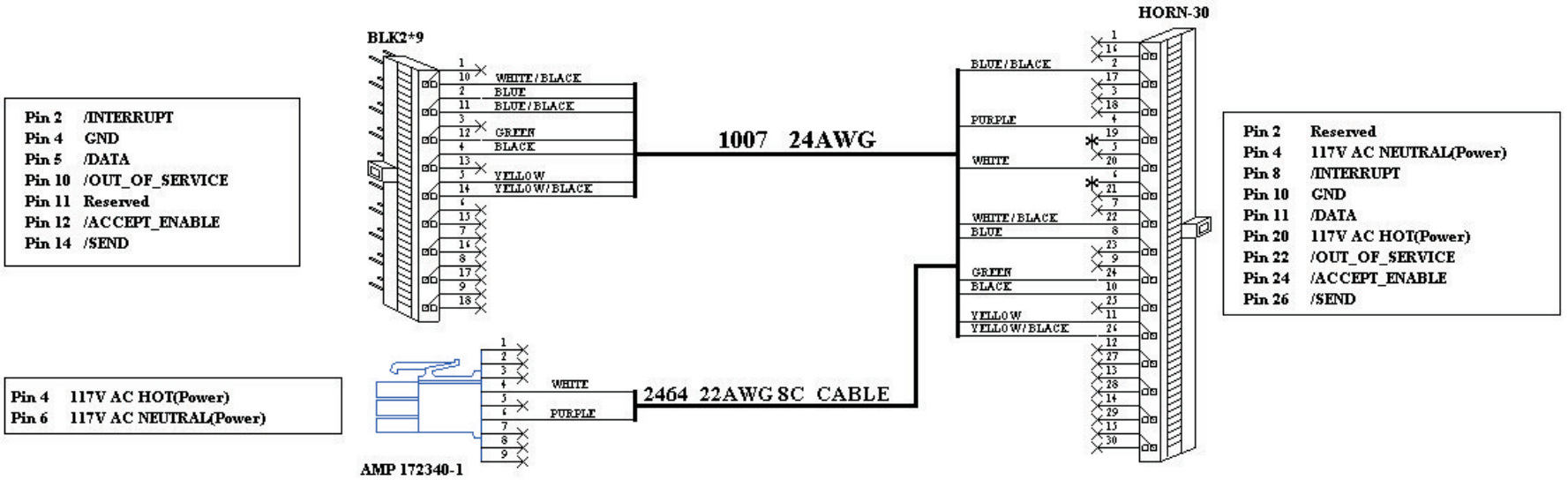


AMP 172340-1 BACK VIEW

Pin1 INHIBIT+
Pin2 INHIBIT-
Pin3 OUT_OF_SERVICE
Pin4 Reserved
Pin5 +12V DC (Power In)
Pin6 Reserved
Pin7 CREDIT_RELAY (N.O.)
Pin8 CREDIT_RELAY (Common)
Pin9 GND

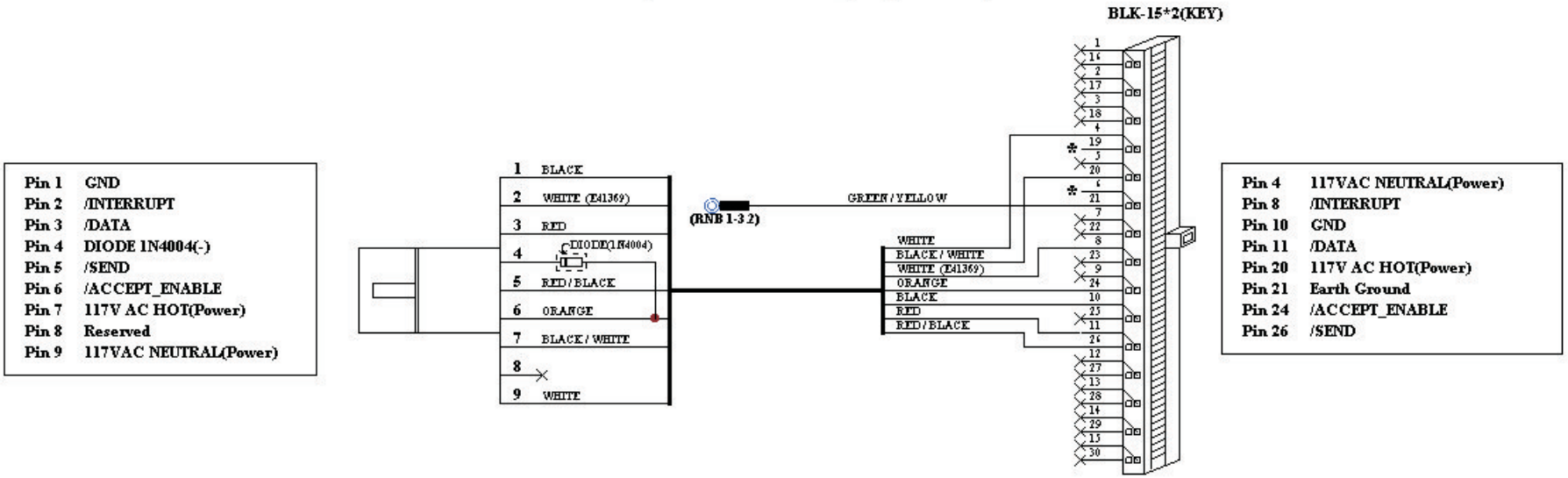
WEL-M013

(N.I.S.R. for 117V AC)



WEL-M023

(N.I.S.R. for Pa_Lo_GOLD)



Example :

A7/V7-HUF7

A7/V7 Option Switch Settings

Supported bill Ft 200, 500, 1000, 2000, 5000, 10000, 20000 7bills.

A7/V7 dip-switch settings and functions:

FUNCTION	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW1	SW2	SW3	SW4
Reject Ft 200	ON											
Accept Ft 200	OFF											
Reject Ft 500		ON										
Accept Ft 500		OFF										
Reject Ft 1000& 2000			ON									
Accept Ft 1000& 2000			OFF									
Reject Ft 5000&10000				ON								
Accept Ft 5000&10000				OFF								
Reject Ft 20000					ON							
Accept Ft 20000					OFF							
Reserved						ON						
Reserved						OFF						
Harness disable							ON					
Harness enable							OFF					
Inhibit Active High								ON				
Inhibit Active Low								OFF				
1 pulse / Ft 100									OFF	OFF		
2 pulse / Ft 100									ON	OFF		
4 pulse / Ft 100									OFF	ON		
20 pulse / Ft 100									ON	ON		
Pulse Speed	50ms on / 50ms off										OFF	OFF
	60ms on / 300ms off										ON	OFF
	30ms on / 50ms off										OFF	ON
	150ms on / 150ms off										ON	ON

◈ Factory configuration has all switches in the OFF position.

Note : (1) Reset the bill acceptor after setting the dip switch.

(2) SW7 and SW8 of the 8-switch DIP and the 4-switch DIP are for pulse protocol only.

Example :

S7-EUR3

S7 Option Switch Settings (Pulse system)

Supported bill Euro 5, 10, 20 3bills.

S7 dip-switch settings and functions:

	FUNCTION	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW1	SW2	SW3	SW4	SW1	SW2	SW3	SW4
	Reject Euro 5	ON															
★	Accept Euro 5	OFF															
	Reject Euro 10		ON														
★	Accept Euro 10		OFF														
	Reject Euro 20			ON													
★	Accept Euro 20			OFF													
	Reserved				ON												
★	Reserved				OFF												
	Reserved					ON											
★	Reserved					OFF											
	High Acceptance						ON										
★	High Security						OFF										
	Stack Banknote when Power-up							ON									
★	Reject Banknote when Power-up							OFF									
	Inhibit Active HIGH (Test)								ON								
★	Inhibit Active LOW								OFF								
	Pulse Speed	100ms on / 100ms off								ON							
★		50ms on / 50ms off								OFF							
	ENABLE INHIBIT-Sleep only										ON						
★	5 second Timeout only										OFF						
	Normal											OFF	OFF				
	Mode 1											OFF	ON				
	Mode 2											ON	OFF				
★	Mode 1 + 2											ON	ON				
★	Credit-Pulse Normal HIGH													ON			
	Credit-Pulse Normal LOW													OFF			
★	Pulse Protocol														ON		
	M.D.B Protocol														OFF		
★	1 pulse / Euro 5															OFF	OFF
	5 pulse / Euro 5															ON	OFF
	10 pulse / Euro 5															OFF	ON
	25 pulse / Euro 5															ON	ON

★ Manufacture setting

Note: After setting dip switch of the credit pulses , you should reset the bill acceptor again.

Example :

N7-USD6

N7 Option Switch Settings

Supported bill US$ 1, 5, 10, 20, 50, 100, (old 5, 10, 20), (new 20)
6bills.

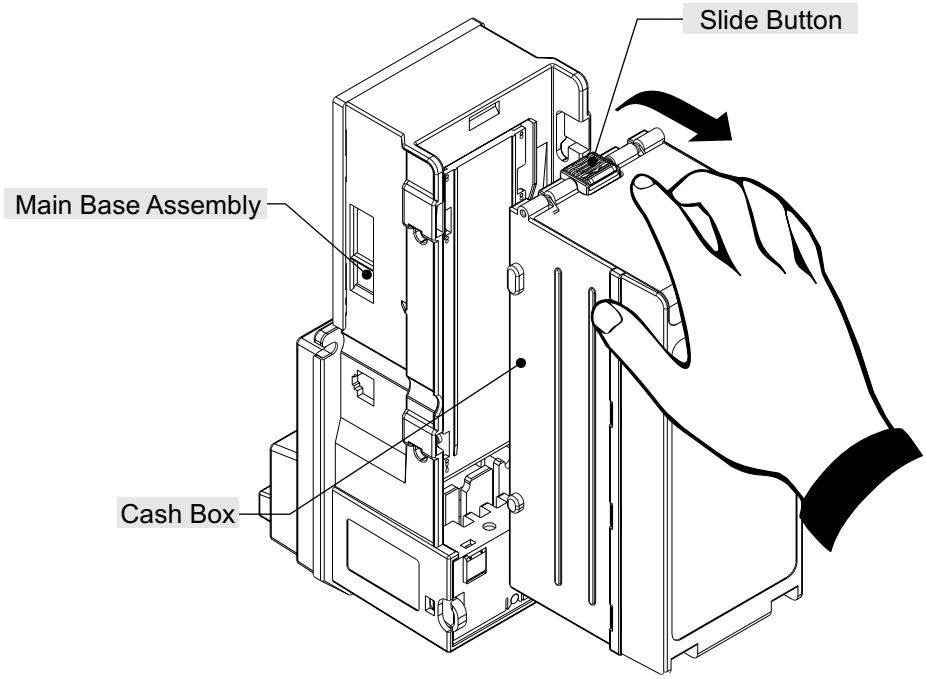
N7 dip-switch settings and functions:

FUNCTION	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW1	SW2	SW3	SW4
Reject US$ 1	ON											
Accept US$ 1	OFF											
Reject US$ 5		ON										
Accept US$ 5		OFF										
Reject US$ 10			ON									
Accept US$ 10			OFF									
Reject US$ 20				ON								
Accept US$ 20				OFF								
Reject US$ 50&100					ON							
Accept US$ 50&100					OFF							
High Acceptance						ON						
High Security						OFF						
Reserved							ON					
Reserved							OFF					
Reserved								ON				
Reserved								OFF				
Reserved									OFF	OFF		
Reserved									ON	OFF		
Reserved									OFF	ON		
Reserved									ON	ON		
Reserved											OFF	OFF
Reserved											ON	OFF
Reserved											OFF	ON
Reserved											ON	ON

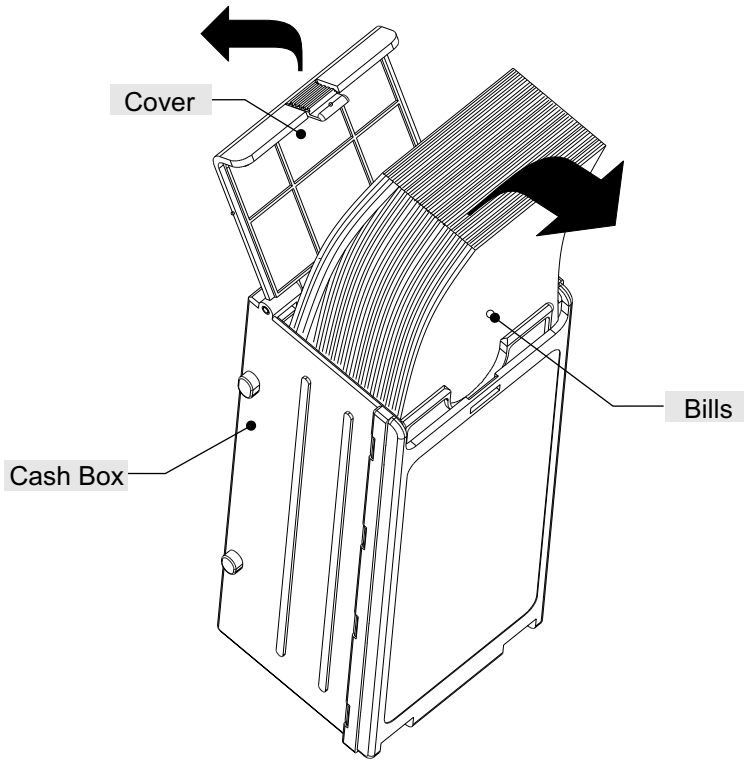
◈ Factory configuration has all switches in the OFF position.

Collecting Bills :

◉ 1. Slide white button on top of Bill Validator. Lift up back of bill box.



◉ 2. Open the Cash box cover to take out bills.



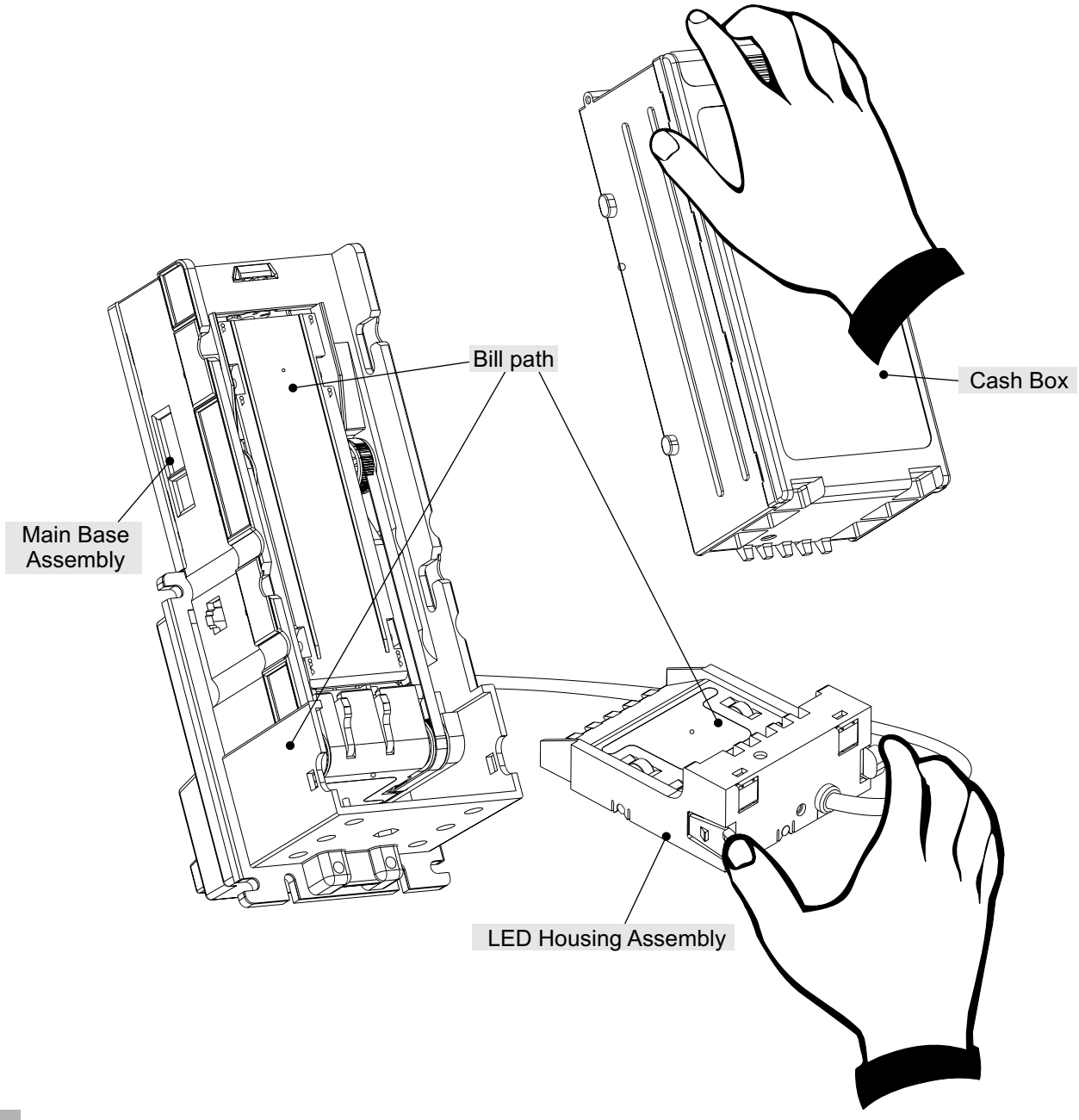
Cleaning :

Reside on LEDs and sensors can cause bill jams and decrease acceptance rates.
Clean internal parts periodically.

- 1. Turn off the power
- 2. Remove cash box & LED Assembly.
- 3. Use a soft cloth or cotton swab to clean internal parts and bill path. If the dirt cannot be removed easily, a standard head cleaner may be used.

Caution

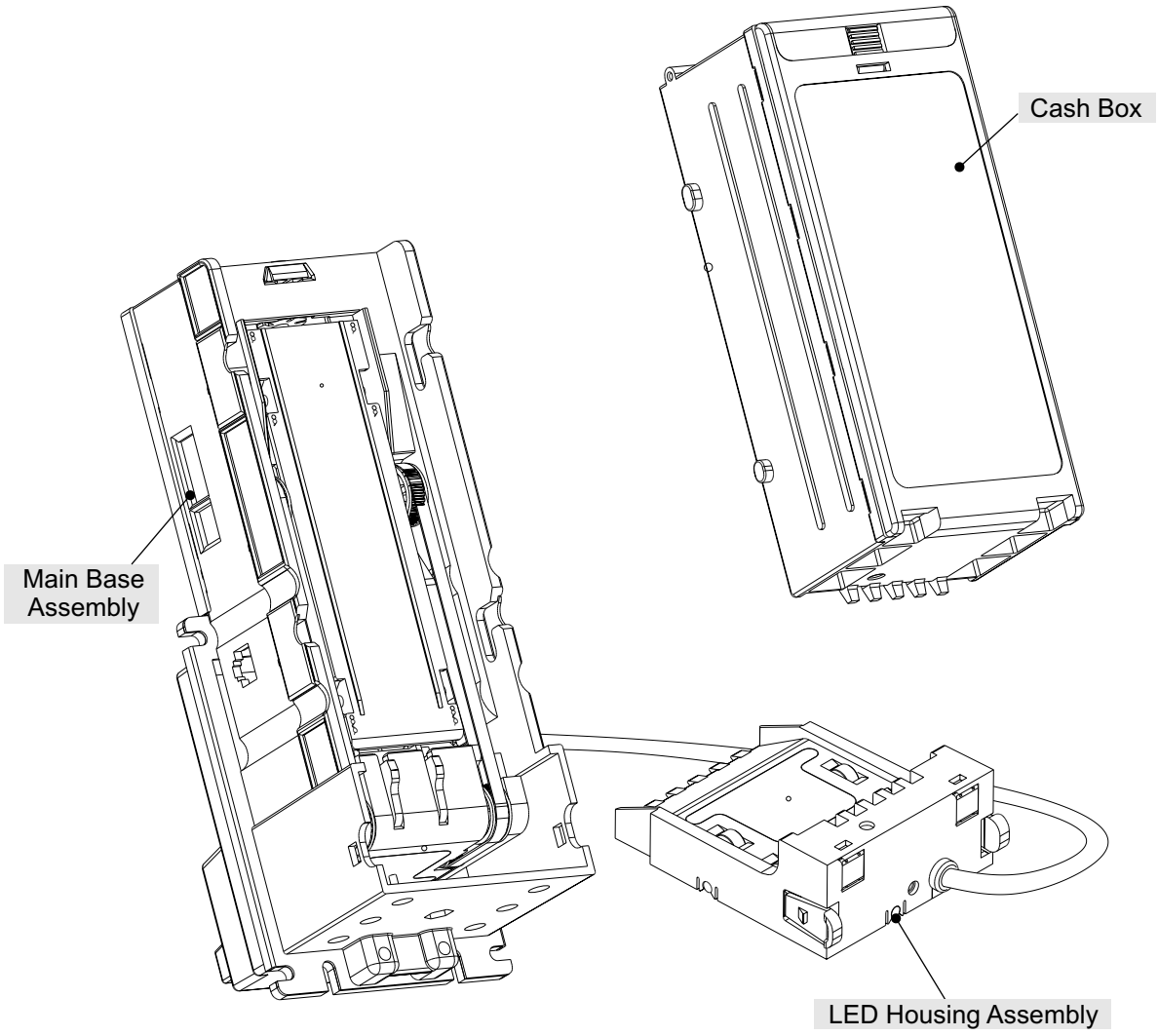
1. Never use an organic solvent such as gasoline or paint thinner to clean the unit.
2. Replace the LED Housing Assembly first.



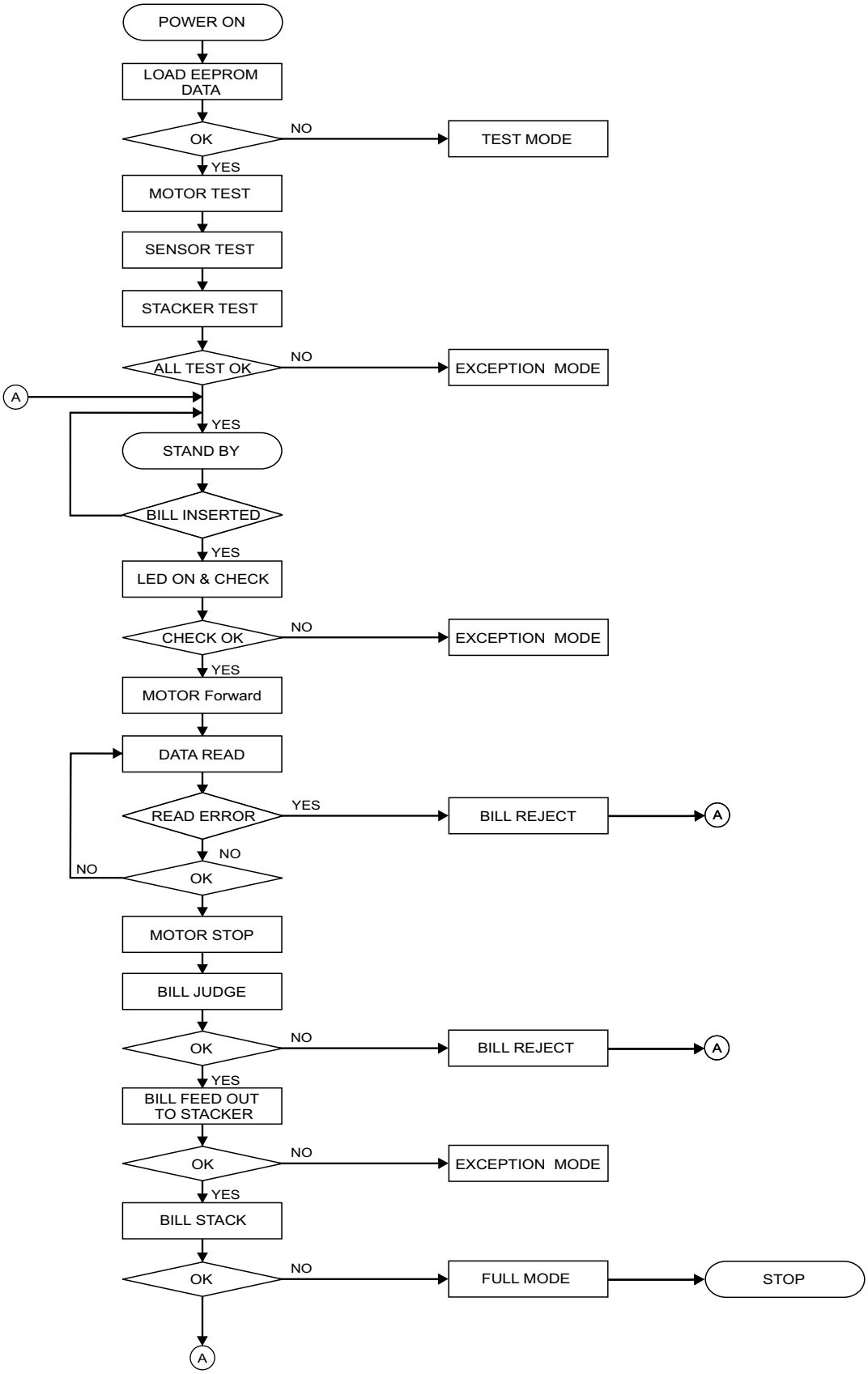
When a Bill is jammed in the Acceptor :

- 1. Take out Cash box & LED Housing Assembly.
- 2. Remove jammed bill.

Caution	Replace the LED Housing Assembly first.

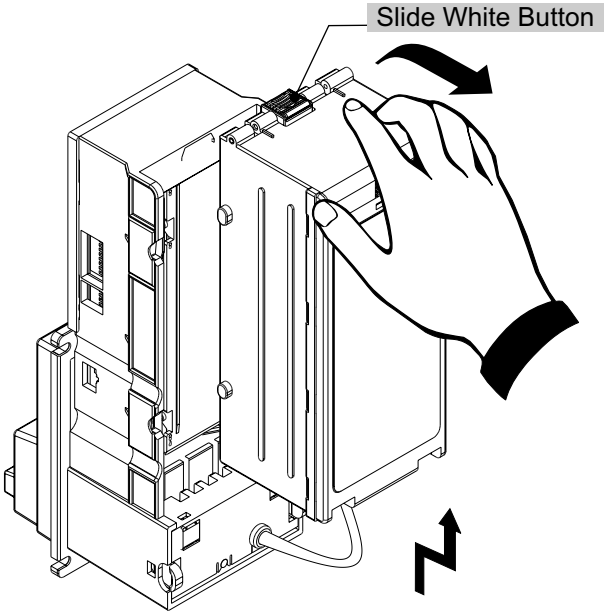


Operation Flowchart :

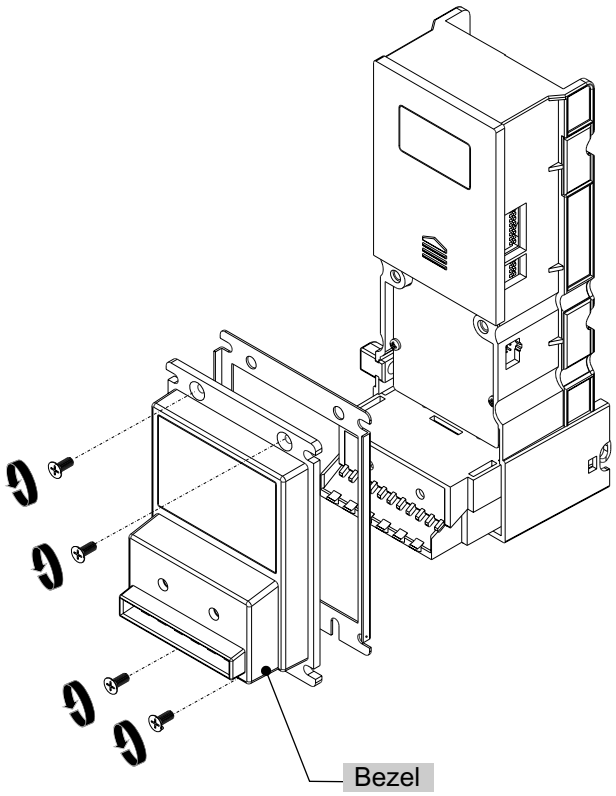


Disassembly & Assembly Procedure :

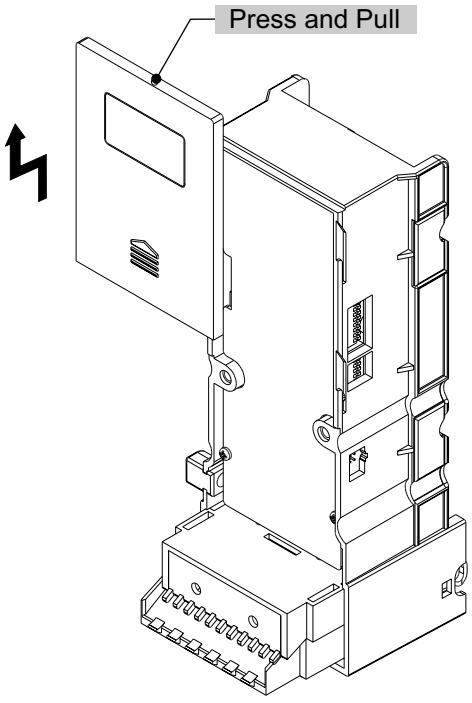
◉ 1. Remove Cash Box



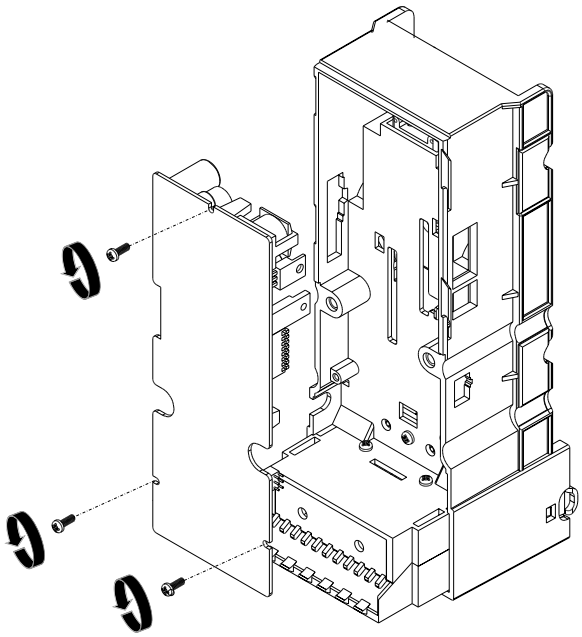
◉ 2. Remove 4 Screws on Bezel



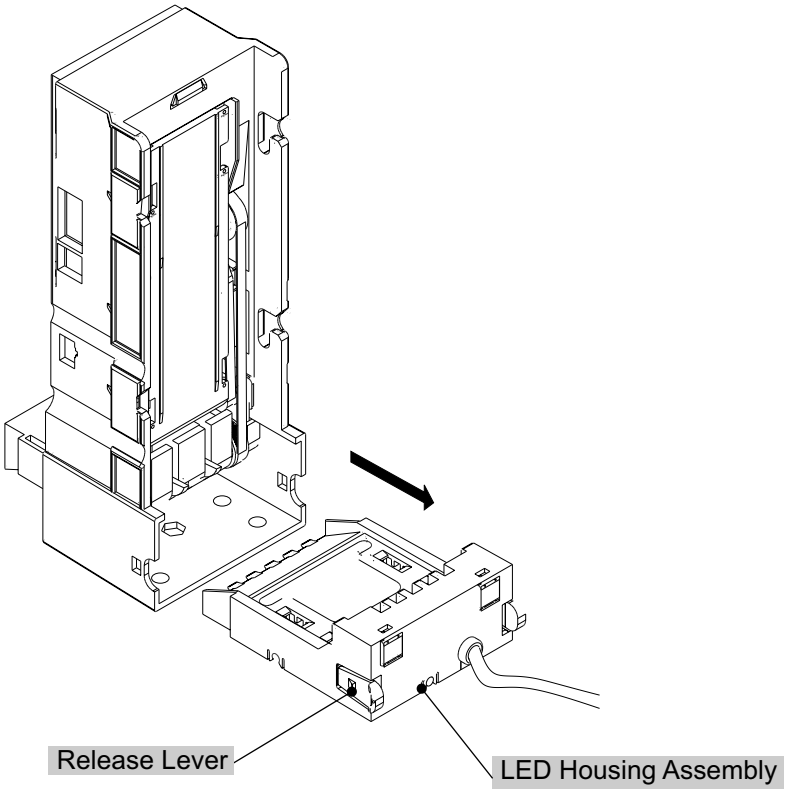
◉ 3. Remove P.C.B Cover



◉ 4. Remove 3 screws from the CPU board and disconnect the 5 connectors on the underside of the board.

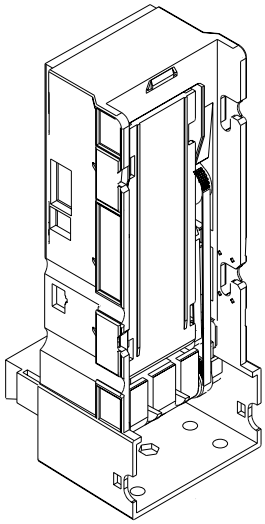


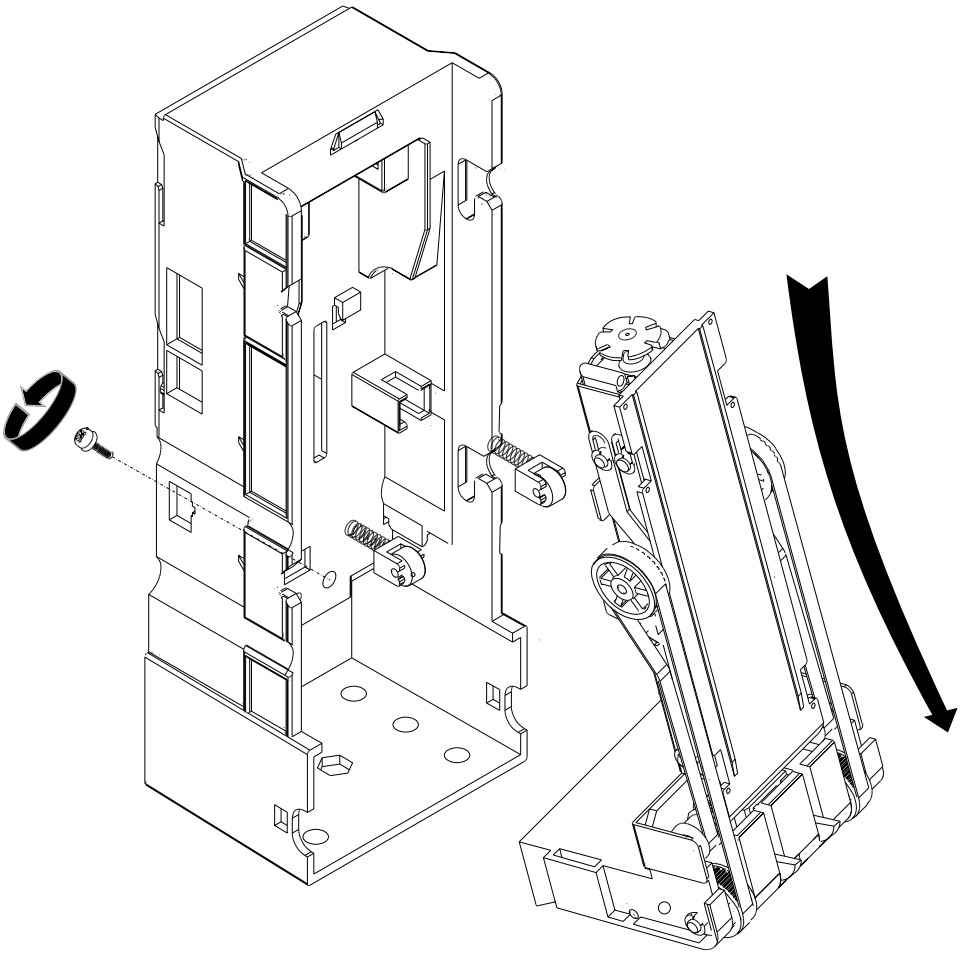
◉ 5. Press the release levers and slide out the LED Housing Assembly .



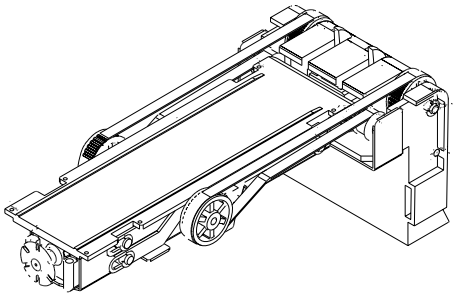
Disassembly Transfer Unit :

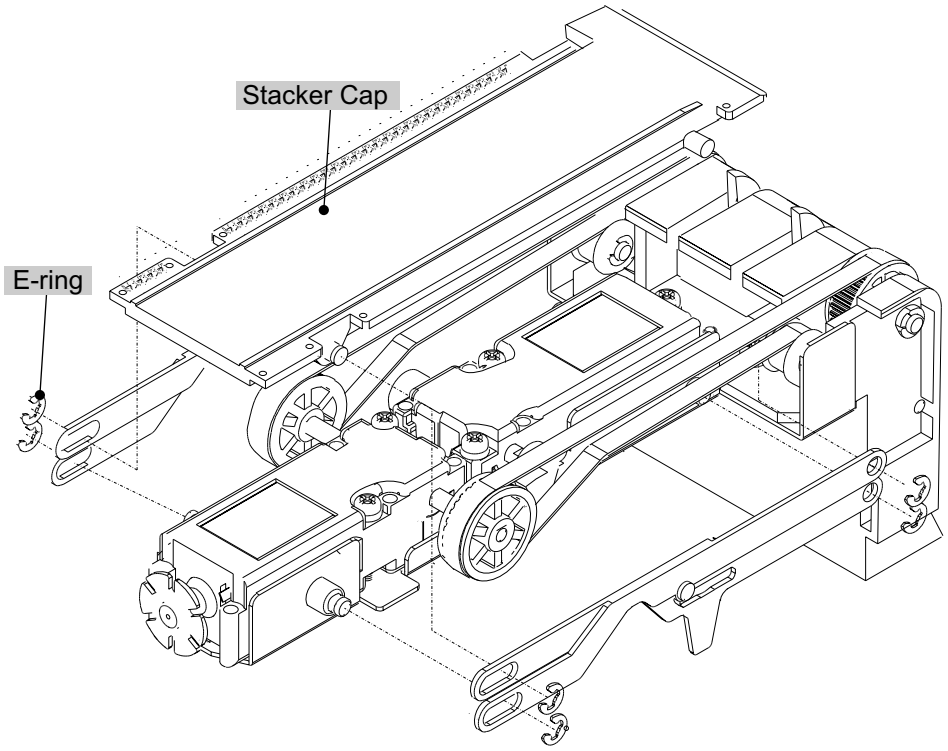
◉ 1. Remove 1 screw on the main base underside,
Then take out the transfer unit.



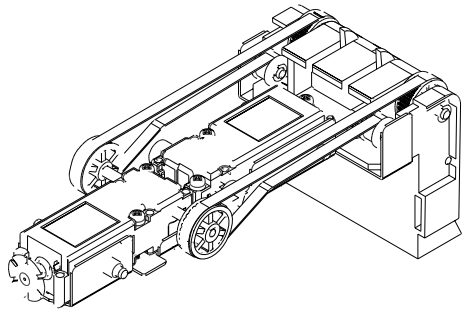


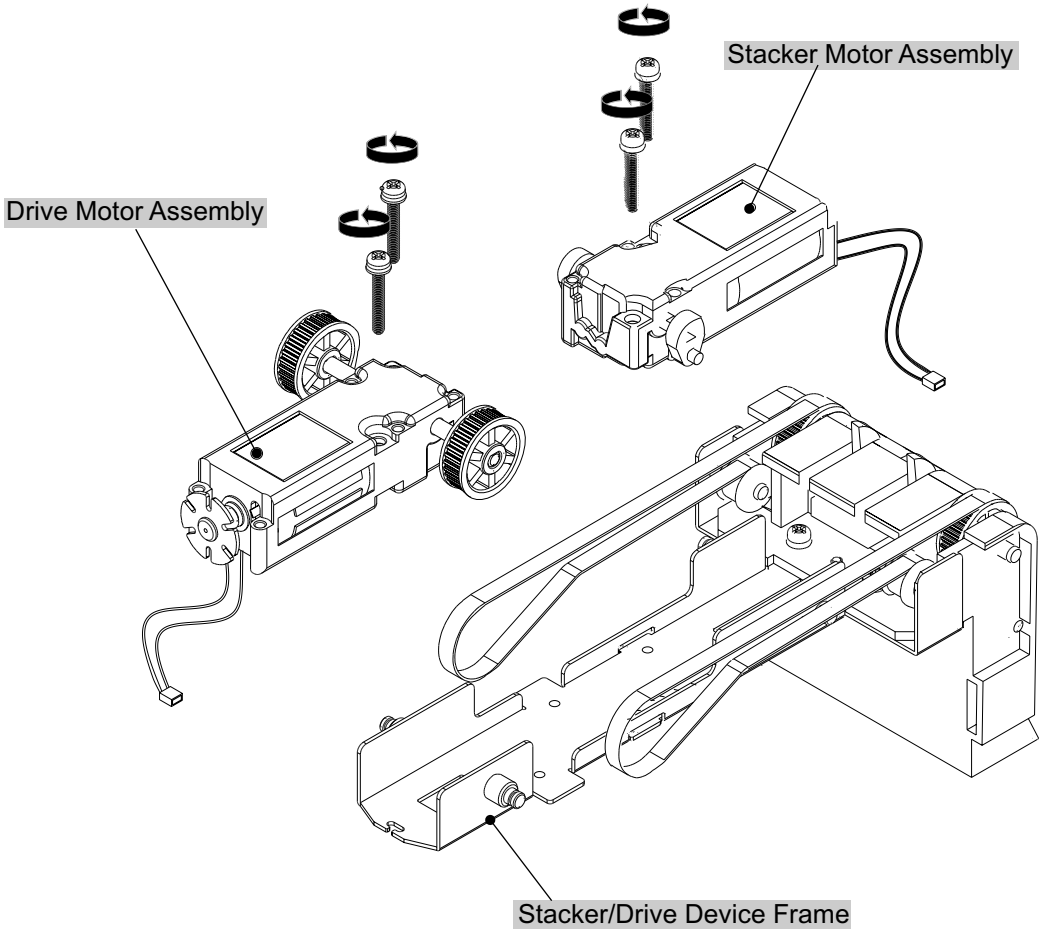
◉ 2. Remove 8 E-rings on both sides, to remove the press mechanism.





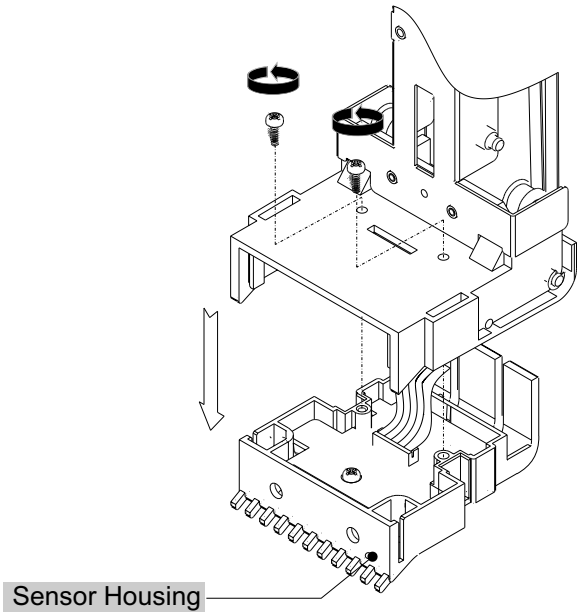
◉ 3. Remove 4 screws on top of motor, separate the motor & stacker/drive device frame.



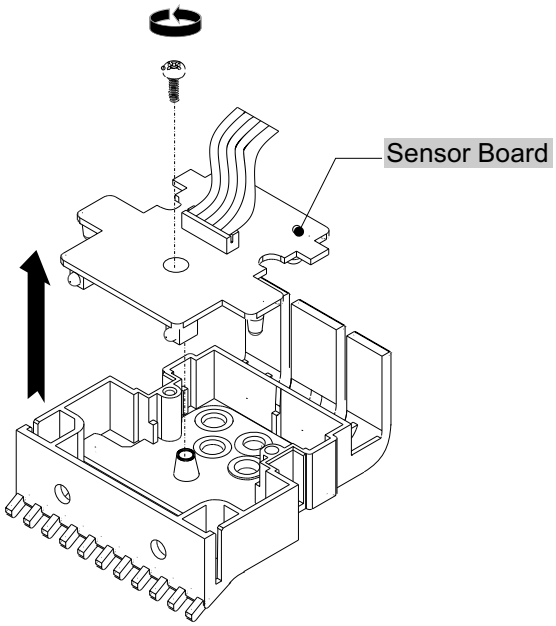


Disassembly of Sensor Housing Unit :

◉ 1. Remove 2 screws and separate them.

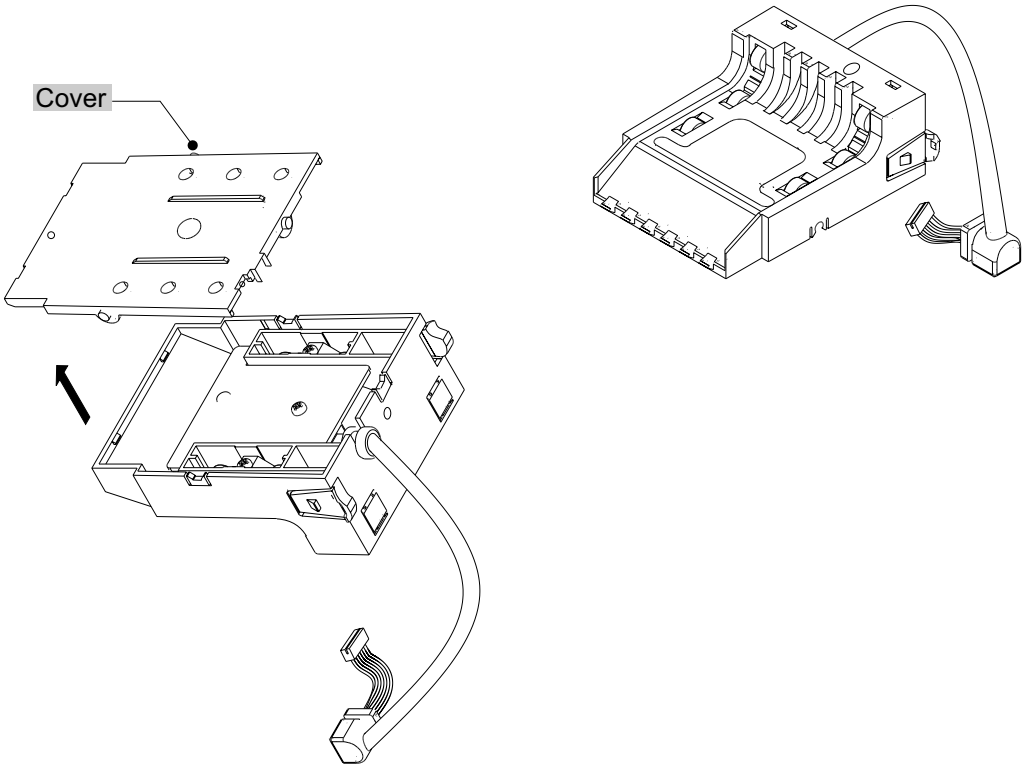


◉ 2. Remove 1 screw on sensor board then take out the board.

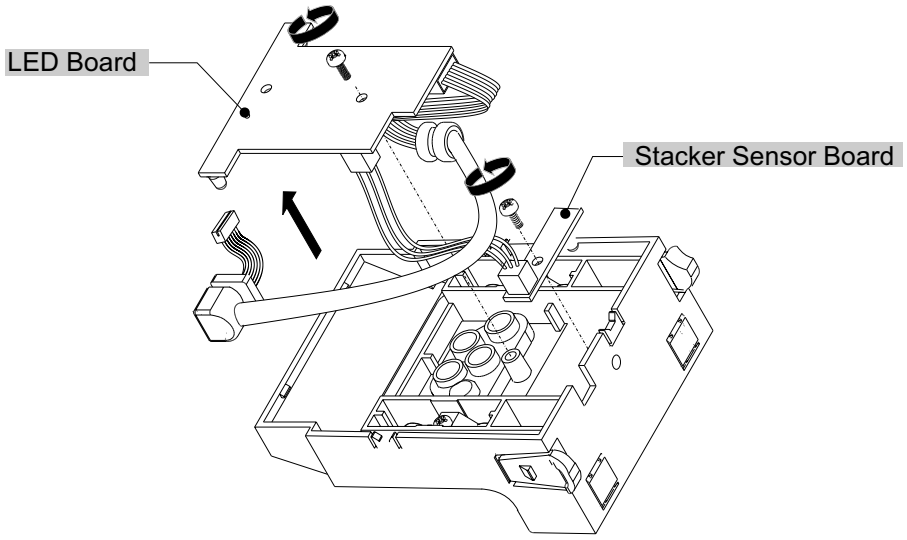


Disassembly of LED Housing Unit :

◉ 1. Use a flat screw driver to pop open the cover.



◉ 2. Remove 2 screws on the LED board & Stacker Sensor Board,
Then take out the 2 boards.

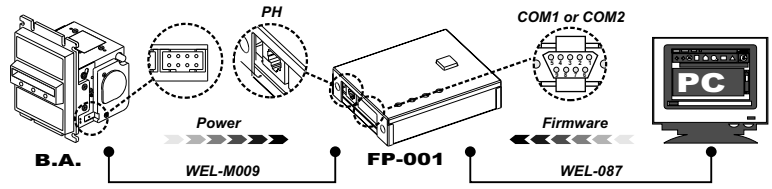


Download Firmware :

Indirect Downloading :

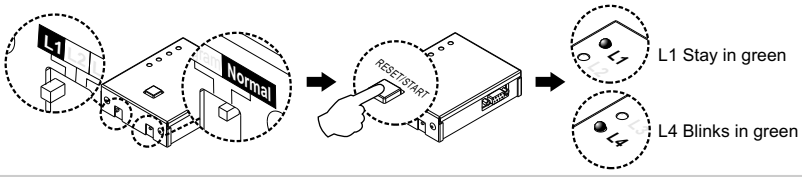
PC ⇨ Programmer

Step 1 : Connection



After the connection is done then give power to B.A.

Step 2 : FP-001 setting



Step 3 : Launch software FW16.exe.
Download FW16.exe from http://www.ictgroup.com.tw/ ➡ support

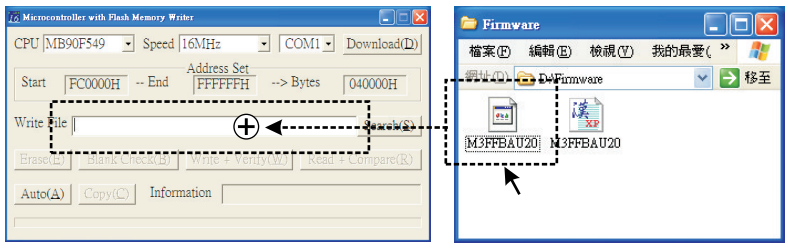
Step 4 : FW16 setting

CPU ***MB90F549*** *Speed* ***16MHz*** *Port* ***COM1 or COM2***

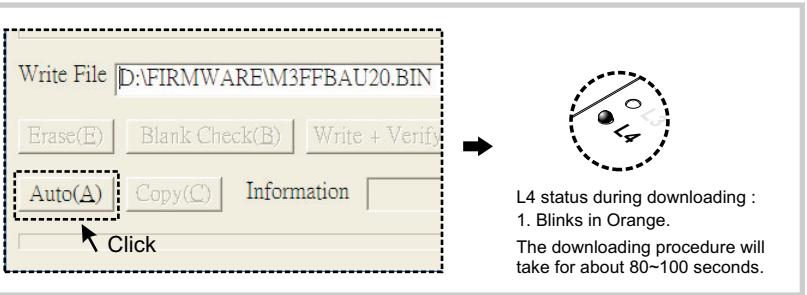
The com port setting varies according to the connection on PC.

Step 5 : Retrive the firmware path.

Drag the firmware (bin file) into FW16.window.

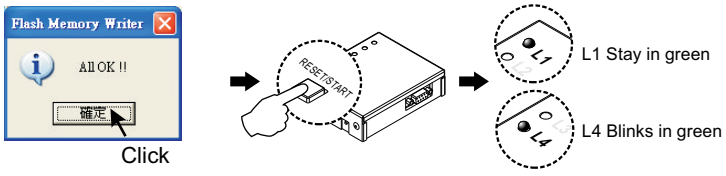


Step 6 : Start downloading to FP-001.



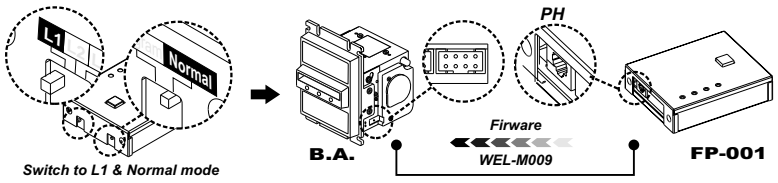
L4 status during downloading :
1. Blinks in Orange.
The downloading procedure will take for about 80~100 seconds.

Step 7 : Firmware is saved in the FP-001 now.(Final)



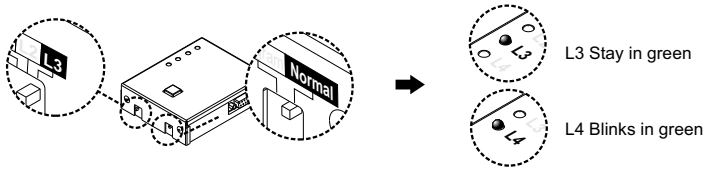
Programmer ⇨ Target

Step 1 : Connection.



Connect the FP-001 to the B.A. that is operating in a vending machine or gaming machine.

Step 2 : FP-001 setting.

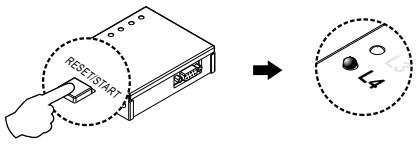


L3 Stay in green

L4 Blinks in green

If L4 is not blinking in green, please return to step1 and do again.

Step 3 : Start downloading to B.A..



L4 status during downloading :
1. RED (Stars)
2. OFF (Erasing)
3. RED (Blank Check)
4. RED (Loading & Verifying)
5. ORANGE (Finish)

The downloading procedure will take for about 70~80 seconds.

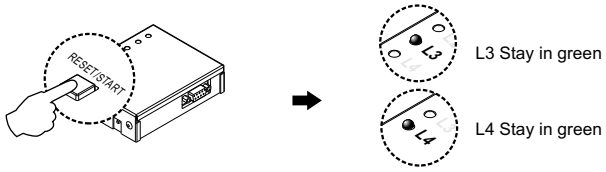
Step 4 : White card calibration.

1. OFF
2. ORANGE

Input white card to calibrate B.A.

There is only one chance to do white card calibration after downloading is finished.

Step 5 : Indirect downloading finish.

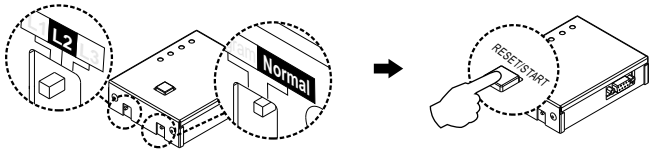


L3 Stay in green

L4 Stay in green

The new firmware update and calibration of B.A. are complete.

Step 6 : Reset B.A. (Final).

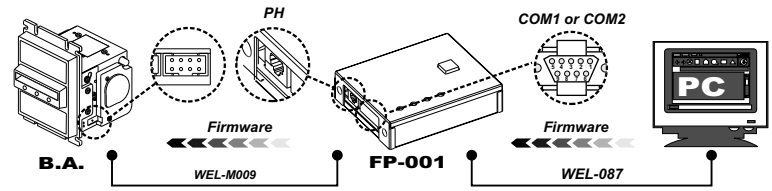


Very Important

1. If there is no com port but USB avalible on your PC , you can buy the (USB-to-Sreial Comm Port) adapter for the FR-001 to PC conection. The (USB-to-Sreial Comm Port) may be avalible in the shop which sells PC and it's peripherals.
2. All bill acceptor must be calibrated with a white card after its software is upgraded.·
3. The white card must be offered by I.C.T.

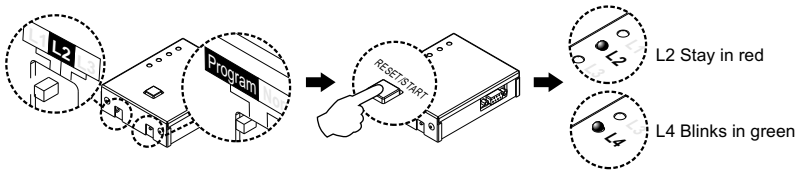
Direct Downloading :

Step 1 : Connection



After the connection is done then give power to B.A.

Step 2 : FP-001 setting



Step 3 : Launch software FW16.exe.
Download FW16.exe from http://www.ictgroup.com.tw/ ➡ support

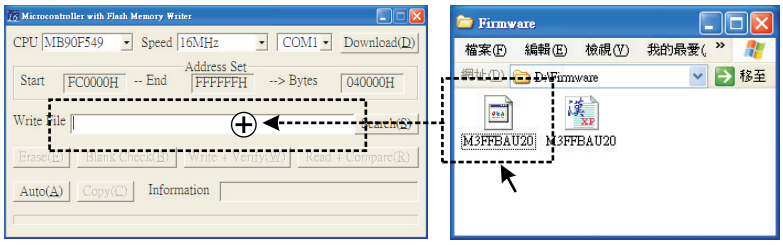
Step 4 : FW16 setting

CPU ***MB90F549*** ***Speed*** ***16MHz*** ***Port*** ***COM1 or COM2***

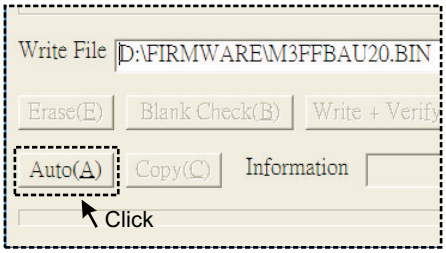
The com port setting varies according to the connection on PC.

Step 5 : Retrive the firmware path.

Drag the firmware (bin file) into FW16.window.



Step 6 : Start downloading to B.A..



Click Auto(A) button to download firmware into B.A..

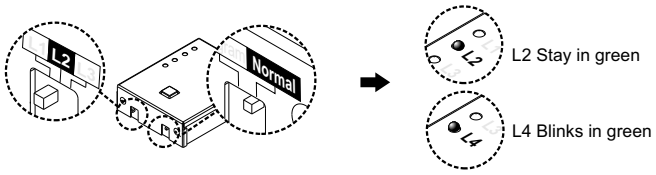
The downloading procedure will take for about 60~75 seconds.

Step 7 : Firmware downloading to B.A. finish.

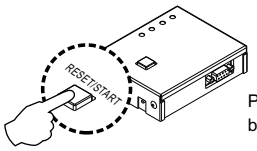
The new program will pass through the FP-001 programmer and load into the B.A..

How ever the new program will not be stored in FP-001 programmer.

Step 8 : Switch FP-001 to Normal mode.



Step 9 : Reset B.A. (Final).

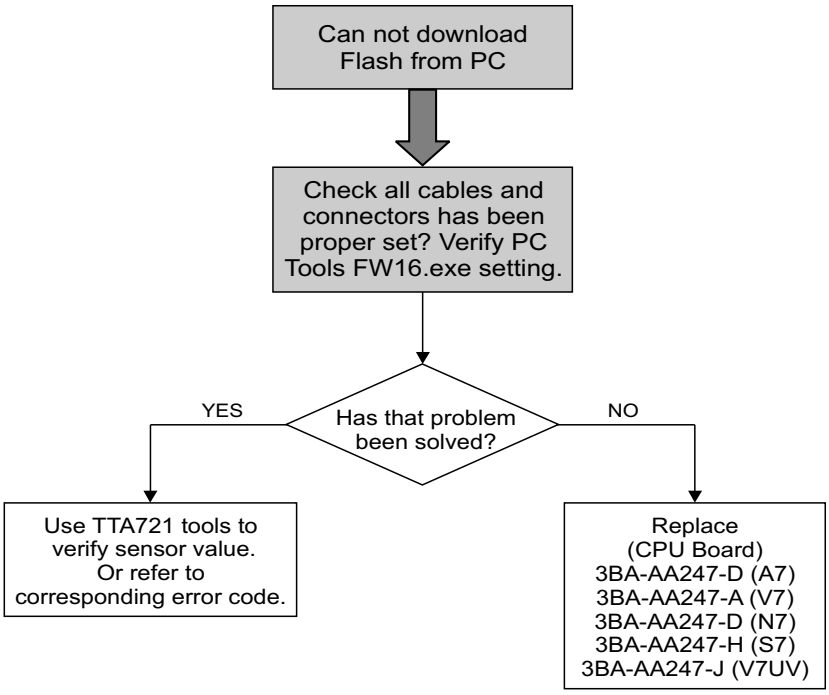


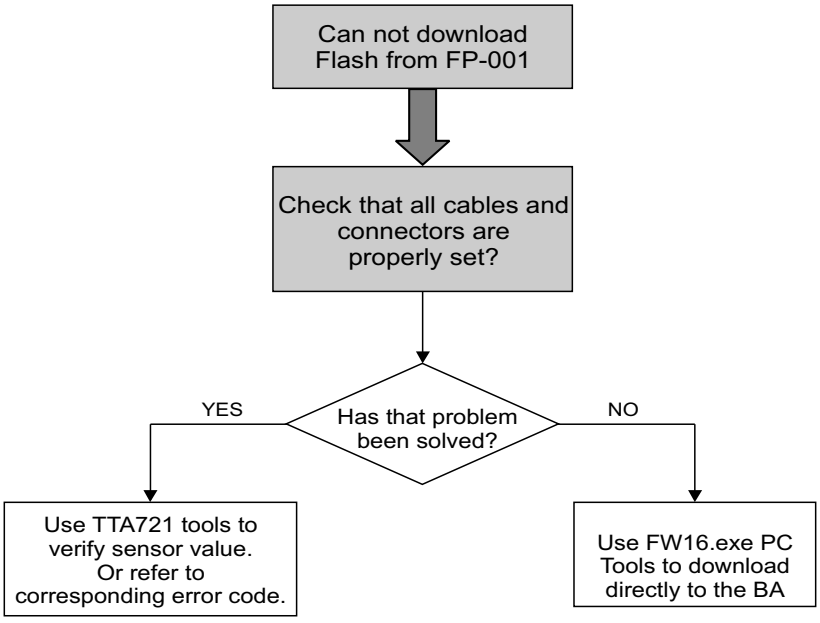
Press down < Reset / Start >
button of FP-001 then B.A. will reset.

Step 10 : White card calibration :

The B.A. White card calibration manual please download from
http://www.ictgroup.com.tw/ ➡ support

FP-001 Trouble Shooting Flow Chart





Diagnostic Software :

To use this software with your A7/V7/N7/S7 series Bill Acceptor, you will need the Following :

1. An available serial port on your computer

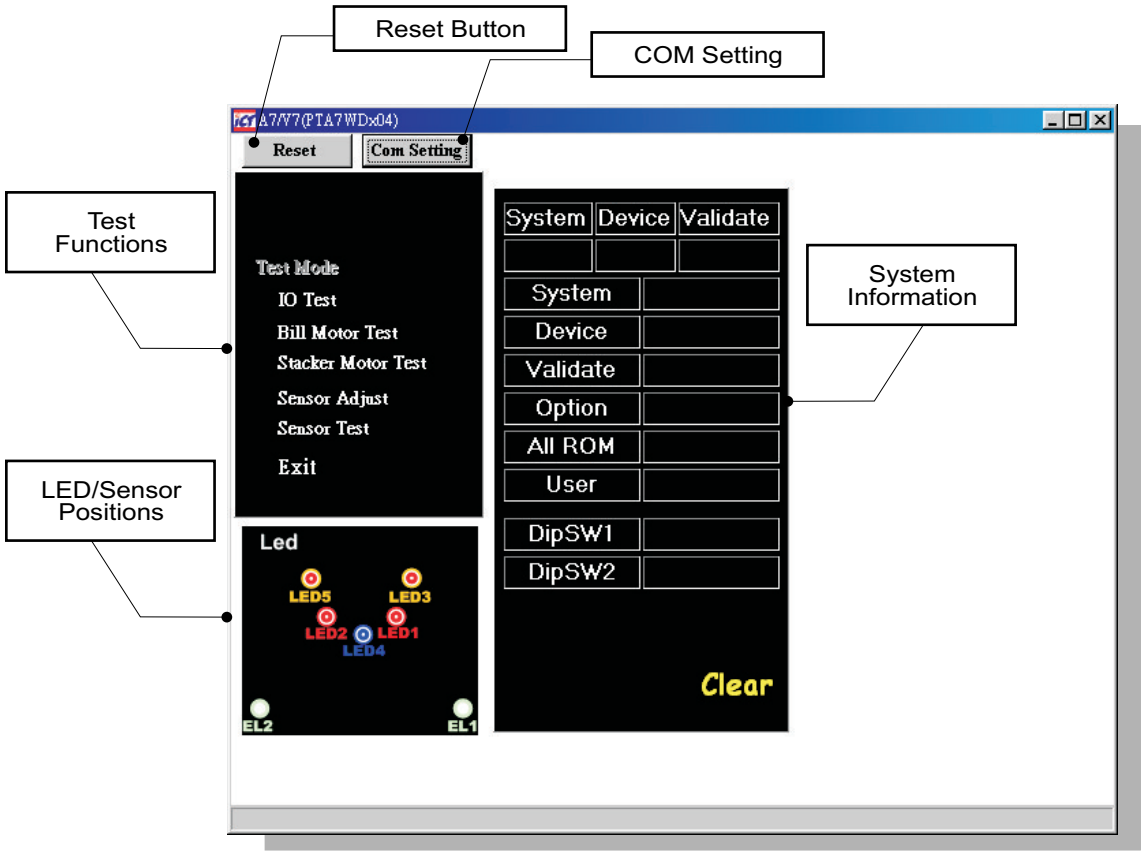
2. ICT Programmer (Part Number FP-001)

Wiring

1. Connect the female end of the download cable (WEL-087) to your computer
2. Connect the male end of the download cable to COM2 on the FP-001
3. Connect the RJ45 Cable to FP-001 and the Bill Acceptor

**** Make sure that on the FP-001 switch setting is on L2 and Normal****

Main Screen



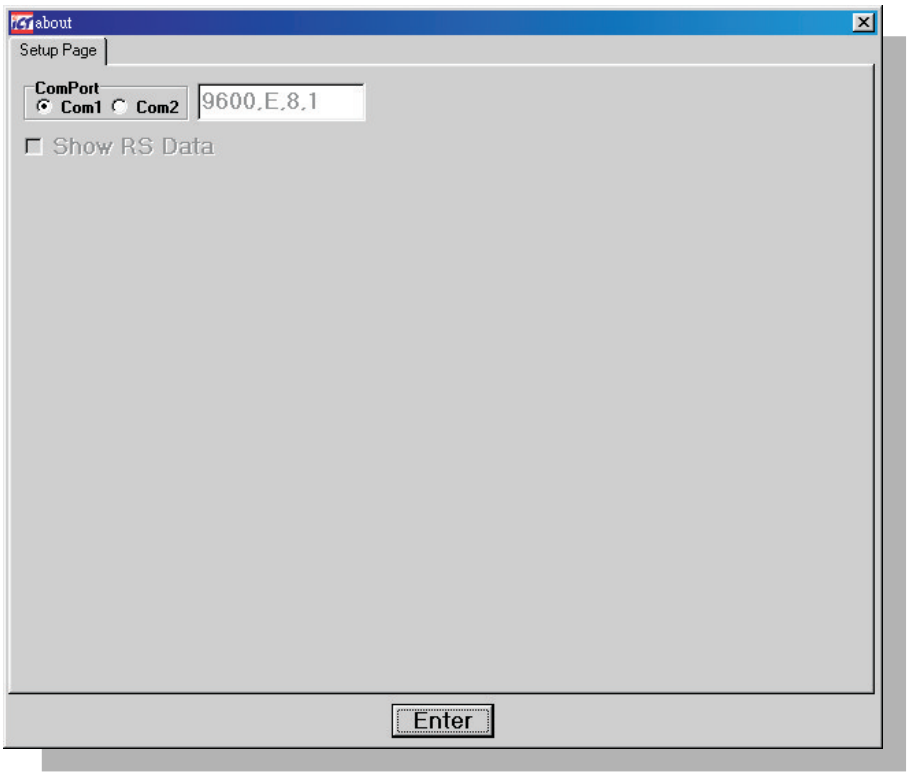
Reset

Resets the testing software. To reset the bill acceptor, press the RESET/START button on FP-001.

System Information

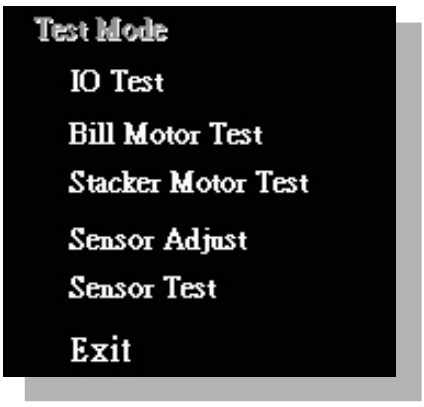
This area will show the current firmware version of your bill acceptor.
Press the RESET/START button to retrieve the information.

COM Setting



Change the COM port which the computer uses.

Test Mode



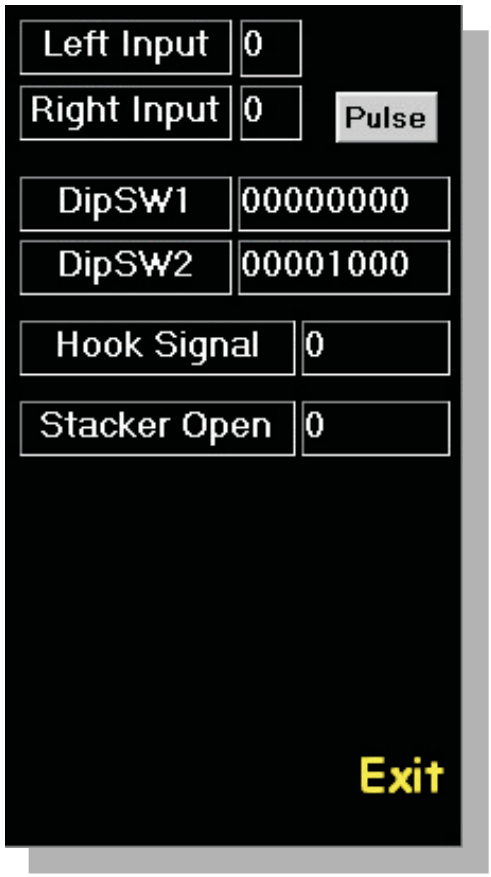
When you click on Test Mode, these options will appear.

Exit

Click here to exit test mode.

IO TEST

When you click IO Test, this box will appear on The right hand corner of the program window :



Left/Right Input

The bill insertion sensors. When an object is in blocking them, they will display 1.

Pulse

Generate a pulse to emulate credit output.

DipSW1

The dip switch settings for the bank of eight Dip switches on the side of the bill acceptor.

DipSW2

The dip switch settings for the bank of four Dip switches on the side of the bill acceptor.

Hook Signal

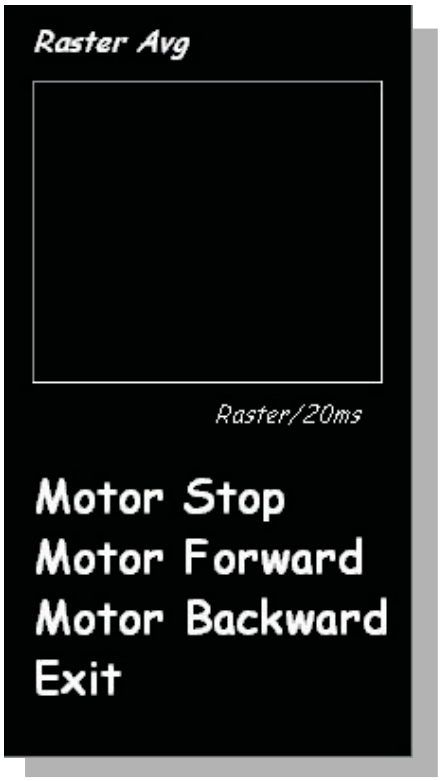
The hook sensor in the back of the bill acceptor. When the sensor is open and unblocked, it will display 0. When an object is blocking the sensor and depressing the teeth, it will display 1.

Stacker Open

When the stacker is correctly attached, it will display 0. Otherwise, it will display 1.

Exit

Click here to close this dialogue box.



BILL MOTOR TEST

When the Bill Motor Test is pressed, this box will appear on the right side of the program window.

Motor Stop

Stop the motor.

Motor Forward

Move the motor forwards. The speed of the motor per 20ms will appear in the top of the window.

Motor Backward

Move the motor backwards. The speed of the motor per 20ms will appear in the top of the window.

Exit

Click here to close this dialogue box.

STACKER MOTOR TEST

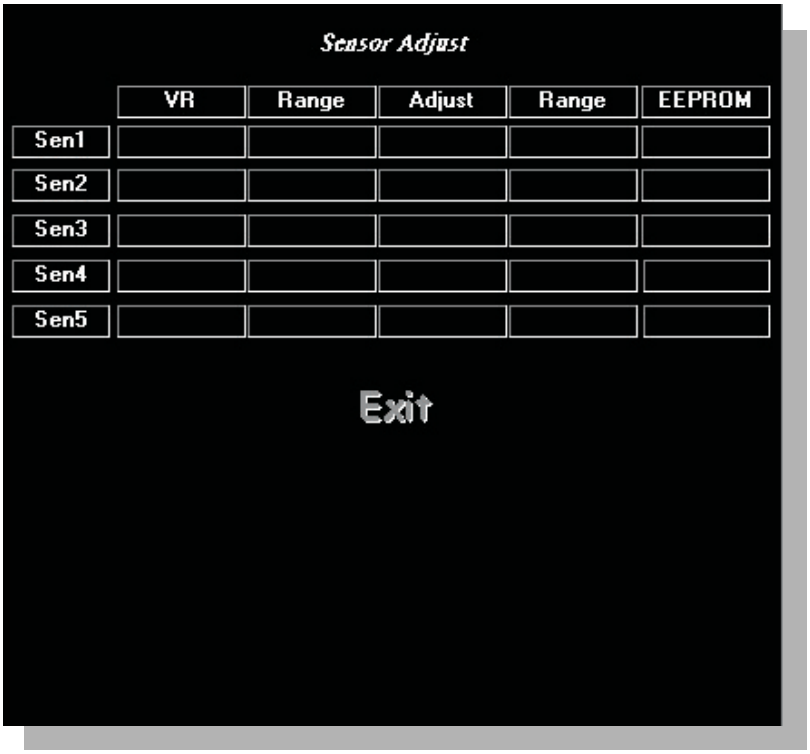
When Stacker Motor Test is pressed, this box will appear on the right of the program window.

Stacking Active

Stacking motor test. When a successful stack is complete , a 0 will appear in the top window, otherwise a 1 will appear.

Exit

Click here to close this dialogue box.



SENSOR ADJUST

When Auto Sensor is pressed, this box will appear on the right of the program window.

Insert the white calibration card to start the adjusting process. The bill acceptor will draw the card in one inch, and return the white calibration card automatically when it is finished.

Any defective sensors will be noted by a red background in the sensor window.

Exit

Click here to close this dialogue box.

SENSOR TEST

When Auto Sensor Test is pressed, this box will appear on the right side of the program widow.

AD SENSOR

This value should be zero, if it is not zero Please set the dip switch 8 to OFF.
Then reset this test kit and B.A.
And then enter the SENSOR TEST again.

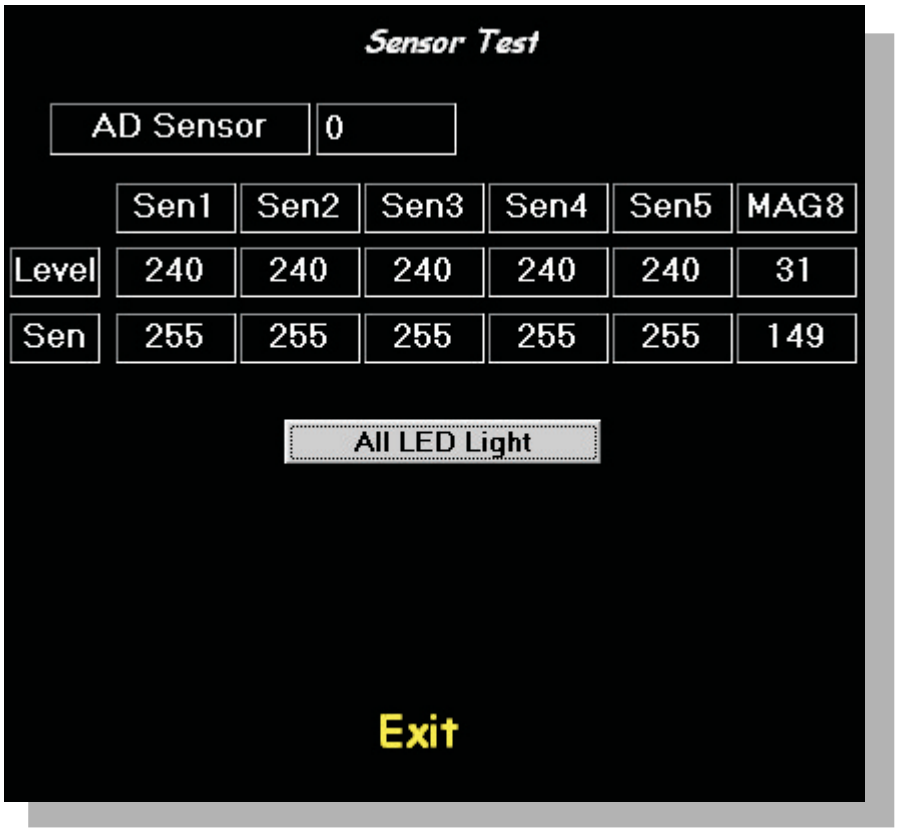
ALL LED Light

When this button pressed, all LEDs will be turned on inside of the bill acceptor.
You will see the screen on the left.

1.Any one of the sensors (SEN1 SEN5) that has a value of less than 255 indicates defective sensor.
2.The magnetic sensor (MAG 8) has a value of less than 30 indicates defective sensor.
If there is no magnetic sensor in B.A. The (MAG 8) sensor value should be zero.

EXIT

Click here to close this dialogue box.



Trouble Shooting :

Introduction

Most failures in ICT bill acceptors occur from minor, easily corrected issues. Prior to doing any kind of maintenance it is important to make sure that the bill acceptor is completely disconnected from the machine and is not powered for safety reasons. Please keep safety in mind while doing repair work on any electrical apparatus.

Please keep in mind the following whenever repairs are effected on ICT products :

(1). If the validator is not powering up, make sure that all cables and harnesses are correctly connected and that the unit is receiving power of the correct voltage from a functioning power supply.

(2). Before updating firmware to correct a low acceptance rate error clean the LED housing to remove any dust, oils, or microscopic particles that may be interfering with the function of the validator.

(3). It is important to remember that even though the Bill Acceptor has automatically calibrating sensors, any time a board is changed the unit must manually be told to calibrate the sensor in order to ensure reliable acceptance.

(4). All repairs should be performed following the repair manual, wiring diagrams, and disassembly procedures in the ICT RMA guide.

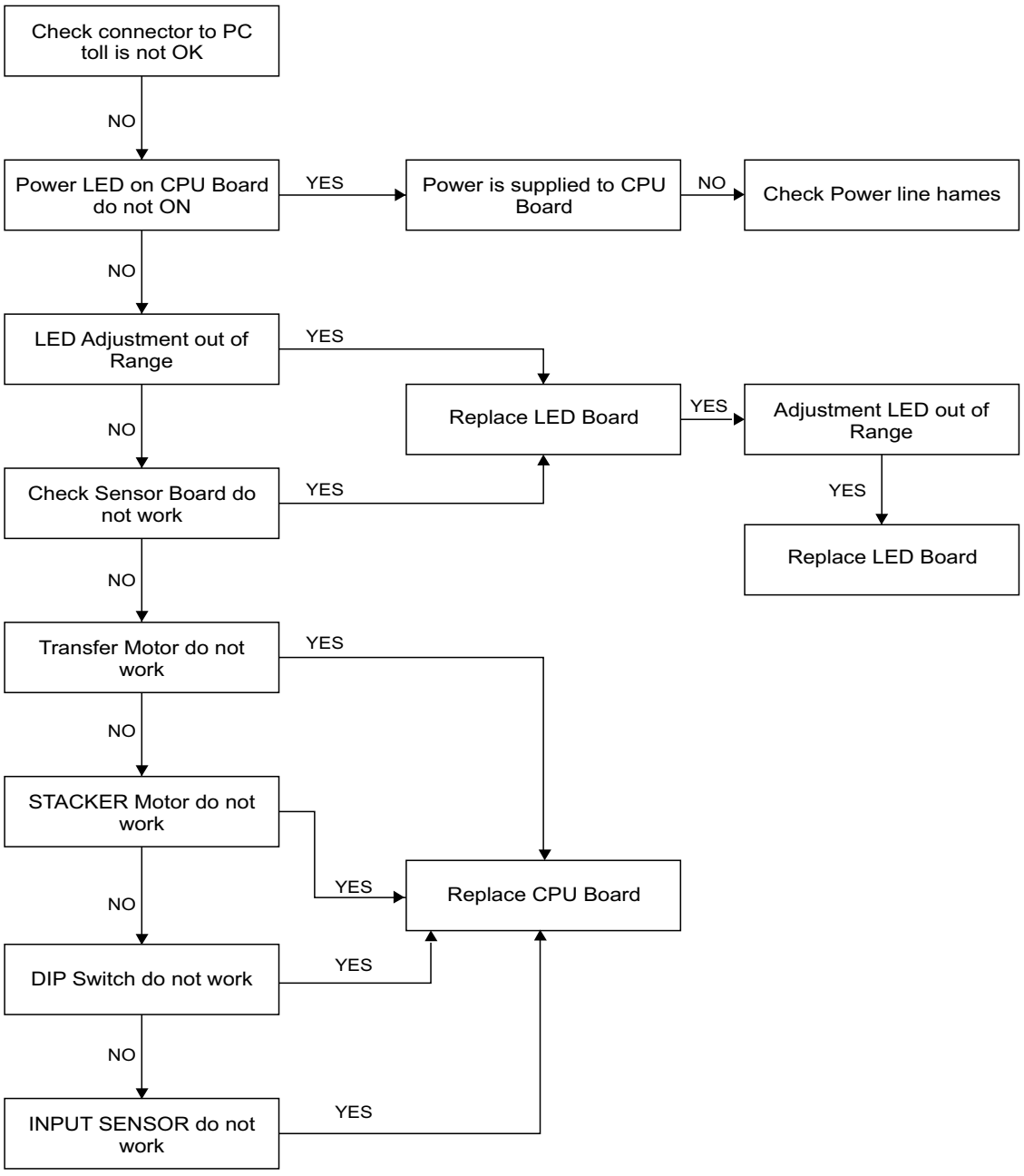
Classification of Failure

Bill acceptor failure can be broadly classified into the four following areas based off of observation of the operation state startup.

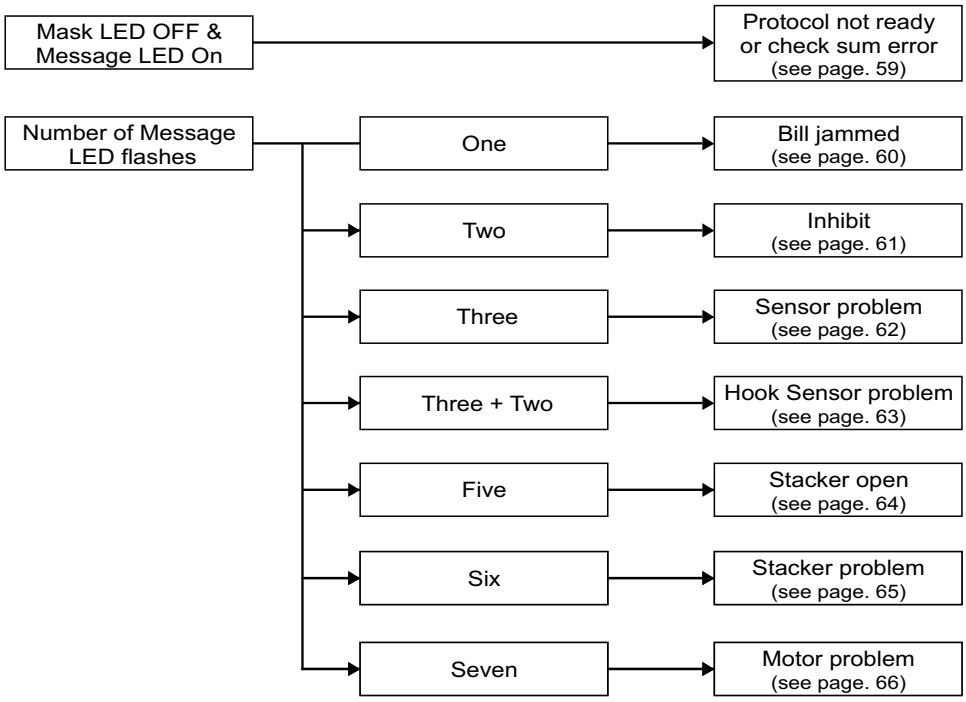
(1). Entry into test mode fails.
(2). Bill acceptor fails to completely initialize or power up.
(3). Low acceptance rate.
(4). The bills fail to follow the bill path smoothly.

Trouble Shooting Flow Charts

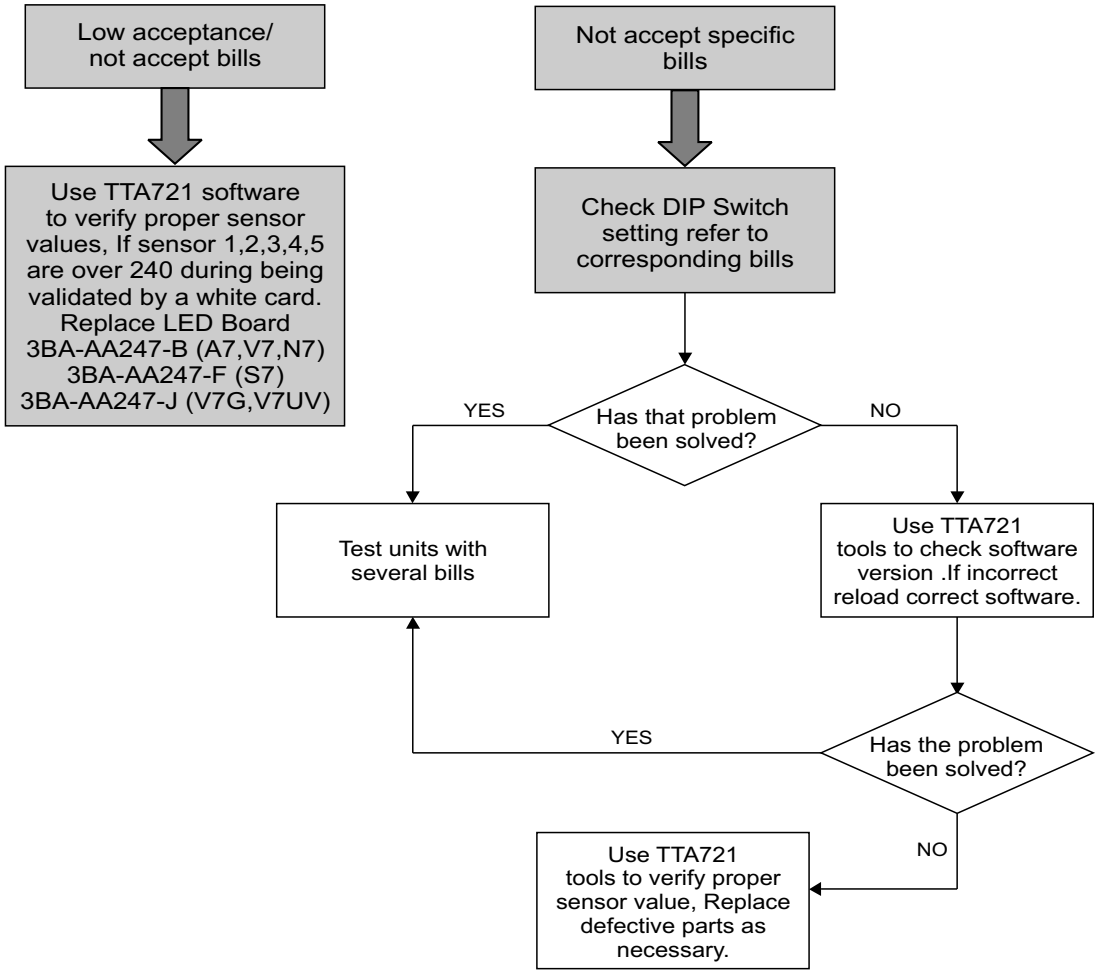
(1). Test mode fails to be entered



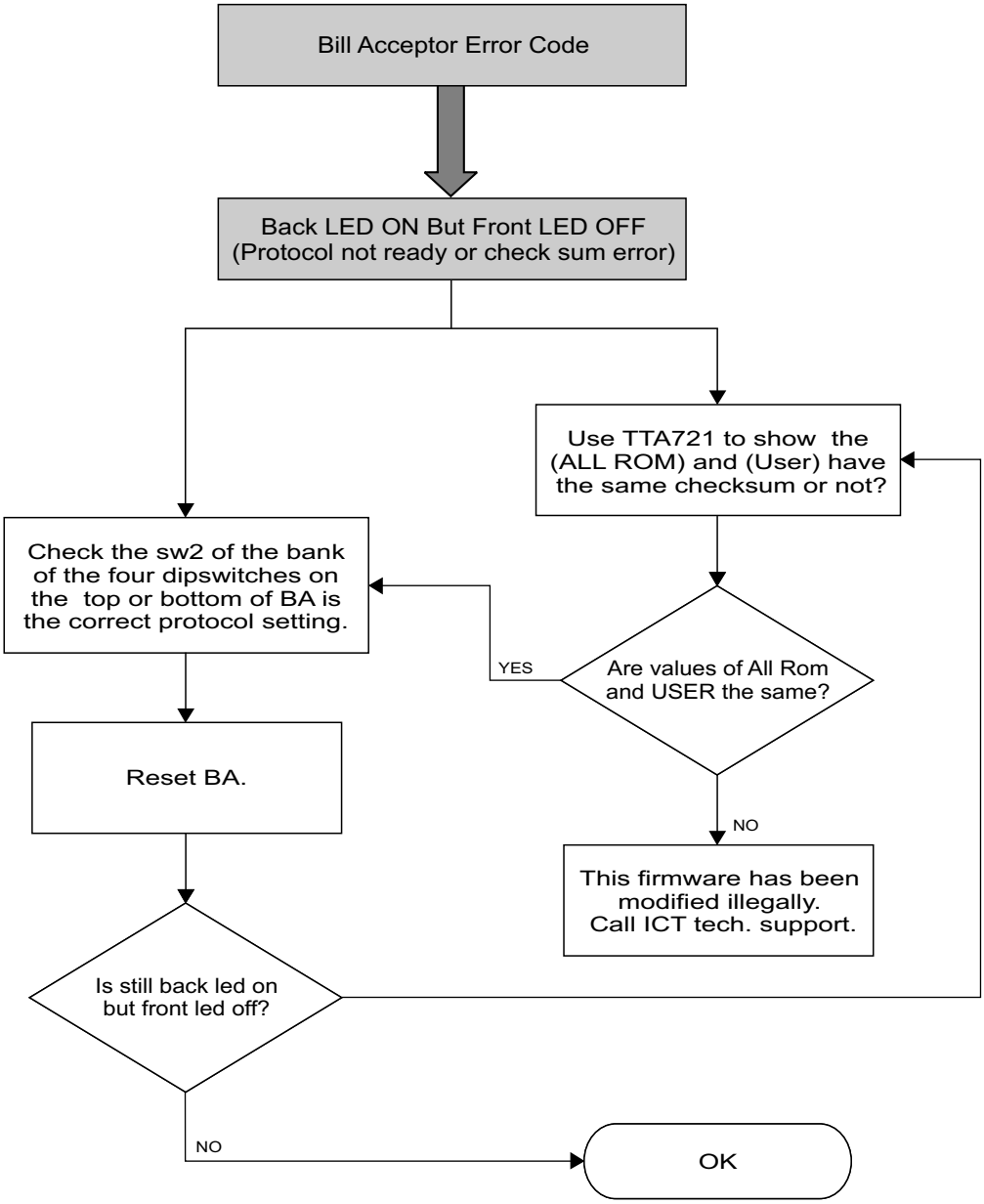
(2). Bill acceptor error code



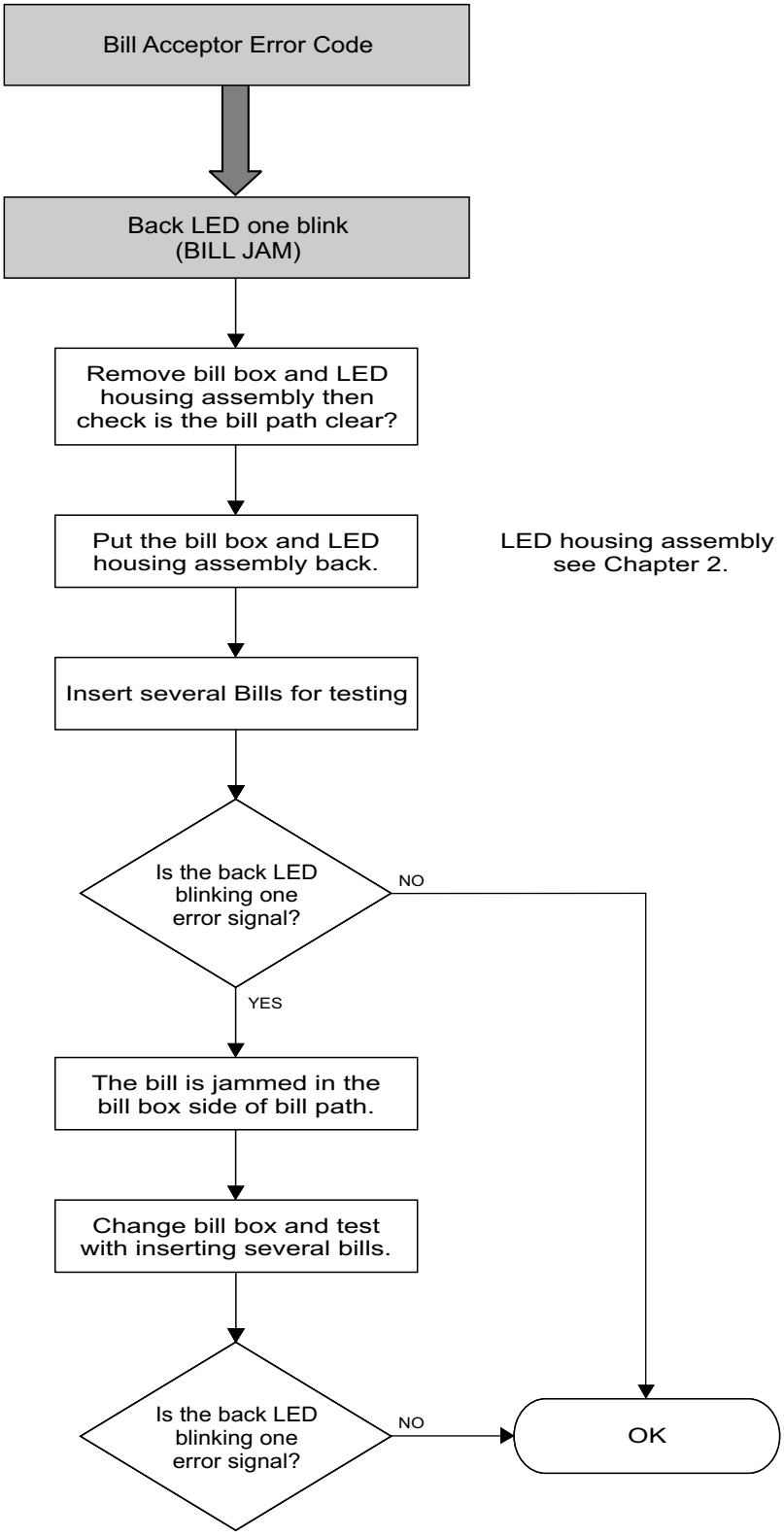
(3). Low acceptance rate



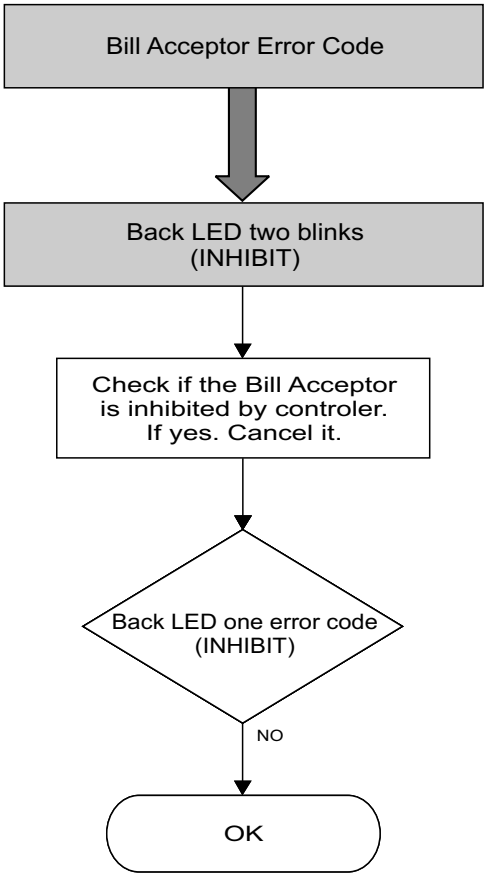
Bill Acceptor Error Code (Mask LED OFF & Message LED ON)



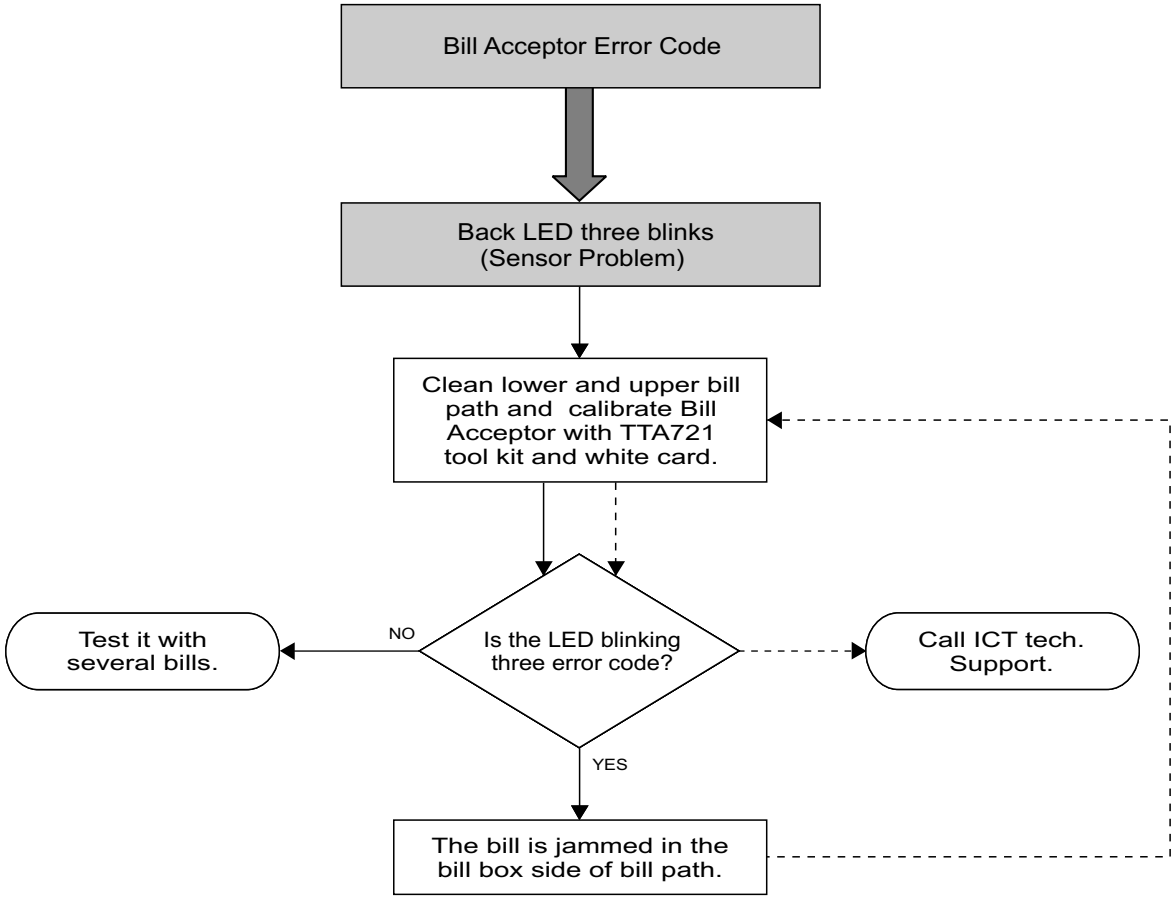
Bill Acceptor Error Code (One Blink)



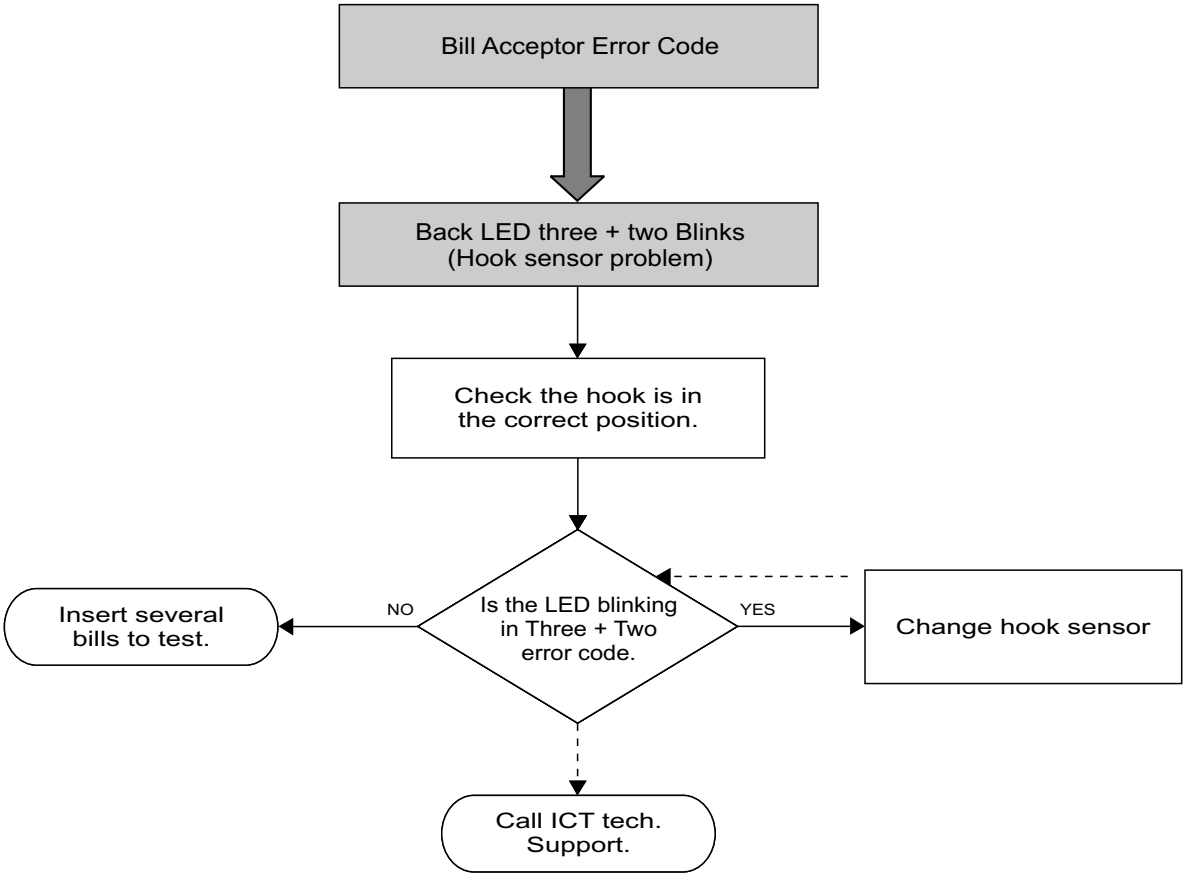
Bill Acceptor Error Code (Two Blinks)



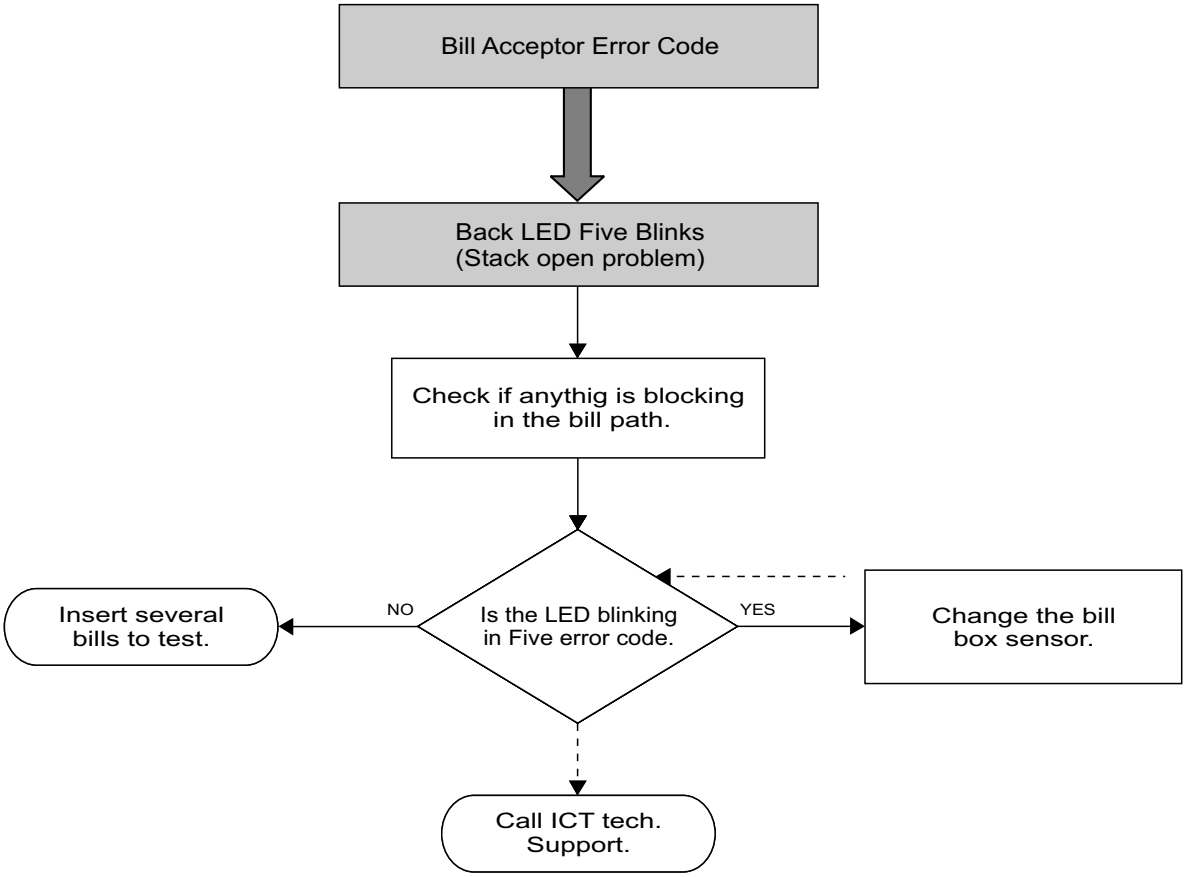
Bill Acceptor Error Code (Three Blinks)



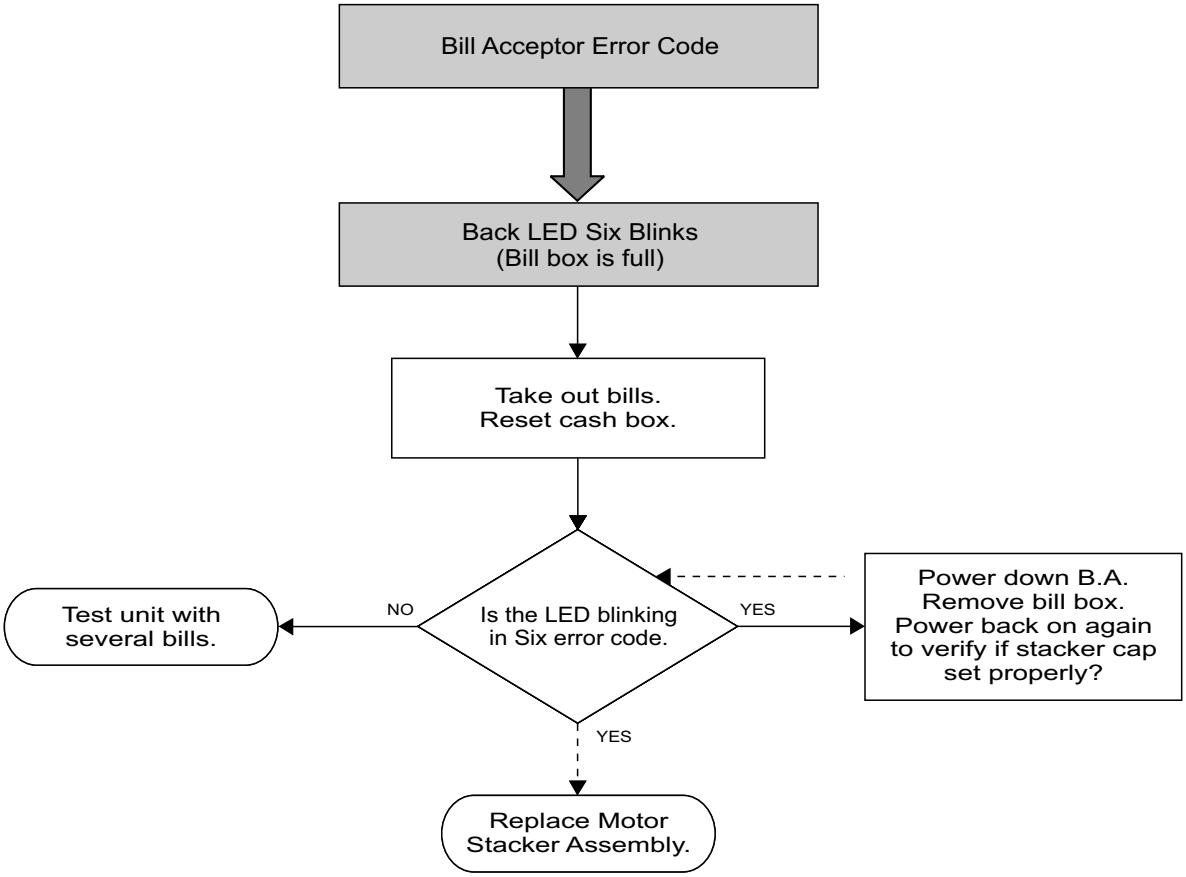
Bill Acceptor Error Code (Three+Two Blinks)



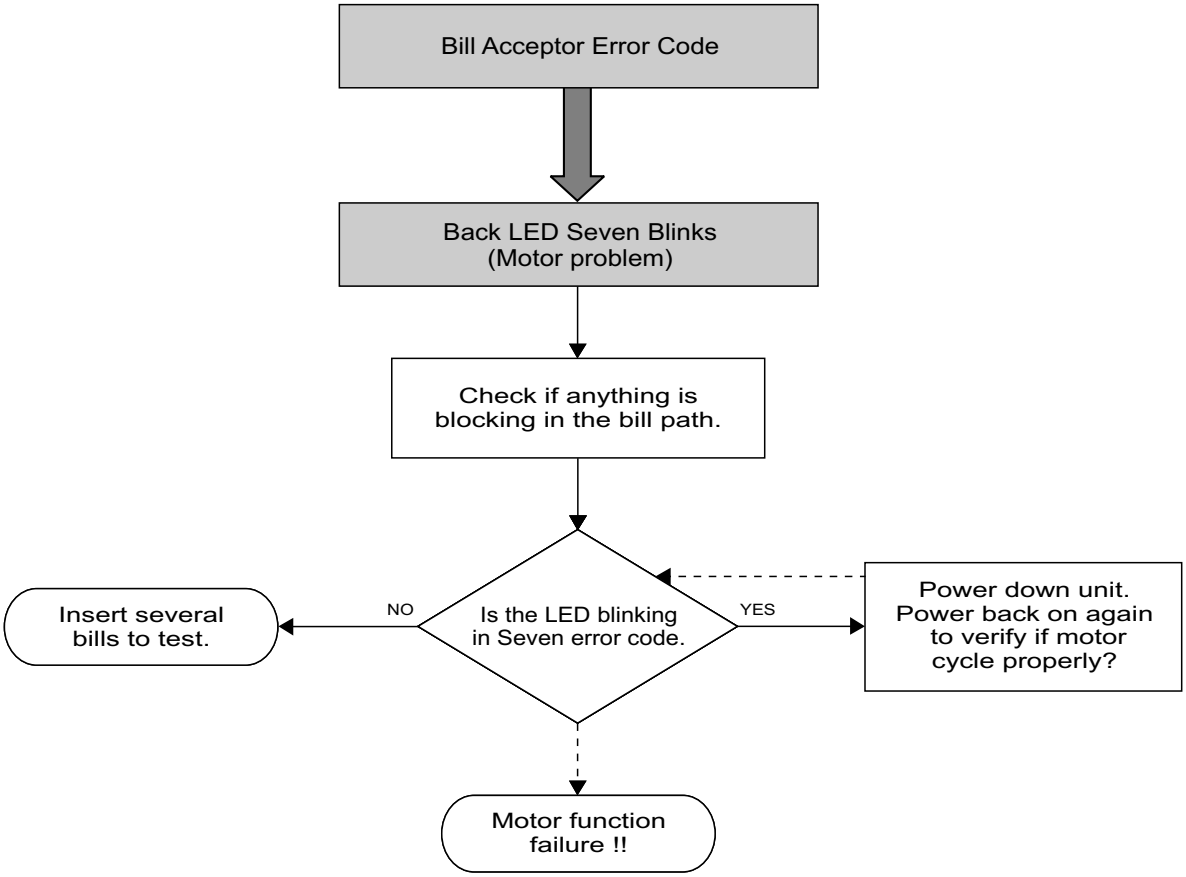
Bill Acceptor Error Code (Five Blinks)



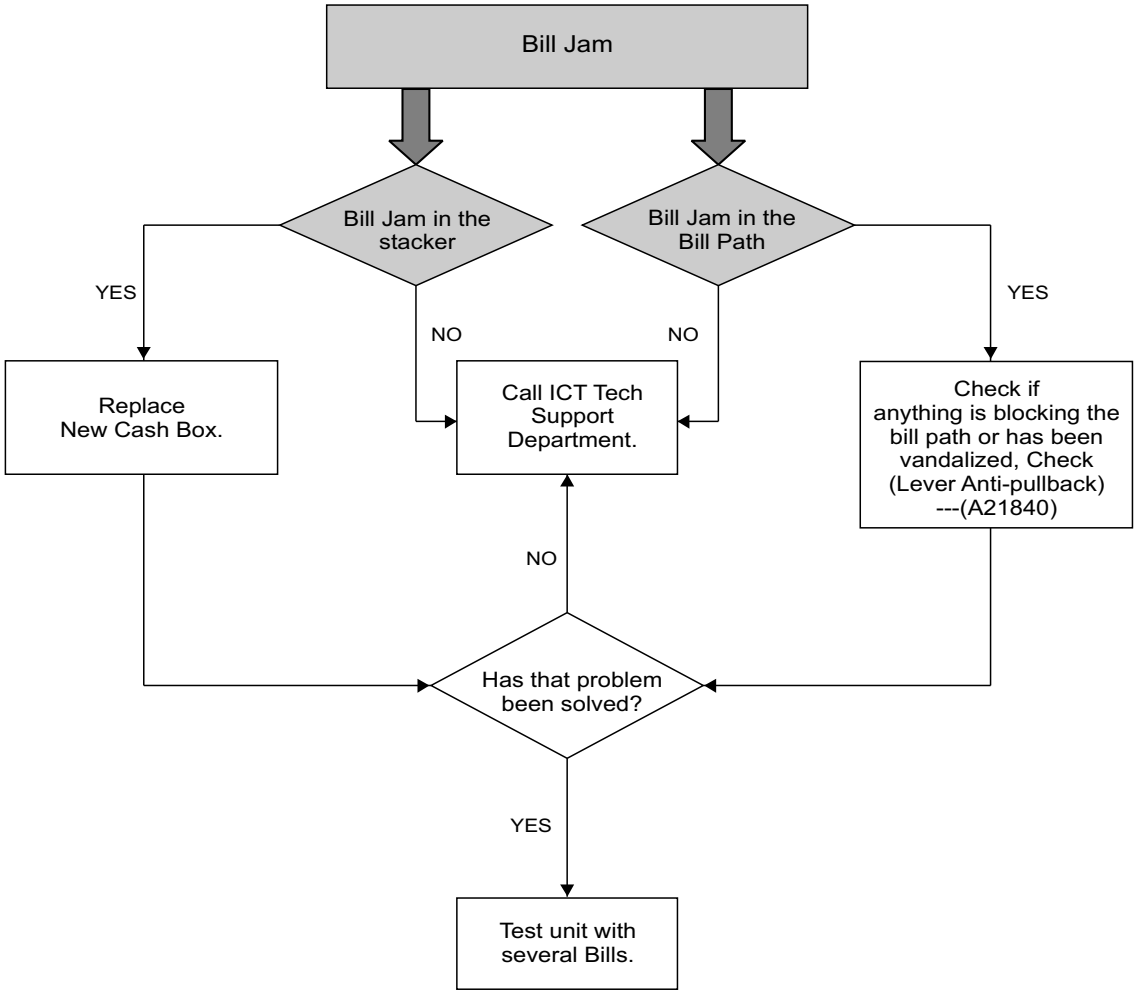
Bill Acceptor Error Code (Six Blinks)



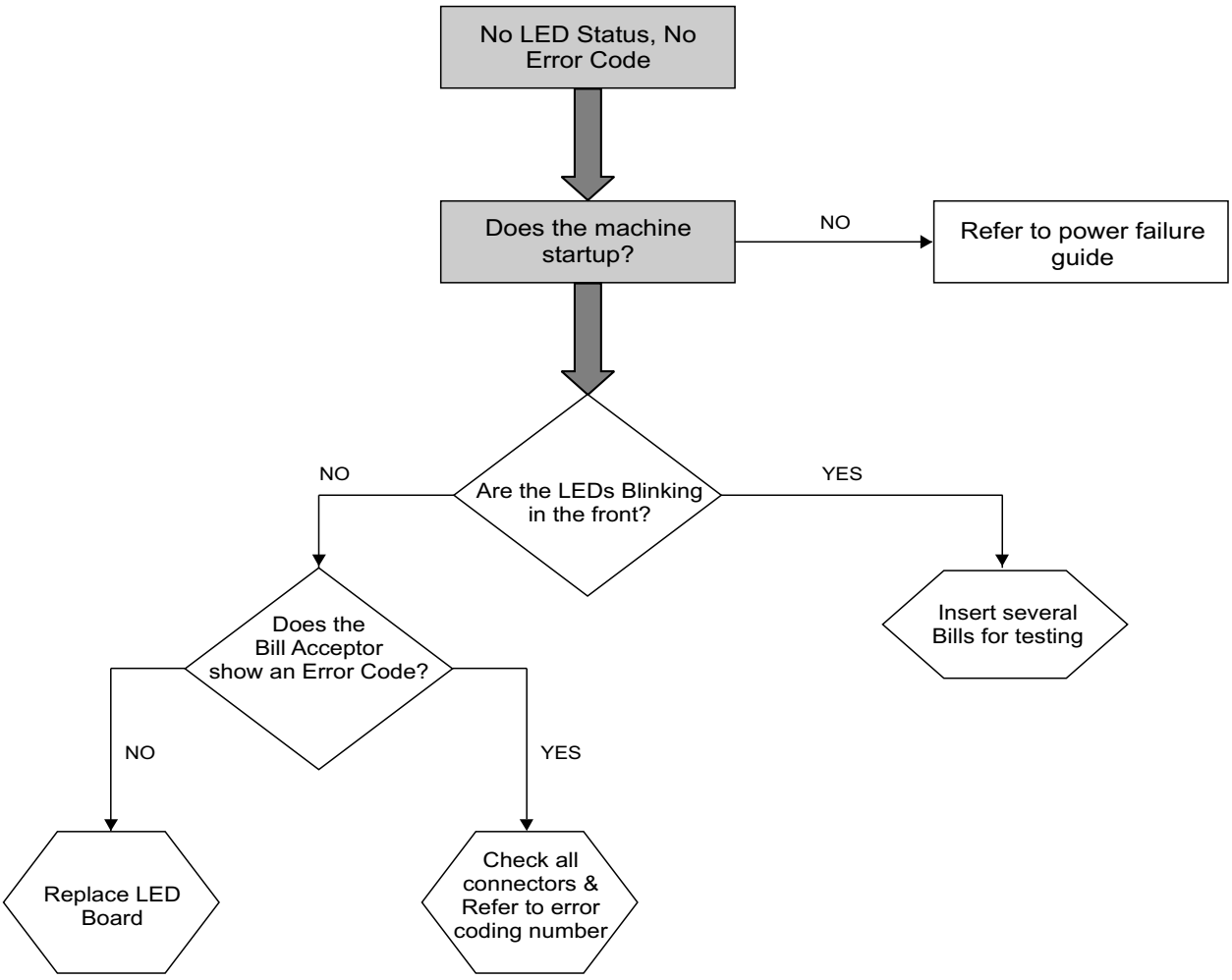
Bill Acceptor Error Code (Seven Blinks)



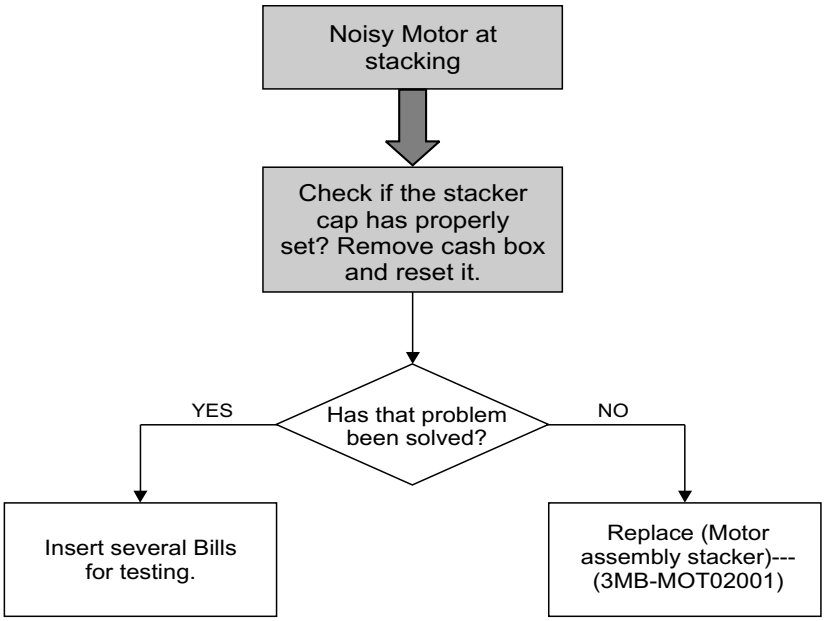
(4). Bill Jam


Bill Jam
Bill Jam in the stacker
Bill Jam in the Bill Path
YES
NO
NO
YES
Replace New Cash Box.
Call ICT Tech Support Department.
Check if anything is blocking the bill path or has been vandalized, Check (Lever Anti-pullback) ---(A21840)
NO
Has that problem been solved?
YES
Test unit with several Bills.

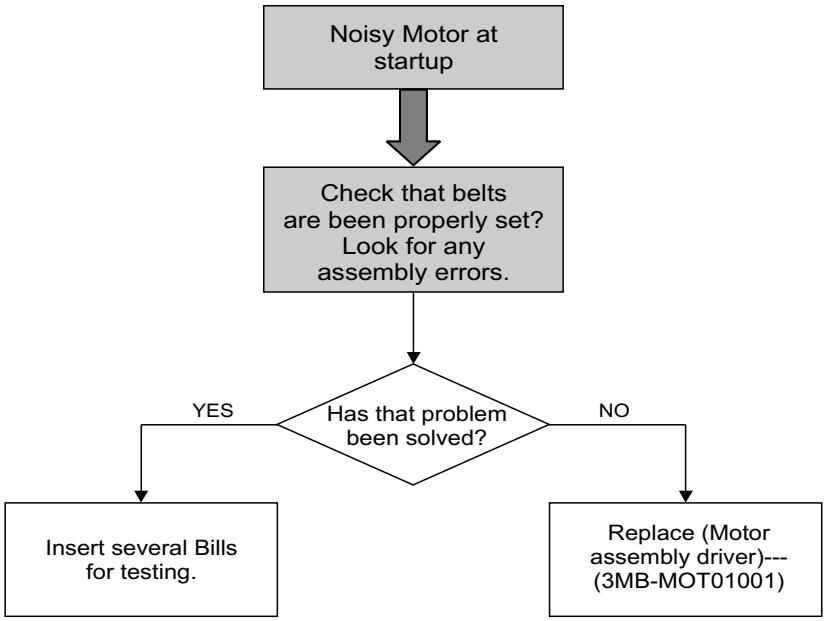
(5). No Led Status, No Error Code



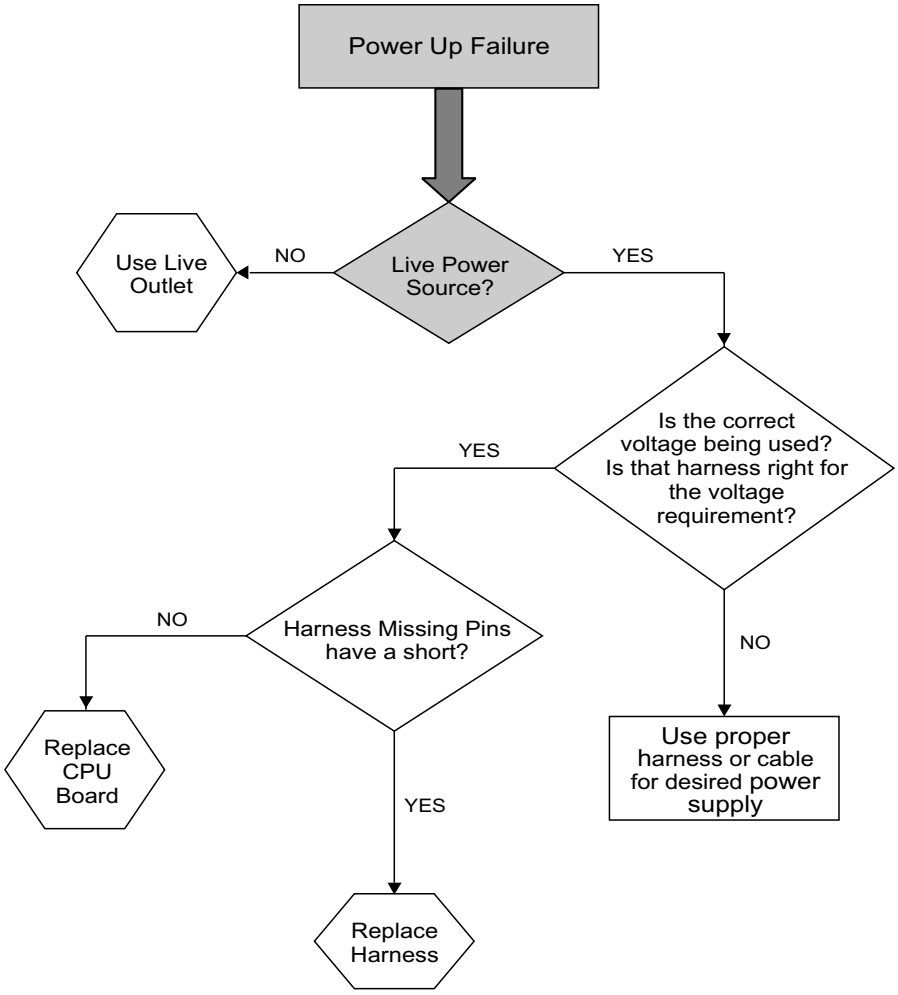
(6). Noisy Motor at stacking



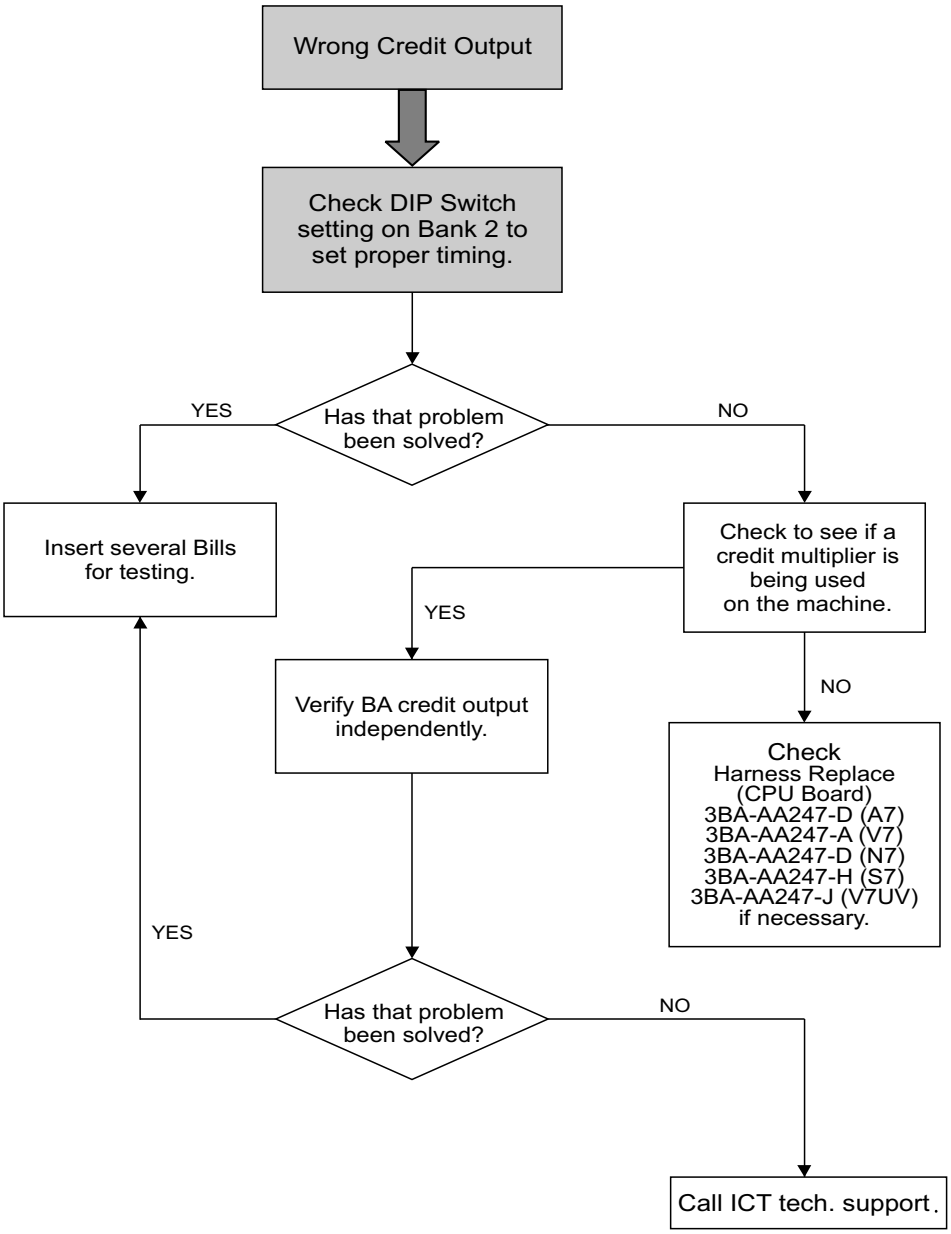
(7). Noisy Motor at startup



(8). Power Up Failure

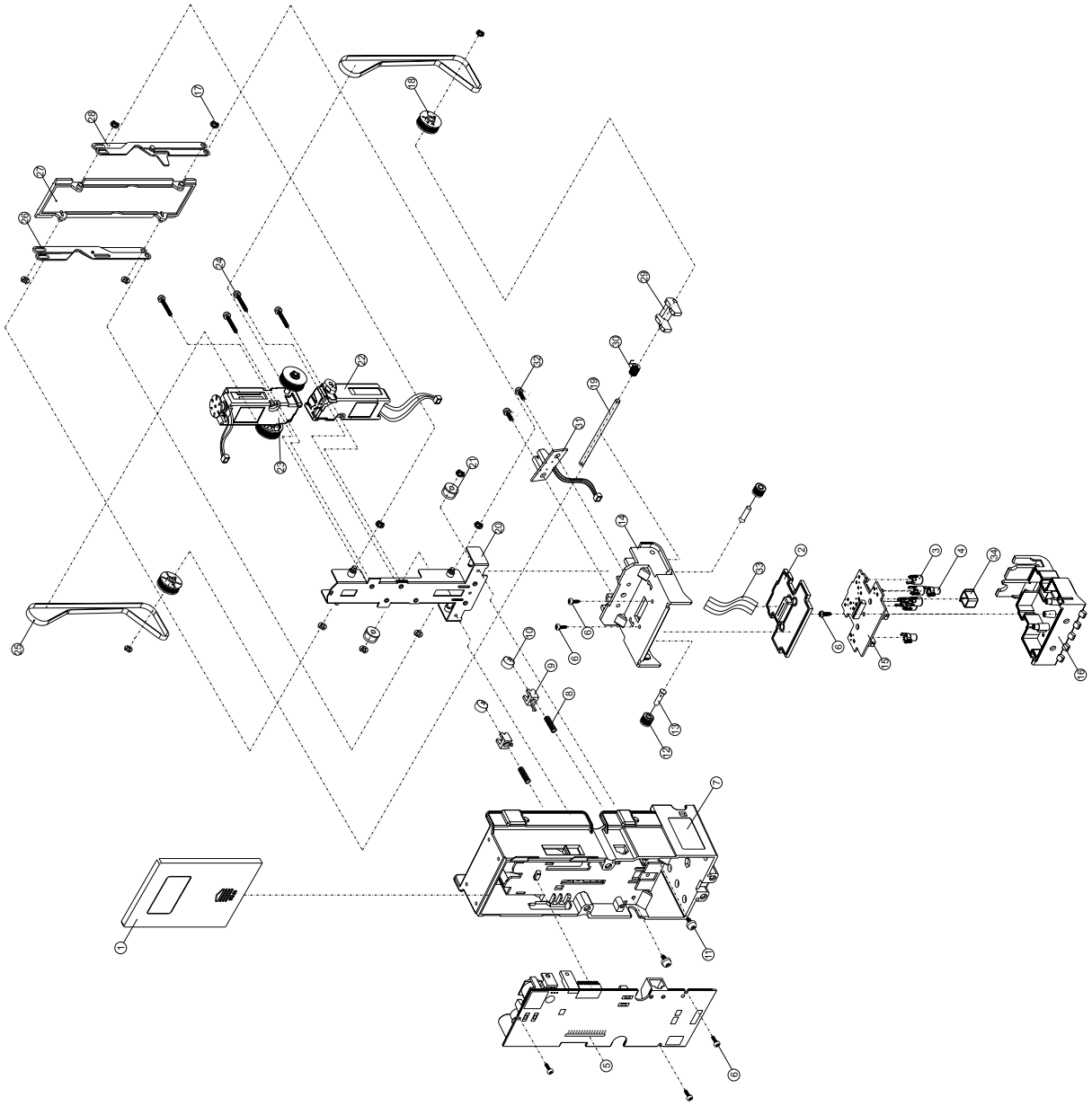


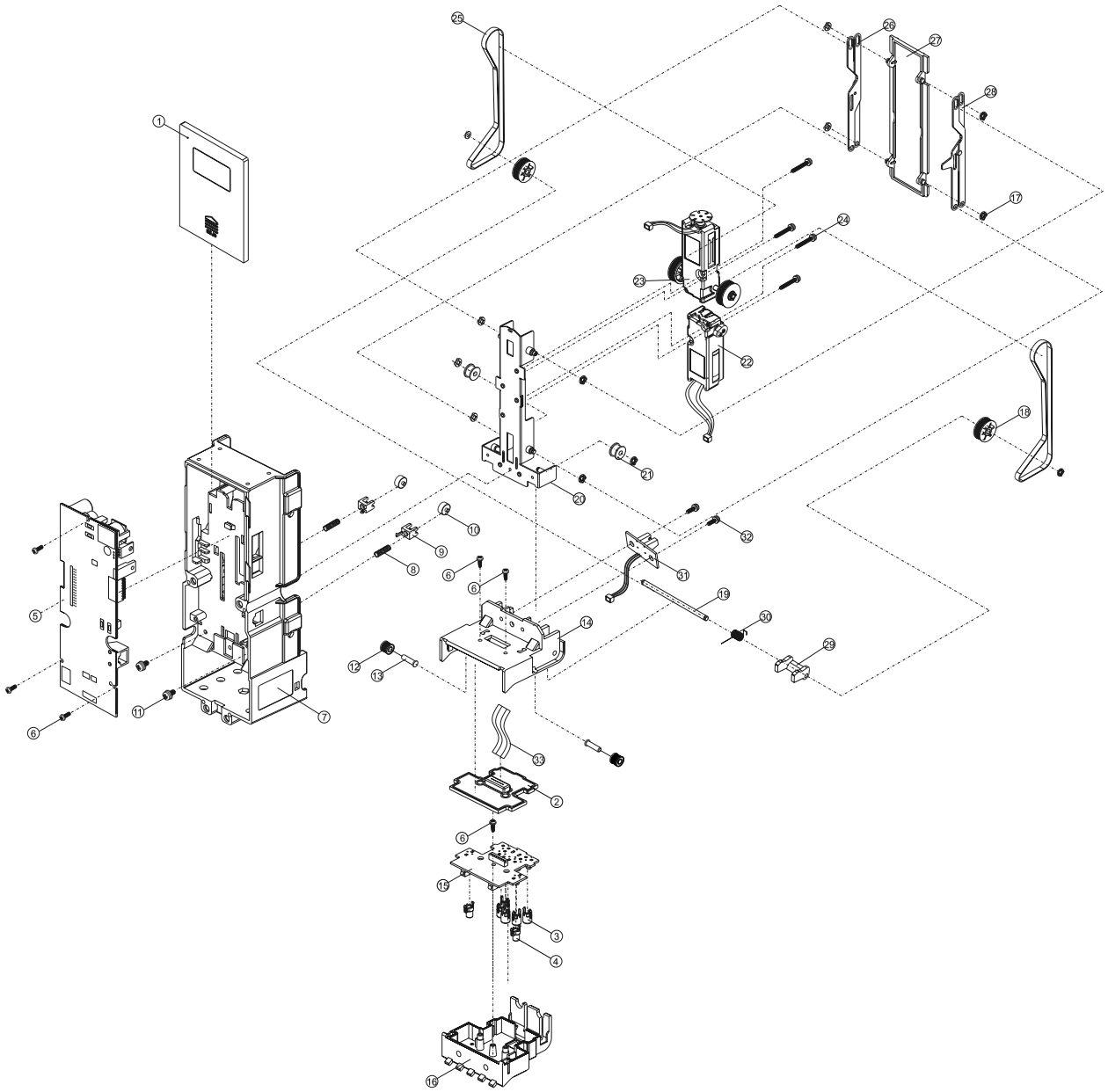
(9). Wrong Credit Output



Parts and Assembly Diagram :

Order	Part number	Appelation	Quantity
1	A2121A	CPU Board cover	1
2	Z5016A	Waterproof rubber(downside)	1
3	A22260	Receiving Lens Bracket	5
4	A22240	Counterfeit Lens Bracket(slit)	2
5	3BA-AA247-A7	V7 CPU board	1
	3BA-AA247-D3	A7 CPU board	1
6	BA-060	Ø 3X8 Screw, TP2	6
7	A2205D	Main base	1
8	G1022A	Spring	2
9	A22210	Roller holder	2
10	A21820	Roller	2
11	BA-041-1	M3 6 Screw with washer	2
12	A21270	Belt pulley (O style,14t)	2
13	B10670	Pulley shaft	2
14	A22110	Frame , drive	1
15	3BA-AA247-C1	Sensor board	1
16	A2212B00	Sensor board housing	1
17	A2575A	Nylon retainting ring	10
18	A20750	Belt pulley (O style ,30t)	2
19	B10660	Pulley shaft	1
20	C1207B	Stacker/Drive device frame	1
21	A22130	Pulley, idler	2
22	3MB-MOT03006	Motor assembly(C), stacker	1
23	3MB-MOT01006	Motor assembly(A), drive	1
24	M10080	M3 20 Screw with washer	4
25	E50070	Belt (MXL162t)	2
26	C1338000	Lever-D, stacker	1
27	A21220	Stacker cap	1
28	C1337000	Lever-C, stacker	1
29	A21840	Lever,anti-pullback	1
30	G10340	Spring,anti-pullback	1
31	3BA-AA227-G2	Sensor board,anti-pullback	1
32	M10200	M3 15 Screw with washer	2
33	FFC-G12060	Flexible Flat Cable,12 pin	1
34	Z50140	Waterproof rubber(magnetic head)	1





Order	Part number	Appellation	Quantity
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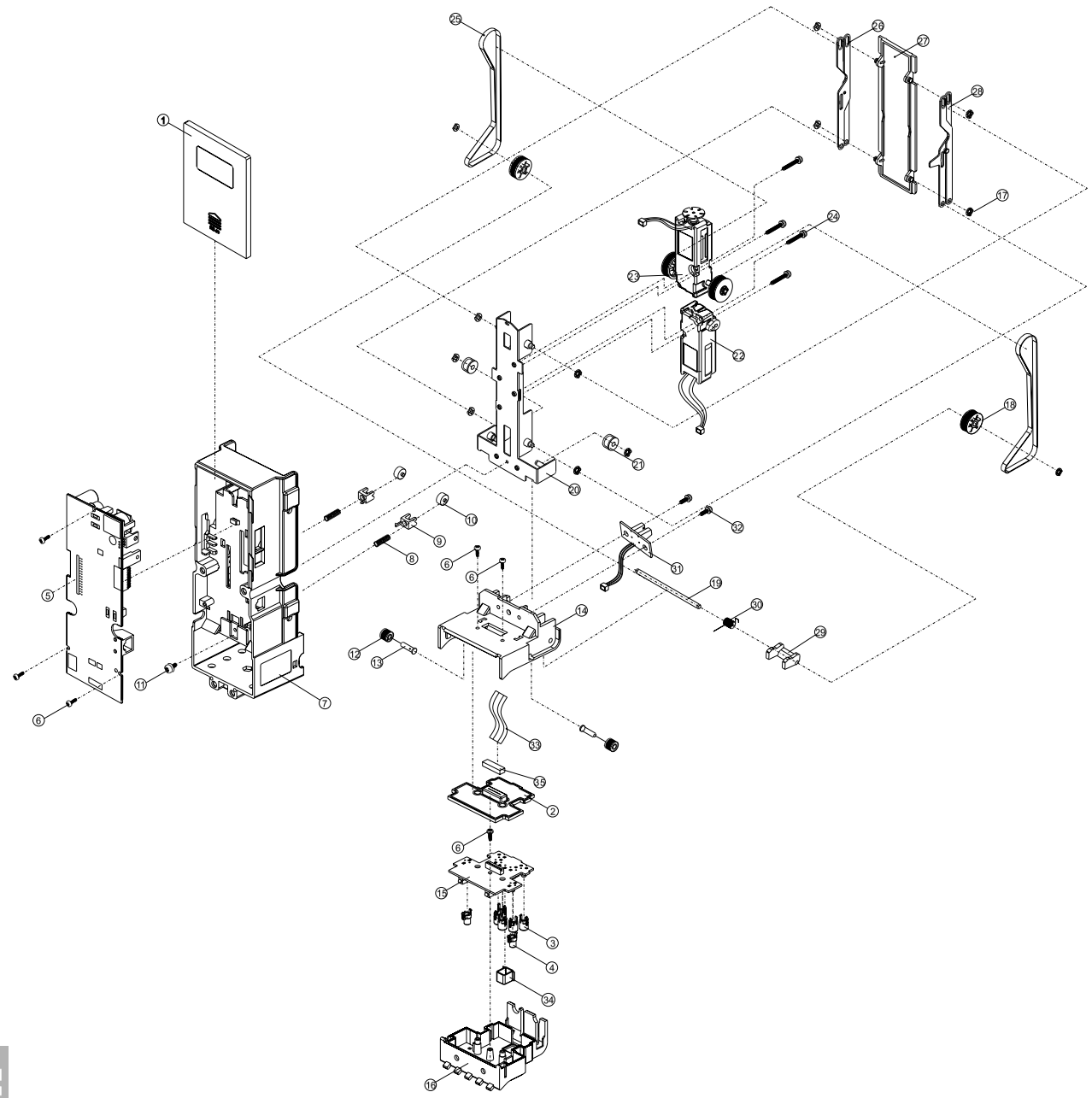
2	Z5016A	Waterproof rubber(downside)	1
3	A22260	Receiving Lens Bracket	5
4	A22240	Counterfeit Lens Bracket(slit)	2
5	3BA-AA247-A7	V7 CPU board	1
	3BA-AA247-D3	A7 CPU board	1
6	BA-060	Ø 3X8 Screw, TP2	6
7	A2205D	Main base	1
8	G1022A	Spring	2
9	A22210	Roller holder	2
10	A21820	Roller	2
11	BA-041-1	M3 6 Screw with washer	2
12	A21270	Belt pulley (O style,14t)	2
13	B10670	Pulley shaft	2
14	A22110	Frame , drive	1
15	3BA-AA247-C2	Sensor board	1
16	A2481000	Sensor board housing	1
17	A2575A	Nylon retainting ring	10
18	A20750	Belt pulley (O style ,30t)	2
19	B10660	Pulley shaft	1
20	C1207B	Stacker/Drive device frame	1
21	A22130	Pulley, idler	2
22	3MB-MOT03006	Motor assembly(C), stacker	1
23	3MB-MOT01006	Motor assembly(A), drive	1
24	M10080	M3 20 Screw with washer	4
25	E50070	Belt (MXL162t)	2
26	C1338000	Lever-D, stacker	1
27	A21220	Stacker cap	1
28	C1337000	Lever-C, stacker	1
29	A21840	Lever,anti-pullback	1
30	G10340	Spring,anti-pullback	1
31	3BA-AA227-G2	Sensor board,anti-pullback	1
32	M10200	M3 15 Screw with washer	2
33	FFC-G12060	Flexible Flat Cable,12 pin	1



Order	Part number	Appellation	Quantity
1	A2121A	CPU Board cover	1
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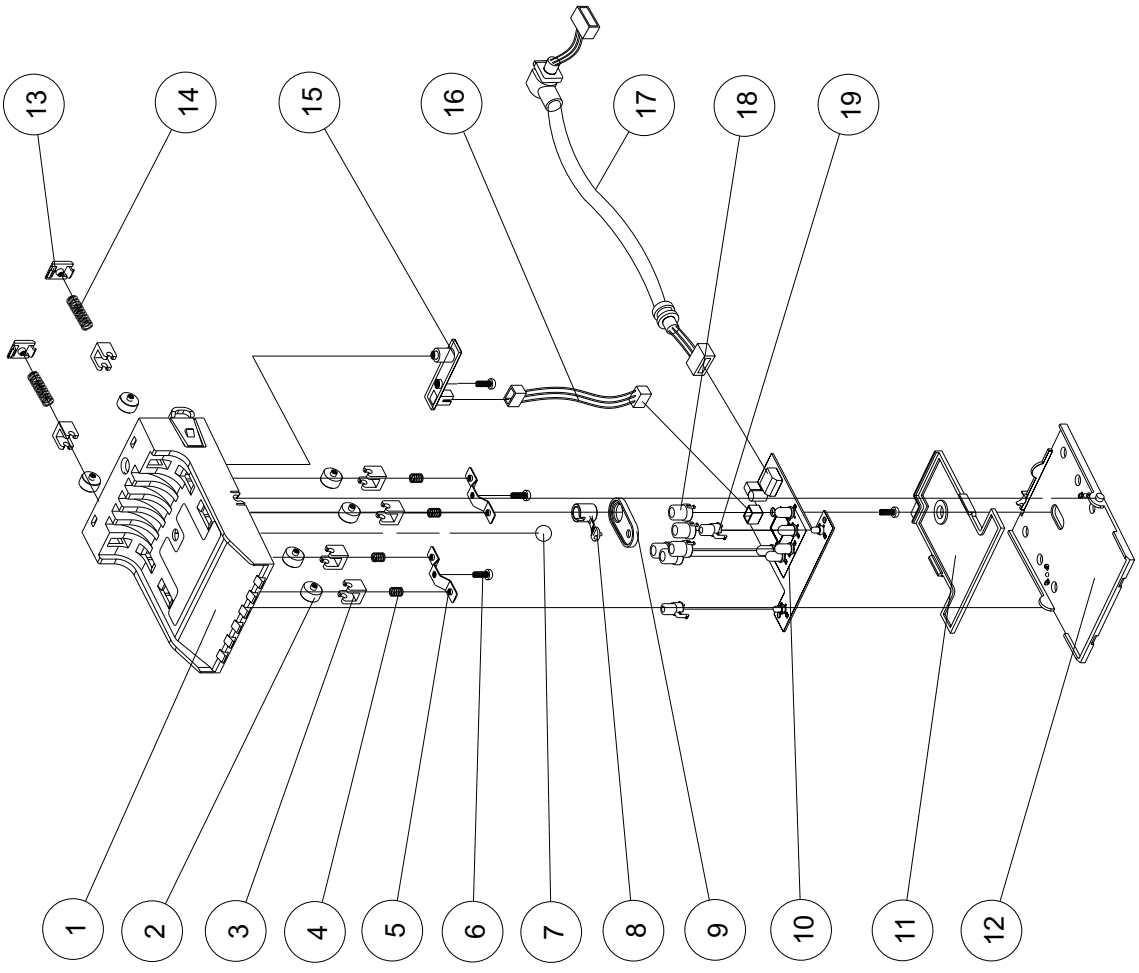
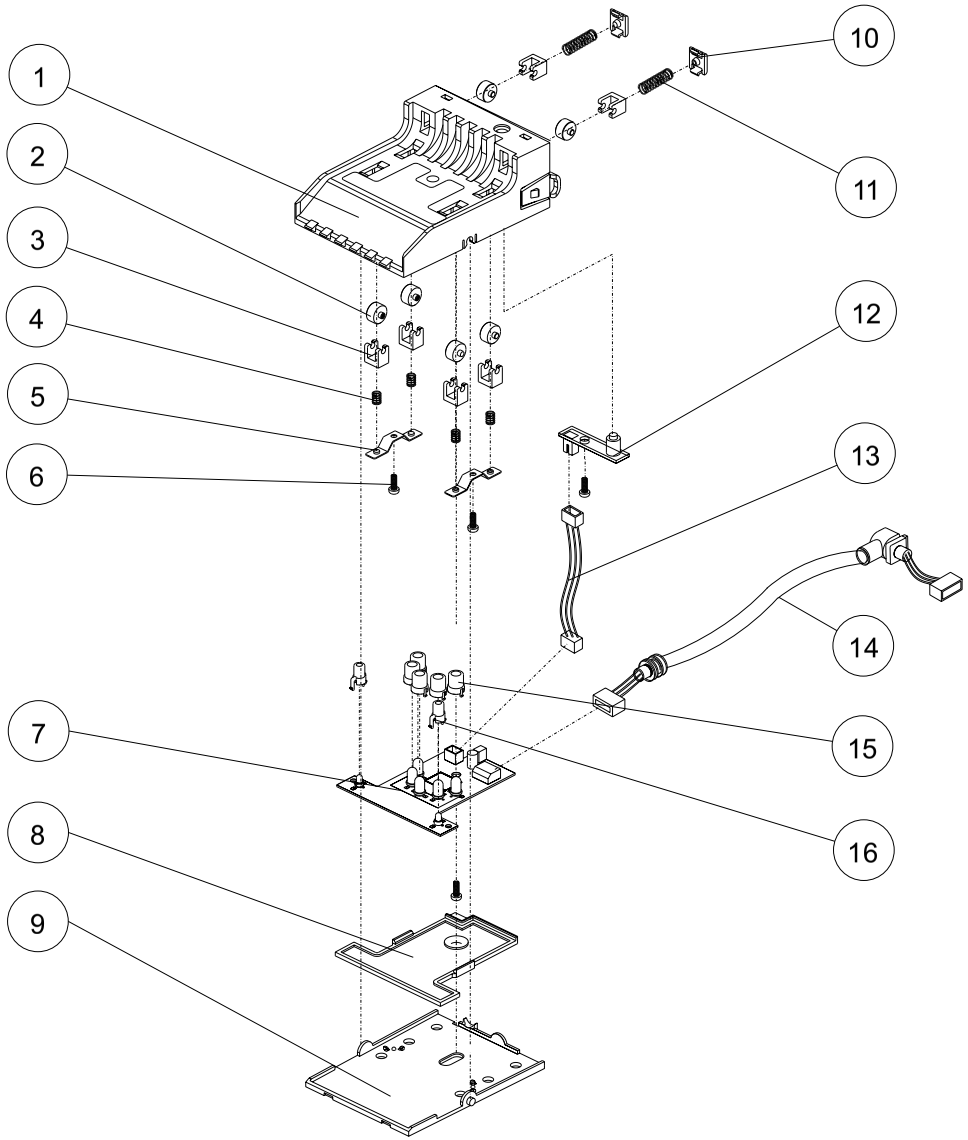
3	A22260	Receiving Lens Bracket	5
4	A22240	Counterfeit Lens Bracket(slit)	2
5	3BA-AA247-H4	S7 CPU board	1
6	BA-060	Ø 3X8 Screw, TP2	6
7	A2205D	Main base	1
8	G1022A	Spring	2
9	A22210	Roller holder	2
10	A21820	Roller	2
11	BA-041-1	M3 6 Screw with washer	1
12	A21270	Belt pulley (O style,14t)	2
13	B10670	Pulley shaft	2
14	A22110	Frame , drive	1
15	3BA-AA247-C1	Sensor board	1
16	A2212B00	Sensor board housing	1
17	A2575A	Nylon retainting ring	10
18	A20750	Belt pulley (O style ,30t)	2
19	B10660	Pulley shaft	1
20	C1207B	Stacker/Drive device frame	1
21	A22130	Pulley, idler	2
22	3MB-MOT03006	Motor assembly(C), stacker	1
23	3MB-MOT01006	Motor assembly(A), drive	1
24	M10080	M3 20 Screw with washer	4
25	E50070	Belt (MXL162t)	2
26	C1338000	Lever-D, stacker	1
27	A21220	Stacker cap	1
28	C1337000	Lever-C, stacker	1
29	A21840	Lever,anti-pullback	1
30	G10340	Spring,anti-pullback	1
31	3BA-AA227-G2	Sensor board,anti-pullback	1
32	M10200	M3 15 Screw with washer	2
33	FFC-G12060	Flexible Flat Cable,12 pin	1
34	Z50140	Waterproof rubber(magnetic head)	1
35	Z50230	RUBBER	1

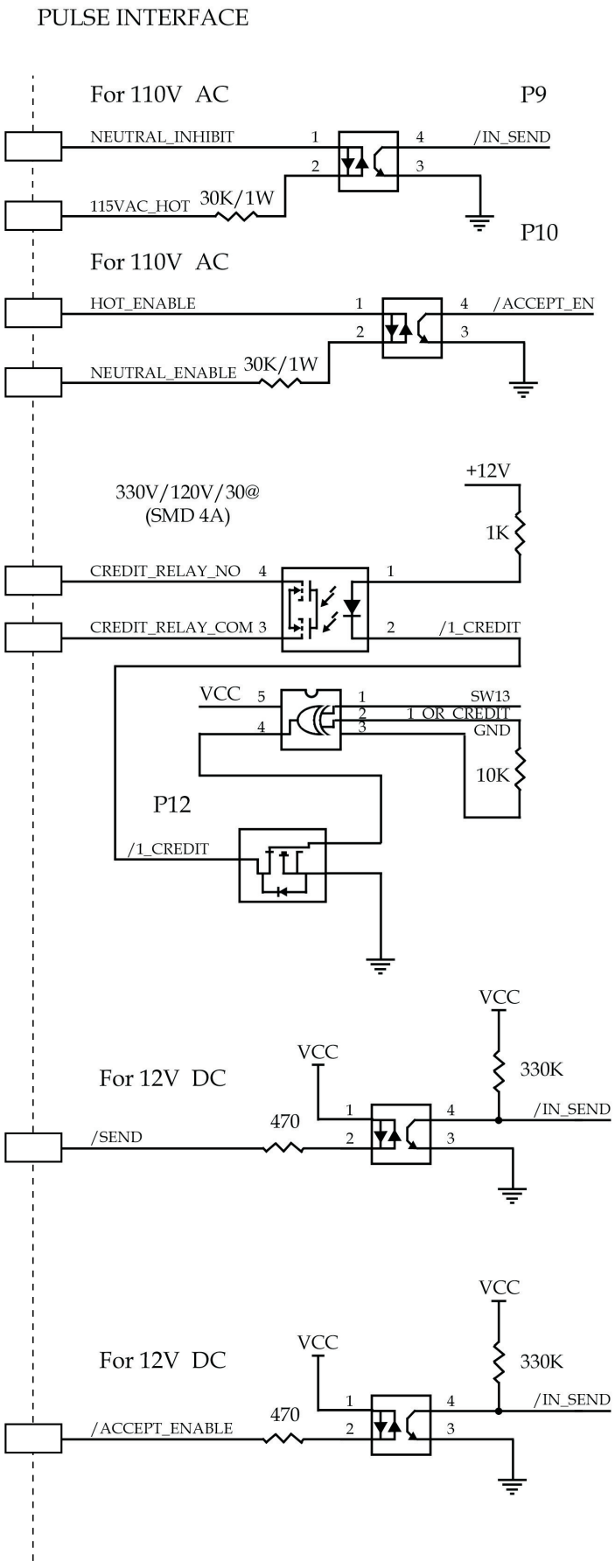
Order	Part number	Appellation	Quantity
1	A2210C00	LED Board housing	1
2	A21820	Roller	6
3	A21250	Roller holder	6
4	G10400	Plate spring	4
5	C13570	Leaf spring	2
6	BA-060	Ø 3X8 Screw, TP2	4
7	J20420	Nylon ball	1
8	A2248A	Ball shrapnel	1
9	Z50170	Rubber washer	1
10	3BA-AA247-B2	LED Board	1
11	Z5015A	Waterproof rubber(upper)	1
12	A22200	Housing cover	1
13	A21280	Idle roller cover	2
14	G1022A	Spring	2
15	3BA-AA227-C3	Stacker sensor board	1
16	WEL-M005	Stacker sensor harness	1
17	WEL-M004	CPU Board connect harness	1
18	A22270	Emission Lens Bracket	5
19	A22250	Counterfeit Lens Bracket(hole)	2



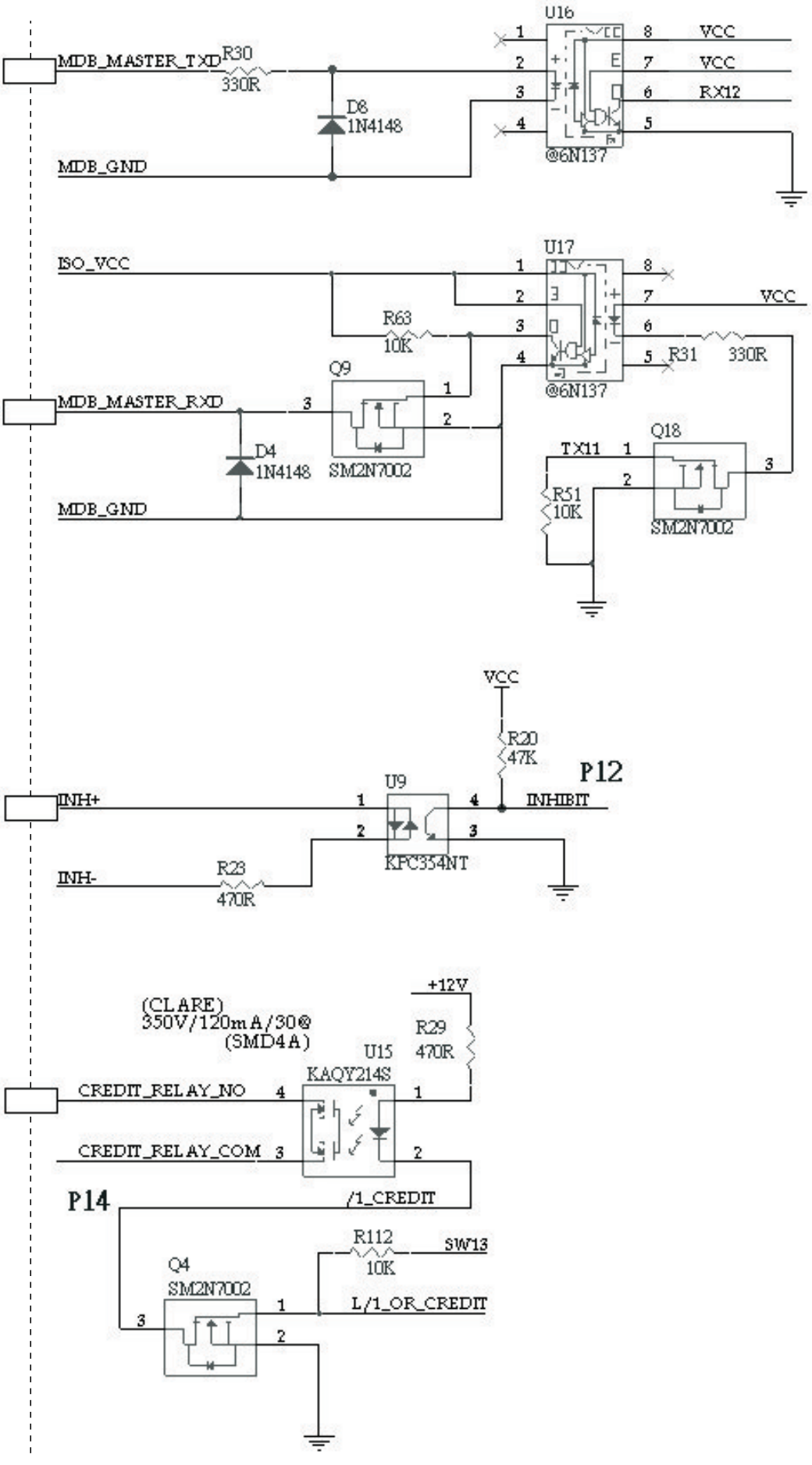


Order	Part number	Appellation	Quantity
1	A2518000	LED Board housing	1
2	A21820	Roller	6
3	A21250	Roller holder	6
4	G10400	Plate spring	4
5	C13570	Leaf spring	2
6	BA-060	Ø 3X8 Screw, TP2	4
7	3BA-AA247-B2	LED Board	1
8	Z5015A	Waterproof rubber(upper)	1
9	A22200	Housing cover	1
10	A21280	Idle roller cover	2
11	G1022A	Spring	2
12	3BA-AA227-C3	Stacker sensor board	1
13	WEL-M005	Stacker sensor harness	1
14	WEL-M004	CPU Board connect harness	1
15	A22270	Emission Lens Bracket	5
16	A22250	Counterfeit Lens Bracket(hole)	2

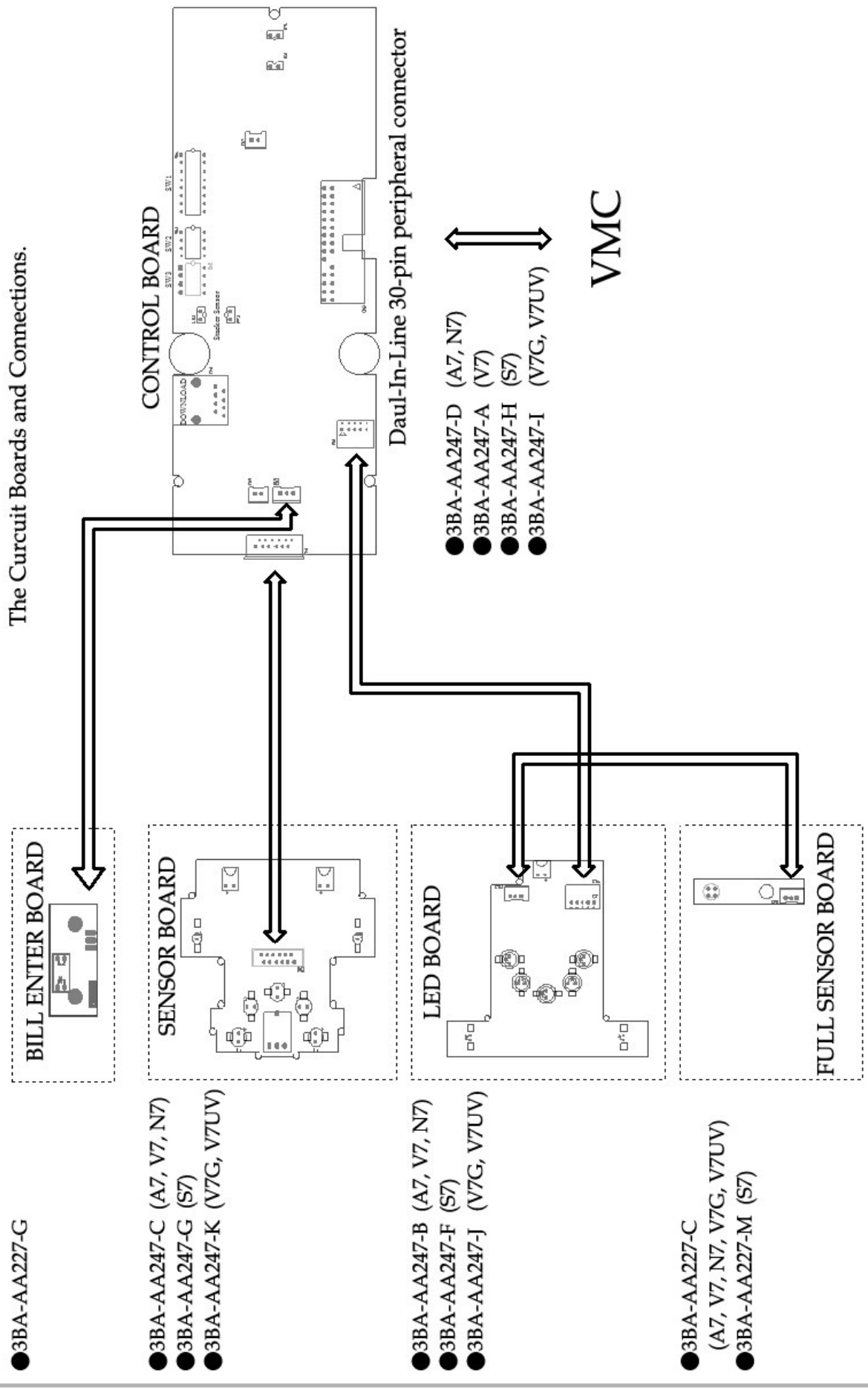
I/O Circuits :


PULSE INTERFACE
For 110V AC
P9
NEUTRAL_INHIBIT
1
4
/IN_SEND
2
3
115VAC_HOT
30K/1W
P10
For 110V AC
HOT_ENABLE
1
4
/ACCEPT_EN
2
3
NEUTRAL_ENABLE
30K/1W
330V/120V/30@
(SMD 4A)
+12V
1K
CREDIT_RELAY_NO
4
1
CREDIT_RELAY_COM
3
2
/1_CREDIT
VCC
5
1
SW13
2
1_OR_CREDIT
4
3
GND
10K
P12
/1_CREDIT
VCC
VCC
330K
For 12V DC
1
4
/IN_SEND
470
/SEND
2
3
VCC
VCC
330K
For 12V DC
1
4
/IN_SEND
470
/ACCEPT_ENABLE
2
3

V7 I/O Interface :



Circuit Board Overview :



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