Office: (800) 683-7248 **Technical Support:** (702) 651-3444 **FAX:** (702) 651-0214
E-Mail: techsupport@jcm-american.com **Web-Site:** www.jcm-american.com

UBA Series

Universal Bill Acceptor (UBA-1x-SS)

Operation and Maintenance Manual (Revision 2)

JCM Part No. 960-000097 Rev. 2

UBA 1x-SS Series
Table of Contents

Table of Contents
Continued

Page

Table of Contents
Continued

THIS PAGE INTENTIONALLY LEFT BLANK

UBA 1x-SS Series
List of Figures

List of Figures
Continued

List of Figures
Continued

THIS PAGE INTENTIONALLY LEFT BLANK

UBA 1x-SS Series
List of Tables

THIS PAGE INTENTIONALLY LEFT BLANK

UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Section 1

1 GENERAL INFORMATION

This section provides a general overview of the Universal Bill Acceptor Series (UBA-1x-SS) pictured in Figure 1-1. This first section is designed to help you navigate through the manual with ease and provides the following information:

- Model/Type Number Specifications
- Precautions
- Component Names
- System Configuration
- Specifications
- Primary Features
- Complete Unit Dimensions
- Unit Dimensions with UBA Faceplate
- Unit Dimensions with ICB
- Standard Cash Box Dimensions
- Country Codes

In order to make operation of this device easier and make navigation within this manual simpler, the following illustrations were used within the text:

- **Safety Instructions**, which need to be observed in order to protect the operators and equipment, have been written in bold text and have been given the pictographs: ⚠
- **Special *Notes***, which effect the use of the Bill Acceptor, have been written in *italic* text and have been given the pictograph: ☞
- **Steps,** requiring the operator to perform specific actions are given sequential numbers (1., 2., 3., etc.)

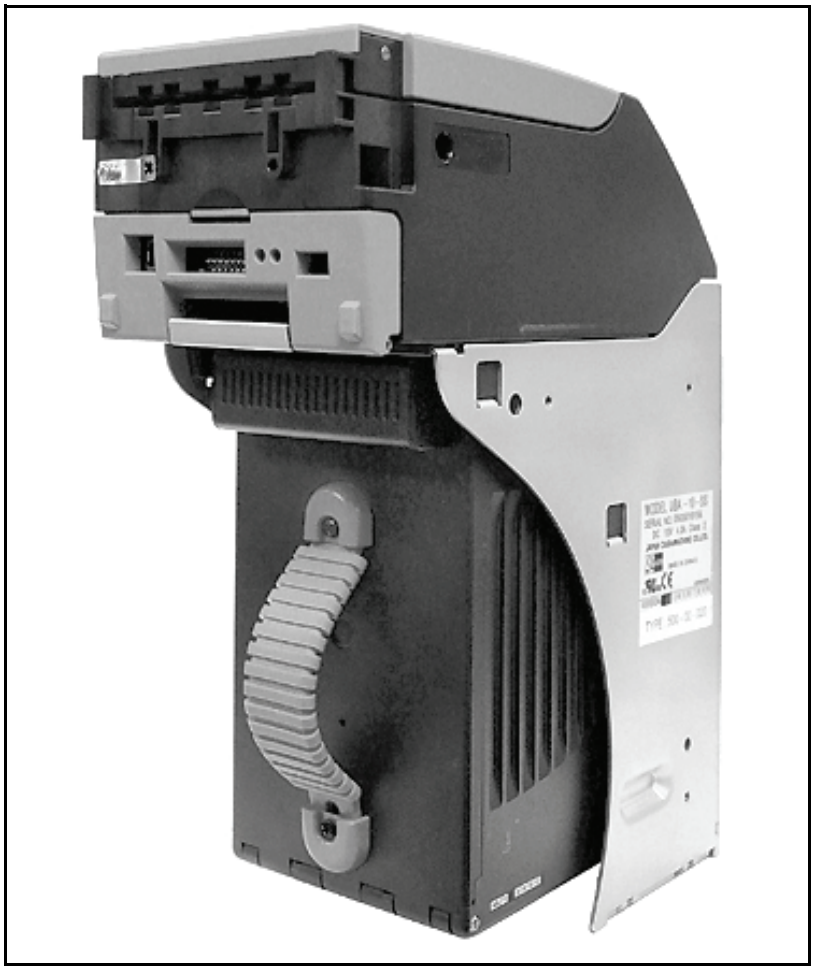


Figure 1-1 Universal Bill Acceptor (UBA-1x-SS)

Model/Type Number Specifications

Table 1-1: Model Number Specifications

Nº	Model: UBA - 1* - SS - 5*0 - 00 - ***** - *** - ** (1,2) (3) (4,5,6) (7,8) (9,10,11,12,13) (14) (15)
(1)	Sensor configuration 1. Type 1
(2)	CPU board type 0. 8Mbit Flash ROM 1. 8Mbit EPROM 2. 16Mbit Flash ROM 4. USB interface applicable
(3)	Stacking configuration SS = Security Stacker (Downward vertical stacking [standard])
(4)	Box capacity 5 = 500 note capacity
(5)	Box type 0 = Plastic S =Steel (WBA style Box)
(6)	Box handle type 0 = Blue Plastic (standard) J = Steel N = None
(7)	Transport unit body color 0 = Black w/Blue Cover (standard)
(8)	Transport unit cover color 0 = Blue (standard)
(9)	Faceplate[a] 0 = Without faceplate (standard) 1 = With JCM standard UBA faceplate (85mm wide) 2 = With Blue/Blue LED A = With Blue/Blue LED (2-line)
(10)	Intelligent Cash Box (ICB Option) 0 = ICB not supported (no ICB Board or ICB Cash Box) 1 = ICB supported (with ICB Board & ICB Cash Box) 2 = ICB supported (with ICB Board & UBA Cash Box)
(11)	External Interface board 0 = Standard (no external I/F board) 1 = With 24V - 13.5V + Rs232C I/F conversion board 2 = With RS232C I/F conversion board
(12)	Input/Output signals F = Photo-coupler Isolation R = RS232C
(13)	Harnessing 0 = No Harness 1 = Standard Harness 2 = OEM Harness F = 24VDC/13.5VDC Conversion Harness (w/Photo Coupler) R = 24VDC/13.5VDC Conversion Harness (w/RS-232C)
(14)	Accepted Country Code ISO 3166-based 3-digit alpha code (see page 1-10)
(15)	Interface[b] 03 = JCM ID-003 Serial Interface 24 = OEM Interface 28 = OEM Interface (USB)

a. Contact your JCM Sales Representative for information concerning Faceplates, the ICB and other options available.

b. Contact your JCM Sales Representative for information concerning other interface styles.

Precautions

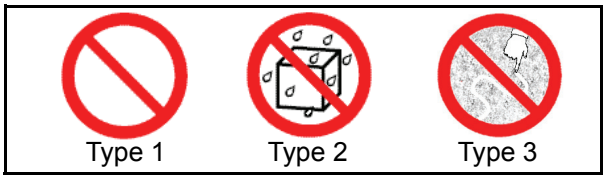


Figure 1-2 Precautionary Symbols

The Figure 1-2 symbols are defined as follows:

1. (**Type 1**) Do not insert a torn, folded, or wet bill, as this action may cause a bill jam inside the unit.
2. (**Type 2**) Do not expose the unit to water. The unit contains several precision electronic devices which can be damaged if water or any liquid is sprayed or spilled into the unit.
3. (**Type 3**) Do not install the unit into a dusty environment. Dust may affect and degrade the sensor's performance.

Do NOT carry the UBA unit by the Cash Box handle, it can release and drop the unit to the ground causing damage.

User Cautions

1. Be sure to turn the power off before plugging or unplugging connectors.
2. Firmly close the unit's Transport path before applying power.
3. When closing the unit, ensure all service door locks click into place. Make sure to open and close the unit's bill path access ports gently, and take care that no dust or other foreign objects enter when opening the guide area.
4. Do not allow inventory stock to endure high temperature, high humidity or a dusty environment.
5. Do not throw the unit or allow it to fall to the ground. Improper handling may cause personal injury and/or damage to the equipment.
6. When opening the upper guide, hold the guide up since it does not stay in the open position by itself.
7. If the bill validator is dirty due to dust, foreign objects, or other such debris adhering to it, bill acceptance rate will degrade.

Use a soft, lint-free cloth and a mild non-abrasive soap and water solution to clean dust and debris from the bill path.

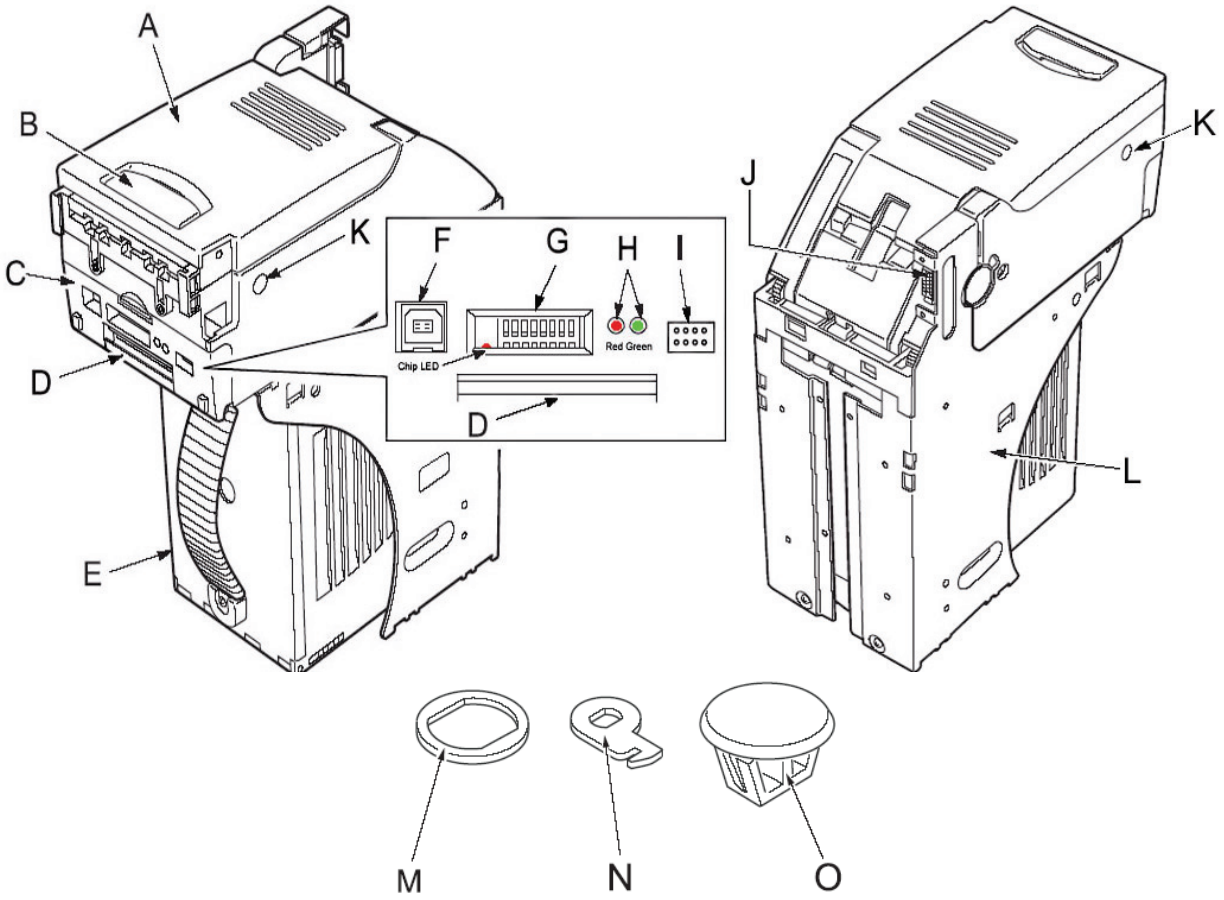
⚠ Under no circumstances allow the cloth to be wet enough to allow excess fluid to run into the device; internal printed circuit boards may be damaged. Do not use any alcohol, solvents or scouring agents which can attack the plastic surfaces of the device.

A new JCM authorized Wafertechnology Cleaning Card is now available. Refer to "Cleaning/Preventive Maintenance" on page 9 of Section 2 of this manual for further information concerning its availability and use.

8. Inserting worn or damaged bills may cause a jam.

Component Names

Figure 1-3 illustrates the UBA primary component parts and their relative locations.



A: Acceptor Unit
B: Upper Guide Access Lever
C: Front Access Door
D: Acceptor Unit Release Lever
E: Cash Box
F: USB Type B Male Receptacle for software downloading and adjustments
G: DIP Switch Block (See Section 2 pg 2-2 to set)
H: Diagnostic LEDs (Green & Red) (See Appendix A, pg A-13 for Diagnostic Codes)
I: Front Bezel Connector **(Connects to the Faceplate Assembly)**
J: Interface Connector **(Connects to the Host Machine)**
K: Centering Guide Release Port (on both sides)
L: Housing Frame
M: Key Spacer (2 each)
N: Plate Locking Key (2 each)
O: Key Hole Cap

Figure 1-3 Universal Bill Acceptor (UBA) Major Component Parts

Specifications

Technical Specifications

Table 1-2: UBA-1x Technical Specification

Acceptance rate:	98% or greater* *Note: The following bills types are excluded: a) Bills with excessive or poor magnetism or unclear graphics b) Double (dual) notes c) Worn, dirty, wet, torn or excessively wrinkled bills d) Bills having folded corners or edges e) Bills having the wrong cut dimensions or printing displacement f) When security measures against counterfeiting are implemented, the software may not fulfill the specified acceptance rate level.
Bill Types Accepted:	Width: 2.44 – 3.35 in. (62 – 85mm), Length: 4.72 – 6.5 in. (120 – 165mm [up to 6.7 in. (170mm) with a WBA Steel Cash Box])
Insertion Direction:	Refer to Software Specifications relative to bills being used
Processing Speed:	Approximately 2 seconds (from bill insertion to vend signal output) Approximately 5 seconds (from bill insertion to completion of stacking)
Diagnostic Indicators:	Front Panel Faceplate LEDs
Escrow:	1 bill
Anti-stringing Mechanism:	PB unit (anti-pullback system – JCM Patented)
Cash Box Capacity:	500 notes or more
Interface:	ID-003 JCM Standard Serial Interface (UBA-10/11/12) ID-024 OEM Interface ID-028 JCM USB Serial Interface (UBA-14) (Ask JCM for the communication specifications) Contact JCM for other Interface requirements if needed.

Environmental Specifications

Table 1-3: UBA-1x Environmental Specification

Operating Temperature:	41ºF to ~ 122ºF (5ºC to ~ +50ºC)
Storage Temperature:	- 4ºF to ~ 140ºF (-20ºC to ~ +60ºC)
Relative Operating Humidity:	30% to ~ 85% RH (non-condensed)
Relative Storage Humidity:	30% to ~ 86% RH (non-condensed)
Visible Light Sensitivity:	Avoid Direct Sunlight Contact
Installation:	Indoors Only

Electrical Specifications

Table 1-4: UBA-1x Electrical Specification

Supply Voltage:	12VDC ± 5% **(NOTE: Use a power supply with a 4.0A or more capability)** **A 24VDC to12VDC conversion board option is available.**
Current Consumption:	Standby = 300mA Operation = 1.6A

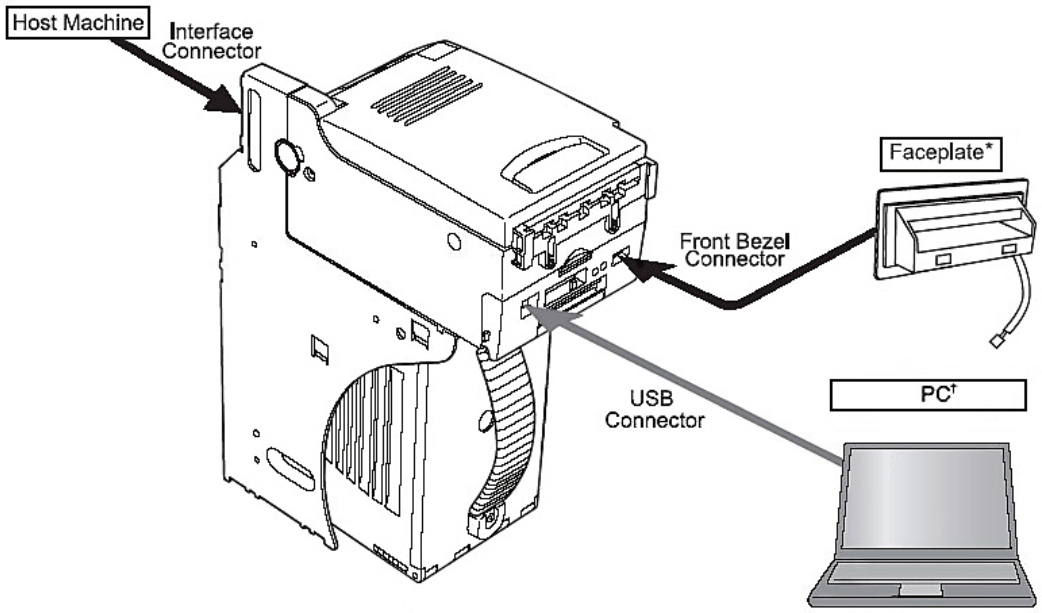
Structural Specifications

Table 1-5: UBA-1x Structural Specification

Weight:	Approximately 8.81 lbs (4.0kg)
Mounting:	Horizontal
Outer Dimensions:	11.73 in (298mm) High x 8.86 in (225mm) Deep x 4.49 in (114mm) Wide

System Configuration

Figure 1-4 illustrates a typical UBA system configuration.



*** a standard UBA Faceplate can be instantly connected. If connecting a custom designed Faceplate, refer to the Section 2, page 2-2 Connector and Pin Assignment information.**

† a PC can be connected to download software and perform adjustments. For details concerning software downloading and adjustment procedures, refer to Section 7.

Figure 1-4 UBA System Configuration

Primary Features

The UBA Series of Bill Validators contains the following primary features:

- **Automatic Centering**
  - The automatic centering mechanism allows the unit to read bills ranging from 62 to 85mm in width without using special bill guides (See Figure 1-5). It helps to improve the overall acceptance rate.

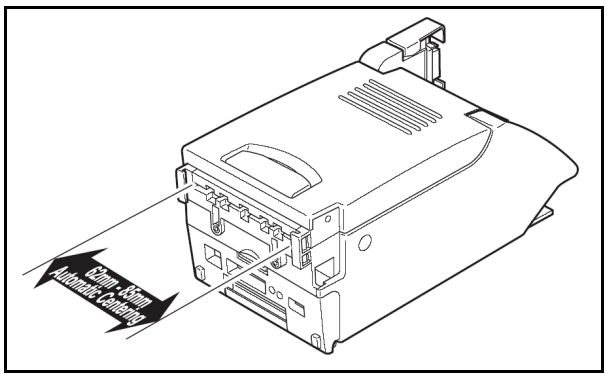


Figure 1-5 UBA Automatic Centering Feature

- **Proven Anti-pullback (anti-fishing) Technology**
  - This JCM patented Anti-Pullback Mechanism provides powerful protection against bill stringing.
  - The drum rotates every time a bill passes through the unit, and tangles around any foreign object attached to the bill, such as string and/or tape (See Figure 1-6).

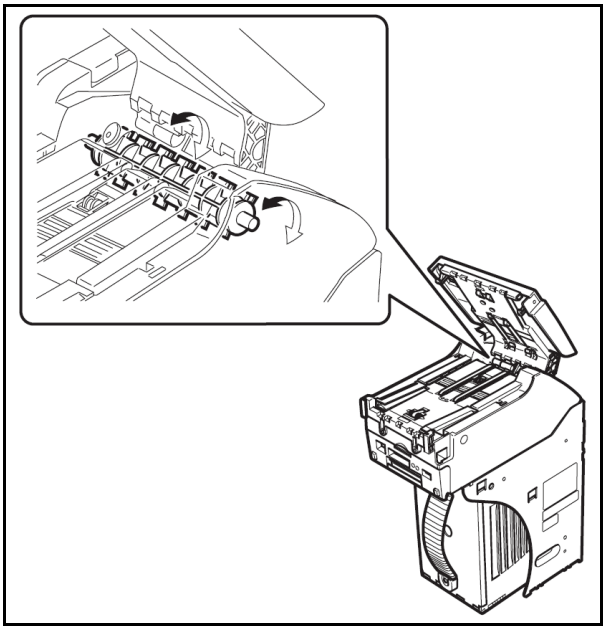


Figure 1-6 UBA Anti-Pullback Feature

– If any foreign object is detected, the UBA does not issue credit to the host controller.

- **Changeable Photo-Coupler Isolation/RS-232C Communication**
  – Onboard electronics allows the use of TTL or RS-232C communication without requiring additional signal conversion boards.

NOTE: See Figure 2-10 in Section 2 for Jumper Configuration combination settings.

- **Plastic Cash Box**
  – Durable and impact-resistant plastic construction assures secure cash handling.
  – Equipped with dispute resolving windows to reveal the value area of last the last bill inserted (See Figure 1-7).

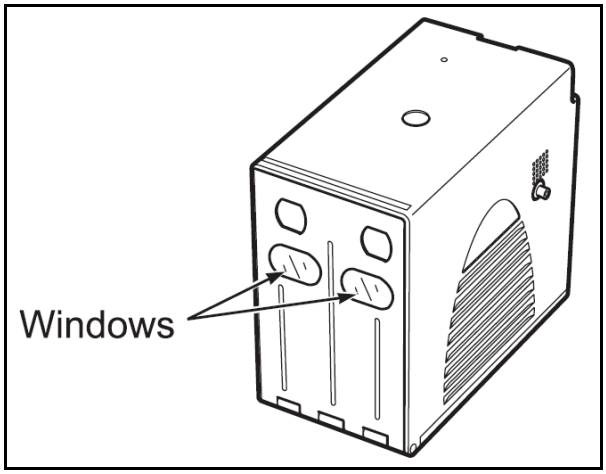


Figure 1-7 UBA Dispute Resolving Window Feature

- **ICB System (Optional)**
  – This JCM patented Intelligent Cash Box (ICB) system is designed to increase the casino operators efficiency by reducing common errors prevalent in casino drop and count processes. In addition to time and cost savings, the ICB system provides an accumulated data analysis for accountability and profitability.

Standard Unit Dimensions

Figure 1-8 illustrates the UBA-1x-SS standard unit dimensions.

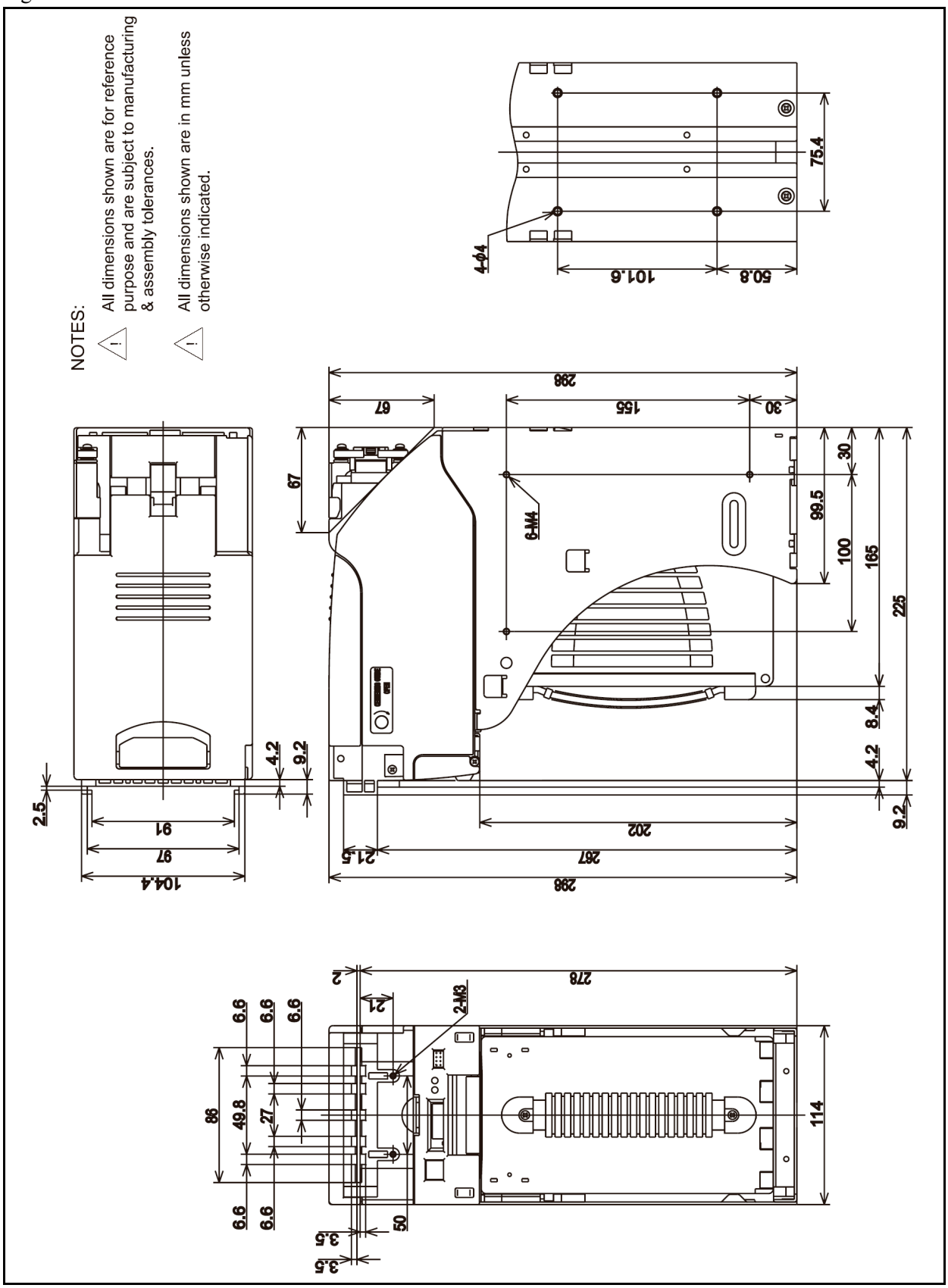


Figure 1-8 Bill Acceptor UBA-1x-SS Complete Unit Dimensions Diagram

Unit Dimensions with UBA Faceplate

Figure 1-9 illustrates the UBA-1x-SS complete unit dimensions with a UBA Faceplate.

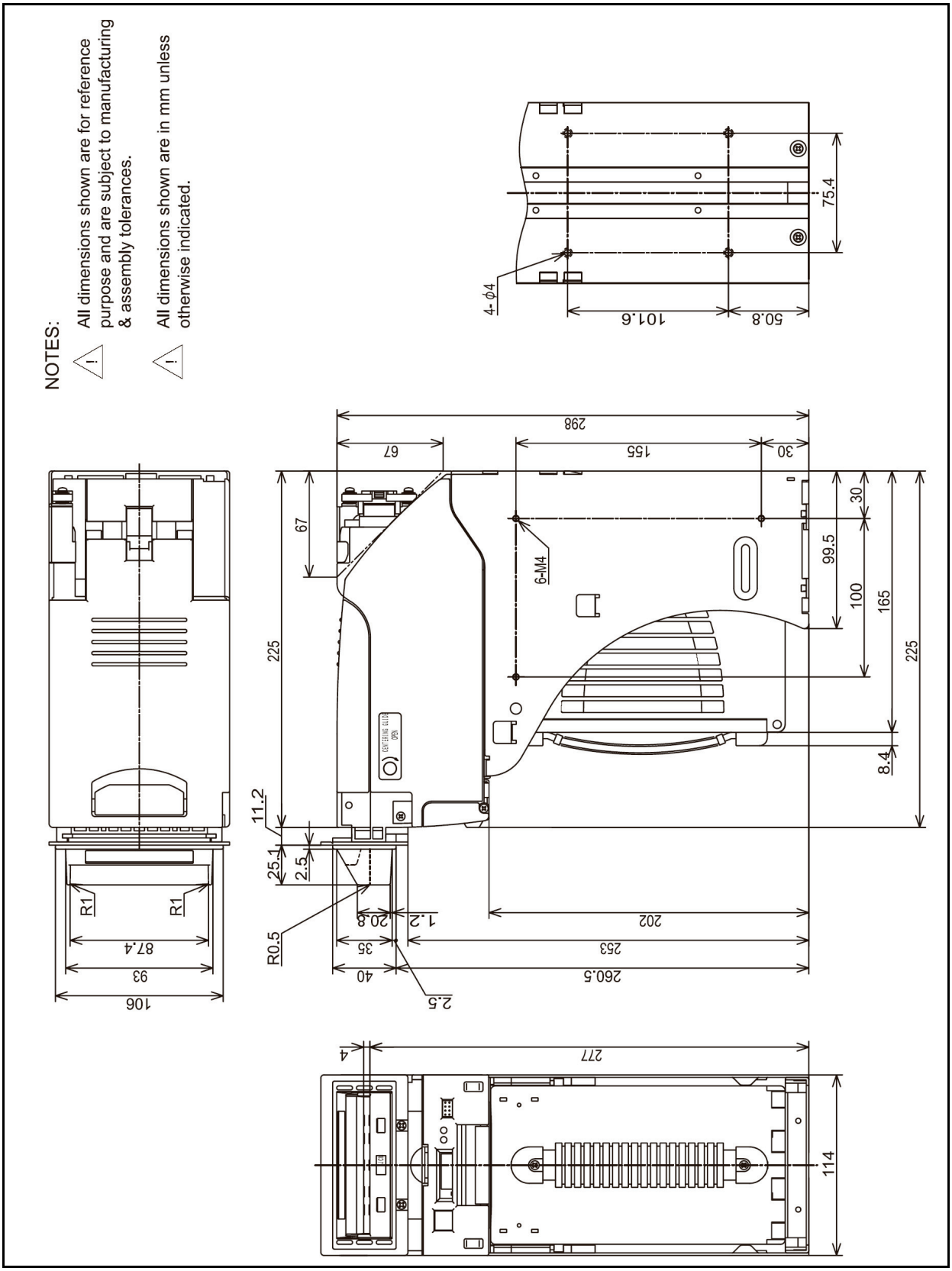


Figure 1-9 Bill Acceptor UBA-1x-SS Complete Unit Dimensions with UBA Faceplate Diagram

Unit Dimensions with ICB

Figure 1-10 illustrates the UBA-1x-SS Complete Unit Dimensions with an Intelligent Cash Box (ICB).

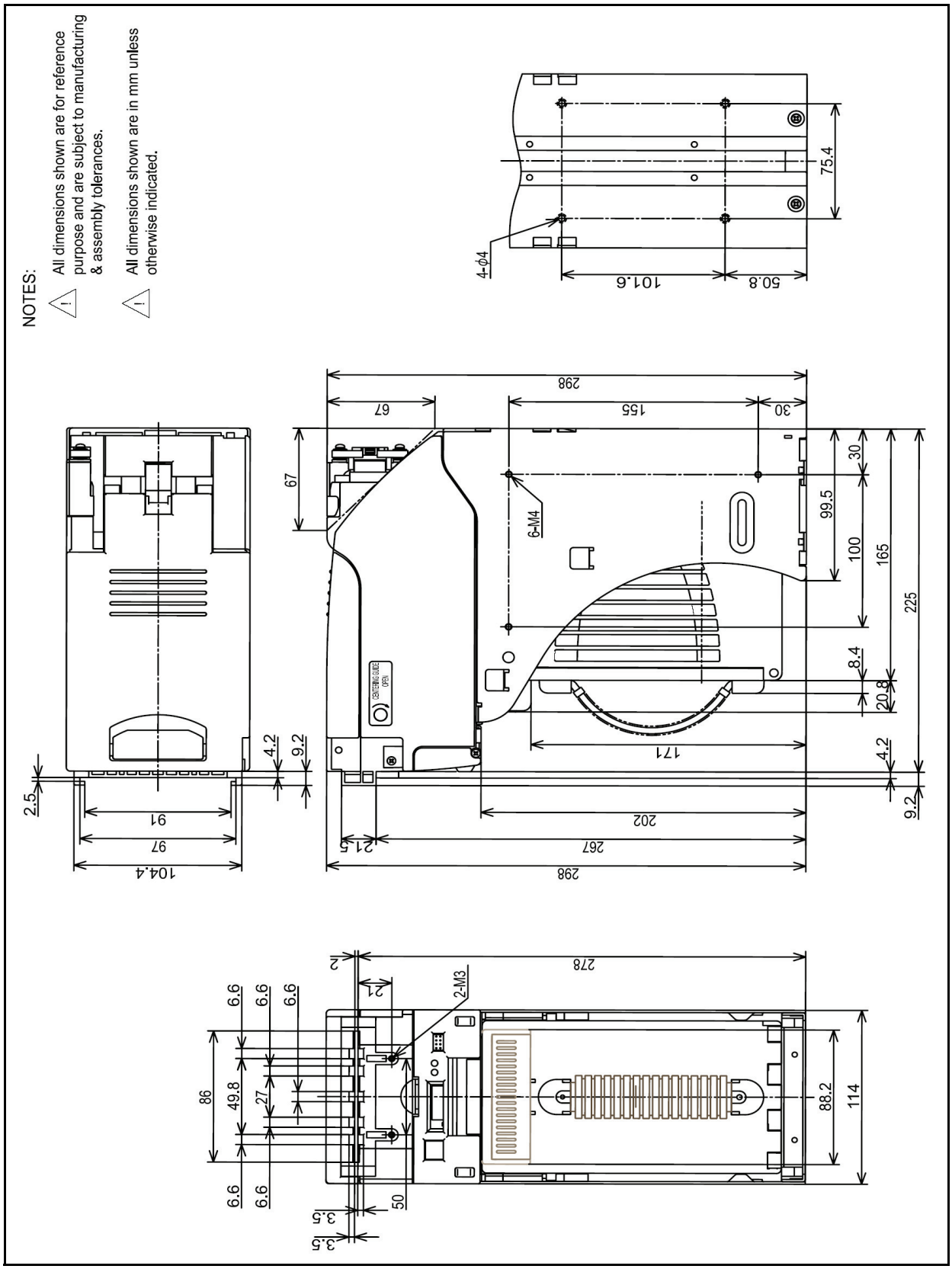


Figure 1-10 Bill Acceptor UBA-1x-SS Complete Unit Dimensions with ICB Diagram

Standard Cash Box Dimensions

Figure 1-11 illustrates the standard Cash Box dimensions.

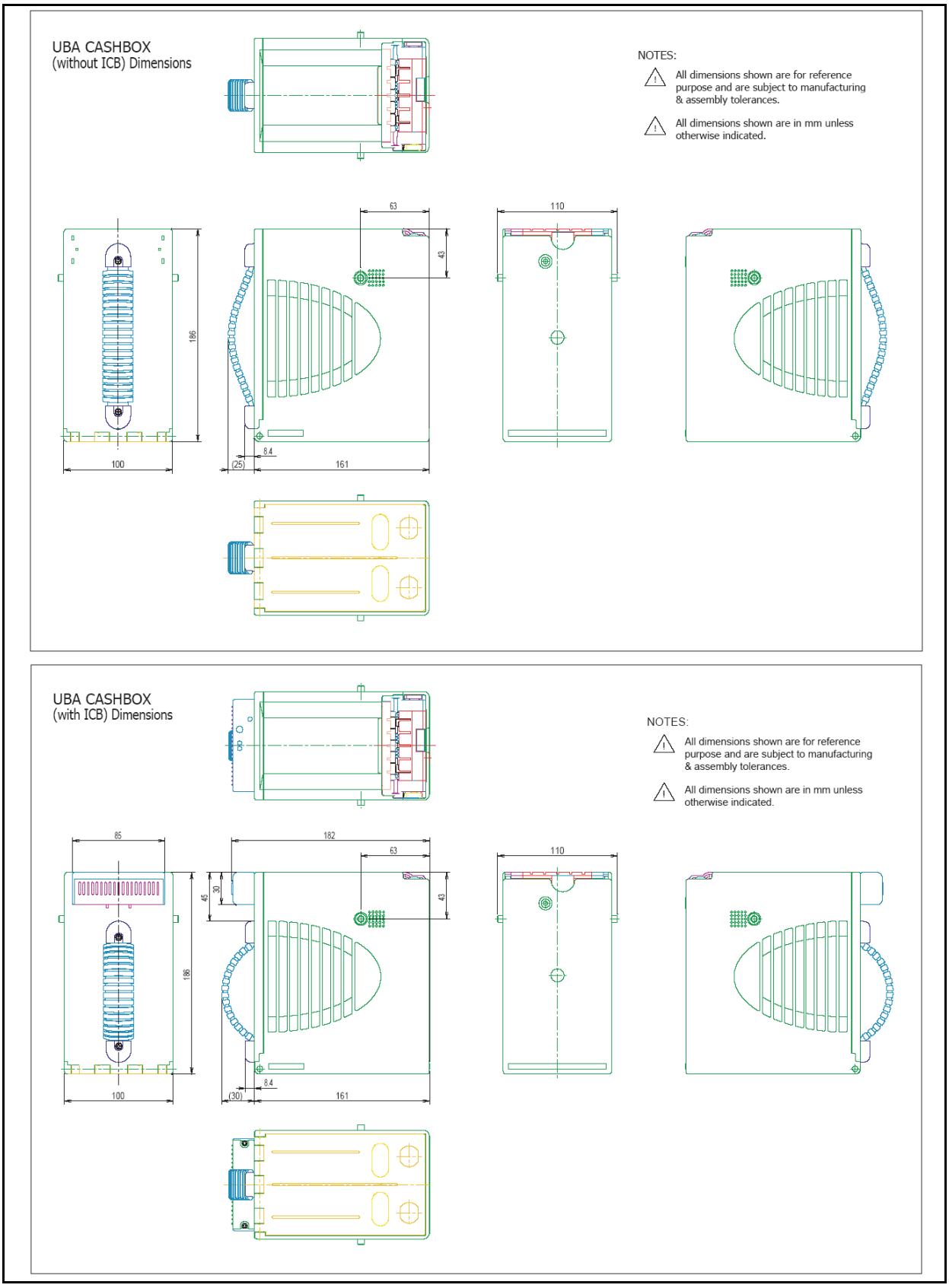


Figure 1-11 Bill Acceptor Standard Cash Box Dimensions Diagram

Country Codes

Table 1-6: Country Code Listings

Country	Country Code
Antilles	ANT
Argentine	ARG
Australia	AUS
Austria	AUT
Austria	AUT4
Barbados	BRB
Belgium	BEL
Botswana	BWA
Brazil	BRA
Bulgaria	BGR
Canada	CAN
Canada	CAN
Chile	CHL
China	CHN
Colombia	COL
Costa Rica	CRI
Croatia	HRV
Cyprus	CYP
Czech Republic	CZE
Denmark	DNK
Estonia	ESTE
Estonia	EST2
European Union	EUR
Finland	FIN
France	FRA
Germany	DEU
Germany	DEU1
Germany	DEU2
Germany/Sweden	DEU/SWE
Great Britain (England)	GBR
Great Britain (England)	GBR-B
Great Britain/Gibraltar	GBR/GBI
Great Britain/Isle Of Man	GBR/MAN
Greece	GRC
Greece	GRC-B
Guatemala	MGT
Honduras	HND
Hong Kong	HKG
Hungary	HUN

Table 1-6: Country Code Listings (Continued)

Country	Country Code
Iceland	ISL
India	IND
Israel	ISR
Italy	ITA
Italy	ITA8
Italy	ITA9
Japan	JPN
Kazakhstan	KAZ
Kazakhstan	KAZ1
Latvia	LVA
Lithuania	LTU
Malaysia	MYS
Malaysia	MYS1
Malta	MLT
Mauritius	MUS
Mexico	MEX
Moldova	MDA
Morocco	MAR
Namibia	NAM
Netherlands	NLD
Netherlands	NLD-B
New Zealand	NZL
New Zealand	NZL1
New Zealand	NZL-B
North Ireland	NIRL
Norway	NOR
Norway	NOR1
Peru	PER
Peru	PER1
Philippines	PHL
Philippines	PHL1
Poland	POL
Poland	POL1
Poland	POL1-B
Portugal	PRT
Qatar	QAT
Republic Of Ireland	IRL
Republic Of Korea	KOR
Republic Of Korea	KOR-B
Romania	ROM

Table 1-6: Country Code Listings (Continued)

Country	Country Code
Russia	RUS
Russia	RUS-B
Saudi Arabia	SAU
Singapore	SGP
Singapore	SGP-B
Slovakia	SVK
Slovenia	SVN
South Africa	ZAF
Spain	ESP
Sri Lanka	LKA
Sweden	SWE
Switzerland	CHE
Switzerland	CHE3
Switzerland	CHE-B
Taiwan (Republic Of China)	TWN
Tanzania	TZA
Thailand	THA
Trinidad & Tobago	TTO
Ukraine	UKR
Ukraine	UKR1
United Arab Emirates	ARE
United States	USA
Uruguay	URY
Uruguay	URY1
Venezuela	VEN
Venezuela	VEN1
Venezuela	VEN2
Venezuela	VEN-B

These Country Codes conform to the ISO 3166 Country Code list definitions.

UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Section 2

2 INSTALLATION/OPERATION

This section provides installation and operation instructions for the Universal Bill Acceptor Series (UBA). The information within contains the following features:

- Installation
- Lock Installation
- DIP Switch Configurations
- Connector Pin Assignments
- Jumper Configurations
- Retrieving Bills
- Clearing a Bill Jam
- Cleaning/Preventive Maintenance
- Operational Flowchart
- Interface Circuit Schematic

Installation

Perform the following steps to install the UBA unit:

1. Remove power from host machine.
2. Set UBA DIP Switches if required (See Figure 2-1). The initial setting is all switches OFF to enable all denominations.

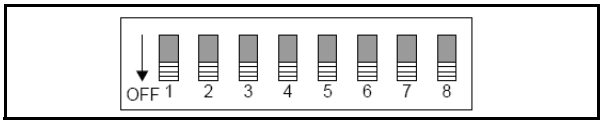
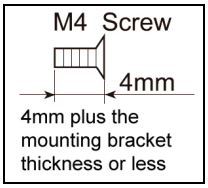


Figure 2-1 Front Panel Dip Switch Block

3. Connect the proper interface harness from the host machine to the UBA.
4. Install the UBA into the host machine using Flat Head M4 mounting screws. There are four mounting holes located on the frame end and three located on each side of the frame (See Figure 2-2 & Figure 2-3).

NOTE: The maximum length of M4 Flat Head Screws should be 4mm plus the thickness of the cabinet or mounting bracket. Example: If the UBA is mounted on a bracket that is 2mm thick, the M4 screws should be no more than 6mm in length.



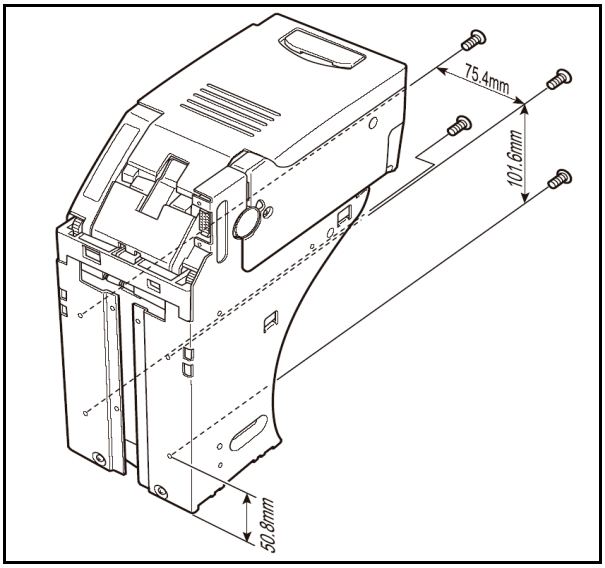


Figure 2-2 End Mounting Screw Hole Locations

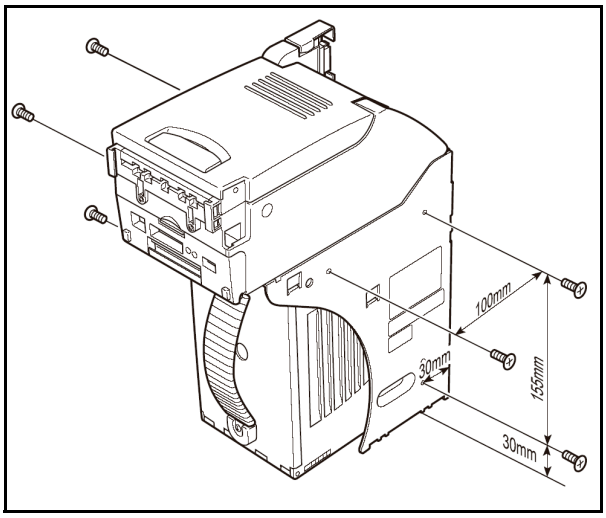


Figure 2-3 Side Mounting Screw Hole Locations

5. Apply power to the machine and verify that the circuit board mounted Red chip LED, located to the left of the DIP Switch Block, is illuminated (ON) (See Figure 2-4), and both the Red and Green frame mounted Front Panel Indicator LEDs are extinguished (OFF).

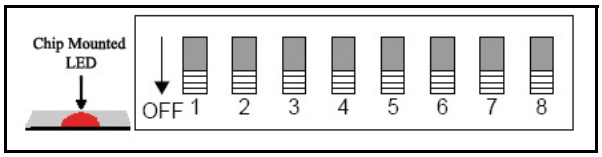


Figure 2-4 Circuit Board Mounted Red LED

– If the red chip LED is OFF, check connections and make sure power is applied.
– If any of the indicator LEDs are ON, check error codes to fix the problem.

6. Check operation by inserting banknotes of each denomination to verify that the notes are accepted and properly credited by the host machine.

Lock Installation

One or two security locks can be installed onto a UBA Cash Box. When installing a security lock, the following attachment accessories may be required:

1. Two key spacers
2. Plate lock keys and
3. A key cap attachment.

Dimensions of the plate key lock is illustrated in Figure 2-5.

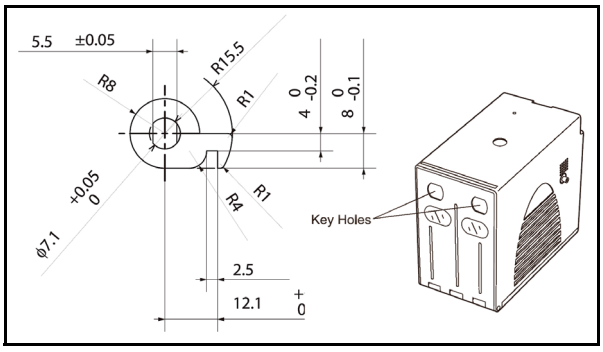


Figure 2-5 Plate Key Lock Dimensions & Location

Choose a lock that fits a standard 5/8" or 1-1/8" hole dimension format, because they are the only formats supported. Use a key spacer if required.When using only one lock, the remaining blank hole does not provide access to Cash Box contents. However, some regulatory authorities may require installation of a key cap.

NOTE: When two locks are installed, they must rotate in the same direction as illustrated in Figure 2-6.

NOTE: There are many lock designs, and key spacer washers may be required for some lock types. Locks vary greatly in price, security, keying policies, et cetera. The customer is responsible for selecting a lock with performance that fits the intended purpose. JCM does not test or endorse any specific brand of lock for its security characteristics.

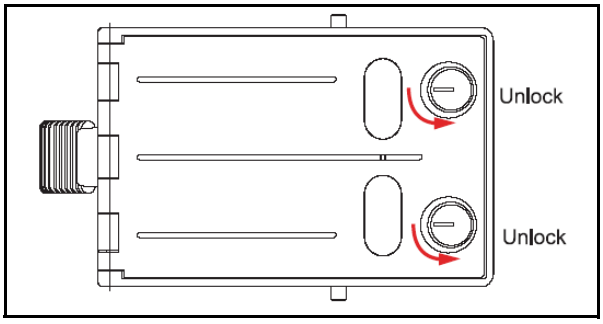


Figure 2-6 Key Lock Rotation Requirement

NOTE: There are many lock designs, and key spacer washers may be required for some lock types. Locks vary greatly in price, security, keying policies, et cetera. The customer is responsible for selecting a lock with performance that fits the intended purpose. JCM does not test or endorse any specific brand of lock for its security characteristics.

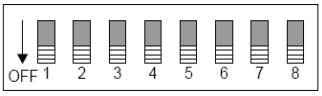
DIP Switch Configurations

Table 2-1 lists the default DIP Switch configurations for the UBA Front panel DIP Switch Block.

NOTE: DIP Switch settings may vary based on software changes related to the specific country using the UBA. Please contact your local JCM Customer Representative for the latest setting information, or visit the JCM Website at www.jcm-american.com.

Table 2-1 DIP Switch Settings

UBA Front Panel Switches



Default Setting = ALL Switches are OFF

Switch No.	Switch ON	Switch OFF
1	TITO* barcode coupon disabled	TITO barcode coupon enabled
2	$1 bill disabled	$1 bill enabled
3	$5 bill disabled	$5 bill enabled
4	$10 bill disabled	$10 bill enabled
5	$20 bill disabled	$20 bill enabled
6	$50 bill disabled	$50 bill enabled
7	$100 bill disabled	$100 bill enabled
8	TEST Mode	NORMAL Mode

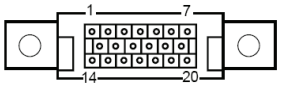
*. TITO = Ticket In Ticket Out

Connector Pin Assignments

Table 2-2 through Table 2-5 list the various UBA Connector pin assignments.Table 2-2 lists the UBA-10/11/12 Rear Panel Connector pin assignment.

Table 2-2 UBA-10/11/12 Rear Panel Connector Pin Assignments

UBA-10/11/12 Rear Panel Connector



Socket Jack: DRA-20PC-FO (JAE)
Contact Type: D02-22-26P-10000 (JAE)
Socket Plug: DRA-20SC-FO (JAE)
Contact Type: D02-22-26S-10000 (JAE)

Pin No.	Signal Name*	I/O†	Function
1	+12V POWER		+12V DC power
2	GROUND (Power)		0V DC Ground Plain
3	M. RES	In	Bill acceptor master reset signal line
4	PC/RS232C OUT	Out	Serial data signal output line from Acceptor to Controller
5	+12V I/F		+12V DC Interface Power
6	PC/RS232C IN	In	Serial data signal input line from Controller to Acceptor
7	GND I/F		Photo-coupler Zero (0) Volt DC Interface power
8	(TTL1)	(In)	Reserved (TTL1) input
9	(TTL1)	(Out)	Reserved (TTL1) output
10	(TTL2)	(In)	Reserved (TTL2) input
11	(TTL2)	(Out)	Reserved (TTL2) output
12	(TTL3)	(In)	Reserved (TTL3) input
13	GND		RS232C 0 Volt DC Interface power
14	LED POWER		LED drive line - anode
15	(TTL4)	(In)	Reserved (TTL4) input
16	(TTL5)	(In)	Reserved (TTL5) input
17	(TTL3)	(Out)	Reserved (TTL3) output
18	LED- (TTL4)	(Out)	LED Drive Line - cathode (TTL4)
19	(TTL5)	(Out)	Reserved (TTL5) output
20	(TTL6)	(Out)	Reserved (TTL6) output

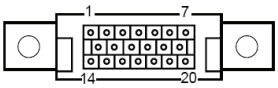
*. I/O (input/output) is the terminal viewed from Bill Acceptor's side.
†. Signal name, I/O, and function without parenthesis are for ID-003 interface.

NOTE: Photo-coupler and RS-232C signal level isolation can be jumper selected using jumpers located on the CPU board. The related jumper selections are described in "Jumper Configurations" on page 2-7 of this section.

Table 2-3 lists the UBA-14 Rear Panel Connector pin assignment.

Table 2-3 UBA-14 Rear Panel Connector Pin Assignments

UBA-14 Rear Panel Connector



Socket Jack: DRA-20PC-FO (JAE)
Contact Type: D02-22-26P-10000 (JAE)
Socket Plug: DRA-20SC-FO (JAE)
Contact Type: D02-22-26S-10000 (JAE)

Pin No.	Signal Name*	I/O†	Function
1	+12V POWER		+12V DC power
2	GROUND (Power)		0V DC Ground Plain
3	M. RES	In	Bill acceptor master reset signal line
4	PC/RS232C OUT	(Out)	Serial data signal output line from Acceptor to Controller
5	+12V I/F		+12V DC Interface Power
6	PC/RS232C IN	(In)	Serial data signal input line from Controller to Acceptor
7	GND I/F		Photo-coupler Zero (0) Volt DC Interface power
8	Vbus		USB Communication Vbus signal line: DC +5V
9	-DATA	IN/OUT	USB Communication input/output signal line
10	+DATA	IN/OUT	USB Communication input/output signal line
11	(TTL1)	(Out)	Reserved (TTL1) output
12	GND USB		USB Communication Ground: DC 0V
13	(GND I/F)		(Interface power: RS232C DC0V)
14	LED POWER		LED drive line - anode
15	(TTL1)	(In)	Reserved (TTL1) input
16	(TTL2)	(In)	Reserved (TTL2) input
17	(TTL3)	(In)	Reserved (TTL3) output
18	LED- (TTL2)	(Out)	LED Drive Line - cathode (TTL2)
19	(TTL3)	(Out)	Reserved (TTL3) output
20	NC		No Connection

*. I/O (input/output) is the terminal viewed from Bill Acceptor's side.
†. Signal name, I/O, and function with parenthesis are for photo-coupler isolation and RS-232C only.

NOTE: Photo-coupler and RS-232C signal level isolation can be jumper selected using jumpers located on the CPU board. The related jumper selections are described in "Jumper Configurations" on page 2-7 of this section.

Table 2-4 list the UBA Front Panel Bezel Connector pin assignments.

Table 2-4 UBA-1X Front Panel Bezel Connector Pin Assignments

UBA Front Panel Bezel Connector (CN13)

Header Type: RF-H08(07)2SD-1110 (JST)
Contact Type: RF-SC2210 (JST)
Housing Type: RF-08 (JST)
Wire Type: UL1007 AWG#24~26 Recommended

Pin No.	Signal Name	I/O*	Signal Description
1	NC		Reserved
2	NC		Reserved
3	TXD	Out	Transmit signal output line from Acceptor to Controller
4	NC		Reserved
5	+12V Power		+12V DC Power
6	GND (Power)		0V DC Ground Plain
7	LED Power		LED Drive Line (anode)
8	LED -		LED Drive Line (cathode)

*. I/O (input/output) is the terminal viewed from Bill Acceptor's side.

Optional Conversion Circuit Boards and Harnesses

Optional Conversion Circuit Board

The Optional Conversion Board can be attached to a UBA-14 unit. Two types of optional conversion board are available. Table 2-5 list the available UBA-14SS Optional Conversion Circuit Boards.

Table 2-5 UBA-14SS Circuit Board Conversion Options

UBA-14SS Circuit Board Conversion Options	
Part No.	**Board Function**
4033-3240-06-13A-01 (EDP#:122467)	24VDC/13.5VDC and RS-232C Signal Level Conversion Board This board will allow a 24VDC to 13.5VDC voltage conversion and RS-232C Interface communications capabilities.
4033-3240-06-13A-02 (EDP#: 123523)	RS-232C Signal Level Conversion Board. This board allows comm-unication with an RS-232C Interface.

Optional Conversion Circuit Board Installation Procedure

To Install an Optional Conversion Board, proceed as follows:

1. Press down on the UBA Acceptor's Front Release Latch and slide the Acceptor Unit forward and off the transport platform (See Figure 2-7 inset).

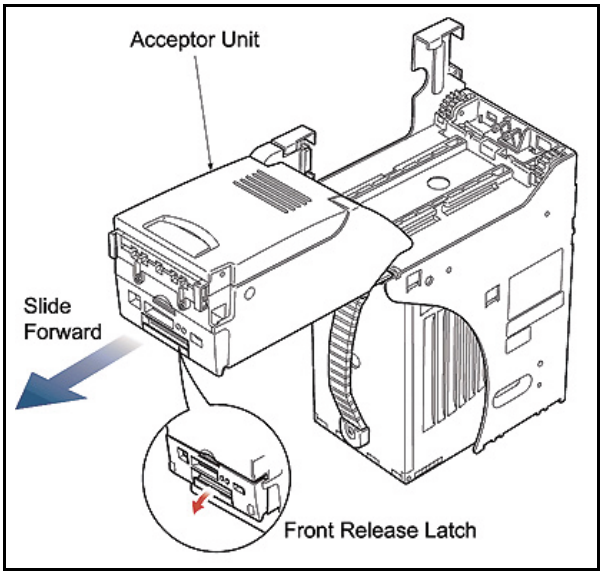


Figure 2-7 Removing Acceptor Unit

2. Position the Optional Conversion Board and insert the M2.6×6 Binding/Self Tightening Phillips mounting screws into the two (2) circuit board mounting holes (See Figure 2-8 a).
3. Tighten each attachment screws with a Phillips screw driver to secure the board in place on the transport assembly (See Figure 2-8 b).

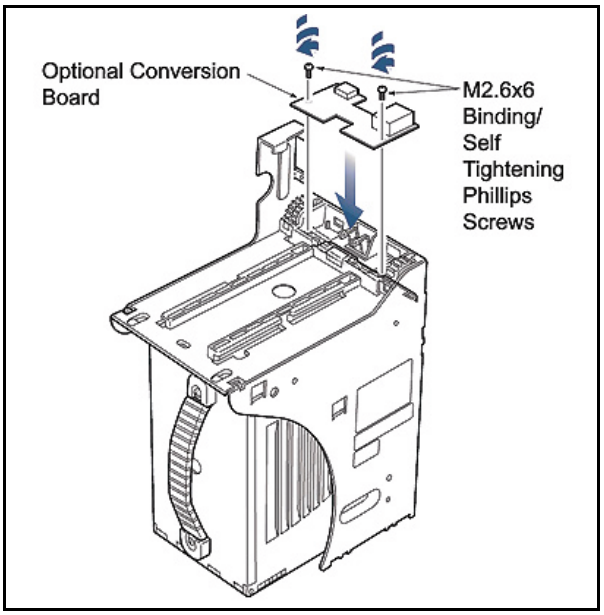


Figure 2-8 Installing Optional Circuit Board

Optional Conversion Board and Harness Kits

The Optional Conversion Board/Harness kits can be attached to any UBA-14 unit. Three kit types of board and harness combinations are available.

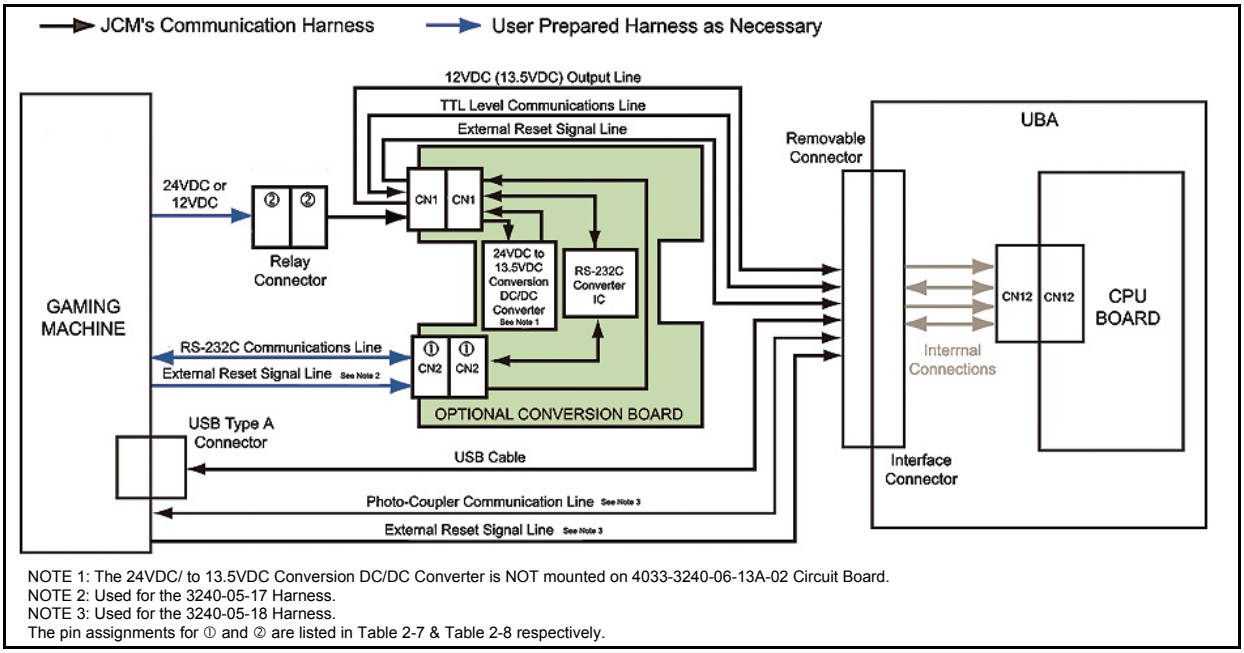
Table 2-6 list the available UBA-14SS Optional Conversion Circuit Board and Harness Kits.

Table 2-6 UBA-14SS Conversion Board and Harness Kit Options

UBA-14SS Conversion Board & Harness Kit Options		
Harness Types / Board Types	DC24V/DC13.5V and RS-232C Signal Level Conversion Board (Part#: 4033-3240-06-13A-01)(EDP# 122467)	Photo-Coupler I/F Harness with M3X12 Washer Sems Screw and Clamp (Part#: 3240-05-18A)(EDP# 122469)
24VDC/13.5VDC & RS-232C Signal Level Conversion Board (Part#: 4033-3240-06-13A-01) (EDP#: 122467)	UBA 24V/RS-232C Board plus RS-232C Harness Kit (EDP# 123200)	UBA 24V/RS-232C Board plus Photo-Coupler Harness Kit (EDP# 123521)
RS-232C Signal Level Conversion Board (Part#: 4033-3240-06-13A-02) (EDP#: 123523)	UBA RS-232C Board plus RS-232C Harness Kit (EDP# 123522)	N/A

External Interface Connection Structure for an Optional Conversion Board

4. Figure 2-9 illustrates the External Interface Connection Structure for an Optional Conversion Board.



NOTE 1: The 24VDC/ to 13.5VDC Conversion DC/DC Converter is NOT mounted on 4033-3240-06-13A-02 Circuit Board.
NOTE 2: Used for the 3240-05-17 Harness.
NOTE 3: Used for the 3240-05-18 Harness.
The pin assignments for ① and ② are listed in Table 2-7 & Table 2-8 respectively.

Figure 2-9 Optional Conversion Board External Interface Connection Structure

Table 2-7 lists the pin assignments for the CN2 Connector shown at Figure 2-9 ①, and Table 2-8 lists the pin assignments for the Relay Connector shown at Figure 2-9 ②.

Table 2-7 Connector CN2 Pin Assignments

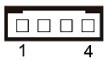
Connector CN2	
	**Header: 53103-0430 (Japan Molex)** **Contact Type: 50083-8014 (Japan Molex)** **Housing: 51030-0430 (Japan Molex)** **Recommended Wire: UL1007 AWG#24 to 26**
Pin No.	**Signal Name**
1	M Reset
2	T_{XD}
3	R_{XD}
4	Interface Ground

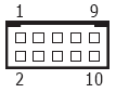
Table 2-8 Relay Connector Pin Assignments

Relay Connector	
	**Header: 51029-0310 (Japan Molex)** **Contact Type: 50087-8014 (Japan Molex) or 70021-00041 (USA Molex)** **Housing: 51030-0330 (Japan Molex)** **Contact Type: 51030-0430 (Japan Molex)** **Recommended Wire: UL1007 AWG#24 to 26**
Pin No.	**Signal Name**
1	UBA R_{XD}
2	Interface Ground
3	UBA 5V DC
4	UBA T_{XD}

Optional USB Connector

Table 2-9 list the Optional USB Connector (Part No. 300-100154) pin assignments.

Table 2-9 Optional USB Connector Pin Assignments

Optional 24V Connector	
	**JST PHDR-10US (2mm, 5x2)**
Pin No.	**Signal Name**
1	UBA R_{XD}
2	Interface Ground
3	UBA 5V DC
4	UBA T_{XD}
5	Interface 12V DC
6	Switched 12V DC Power
7	Power Ground
8	Power Ground
9	24V DC Input Power
10	12V Input/Output Power

Optional USB Pin Configurations

- Pin 3: Generated by UBA, used to determine if the UBA is powered up.
- Pin 5: Interface 12V, generated internally from USB supply.
- Pin 6: Switched 12V, power to UBA - turned on when USB is enumerated.
- Pin 7: Power ground from PSU
- Pin 8: Power ground to UBA
- Pin 9: 24V power input, used in 24V USB configurations.
- Pin 10: 12V power input, used in 12V USB configurations.

NOTE: Pins 1, 2, 3, 4, 5, and 6 are used by the USB interface only.

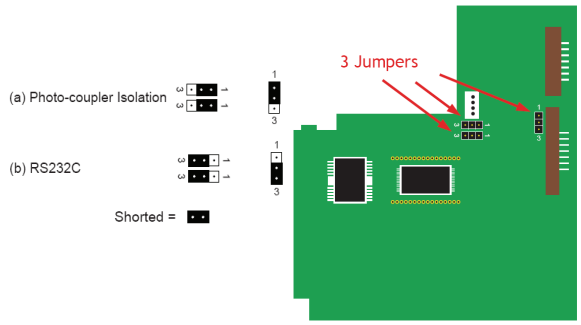
Non-USB Pin Configurations

- Pin 7: Power ground from PSU
- Pin 8: Power ground to UBA
- Pin 9: 24V power IN from PSU
- Pin 10: 12V power OUT to UBA

NOTE: The only non-USB configuration of the interface board is for 24V DC to 12V DC power conversion applications. In this case only pins 7 through 10 are used.

Jumper Configurations

The UBA CPU board contains three jumper plugs. Photo-coupler isolation and/or RS232C selection is configured by these jumpers. All three jumpers must be configured to the same setting (See Figure 2-10).



NOTE: Jumper Settings for Photo-coupler isolation and RS232C communications are shown correctly set.

Figure 2-10 CPU Board Bottom View

Retrieving Bills

To retrieve Cash Box deposited bills, perform the following steps:

1. Pull the handle to release the Cash Box from the frame as illustrated in Figure 2-11. Press thumb on the Acceptor Head while pulling the Cash Box Handle for better leverage during extraction.

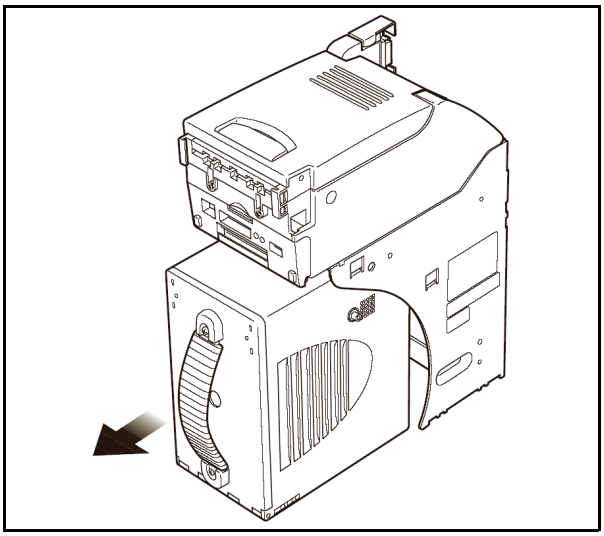


Figure 2-11 Removing the Cash Box

2. When a lock is installed, use the appropriate key to unlock the box. For details concerning locks, refer to “Lock Installation” on page 2-2 of this section.
3. Open the Cash Box door and retrieve the bills as illustrated in Figure 2-12.

Clearing a Bill Jam

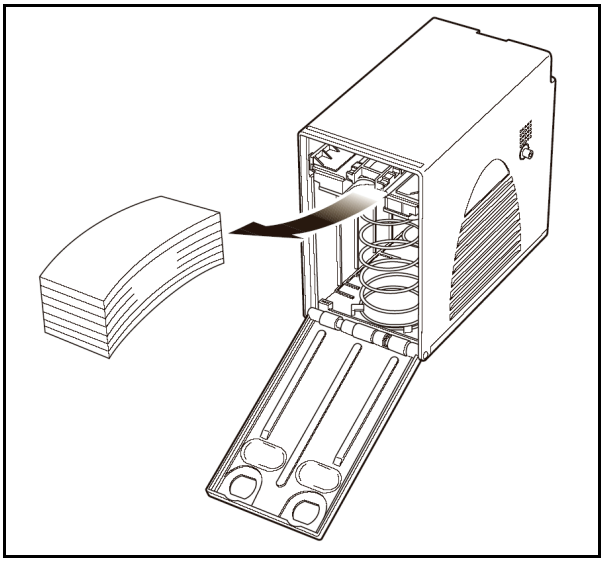


Figure 2-12 Retrieving Bills

When a bill is jammed near the Bill Acceptor's entrance:

1. Pull the tab located on the top of the Acceptor to open the units cover and
2. Remove the jammed bill (See Figure 2-13).

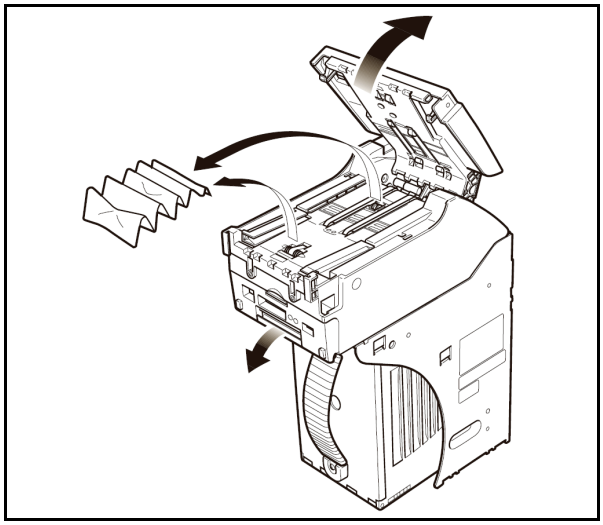


Figure 2-13 Clearing an Entrance Bill Jam

When a bill is jammed near the Cash Box entrance:

3. Pull on the box handle to remove the Cash Box from frame, then
4. Remove the jammed bill (See Figure 2-15).

If a Bill jam occurs when the centering mechanism is closed, the cover will not open. To unjam the unit:

1. Recycle power and allow the unit to reset.

NOTE: If recycling the power fails to clear the jam, use a 2.5 mm Hex Nut Driver (JCM part # 501-000131) to rotate the mover guide shaft, then open the centering rails to remove jam (See Figure 2-14).

Figure 2-14 Opening UBA Centering Mechanism

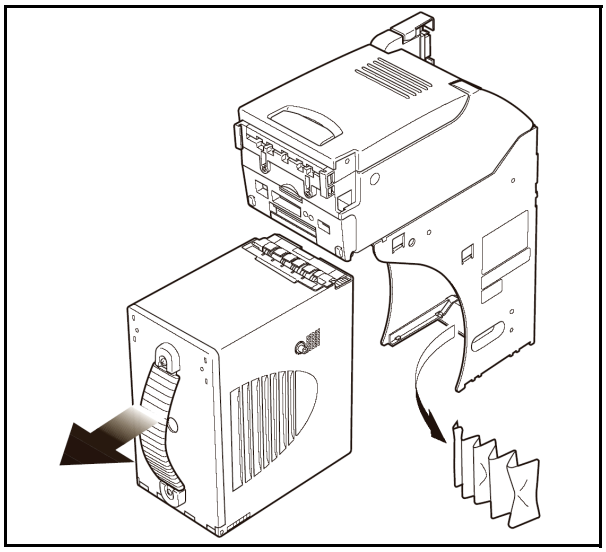


Figure 2-15 Clearing Cash Box Entrance Bill Jams

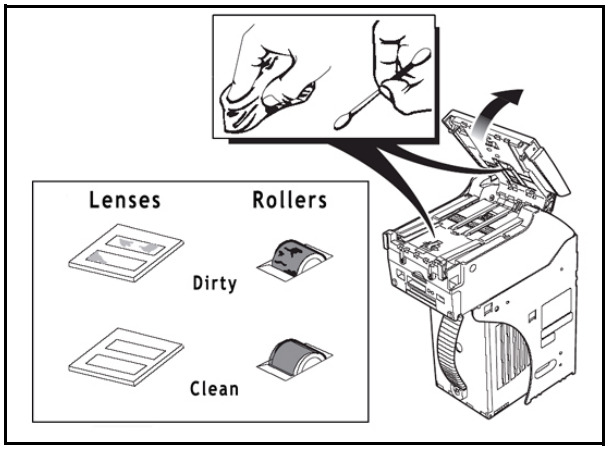


Figure 2-16 UBA Cleaning Locations

Cleaning/Preventive Maintenance

To clean the lenses, use a lint-free cloth and a mild non-abrasive detergent such as liquid dish soap mixed with water. It is important to keep the bill path, rollers, and belts clean. Use a soft lint-free cloth or a cotton swab to wipe dirt and stains from the surfaces of the magnetic and optical sensors, rollers and belts. The sensor lenses are transparent, and made of a polymer material. Handle them with care. Repeat the cleaning process as needed until the Transport path is free of contaminants (See Figure 2-16).

Do not use alcohol, thinner or citrus based products for cleaning any surfaces.

Available Cleaning Card

A JCM Waffletechnology Bill Validator Cleaning Card is now available (JCM Part No. 501-000141)(Manufacturer's Part No. KWJCM-B1B15M). The cleaning card is designed to be used as a supplemental part of a Preventive Maintenance program to help in reducing dirt and paper dust build-up within a unit. This will optimize performance between regular Preventive Maintenance intervals.

This is the only cleaning card authorized for use on the UBA Gaming Validator (See Figure 2-17).

Figure 2-17 JCM Waffletechnology Cleaning Card

Card Features

- A unique Waffletechnology design that hugs all surfaces to insure complete surface cleaning
- Specially designed scrubber patterns insure that belts and O-ring rollers are cleaned and lubricated to prevent them from drying out.

Directions For Use

1. Remove cleaning card from pouch and insert it into the Bill Validator.
2. The cleaning card will be accepted and then automatically rejected.
3. Repeat this process several times to ensure build-up removal.
4. Insert and HOLD cleaning card while the Validator pulls on it to ensure proper belt cleaning.
5. Dispose of used card in an environmentally safe manner.

For more information and a list of Authorized Waffletechnology Distributers visit: http://www.jcmwaffletechnology.com.

Operational Flowchart

Figure 2-18 depicts part one of a typical bill acceptance flow process.

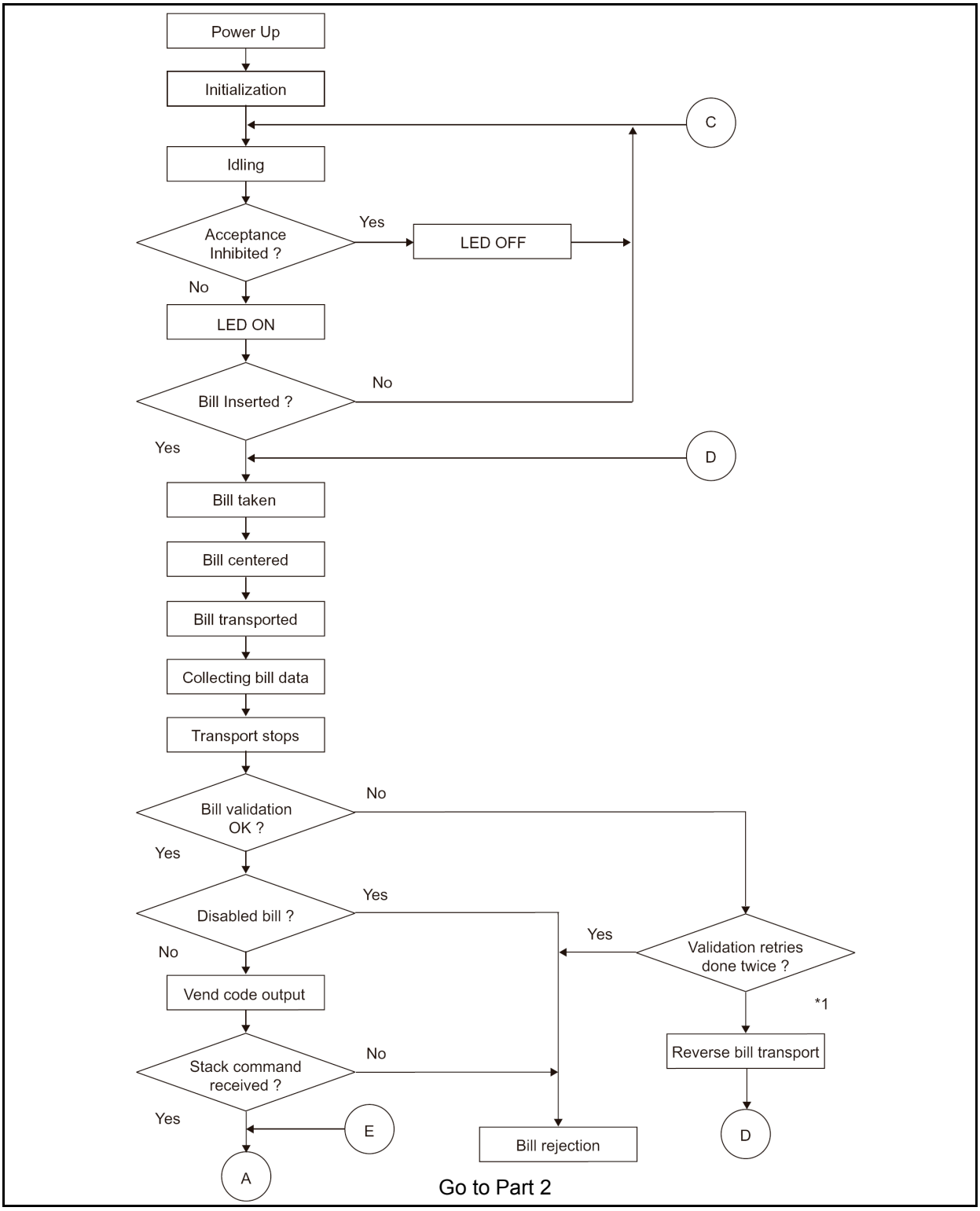
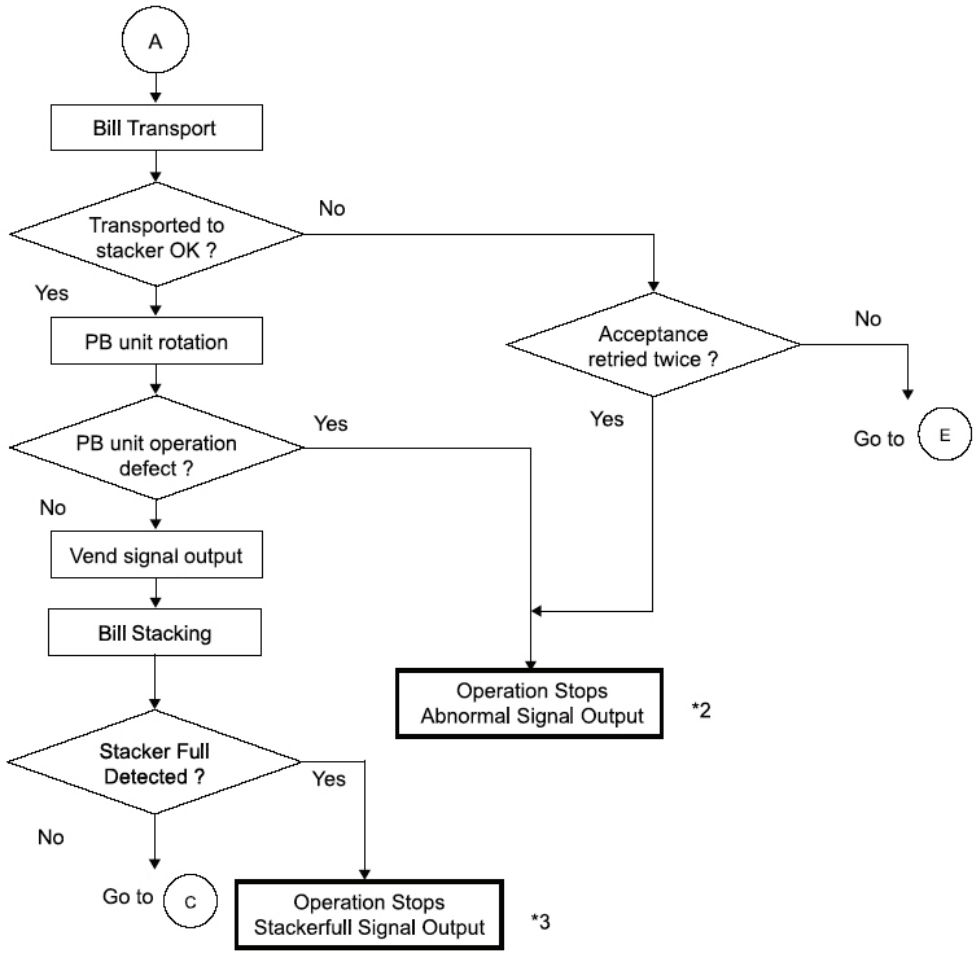


Figure 2-18 Bill Acceptor Operational Flowchart (Part 1)

Operational Flowchart (Continued)

Figure 2-19 depicts part two of a typical bill acceptance flow process.



*1: Faulty bill validation is suspect when a bill is automatically reinserted several times for re-evaluation. The Bill Validator will attempt to examine a bill three (3) times before rejecting the bill.

*2: When an abnormal signal condition occurs, remove the bill causing the malfunction and re apply power to the UBA or send a reset command to the Bill Acceptor.

*3: When a Stacker Full signal occurs, remove the bills from the Cash Box and re-install it into its fully seated position. The UBA will then automatically reinitialize itself.

Figure 2-19 Bill Acceptor Operational Flowchart (Part 2)

Standard Interface Circuit Schematic

Figure 2-20 illustrates the CPU Board UBA-10/11/12-SS Schematic Diagram.

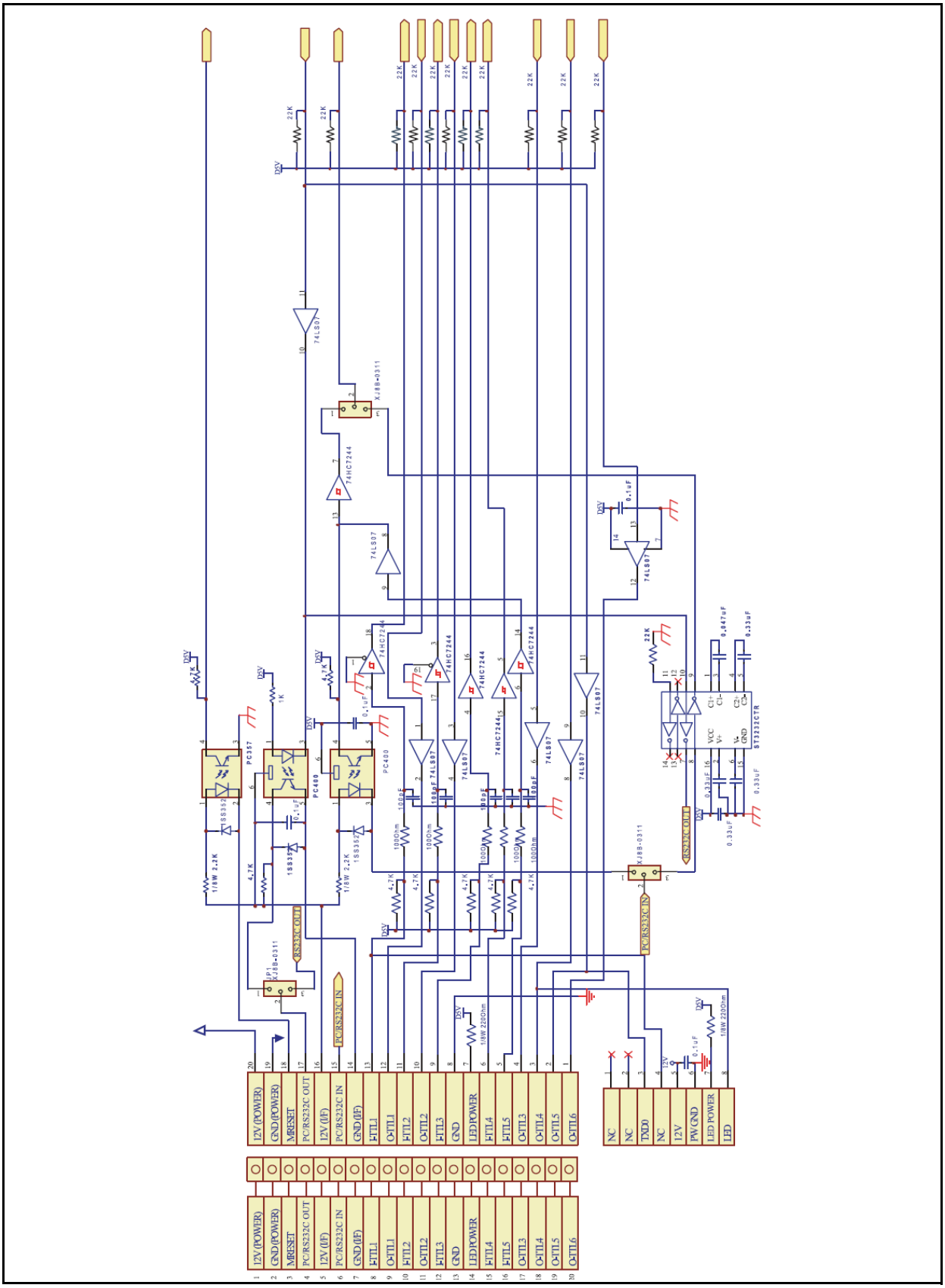


Figure 2-20 UBA-10/11/12-SS Bill Acceptor CPU Board Schematic Diagram

USB Interface Circuit Schematic

Figure 2-21 illustrates the CPU Board UBA-14-SS Schematic Diagram.

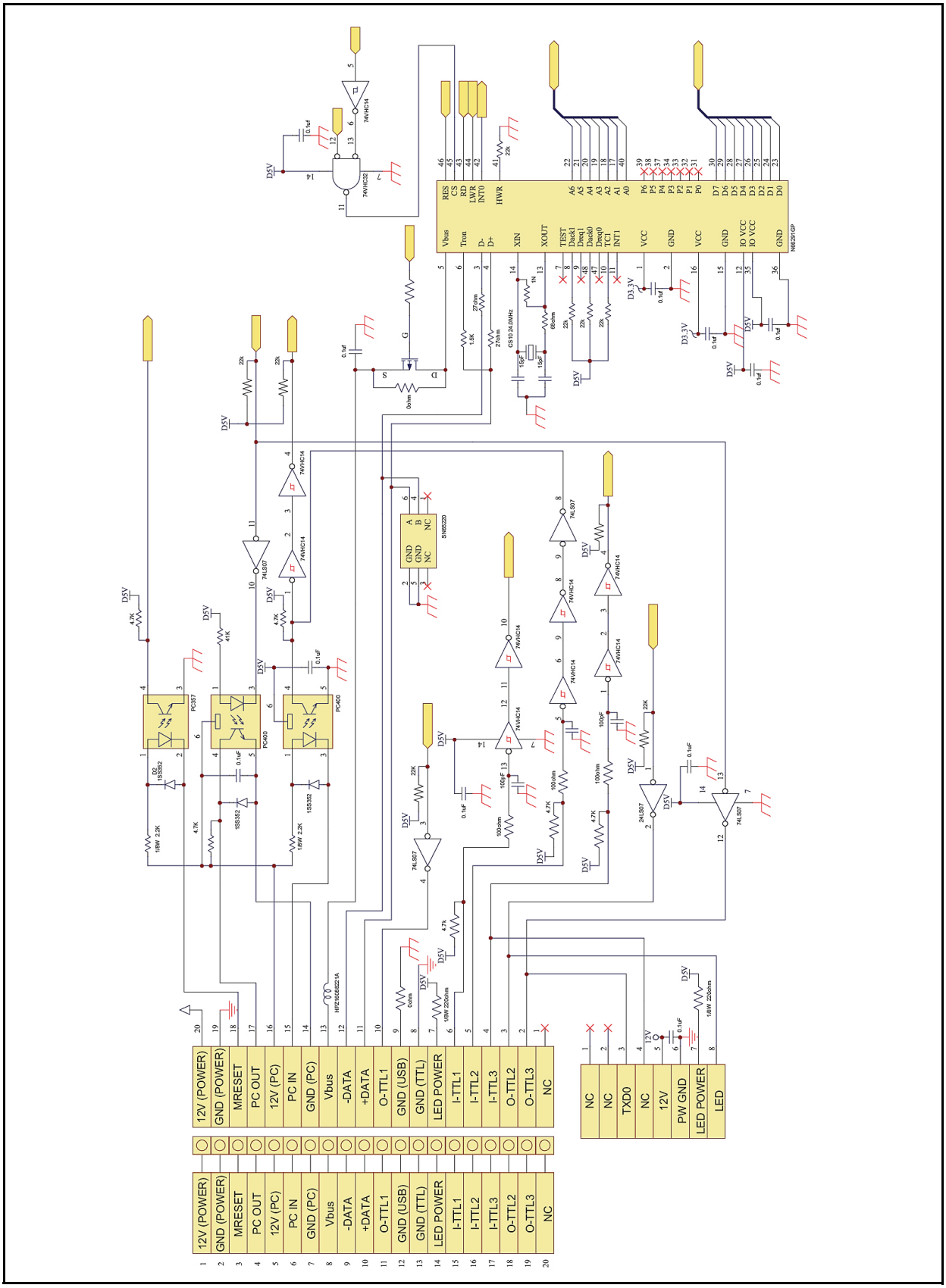


Figure 2-21 UBA-14-SS Bill Acceptor CPU Board Schematic Diagram

THIS PAGE INTENTIONALLY LEFT BLANK

3 COMMUNICATIONS

This section was intentionally left out due to a Non Disclosure Agreement requirement.

If this information is required, please contact:

JCM Technical Support
925 Pilot Road
Las Vegas, Nevada 89119
(702) 651-0000

THIS PAGE INTENTIONALLY LEFT BLANK

UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Section 4

4 DISASSEMBLY/REASSEMBLY

This section provides disassembly and reassembly instructions for the Universal Bill Acceptor Series (UBA). This section contains the following information:

- Tool Requirements
- Primary Unit Disassembly
- Acceptor Unit Disassembly
- Circuit Board Removal
- Cash Box Handle and ICB Box Disassembly
- Transport Guides A, B, C, D, & E Disassembly
- Sensor Board Disassembly
- Transport Unit Motors Disassembly
- Transport C Timing Belt Disassembly
- Final Timing Belt Disassembly

Tool Requirements

The following tools will be required to perform disassembly and reassembly:

- #1 & #2 Phillips Screwdriver
- 2.5mm Hex Head Driver
- Set of Jewelers Phillips Screw Drivers
- E-Clip (E-Ring) Plyers
- Needle Nose Plyers
- Tweezers

Primary Unit Disassembly

The following instructions are provided to perform an initial disassembly of the Universal Bill Acceptor's primary parts.

1. Press down on the front latch and slide the UBA Acceptor assembly forward (See Figure 4-1).
2. Pull on the Cash Box handle and remove the Cash Box from the frame (See Figure 4-2 a).
3. When an optional 24V/USB Circuit Board is installed, remove the optional printed circuit board from the frame housing (See Figure 4-2 b).

NOTE: Applicable screw size is 2.6x8 P. The tightening torque necessary is 56.89 psi (4.0kgf/cm^2).

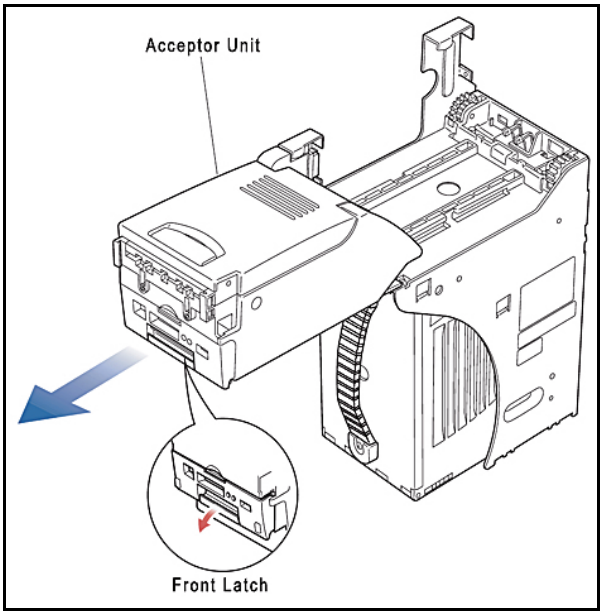


Figure 4-1 Acceptor Unit Removal

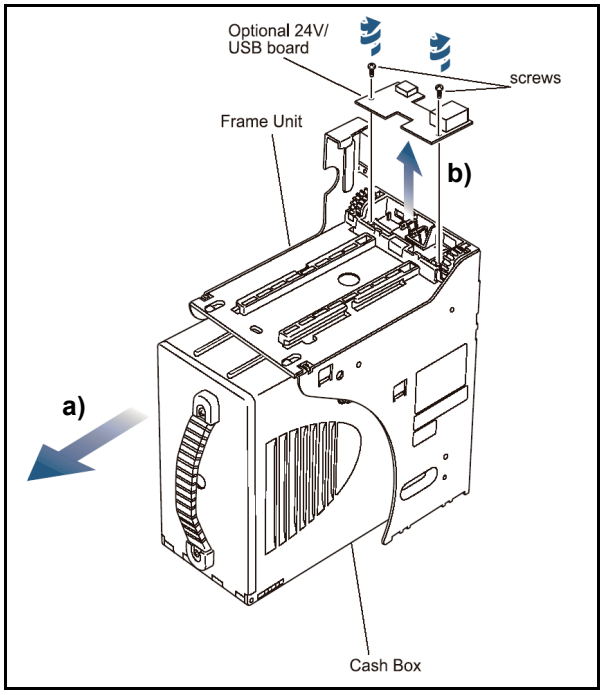


Figure 4-2 UBA Unit Cash Box & USB Board Removal

Acceptor Unit Disassembly

Side and Top Cover Removal

Perform the following steps to remove the UBA Acceptor side and top covers:

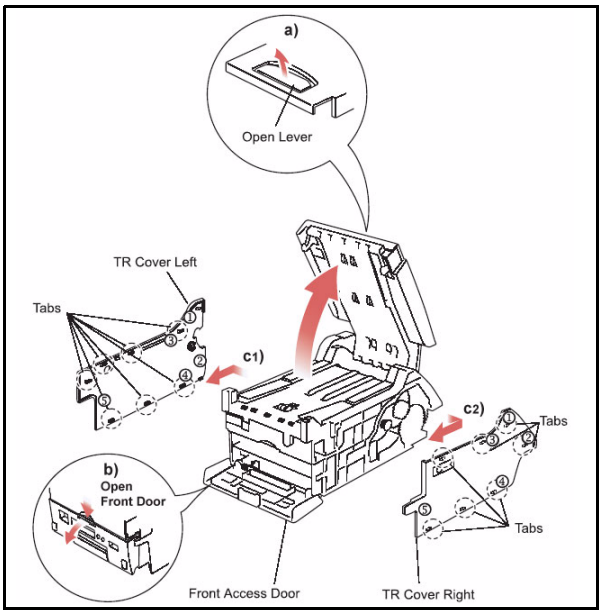


Figure 4-3 Side and Top Cover Removal

1. Pull the release lever located on top of the unit and fully open the Transport (TR) section of the Acceptor's Cover in the direction of the large arrow shown in Figure 4-3 a.

WARNING: Hold the Upper Guide open while removing the right and left Transport (TR) covers, because it does not stay in the upright position by itself. Improper handling may result in personal injury and/or damage to the equipment.

2. Fully open the front access door (See Figure 4-3 b).
3. Lift and hold points ① and ② open, then (See Figure 4-3 C1 & C2 and Figure 4-4)

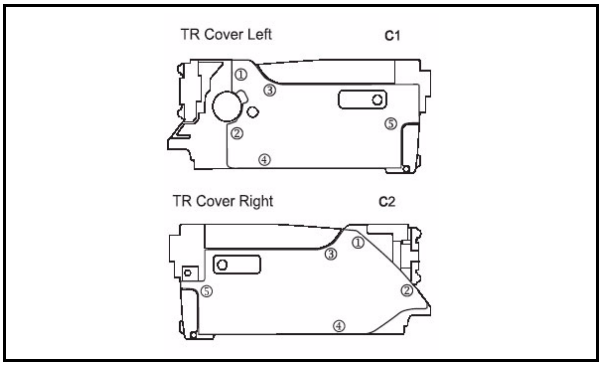


Figure 4-4 Side Cover Installation Points

4. Slide each cover in the direction indicated by the small arrows shown in Figure 4-3 C1 & C2 to remove each side cover.
5. To remove the Transport Cover, release the six (6) tabs, three located on each side of Transport Cover using a flathead screwdriver (See Figure 4-5).

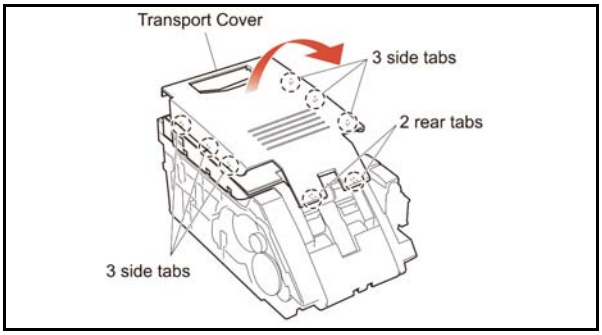


Figure 4-5 Transport Cover Removal

6. Remove the Transport Cover upward using the two rear tabs as points of support.
7. When removing a Transport Cover, be sure to handle the cover's hook very carefully.

NOTE: If the Transport cover's hook is damaged in the process, replace it with a new one!

8. To re-attach the side covers, place the covers in their proper position, then
9. Hold points ③, ④ and ⑤ on each cover, (See Figure 4-3) and slide it in the reverse arrow direction as previously shown in Figure 4-4.

Front Access Door Removal

Perform the following steps to remove the UBA Front Access Door:

1. Turn the Acceptor unit upside down.
2. Remove the screw located on the side of the front access door to release the Front Grounding (FG) harness (See Figure 4-6 a).
3. Fully open the front access door and release the Acceptor Latch Spring Lock (See exploded view inset in Figure 4-6 b).
4. Unscrew two screws located on the shaft and slightly widen the UBA Transport unit in the directions of the small arrows shown in Figure 4-6 b, and remove the front access door from the Transport unit in the large arrow direction (See Figure 4-6 c).

NOTE: When re-assembling the Front Door, tighten the two (2) screws located on the shaft to a torque of is 42.67 psi (3.0kgf/cm^2).

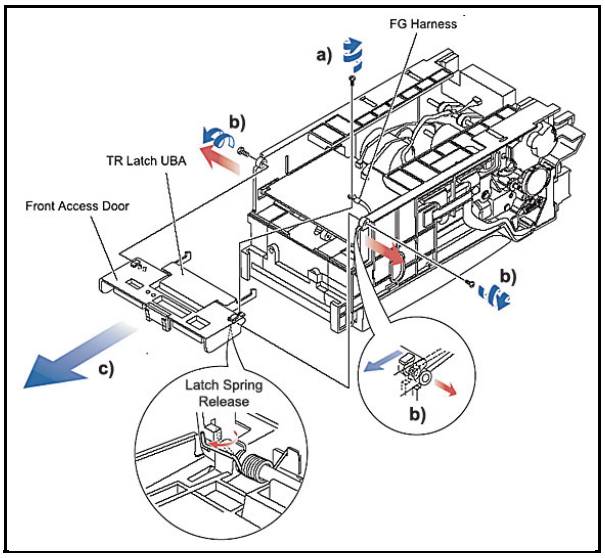


Figure 4-6 Front Access Door Removal

Opening Lever Disassembly

Perform the following steps to disassemble the UBA Acceptor's Transport Opening Lever:

1. Remove the Transport Cover (See "Side and Top Cover Removal" on page 1.)
2. Remove the E-Clip located on the shaft end, and pull the Opener Latch Shaft out of the assembly (See Figure 4-7 a).

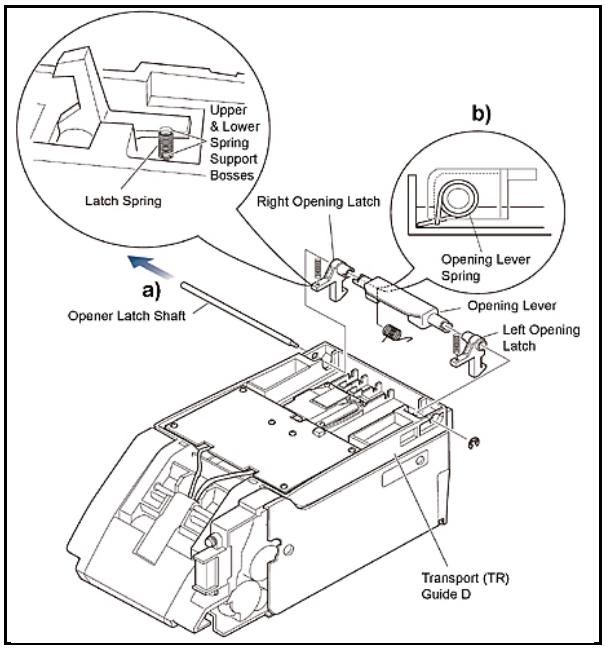


Figure 4-7 TR Opening Lever Disassembly

3. Lift Transport Guide (TR) D, then remove the Opening Lever, the left and right Opening Lever Latches, and their related Opening Lever Springs.

Caution: Make sure not to lose the small Latch Springs located beneath the left and right Opening Lever Latches!

4. On re-assembly, the Opening Lever Spring (See Figure 4-7 b) needs to have its hook end reformed as a half-round.

NOTE: The Opening Latch Springs need to be replaced onto the Transport Guide D Latch Bosses with tweezers once the shaft has been re-inserted into the assembly!

Circuit Board Removal

CPU Board Removal

Perform the following steps to remove the UBA CPU Board:

1. Turn the Acceptor unit upside down.
2. Remove the ICB board from the top of the CPU Board (See Figure 4-8 a).
3. Lift the push rivet up with a flathead screwdriver and remove the wire holder (See Figure 4-8 b).
4. Disconnect the three (3) sets of three (3) harness connectors from CPU board (9 connectors total) (See Figure 4-8 C1, C2 & C3).
5. Unlock Transport Guide A, and pull the CPU Board forward, but not completely out of the assembly (See Figure 4-8 d).
6. Before pulling the CPU Board completely out of the assembly, disconnect the remaining two (2) harness connectors located on the bottom side of the CPU Board assembly (See Figure 4-8 e).

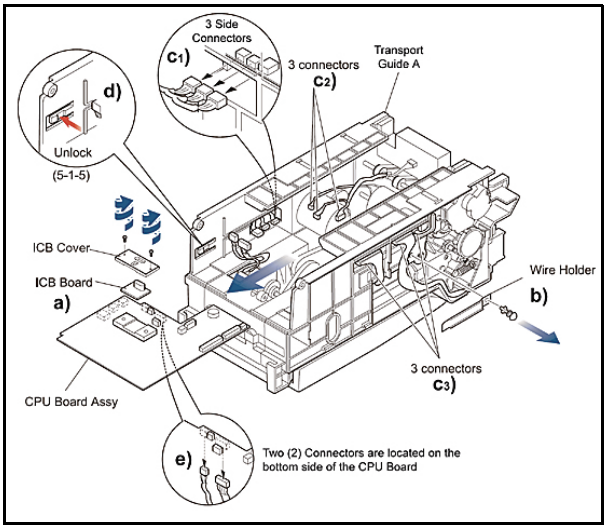


Figure 4-8 TR CPU Board Removal

Caution: When reinstalling the ICB Board onto the CPU Board, check that the PLUG and SOCKET Numbers agree to ensure a correct harness plug reconnection.

Upper Sensor Board Removal

Perform the following steps to remove the UBA Upper Sensor Board:

1. Remove the Transport Cover (See "Side and Top Cover Removal" on page 1.)
2. Remove the four (4) circuit board mounting screws (See Figure 4-9) and disconnect the three (3) board harness connectors.
3. Remove the Upper Sensor Board from the assembly.

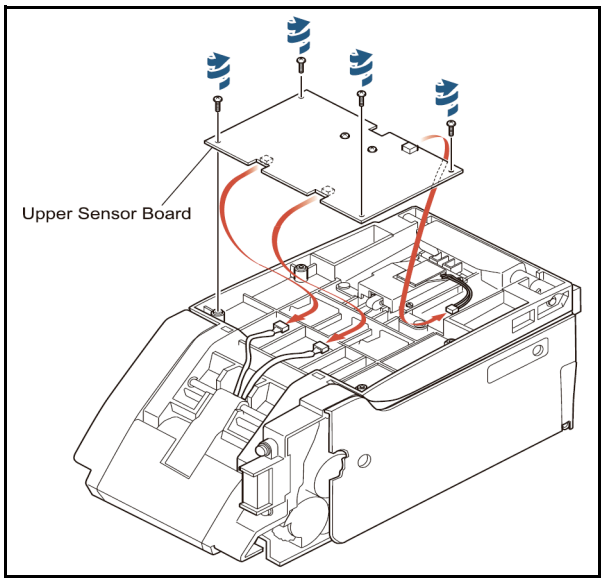


Figure 4-9 Upper Sensor Board Removal

Lower Sensor Board Removal

Perform the following steps to remove the UBA Lower Sensor Board:

1. Remove the Right Side Cover (See "Side and Top Cover Removal" on page 1.)
2. Disconnect the three (3) harness connectors from the Lower Sensor Board (See the Figure 4-10 exploded inset).
3. Remove the three (3) circuit board mounting screws, lift the Lower Sensor Board up and slide it out of the side of the assembly as illustrated in Figure 4-10.

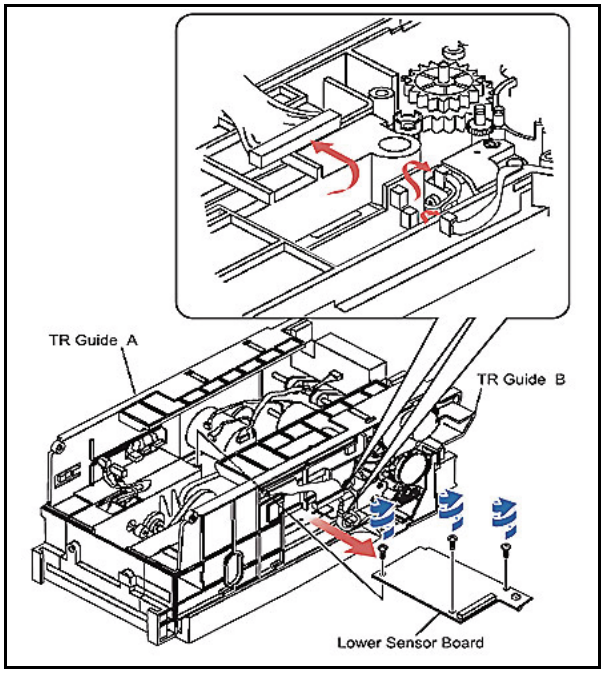


Figure 4-10 Lower Sensor Board Removal

Transport Guides A, B, C, D, & E Disassembly

Transport Guide A Disassembly

Perform the following steps to remove the UBA Transport Guide A assembly:

1. Remove the single screw retaining the Roller Guide Cap, and twist the Cap down and clockwise in the arrow direction shown in Figure 4-11 (a) step ①, then remove it up and off the assembly.

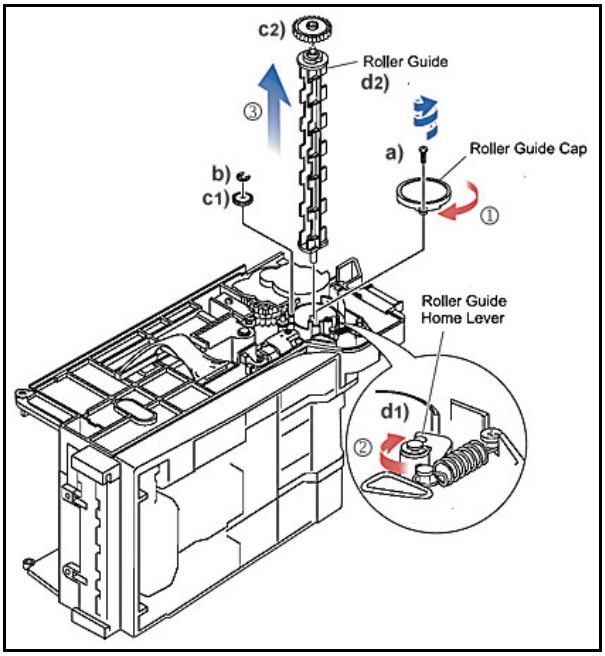


Figure 4-11 Roller Guide Removal

2. Remove the E-Clip retaining the small torque transfer gear (See Figure 4-11 b & c1), then remove both the small and large gears from the assembly (See Figure 4-11 c1 & c2).
3. Using a finger, pull back on the spring loaded Roller Guide Home Lever (See Figure 4-11 d1 step ②) and pull the Roller Guide up and out of the assembly (See Figure 4-11 d2 step ③).
4. Turn the UBA Acceptor unit upside-down.
5. Remove the single Encoder Sensor Board mounting screw and remove the circuit board from the assembly (See Figure 4-12 a).

NOTE: When reassembling the unit, align the dents on the Stacking Gear Motor as shown in Figure 4-12 b1 step ①.

6. Remove the two (2) motor mount screws (See Figure 4-12 b2), then
7. Remove Stacking Motor from the right side of the unit in the large arrow's direction.

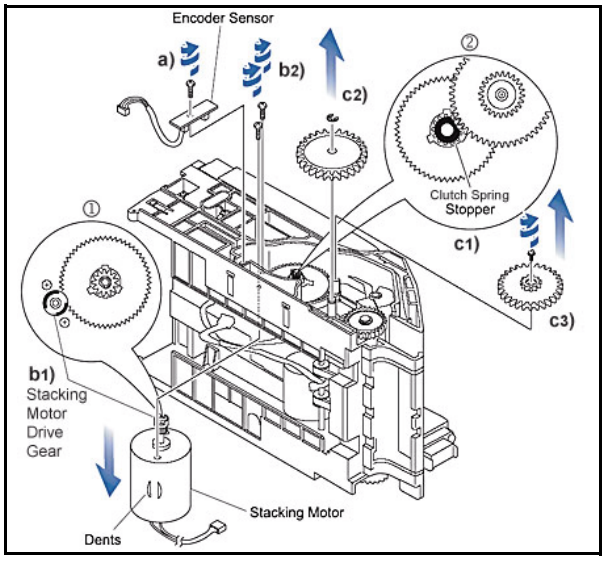


Figure 4-12 Stacking Motor Removal

8. Align the gear of the Clutch Spring Stopper as shown in step ② c1, then remove E-Clip (c2) and screw (c3) retaining the two gears, and lift them up and out of the assembly.

NOTE: When remounting the Stacking Motor, be sure to rotate the dents on the motor in the direction shown in Figure 4-12 before re-inserting it. Also, the Stacking Motor Gear and the Clutch Spring Stopper must be aligned as shown in Figure 4-12 before remounting the Stacking Motor!

9. Turn the UBA Acceptor unit upside-down again.
10. Remove the Stacking Clutch Shaft retaining E-clip, and pull the assembly downward and out of the unit as shown in Figure 4-13.

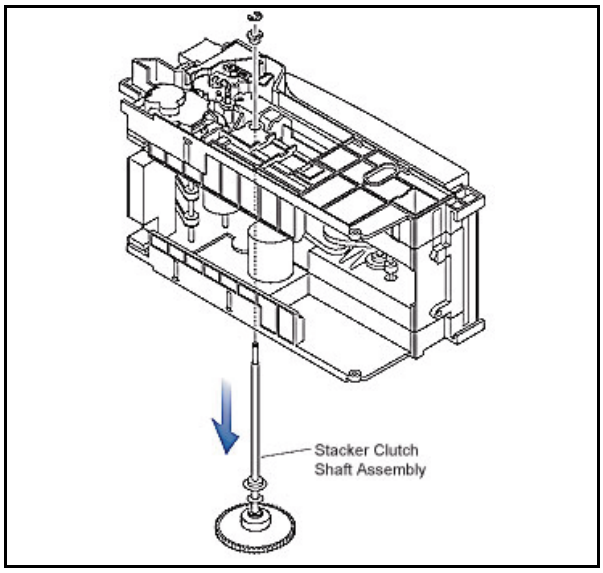


Figure 4-13 Stacking Clutch Shaft Removal

11. Turn the UBA Acceptor unit upside-down a third time.
12. Using needle nose pliers, disconnect the Encoder Sensor Board harness connector plug from the internal circuit board through the frame access hole (See Figure 4-14 a).
13. Remove the Final Stacker Gear E-Clip and remove the gear (See Figure 4-14 b).

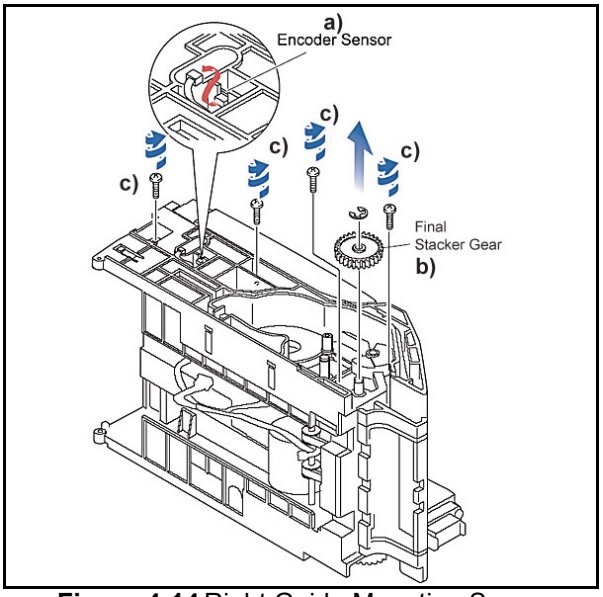


Figure 4-14 Right Guide Mounting Screw Removals

14. Turn the UBA Acceptor unit upside-down a fourth time.
15. Remove the four right side frame mounting screws indicated in Figure 4-14 c.
16. Remove the two (2) Transport Gear Cover retaining screws, then
17. Remove the Transport Gear Cover as shown in Figure 4-15 a.

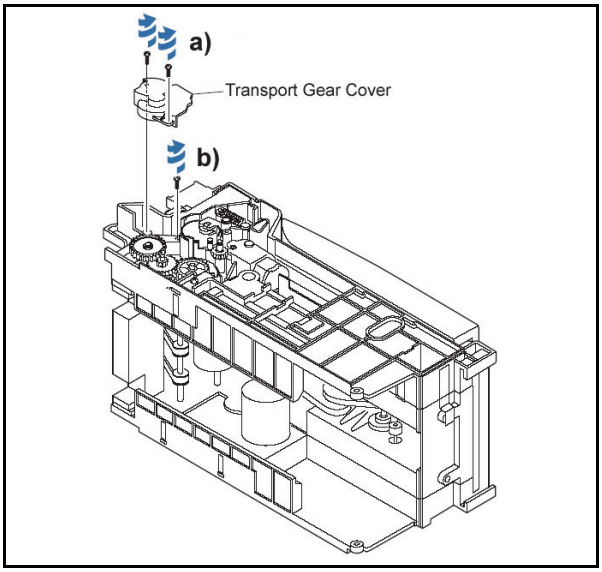


Figure 4-15 Last Left Side Guide Mounting Screw Removal

18. Remove the last remaining left side guide mounting screw (See Figure 4-15 b).
19. Pull the Transport Opening Lever to open Transport Guide D. The unit will separate into three pieces consisting of Transport Guide A, Transport Guides B & C, and Transport Guides D & E respectively (See Figure 4-16).

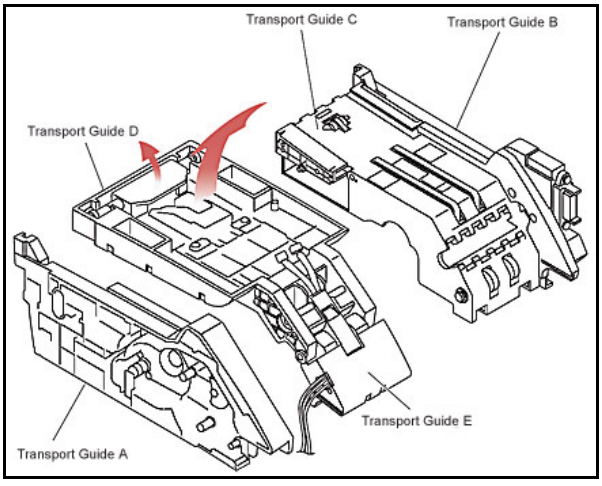


Figure 4-16 UBA Side Frame Removals

Transport Guides B & C Disassembly

Perform the following steps to disassemble UBA Transport Guide B from C:

1. Remove the Final Transport Gear E-Clip and remove the Final Transport Gear and a Parallel Pin located below it (See Figure 4-17 a).
2. Remove the 3rd Transport Gear as illustrated in Figure 4-17 b.

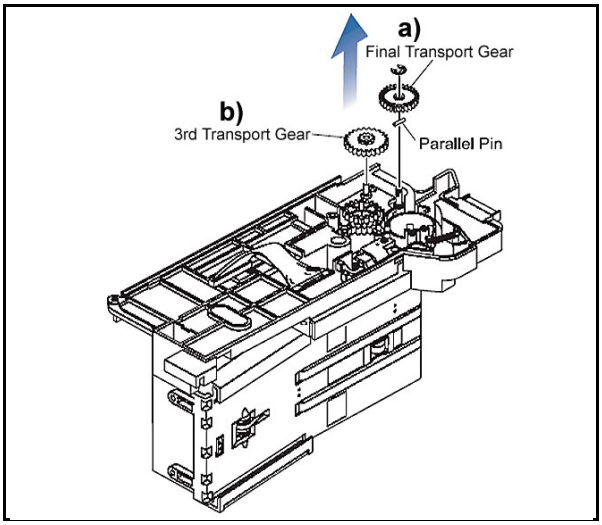


Figure 4-17 UBA Guide B Removal

3. Remove the Lower Sensor Board as previously described in the section discussing "Lower Sensor Board Removal" on page 4.
4. Remove the mounting screw securing Grounding Plate #2 (See Figure 4-18 a) and the three (3) Guide B mounting screws to separate Transport Guide B from guide Section C (See Figure 4-18 b).

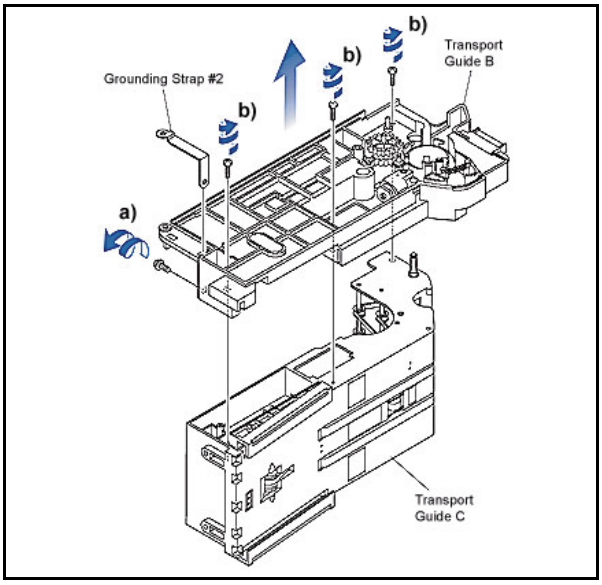


Figure 4-18 Transport Guide B Removal

Transport Guides D & E Disassembly

Perform the following steps to disassemble UBA Transport Guide D from Guide E:

1. Remove the Tunnel Shaft E-Clip and pull the Tunnel Shaft out of the assembly \(See Figure 4-19 a).

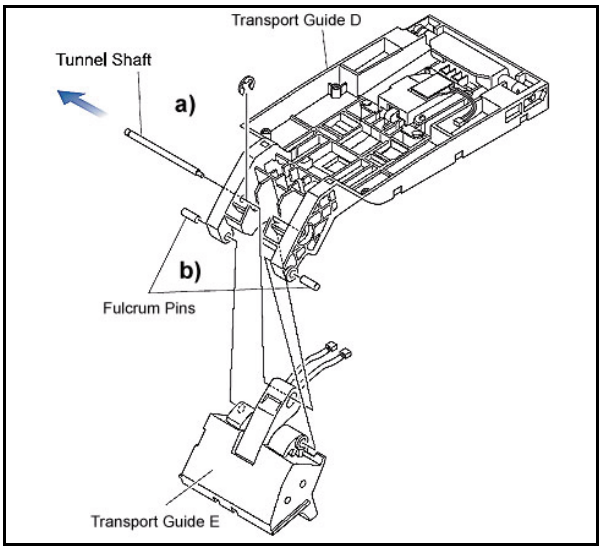


Figure 4-19 Transport Guide E Removal

2. Remove the two Fulcrum Pins and separate Transport Guide D from Guide E (See Figure 4-19 b).

Sensor Board Disassembly

Home Centering Sensor Board Disassembly

Perform the following steps to remove the UBA Home Centering Sensor Board:

1. The Centering Home Sensor Board is attached to Transport Guide A. Remove the single Home Centering Sensor Board mounting screw, and lift the small circuit board up and off the assembly (See Figure 4-20).

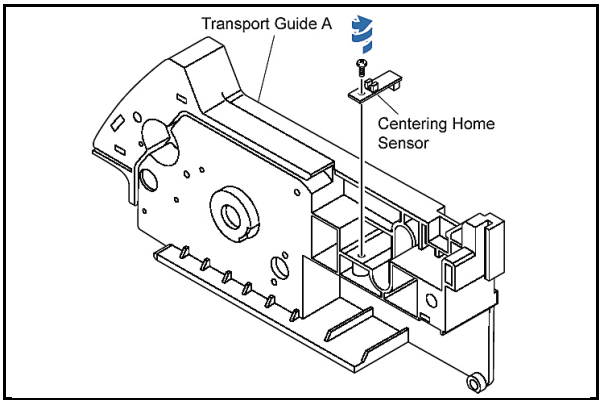


Figure 4-20 Centering Home Sensor Board Removal

Encoder Sensor Board Disassembly

Perform the following steps to remove the UBA Encoder Sensor Board:

1. The Encoder Sensor Board is attached to Transport Guide B. Remove the single Encoder Sensor Board mounting screw and lift the small circuit board up and off the assembly (See Figure 4-21).

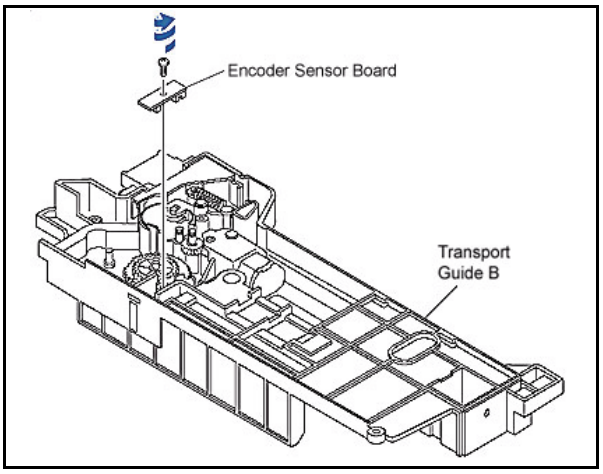


Figure 4-21 Encoder Sensor Board Removal

Anti-Pullback Home Sensor Board Disassembly

Perform the following steps to remove the UBA Anti-Pullback Home Sensor Board:

1. The Anti-Pullback Home Sensor Board is attached to Transport Guide B. Remove the Anti-Pullback Lever Spring from the Roller Guide Homing Lever (See Figure 4-22 a).

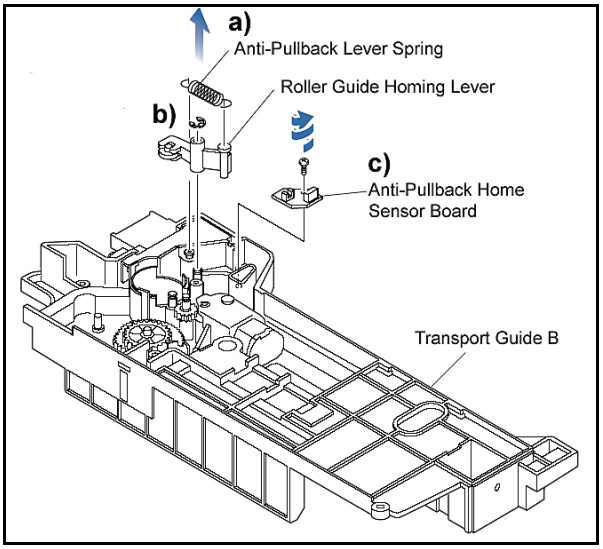


Figure 4-22 Anti-Pullback Sensor Board Removal

2. Remove the Roller Guide Homing Lever E-Clip (See Figure 4-22 b), then

3. Remove the Anti-Pullback Home Sensor Board mounting screw, and lift the circuit board up and off of the assembly (See Figure 4-22 c).

Transport Unit Motors Disassembly

Anti-Pullback Drive Motor Unit Disassembly

Perform the following steps to disassemble the UBA Anti-Pullback Motor Unit:

1. Remove the two (2) Anti-Pullback Motor Bar mounting screws (See Figure 4-23 c) and lift the Motor Bar assembly up and out of Transport Guide B.
2. Remove the 2nd Roller Gear retainer E-Clip and drop the 2nd Roller Gear down and out of the assembly (See Figure 4-23 b).
3. Remove the two (2) Anti-Pullback Motor Unit mounting screws and slide the Motor Unit back and out of the Motor Bar assembly (See Figure 4-23 a).

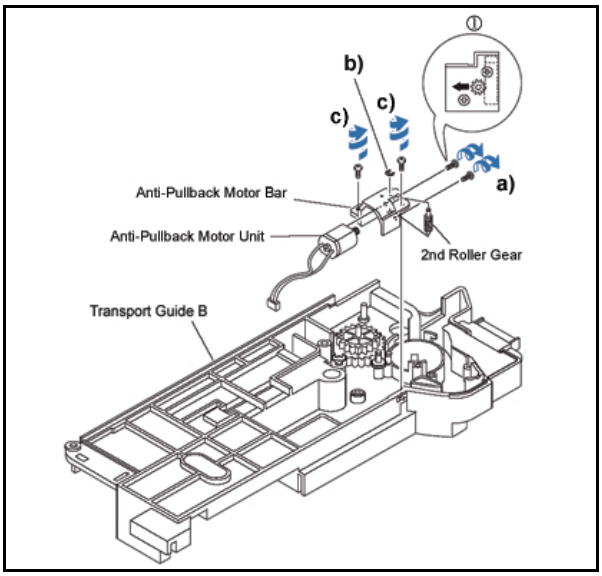


Figure 4-23 Anti-Pullback Motor Unit Removal

NOTE: When re-assembling the Anti-Pullback Motor Bar to the Anti-Pullback Motor Unit, fasten the mounting screws so that the 2nd Gear Roller and the Anti-Pullback Motor Assembly gears do not tightly bind on one other (See Figure 4-23 ①).

Transport Motor Disassembly

Perform the following steps to disassemble the UBA Transport Motor Unit:

1. Pull the Transport Gear Pin up and out of the Transport Guide B assembly (See Figure 4-24 a), then
2. Lift the 2nd Transport Gear up and off the assembly (See Figure 4-24 b).

NOTE: The Gear Pin will be damaged as it is removed and is not reusable. Replace it with a new Gear Pin when re-assembling the unit (4033SH0126, Part #: 108154).

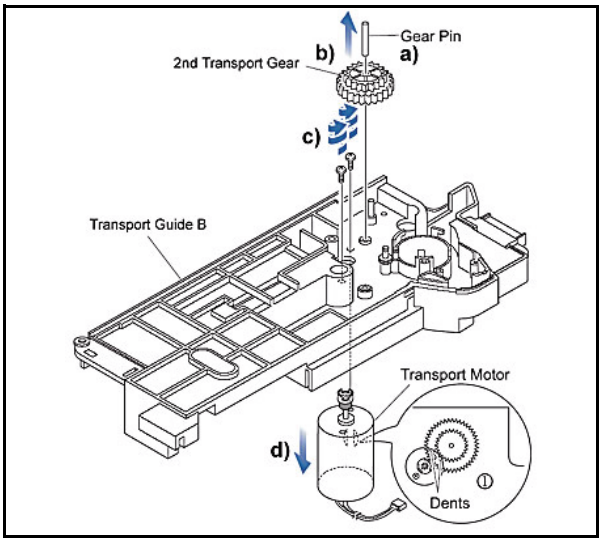


Figure 4-24 Transport Motor Unit Removal

3. Remove the two (2) motor mount screws (See Figure 4-24 c), then
4. Carefully drop the Transport Motor down and out of the assembly (See Figure 4-24 d).

NOTE: When re-mounting the Transport Motor, ensure that the motor dents are aligned in the direction shown in the Figure 4-24 ① exploded view circle diagram.

Entrance Sensor Board Removal

Perform the following steps to remove the UBA Entrance Sensor Board:

1. Pull Guide Plate #1 out of the assembly in the direction indicated by the arrow shown in Figure 4-25 a.
2. Remove the single Entrance Sensor Board mounting screw (See Figure 4-25 b), disconnect circuit board harness connector plug (See Figure 4-25 c), and remove Entrance Sensor Board from the assembly.

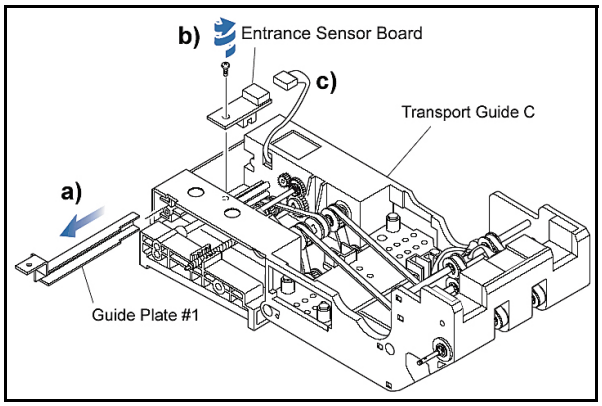


Figure 4-25 Entrance Sensor Board Removal

EXIT SENSOR BOARD DISASSEMBLY

Perform the following steps to remove the UBA Exit Sensor Board:

1. Disconnect the Exit Sensor Board harness connector plug (See Figure 4-26 a), and

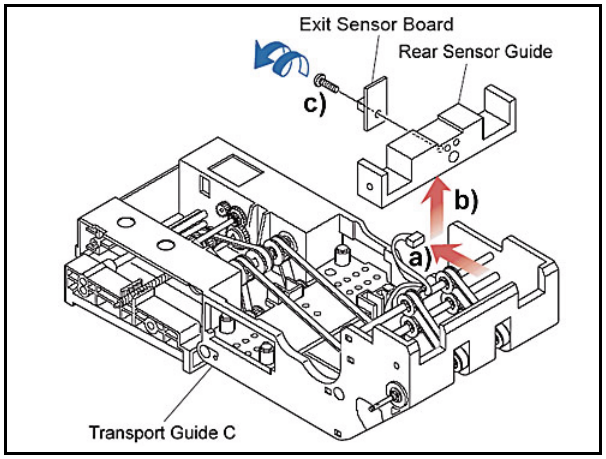


Figure 4-26 Exit Sensor Board Removal

2. Remove the Rear Sensor Guide assembly forward and then upward out of the assembly (See Figure 4-26 b).
3. Remove the single Exit Sensor Board mounting screw (See Figure 4-26 c), and lift the Exit Sensor Board off the assembly.

Centering Motor Unit Disassembly

Perform the following steps to disassemble the UBA Centering Motor Unit:

1. Remove the two (2) Centering Motor Unit mounting screws, then carefully lift the Centering Motor Unit up and off the assembly after disconnecting its harness plug (See Figure 4-27).

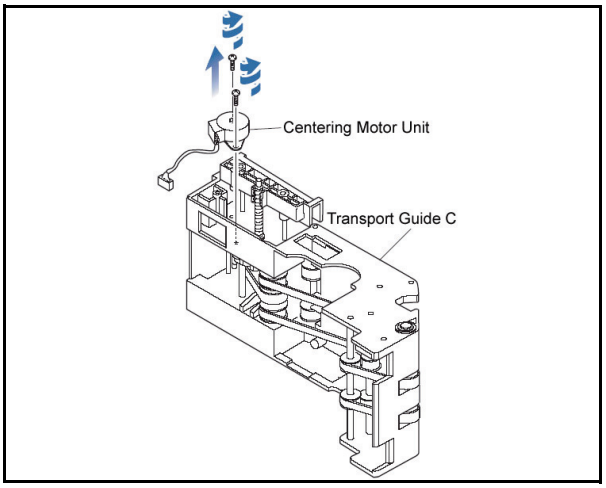


Figure 4-27 Centering Motor Unit Removal

Transport C Timing Belt Disassembly

Transport C Timing Belt Removal

Perform the following steps to remove the UBA Transport C Timing Belts:

1. Remove the four (4) Lower Sensor Spacer mounting screws (See Figure 4-28), then
2. Remove Lower Sensor Spacer upward and slide it sideways out of Transport Guide C.

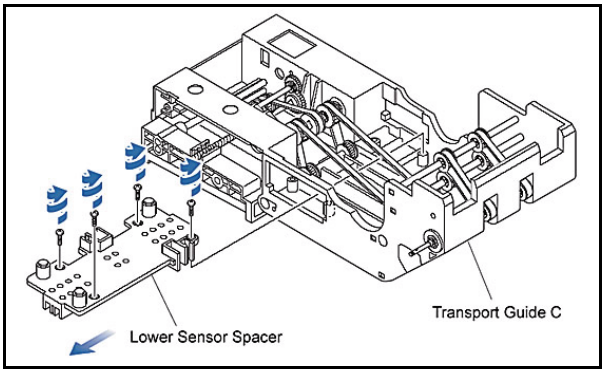


Figure 4-28 Timing Belts Removal

3. Rotate the 2nd Mover Gear in the direction indicated by the arrow shown in the Figure 4-29 exploded view, then
4. Remove Mover Guides #1 and #2 out of each side of Transport Guide C (See Figure 4-29).

Caution: When re-inserting Mover Guides #1 and #2, ensure that they have an identical sized spacing width (A=B) when being simultaneously reinstalled inside Transport Guide C (See Figure 4-29 ①).

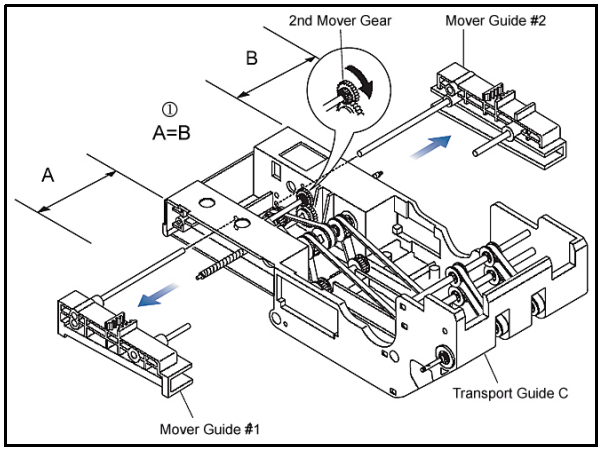


Figure 4-29 Mover Gear #1 & #2 Removal

5. Push Pulley Shaft #2 out of the assembly in the direction indicated by the arrow shown in Figure 4-30 (a), and
6. Remove the Mover Pulley up and out of the assembly as Pulley Shaft #2 is withdrawn (See Figure 4-30 b).

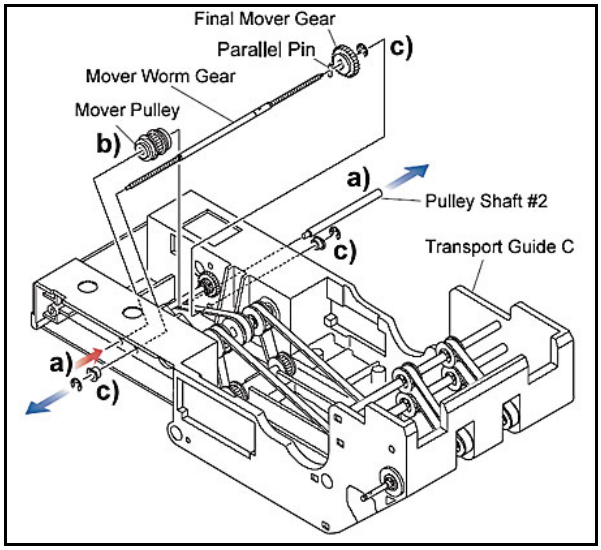


Figure 4-30 Pulley Shaft Removals

7. Remove the two (2) E-Clips securing the ends of the Mover Worm Gear Shaft (See Figure 4-30 c), then
8. Pull the Mover Worm Gear Shaft out of the assembly along with the Final Mover Gear, Parallel Pin and E-Clip attached to it.
9. Push each end of the three (3) Pulley Shafts out one at a time as illustrated in Figure 4-31 (a), and move their respective pulleys to the side wall.
10. Push the end of the Pulley Shaft in, and pull it out in the direction indicated by the arrow shown at the Figure 4-31 (b) location.

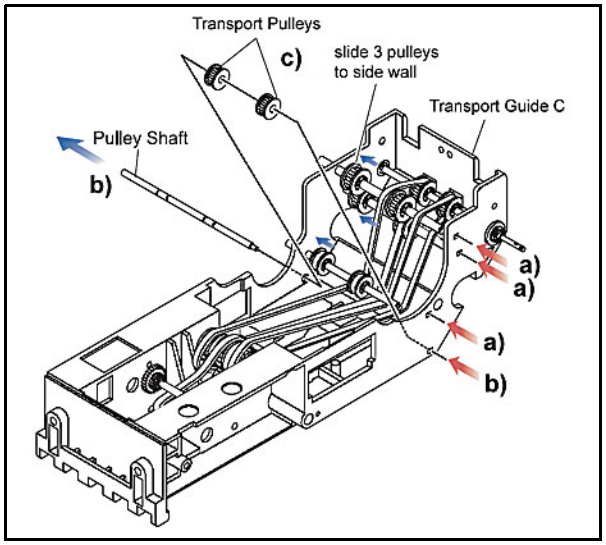


Figure 4-31 Mover Worm Gear Shaft Removal

11. Lift the two (2) freed Transport Pulleys up and out of the assembly (See Figure 4-31 c).
12. Remove the three (3) E-Clips securing the Transport Drive Shaft end and internal Drive Pulleys (See Figure 4-32 a), then
13. Pull the Transport Drive Shaft out and remove the two (2) Drive Pulleys along with the two (2) adjacent Parallel Pins up and out of the assembly as the Transport Drive Shaft is withdrawn (See Figure 4-32 b).

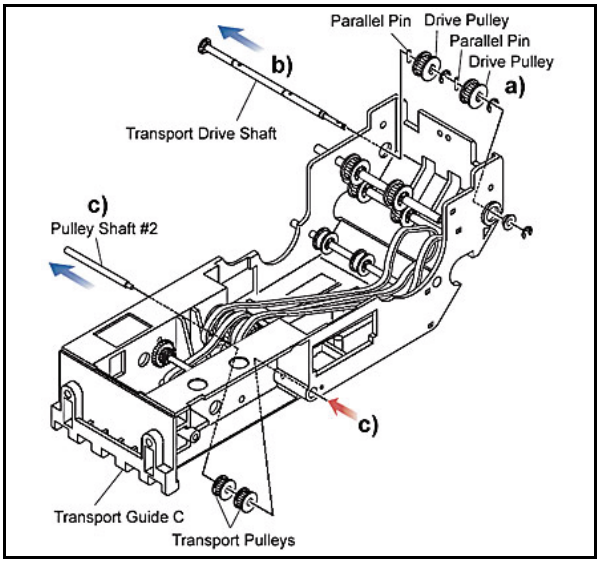


Figure 4-32 Transport Drive Shaft Removal

14. Push the end of Pulley Shaft #2 in, and pull it out in the direction indicated by the arrow shown at Figure 4-32 (c), and remove the two (2) Transport Pulleys up and out of the assembly as Pulley Shaft #2 is withdrawn.

15. Remove the five (5) E-Clips securing the end and internal Drive Pulleys on Transport Shaft #2, then
16. Pull Transport Shaft #2 out (See Figure 4-33 a) and lift Drive Pulleys #1, #2 and #3 and their adjacent two (2) Parallel Pins up and out of the assembly as Transport Shaft #2 is withdrawn (See Figure 4-33 b).

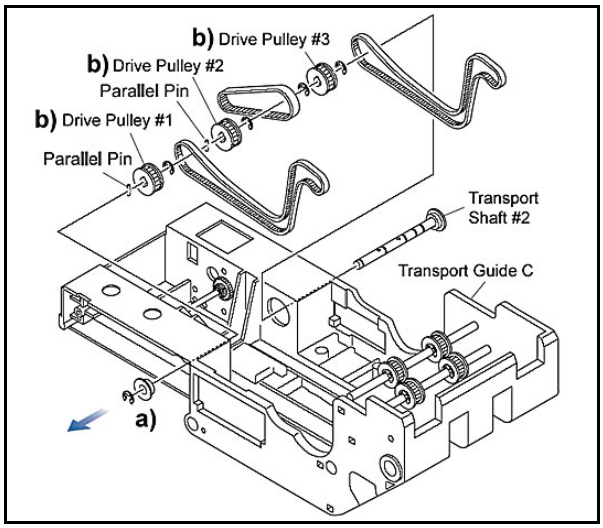


Figure 4-33 Drive Belt Removal

17. Remove the three freed Timing Belts from the assembly.

NOTE: Reinsert the Parallel Pins into Drive Pulleys #1 and #2 only! No Parallel Pin is required for Drive Pulley #3.

Transport D Solenoid Removal

Perform the following steps to remove the UBA Transport Drive D Solenoid:

18. Remove the four (4) Solenoid Base mounting screws securing the Solenoid base to Transport Guide D (See Figure 4-34 a) and

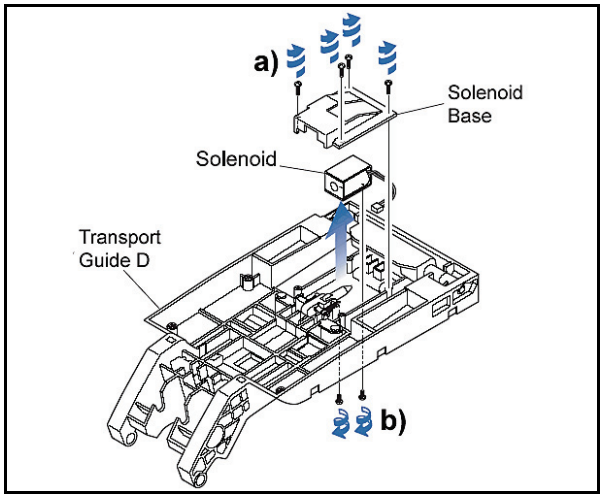


Figure 4-34 Transport Guide D Solenoid Removal

19. Remove the Solenoid Base.
20. Remove the two (2) Solenoid mounting screws from the bottom side of Transport Guide D and lift the Solenoid up and out of the assembly (See Figure 4-34 b).

Cash Box Handle and Intelligent Cash Box ICB Module Unit Disassembly

Cash Box Handle Removal

Perform the following steps to remove the UBA Standard and Intelligent Cash Box (ICB) Handle:

1. Remove the two (2) Cash Box Handle mounting screws (See Figure 4-35).

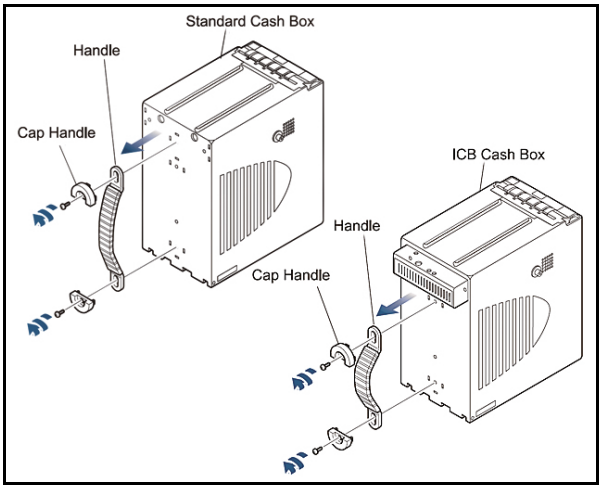


Figure 4-35 Cash Box Handle Removal

2. Remove the Handle Cap and take the handle off of the assembly.

ICB Module Removal

Perform the following steps to remove the UBA ICB Module:

1. Remove the two (2) module mounting screws securing the ICB Module Box Cover to the ICB Module Box Assembly (See Figure 4-36 a).

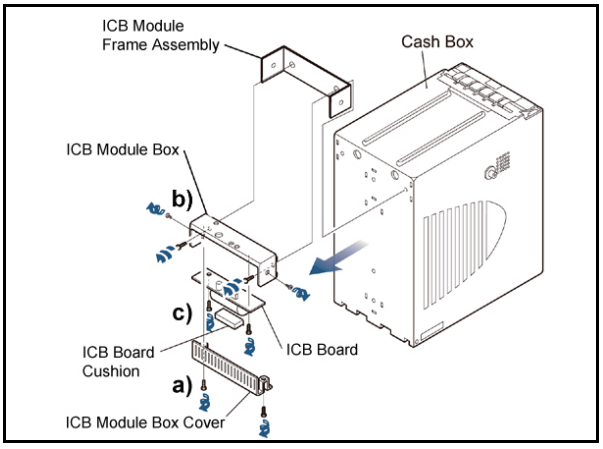


Figure 4-36 ICB Module Removal

2. Remove the two (2) screws that mount the ICB Module Box onto the Cash Box (See Figure 4-36 b).
3. Remove the two (2) screws that attach the ICB Module circuit board onto the ICB Module Box Assembly (See Figure 4-36 c).

Cash Box Sensor Board Removal

1. Remove the Transport Guide E Back Cover by pressing down on the curved arrow area indicated in Figure 4-37 (a).

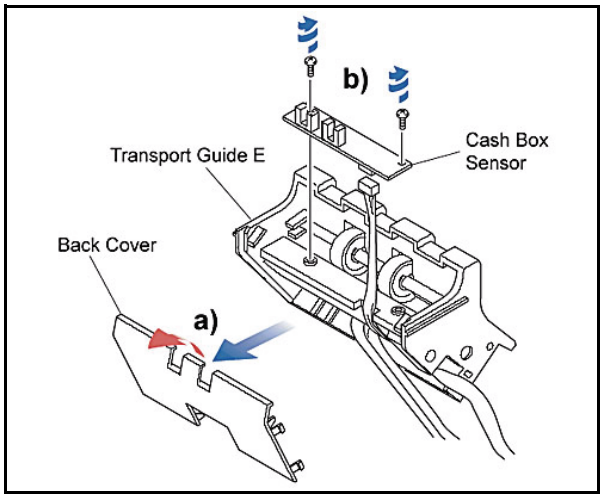


Figure 4-37 Cash Box Sensor Removal

2. Remove the two (2) Cash Box Sensor Board mounting screws (See Figure 4-37 b), then
3. Carefully lift the board up; disconnect the harness connector plug, and remove the Cash Box Sensor Board from the assembly.

Pusher Mechanism Unit Disassembly

Perform the following steps to disassemble the UBA Pusher Mechanism Unit:

1. Open the Cash Box lid and remove the two (2) internal Pusher Mechanism Unit mounting screws from the back inside wall of the Cash Box (See Figure 4-38), then
2. Slide the Pusher Mechanism Unit out of the assembly.
3. Remove the six (6) Pusher Mechanism mounting screws from the sides of the assembly as shown in Figure 4-39, then
4. Separate the Pusher Mechanism unit upward and out of the Transport.

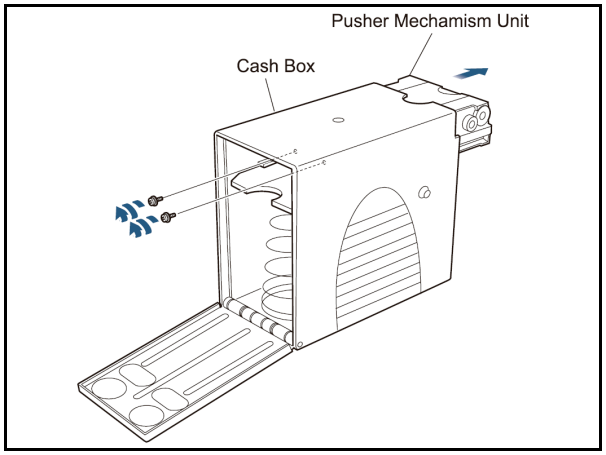


Figure 4-38 Pusher Mechanism Unit Removal

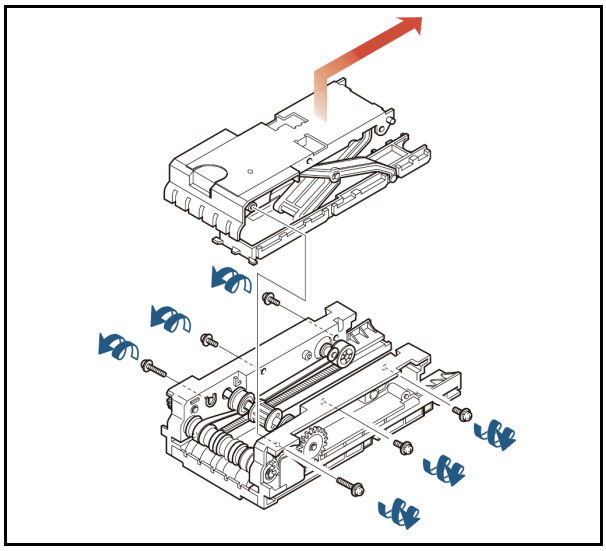


Figure 4-39 Pusher Mechanism Separation

Final Timing Belt Disassembly

Perform the following steps to remove the final UBA Timing Belts:

1. Remove the two (2) screws located on each side of the Belt Housing and remove the Cover Roller (See Figure 4-40).

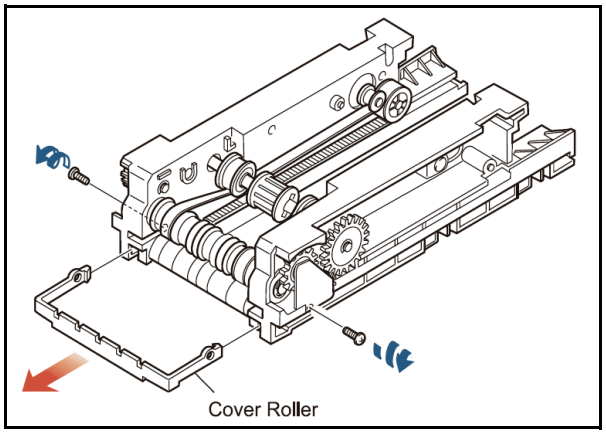


Figure 4-40 Cover Roller Removal

2. Remove the two (2) “Drive Gear (24)” E-Clips, its Parallel Pin, and the Ø 6B Bushing (See Figure 4-41 a).

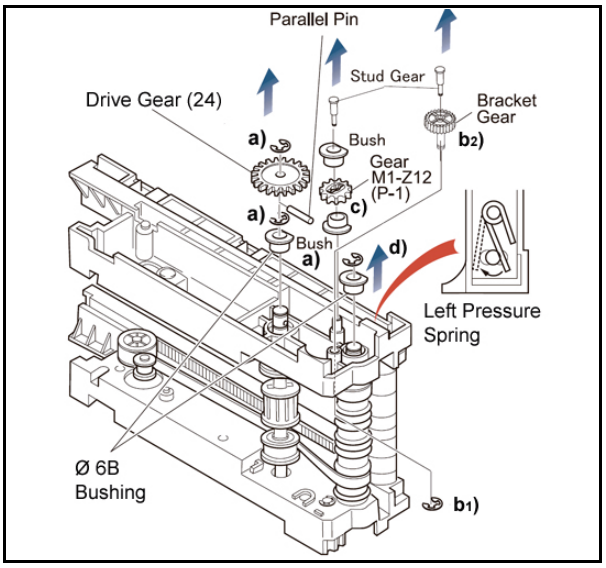


Figure 4-41 Timing Belt Removal Access

3. Remove the E-Clip retaining the Bracket Gear assembly (See Figure 4-41 b1), then
4. Lift the Bracket Gear assembly up and off the Transport (See Figure 4-41 b2).
5. Remove “Gear M1-Z12 (P-1)” (See Figure 4-41 c).
6. Remove the second Ø 6B Bushing E-Clip retainer, then remove the second Ø 6B Bushing (See Figure 4-41 d).
7. Release the Left Pressure Spring’s tension in the Shaft Roller pit as indicated in the Figure 4-41 (e) exploded view.
8. Pull the Right Pusher Guide upward, and remove the Timing Belts.(See Figure 4-42).

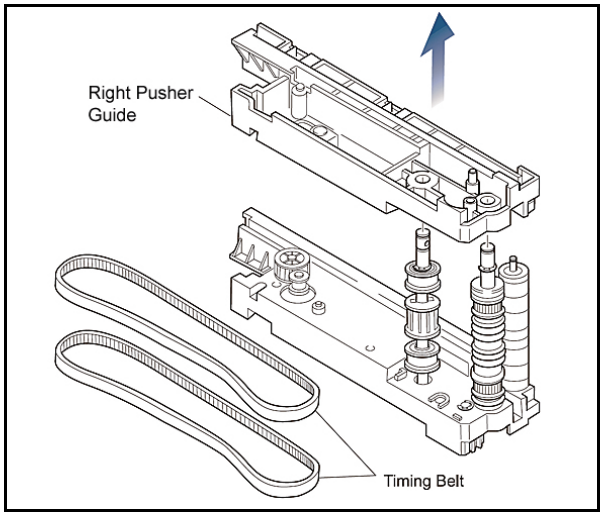


Figure 4-42 Timing Belt Removal

The Disassembly Procedure is now complete. Reverse all of the proceeding instructions to reassemble any of the components described during this disassembly procedure.

THIS PAGE INTENTIONALLY LEFT BLANK

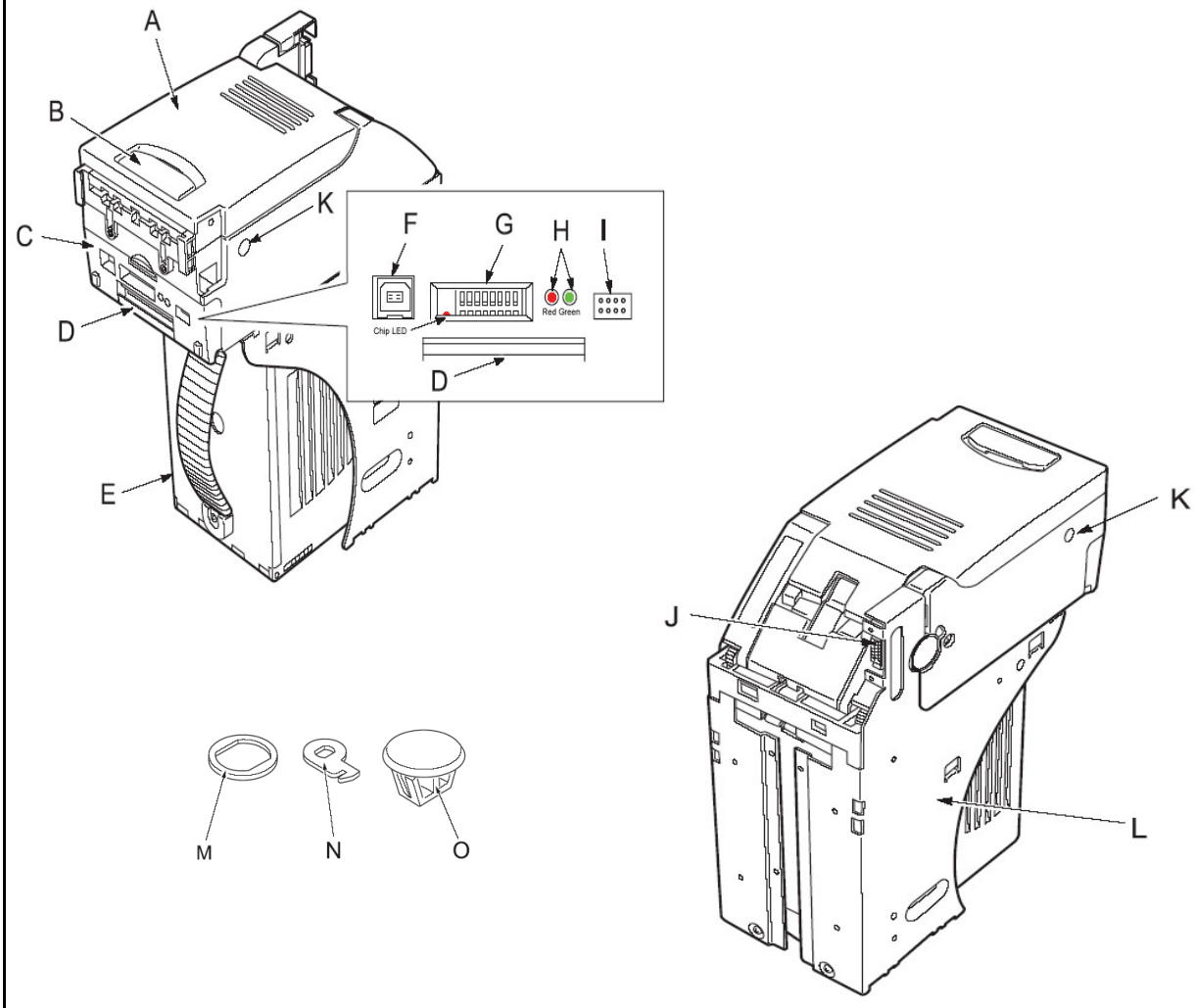
UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Section 5

5 WIRING DIAGRAMS

This chapter provides the Universal Bill Acceptor Series (UBA) wiring diagrams and component parts lists for the following items:

- UBA Primary Components
- System Wiring Diagram.

UBA Primary Components Parts Diagram



A: Acceptor Unit
B: Upper Guide Lever
C: Front Access Door
D: Acceptor Unit Release Lever
E: Cash Box
F: USB Connector for software downloading and adjustment
G: DIP Switch Block (See Section 2 pg 2-2 to set)
H: Diagnostic LEDs
I: Front Bezel Connector **(Connects to the Faceplate Assembly)**
J: Interface Connector **(Connects to the Host Machine)**
K: Centering Guide Open Port (one on each side)
L: Main Frame
M: Key Spacer
N: Plate Locking Key
O: Key Hole Cap

Figure 5-1 Universal Bill Acceptor (UBA) Primary Components

THIS PAGE INTENTIONALLY LEFT BLANK

UBA SYSTEM WIRING DIAGRAM

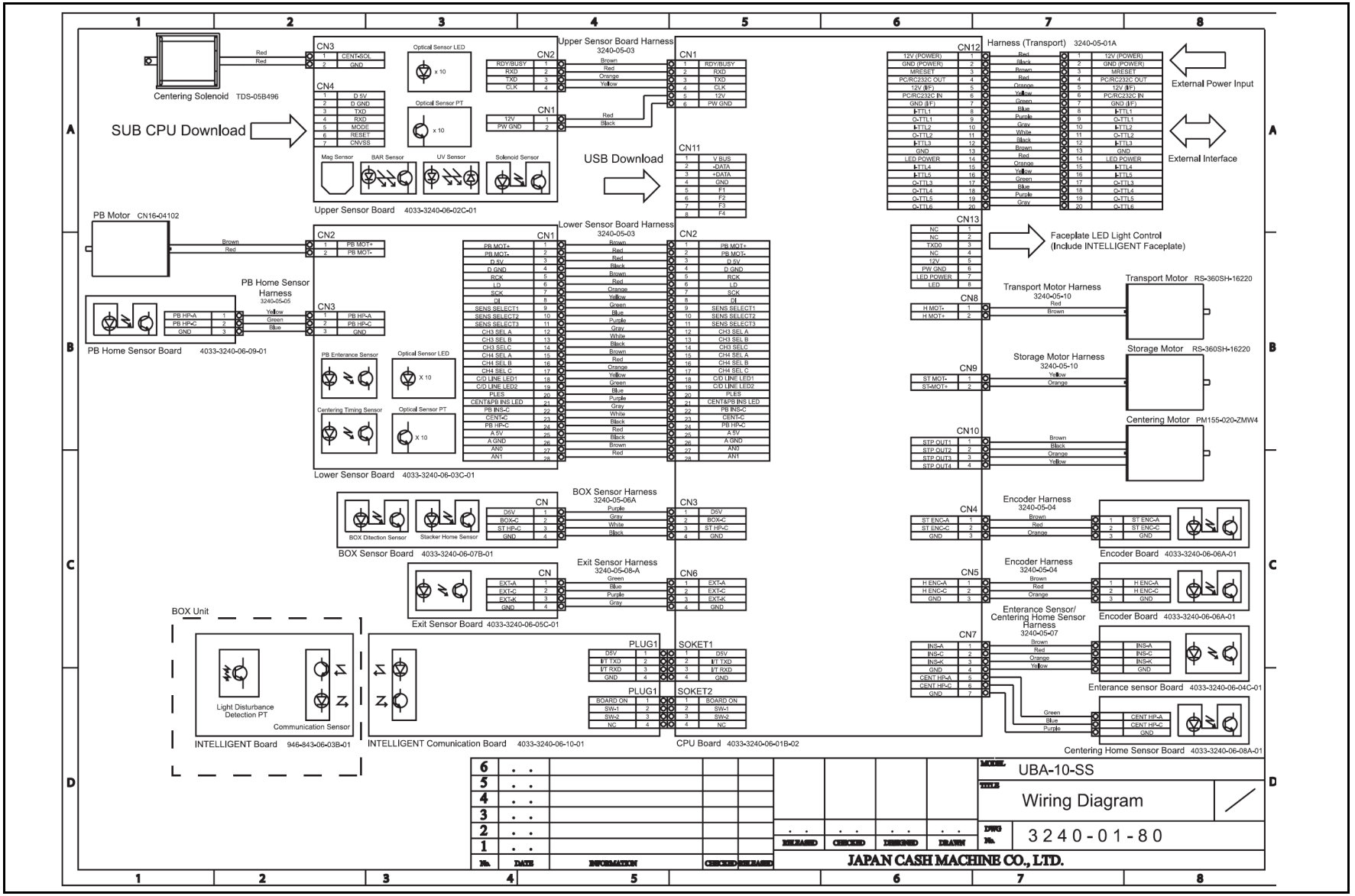


Figure 5-2 UBA-10-SS Bill Acceptor System Wiring Diagram

THIS PAGE INTENTIONALLY LEFT BLANK

NOTE: If you intend to print this document, please replace this page with the same page numbered 11x17 inch fan-fold page present at the end of this PDF file.

UBA System Wiring Diagram (Continued)

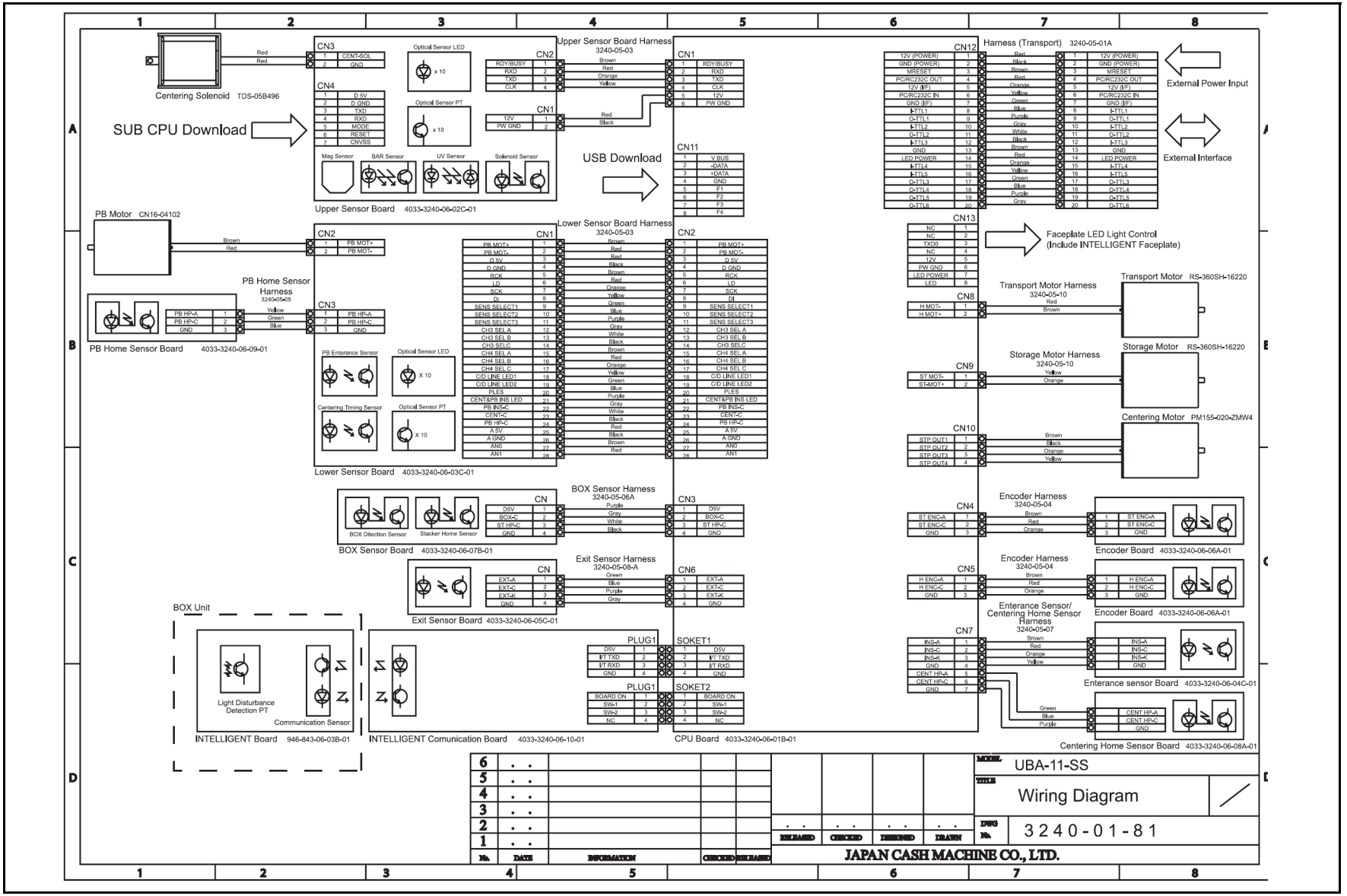


Figure 5-3 UBA-11-SS Bill Acceptor System Wiring Diagram

THIS PAGE INTENTIONALLY LEFT BLANK

NOTE: If you intend to print this document, please replace this page with the same page numbered 11x17 inch fan-fold page present at the end of this PDF file.

UBA System Wiring Diagram (Continued)

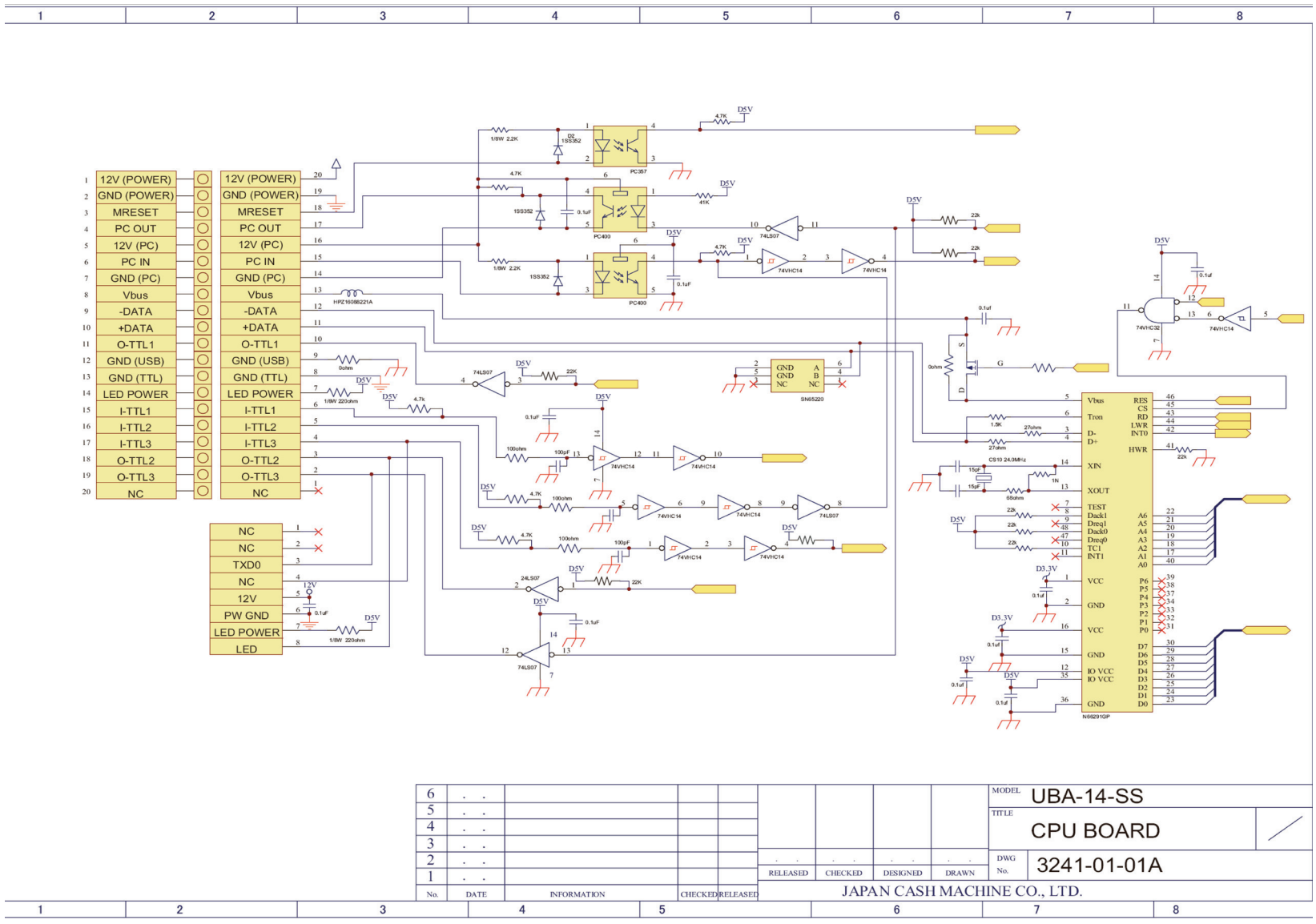


Figure 5-4 UBA-14-SS External Connector Interface Circuit Wiring Diagram

THIS PAGE INTENTIONALLY LEFT BLANK

NOTE: If you intend to print this document, please replace this page with the same page numbered 11x17 inch fan-fold page present at the end of this PDF file.

UBA System Wiring Diagram (Continued)

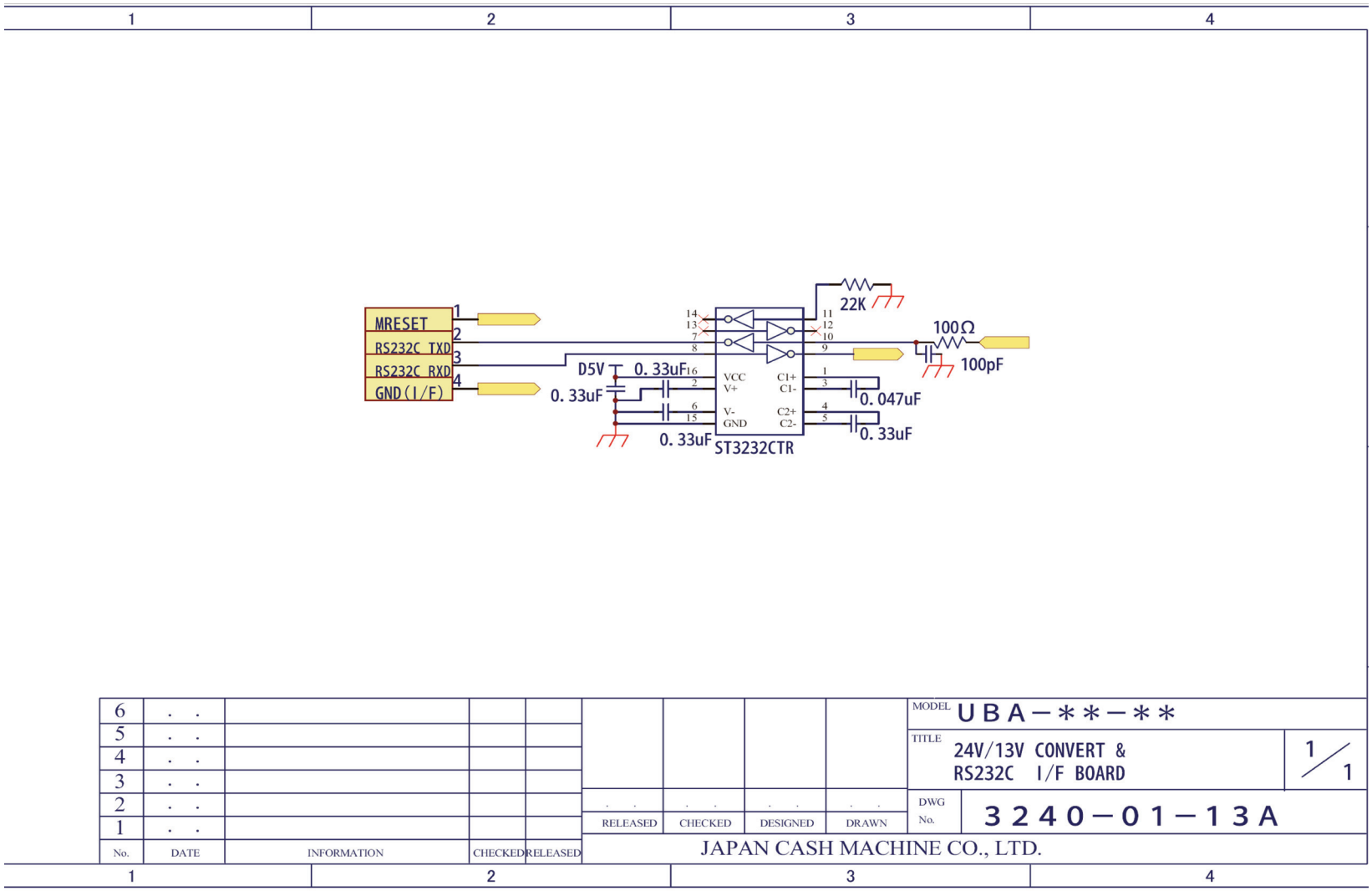


Figure 5-5 UBA-14-SS Optional Conversion Board Interface Circuit Wiring Diagram

THIS PAGE INTENTIONALLY LEFT BLANK

UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Section 6

6 PROGRAMMING, CALIBRATION, AND TESTING

This section provides Flash Memory Download Programming, Calibration, and Performance Testing instructions for the Universal Bill Acceptor Series (UBA). This section contains the following information:

- Workbench Tool Requirements
- Software Download Preparation
- Software Downloading Procedure
- Programming Instructions
- Calibration Procedures
- Performance Tests

Workbench Tool Requirements

The following tools are required to perform a workbench software download (See Figure 6-2):

- JCM Universal Bill Acceptor (UBA)
- JCM External Power Supply (Part No. 701-000148) or equivalent
- PC containing a USB port (OS: Windows 2000/XP)
- USB Cable (A type Male to B Type Male) (See Figure 6-1).
- The latest .ZIP compressed UBA Download Program (V1.11 or later).

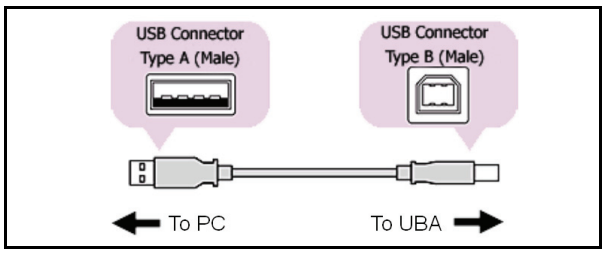


Figure 6-1 Download USB Cable Requirement

Software Download Preparation

The following instructions describe how to decompress and store a downloaded program onto a personal computer (PC) for eventual installation into the Universal Bill Acceptor:

1. Refer to the Figure 6-2 interconnection diagram to properly connect the various cables and wiring harnesses to the UBA.

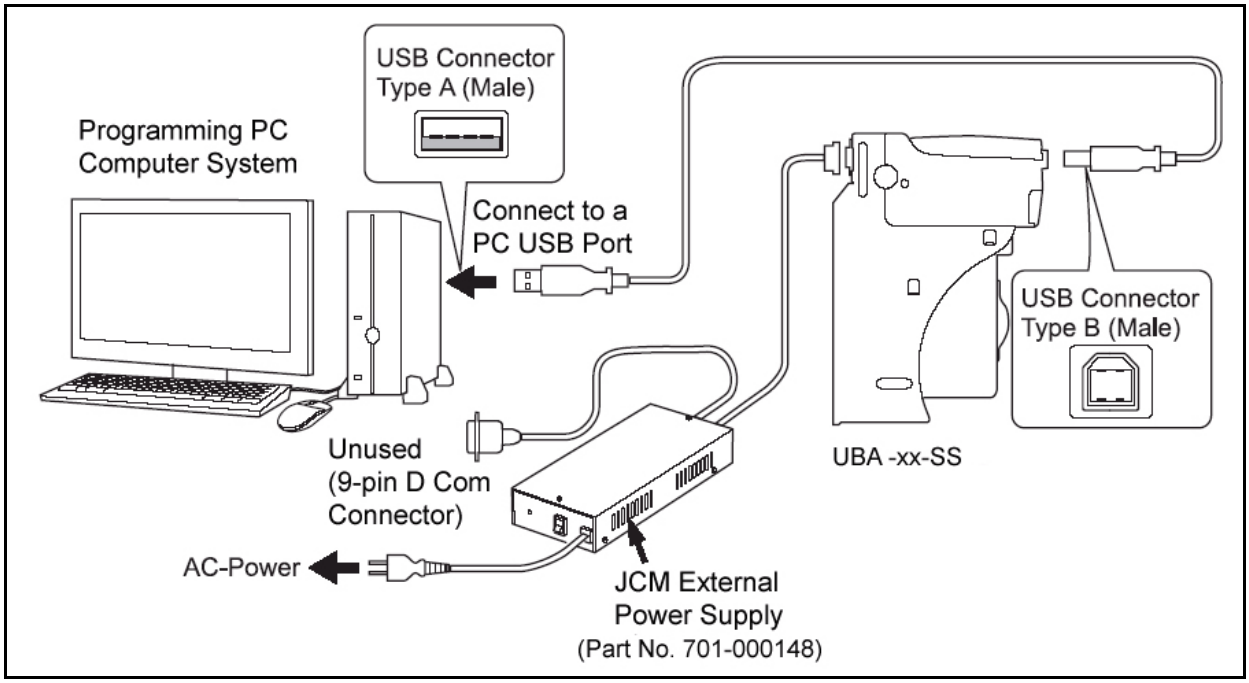


Figure 6-2 Required Download Workbench Tools

Warning: Make sure the External Power Supply is OFF when connecting the harness to the UBA. Failure to do so may cause electrical shock and/or permanent damage to the equipment.

2. Figure 6-3 illustrates the UBA's DIP Switch, LED indicators and external port locations.

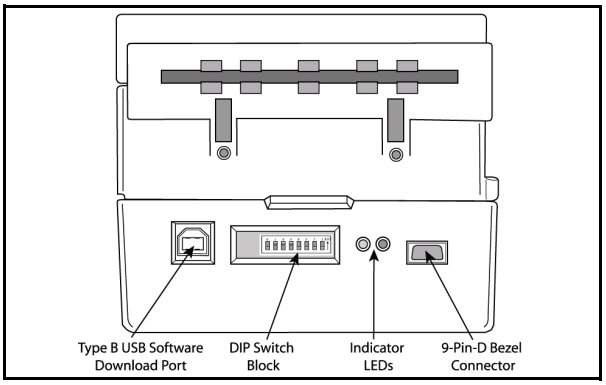


Figure 6-3 UBA DIP Switch & Port Location

Software Downloading Procedure

Program Installation

The following PC initialization functions are required prior to downloading software.

1. Create and name a new folder on your PC.
2. Decompress the.ZIP file and save the expanded file program contents in the file folder just created.
3. Open the folder and Double-Click on "`Setup.exe`" of the expanded UBA Program.
4. The **UBA Downloader** screen shown in Figure 6-4 will appear. Click the Next > button to continue the installation.

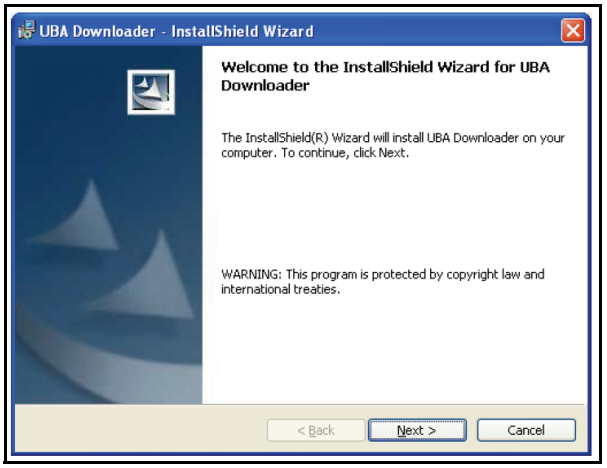


Figure 6-4 Initial Setup Screen

5. Enter a User Name: and Organization: in the fields displayed by the **Customer Identification Screen** and click the Next > button as shown in the Figure 6-5 screen.

NOTE: One of two selections for a application installer must also be made below the information fields.

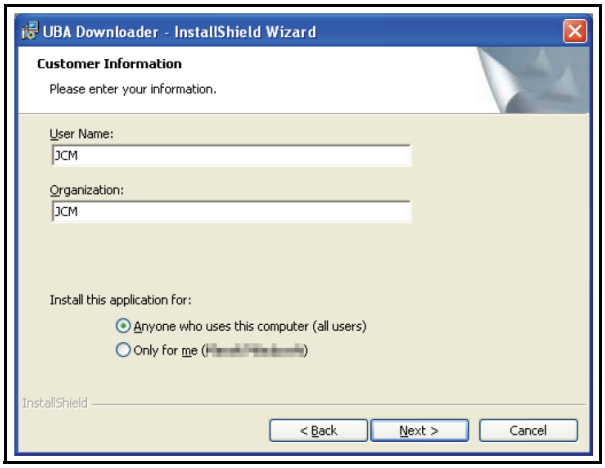


Figure 6-5 Customer Information Screen

6. Confirm the folder name given during Step 1 to install the UBA Downloader and click the Next > button as shown in the Figure 6-6 Destination Folder screen.

NOTE: If the folder name given during Step 1 does not appear under the Install UBA Downloader To: *line, click on the* Change... *button and find the correct folder on the PC.*

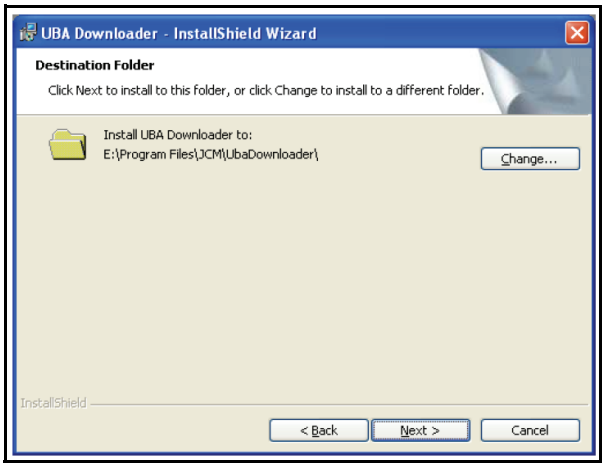


Figure 6-6 Destination Folder Screen

7. The Ready to Install the Program screen shown in Figure 6-7 will now appear. If the folder selection and customer information is correct, click the Next > button to start the installation procedure. If not, click < Back and re-enter the information until correct.

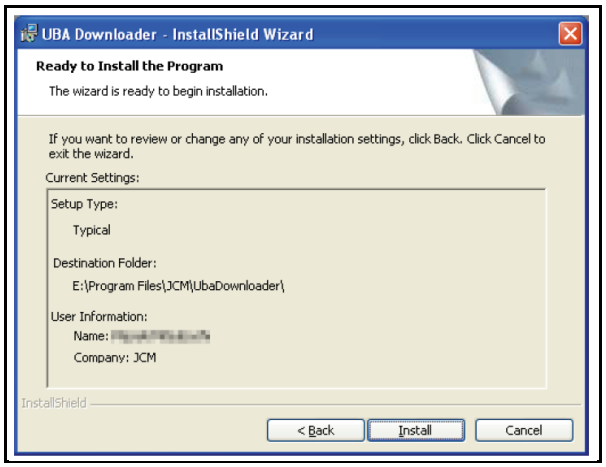


Figure 6-7 Ready to Install Screen

8. During the installation of the UBA Downloader the Figure 6-8 Installing UBA Downloader screen will appear containing a left-to-right Status: bar graph occurring at screen center. When the install is finished, click the Next > button to complete the installation.

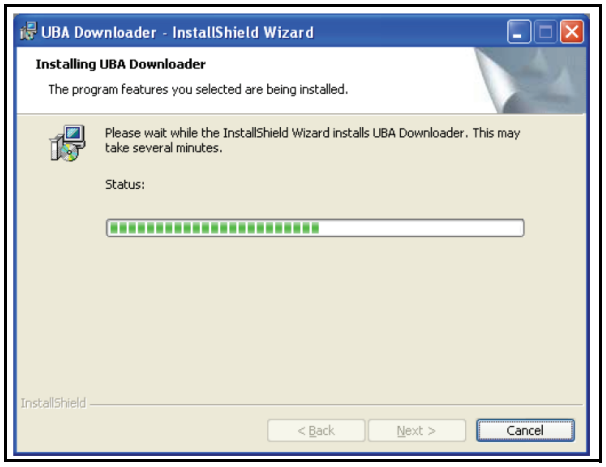


Figure 6-8 Software Installing Screen

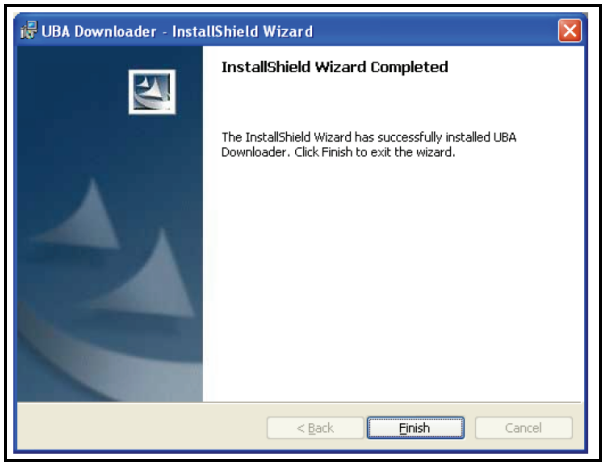


Figure 6-9 Installation Finished Screen

9. The Figure 6-9 screen appears when the software installation is complete. Click the Finish button to exit the install wizard.

Programming Instructions

Once the UBA Software Program has been installed onto the PC computer, use the following steps to install the information into the UBA Flash Memory:

1. Set all UBA Front Panel DIP Switches to OFF, and
2. Supply power to the UBA.
3. Start the UBA Downloader Application from your PC's Start → Program → [JCM named] file folder.
   When the application opens, the Figure 6-10 screen will appear

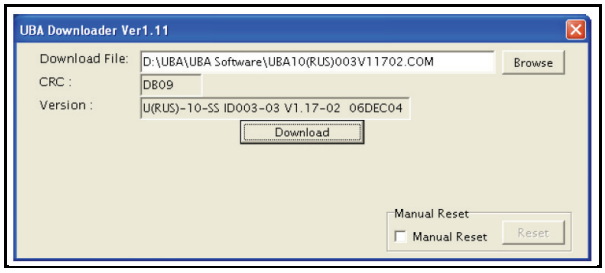


Figure 6-10 Initial Program Installation Screen

4. Click on the Browse button and select the software on the PC screen (See Figure 6-11) to be downloaded into the UBA flash memory.

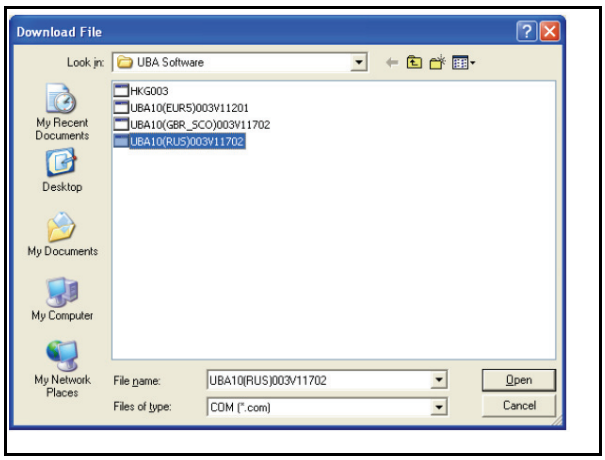


Figure 6-11 PC Browse Screen

Then click the DOWNLOAD Download button at screen center to begin the software download.

5. When the Flash ROM download has completed, Click the OK button to close the UBA Downloader file (See Figure 6-12).

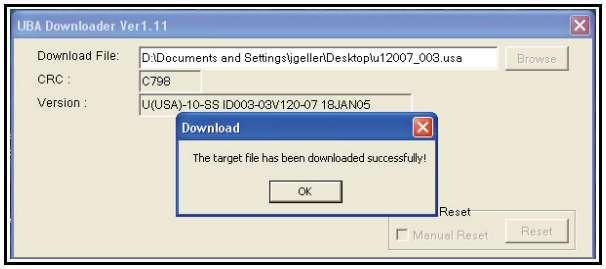


Figure 6-12 Installation Complete Screen

NOTE: Once the software is downloaded into the UBA, it is recommended that bill acceptance be tested using the new software to confirm that the download was successful. (See Section 6 regarding the Bill Acceptance Test).

Calibration Procedures

Calibration Description

Calibration sets a starting reference point for all optical and magnetic sensors within the unit.

This task can be accomplished at the host unit or at a workbench.

Calibration Tool Requirements

The following equipment and tools are required for workbench calibration: (See Figure 6-13).

- JCM Universal Bill Acceptor (UBA)
- JCM External Power Supply (Part No. 701-000148) or equivalent
- PC containing a USB port (OS: Windows 2000/XP)
- White Reference Paper (Part No. 107724)

NOTE: For details involving jumper settings, refer to Section 2 regarding Jumper Configurations.

- Black Reference Paper (Part No. 107725)
- UV Reference Paper (Part No. 110664)
- Mag Tool (MG-03, Part No. 501-000042)
- Mag Head Test Board (4033-MC-01-01, Part No. 108137)
- Adjustment Program (`ADJTOOL_V1.06-4.exe`, `comm.ini` and `adj.ini`).

When to Calibrate

1. After a Bill Acceptor component has been disassembled for repair.
2. After a sensor board has been replaced.

Initial Settings

1. Make sure that the UBA jumper setting are in the photo-coupler isolation position.
2. Connect the two External Power Supply Communications cables between the UBA and PC Serial Port respectively (See Figure 6-13).
3. Set UBA Front Panel DIP Switch 8 to ON, and supply power to the External Power Supply unit.
4. Create and name a new folder on your PC
5. Save the decompressed `"ADJTOOL_Vxxx.exe","comm.ini"` and `"adj.ini"` adjustment programs in the newly created folder.

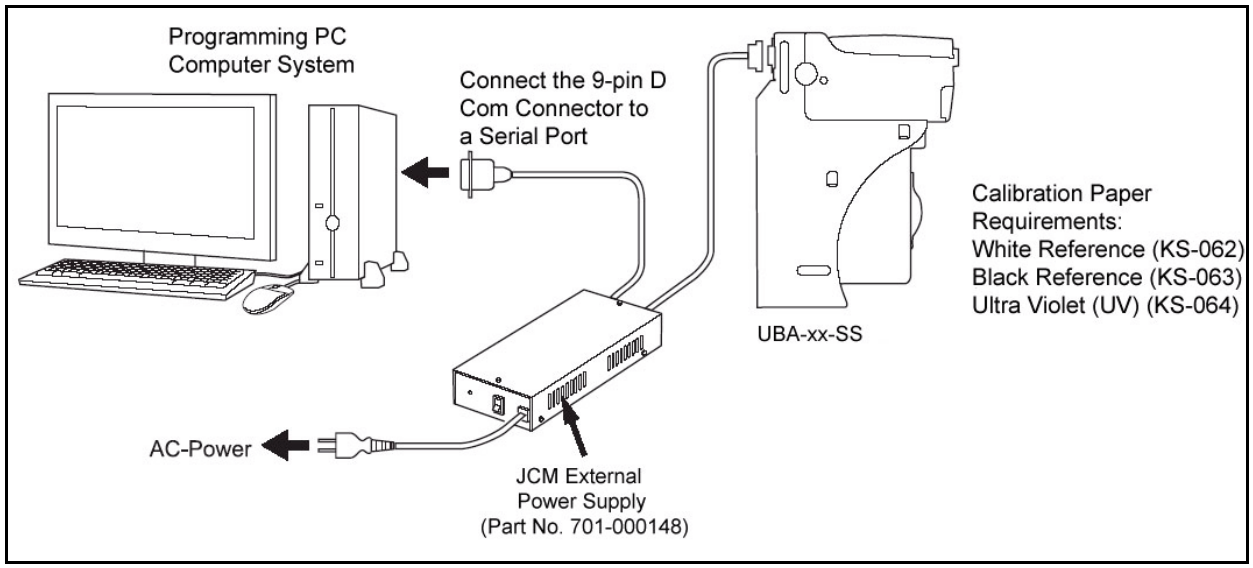


Figure 6-13 Required Calibration Workbench Tools

Adjustment Procedure

1. Double click on the latest version of the `UBA_ADJTOOL_ Vxxxx.exe`. application and the Figure 6-14 screen will appear.

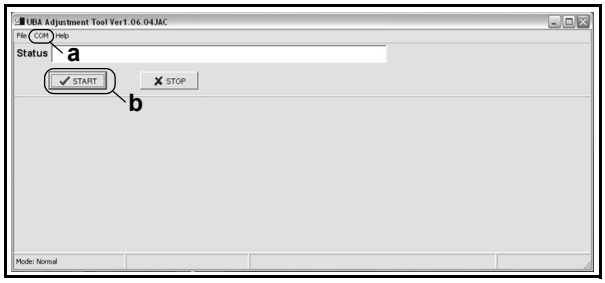


Figure 6-14 Opened UBA_ADJTOOL File Screen

2. Check that the PC's COM Port number being used agrees with the port to which the UBA is connected by clicking on the `COM` pull-down tab (See Figure 6-14 a) and selecting "RS232C".
3. In the Dialog Box that appears (See Figure 6-15), select the COM Port to which the UBA is connected, and click ✓Select (See Figure 6-15).

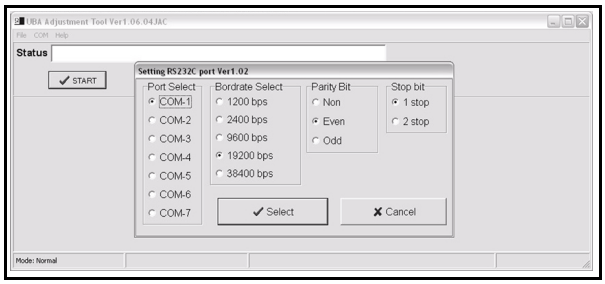


Figure 6-15 COM Port Selection Screen

4. Turn UBA DIP Switch No.8 to **ON**, apply power to the UBA, then turn DIP Switch No. 8 **OFF**.
5. Click ✓START to begin the UBA Adjustment program (See Figure 6-14 b). The automatic motor speed check test will run and a screen Dialog Box will then ask for the "White" Reference paper to be set (See Figure 6-16).

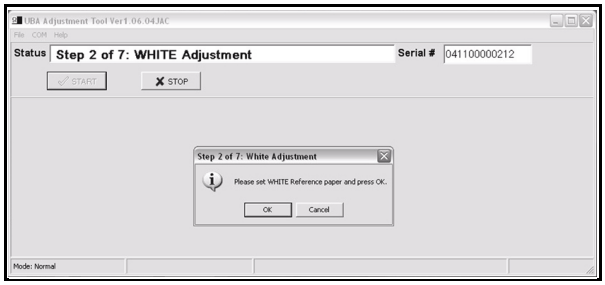


Figure 6-16 White Reference Test Screen

6. Open the UBA's Upper Guide, Insert the White Reference paper (See Figure 6-17 ①), firmly close the guide (See Figure 6-17 ②) and press OK.

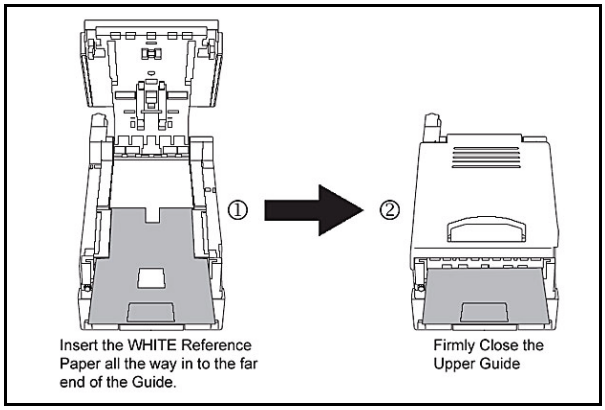


Figure 6-17 White Test Paper Insertion Request

7. After a short period, the screen Dialog Box will indicate "Black Adjustment" (See Figure 6-18).

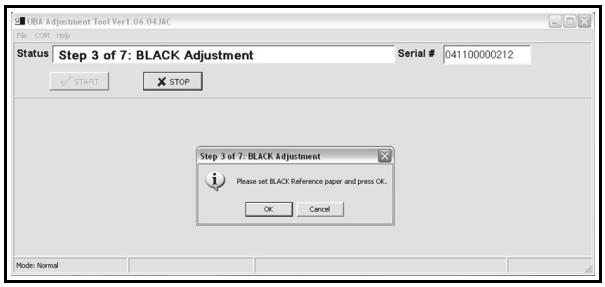


Figure 6-18 Black Reference Test Screen

Open the UBA's Upper Guide, remove the White Reference paper and insert the Black Reference paper (See Figure 6-19 ①), firmly close the guide (See Figure 6-19 ②) and click OK again.

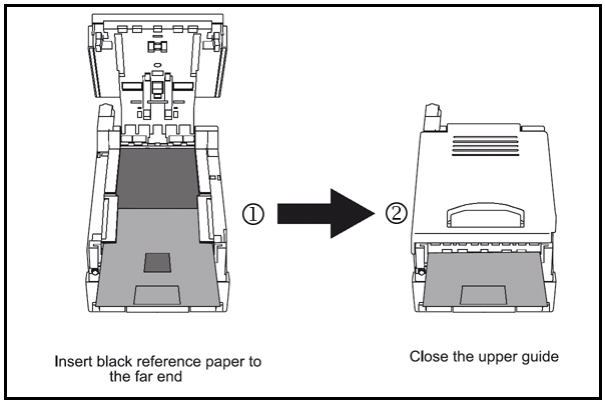


Figure 6-19 Black Test Paper Insertion Request

8. Repeat the White and Black Reference paper steps as instructed on the screen until the

"UV Adjustment" screen is displayed (See Figure 6-20). Open the UBA Upper Guide, remove the existing test Reference paper and insert the UV Reference paper in its place and click OK again.

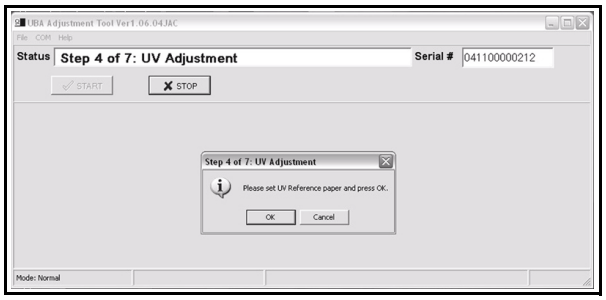


Figure 6-20 Set UV Reference Test Screen

9. Insert the UV Reference paper so it covers the white plastic area at the rear center of the lower Transport path (See Figure 6-21 ①), and firmly close the Upper Guide as shown in Figure 6-21 ② and click OK again.

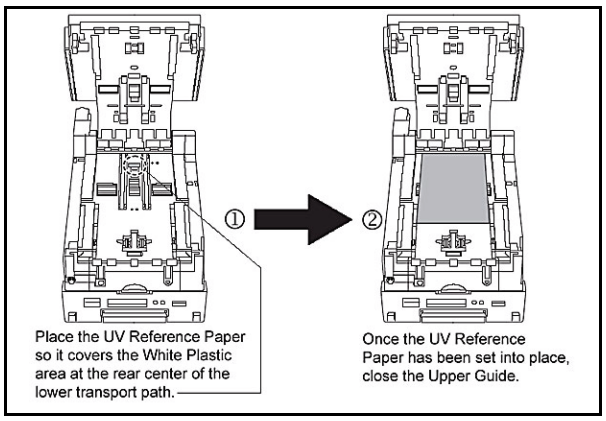


Figure 6-21 UV Test Paper Insertion Request

CAUTION: Do not insert the UV Reference paper past the curved area of the Transport, an error will occur if the UV Reference paper is inserted in too far.

10. When the "Adjustment Without Reference Paper" screen appears, open the Upper Guide and remove the UV Reference Paper, then firmly close the Upper Guide and click on OK again (See Figure 6-22).
11. When the White Adjustment Screen reappears, insert the White Reference paper and again click OK.
12. When the adjustment of the Optical sensors is complete the "MAG HEAD Adjustment" screen will then appear (See Figure 6-23).

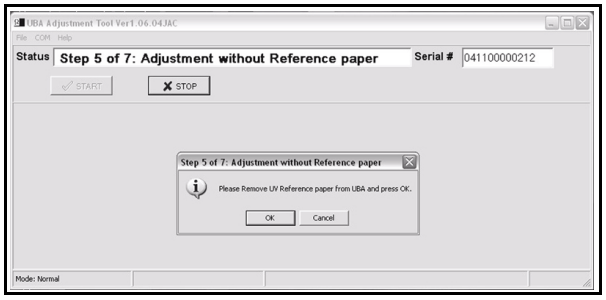


Figure 6-22 Remove UV Reference Test Screen

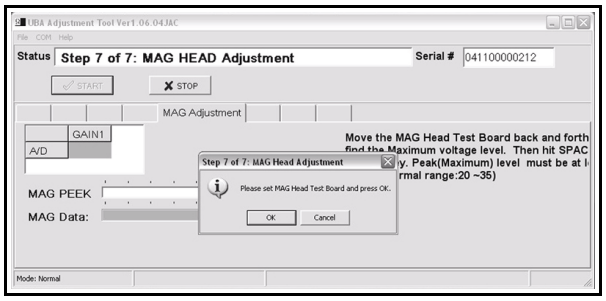


Figure 6-23 MAG HEAD Adjustment Screen

13. Insert the Mag Head Test Board into the UBA. Set the Mag Head Test Board so the middle line is located just above the roller on the lower tray, then close the guide firmly and click on OK.
14. Move the Mag Head Test Board back and forth, in and out slightly, to find the peak value. Find the position where the "GAIN1" value enters a range within -5P in relation to the peak value, then press the "Space" bar.

NOTE: The average peak value is approximately 20P to approximately 35P. Use this value only for reference and make sure to find the peak value using your particular Acceptor.

15. When the MAG HEAD Adjustment is complete, the "Adjustment Successful!" screen will be displayed (See Figure 6-24).

Figure 6-24 MAG HEAD Adjustment Screen

16. Click OK and this calibration process will be complete.

UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Section 7

7 EXPLODED VIEWS AND PARTS LISTS

This section provides product exploded views and parts lists for the Universal Bill Acceptor Series (UBA). This section contains the following information:

- Entire UBA Unit View and Parts List
- Acceptor Unit View and Parts
- Frame Unit View and Parts
- Cash Box Unit View and Parts

Entire UBA Unit View and Parts

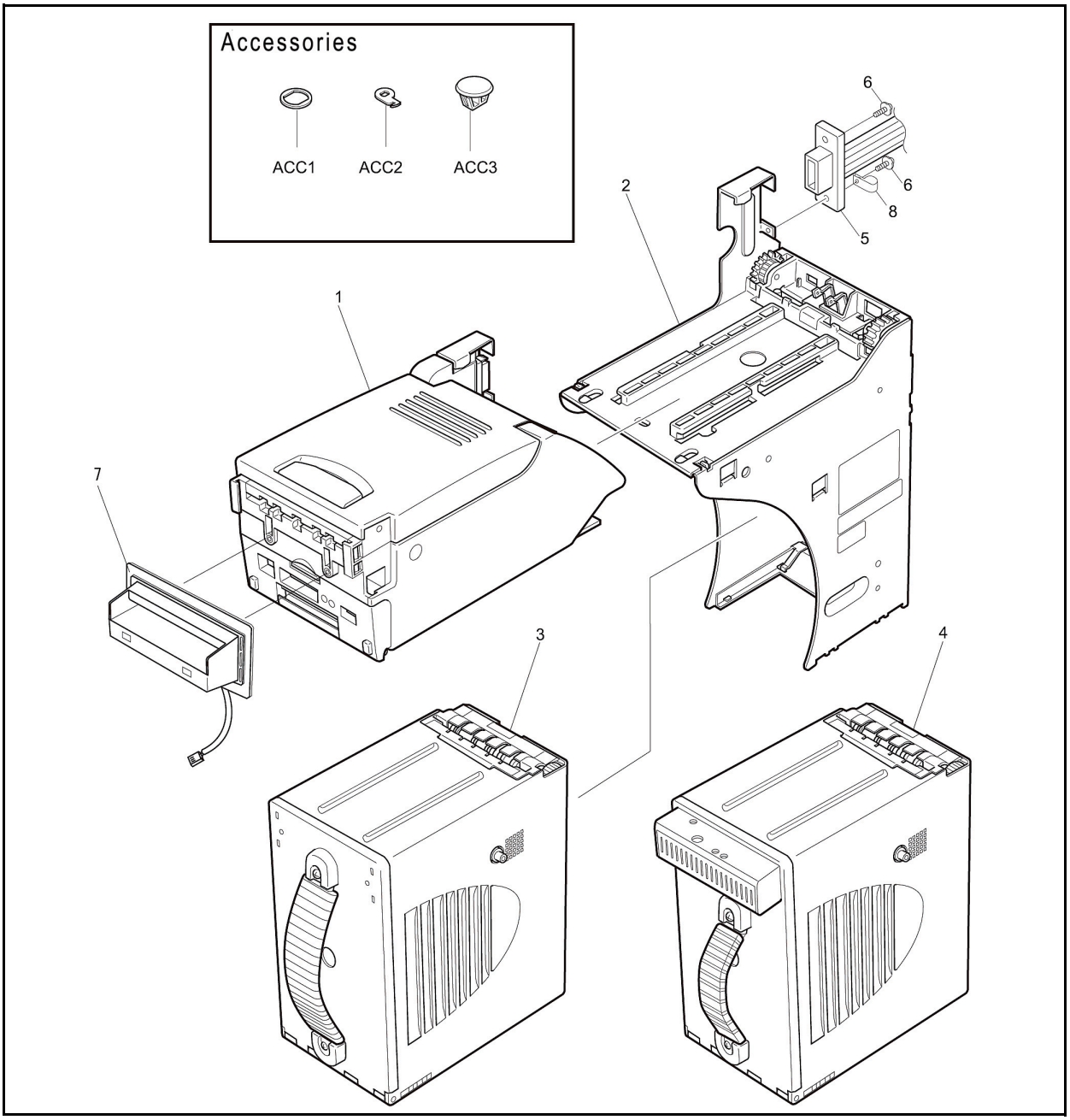


Figure 7-1 Entire UBA Unit Exploded View

Entire UBA Unit Parts List

Table 7-1: Entire UBA Unit Parts List

Ref Nº.	EDP Number	Part Nº.	Description	Remark
1	116216		UBA TRANSPORT UNIT R	For UBA-10/11/12 (CPU Board NOT included.)
	117754		UBA TRANSPORT UNIT (USB I/F applicable) R	For UBA-14 (CPU Board included.)
2	106446		UBA FRAME UNIT HK R	
3	116086		UBA-SS CASH BOX R	Standard Cash Box
4	119588		UBA-SS CASH BOX IT R	Intelligent Cash Box
5	060455	843-05-02A	INTERFACE CONNECTOR R	For UBA-10/11/12, OEM Interface
	062897	843-05-03A	INTERFACE CONNECTOR R	For UBA-10/11/12, ID-003 Interface
	117623	3241-05-01	INTERFACE CONNECTOR R	For UBA-14, OEM Interface without SL-5N
	121655	3241-05-01	INTERFACE CONNECTOR R	For UBA-14, OEM Interface with SL-5N
	120120	3241-05-03	INTERFACE CONNECTOR R	For UBA-14, OEM Interface with SL-5N
6	104014		3 x 12 WASHER/SCREW	
7	113944		UBA FACE UNIT A	
	113945		UBA FACE UNIT 1	
	113946		UBA FACE UNIT 2	
8	117752	SL-5N	NYLON CLIP	(For USB-14 I/F Only)
ACC1	059086	0943PT0406A	KEY SPACER R	
ACC2	103158	4044PT0102C	PLATE LOCK KEY	
ACC3	104014	4044RE0123	KEY HOLE CAP	

Acceptor Unit Exploded Views

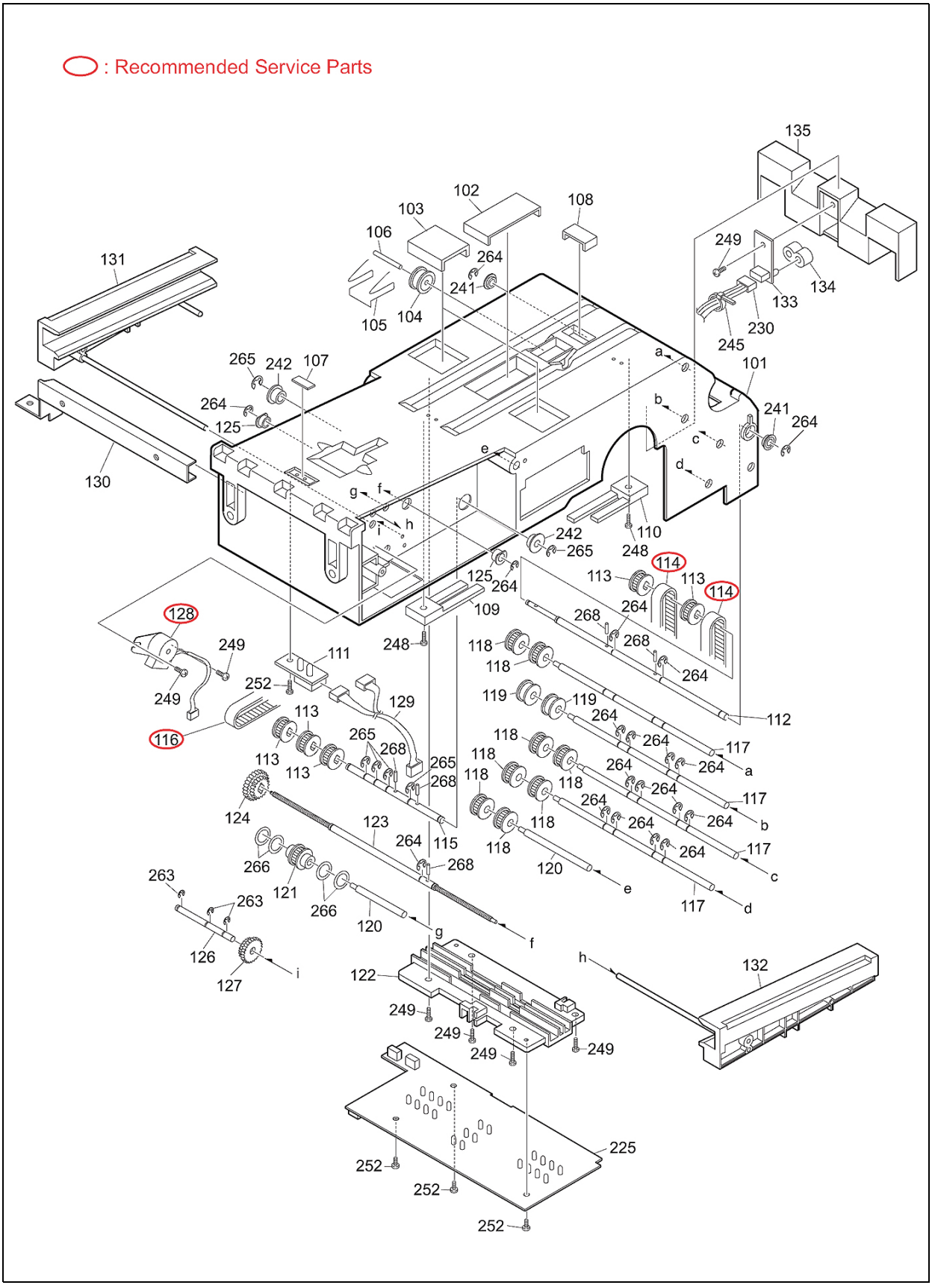


Figure 7-2 UBA Acceptor Unit Exploded View (Part 1)

UBA Acceptor Unit Exploded Views (Continued)

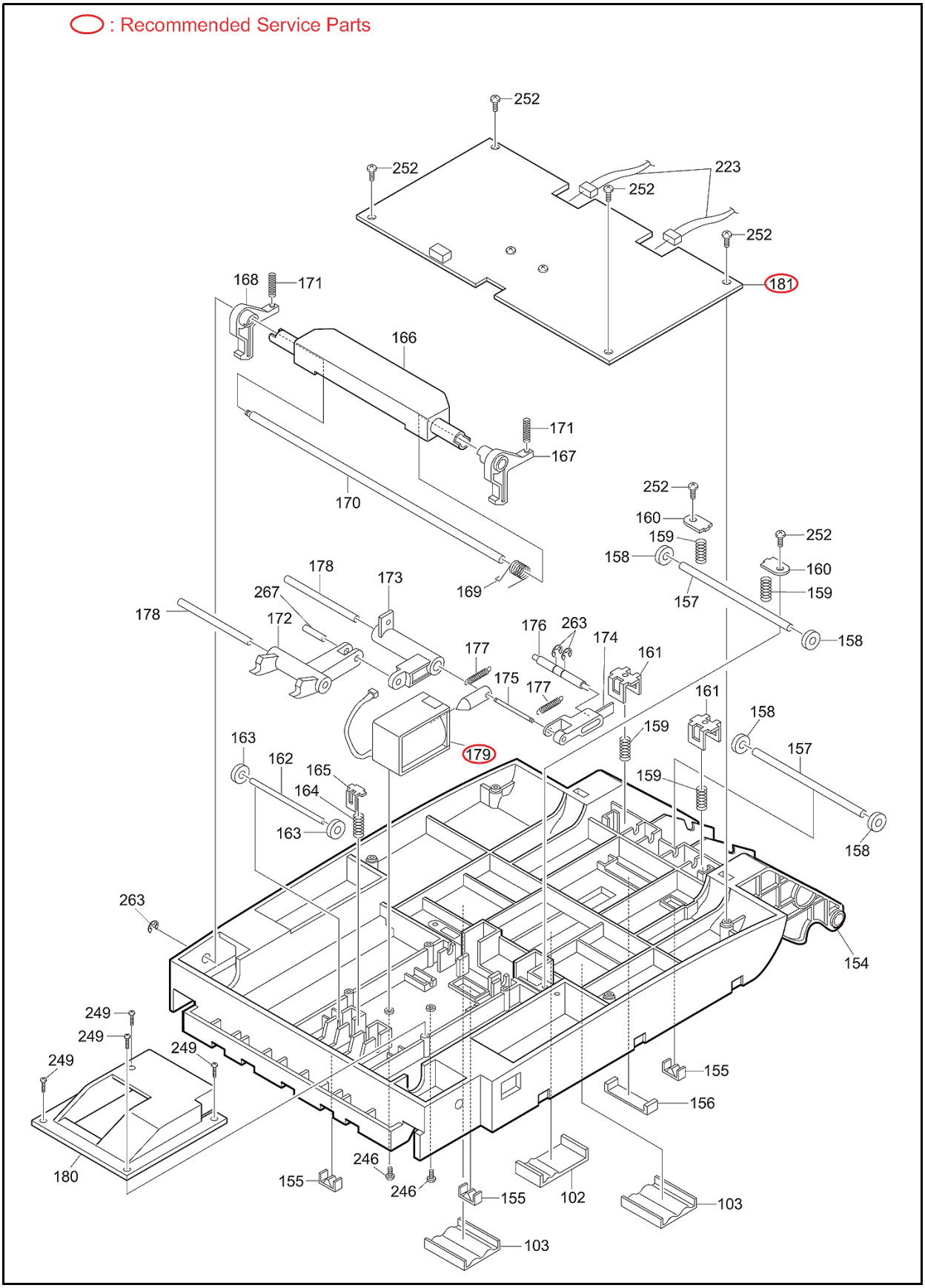


Figure 7-3 UBA Acceptor Unit Exploded View (Part 2)

UBA Acceptor Unit Exploded Views (Continued)

: Recommended Service Parts

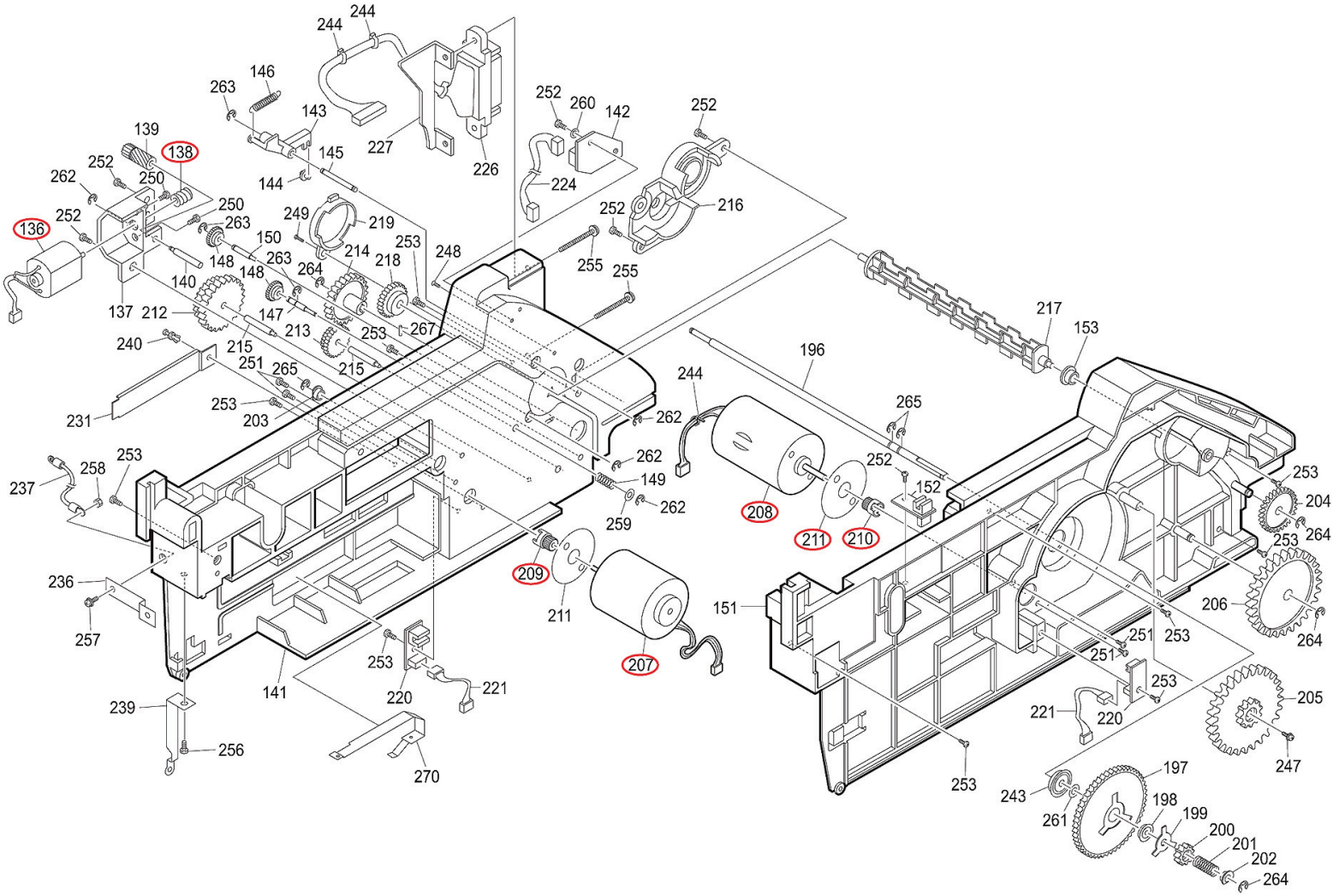


Figure 7-4 UBA Acceptor Unit Exploded View (Part 3)

UBA Acceptor Unit Exploded Views (Continued)

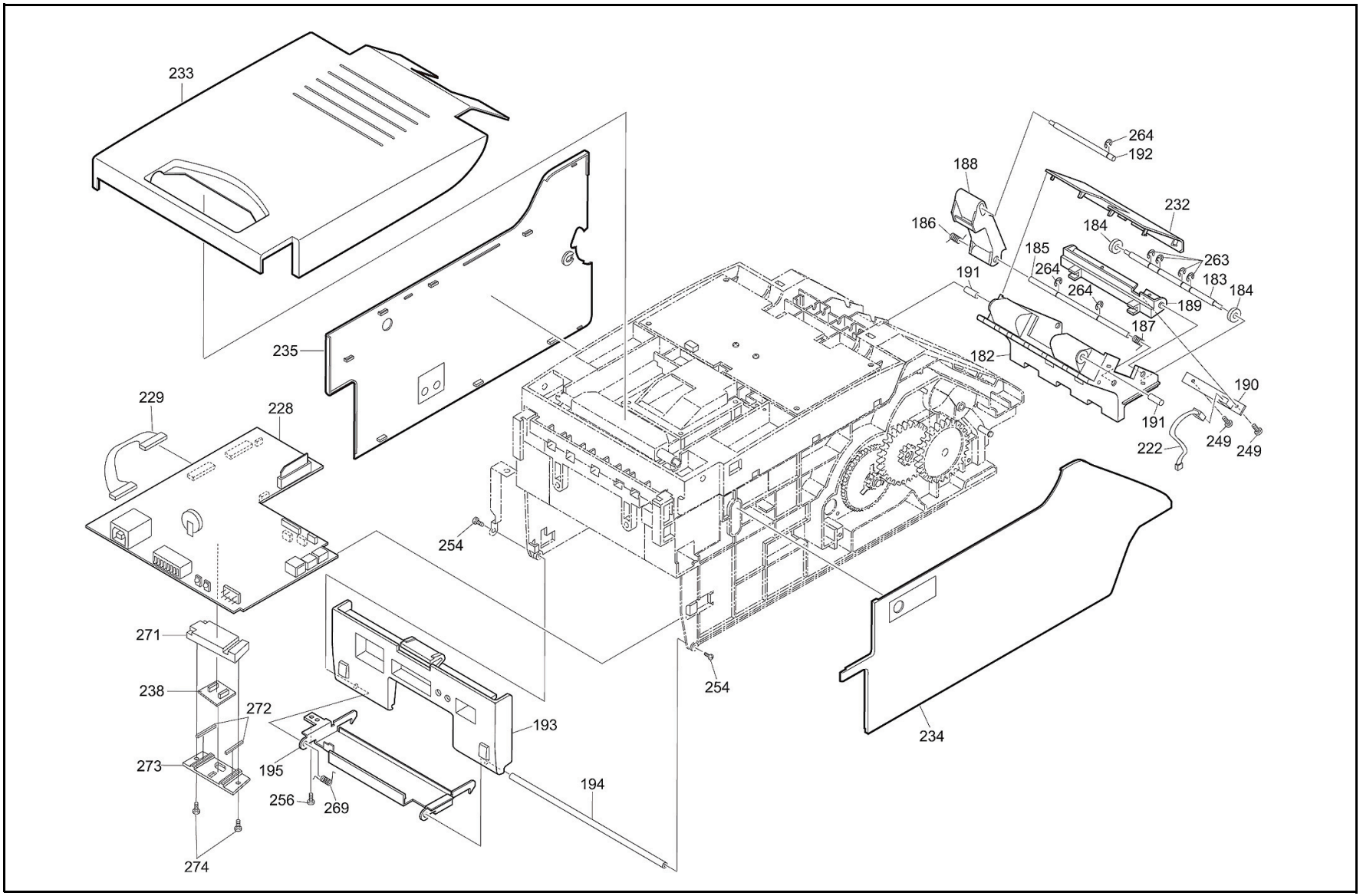


Figure 7-5 UBA Acceptor Unit Exploded View (Part 4)

UBA Acceptor Unit Parts List

Table 7-2: UBA Acceptor Unit Parts List

Ref Nº.	EDP Number	Part Nº.	Description	Remark
101	102752	4033RE0103B	UBA TRANSPORT GUIDE C	
102	102775	4033RE0106A	UBA SENSOR LENS A	
103	102774	4033RE0107A	UBA SENSOR LENS B	
104	102974	4033RE0153	UBA MAG ROLLER	
105	063353	0638KS0101	MAG SPRING	
106	102997	4033SH0109	MAG ROLLER PIN	
107	102764	4033RE0117	UBA SENSOR COVER	
108	102776	4033RE0127	UV PARTNER	
109	102773	4033RE0108	LIGHT GUIDE A	
110	102772	4033RE0109	LIGHT GUIDE B	
111	105229	4033-3240-06-04C-01	ENTRANCE SENSOR	
112	103006	4033SH0119	TRANSPORT DRIVE SHAFT	
113	091168	4014RE0125	PULLEY D	
114	104296	40S1.5M365UV	TIMING BELT	Recommended Service Part
115	103003	4033SH0116	TRANSPORT SHAFT 2	
116	104297	40S1.5M137UV	TIMING BELT	
117	103007	4033SH0120	PULLEY SHAFT	
118	091169	4014RE0126	TRANSPORT PULLEY	
119	091166	4014RE0123	PULLEY ROLLER	
120	103009	4033SH0124	PULLEY SHAFT 2	
121	102783	4033RE0134	PULLEY MOVER P	
122	102779	4033RE0130	LOWER SENSOR SPACER	
123	103983	4033SC0101	UBA MOVER SCREW	
124	102970	4033RE0149	UBA FINAL MOVER GEAR	
125	091171	4014RE0127A	MOVER BEARING	
126	102999	4033SH0112	MOVER GEAR SHAFT	
127	102969	4033RE0148	UBA 2ND MOVER GEAR	
128	103923	PM15S-020-ZQA4	CENTERING MOTOR ASSY.	Recommended Service Part
129	103878	3240-05-07	ENTRANCE SENSOR/CENTER-ING HOME SENSOR HARNESS	
130	106068	4033PT0107	GROUND PLATE 1	
131	102763	4033RE0118	UBA MOVER GUIDE 1	
132	102762	4033RE0119	UBA MOVER GUIDE 2	
133	105230	4033-3240-06-05C-01	EXIT SENSOR	
134	102782	4033RE0133	FRONT OUTPUT SENSOR COVER	
135	102761	4033RE0120	REAR SENSOR GUIDE	
136	104072	CN16-04102(UBA)	ANTI-PULLBACK MOTOR ASSY.	Recommended Service Part
137	102785	4033RE0137	ANTI-PULLBACK MOTOR COVER	

Table 7-2: UBA Acceptor Unit Parts List (Continued)

Ref Nº.	EDP Number	Part Nº.	Description	Remark
138	091193	4014RE0138	ROLLER GEAR MOTOR	Recommended Service Part
139	102971	4033RE0150	2ND ROLLER GEAR COVER	
140	103004	4033SH0117A	HORIZONTAL WORM GEAR SHAFT	
141	102753	4033RE0102F	UBA TRANSPORT GUIDE B	
142	105234	4033-3240-06-09-01	ANTI-PULLBACK HOME SENSOR	
143	107846	4033RE0124B	ROLLER GUIDE HOME LEVER	
144	102976	4033RE0155	ROLLER GUIDE HOME ROLLER	
145	103001	4033SH0114A	ROLLER LEVER SHAFT	
146	103023	4033TS0102	ANTI-PULLBACK LEVER SPRING	
147	103002	4033SH0115	ANTI-PULLBACK CLUTCH SHAFT	
148	102972	4033RE0151	ROLLER GEAR CLUTCH	
149	103017	4033CS0105	ANTI-PULLBACK CLUTCH SPRING	
150	103010	4033SH0125A	ROLLER GEAR SHAFT	
151	102754	4033RE0101E	UBA TRANSPORT GUIDE A	
152	105233	4033-3240-06-08A-01	CENTERING HOME SENSOR	
153	102979	4033RE0159	UBA ROLLER GUIDE BEARING	
154	102751	4033RE0104A	UBA TRANSPORT GUIDE D	
155	091079	4014RE0155A	SQUARE PRISM 30	
156	102981	4033RE0161	UV COVER	
157	103000	4033SH0113	TRANSPORT ROLLER SHAFT	
158	091161	4014RE0121A	TRANSPORT ROLLER TR1	
159	108996	4033CS0106	UBA TRANSPORT SPRING	
160	103833	4033PT0102	SPRING CLIP	
161	091068	4014RE0144A	ROLLER ROCKER SPRING	
162	102996	4033SH0108	MOVER ROLLER SHAFT	
163	091159	4014RE0120A	MOVER ROLLER GUIDE	
164	103014	4033CS0101	UBA MOVER SPRING	
165	102977	4033RE0156	SPRING STOPPER	
166	102768	4033RE0113A	UBA OPENING LEVER	
167	102771	4033RE0110	OPENING LATCH RIGHT	
168	102770	4033RE0111	OPENING LATCH LEFT	
169	103020	4033KS0103	OPENING LEVER SPRING	
170	102993	4033SH0104	OPENING LATCH SHAFT	
171	103016	4033CS0103	OPENING LATCH SPRING	
172	102756	4033RE0125	UPPER ROLLER LEVER	
173	102755	4033RE0126	SOLENOID LINK LEVER	
174	102758	4033RE0123	UPPER ROLLER SLIDER	
175	103013	4033BE0101	MOVER BEAM SHAFT	

Table 7-2: UBA Acceptor Unit Parts List (Continued)

Ref Nº.	EDP Number	Part Nº.	Description	Remark
176	102995	4033SH0107	SLIDER SHAFT	
177	103022	4033TS0101	SOLENOID SPRING	
178	102998	4033SH0111	SOLENOID LEVER SHAFT	
179	104071	TDS-05B-496	SOLENOID ASSY.	Recommended Service Part
180	102760	4033RE0121	SOLENOID BASE	
181	105226	4033-3240-06-02C-01	UPPER SENSOR BOARD	Recommended Service Part
182	102750	4033RE0105	UBA TRANSPORT GUIDE E	
183	102991	4033SH0102	REAR GUIDE ROLLER SHAFT	
184	102975	4033RE0154	UBA TRANSPORT ROLLER	
185	102992	4033SH0103	REAR GUIDE SPRING SHAFT	
186	103018	4033KS0101	REAR GUIDE ROLLER SPRING A	
187	103019	4033KS0102	REAR GUIDE ROLLER SPRING B	
188	102766	4033RE0115	WIRE TUNNEL	
189	102781	4033RE0132	CASH BOX SENSOR BOARD COVER	
190	105232	4033-3240-06-07B-01	CASH BOX SENSOR	
191	102990	4033SH0101	GUIDE FULCRUM PIN	
192	102994	4033SH0106	TUNNEL SHAFT	
193	102767	4033RE0114C	FRONT COVER	
194	103008	4033SH0122	FRONT DOOR SHAFT	
195	103832	4033PT0101C	UBA TRANSPORT LATCH	
196	103005	4033SH0118	STACKER CLUTCH SHAFT	
197	102793	4033RE0144	2ND STACKING GEAR	
198	103610	OWC612GXLZ	UNI-DIRECTIONAL CLUTCH	
199	103836	4033PT0105	CLUTCH PLATE	
200	102792	4033RE0143	STACKING GEAR CLUTCH	
201	103015	4033CS0102	CLUTCH SPRING	
202	104061	4033RE0162	CLUTCH SPRING STOPPER	
203	102978	4033RE0158A	TRANSOPORT BEARING LIMIT	
204	102968	4033RE0147	FINAL STACKING GEAR	
205	102794	4033RE0145	3RD STACKING GEAR	
206	102967	4033RE0146	4TH STACKING GEAR	
207	106441	4033-3240-05-09-01	TRANSPORT MOTOR	Recommended Service Part
208	106443	4033-3240-05-10-01	STACKING MOTOR	Recommended Service Part
209	102786	4033RE0138	TRANSPORT MOTOR GEAR	Recommended Service Part
210	102791	4033RE0142	STACKING MOTOR GEAR	Recommended Service Part
211	102989	4033PE0101	MOTOR SPACER	Recommended Service Part
212	102787	4033RE0139A	2ND TRANSPORT GEAR	

Table 7-2: UBA Acceptor Unit Parts List (Continued)

Ref Nº.	EDP Number	Part Nº.	Description	Remark
213	102788	4033RE0140A	3RD TRANSPORT GEAR	
214	102790	4033RE0141A	FINAL TRANSPORT GEAR	
215	108154	4033SH0126	GEAR PIN	
216	102784	4033RE0136	TRANSPORT GEAR COVER	
217	102765	4033RE0116	UBA ROLLER GUIDE	
218	102973	4033RE0152	ROLLER GEAR GUIDE	
219	102980	4033RE0160	ROLLER GUIDE CAP	
220	105231	4033-3240-06-06A-01	ENCODER SENSOR	
221	103875	3240-05-04	ENCODER HARNESS	
222	103877	3240-05-06A	CASH BOX SENSOR HARNESS	
223	103873	3240-05-02A	UPPER SENSOR BOARD HARNESS	
224	103876	3240-05-05	ANTI-PULLBACK HOME SENSOR HARNESS	
225	105228	4033-3240-06-03C-01	LOWER SENSOR BOARD	Recommended Service Part
226	103872	3240-05-01A	HARNESS with CONNECTOR	
227	103834	4033PT0103	UBA CONECTOR COVER	
228	105224	4033-3240-06-01C-01	CPU BOARD (8Meg EPROM)	Recommended Service Part
228	105225	4033-3240-06-01C-02	CPU BOARD (8Meg FLASH)	Recommended Service Part
228	110557	4033-3240-06-01C-03	CPU BOARD (16Meg FLASH)	Recommended Service Part
228	112075	4033-3240-06-01A-01	CPU BOARD (USB I/F applicable)	Recommended Service Part
229	103874	3240-05-03	LOWER SENSOR BOARD HARNESS	
230	103879	3240-05-08A	EXIT SENSOR HARNESS	
231	104059	4033PT0106	WIRE HOLDER	
232	102769	4033RE0112	BACK COVER	
233	102759	4033RE0122A	TOP COVER	
234	102777	4033RE0128A	RIGHT TRANSPORT COVER	
235	102778	4033RE0129B	LEFT TRANSPORT COVER	
236	106031	4033PT0111	GROUNDING JACK PLATE	
237	105984	3240-05-11B	FRONT GROUNDING HARNESS	
238	106439	4033-3240-06-10-01	INTELLIGENT BOARD	Recommended Service Part
239	107787	4033PT0108	GROUND RIVET	
240	103109	NP-3045	PUSH RIVET	
241	033218	DDLF-850ZZ	BEARING #SMF85ZZ	
242	104050	THF-512ZZ-4.5	BEARING	
243	080523	THF-612ZZ-4.5	BEARING	
244	092949	PLT.6SM	CABLE TYE	

Table 7-2: UBA Acceptor Unit Parts List (Continued)

Ref Nº.	EDP Number	Part Nº.	Description	Remark
245	000208	CV-70N	CABLE TYE	
246	104043		2X3 BINDING FASTENER with LOCK WASHER	
247	104002		2.6X5 WASHER/ SCREW (Ø 7.5)	
248	104151		2X5 PHILLIPS SELF TIGHTENING H5 SCREW	
249	104149		2X6 PHILLIPS SELF TIGHTENING SCREW	
250	104148		1.7X3 WASHER/ SCREW	
251	104005		2.6X6 BINDING FASTENER with LOCK WASHER	
252	104009		2.6X6 PHILLIPS SELF TIGHTENING BINDING SCREW	
253	104011		2.6X10 PHILLIPS SELF TIGHTENING BINDING SCREW	
254	104007		2.6X8 BINDING FASTENER with LOCK WASHER	
255	104013		3X12 WASHER/ SCREW	
256	108973		2.6X4 PAN HEAD SCREW	
257			3X8 WASHER/ SCREW	
258	109226		M3 NUT #JIS1	
259	104218		2.5X5X0.3 FLAT WASHER	
260	103959		2.6X5.58X0.5 PLASTIC WASHER	
261	103958		6.2X10.X0.2 PLASTIC WASHER	
262	091518		E-Clip Ø 1.5 SUSTAINER	
263	091517		E-Clip Ø 2 SUSTAINER	
264	091516		E-Clip Ø 3 SUSTAINER	
265	093074		E-Clip Ø 4 SUSTAINER	
266	102294		O-RING P6 #EPDM70	
267	104288		2X6 PARALLEL PIN	
268	104019		1.6X8 PARALLEL PIN SUSTAINER	
269	103021	4033KS0104C	SPRING	
270	106069	4033PT0110	GROUNDING TAB 3	
271	113653	4033RE0401A	ICB PEDISTAL	
272	112689	4033RE0401	ICB COVER SPONGE	
273	113654	4033RE0402	ICB COVER	
274	056165		2.6x3 PHILLIPS SELF TIGHTENING BINDING SCREW	

Frame Unit Exploded View

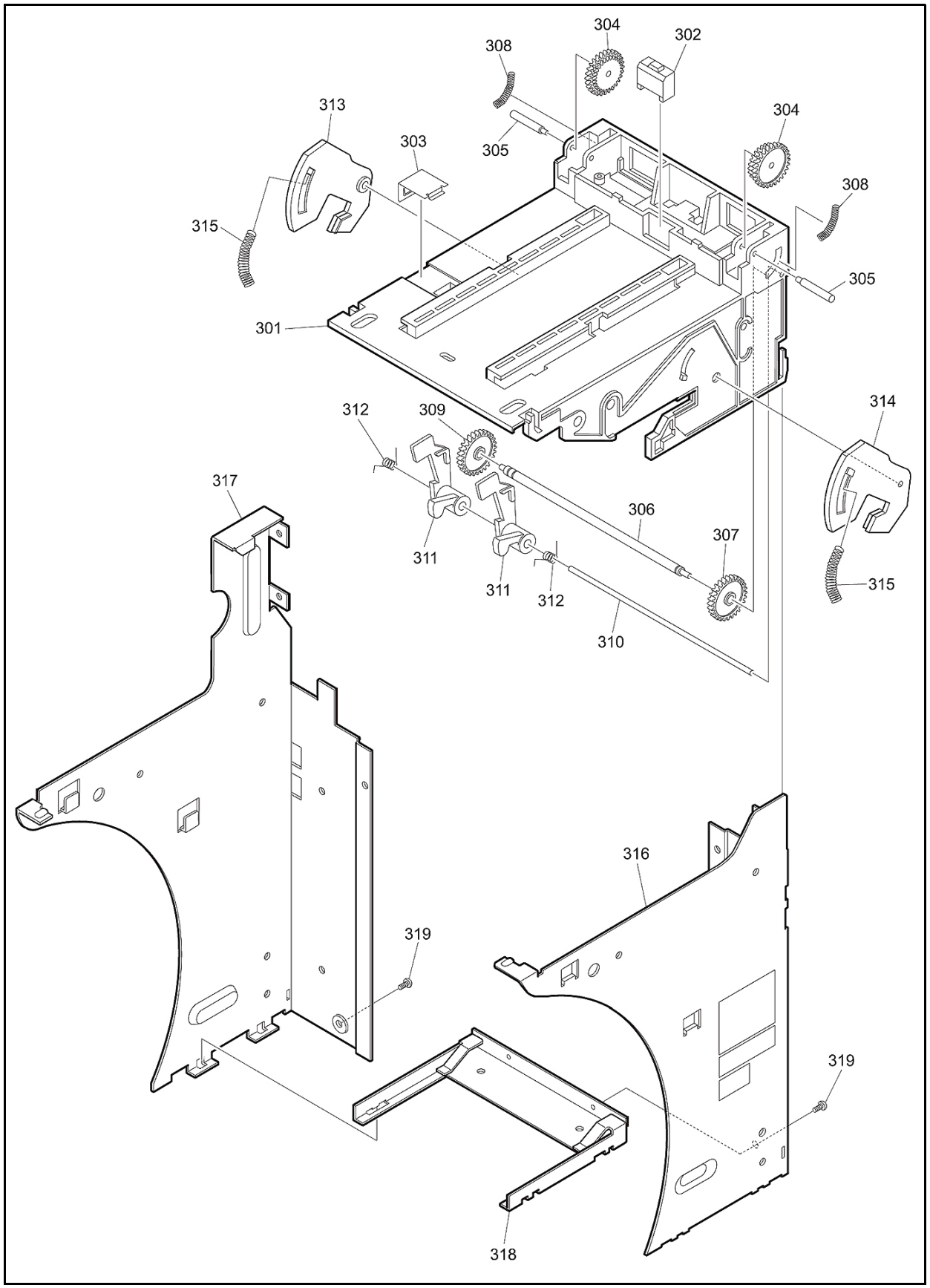


Figure 7-6 Frame Unit Exploded View

UBA Frame Unit Parts List

Table 7-3 Frame Unit Parts List

Ref Nº.	EDP Number	Part Nº.	Description	Remarks
301	102982	4033RE0201A	UBA TRANSPORT STAND	
302	102988	4033RE0207	PRISM STAND	
303	106067	4033PT0204A	STAND GROUNDING TAB	
304	102986	4033RE0205	UBA STAND GEAR 2	
305	103011	4033SH0201	STAND GEAR SHAFT	
306	052620	0943SH0301A	STAND GEAR SHAFT	
307	102985	4033RE0204	UBA STAND GEAR 1	
308	052648	0943CS0301A	FRONT GUIDE SPRING	
309	108810	4033AS0201	UBA STAND GEAR SUSTAINER	
310	103012	4033SH0202	STAND LEVER SHAFT	
311	102987	4033RE0206	CASH BOX LEVER	
312	052650	0943KS0301	FRONT LEVER SPRING	
313	102983	4033RE0202	CASH BOX LEVER A	
314	102984	4033RE0203	CASH BOX LEVER B	
315	052649	0943CS0302	REAR LEVER SPRING	
316	104052	4033PT0201	UBA FRAME A	
317	104057	4033PT0202	UBA FRAME B	
318	104153	4033PT0109	UBA FRAME BASE	
319	104016		3X6 WASHER/SCREW	

THIS PAGE INTENTIONALLY LEFT BLANK

Cash Box Unit Exploded View

: Recommended Service Parts

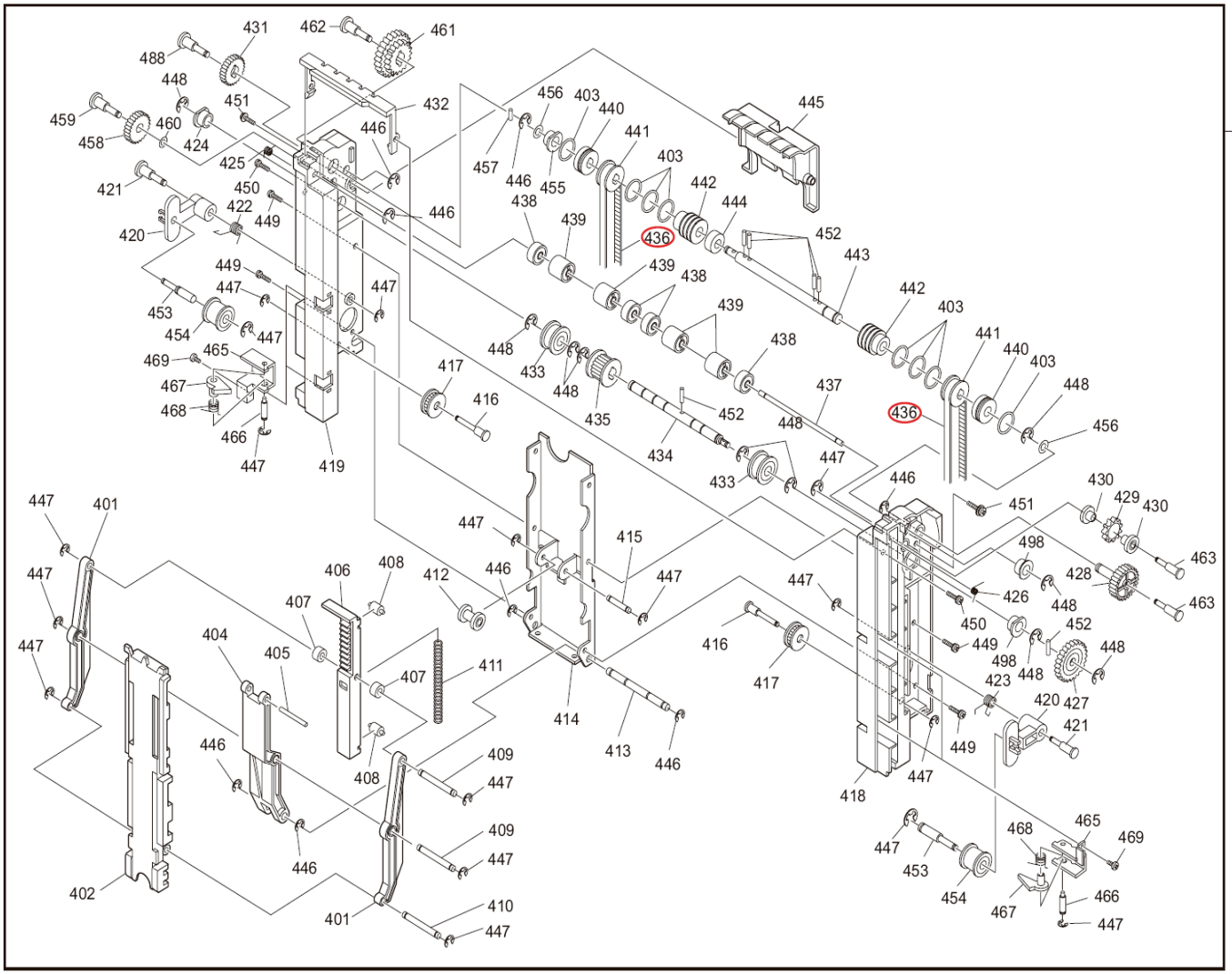


Figure 7-7 Cash Box Mechanical Exploded View (Part 1)

THIS PAGE INTENTIONALLY LEFT BLANK

Cash Box Unit Exploded View (Continued)

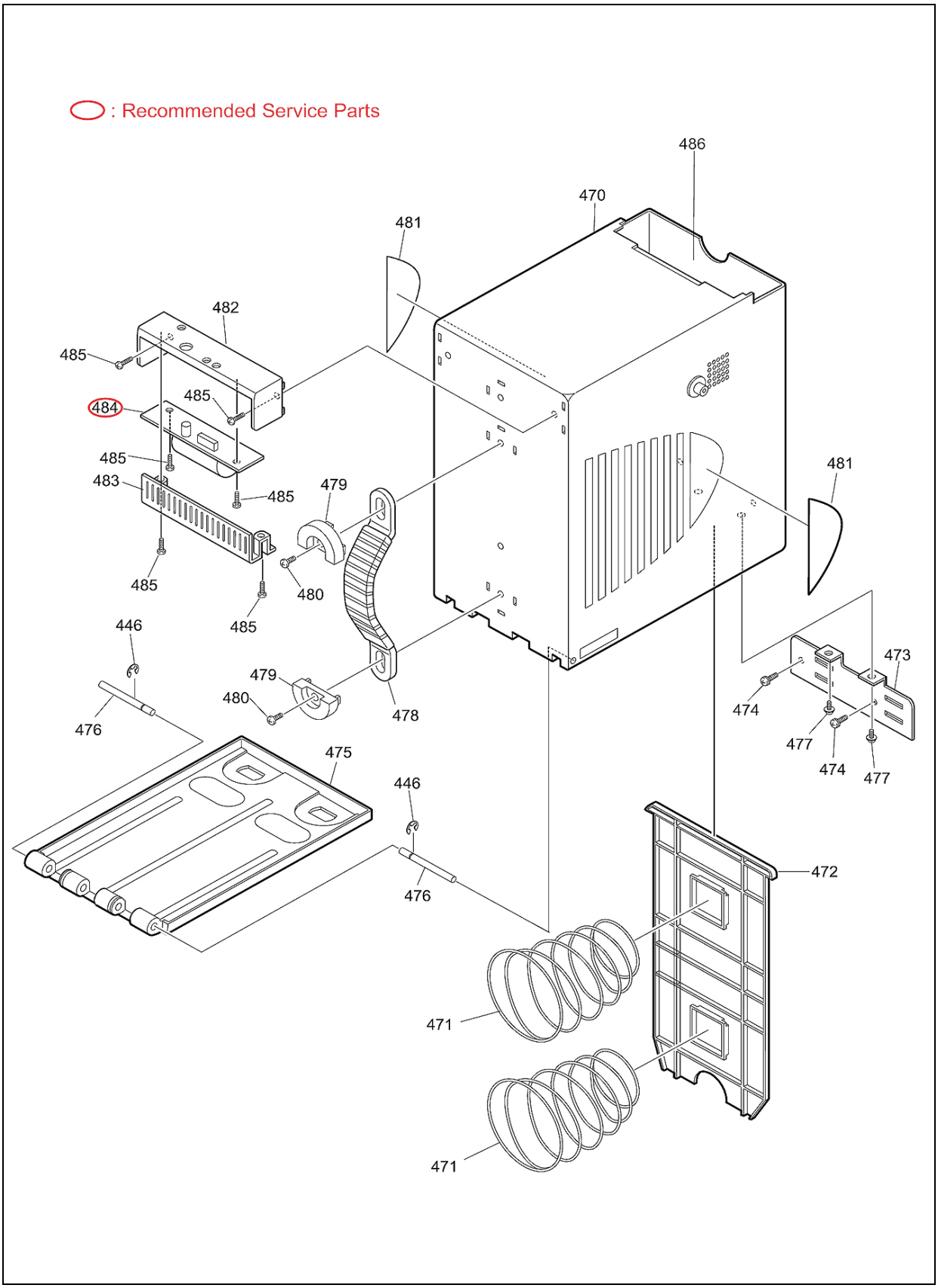


Figure 7-8 Intelligent Cash Box Exploded View (Part 2)

Cash Box Unit Exploded View (Continued)

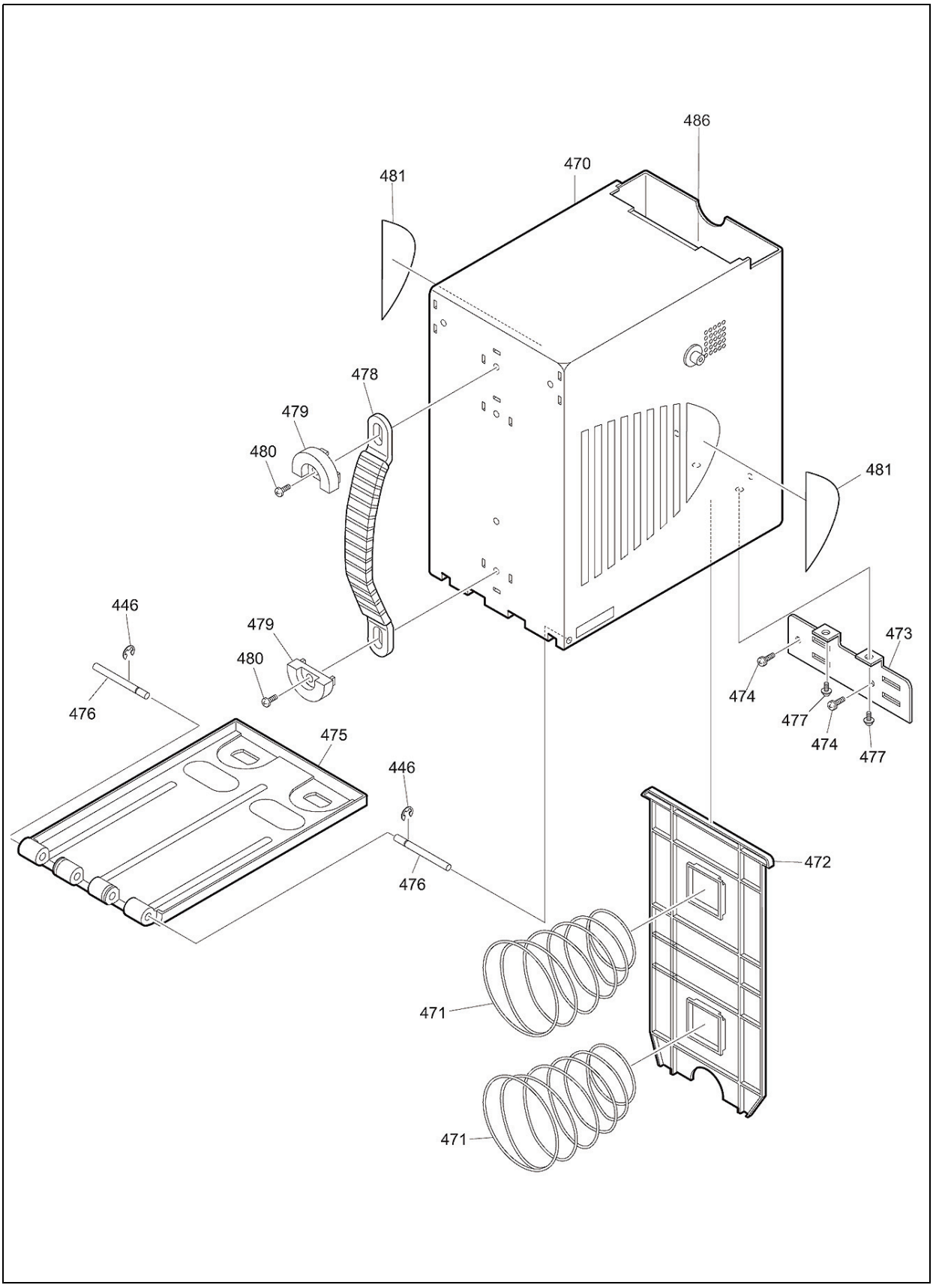


Figure 7-9 Standard Cash Box Unit Exploded View (Part 3)

Cash Box Unit Parts List

Table 7-4: Cash Box Unit Parts List

Ref Nº.	EDP Number	Part Nº.	Description	Remarks
401	103176	4044RE0110	BUSHING LINK B	
402	103174	4044RE0107	PUSHER PLATE	
403	081620	P11(EPDM70)	O-RING	
404	103177	4044RE0109	BUSHING LINK A	
405	070749	0664SH0504	U-ARM PIN 82	
406	103172	4044RE0111	PUSHER LATCH	
407	104265	4044RE0117	ROLLER ARM	
408	104289	4044RO0101	ROLLER RACK	
409	104260	4044SH0105	LINK SHAFT	
410	070750	0664SH0505	LEFT ARM SHAFT 82	
411	104274	4044CS0101	PUSHER SPRING B	
412	052579	0943RE0514D	RIGHT ROLLER GUIDE R	
413	052628	0943SH0506A	LEFT ARM SHAFT	
414	103156	4044PT0101	PUSHER BASE	
415	052626	0943SH0504A	GUIDE ROLLER SHAFT	
416	052634	0943ST0504A	PULLEY STUD	
417	052515	0943RE0114B	PULLEY W5 B R	
418	103164	4044RE0105B	PUSHER GUIDE, RIGHT	
419	103163	4044RE0104A	PUSHER GUIDE, LEFT	
420	104615	4044RE0122	LABOR ROLLER	
421	104263	4044ST0103	STUD LEVER	
422	104275	4044KS0101	TENSION SPRING LEFT	
423	104276	4044KS0102	TENSION SPRING RIGHT	
424	052561	0943RE0508A	BUSHING F6B R	
425	114527	4044KS0103	PRESSURE ROLLER SHAFT SPRING, RIGHT	
426	114528	4044KS0104	PRESSURE ROLLER SHAFT SPRING, LEFT	
427	104268	4044GE0101A	GEAR (24)	
428	104272	4044GE0105A	GEAR, M1-Z16	
429	104273	4044GE0106A	GEAR, M1-Z12 (P-1)	
430	104267	4044RE0125	BUSHING	
431	104269	4044GE0102	GEAR (M=0.5,18)	
432	103167	4044RE0116	ROLLER COVER	
433	103166	4044RE0119	V ROLLER	
434	104256	4044SH0101A	GEAR PUSHER SHAFT	
435	052563	0943RE0510D	GEAR PUCK R	
436	052583		150MXL4.8V TIMING BELT	Recommended Service Part
437	104258	4044SH0103	ROLLER SHAFT	

Table 7-4: Cash Box Unit Parts List (Continued)

Ref Nº.	EDP Number	Part Nº.	Description	Remarks
438	026108	0943RE1007	ROLLER (RE-7V10)	
439	034851	0943RE1003	ROLLER (REO-06)	
440	052562	0943RE0509C	B OL PULLEY R	
441	052514	0943RE0113B	PULLEY W5 A R	
442	034849	0943RE1001	PULLEY (REO-04)	
443	104257	4044SH0102A	TRANSPORT PULLEY SHAFT	
444	052577	0943RE0511B	PULLEY COLLAR R	
445	103175	4044RE0108A	PULLEY COVER	
446	003705		E-RING Ø2 SUSTAINER	
447	003707		E-RING Ø3 SUSTAINER	
448	003708		E-RING Ø4 SUSTAINER	
449	091531		2.6X6 PAN HEAD SEMS SCREW	
450	104285		2.3X5 PHILLIPS SELF TIGHT-ENING PAN HEAD SCREW	
451	104280		2.6X12 WSE MS SCREW, SMALL	
452	081191		2X10 PARALLEL E PIN SUSTAINER	
453	104616	4044ST0106	ROLLER STUD	
454	104266	4044RE0118	TENSION LEVER ROLLER	
455	103165	4044RE0120	TRANSPORT SHAFT BUSHING	
456	106593		STW-FT60TO .25 POLLY-VYNAL SLIDER	
457	104288		2X6PARALLEL PIN SUSTAINER	
458	104270	4044GE0103	GEAR (M=0.5,24)	
459	104261	4044ST0101	GEAR STUD B	
460	103954		STW-FT40T0.25 POLLYVYNAL SLIDER	
461	104271	4044GE0104	GEAR (16,18)	
462	104262	4044ST0102	GEAR STUD C	
463	114535	4044ST0105	GEAR STUD (P-2)	
464	041899		M3X8 SCREW with WASHER	
465	103159	4044PT0103	LEVER CASE	
466	070751	0664SH0506	STOP LEVER PIN	
467	070742	0664RE0505A	STOP LEVER R	
468	070720	0664KS0501	STOP LEVER SPING	
469	041901		M2X8 PHILLIPS SELF TIGHT-ENING SCREW, CHROME	
470	104614	4044AS0101B	STACKER CASH BOX	
471	034869		LB-02-C BACKUP PLATE SPRING	
472	103173	4044RE0106A	RECEIVER PLATE	

Table 7-4: Cash Box Unit Parts List (Continued)

Ref Nº.	EDP Number	Part Nº.	Description	Remarks
473	110367	4044PT0105B	LOCK PLATE	
474	104281		3X6 WASHER SEMS SCREW, SMALL	
475	104613	4044AS0104A	CASH BOX OPENING COVER	
476	104259	4044SH0104A	FULCRUM SHAFT (1)	
	104290	4044RU0101	HANDLE	For Standard Cash Box
	121968	4044RU0103	HANDLE (RED)	For Standard Cash Box
	106537	4044RU0102	HANDLE (ICB)	For Intelligent Cash Box
	121969	4044RU0104	HANDLE (ICB) (RED)	For Intelligent Cash Box
	103171	4044RE0112	CAP HANDLE	
	121970	4044RE0127	CAP HANDLE (RED)	
480	104287		3X10 PHILLIPS SELF TIGHT-ENING PAN HEAD SCREW	
	104278	4044MA0101	CASH BOX LABEL	
	121971	4044MA0103	CASH BOX LABEL (RED)	
482	103170	4044RE0113A	INTELLIGENT CASH BOX	For Intelligent Cash Box
483	103169	4044RE0114	INTELLIGENT BOX COVER	For Intelligent Cash Box
484	116199	943-843-06-10A-01	INTELLIGENT CIRCUIT BOARD	For Intelligent Cash Box Recommended Service Parts
485	104286		2.6X6 WASHER SEMS	
486	113227	4044AS0105	INTELLIGENT FRAME ASSY	For Intelligent Cash Box
487	113207	4044RE0124	CAP	
488	104264	4044ST0104A	GEAR STUD	
489	005846		M2.6 X5 PLATE BIS	
490	049531		M2.6 X8 PHILLIPS SELF TIGHT-ENING PAN HEAD SCREW	
491	113228	4044PE0101	CUSHION, INTELLIGENT	For Intelligent Cash Box
492	110029	4044SC0101	SCREW GUIDE	
493	110080	4044CS0103	NIPPLE SPRING	
494	109917	4044ST0108B	NIPPLE PIN	
495	109916	4044ST0107A	SOCKET GUIDE	
496	113235	4044SH0108	FULCRUM SHAFT (2)	
497	115938		UBA-SS PUSHER MECHNISM R	
498	113208	4044RE0126	T3 BUSHING	
499	003718		(5103-18 4ö) NZ	
500	121843		UBA-SS INTELLIGENT CASH BOX KIT	

Face Unit

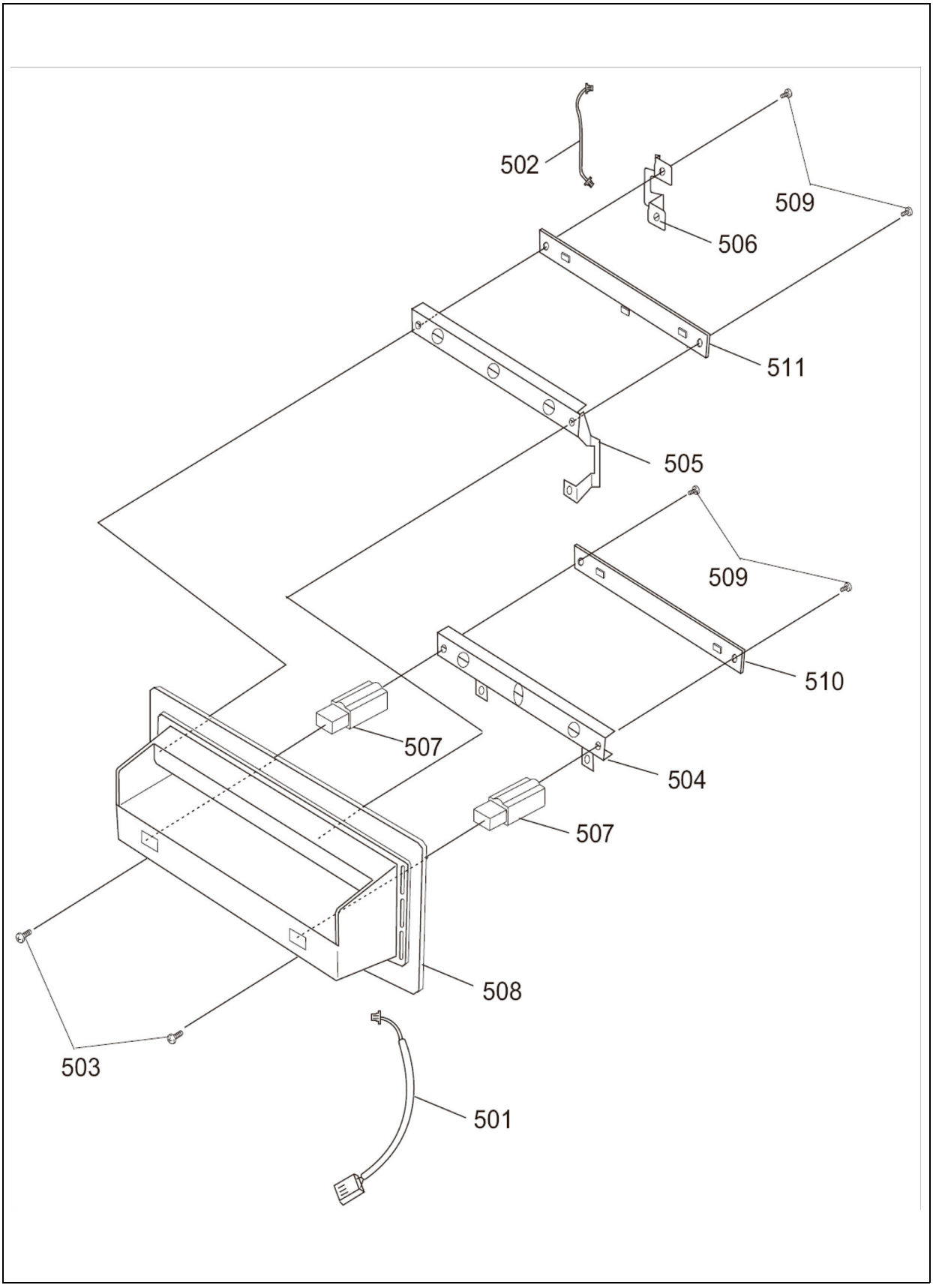


Figure 7-10 Face Unit Exploded View

Face Unit Parts List

Table 7-5 Face Unit Parts List

Ref Nº.	EDP Number	Part Nº.	Description	Remarks
501	113236	3240-05-14A	RIGHT FACE HARNESS PLATE	
502	113237	3240-05-15	RIGHT FACE PLATE RELAY HARNESS	For UBA FACE UNIT A
503	006481		3X16 WASHER SEMS SCREW	
504	056771	0943PT0601	SHIELD PLATE	
505	113927	4033PT0301	SHIELD PLATE	For UBA FACE UNIT A
506	113928	4033PT0302A	WIRE HOLDER	For UBA FACE UNIT A
507	112644	4033RE0302	INSERT LIGHT GUIDE	
508	113926	4033RE0303	INSERT GUIDE UBA (BLACK)	For UBA FACE UNIT A/2
	112642	4033RE0301	INSERT GUIDE UBA	For UBA FACE UNIT 1
509	056165		2.6X8 SELF TIGHTENING, BINDING PHILLIPS SCREW	
510	112880	4033-3240-06-11A-02	LED CIRCUIT BOARD	
	112874	4033-3240-06-11A-01	LED CIRCUIT BOARD	
511	112903	4033-3240-06-12A-02	LED CIRCUIT BOARD	

THIS PAGE INTENTIONALLY LEFT BLANK

UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Section 8

8 INDEX

R

S

T

U

W

UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Section A

A TROUBLESHOOTING

This section provides Troubleshooting instructions for the Universal Bill Acceptor Series (UBA). This section contains the following information:

- Introduction
- Troubleshooting Overview
- Fault Table Listings
- Performance Tests
- LED Diagnostic Codes

Introduction

Most Bill Acceptor failures are due to minor causes. Before replacing any parts, make sure that all assembly and circuit board connectors are properly fitted and the harness is properly connected.

Faulty bill acceptance by the Bill Acceptor is often caused when dust or iron powder adheres to the identification sensor, magnetic sensor or Transport belt. Clean the acceptor section first, then observe the operating state of acceptor in detail when initializing power. This observation is important in locating any failure causes and the possible fault point. If the acceptor head has to be repaired by disassembling it, always recalibrate the sensors following a repair.

Perform all repairs by referring to the Calibration and Flash Memory Software Downloading section in the Section 7 Adjustment and Performance Test Section, and in the Section 4 Assembly/Disassembly Instructions Section.

Troubleshooting Overview

The UBA allows the operator to perform fault diagnosis by checking various fault table listings against the symptom and survey the cause(s) of any failure occurrences during the process.

After determining the cause of the failure, execute the Performance Test, perform a sensor readjustment and then repair the UBA Unit replacing any appropriate parts deemed necessary.

Fault Table Listings

Table A-1 through Table A-3 list the various possible UBA fault conditions that can occur and the necessary actions required to correct them.

Table A-1 General Fault Conditions

Symptoms/Error Messages	Possible Fault Causes	Corrective Action Required
Bill Acceptor is not working (does not accept any bills).	No external power is applied to the Bill Acceptor (+12VDC & GND)	Verify that the Power Supply +12VDC and Ground cables are connected to the appropriate pins on the main connector. NOTE: The small LED to the left of the front panel DIP Switches indicates power available when lit.
	Wrong or inappropriate connections	Verify that all harness connectors are properly seated. Check for any bent, missing or damaged pins in the connector plugs and mating receptacles.
	Corrupted software.	Redownload the correct software. Refer to “Software Downloading Procedure” on page 6-2 of Section 6 for software downloading instructions.
	CPU Board failure.	Refer to the “Performance Tests” on page A-5 of this Appendix and conduct an Initial Operation Test. If the test result is Negative (NG), replace the CPU Board. Make sure to recalibrate the sensors after CPU Board is replaced.
	ICB Sensor Board is not inserted into the CPU Board socket.	Remove and then reinsert the ICB Sensor Board into the CPU Board socket. NOTE: The ICB Sensor Board must be inserted in place regardless if its features are being used or not.
	(For UBA-11 only) The EPROM is inserted backwards.	Remove the Acceptor Unit from the frame. Remove the EPROM from CPU Board and reinsert it in the correct direction.

Table A-1 General Fault Conditions (Continued)

Symptoms/Error Messages	Possible Fault Causes	Corrective Action Required
Bill jams occur often.	Drive belts are dirty or damaged.	Clean all drive belts and pressure rollers. Replace as necessary.
	A pressure roller spring is loose or missing.	Check all pressure roller springs using a finger press test. Replace as necessary.
	A foreign object is lodged in the Transport path and/or inside the Cash Box.	Clean the Transport path and remove any foreign object discovered.
	The Acceptor Unit is not properly seated all the way into the frame (the Acceptor Unit latch release levers are not locked onto the frame).	Re-seat the Acceptor Unit back into the frame so it is firmly seated all the way back into the frame so the Acceptor Unit release lever latches securely lock onto the frame.
	Bill is wider than 85 mm or narrower than 62mm (out of UBA Bill width specifications).	Use only bills widths having the correct UBA size specifications.
Low acceptance rates.	Dirt and/or stains on the rollers, belts and lenses.	Clean the Transport path. Refer to the Section 2 Cleaning/Preventive Maintenance procedure.
	The unit has been disassembled and re-calibration adjustment has not occurred following a reassembly.	Make sure to readjust the sensors after reassembling the UBA Unit. Refer to the “Calibration Procedures” on page 6-4 of Section 6.
	The wrong software or an old version of the software being used.	Make sure that the programmed Flash or EPROM memory software is the latest version, and it supports the currency values and country allowing acceptance.
	Software not designed to accept current Bills	Check the particular specifications for the required Bill type acceptance, and make sure the bills will be accepted by the software loaded (i.e., check denomination/issuing year, etc.).
	Sensor lenses are loose or missing.	Sensor lenses require re-positioning. Contact JCM Technical Support.
Upper Guide can not be opened.	Centering Guides are not at their home position.	Turn the Power OFF and ON again. This action should tell the host machine to send a reset command to reinitialize the unit.
		If power cannot be applied, use a Hexagonal Nut Driver to open the Upper Guide and manually reset the guide.

Table A-1 General Fault Conditions (Continued)

Symptoms/Error Messages	Possible Fault Causes	Corrective Action Required
All bills being rejected.	Incorrect software (different currency type).	Download the correct software for currency being accepted. Refer to “Software Downloading Procedure” on page 6-2 of Section 6 regarding Software Downloading.
	Bills are not being accepted by the software.	Make sure the bill values required are included in the software specifications (i.e., denominations/issuing year, etc.) Refer to the “Calibration Procedures” on page 6-4 of Section 6.
	Incorrect DIP Switch settings.	Enable all denominations by setting all DIP switches to OFF.
	Bill acceptance is being inhibited by Host Controller command	Enable Bill acceptance for the required Host command.
	Upper/Lower Sensor Board failure.	Change the Upper or Lower Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.
	Unit was disassembled and re-calibration did not occur following reassembly.	Recalibrate all UBA Sensors following reassembly.
Motor continues to run.	Upper Guide is open.	Firmly close the guide.
	A foreign object or a jammed bill is stuck in the Transport path.	Open the Guide, remove the foreign object or jammed bill, and close the cover.
	Motor driver failure.	Refer to the “No. 1 Transport Motor Forward/Reverse Rotation Test” on page A-5 of this Appendix and conduct a Forward/Reverse Motor Rotation Test.
Can not enter the TEST mode.	Incorrect DIP Switch settings.	Set the DIP Switch No. 8 to ON, and resupply power to the UBA.
	Dip switch failure.	Refer to the “No. 9 DIP Switch Test” on page A-11 of this Appendix and conduct a DIP Switch TEST to check if the specific DIP Switch Block has a failure.
	CPU Board failure.	Exchange the CPU Board with a known good board. Refer to “CPU Board Removal” on page 4-3 of Section 4 regarding Circuit Board Removal.

Table A-2 Adjustment Fault Conditions

Symptoms/Error Messages	Possible Fault Causes	Corrective Action Required
Can not start the ADJTOOL_V*** .exe program by double-clicking on its icon.	PC Operating System (OS) is not compatible.	The current Adjustment program only supports the Windows 2000/XP Operating System.
	The program files are corrupted.	Request the correct programs from JCM.
Communication Error.	Wrong or inappropriate connections	Check the PC harness connections and the related UBA interface connectors. Check for any bent, missing or damaged pins in the connector plug and receptacle.
	UBA DIP Switch settings are incorrect.	Set the UBA DIP Switches 1 to 7 OFF and Switch 8 to ON. Recycle the power supplied to the external maintenance power supply (P/N 702-000148).
	DIP Switch failure.	Refer to the “No. 9 DIP Switch Test” on page A-11 of this Appendix and conduct a DIP Switch Test.
	CPU Board failure.	Exchange the CPU Board with a known good one. Refer to Section 4 regarding Circuit Board Removal.
Adjustment Error.	Incorrect reference paper type.	Follow the instruction provided in the ADJTOOL_V***.exe program and use the correct reference paper recommended.
	Upper/Lower Sensor Board failure.	Change the Upper or Lower Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.

Table A-3 Communication Fault Conditions

Symptoms/Error Messages	Possible Fault Causes	Corrective Action Required
Cannot communicate with host.	DIP Switch settings are incorrect.	Set all DIP Switches to OFF.
	Connectors are off or loosely connected.	Firmly reconnect all of the communication connectors.
	Damaged connector pins.	Check for any bent, missing or damaged pins in the connector plugs and mating receptacles.
	CPU Board is corrupted.	Exchange the CPU Board with a known good one. Refer to “Circuit Board Removal” on page 4-3 of Section 4 regarding Circuit Board Removal.
	Incorrect Interface.	Verify that the correct interface between the Host machine and the Bill Acceptor is being used.
	Acceptor Head Failure.	The ICB Board is not installed on the CPU Board. Install the ICB Board.
		The ICB Board is installed incorrectly. Check that the PLUG Number on the ICB Board and SOCKET Number on the CPU Board agree. Reinstall the ICB Board in the correct direction.

Performance Tests

The UBA is equipped with diagnostic features to aid in repair and maintenance. This portion of Appendix A describes the test procedure for use with each function using DIP Switch settings to identify the cause of a failure condition. In order to identify a failure condition's cause, the UBA has to be in the TEST mode.

To enter the TEST mode perform the following steps:

1. Set DIP Switch No. 8 to ON and supply the power to the UBA.
2. Check that both the Red and Green diagnostic LEDs are lit. This condition indicates the unit is now in the TEST mode.
3. Set the DIP Switches depending on the test you wish to execute.
4. Set DIP Switch No. 8 to OFF to start a particular test. When the test begins, both the Red and Green diagnostic LEDs will extinguish (go out) After few seconds, the diagnostic LEDs will independently turn ON & OFF depending on the test being executed.
5. To finish a test, set DIP Switch No. 8 to ON again, and turn the UBA power OFF.

Choosing and Selecting Operational Tests

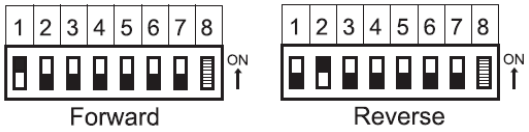
Set the UBA into the "Test Mode", and then set the DIP Switches to match each operational test shown in the following Test Tables. Set DIP Switch 8 to OFF initially to start each test.

NOTE: The setting of DIP Switch 8 to ON again will interrupt a test, and restore the system to the Test Mode.

No. 1 Transport Motor Forward/Reverse Rotation Test

The tests listed in Table A-4 detect the forward and reverse rotational motor speed. Confirm that the motor operates smoothly without emitting abnormal noise.

Table A-4 Transport Motor Speed Test Error Conditions



DIP Switch Block Settings

Motor Speed Condition	Red LED Status	Green LED Status	Causes and Conditions
Normal	OFF	ON	Normally runs and stops when cycled.
Fast	2 Flashes	OFF	Contact JCM Technical Support
Slow	3 Flashes	OFF	The Transport Motor Speed Encoder Sensor does not detect motor rotation. Check that all harness connectors are seated. A Motor or CPU Board failure may have occurred. Exchange the Motor/CPU Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.

If diagnostic LED status is different from the Table A-4 listed states, contact JCM Technical Support.

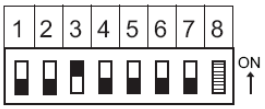
No. 2 Stacker Test

The tests listed in Table A-5 detect the Bill Stacker's operational condition. When the test starts, the pushing mechanism will begin operating constantly.

When the Green LED lights, it indicates the Stacker is working properly.

If the Red LED flashes, refer to the Stacker Test Error Conditions listed in Table A-5 to discover the probable error condition.

Table A-5 Bill Stacker Test Error Conditions



DIP Switch Block Settings

Stacker Condition	Red LED Status	Green LED Status	Causes and Conditions
Stacker Full	1 Flash	OFF	A Stacker Encoder Board failure may have occurred. Check all harnesses and connectors. Exchange the Stacker Encoder Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.
Stacker Jam	2 Flashes	OFF	An Exit Sensor Board failure may have occurred. Check all harnesses and connectors. Exchange the Exit Sensor Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.
Stacker Motor Lock	4 Flashes	OFF	Stacker motor may be defective. Change the motor if defective. A Stacker Encoder Board failure may have also occurred. Check all harnesses and connectors. Exchange the Stacker Encoder Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.
Cash Box Error	10 Flashes	OFF	A Cash Box Sensor Board failure may have occurred. Check all harness and connectors. Change the Box Sensor Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.

If diagnostic LED status is different from the Table A-5 listed states, contact JCM Technical Support.

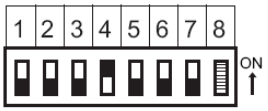
No. 3 Running Test

The tests listed in Table A-6 detect the UBA's operational condition. When the test starts, the following operation is continuously repeated.

If neither the Red or Green LED lights, it means the UBA is operating properly.

If the Red LED flashes, refer to Running Test Error Conditions listed in Table A-6 to discover the probable error condition.

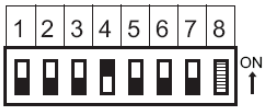
Table A-6 UBA Running Test Error Conditions



DIP Switch Block Settings

UBA Condition	Red LED Status	Green LED Status	Causes and Conditions
Stacker Full	1 Flash	OFF	A Stacker Encoder Board failure may have occurred. Check all harnesses and connectors. Exchange the Stacker Encoder Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.
Stacker Jam	2 Flashes	OFF	An Exit Sensor Board failure may have occurred. Check all harnesses and connectors. Exchange the Exit Sensor Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.

Table A-6 UBA Running Test Error Conditions (Continued)



DIP Switch Block Settings

UBA Condition	Red LED Status	Green LED Status	Causes and Conditions
Stacker Lock-up	4 Flashes	OFF	Stacker motor may be defective. Change the motor if defective. A Stacker Encoder Board failure may have also occurred. Check all harnesses and connectors. Exchange the Stacker Encoder Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Disassembly Instructions and Circuit Board Removal.
Acceptor Jam	4 Flashes	OFF	Check the prisms for dirt or scratches. To clean the prisms, refer to Section 2 regarding Preventive Maintenance. A Lower Sensor Board failure may have occurred. To change the Lower Sensor Board refer to Section 4 regarding Circuit Board Removal.
Motor Lock-up	6 Flashes	OFF	The Transport Motor Speed Encoder Sensor does not detect motor rotation. Check all harnesses and connectors. A Motor or CPU Board failure may have occurred. Exchange the Motor and/or CPU Board with a known good motor or board. Refer to Section 4 regarding Disassembly Instructions and Circuit Board Removal.
Upper PCB Set-up Error	7 Flashes	OFF	An Upper Sensor Board failure may have occurred. To Exchange the Upper Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.
Anti-Pullback Unit Error	9 Flashes	OFF	An Anti-Pullback Home Sensor Board and/or a Lower Sensor Board failure may have occurred. Check all harnesses and connectors. Exchange the Anti-Pullback Home Sensor Board and/or a Lower Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.
Cash Box Error	10 Flashes	OFF	A Cash Box Sensor Board failure may have occurred. Check all harness and connectors. Exchange the Cash Box Sensor Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.
Solenoid Error	13 Flashes	OFF	A Solenoid or an Upper Sensor Board failure may have occurred. Check all harness and connectors. Exchange the Upper Sensor Board with a known good board. Refer to Section 4 regarding Disassembly Instructions and/or Circuit Board Removal.
Centering Mechanism Error	14 Flashes*	OFF	Centering mechanism Home Sensor Board and/or CPU Board failure may have occurred. Check all harnesses and connectors. Exchange the Centering Mechanism Home Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.

*. NOTE: If the Centering Mechanism's Home Sensor is blocked or disabled, the UBA will not error during this test. The Centering Mechanism will just perform a short cycle and continue to operate.

If diagnostic LED status is different from the Table A-6 listed states, contact JCM Technical Support.

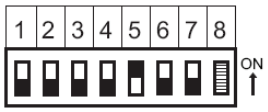
No. 4 Anti-Pullback Mechanism Test

The test listed in Table A-7 detects the Anti-Pullback mechanism operational condition.

When the Green and Red LEDs are out, it indicates the Anti-Pullback mechanism is working properly.

If there are any problems with the centering mechanism, the Red LED will blink 9 times.

Table A-7 Anti-pullback Mechanism Test Error Conditions



DIP Switch Block Settings

Anti-Pullback Mechanism Condition	Red LED Status	Green LED Status	Causes and Conditions
Anti-Pullback Unit Error	9 Flashes	OFF	An Anti-Pullback Home Sensor Board and/or a Lower Sensor Board failure may have occurred. Check all harnesses and connectors. Exchange the Anti-Pullback Home Sensor Board and/or a Lower Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.

If diagnostic LED status is different from the Table A-7 listed states, contact JCM Technical Support.

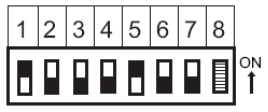
No. 5 Centering Mechanism Test

The test listed in Table A-7 detects the solenoid Sensor Boards operational condition.

When the Green and Red LEDs are out, it indicates the Centering Mechanism is working properly.

If there are any problems with the Centering Mechanism Sensor Board, the Red LED will blink 14 times.

Table A-8 Centering Mechanism Test Error Conditions



DIP Switch Block Settings

Centering Mechanism Condition	Red LED Status	Green LED Status	Causes and Conditions
Centering Mechanism Error	14 Flashes	OFF	Centering Mechanism Home Sensor Board and/or CPU Board failure may have occurred. Check all harnesses and connectors. Exchange the Centering mechanism Home Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.

If diagnostic LED status is different from the Table A-8 listed states, contact JCM Technical Support.

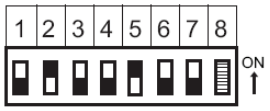
No. 6 Solenoid Test

The test listed in Table A-9 detects the solenoid Sensor's operating condition.

The Green LED will illuminate when the sensor is blocked.

If there are any problems with the Solenoid Sensor Board, the Red LED will blink 8 times.

Table A-9 Solenoid Sensor Test Error Conditions



DIP Switch Block Settings

Solenoid Condition	Red LED Status	Green LED Status	Causes and Conditions
Solenoid Error	8 Flashes	OFF	A Solenoid Upper Sensor Board failure may have occurred. Check all harness and connectors. Exchange the Upper Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.

If diagnostic LED status is different from the Table A-9 listed states, contact JCM Technical Support.

No. 7 General Sensor Test

The tests listed in Table A-10 detect the UBA's Sensors operational conditions.

To check the various sensor conditions, set the DIP Switches according to the sensor test desired and observe the LED illuminating conditions for the selected test listed in Table A-10.

Begin sensor testing as follows:

1. Set the UBA into the "Test Mode", by switching DIP Switch No. 8 to ON and applying power to the UBA.

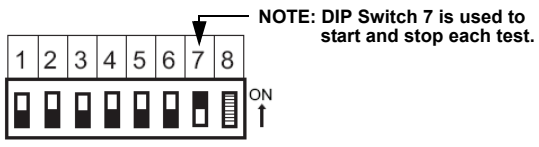
NOTE: If the diagnostic LED illuminating condition results are different from those listed in Table A-10 a fault condition is indicated.

2. Now set DIP Switch 7 to ON and DIP Switch 8 to OFF to initially to start the first test.

NOTE: Leave DIP Switch 7 ON throughout the Sensor Tests.

Select the first Sensor to be tested from Table A-10, turn ON the appropriate test switches, turn DIP Switch 7 OFF to begin the test, and compare the LED illumination result to the expected adjacent listed Test Condition result.

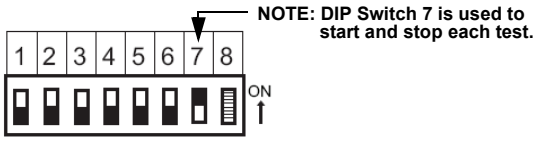
Table A-10 UBA General Sensor Test Settings



Initial DIP Switch Block Setting

Sensor Name	DIP Switch Conditions	Test Conditions
Entrance Sensor	1 ON, & 2-6 OFF	Open the Upper Guide to check the Entrance Sensor's condition. When the entrance sensor is blocked, the Green LED should illuminate. If the Green LED lights when the Entrance Sensor is blocked, the sensor's condition is normal.

Table A-10 UBA General Sensor Test Settings (Continued)



Initial DIP Switch Block Setting

Sensor Name	DIP Switch Conditions	Test Conditions
Centering Timing Sensor	1 ON, & 2-6 OFF	Open the Upper Guide to check the Centering Timing Sensor's condition. When the Centering Timing Sensor is blocked, the RED LED should illuminate. If red LED lights when the Centering Timing Sensor is blocked, the sensor's condition is normal.
Anti-Pullback Sensor	2 ON, & 1 + 3-6 OFF	Open the Upper Guide as if to check Entrance Sensor's condition and block the Anti-Pullback Entrance Sensor. When the Anti-Pullback Entrance Sensor is blocked, the Green LED should illuminate. If Green LED is lights when the Anti-Pullback Entrance Sensor is blocked, the sensor's condition is normal.
Exit Sensor	2 ON, & 1 + 3-6 OFF	Block the Exit Sensor with a piece of paper or cardboard. When the Exit Sensor is blocked, the Red LED should illuminate. If Red LED lights when the Exit Sensor is blocked, the sensor's condition is normal.
Anti-Pullback Home Position Sensor	3 ON, & 1-2 + 4-6 OFF	Rotate the Anti-Pullback Roller with your fingers. When the Anti-Pullback Roller is in its Home position, the Green LED should illuminate. If the Green LED flickers ON and OFF while rotating the Anti-Pullback Roller, the sensor's condition is normal.
Centering Home Position Sensor	3 ON, & 1-2 + 4-6 OFF	Move the Centering Mechanism with a Hexagonal Nut Driver. When the Centering Mechanism is in its Home position, the Red LED should illuminate. If the Red LED lights when the Centering mechanism is at its Home position, the sensor's condition is normal.
Transport Motor Encoder Sensor	4 ON, & 1-3 + 5-6 OFF	Open the Upper Guide and move the belts forward to check the Transport Motor Encoder Sensor. When the Transport Encoder Sensor is blocked by an interrupter blade, the Green LED should illuminate. If the Green LED flickers On and OFF as the belts are moved, the sensor's condition is normal.
Stacker Motor Encoder Sensor	4 ON, & 1-3 + 5-6 OFF	Rotate the Stacker gear with a finger. When the Stacker Encoder's Sensor is blocked by an interrupter blade, the Red LED should illuminate. If the Red LED flickers ON and OFF while rotating the gear, the sensor's condition is normal.
Pusher Plate Home Position Sensor	5 ON, & 1-4 + 6 OFF	Remove the Cash Box from the Frame Unit. When the Pusher Home Sensor's Left Arm is pushed, and the Pusher Home Sensor is blocked, the Green LED will be lit (ON). When the Pusher Home Sensor Arm is released, the sensor is unblocked and the Green LED will extinguish (go OFF).
Stacker Detection Sensor	5 ON, & 1-4 + 6 OFF	Remove the Cash Box from the frame unit. When the Cash Box Seated Sensor's right lever is blocked, the Red LED should illuminate. If Red LED goes ON when the Cash Box is set into its fully seated position, the sensor's condition is normal

No. 8 Bill Acceptance Test

The tests listed in Table A-11 detects the UBA's ability to properly accept bills.

Begin acceptance testing as follows:

1. Set DIP Switch No. 8 to ON and supply power to the UBA.
2. Set the remaining 6 DIP Switches according to the test selected in Table A-11, and then turn DIP Switch No. 8 to ON to start the test.
3. Insert a bill into the UBA to begin the selected test.

NOTE: Whenever the UBA is disassembled or new software is downloaded into memory, make sure to perform a Bill Acceptance Test afterwords.

Table A-11 UBA Bill Acceptance Test Error Conditions

DIP Switch Block Settings

NOTE: Refer to tables A13 or A14 for error listings relating to this test.

No. 9 DIP Switch Test

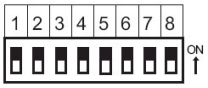
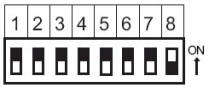
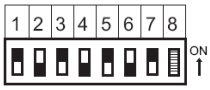
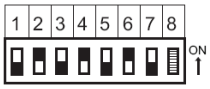
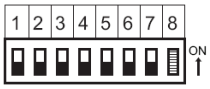
The tests listed in Table A-12 reveal the correct DIP Switch operational conditions.

To begin the test perform the following:

1. Begin by setting all DIP Switches to ON and supply power to the UBA.
2. Check that both the Red and Green LEDs light and begin to flash as indicated in Table A-12 Step No. 1.
3. Set Switch No. 8 to OFF as indicated in Table A-12 Step No. 2. The blinking LEDs should both turn OFF
4. Set Switch No. 8 to ON, and Switches 2, 4, and 6 to OFF as indicated in Table A-12 Step No. 3.

   Now, set Switch No. 8 to OFF again; the Green LED should light (go ON) and the Red LED should remain OFF.
5. Set Switch No. 8 to ON again, Switches 2, 4, and 6 to ON and Switches 1, 3, and 5 to OFF as indicated in Table A-12 Step No. 4. Now, set Switch No. 8 to OFF again; the Red LED should light (go ON) and the Green LED should go OFF.
6. Set Switch No. 8 to ON again, and all remaining Switches to OFF as indicated in Table A-12 Step No. 5. Now, set Switch No. 8 to OFF again; both the Green and Red LED should light.

Table A-12 DIP Switch Test Steps

Step No.	DIP Switch Setting	LED Status	
		Red	Green
1		Flashing	Flashing
2		OFF	OFF
3		OFF	ON
4		ON	OFF
5		ON	ON

If any diagnostic LED status condition is different from those listed in the Table A-12 Steps, a DIP Switch and/or CPU Board failure may have occurred. Refer to Section 4 regarding Circuit Board Removal. If the error can not be resolved, contact JCM Technical Support.

LED Diagnostics Codes

Malfunction LED Error Codes

Table A-13 lists the possible Malfunction LED Error Codes that can exist when a fault condition occurs.

Table A-13 Malfunction LED Error Codes

LED Status		Error	Causes and Solutions
Red LED	Green LED		
1 Flash	ON	Boot ROM error	Change the CPU Board. Refer to Section 4 regarding Circuit Board Removal.
2 Flashes	ON	1. Incorrect external ROM contents or empty program 2. No program in the external Flash ROM	Change the CPU Board. Refer to Section 4 regarding Circuit Board Removal.
3 Flashes	ON	Internal RAM error	Change the CPU Board. Refer to Section 4 regarding Circuit Board Removal.
4 Flashes	ON	External RAM error	
1 Flash	OFF	Cash Box Full	Empty the Cash Box and re-install.
2 Flashes	OFF	Stacker Pusher Mechanism fault (Transport Jam Type 1)	Stacker motor may be corrupted. Change the motor if defective. A Stacker Encoder Board failure may have also occurred. Check all harnesses and connectors. Exchange the Stacker Encoder Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Disassembly Instructions and Circuit Board Removal.
3 Flashes	OFF	Transport Jam Type 2	The ICB is Disabled/Cash Box is Active. An Exit Sensor Board failure may have occurred. Check all harnesses and connectors. Exchange the Exit Sensor Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.
4 Flashes	OFF	Stacker Encoder signal fault or an Acceptor Jam	A Stacker Encoder Sensor failure may have occurred. Check all lenses for dirt or scratches. To clean the lenses and sensors, refer to Section 2 regarding Preventive Maintenance.Check all harnesses and connectors. A Lower Sensor Board failure may have occurred. Exchange the Lower Sensor Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.
5 Flashes	OFF	Transport Motor speed error	The Transport Motor Speed Encoder Sensor does not detect motor rotation or requires sensor adjustment. Check all harnesses and connectors. A Motor or CPU Board failure may have occurred. Exchange the Motor and/or CPU Board with a known good motor or board. Refer to Section 4 regarding Disassembly Instructions and Circuit Board Removal.
6 Flashes	OFF	Transport Motor failure	
7 Flashes	OFF	Reserved	N/A
8 Flashes	OFF	Reserved	N/A
9 Flashes	OFF	Anti-Pullback Unit Error	An Anti-Pullback Home Sensor Board and/or a Lower Sensor Board failure may have occurred. Check all harnesses and connectors. Exchange the Anti-Pullback Home Sensor Board and/or a Lower Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.

Table A-13 Malfunction LED Error Codes (Continued)

LED Status		Error	Causes and Solutions
Red LED	**Green LED**		
10 Flashes	OFF	Cash Box Error	Cash Box not seated or not present. A Cash Box Sensor Board failure may have occurred. Check all harness and connectors. Exchange the Cash Box Sensor Board and/or CPU Board if required with a known good board. Refer to Section 4 regarding Circuit Board Removal.
11 Flashes	OFF	Reserved	N/A
12 Flashes	OFF	Cheated	Cheat attempt detected.
13 Flashes	OFF	Centering Mechanism Solenoid Error	A Solenoid or an Upper Sensor Board failure may have occurred. Check all harness and connectors. Exchange the Upper Sensor Board with a known good board. Refer to Section 4 regarding Disassembly Instructions and/or Circuit Board Removal.
14 Flashes	OFF	Centering Mechanism Error	A Centering Mechanism Home Sensor Board and/or CPU Board failure may have occurred. Check all harnesses and connectors. Exchange the Centering Mechanism Home Sensor Board with a known good board. Refer to Section 4 regarding Circuit Board Removal.

If diagnostic LED status is different from the Table A-13 listed states, contact JCM Technical Support.

Initialization LED Error Codes

Table A-14 lists the possible Initialization LED Error Codes that can exist when a fault condition occurs during a UBA initial start-up.

Table A-14 ICB Initialization Errors

LED Status		Error	Causes and Solutions
Red LED	**Green LED**		
11 Flashes	OFF	ICB Module	Intelligent Cash Box (ICB) Communications Error (Failure Type 02).
12 Flashes	OFF	ICB Module	Intelligent Cash Box (ICB) Check Sum Error (Failure Type 07). Memory partially cleared.
13 Flashes*	OFF	ICB Module	Intelligent Cash Box (ICB) Installed with data from another machine (i.e., data not cleared) (Failure Type 08)*.
14 Flashes	OFF	ICB Module	Intelligent Cash Box (ICB) not initiated (Failure Type 09). Memory not properly cleared.
15 Flashes	OFF	ICB Module	Intelligent Cash Box (ICB) Module Error (Failure AF). No ICB Module detected present on Validator.

*. Occurs when three (3) rapid flashes are present when unit is initially powered-up indicating an ICB failure.

If diagnostic LED status is different from the Table A-14 listed states, contact JCM Technical Support.

LED Reject Codes

Table A-15 lists the possible LED Reject Codes that can exist when a fault condition occurs.

Table A-15 LED Reject Codes

LED Status		Error	Causes and Solutions
Red LED	Green LED		
OFF	1 Flash	Slanted Bill Insertion	Re-insert the bill straight.
OFF	2 Flashes	Magnetic Sensor pattern error	Check all lenses for dirt or scratches. To clean the lenses and sensor, refer to Section 2 regarding Preventive Maintenance. An Upper Sensor Board failure may have occurred. Check all harnesses and connectors. To change the Upper Sensor Board refer to Section 4 regarding Circuit Board Removal.
OFF	3 Flashes	Paper detected inside the Acceptor in standby mode	Remove the paper jam from the Acceptor path and clean the lenses. To clean the lenses and sensor, refer to Section 2 regarding Preventive Maintenance. An Upper and/or Lower Sensor Board failure may have occurred. Check all harnesses and connectors. To change the Upper/Lower Sensor Board, refer to Section 4 regarding Circuit Board Removal.
OFF	4 Flashes	Optical Sensor error Type 1	
OFF	5 Flash	Bill feed error Type 1	Check all lenses for dirt or scratches. To clean the lenses and sensors, refer to Section 2 regarding Preventive Maintenance. An Upper Sensor Board failure may have occurred. Check all harnesses and connectors. To change the Upper Sensor Board refer to Section 4 regarding Circuit Board Removal.
OFF	6 Flashes	Bill identification error	Remove the Bill from the Acceptor and clean the lenses. To clean the lenses and sensors, refer to Section 2 regarding Preventive Maintenance. An Upper and/or Lower Sensor Board failure may have occurred. Check all harnesses and connectors. To change the Upper/Lower Sensor Board, refer to Section 4 regarding Circuit Board Removal.
OFF	7 Flashes	Optical Sensor Error Type 2	
OFF	8 Flashes	Optical Sensor Error Type 3	
OFF	9 Flashes	Inhibited Bill	Check and set DIP switches properly. Refer to Section 1 regarding Component Names and Section 7 referencing Software Specifications/Requirements.
OFF	10 Flashes	Return Bill	Bill inhibited by host machine.
OFF	11 Flashes	Reserved	N/A
OFF	12 Flashes	Bill feed error Type 2	Check all bill path sensors.
OFF	13 Flashes	Bill length error	Check all belts and rollers in the Transport path. To clean the belts and rollers, refer to Section 2 regarding Preventive Maintenance. To change the belts and rollers, refer to Section 4 regarding Disassembly Instructions.
OFF	14 Flashes	Optical Sensor Error Type 4	Remove the Bill from the Acceptor and clean the lenses. To clean the lenses, refer to Section 2 regarding Preventive Maintenance. An Upper and/or Lower Sensor Board failure may have occurred. Check all harnesses and connectors. To change the Upper/ Lower Sensor Board, refer to Section 4 regarding Circuit Board Removal.
OFF	15 Flashes	Optical Sensor Error Type 5	

If diagnostic LED status is different from the Table A-15 listed states, contact JCM Technical Support.

UBA Series
Universal Bill Acceptor (UBA-1x-SS)
Appendix B

B GLOSSARY

A

1 **Acceptor** – a term used in Communications Section 3 referencing functions sent to, and received from the Bill Acceptor by software commands.

2 **Anti-Pullback** – a method of preventing notes (bills) from being illegally removed from a validator using a string or wire to retrieve it once it has been accepted by the unit.

3 **Anti-Pullback Mechanism** – The rotating drum located in the rear portion of the transport to prevent a note (bill) from being retrieved by an attached string or wire.

4 **Automatic Centering** – a mechanism for straightening an incorrectly inserted note (bill) prior to being read by the sensors.

C

5 **Country Codes** – specific codes given to a country to identify its currency type.

6 **CPU** – acronym for Central Processing Unit.

E

7 **E-Clip** – a semicircular clip designed to fit into a shaft groove to retain a component in place.

D

8 **DIP Switch** – Dual Inline Package Switch – a printed circuit board mountable two-position slide switch package containing up to 16 individual switches.

9 **Downloader** – a proper name given to a specific UBA Flash EPROM programming application (i.e., UBA Downloader V1.11)

F

10 **Flash Memory** – electronically programmable memory integrated circuits that can be reused without requiring special erasure procedures.

I

11 **Intelligent Cash Box (ICB)** – an optional system which tracks gaming assets and revenues. The ICB System standardizes and simplifies the revenue drop and soft count functions, by automating the cash collection process.

12 **Identification Sensor** – optical sensors used for reading images on notes (bills) for comparison to recorded known image information.

M

13 **Magnetic Sensor** – a sensor used to detect the magnetic ink present on certain bill denominations.

P

14 **Photo-coupler isolation** – an LED and photo sensor combination utilized to isolate electrical signals.

15 **Pictographs** – small internationally recognized safety and attention symbols placed to the left of Notes, Cautions and Warnings throughout the manual.

16 **Pusher Mechanism** – a device used to stack received bills into the Cash Box.

R

17 **RS-232C Communication** – a common serial data communication standard protocol.

S

18 **Sensor** – a photo sensitive device and LED combination designed to detect timing and movement events.

19 **Solenoid** – an electro-magnetically retracting piston that mechanically moves a lever arm or other actuator within the UBA

T

20 **Timing Belts** – rubber belts used to transport notes (bills) inside the Validator.

U

21 **UBA** – acronym for Universal Bill Acceptor.

22 **USB** – acronym for Universal Serial Bus.

925 Pilot Road, Las Vegas, Nevada 89119
Office: (800) 683-7248, Tech. Support: (702) 651-3444, FAX: (702) 651-0214
E-mail: techsupport@jcm-american.com http://www.jcm-american.com

UBA SYSTEM WIRING DIAGRAM

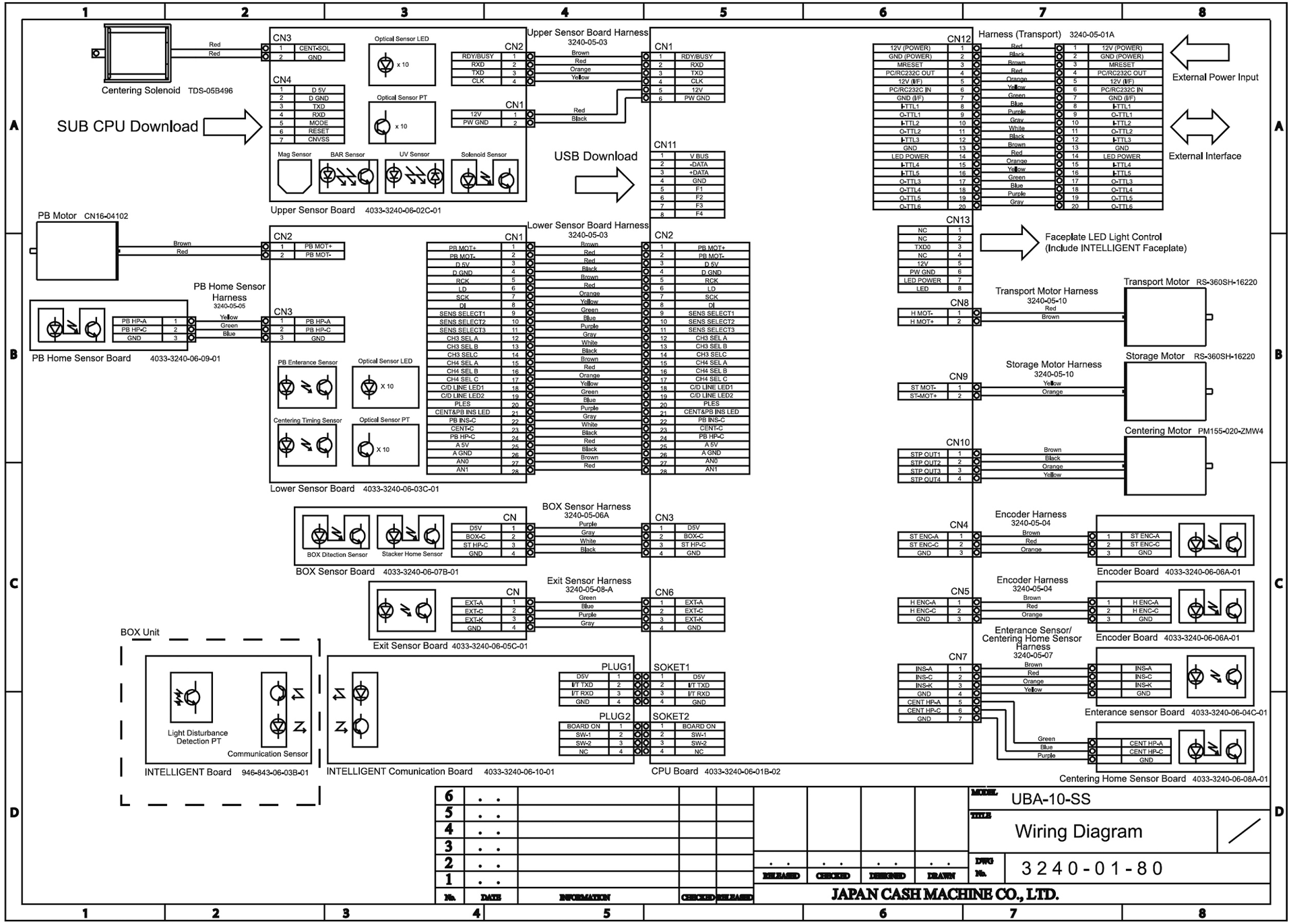


Figure 5-2 UBA-10-SS Bill Acceptor System Wiring Diagram

PAGE 5-4 IS INTENTIONALLY BLANK

System Wiring Diagram (Continued)

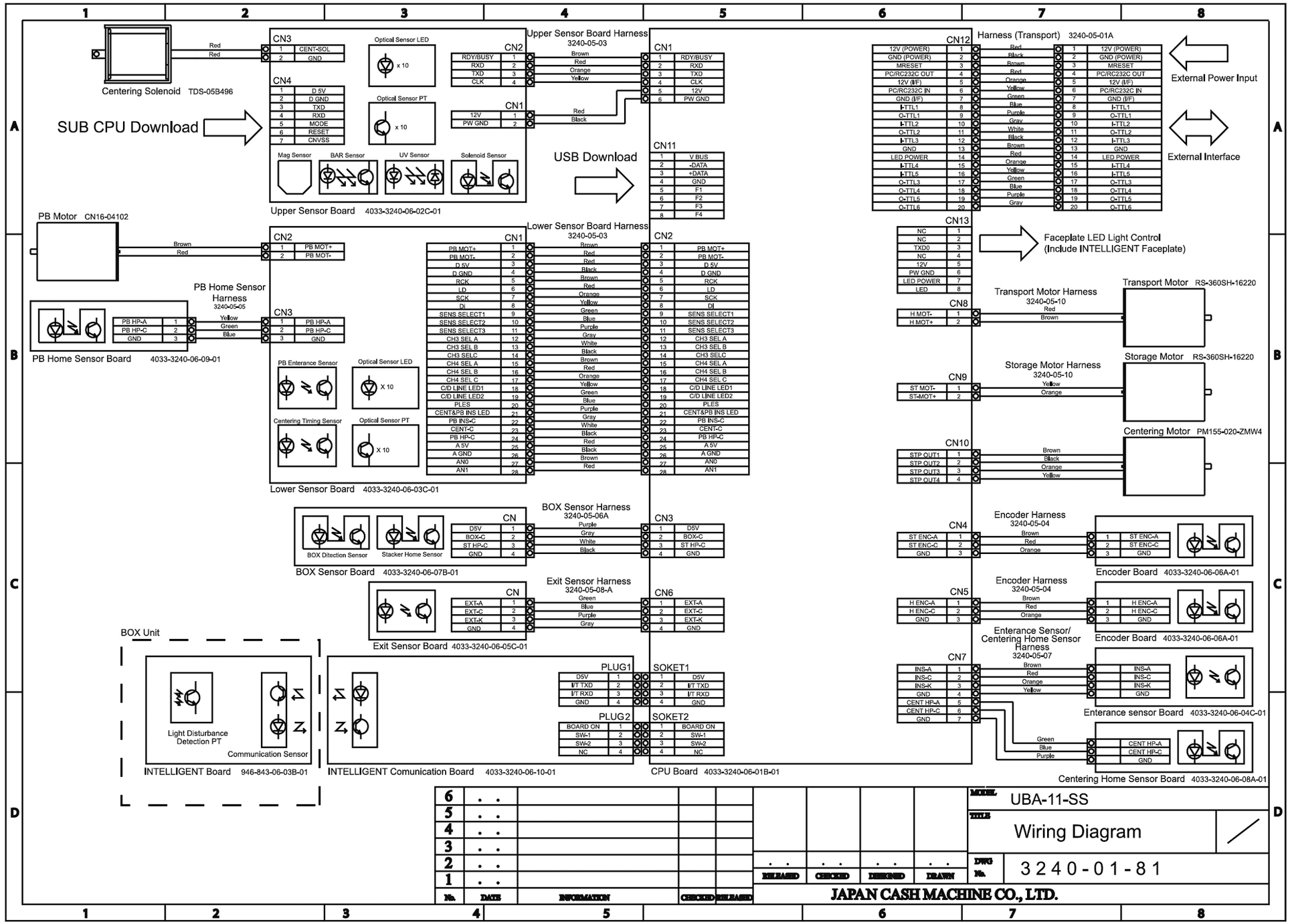


Figure 5-3 UBA-11-SS Bill Acceptor System Wiring Diagram

PAGE 5-6 IS INTENTIONALLY BLANK

System Wiring Diagram (Continued)

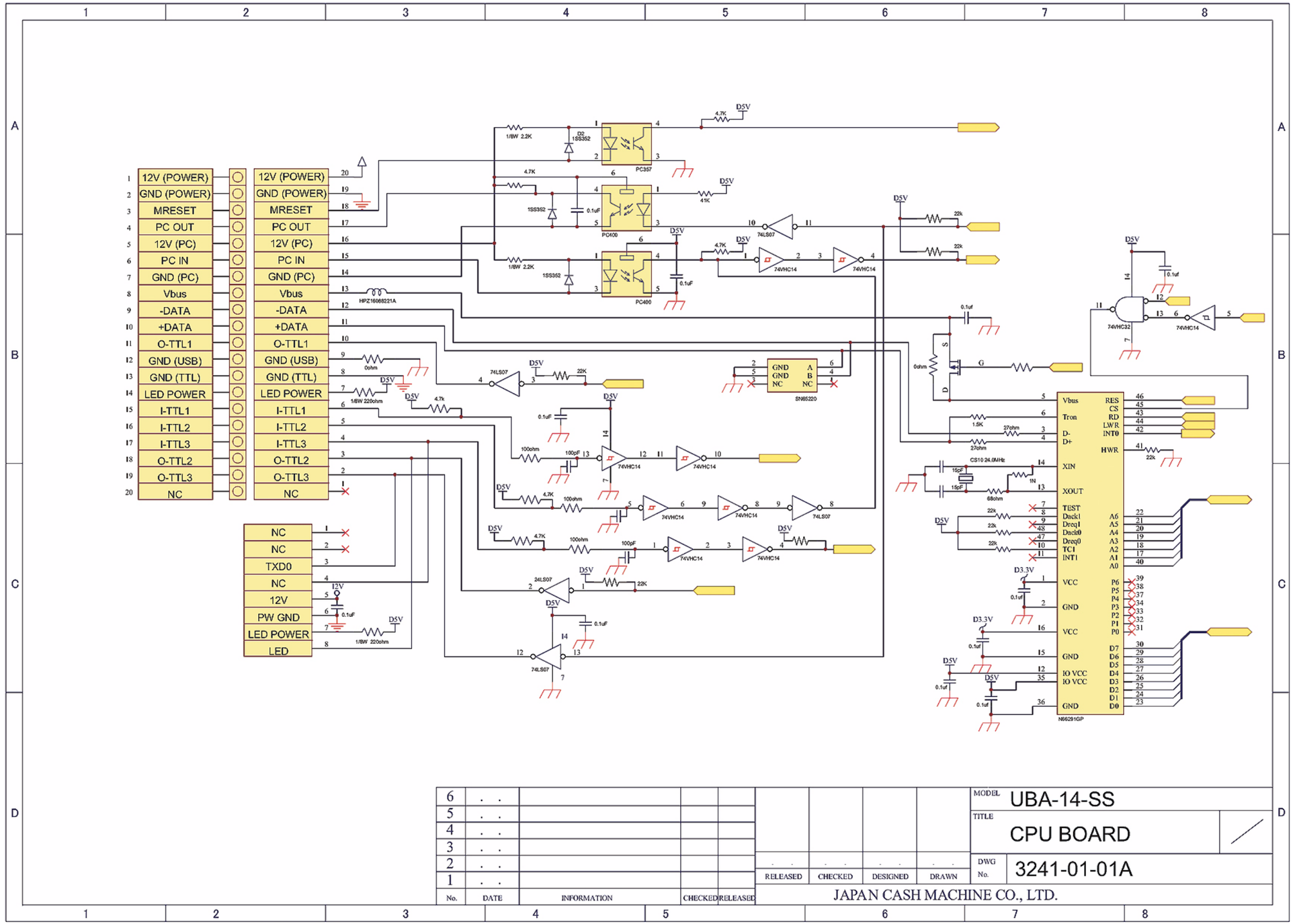


Figure 5-4 UBA-14-SS External Connector Interface Circuit Wiring Diagram

PAGE 5-8 IS INTENTIONALLY BLANK

System Wiring Diagram (Continued)

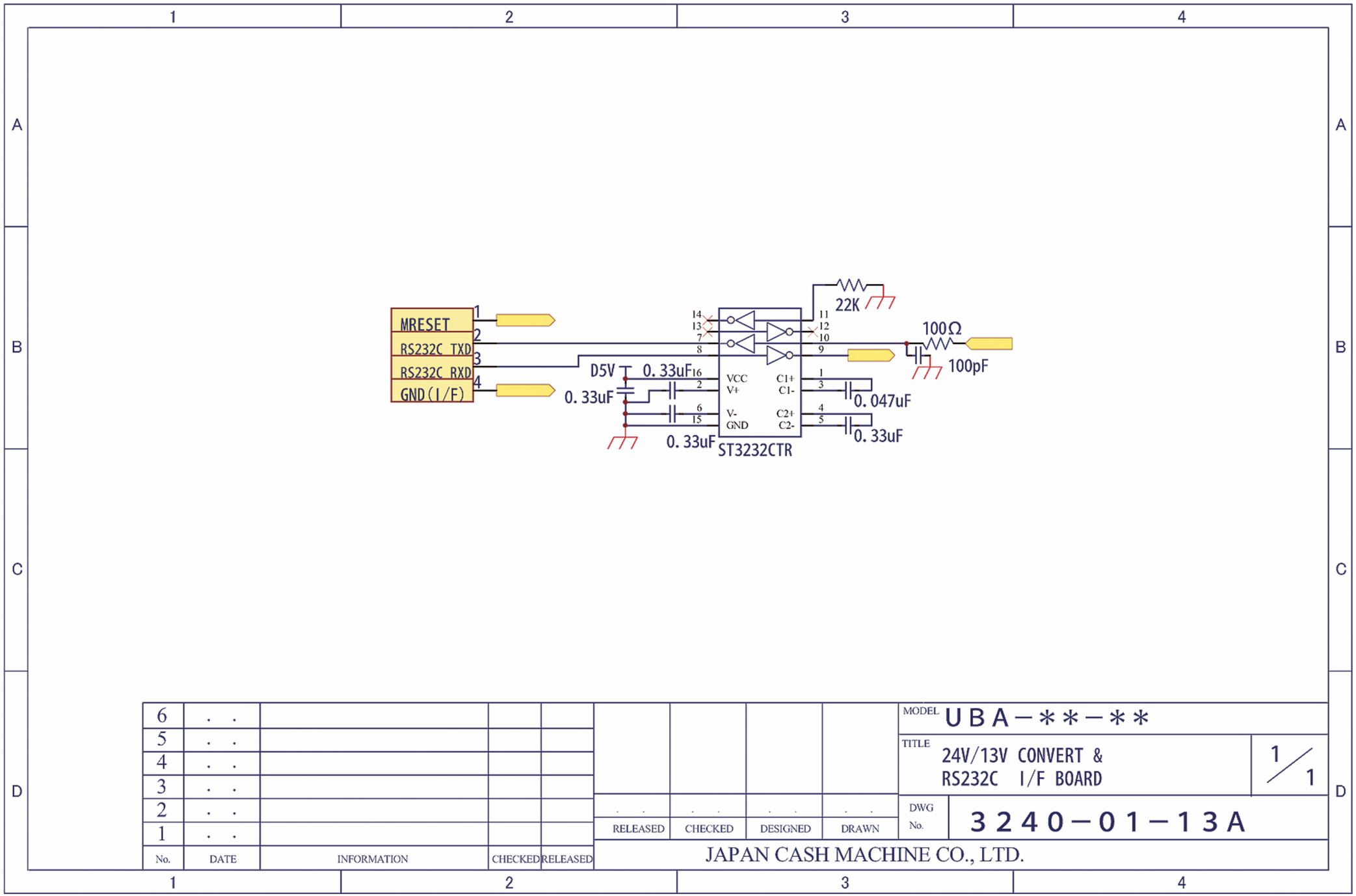


Figure 5-5 UBA-14-SS Optional Conversion Board Interface Circuit Wiring Diagram

PAGE 5-10 IS INTENTIONALLY BLANK