



Support: <http://www.jcmglobal.com/en/contact/default.aspx> **Web-Site:** <http://www.jcmglobal.com>

TBV™ Series

SH Transaction Based Validator

TBV-101-ASH

*Operation and Maintenance
Manual Addendum*

(Revision A)










P/N 960-000168R_Rev. A {EDP #218952}



Issue #4060-APE-01-00

REVISION HISTORY			
Rev No.	Date	Reason for Update	Comment
A	10/09/12	Addendum to FSH ICB, FLD, GSH and GLD Model Version	

International Compliance

- RoHS Directives  or  or  or  or 
- UL & c-UL Marks  File No. E142330
- FCC Directives , see below.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

IC NOTICE

This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Copyright © 2012 By Japan CashMachine Co., Limited

This product document (hereinafter referred to as "Manual") is fully covered by legal Copyrights owned by the Japan Cash Machine, Co., Ltd., (hereinafter referred to as "JCM") under Japanese laws and foreign countries. This Manual contains many copyrighted, patented or properly registered equipment items manufactured by JCM, that are prohibited and illegal to duplicate, replicate or copy in whole, or in part, without the express authorization by JCM with the following exceptions:

1. When an authorized JCM agency or distributor duplicates the Manual for sales promotion and/or service maintenance of the product, or technical service personnel education as required; and
2. When an end user duplicates the Manual to maintain operation of the product or operate the product in general. JCM retains all rights to amend, alter, change or delete any portion of this Manual in whole, or in part, or add items thereto without notice regarding the product or its related products.

JCM is a registered trademark of Japan CashMachine Co, Limited. All other product names mentioned herein may be registered trademarks or trademarks of their respective companies. Furthermore, ™, ® and © are not always mentioned in each case throughout this publication.

TBV™ Series

SH Transaction Based Validator

Table of Contents

	Page
TOC	
GENERAL INFORMATION	1
Description	1
TBV-101-ASH Unit.....	1
Model Descriptions	2
Type Descriptions.....	2
Software Descriptions.....	2
Precautions	2
Primary Features	2
Component Names	3
Specifications	4
TBV-101-ASH Technical Specifications	4
TBV-101-ASH Environmental Specifications	5
TBV-101-ASH Electrical Specifications	5
TBV-101-ASH Structural Specifications.....	5
Unit Dimensions	6
TBV-101-ASH Version Entire Unit Outside Dimensions	6
International Compliance.....	7
Technical Contact Information	7
Installation	7
Communications	7
Disassembly and Reassembly	7
Calibration and Testing.....	7
Troubleshooting	7
Wiring Diagram	8
TBV-101-ASH Unit Centering System Wiring Diagram	8
Exploded View and Parts Lists.....	9
TBV-101-ASH Bezel Unit, Exploded View 1	9
TBV-101-ASH Bezel Unit Parts List 1	9
TBV-101-ASH Bezel Unit, Exploded View 2.....	10
TBV-101-ASH Bezel Unit Parts List 2	10

THIS PAGE INTENTIONALLY LEFT BLANK

TBV™ Series

SH Transaction Based Validator

List of Figures

		Page
LOF		
Figure 1	TBV-101-ASH Unit Version	1
Figure 2	TBV-101-ASH Version Component Names	3
Figure 3	TBV-101-ASH Version Banknote Acceptor's Outside Dimensions	6
Figure 4	TBV-101-ASH Unit Centering System Wiring Diagram.....	8
Figure 5	TBV-101-ASH Bezel Unit, Exploded View 1	9
Figure 6	TBV-101-ASH Bezel Unit, Exploded View 2	10

THIS PAGE INTENTIONALLY LEFT BLANK

TBV™ Series

SH Transaction Based Validator

List of Tables

LOT		Page
Table 1	TBV-101-ASH Model Specifications	2
Table 2	TBV-101-ASH Type Specifications	2
Table 3	TBV-101-ASH Software Specifications	2
Table 4	TBV-101-ASH Version Technical Specifications.....	4
Table 5	TBV-101-ASH Version Environmental Specifications	5
Table 6	TBV-101-ASH Version Electrical Specifications	5
Table 7	TBV-101-ASH Version Structural Specifications.....	5
Table 8	TBV-101-ASH Bezel Unit Parts List 1	9
Table 9	TBV-101-ASH Bezel Unit Parts List 2	10

THIS PAGE INTENTIONALLY LEFT BLANK

TBV™ Series

SH Transaction Based Validator

TBV-101-ASH Addendum





GENERAL INFORMATION

Description

This addendum provides a general overview of the TBV-101-ASH Transaction Based Validator Version pictured in Figure 1. This guide is designed to help the user navigate with ease. It includes the following information:

- TBV Units
- Model Descriptions
- Type Descriptions
- Software Descriptions
- Precautions
- Component Names
- Specifications
- Unit Dimensions
- Wiring Diagrams
- Exploded View and Parts Lists.

In order to make operating this device and navigating within this manual easier, the following illustrations are used:

- **Safety Instructions** need to be observed in order to protect the operator and the equipment; these are identified with bold text and the following pictographs:   
- **Special Notes** affect the use of the Banknote Acceptor; these are identified with *italic* text and the following pictograph: 
- **Steps** require the operator to perform specific actions; these are identified with sequential numbering (1., 2., 3., etc).

TBV-101-ASH Unit



Figure 1 TBV-101-ASH Unit Version

Model Descriptions

Table 1 lists the product model number descriptions.

Table 1 TBV-101-ASH Model Specifications

Nº	Model: TBV - * * * * - * * * Nº (1) (2)(3)(4) (5)(6)(7)
(1)	Product Series Name
(2)	Validate Sensor 1 = Worldwide Type 1 (Standard)
(3)	Option Board 0 = None (Standard)
(4)	Centering Unit 1 = None (USA dollar 66mm only)
(5)	Accessory Unit A = Bezel Unit without a Shutter (USA Dollars, 66mm only)
(6)	Stacker Type SH = Horizontal Stacking Mechanism
(7)	Box Access F = Front Access Frame (Standard) R = Rear Access

Type Descriptions

Table 2 lists the product type number descriptions.

Table 2 TBV-101-ASH Type Specifications

Nº	Type: * * * * * - * * * * Nº (1)(2)(3)(4)(5)(6)(7)(8)
(1)	Cash Box Capacity* K = 2,000 Notes (New Banknotes)
(2)	Cash Box Option 0 = Thumb Twist Lock Knob (Standard) 1 = Hole Seal
(3)	ICB 0 = None (Standard) 1 = Optical Transport Method
(4)	Bezel Type 0 = None 1 = Plastic (Standard) 2 = Metal
(5)	I/F Harness 1 = Standard 2 = USB Interface
(6)	Reserved
(7)	Reserved
(8)	Reserved

*. The number of stacked Notes depends on the Banknote's condition.



NOTE: Some specifications listed are not available for all models due to specific product structure conditions. If interested, contact the local distributor to confirm the specific combinations or customization desired.

Software Descriptions

Table 3 lists the software number descriptions.

Table 3 TBV-101-ASH Software Specifications

Nº	Software: TBV - * * * * * - * * * * - V * * * Nº (A) (B) (C) (D)
(A)	Software Model Name
(B)	Denomination (Country Code)*
(C)	Interface Protocol Name 003 = ID-003
(D)	Software Version

*. The Country Code is indicated by three (3) alphabetical characters following the JIS Standard (e.g., USA = United States, EUR = Europe). If there are more than two (2) denominations, the Country Codes are punctuated with a slash mark (e.g., USA & EUR = USA/EUR).

Precautions

See the standard TBV Operation and Maintenance Manual (P/N 960-100926R {EDP #148849}) for details regarding “User Cautions,” “Installation Cautions,” “Mounting, Dismounting & Transportation,” “Handling,” “Preventive Maintenance,” and “Unacceptable Banknote” conditions.

Primary Features

See the standard TBV Operation and Maintenance Manual for details regarding “Primary Features” information.

Component Names

Figure 2 illustrates the various TBV-101-ASH Version component names and locations.

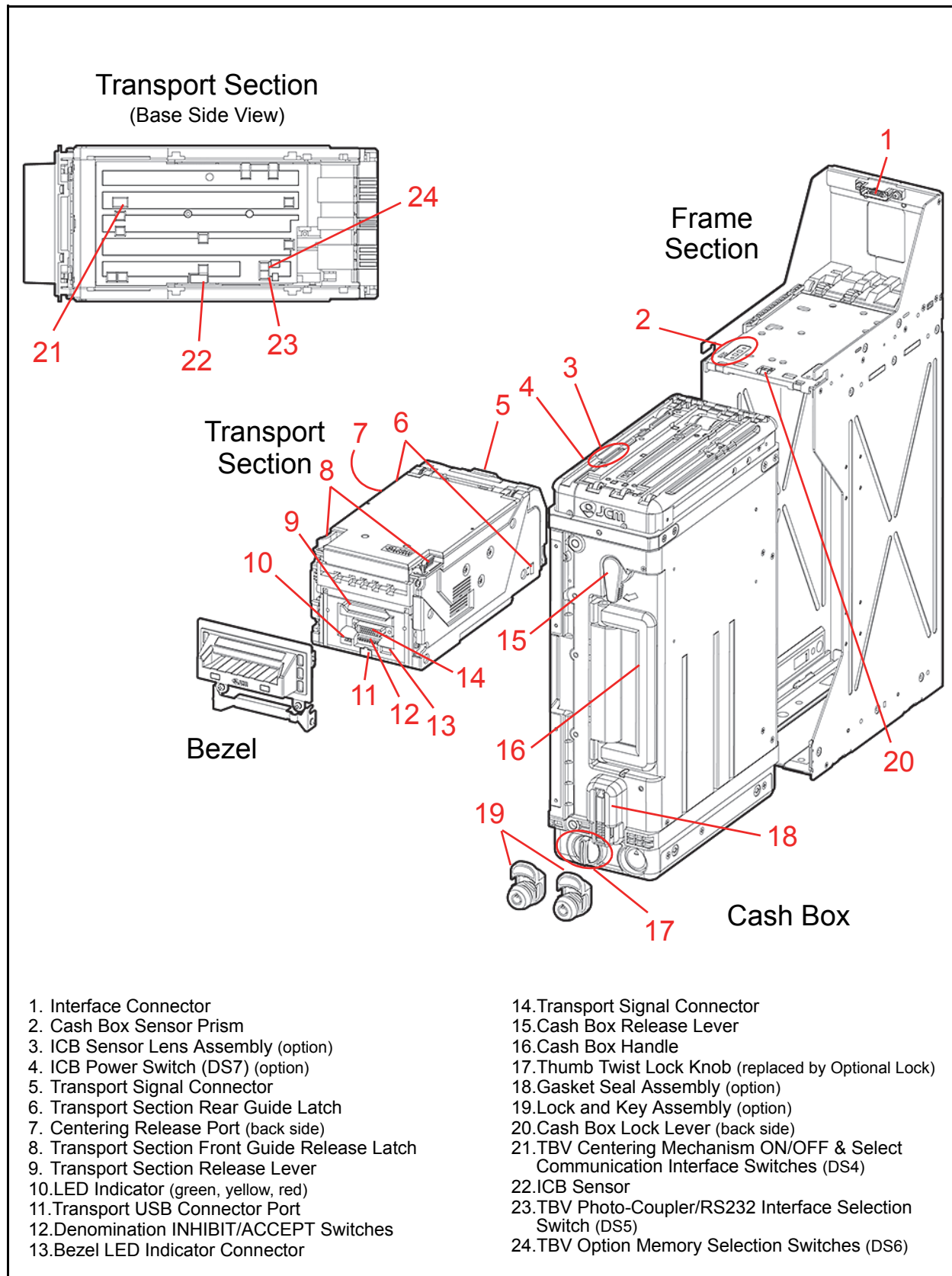


Figure 2 TBV-101-ASH Version Component Names

Specifications

TBV-101-ASH TECHNICAL SPECIFICATIONS

Table 4 TBV-101-ASH Version Technical Specifications

Acceptance Rate:	98% or greater Note: The following banknote types are excluded: a) Worn, dirty wet, stained, torn or excessively wrinkled Banknotes b) Double (dual) Banknotes c) Banknotes with adhering oil or iron powder d) Banknotes with folded corners or edges e) Banknotes with excessive or inadequate magnetism, or unclear graphics f) Banknotes with either the wrong cut dimension or printing displacement g) Banknotes with excessive fold lines or specific Banknote processing machine damage.
Bill Types Accepted:	Long side: 110~170mm (4.33~6.69 in.) Short side: 60~85mm (2.36~3.35 in.)
Barcode Coupon*:	Standard Specification a) Read code interleave interval: 2 of 5 b) Narrow Bar: 0.5mm-0.6mm (0.019-0.023 in.) c) Wide Bar: Narrow Bar = 3:1 d) Characters: 18 characters e) Print Position: middle (coupon divided equally from the left, right, top and bottom of the coupon's center) f) Print Width: wider than 10mm (0.39 in.) g) Thickness: 0.1mm
Insertion Direction:	Banknote: Four-way Barcode Coupon: Two-way (barcode surface up only)
Processing Speed†:	TBV-101-ASH (fixed type only): • Banknote - Approximately 1.0 second/note from Banknote insertion to Escrow. - Approximately 2.2 seconds/note between the next Banknote insertion during sequential insertion operation. • Barcode Coupon/Double Read‡ - Approximately 2.3 seconds/note from Banknote insertion to Escrow. - Approximately 3.4 seconds/note between the next Banknote insertion during sequential insertion operation. • Barcode Coupon/Single Read‡ - Approximately 1.0 second/note from Banknote insertion to Escrow. - Approximately 2.2 seconds/note between the next Banknote insertion during sequential insertion operation.
Validation Method:	Optical (6 illumination types, [Transmissive/Reflective]) and Magnetic
Diagnostic Indicators:	LED Full Color Range
Escrow:	One Note
Anti-stringing Mechanism:	Optical Sensor and Shutter
Cash Box Type**:	Simplified Security Cash Box Intelligent Cash Box (option)
Cash Box Capacity††:	Approximately 2,000 Notes (New Banknotes) (approximately 1,800 Notes is nearly full)
Interface:	Photo-Coupler Isolation, RC232C, ccTalk, USB (full speed)

*. Refer to the specific country's "Barcode Coupon Specification" sheet for more details.

†. The time between the first Banknote's insertion to the next sequential Banknote insertion operation.

‡. The Barcode Ticket/Coupon Reading Specification can be changed by DIP Switch Settings.

**User supplied installed Locks (including the attached Plate, Lock and Key).

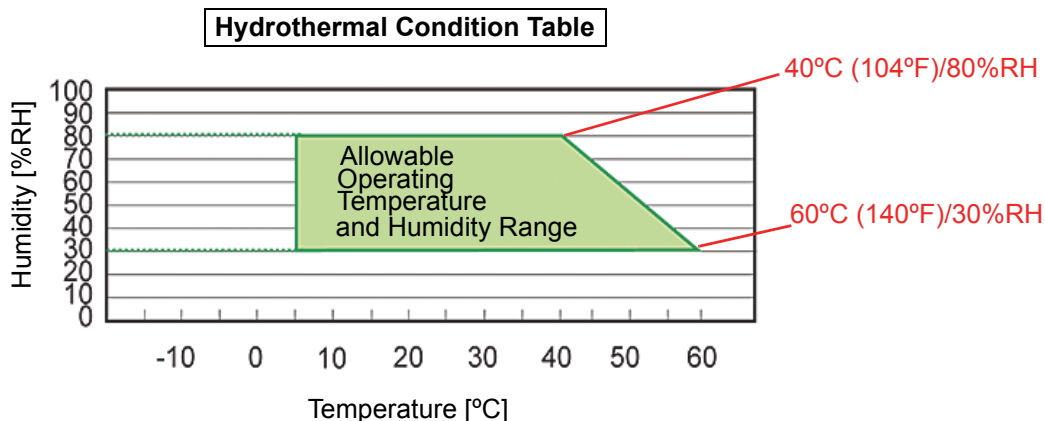
††.The actual number of Notes stacked depends on the condition of the Banknotes.

TBV-101-ASH ENVIRONMENTAL SPECIFICATIONS

Table 5 TBV-101-ASH Version Environmental Specifications

Operating Temperature:	5°C to +60°C (41°F to 140°F)
Storage Temperature:	-20°C to +60°C (-4°F to 140°F)
Relative Operating Humidity:	30% to 80% RH (non-condensing)
Relative Storage Humidity:	30% to 80% RH (non-condensing)
Visible Light Sensitivity:	Avoid contact with direct sunlight (interior lighting must be incandescent with a radiant angle of 15 degrees or more, having an illumination index of 3000 Lux or less)
Installation:	Indoors or outside (Bezel portion only)*, no cabinet vibration

*. NOT exposed to the elements, including the internal unit assemblies.



TBV-101-ASH ELECTRICAL SPECIFICATIONS

Table 6 TBV-101-ASH Version Electrical Specifications

Supply voltage:	24VDC \pm 5% (greater than 4.1A [100w] recommended)
Current consumption:	Standby = approximately 0.2 A Operation = approximately 2.0 A Peak = approximately 3.7 A (maximum 3 seconds)

TBV-101-ASH STRUCTURAL SPECIFICATIONS

Table 7 TBV-101-ASH Version Structural Specifications

Weight:	Approximately 9.3kg (20.5 lbs)
Mounting:	Horizontal
Outside dimensions:	See "TBV-101-ASH Version Banknote Acceptor's Outside Dimensions" on page 6 in this Service Manual Addendum

Unit Dimensions

TBV-101-ASH VERSION ENTIRE UNIT OUTSIDE DIMENSIONS

Figure 3 illustrates the TBV-101-ASH unit's outside dimensions.

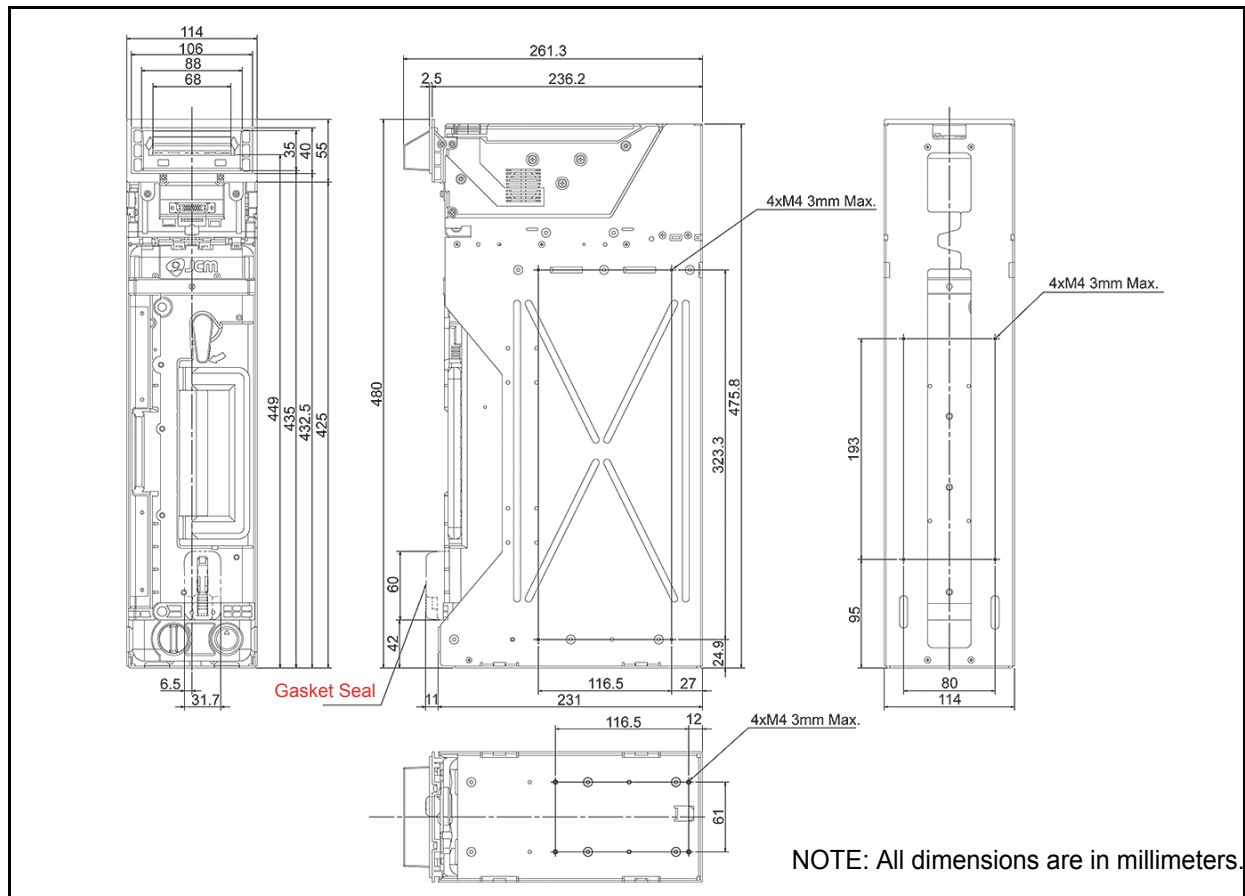









Figure 3 TBV-101-ASH Version Banknote Acceptor's Outside Dimensions

International Compliance

- RoHS Directives  or  or  or  or 
- UL & c-UL Marks  File No. E142330
- FCC Directives , see below.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

IC NOTICE

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Technical Contact Information

See the standard TBV Operation and Maintenance Manual for additional technical information regarding the TBV-101-ASH Version.

Installation

See Section 2 of the standard TBV Operation and Maintenance Manual for details regarding the “Banknote Insertion Process,” “DIP Switch Configurations,” “Connector Pin Assignments,” “Preventive Maintenance,” “Clearing Banknote Jams,” “Cleaning,” “Interface Schematics,” and an “Operation Flowchart” for the TBV-101-ASH Version.

Communications

See Section 3 of the standard TBV Operation and Maintenance Manual for information regarding communication information for the TBV-101-ASH Version.

Disassembly and Reassembly

See Section 4 of the standard TBV Operation and Maintenance Manual for details regarding the “Disassembly/Reassembly” procedures for the TBV-101-ASH Version.

Calibration and Testing

See Section 6 of the standard TBV Operation and Maintenance Manual for details regarding “Download and Installation Workbench Tool Requirements,” “Driver Installation Procedure,” “Software Downloading Procedures,” “Calibration Procedures,” “When to Calibrate,” “Calibration Tool Requirements,” “Reference Paper Placement,” “Validation Sensors Calibration,” “Positioning Sensors Calibration,” “Model Information Input,” “Performance Tests,” “Performance Test Tool Requirements,” “Performance Test Procedures,” and “DIP Switch Settings for conducting Performance Tests without a PC” for the TBV-101-ASH Version.

Troubleshooting

See Appendix A of the standard TBV Operation and Maintenance Manual for details regarding “LED Indication Conditions,” “Standard Error and Reject Codes,” “Maintenance Equipment,” and “Reference Paper Handling” for the TBV-101-ASH Version.

Wiring Diagram

This section provides the TBV™ Banknote Acceptor, TBV-101-ASH unit wiring diagrams.

TBV-101-ASH UNIT CENTERING SYSTEM WIRING DIAGRAM

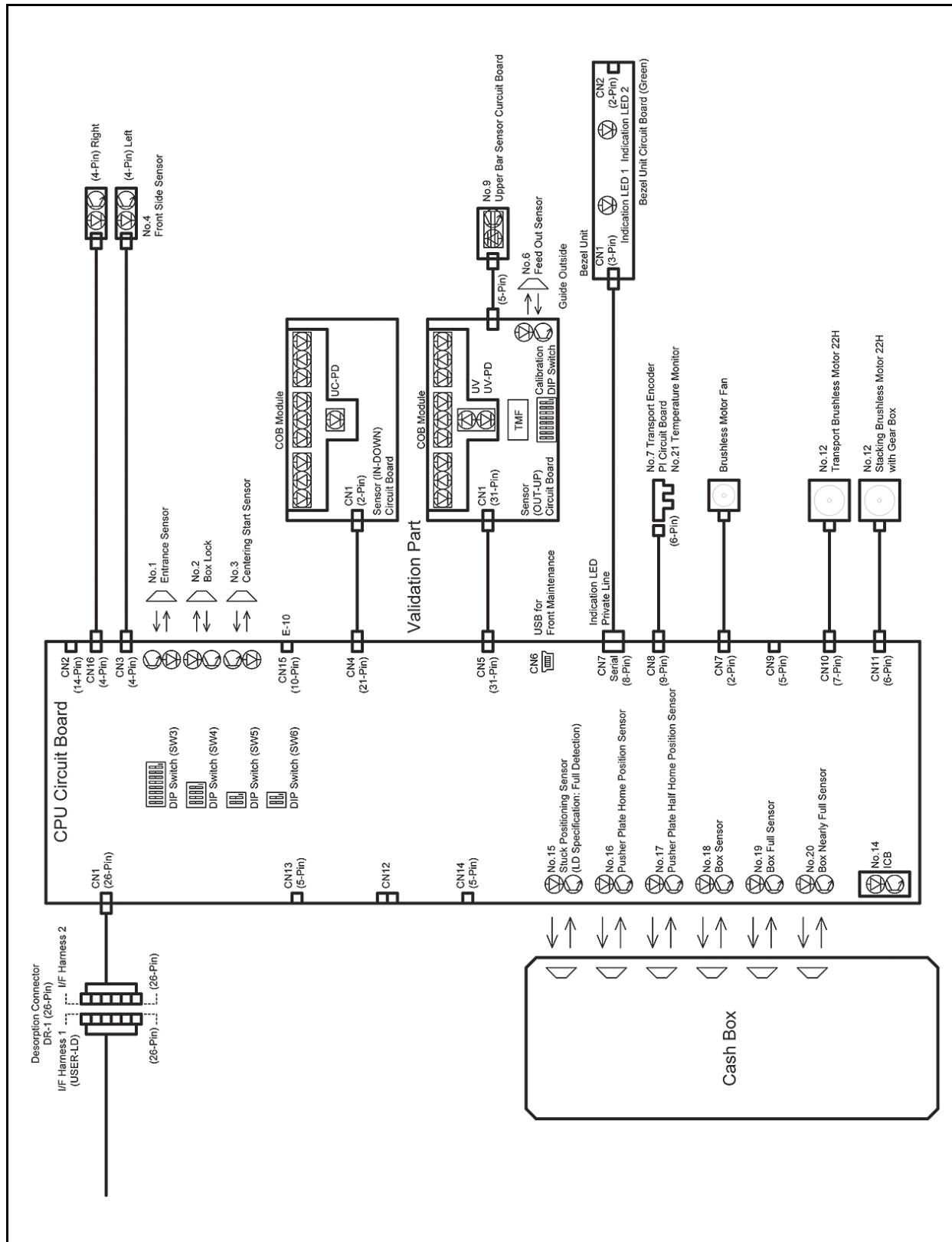


Figure 4 TBV-101-ASH Unit Centering System Wiring Diagram

Exploded View and Parts Lists

TBV-101-ASH BEZEL UNIT, EXPLODED VIEW 1

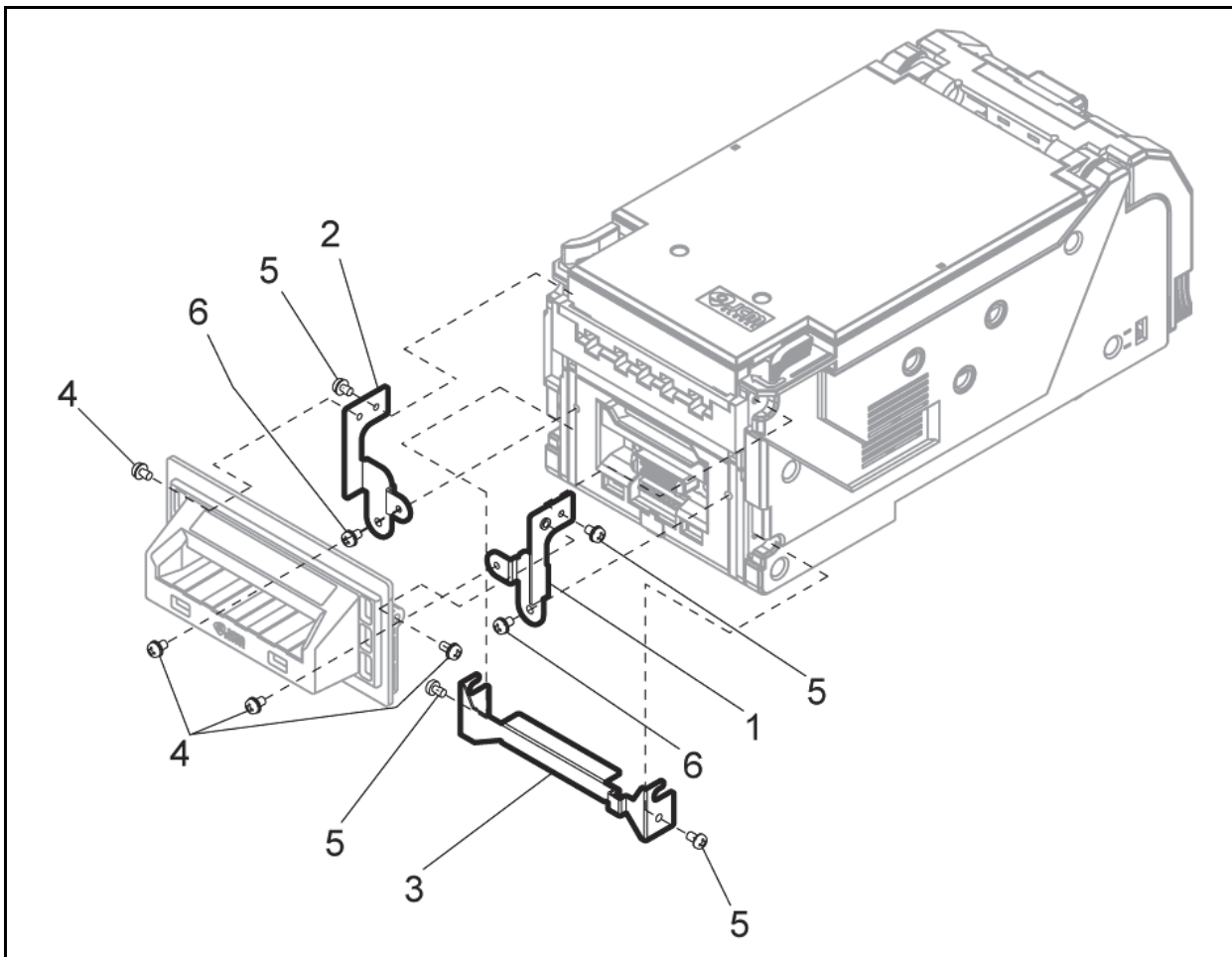


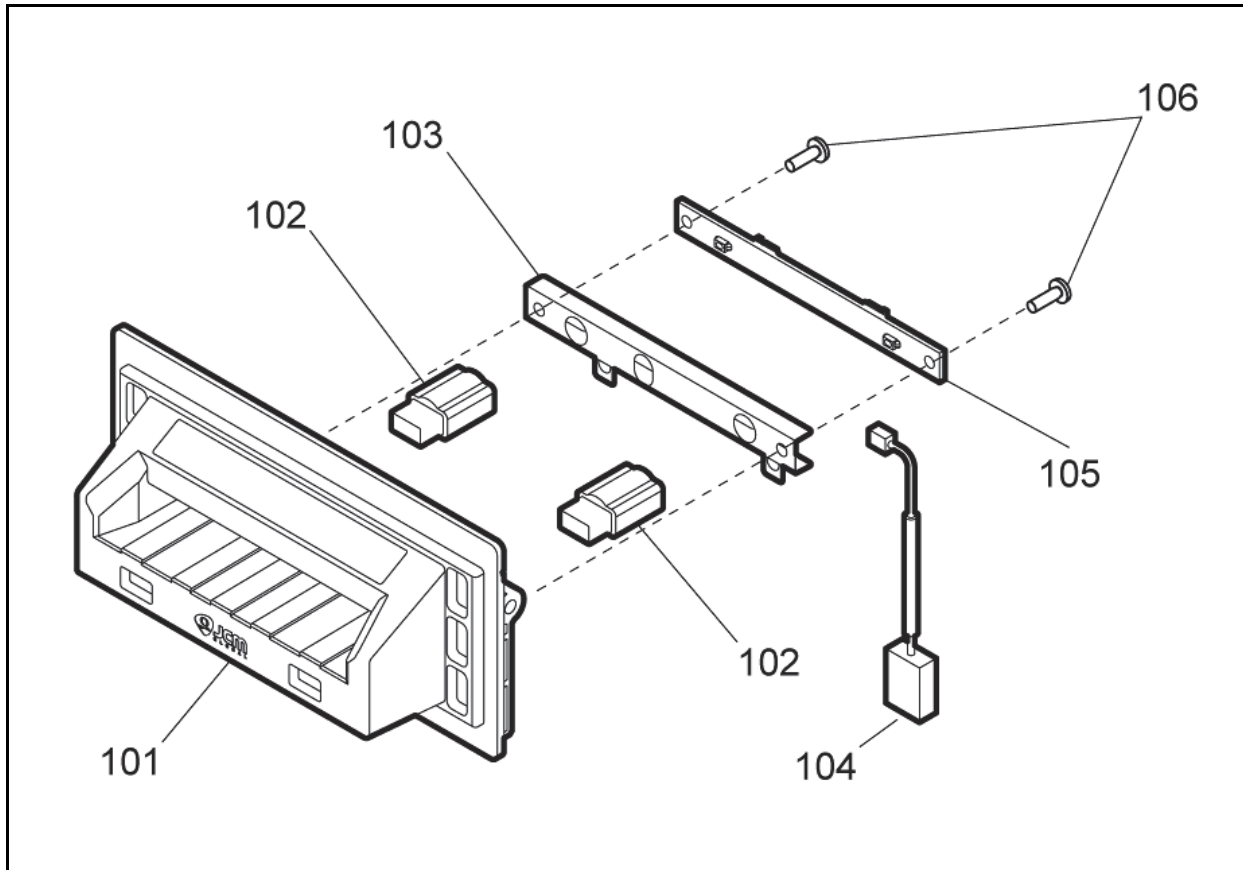
Figure 5 TBV-101-ASH Bezel Unit, Exploded View 1

TBV-101-ASH Bezel Unit Parts List 1

Table 8 TBV-101-ASH Bezel Unit Parts List 1

Ref No.	EDP No.	Description	Qty	Remark
1	216333	Bezel Bracket Right	1	
2	216334	Bezel Bracket Left	1	
3	216335	Connector Cover	1	
4	003609	M3x6 W Washer	4	
5	003600	M3x5 Washer	4	
6	006037	M3x12 W Washer	2	

See Section 7 of the standard TBV Operation and Maintenance Manual for further details regarding parts information for the TBV-101-ASH Version.

TBV-101-ASH BEZEL UNIT, EXPLODED VIEW 2**Figure 6** TBV-101-ASH Bezel Unit, Exploded View 2**TBV-101-ASH Bezel Unit Parts List 2****Table 9** TBV-101-ASH Bezel Unit Parts List 2

Ref No.	EDP No.	Description	Qty	Remark
101	216336	TBV Single Bezel A	1	
102	112644	Insertion Light Guide	2	
103	056771	Shield Plate	1	
104	218441	Bezel Ramp Harness	1	
105	195804	Lower Bezel Board (Green)	1	
106	056165	2.6x8 Phillips Self Tightening Binding Screw	2	

See Section 7 of the standard TBV Operation and Maintenance Manual for further details regarding parts information for the TBV-101-ASH Version.



Issue #4060-APE-01-00