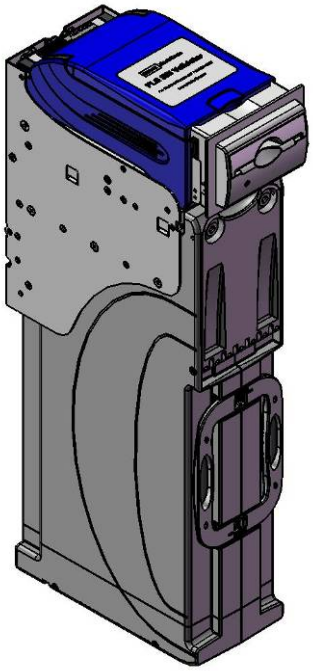
one™ Bill Validator with 2500 Banknote Cashbox



Part 1: Operation Manual (Revision 0)

For any feedback or errors, please contact us at support@cashcode.com.

1. INTRODUCTION:

All CashCode products have two types of manuals:

- Part-1: Operation Manual
- Part-2: Service Manual

This document is designed to help with the integration of one™ bill Validator.

- Select Part Number for the specific hardware configuration
- Unit Dimension and component nomenclatures
- Bill Validator Specification and Configuration
- General Specification for Dip Switch setting
- Easy Diagnostic for any service requirements

1.1 Glossary:

- Anti Stringing Sensor – Sensor used to detect bills being pulled back illegally by using a string, wire or tape.
- Bar Code Sensor – Sensor to scan bar coded tickets
- BDP – Bi directional protocol
- Bezel – Face Plate
- BV – Bill Validator or Bill Acceptor
- Centering Mechanism – CashCode patented bill centering mechanism which aligns bills before entry into bill path
- CST – Cassette or Cash Box
- CPU – Central Processing Unit
- Dielectric Sensor – CashCode Patented Sensor used to measure the paper density
- DIP Switch – Dual Inline Package Switch
- ONE /FLS – The ONE FrontLoad Standard Bill Validator
- Memory Card – Portable programmable memory which can used to program BV without any tools
- Magnetic Sensor – Sensor used to read magnetic properties / ink on the bill
- Stacker Mechanism – A scissor type attachment used to stack the bill into cashbox
- TITO – Ticket In Ticket Out Standard
- U/V – Ultra Violet Sensor
-  - Caution / Safety Instructions
-  - Comments / Notes

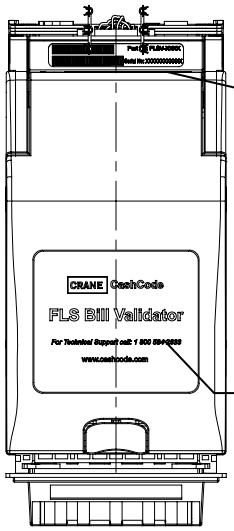
1.2 Safety Instructions:

Please follow the below guidelines:

- Please make sure the top lid is closed and the 24 pin connector is connected to the ONE Validator before power on.
- Please follow the specifications for operating temperature, humidity and storage conditions
- Do not lift or transport the unit by the cashbox handle.
- Be sure to remove power before removing the validating head.
- Please follow proper cleaning and maintenance procedures, ensuring the performance of the unit.

All information about this product is available online 24hrs a day, visit our website at http://support.cashcode.com/en/documentation/index.php

1.3 Product Labels:

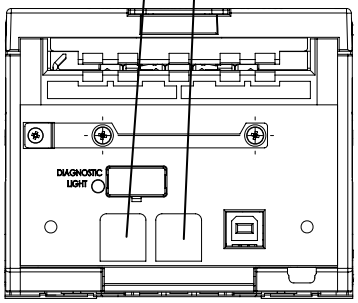


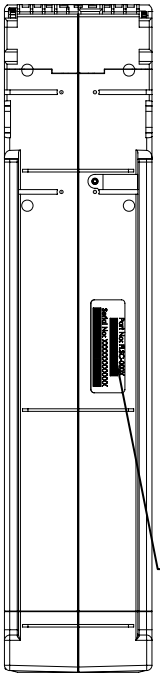
FLSV-XXXX
Validating Head Label

one™ Bill
Validator Label

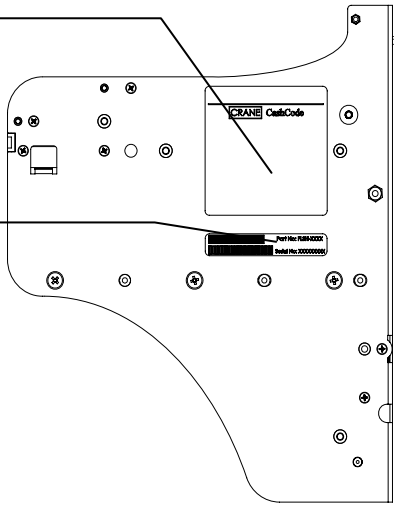
Boot Version Label

FLS-XXXX-XXXXXX
Software Version Label





FLS-6XXX
Main Product Label



FLSH-XXXX
Housing Label

FLSC-2500
Cashbox P/N Label

Additional Labels:

Packaging Label (Box Exterior)
Memory Card Label (See Section 2.6)
Bezel Label (See Section 2.3)

All Product Labels contain a generic part number and unique serial number.

1.4 Product Documentation:

Document Type	Document Part Numbers	Descriptions
User's Guide	UG-FLS-XXXX_Rev XX	Hardware Configuration.
Software Release Specification	SRS FLS-XXXX-XXXXXX Rev XX	Software Users Guide: ❖ Dip Switch Settings ❖ Bill Table Reference ❖ Diagnostics ❖ CRC
Bill Set Descriptions	BSD-XXXX-X	Picture of Accepted Bills and Denominations for specific software.
Cashbox Users Guide	FLSC-XXXX	Description and detail of Cash Box and its options.
Bezel Users Guide	UG-FLSB-XXXX_X	Details of Bezel, opening and mounting arrangement.
Basic Operational Manual	One_Part1_x	Basic Operation Manual.
2500 Bill Cashbox Operational Manual	One_2500_Part1_x	Additional Information regarding operation of validator with the 2500 Bill Cashbox.
Service Manual	One_Part2_x	Extended Manual with details on disassembling and servicing validator.
Onetrack Operation Manual	Onetrack_Part1_x	Basic Operation Manual and setup detail for Onetrack (RFID tag based soft counting) system.
OneCheck Operation Manual	Onecheck_Part1_x	Basic Operation Manual and setup detail for OneCheck (TITO Printer based soft counting) system.
3D Outline Model	Step or IGS format available upon request	Contact your sales representative.

You can also visit our website for available documents.
http://support.cashcode.com/en/documentation/index.php

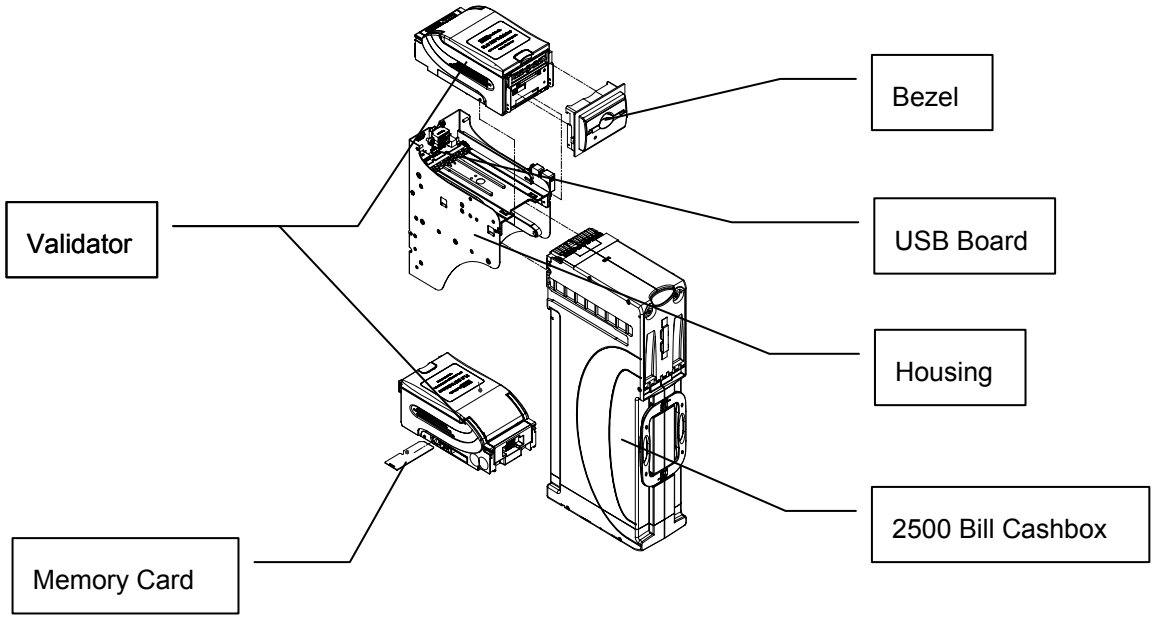
1.5 Product Overview:

The ONE Bill Validator was developed to validate bills having a width up to 85 mm. Compared to the previous Front Load bill Validator models, the ONE has the following distinctive features:

- Utilizes a light-weight plastic shockproof cashbox and a plastic validating head.
- Universal platform allowing use of the device in both 12VDC and 24VDC applications utilizing different interfaces.
- The block of sensors contains ultra-violet sensor.
- Two barcode sensors allow 4-way acceptance of barcode tickets.

The one™ BV consists of five main modules. Each module is available in different variations to suit your needs. The picture above illustrates the different modules:

- The one™ BV is designed to accommodate bills of different sizes from 62 to 85 mm wide, and from 125 to 172 mm long – which represents most of the world currencies.
- Certain currencies have different widths depending on denomination. For accurate validation of such currencies, the one™ Validating Head has a centering mechanism, which aligns the bills for processing of different widths.
- The lockable-removable Cashbox is used for temporary storage of validated bills. It can be locked with two standard ¾" tubular locks.
- Bill Capacity (2,500 banknotes) refers to the number of new bills that the Cashbox can store. Actual Cashbox capacity can decrease in real applications due to variations in thickness of street-grade bills.
- The one™ Housing joins all the other modules. It is meant to be permanently secured inside a Gaming, Vending or other type of host machine.
- Several Bezel styles are available for the one™ FrontLoad Standard.
- Software updates can be easily done with a Memory Card.



1.6 General Specifications:

Validation Sensors: ❖ 4 Color optical Sensors: ❖ Dielectric Sensors: ❖ Inductive Sensors: ❖ Anti Stringing Sensors: ❖ Barcode Sensors: ❖ U/V Sensors:	 Universal for any currency 1 (Differential) 3 1 set 2 (Upper cover and Lower Body) 1
Interface connector: ❖ Standard: ❖ Optional:	 24-pin CC proprietary power and signal connector. USB on the back (excludes back mounting option); includes an extra board with USB data connector and a dedicated power connector (Molex 39-30-3045 or 39-30-3047).
Supported Protocols and Interfaces: ❖ Universal Platform: ❖ Optional:	 RS232 Secondary RS232 channel Opto-isolated serial (ID003) Cctalk CCS/VFM USB (an external board required)
Cashbox locks: ❖ Standard: ❖ Optional:	 No locks installed, only cams supplied. Shipped with shipping lock and cap. Special Cam for Australian OEM.
Cashbox Free Fall Test: (Standard: IEC 68-2-32: 1975)	Functional Height: 0.5 metres Number of falls: 14 (6 sides, 6 edges, 2 corners)
Maximum stacking capacity (new bills):	2500 Bills
Bezels and indication: Standard: Optional Bezel:	 No bezel installed. Green/Red Status Light. GPT Style, Cole Style, Konami Style, BAT Style

Service indication:	Flashing of LED or the bezel lights.
Service port:	Front-service USB, Type B connector.
Memory programming:	❖ CashCode Memory card ❖ Interface controlled with NDEG card installed or using USB service port
Supported memory stick types:	❖ CCFS format (Stay-in, One Time Programmable, Multi-update) ❖ NDEG
Mode selection:	12-position DIP switch
Acceptance:	
Bills:	Lengthwise 4 ways
Accepted Denominations:	Refer to Software Description Guide
Validating Rate:	96% or higher (on first insertion)
Supported Bill Width (mm):	60 ~ 85
Length of Bill supported(mm):	120 ~ 172
Bill Escrow:	One Bill or One Barcode Ticket
Bar Code Tickets:	
Bar Code Specification:	Lengthwise 4 ways or 2 ways (refer to settings).
Encoding standard:	ANSI/AIM BC2-1995, Uniform Symbology Specification – Interleaved 2 of 5
Narrow bar width, in mm:	0.5 to 0.6
Wide/Narrow bar ratio:	3:1
Number of characters:	6 to 18
PCS (Print Contrast Signal) value:	0.6 min
Bill processing cycle time:	3.2 seconds (from Bill insertion to ready for next bill).
Power supply voltage:	
Universal platform:	12 VDC ±5% or 24 VDC ±5%
Current consumption:	
12 V DC, operating mode (max):	3 Amp
12 V DC, standby:	0.6 Amp

Environmental Specifications:	
Allowed applications:	Indoor only
Operating temperature:	0 °C ~ +50 °C
Storage temperature:	-20°C ~ +60°C
Relative Operating Humidity:	30% - 90% (non-condensing)
Relative Storage Humidity:	30% ~ 80% (non- condensing)
Lifetime Expectation:	1,500,000 processed bank notes or 7 Years (whichever comes first).
Installation:	Any in forward-back plane, vertical in left-right plane.
Access to cashbox:	From front side of the Validator.
Outer Dimensions: (H x W x D)	600 mm x 115 mm x 235 mm (23.62 inch x 4.52 inch x 9.25 inch)
Unit Weight:	
Validating Head: Housing: Expanded Cashbox (Empty):	1.22 kg (2.69 lb) 1.58 kg (3.48 lb) 3.52 kg (7.76 lb)
Net Weight:	6.32 kg (13.93 lb)

1.7 Compliance Approvals:

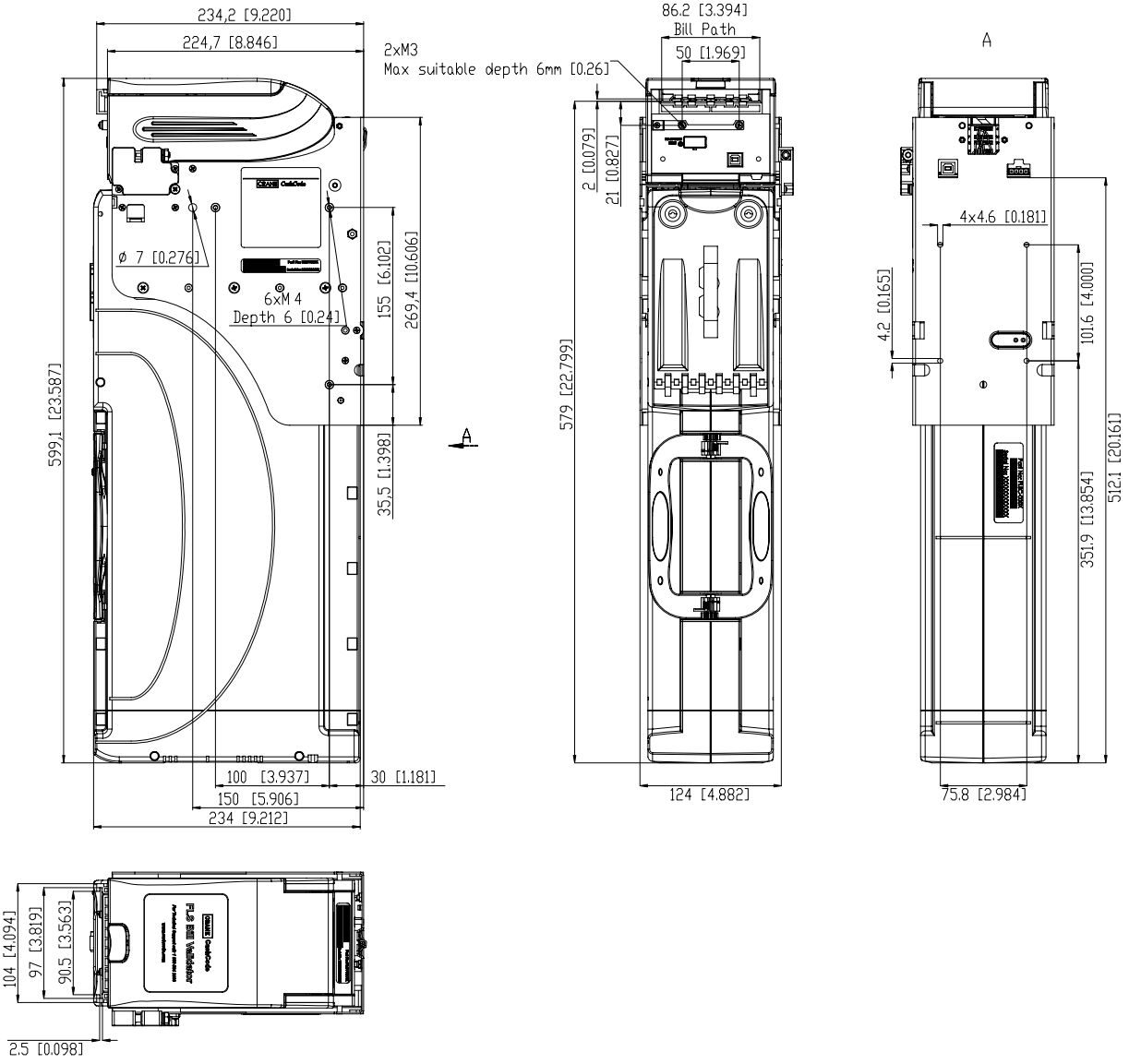
- FCC class B
- CE Compliance
- U/L 756
- ROHS Compliant

CE Declaration is available upon request. Contact your sales representative for details.

U/L listing can be found on http://www.ul.com/

1.8 Unit Dimensions:

1.8.1 ONE BV without Bezel, Foldable Handle Cash Box (2500 Bills):



All dimensions are in mm (inches in bracket) for reference only.

2. MODULAR SYSTEM

A Modular System is an interchangeable group of parts – easily configured to a user's specifications. Below is a more detailed description of each module and its features.

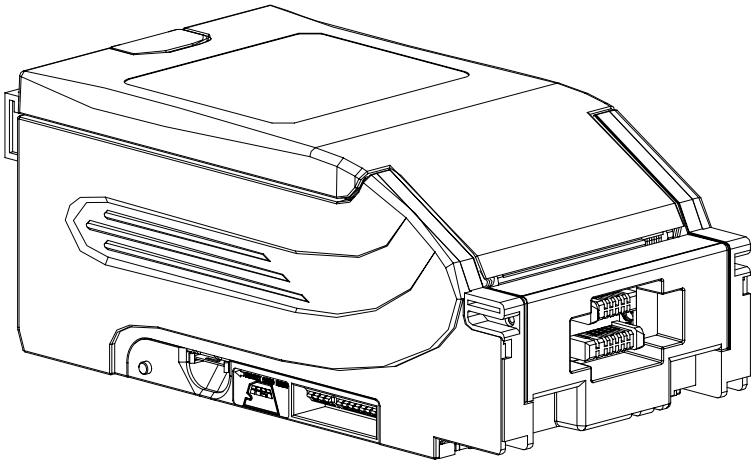
Following options are available:

- Cashbox – 2500 Bills
- USB interface (optional)
- Bezel
- Security switches – 1 or 2 (Switches have Quick Connect terminals and are rated for 5A at 250 V)

Contact your sales representative for sample request.

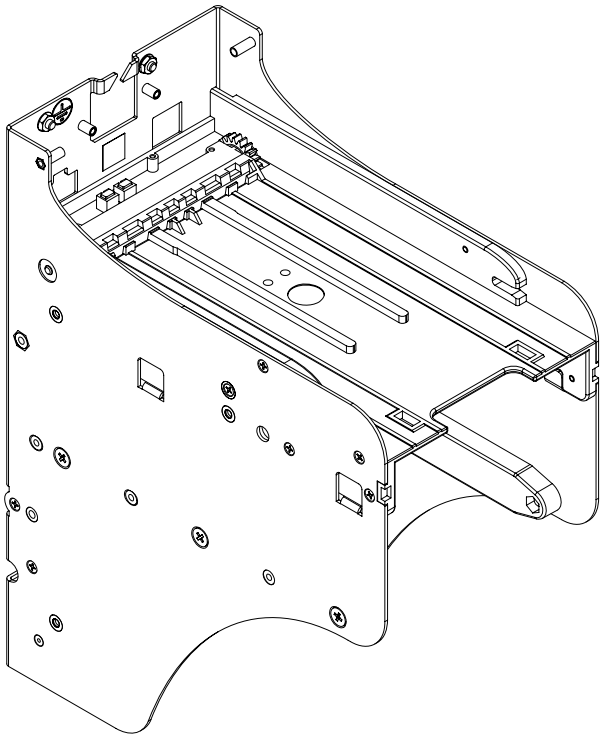
2.1 Validating Head:

The Validating Head with 24 pin output connector is universal and can be used in any application.



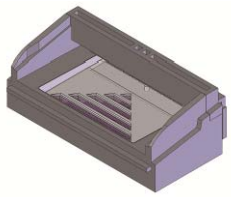
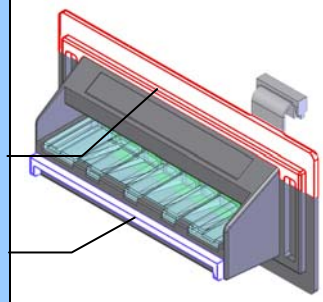
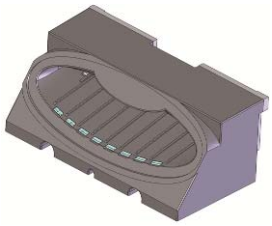
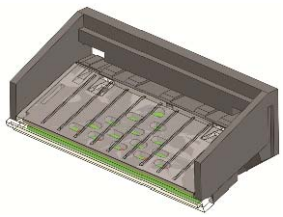
2.2 Housing:

The Housing is made of a rigid metal structure, which allows you to mount the validator using the left, right or back side.



2.3 Bezel:

The Bezels are U/L and CE compliant and 85 mm wide opening. Multiple bezel designs make the CashCode one™ Bill Validator compatible with a wide variety of door styles.

Part Number	Picture	Description
FLSB-5101		GPT Compatible Bezel with runway lights (Blue/Red)
FLSB-530XY		Cole Style Bezel with Runway Lights X-Variant: 1 – Full rectangle 3 – Flange cut top 5 – Raised bottom surface 7 – Flange cut top and raised bottom surface Y-Variant: _ - Green/Red Lights R – Red/Green Lights B – Blue/Red Lights
FLSB-5901		BAT (Aristocrat compatible) Bezel with oval shaped indicator light (Blue/Red)
FLSB-570X		Konami Compatible Bezel with open from top and runway light (Green/Red) X-Variant: 1 – Standard 2 – AGT/Star games customized

If you have custom bezel requirements, please contact your CashCode Sales Representative.

2.4 2500 Bill Cashbox:

The 2500 Bill Cashbox stores, stacks and holds validated bills in a secure cassette. The cashbox has a stacking mechanism and is typically equipped with a latch. Users are encouraged to replace the latch with a regular metal one. Users have a choice between one or two locks for added security. A locking mechanism allows for the installation of security locks (one or two 3/4" tubular locks measuring $1^{1}/_{16}$" ± $P^{1}/_{16}$" or $1\ ^{1}/_{8}$" ±$^{1}/_{16}$"). All security locks are supplied by user.

Although the Cashbox has a 2500 bill storage capacity, street grade bills require more space and as a result full capacity may be reduced. The Cashbox can store bills from 60 to 85 mm wide and from 120 to 172 mm long.

2.5 Accessories:

If no special requirements have been indicated, then ONE FLS will automatically be supplied with a 24-pin connector. For download via the interface connector from a PC the Power Supply OPT-PS5-FLS-DB9 is required.

Accessories P/N	Description	Order Status
OPT-MKFLS-24	Mounting Kit Connector. 24 Pin Connector, Pins, Mounting Screws.	Standard, supplied with every bill Validator.
OPT-PS5-FLS-DB9	Power Supply.	To be ordered separately.
OPT-PS5-FLS-DB9-01	OneCheck enabled power supply.	To be ordered with OneCheck system.
OPT-MKFLS-SWH	Housing Kit with 1 Switch Option (Factory installed).	To be ordered separately. If you need two switches, order qty – 2.
OPT-MKFLS-USB	Extra Kit for USB enabled device (Factory installed)	To be ordered separately.
5110086	Standard Lock Hasp	Standard, supplied with every cashbox.
N/A	Special Lock Cam	To be ordered separately.
N/A	Custom Harness (for each cabinet or application)	To be ordered separately.

2.6 Memory Card:

Each CashCode one™ Bill Validator is supplied with pre-installed software or a Stay-In Memory Card (for gaming applications), according to users order. A Stay-In Memory Card may be a single download, a one time programmable, or an NDEG card.

Software updates are recommended whenever:

- New currency is issued, or
- A new series of counterfeit bills are discovered.

2.6.1 Memory Card Part Number Legend:

FSM-34US20-361011

FSM – oneTM BV Standard Memory Card

34 – Type of memory card (see table)

US – Country code (ISO 3166-3)

20 – Protocol/OEM Customization

Software version:

36 – Control Firmware

10 – Validation Firmware

11 – C/C Code Configuration

Type 31 Memory Card:

Dallas Chip, 128 K Memory

Type 34 Memory Card:

Dallas Chip, 512 K Memory

Type 42 Memory Card

CPU Chip, 512 K Memory

Memory Card Type	Mfg. Download	Single Update	One Time Update	Kobetron Signature Verification	Multi-Download	NDEG	Service USB Enabler
31	X	X	X	X	X	√	X
34	√	√	√	√	X	√	√
42	√	√	√	X	√	√	√

2.6.2 Memory Card Options:

Single Download (Stay-In) Memory Card:

Example Part Number: FSM-34US20-080500

New software can be ordered on single-download Memory Cards. The software from the new Memory Card is downloaded as soon as it is inserted into the slot, and the Validating Head is powered on. The Memory Card must be present at all times for the Bill Validator to operate.

The Stay-In/Single Download update scheme is the recommended option for gaming applications.

One Time Programmable (Stay-In) Memory Card:

Example Part Number: FSM-34US20-080500-OP

The One Time Programmable (OTP) Card is a Single-Update/Stay-In type memory card that has been locked as read-only. When an one™ Bill Validator is updated using an OTP card, it is locked to only accept software updates through OTP in the future.

NDEG (Stay-In) Memory Card:

Example Part Number: FSM-34C02

A special Memory Card can be ordered, which allows the download of new software through the interface connector. After the download, the Memory Card must be present in the Validating Head at all times. If the host controller supports the CCNET interface, then the download can be done via the host controller (and local network). Other interfaces do not support this download feature. Downloads in this case can be completed with any personal computer (PC or laptop) and a CashCode adapter. (The Validator must be temporarily disconnected from the host controller).

Multiple Download Card:

Example Part Number: FSM-34US20-080500-XX

New software can be ordered with a multi-download Memory Card. The multi-download Memory Card can be used for updating multiple one™ Bill Validator, depending on the number of licenses ordered. Subsequently, the card does not have to remain inside the unit during operation. Typically a multi-download Memory Card is issued for a limited number of downloads (maximum 99), and therefore the number of licenses required must be defined in the user's order.

USB Enabler Memory Card:

Example Part Number: FSM-34US20-080500-UB

A USB Enabler memory enables future software updates through the front service USB port of the one™ Validator. This option can be attached to any of the above memory card options.

Procedures for software updates can be found in section 5.

3. START UP & INSTALLATION:

3.1 Start-up:

To avoid damage of any kind during start-up process, please carefully check all points specified below:

- Make sure to use proper cable harness based on interface and cabinet.
- Power supply must conform to the specification on the label.

Proceed as follows to install the ONE Bill Validator in the main cabinet.

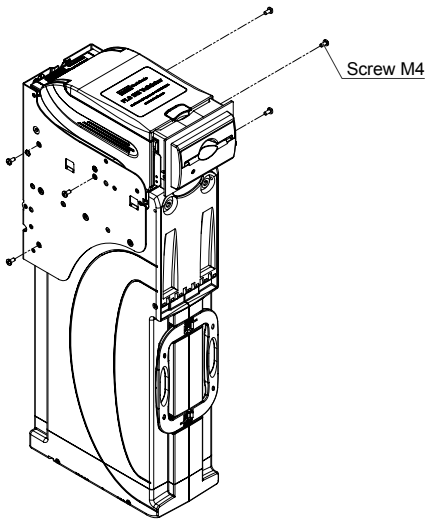
3.2 Installation of Main Unit:

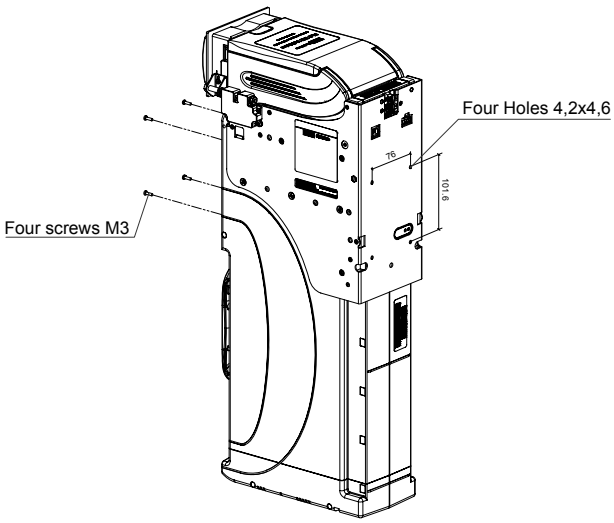
The ONE Bill Validator is installed by using (3) M4 screws on each side of the Front Load frame. The length of these screws should not be longer than required. Otherwise they may protrude through the inside of the frame.

If the position of the mounting screws is different than the position of the mounting holes provided in the target equipment, then additional frame mounting components may be required.

The Bill Validator can also be secured through the holes in the rear wall of the Housing. In this case, M3 screws and locator pins can be used.

For dimensions of the mounting holes, please refer to the dimensional drawings (Section 1.6).

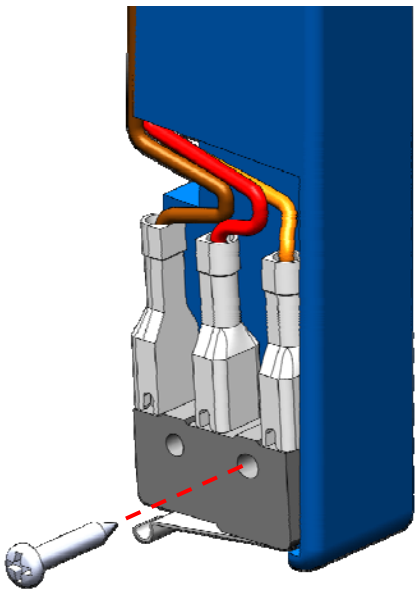


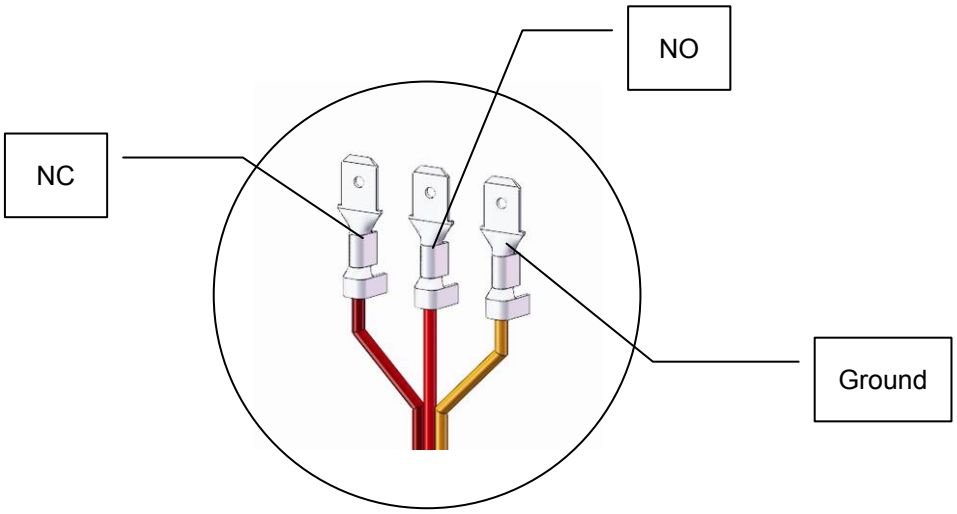


3.3 Security Switch Kit Installation:

The optional security switch kit (Part Number: OPT-MKFLS-SWH) allows the host machine to detect whether a cashbox is present in the validator Housing. Security switches can be installed on one or both sides of the housing, and need to be ordered together with your one™ bill validator for factory installation. Skip to step 3 unless you are installing the housing yourself:

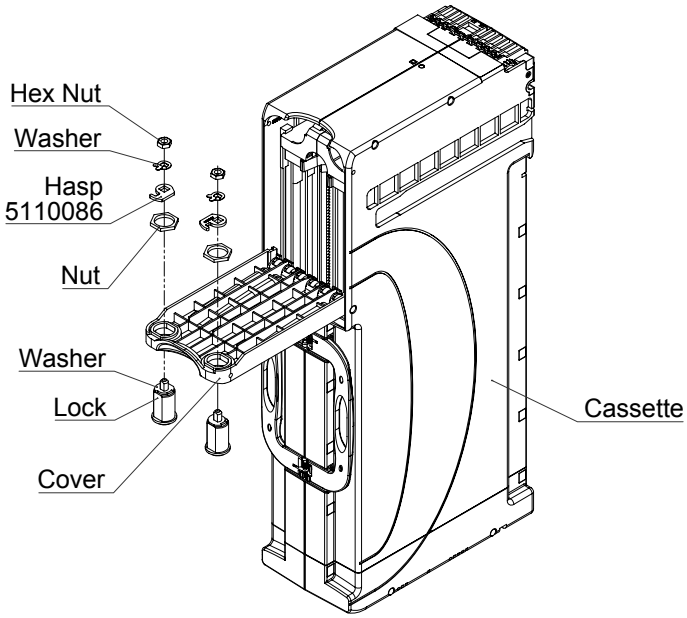
1. Attach the provided cable to the security switch as shown in the diagram.
2. Use a #2x$^{1}/_{2}$" wood screw to secure the switch to the bill validator Housing.
3. Install the housing inside the host machine as shown in section 3.2.
4. Feed the cable up through the housing and connect the applicable wires in the appropriate port of your host machine:
    a. Brown Wire – NC (Normally Closed) Switch. This contact is opened when a cashbox is inside the housing.
    b. Red Wire – NO (Normally Open) Switch. This contact is closed when a cashbox is inside the housing.
    c. Orange Wire – Common Ground.

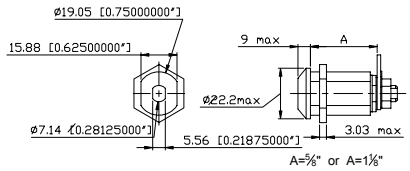


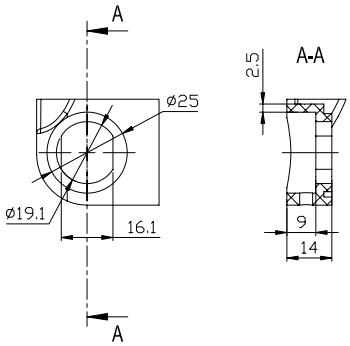


3.4 Cashbox Lock Installation:

In order to install the security locks into the Cashbox, open the Cashbox cover, remove the plastic lock and plug, and follow the diagram shown below:







Detailed Dimension of Slot for Lock

The cashbox design supports 1 to 2 locks, either $^{5}/_{8}$" or 1 $^{1}/_{8}$" in length. Suitable manufacturers include MEDECO, KABA, ABLOY, VSR, and Bilock.

The locks must rotate in opposite directions (one lock 90 degrees clockwise and second should be 90 degrees counterclockwise - see figure on the left).

Two standard locking hasps are shipped with every cashbox:

P/N - 5110086 Standard

Square head locks are special order and must be specified when ordering:

P/N - 5110086-02 Square head

Due to variations in regulatory requirements, CashCode does not provide locks, but we provide cam and applicable washers.

3.5 Interface connection:

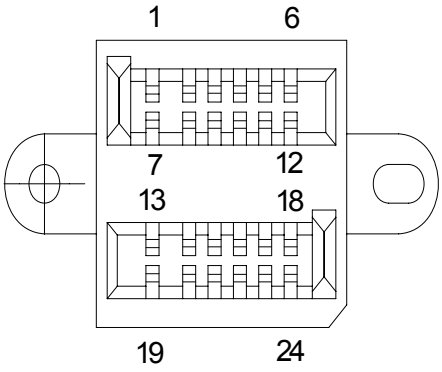
The one™ Bill Validator has the flexibility of five different protocol/interface options:

- Type 1: RS232 levels (CCNET), Opto-Isolated (BDP), Isolated Pulse Low Current or RS485, 24 pin validating head.
- Type 2: USB, 24 pin validating head.

3.5.1 Type 1 Interface Connection:

For the type 1 connection, the Host Controller may reset Bill Validator by holding line M-RES "active" for 1 ms. this informs the Bill Validator to abort any activity and return to its power-on reset state.

Rear Connector Pin Assignment:



(View from the back of Bill Validator)

Plug Housing (24 Pin) P/N: #5105068

Mating Socket P/N: #0100455 (CashCode 24 Pin Connector)

Contact Crimp Terminal DR-SC20-1-7000 (JAE) required for above

For detailed interface descriptions, please refer to the corresponding Interface (Protocol) Description Manual. The manuals may be downloaded from the CashCode website at Thttp://support.cashcode.com/en/documentation/index.php

3.5.2 Terminal/Signal description for Type 1 Interface Connection:

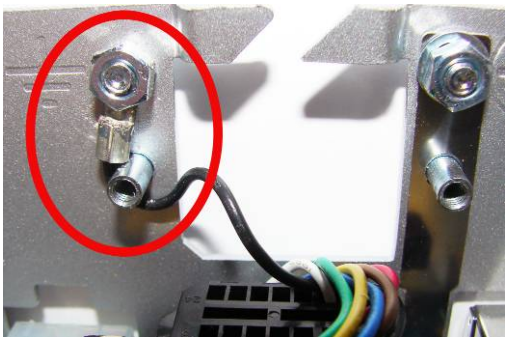
TERMINAL	SIGNAL	FUNCTION	ACTIVITY
1*	GROUND	GROUND BUS	-
2	RxD-EXT	RECEIVE DATA	HIGH/LOW
3	TxD-EXT	TRANSMIT DATA	HIGH/LOW
4	VCC	POWER	-
5	GND	GROUND	-
6	RXD-EXT1	RECEIVE DATA	HIGH/LOW -
7*	GND-EXT/EXT1	INTERFACE GROUND	-
8	TXD-EXT1	TRANSMIT DATA	HIGH/LOW -
9	RS485-A	RS485 BUS	-
10	RS485-B	RS485 BUS	-
11	INP-RXD	INPUT SIGNAL/ RECEIVE DATA	-
12	INP-TTL1	INPUT SIGNAL	-
13*	POWER-	POWER 0V	-
14	INP-TTL2	INPUT SIGNAL	-
15	OC-TXD	OUTPUT SIGNAL (OPEN-COLLECTOR)/ TRANSMIT DATA	-
16	OC-OUT1	OUTPUT SIGNAL (OPEN-COLLECTOR)	-
17	C-LED-BDP / OC-OUT2	LED CATHODE/ OUTPUT SIGNAL (OPEN-COLLECTOR)	-
18	A-LED-BDP	LED ANODE	-
19	POWER+	POWER 12V/24V	-
20	TXD-BDP	TRANSMIT DATA	HIGH/LOW
21	RXD-BDP	RECEIVE DATA	HIGH/LOW
22	RST-BDP	MASTER RESET	LOW
23	GND-BDP	INTERFACE GND	-
24	+12V BDP	INTERFACE POWER	-

The channel identified by EXT (pins 2, 3 and 7) is assigned for RS232 level interface (CCNET). A second RS232 level channel identified by EXT1 (pins 6 and 8) is currently reserved. The channel identified by BDP (pins 20 to 24) is assigned for Opto-Isolated interface (BDP).

Recommendations:

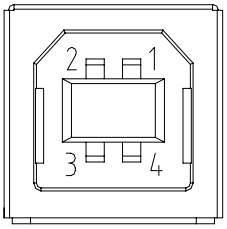
*Please connect Terminal 1 (Ground) to validator housing in order to eliminate external interference (i.e.: inside rear of housing):

**Do not connect Terminal 7 and 13 on the same connector.



3.5.3 Type 2 Interface Connection:

Rear USB Pin Assignment:

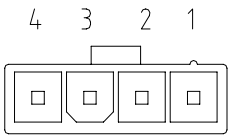


USB “B” Plug

Signals Description for USB 12 Volt version:

TERMINAL	SIGNAL	FUNCTION	ACTIVITY
1	+5 V	POWER	-
2	D-	USB BUS, DATA-	-
3	D+	USB BUS, DATA+	
4	GND	POWER	-

Power Pin Assignment



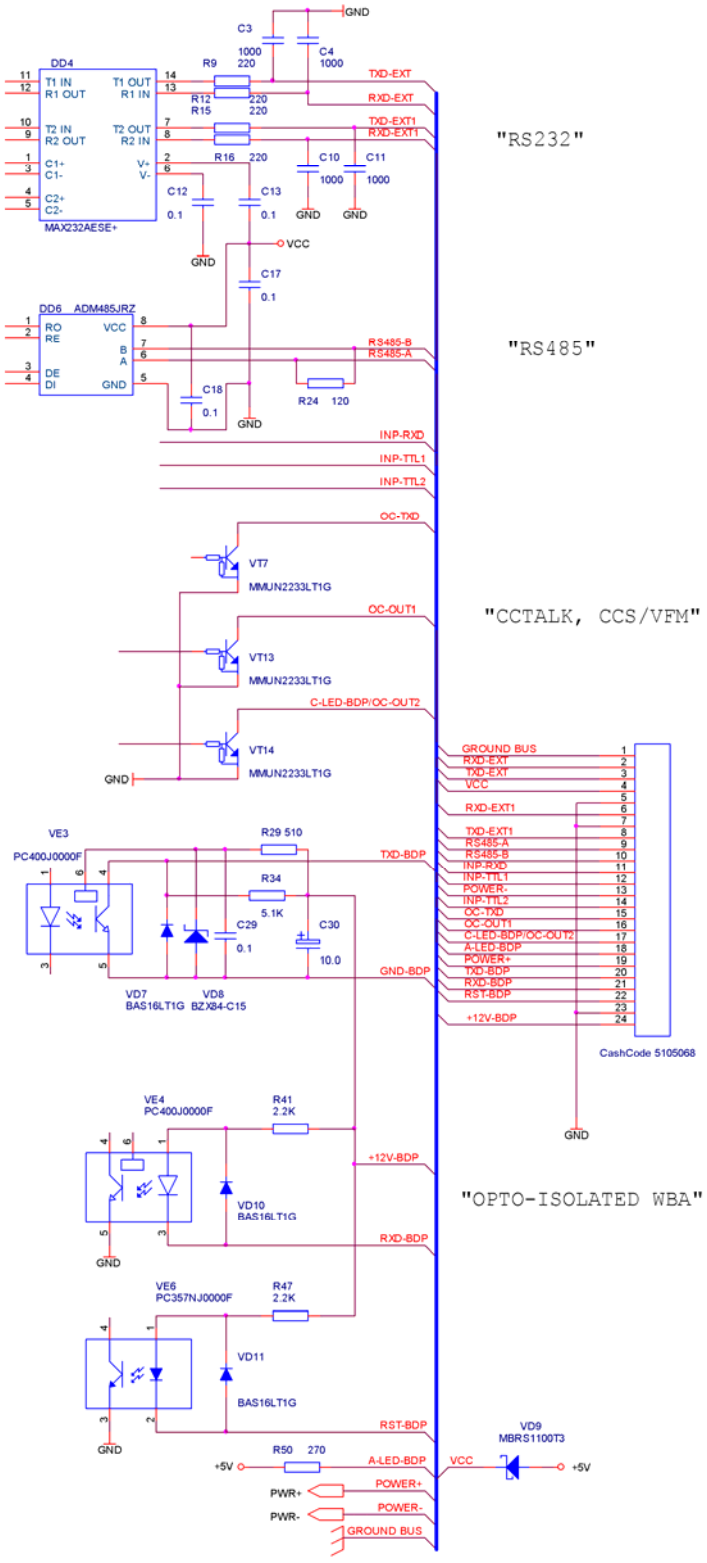
Socket 39-01-4040 (MOLEX)

Signals Description for power connector (Type 5):

TERMINAL	SIGNAL	FUNCTION	ACTIVITY
1	+12V DC	POWER	-
2	GND	POWER	-
3	GND	POWER	-
4	+24V DC	POWER	-

3.6 Input / Output Circuits:

- RS 232
- RS 485
- CCTALK
- OPTO ISOLATED ID003
- CCS / VFM:

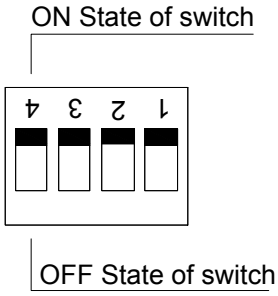


3.7 Switch Settings:

The switches are located on the side of the Validating head near the bottom.

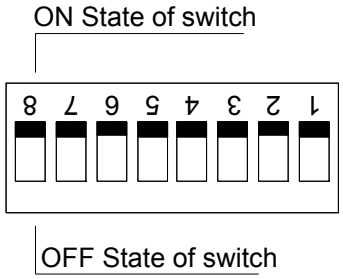
The first series of four (4) DIP switches is defined below. Only the 4th switch should be used during operation and diagnostic of the one™ Bill Validator, to switch between:

- Host Mode: This is the normal operational mode for the validator
- Service Mode: This mode is only for testing the Validator and does not require the connection to a host machine.



PARAMETER	SWITCH	ON	OFF
Orientation of the ticket	SW2.1	Bar Code - Four-Way	Bar Code – Face Up
Stacker orientation	SW2.2	Down	Up
Interface communication speed	SW2.3	9600 Bps	19200 Bps
Mode	SW2.4	Service Mode	Host Mode

The second series of eight (8) DIP switches controls accepted denominations and acceptance settings.



SWITCH	ON	OFF
SW1.1	Denomination #1 Enable	Denomination #1 Disable
SW1.2	Denomination #2 Enable	Denomination #2 Disable
SW1.3	Denomination #3 Enable	Denomination #3 Disable
SW1.4	Denomination #4 Enable	Denomination #4 Disable
SW1.5	Denomination #5 Enable	Denomination #5 Disable
SW1.6	Denomination #6 Enable	Denomination #6 Disable
SW1.7	Denomination #7 Enable	Denomination #7 Disable
SW1.8	Accept All	Reject Unfit Bills

DIP switch setting may vary based on software requirement for specific country or customer. For a complete explanation of switch settings, please refer to “software version description” for your particular Bill Validator. You can find at http://support.cashcode.com/en/documentation/index.php

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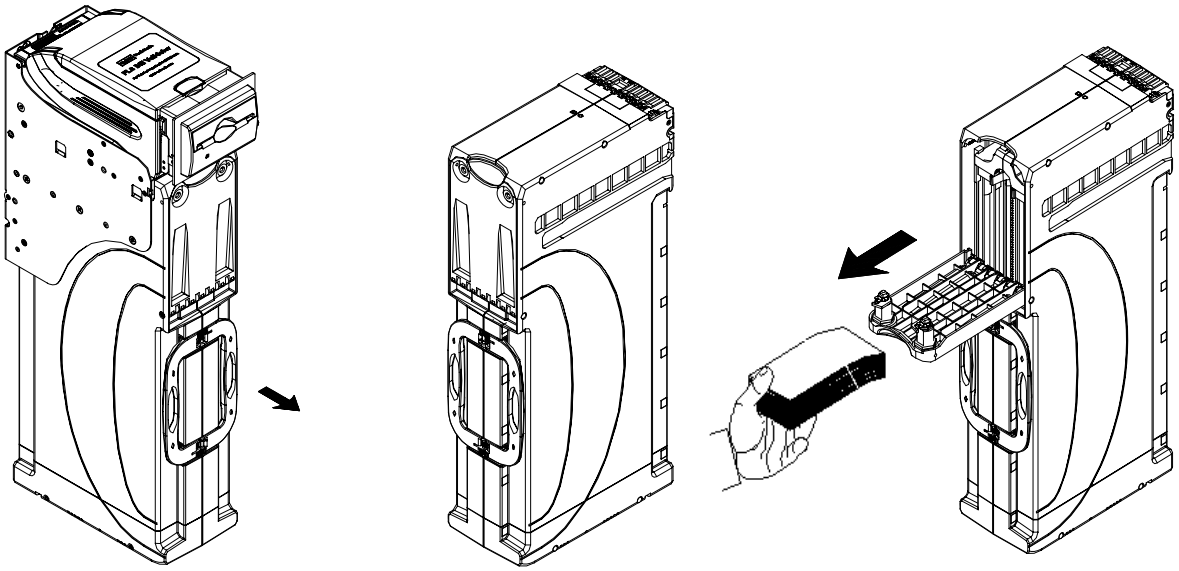
4. MAINTENANCE & SERVICE:

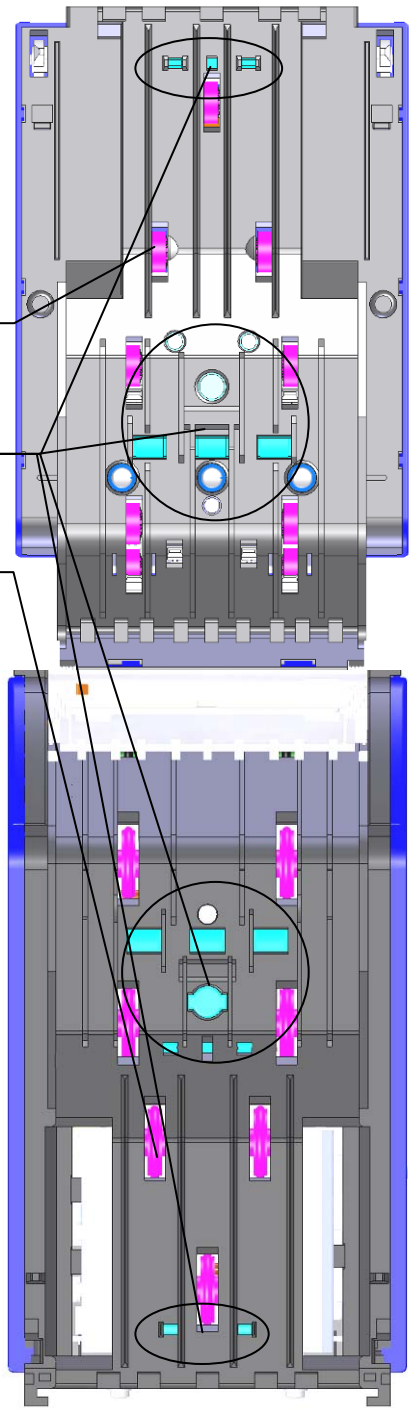
4.1 Collect Bills or Barcode Tickets:

To collect bills from the one™ Bill Validator, simply pull out the Cashbox using the handle. To open the Cashbox cover, open the locks located at the two corners. To replace the Cashbox, close the cover, and insert the Cashbox into the FrontLoad ONE frame.



4.2 Scheduled Maintenance:

During normal operation, dust and dirt accumulate on the optical sensors and the rollers of the validating head, possible resulting in a reduced acceptance rate. The bill path is recommended to be cleaned with a soft moist cloth, as explained below, every 6 months or after acceptance of 60,000 bills, whichever comes first.



Procedure:

1. Open the top cover of the validating head.
2. Use compressed air to blow away all loose particles from the bill path and cashbox chamber.
3. Wipe away any remaining dirt with a soft, moist cloth.
4. Check all lenses for scratches and clean with a soft cloth and clean water.
5. Check for cracked o-rings and transport rollers and clean them using a soft cloth with isopropyl alcohol (70%).
6. If any lenses, o-rings, or rollers are damaged, contact your closest service centre to have them replaced.

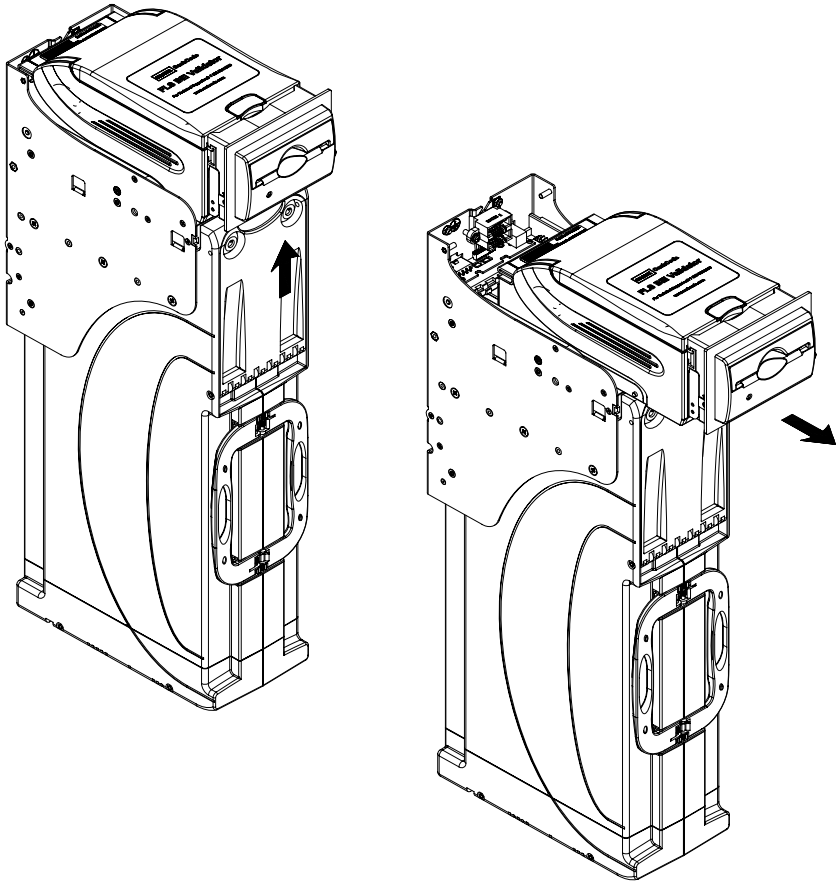
DO NOT use Acetone, Petroleum, or Mineral oil based cleaning products as they will cause damage to validator parts and void your warranty.

5. SOFTWARE UPDATES:

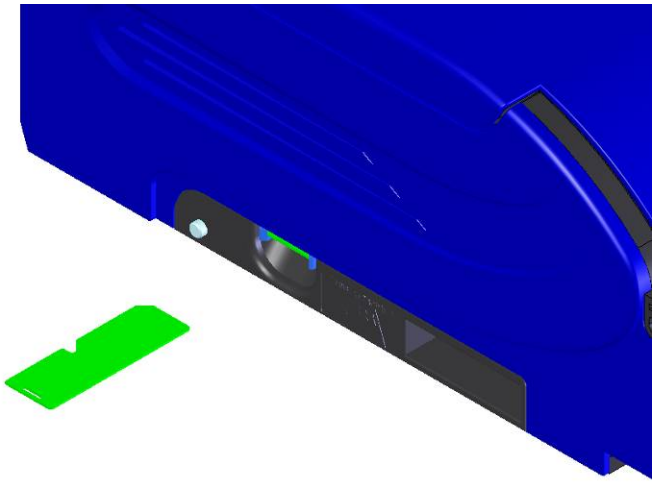
The oneTM Bill Validator is shipped with pre-installed software, according to a user's ordered specifications. It is recommended to keep your BV up to date. You can order updates from CashCode as they become available using the original part number for your system.

5.1 Memory Care Update Procedure:

1. Turn Power OFF.
2. Lift up the Latch under the Validating Head, and Remove the Validating Head from the Housing.



3. Insert the new CashCode Memory Card into the Memory Card slot of the Validating Head (for correct insertion, please see diagram below).

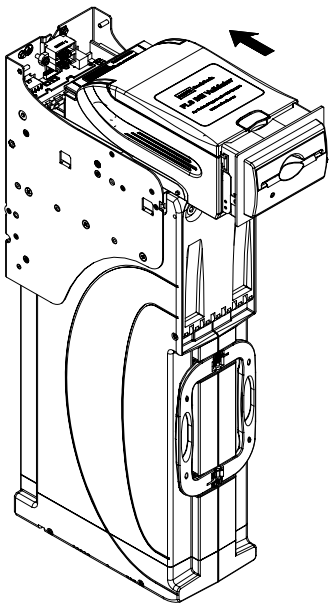


Memory Stick Label should be down and notch on memory stick should be on the left as per diagram above.

4. Insert the Validating Head into the Housing.

5. Turn Power ON and wait until the download process is completed. During the download, a red-green status light will blink. Once the download is completed, the diagnostic light will turn green. If the light stays red, please refer to the next section "Software Update Diagnostics"

After the update, a single-download Memory Card must be present in the Bill Validator at all times during operation. A multiple-download card can be removed and used to update more units, until the number of licenses is reached.



5.2 Download Procedure Via Interface Connector:

In order to properly complete an interface download, the Network Download Enable Memory Card must be present in the Memory Card slot at all times – before, during and after the download.

For a direct download in the service mode via the interface connector, please follow the instructions below:

1. Turn power OFF.
2. Disconnect the interface connector from the Bill Validator.
3. Remove the Validating Head from the Housing, and set Mode Switch to Service mode (Refer to section 3.7).
4. Install the Validating Head into the Housing.
5. Connect the CashCode Adaptor: a) to the Computer, b) to the interface connector of the Bill Validator, and c) to the power outlet (AC 100-250V).
6. From the computer, run the latest software version of the program.
7. Follow the instructions displayed on the computer screen.
8. After completing step 7, disconnect the CashCode Adaptor: a) from the power outlet, b) from the Bill Validator, and c) from the Computer.
9. Remove the Validating Head from the Housing, and set Mode Switch to Validation mode (refer to section 3.7).
10. Install the Validating Head into the Housing.
11. Connect the interface connector to the Bill Validator.

When the ONE Bill Validator has a CCNET protocol, the software download can be completed via the host controller (refer to CCNET Protocol Description).

5.3 Download Procedure Via Front Service USB Port:

In order to perform a software update through the front service USB port, the one™ Bill Validator must be USB-enabled using a USB enabling (–UB) memory card. The PC used for the installation must also have the latest CashCode software and drivers installed (located on the installation CD that came with your one™ Bill Validator)

1. To begin, please ensure the validator is turned ON and connected to a host machine.
2. Connect the validator's front service USB port to the PC using a standard USB A/B cable.
3. If required, use the "Add New Hardware" utility to select the VCOM driver, located in the /vcom/ folder of your CashCode installation directory.
4. Launch the USB firmware update utility (DownloadCFSFile.exe) utility.
5. Select "Load" and pick your software update file.
6. Select "Start".
7. The firmware update process will be accompanied by a rapidly blinking red/green status light for approximately a minute. Please wait until the update is finished before proceeding.
8. Remove the USB Connection.

The diagnostic light will turn green. If the light stays red, please refer to section 5.4: "Software Update Diagnostics"

5.4 Software Update Diagnostics:

Normally, the download process will be accompanied by a blinking red-green status light for about 1 minute. If the download has competed successfully, the status light will turn green. Should the download be unsuccessful, the status light will turn red, with short green flashes. The following table lists possible errors which may take place during a download:

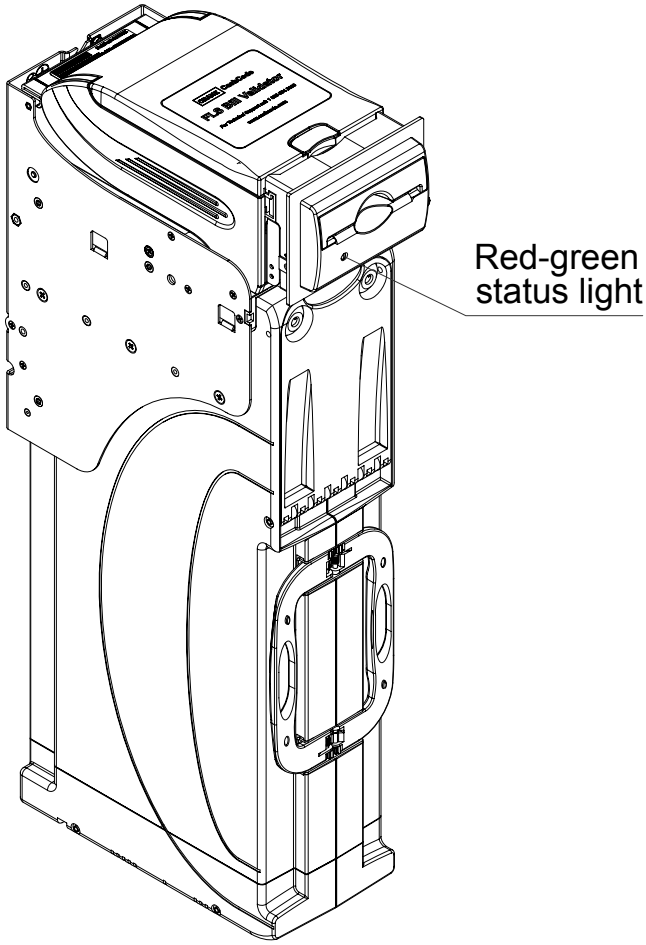
Green Flashes	Error	Solution
1	Unable to write program memory	Turn POWER OFF, remove and insert the Memory Card again, turn POWER ON. Send validating head for service
2	Firmware integrity error	Reprogram device using proper Memory Card
3	Wrong memory card	Follow the next steps checking whether device went back to operation: Verify that the software is suitable to the Bill Validator type. Insert correct type of CashCode Memory Card. Turn POWER OFF, remove and insert the Memory Card again, turn POWER ON. Replace Memory Card with the new one.
4	Security error	Verify that software is suitable for download. Repeat procedure.

6. TROUBLE SHOOTING:

CashCode's one™ Bill Validator is equipped with a self-diagnostic feature to aid in repair and maintenance. When the power to the Bill Validator is turned ON, the Bill Validator begins its self-diagnostic operation.

If the self-diagnostic test is passed, then the status light will turn green. If an error is detected, then the status light on the front of the Bill Validator will blink red.

The number of times the red light flashes on the Bill Validator is an indication of a specific problem or malfunction. A detailed list of these errors and corrective action is provided in the Diagnostics section to follow.



6.1 Operation Mode Diagnostics:

During normal operation, the status light remains a steady green. If an error occurs, it will begin to flash red. Count the flashes and use the following table to diagnose any problems with your one™ validator.

Red Flashes	Error	Solution
1	Cashbox is removed from bill Validator	Check if Cashbox is installed correctly
2	An error occurred during CPU exchange with magnetic board	Reset device power, if the problem persists send device for repair.
3	Cashbox is full	Remove Cashbox, empty Cashbox and insert empty Cashbox.
4	Mechanical Jam in Cashbox or Stacker fail	Remove Cashbox from Bill Validator Housing and extract crumpled or jammed bill. Turn power on and check if stacker motor rotates.
5	Failure of die-electric Sensor	Reset device power, if the problem persists send device for repair.
6	Failure of Optical Sensor	Open Validator head guide, clean optical sensors (please see maintenance section for cleaning details on these sensors).
7	Failure of Magnetic Sensor	Open Validator head guide, clean inductive sensors (please see maintenance section for cleaning details on these sensors).
8	Failure of Transport Motor	1. Open Validator head guide, clean path. 2. Close Validator head guide. 3. If Validator does not start, turn off power, release Validator head and check receiving path. 4. Insert Validator head and turn power on.
9	Speed of Transport motor is too fast	Check power supply voltage.
10	Failure in alignment mechanism	See Solution 8.
11	Bill pathway is not empty	1. Open receiving path and check that it is clean. 2. Remove Cashbox from bill Validator and clean path.
12	Bill jam in entry slot and no credit is issued	Open receiving path and check that it is clean.
13	Overload of transport motor	Open Validator head guide and check to see if path is clean.
14	System Error	Reset device power. If the problem still exists send device for repair.


If any problems persist, contact your nearest service center or CashCode Technical Support.

6.2 Diagnosing with a PC

Using the FLS Navigator utility, you can diagnose, locate, and repair problems with your one™ bill validator, as well as check performance statistics. The PC used for the diagnostic must have the latest CashCode software and drivers installed (located on the installation CD that came with your one™ Bill Validator).

1. To begin, please ensure the validator is turned ON and connected to a host machine.
2. Connect the front service USB port to the PC using a standard USB A/B cable.
3. If required, use the “Add New Hardware” utility to select the VCOM driver, located in the /vcom/ folder of your CashCode installation directory.
4. Launch the FLS Navigator (FLSNav.exe) utility.
5.  Click the “Connect” button to establish connection between the PC and the validator.
6. To collect statistics use the following functions:
   a.  Downloads statistics from the validator and displays them.
   b.  Saves statistics in an external file on your PC.
   c.  Opens previously saved statistics for viewing.
7. To troubleshoot your validator:
   a.  Click the Diagnose button to begin the diagnostic process.
   b. The validator will run through a self-diagnostic test.
   c. Once finished, click on the guide tab to see an overview of detected problems and solutions.
   d. If an error prompts you to “look at View X”, you can use the view tabs to see the physical location of the problem inside the validator.
   e.  Click on the print button to print a repair ticket with detected problems. Two copies will be printed; one for your records and one for the Service Center)
8.  Once finished, press the “Disconnect” button to sever the connection.

7. HOW TO REACH US:

7.1 Technical Support Department:

*CashCode Head Office)

Crane CashCode,
(A division of Crane Payment Solutions).
553 Basaltic Road, Concord, Ontario
Canada L4K 4W8

Phone:	1-800-584-2633	(+1-905-303-8874)
Fax:	1-800-593- 2633	(+1-905-303-8875)
E-mail:	support@cashcode.com	
ELearning	http://elearning.cashcode.com	
Website	http://support.cashcode.com	

7.2 Service Centers:

To locate your nearest service center, please check our website:

http://support.cashcode.com/en/service-locator/index.php

Filename: One_2500_Part1_0
Directory: \\Cc-serv\engineering\R-Drive\Manuals\Operation Manuals\FLS\Draft
Template: C:\Documents and Settings\pbovbel\Application Data\Microsoft\Templates\Manual.dot
Title: Crane Cash Code
Subject: Onetrack Operation Manual
Author: Pavel Bovbel
Keywords: onetrack
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Creation Date: 11/9/2009 3:30:00 PM
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Total Editing Time: 10 Minutes
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As of Last Complete Printing
Number of Pages: 38
Number of Words: 6,400 (approx.)
Number of Characters: 33,542 (approx.)