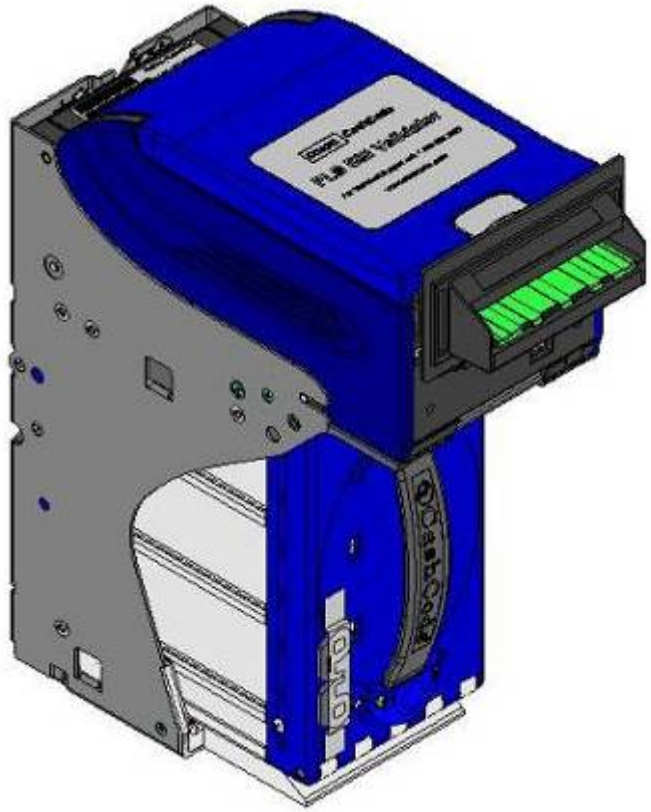
Front Load Standard

Bill & Ticket Validator



Part 1
Operation Manual (Revision 5)

TABLE OF CONTENTS

1. **INTRODUCTION:** In General, for all CashCode products there are two levels of Operation and Service Manual

- Part-1 Manual: Operation Manual
- Part-2 Manual: Repair Manual

This document is Part-1 and it is designed to provide full and clear information about the FrontLoad Standard (FLS) Bill Validator pictured above.

This document is designed to help easy integration of FLS 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. Acronyms:

- 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 code
- BDP – Bi directional protocol
- Bezel – Face Plate
- BV – Bill Validator or Bill Acceptor
- Centering Mechanism – Cashcode patented bill centering mechanism which allows bills to straightened 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
- FLS – 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 cassette
- 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 to close the top lid or connect Validator with 24 pin connector before power on.
- Please follow the specification for operating temperature, humidity and storage conditions
- Do not lift the unit by the handle of cassette.
- Be sure to unplug the power before removing the validating head.
- Please follow proper cleaning or maintenance procedure, in order to maintain the performance of the unit.

All information about this product is available on CashCode Website at

http://support.cashcode.com/en/documentation/index.php

1.3. Product Labels:

1) Validating Head
- Hardware
- Instruction

2) Main Product Label:
- On FLS Housing

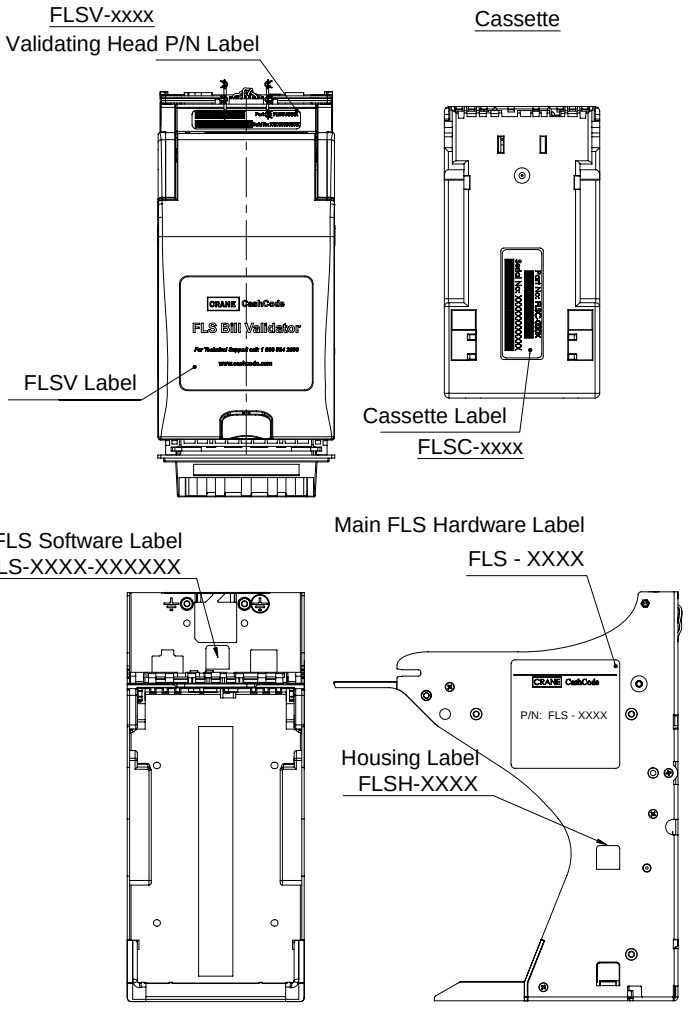
3) FLS Housing Label

4) Cassette Label

5) Bezel Label

6) Memory Stick Label

7) USB Kit lable (if applicable)

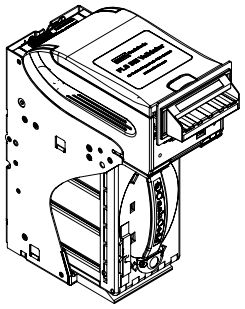


1.4. Product Documentation:

Document Type	Document Part Numbers	Descriptions
User's Guide	UG- FLS-xxxx_Rev xx/xx	Mechanical Hardware User's Guide ❖ Hardware Configurations
Software Descriptions	UG- FLSxxxx-xxxxxx_Rev xx/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
Cassette Users Guide	FLSX-xxxx	Description and detail of Cash Box and its options
Bezel Users Guide	UG-FLSB-xxxx_x	Details of Bezel, opening and mounting arrangement
Operational Manual	FL85_Part1_x	Basic Operation Manual
Service Manual	FL85_Part2_x	Extended Manual with details of how to perform service
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:



FLS Bill Validator was developed to validate bills having a width up to 85 mm.

Compared to the previous Front Load bill Validator models, the FLS has the following distinctive features:

- Utilizes a light-weight plastic shockproof cassette and the 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 the barcode tickets.

The FLS 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 FLS Unit 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 FLS **Validating Head** has a centering mechanism, which allows to process bills of different width.

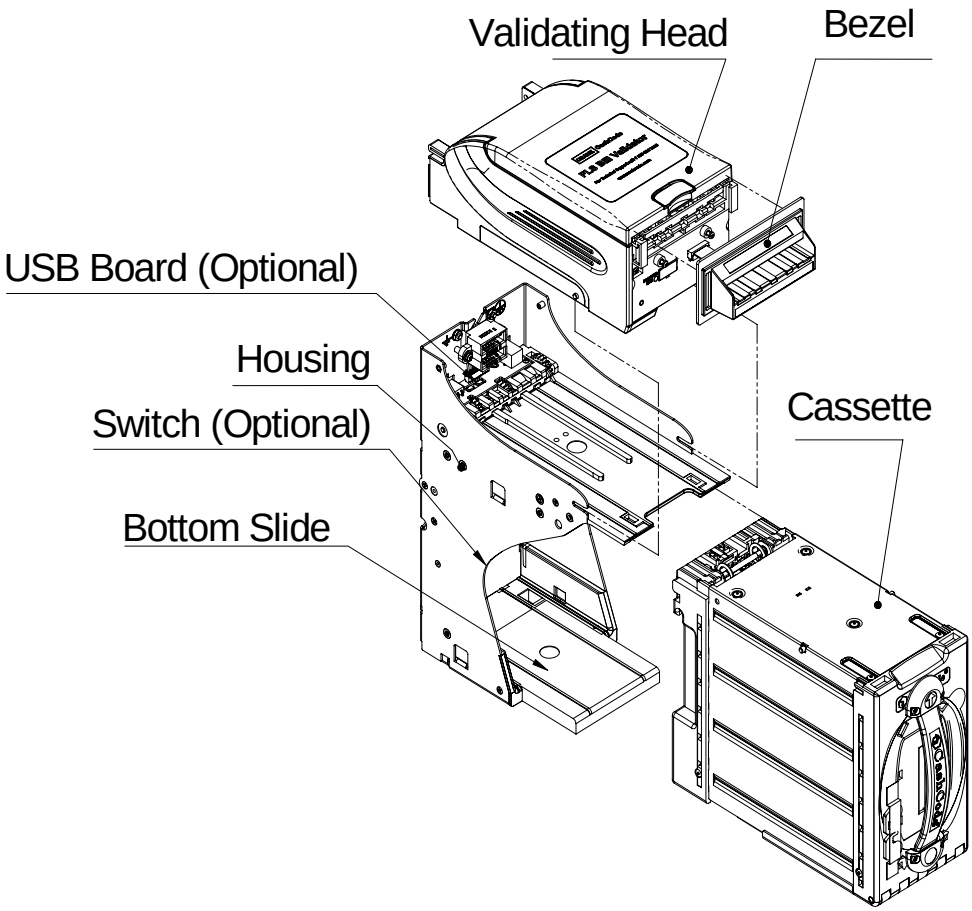
- The lockable-removable **Cassette** is used for temporary storage of validated bills. It can be locked with two standard ¾" tubular locks. The Cassette is available in two sizes: 600 or 1,000.

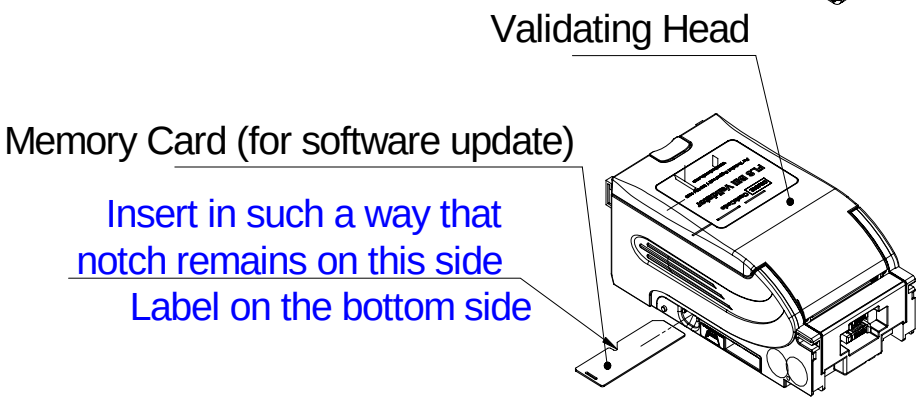
- **Bill Capacity** (600 or 1,000 bills) refers to the number of new bills that the **Cassette** can store. Actual cassette capacity can decrease in real applications due to variations in thickness of street-grade bills.

- The **FLS 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 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: Hardware interfaces: ❖ Universal Platform ❖ Optional	RS232 Secondary RS232 channel Opto-isolated serial (ID003), Cctalk CCS/VFM USB (an external board required)
Drop cassette locks: Standard Optional	No locks installed, only cams supplied. Shipped with shipping lock and cap. Special Cam for Australian OEM
Maximum stacking capacity (new bills)	Two Variations: ❖ 600 Bills ❖ 1,000 Bills
Bezels and indication: Standard Optional Bezel	No bezel installed. Single red/green LED indication GPT Style, Cole Style, Konami Style, BAT Style

Service indication **Service port**	**Flashing of LED or the bezel lights** **Front-panel USB, mini-D connector**
Memory programming	CashCode Memory card, Interface controlled with NDEG card installed or using USB service port
Supported memory stick types	CCFS format (Single update, Manufacturer, Multi-update) NDEG
Mode selection	12-position DIP switch
Acceptance: Bills Accepted Denominations Validating Rate Supported Bill Width (in mm) Length of Bill supported(in mm) Bill Escrow	Lengthwise 4 ways Refer to Software Description Guide 96% or higher (on first insertion) 60 ~ 85 120 ~ 172 One Bill or One Barcode Ticket
Bar Code Tickets: Bar Code Specification: Encoding standard Narrow bar width, in mm Wide/Narrow bar ratio Number of characters PSC (Print Contrast Signal) value	Lengthwise 4 ways or 2 ways (refer settings) ANSI/AIM BC2-1995, Uniform Symbology Specification – Interleaved 2 of 5 0.5 to 0.6 3:1 6 to 18 0.6 min
Bill processing cycle time:	3.2 Second (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) 12 V DC, standby	 3 Amp 0.6 Amp
Environmental Specifications: Allowed applications Operating temperature Storage temperature Relative Operating Humidity Relative Storage Humidity	 Indoor only 0 °C ~ +50 °C -20°C ~ +60°C 30% - 90% (non-condensing) 30% ~ 80% (non- condensing)
Lifetime Expectation	**1,500,000 processed bank notes or** **10 Years** (whichever comes first)

Installation Access to cassette	Any in forward-back plane, Vertical in left-right plane From front side of the Validator
Outer Dimensions: (H x W x D)	300 mm x 115 mm x 235 mm (11.81 inch x 4.52 inch x 9.25 inch)
Unit Weight (Without Cash Box): **600 Note Cash Box (Empty)** **1,000 Note Cash Box (Empty)**	3.2 Kg (7.05 lb) 1.1 Kg (2.42 lb) 1.4 Kg (3.08 lb)

1.7. Compliance Approvals:

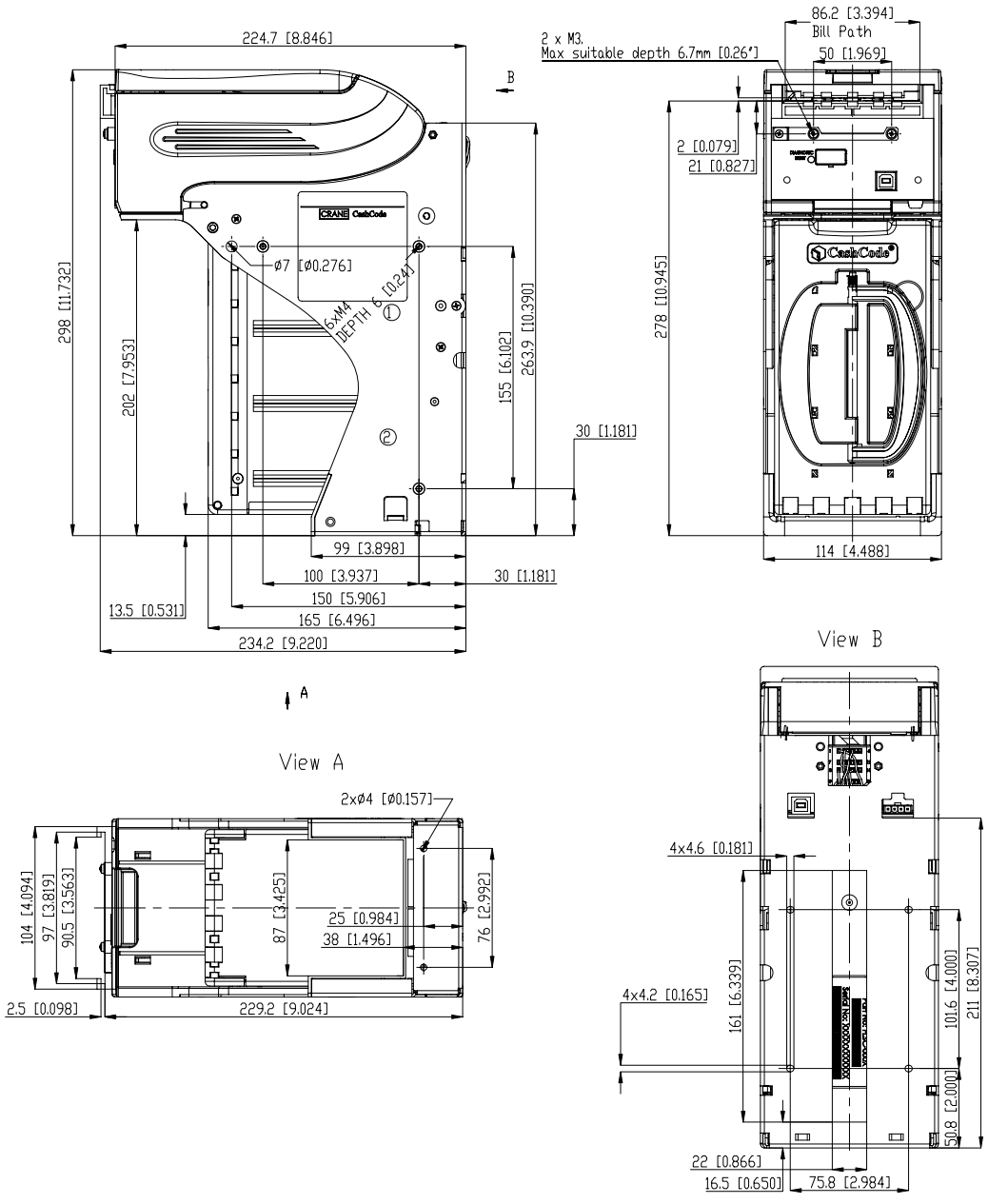
- FCC class B
- CE Compliance
- U/L 756
- ROHS Compliant

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

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

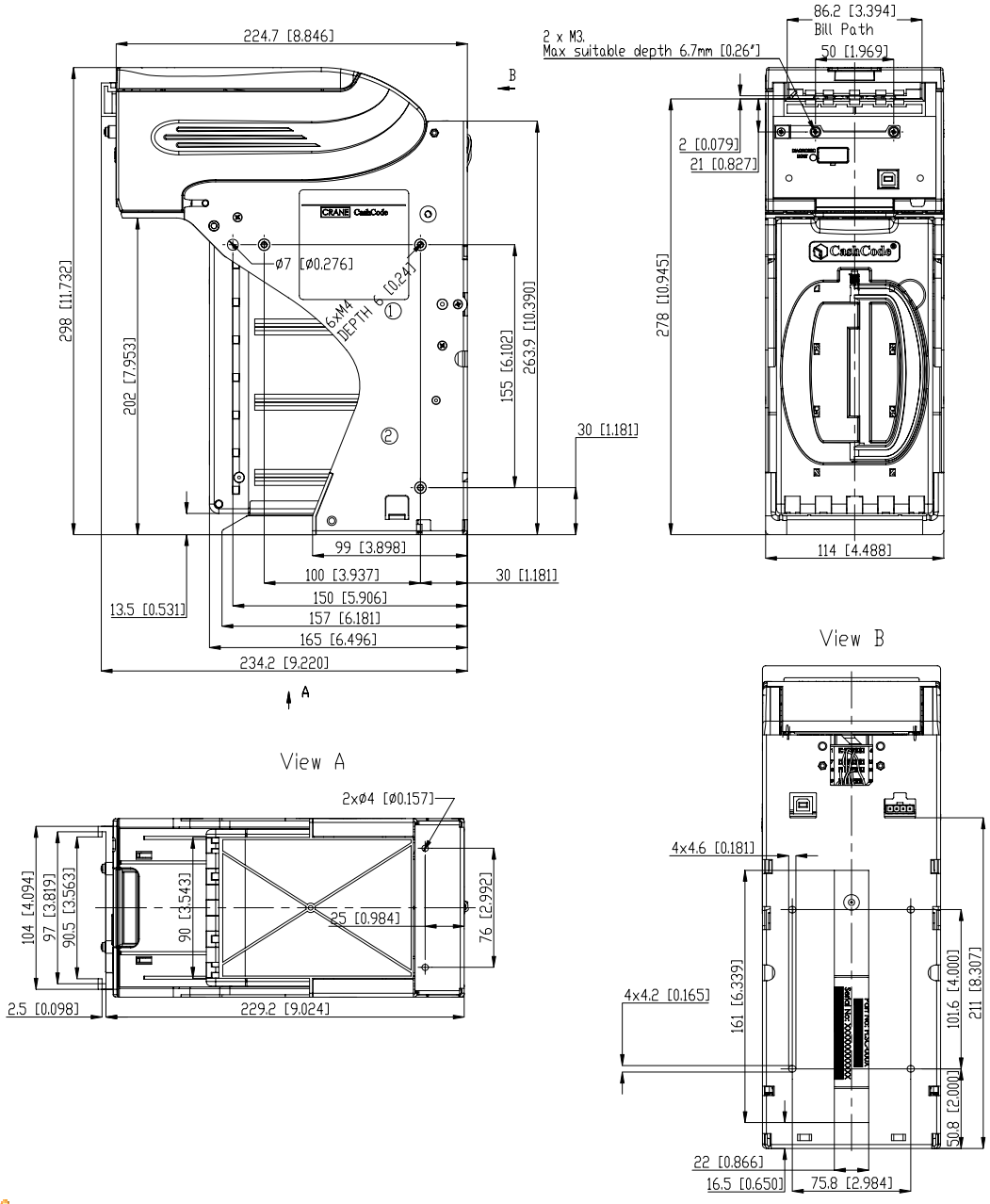
1.8. Unit Dimensions:

1.8.1 BV without Bezel, Foldable Handle Cash Box (600 Bills), Short Slide:



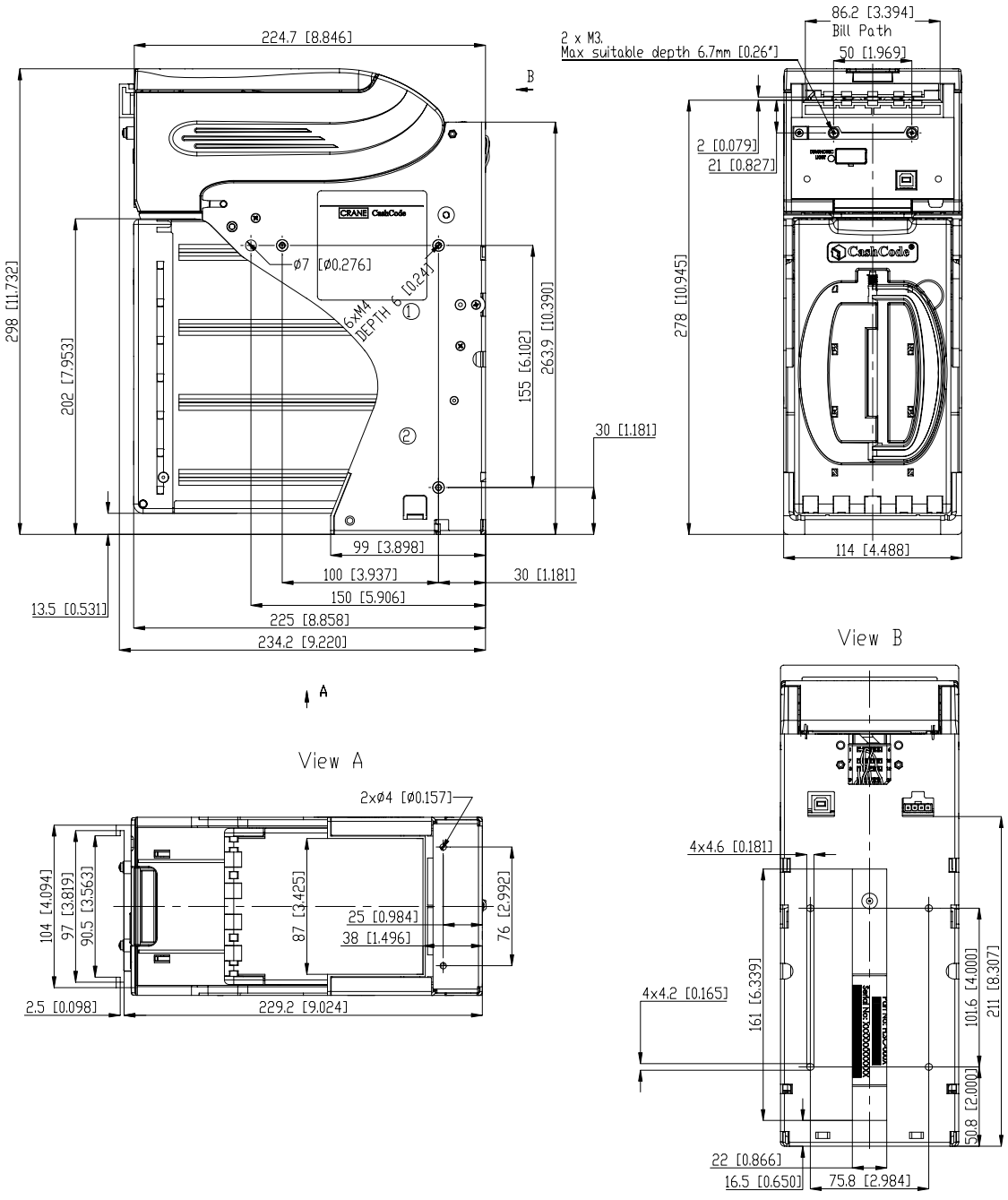
⚠ All dimensions are in mm (inches in bracket) & use it for reference only.

1.8.2 BV without Bezel, Foldable Handle Cash Box (600 Bills), Long Slide:



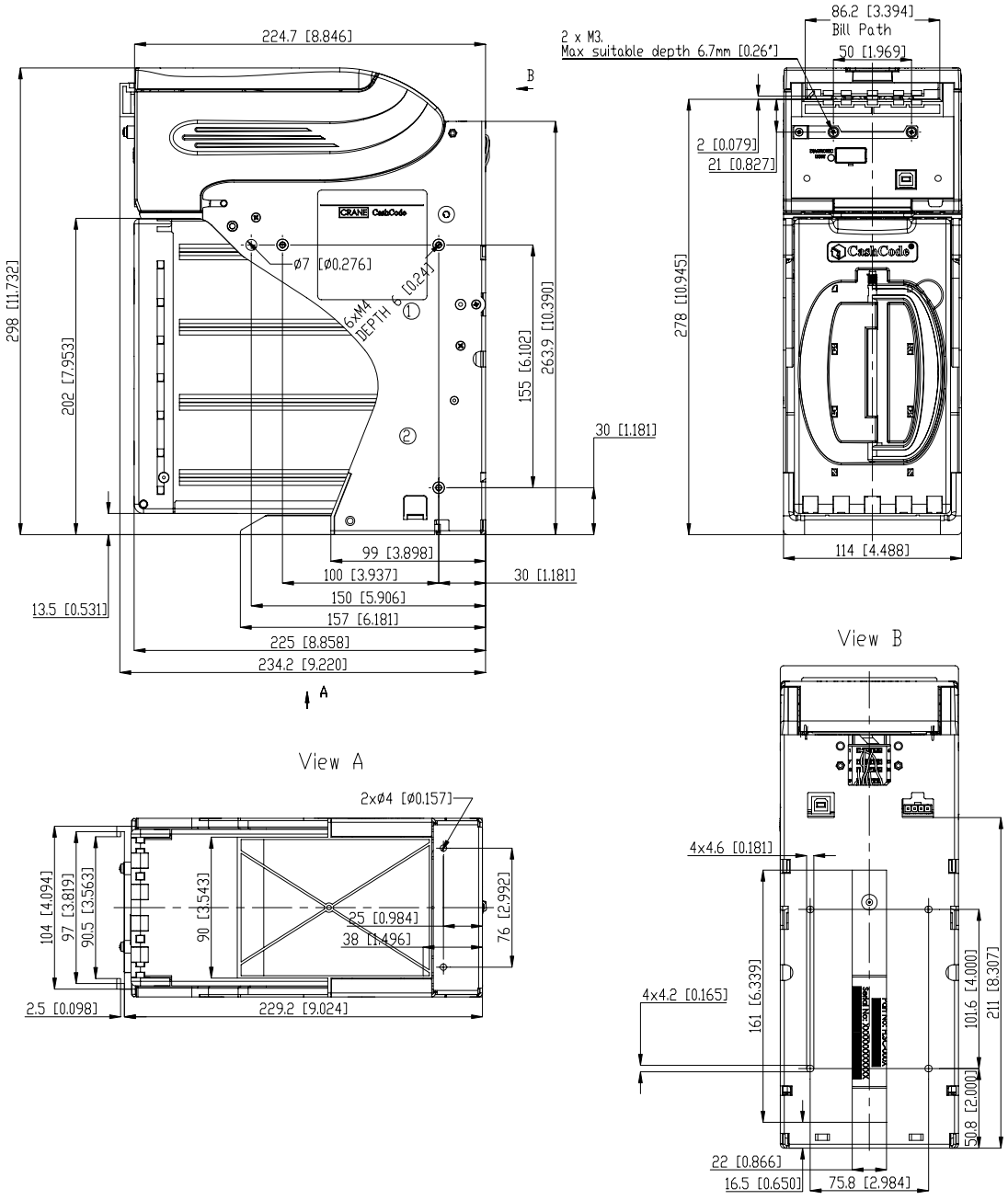
All dimensions are in mm (inches in bracket) & use it for reference only.

1.8.3 BV without Bezel, Foldable Handle Cash Box (1,000 Bills), Short Slide:



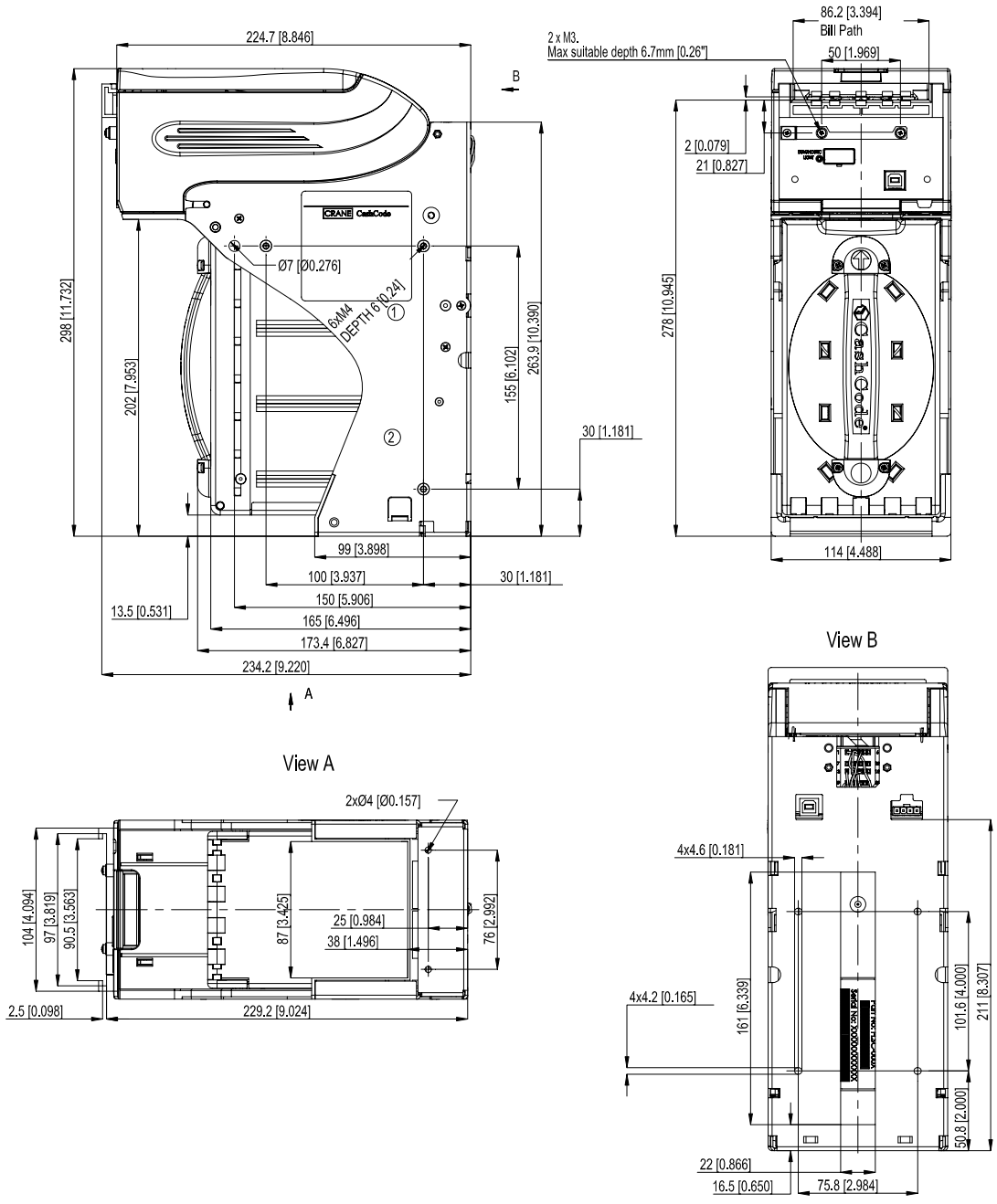
All dimensions are in mm (inches in bracket) & use it for reference only.

1.8.4 BV without Bezel, Foldable Handle Cash Box (1,000 Bills), Long Slide:



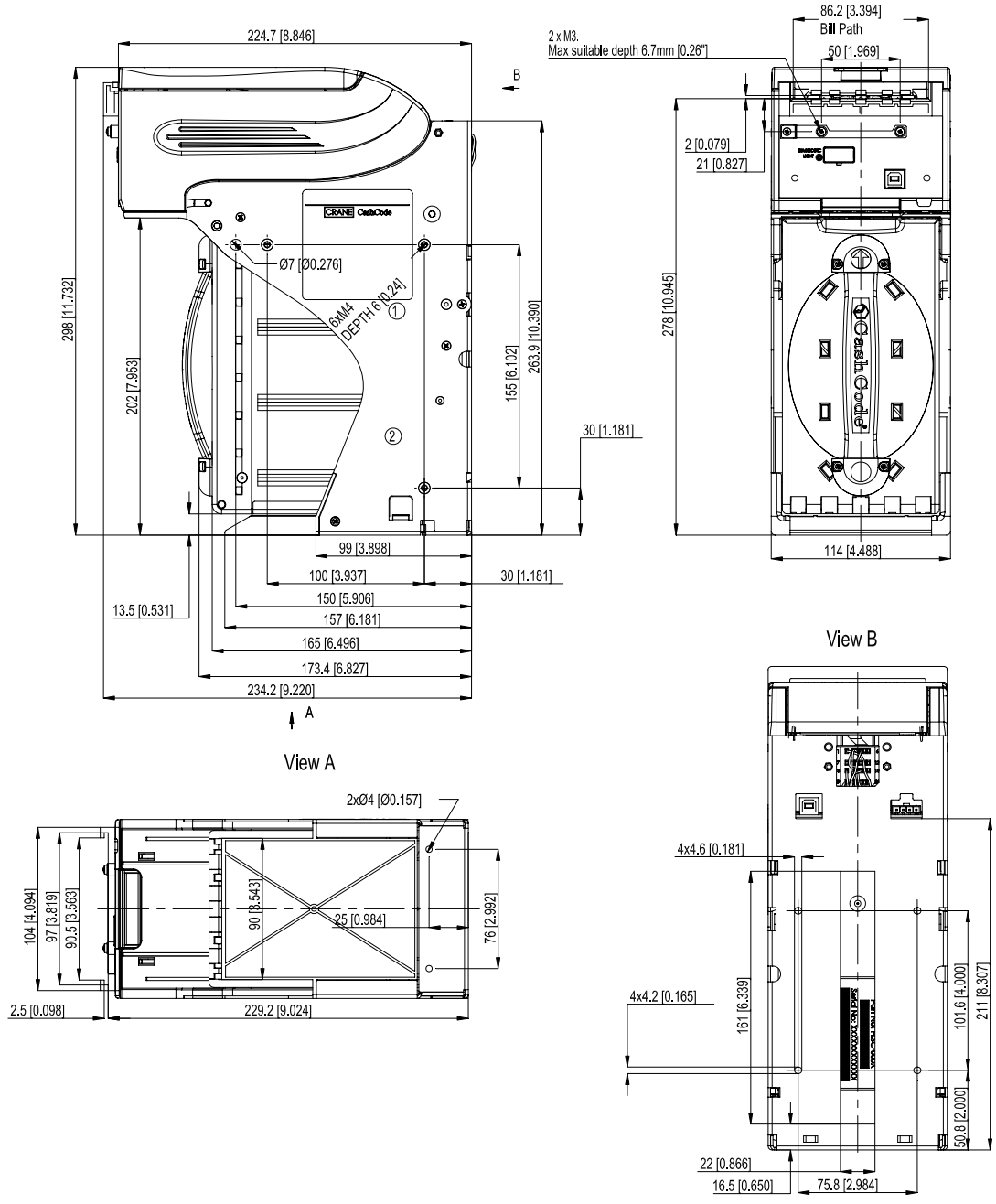
All dimensions are in mm (inches in bracket) & use it for reference only.

1.8.5 BV without Bezel, Flexible Handle Cash Box (600 Bills), Short Slide:



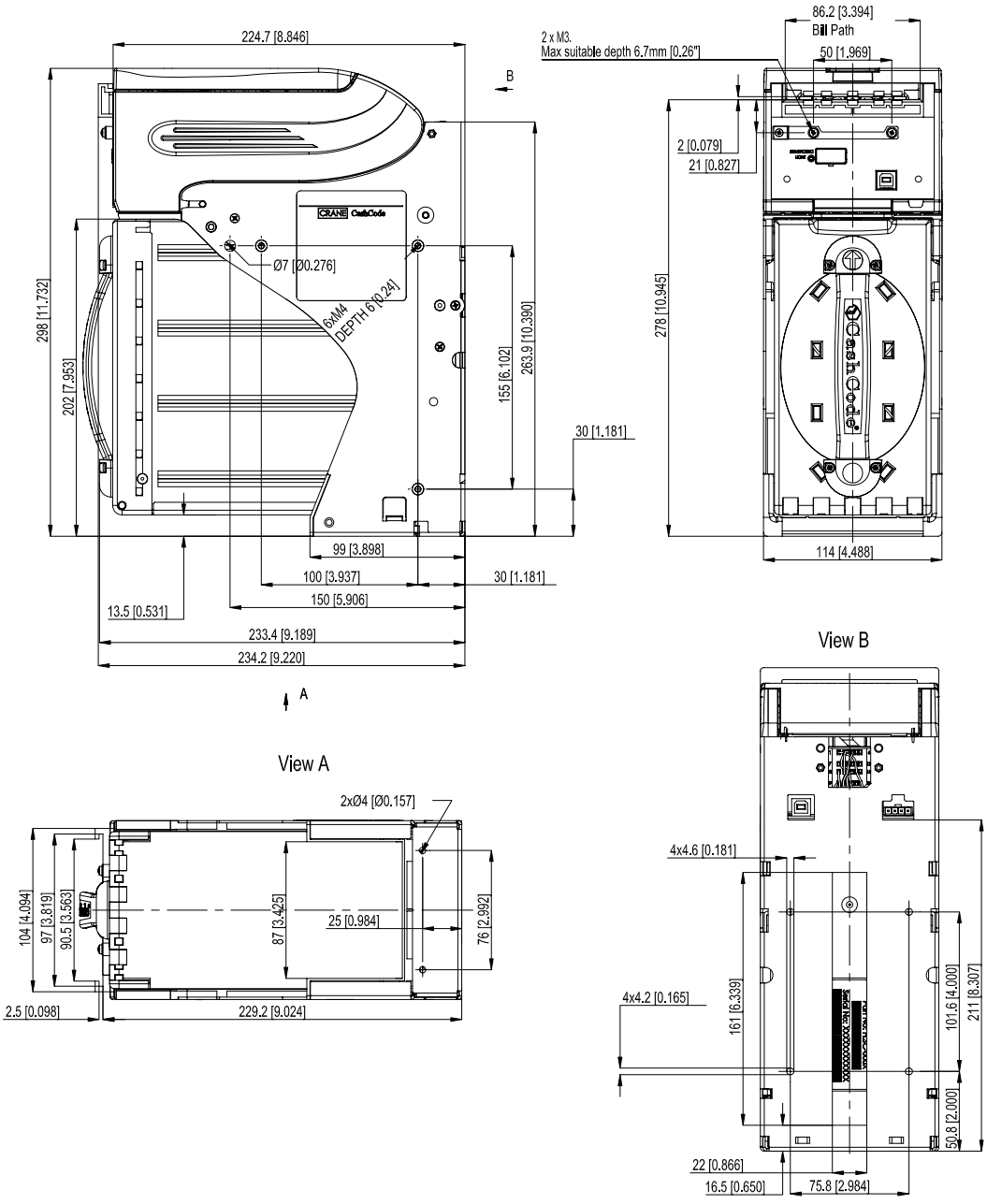
All dimensions are in mm (inches in bracket) & use it for reference only.

1.8.6 BV without Bezel, Flexible Handle Cash Box (600 Bills), Long Slide:



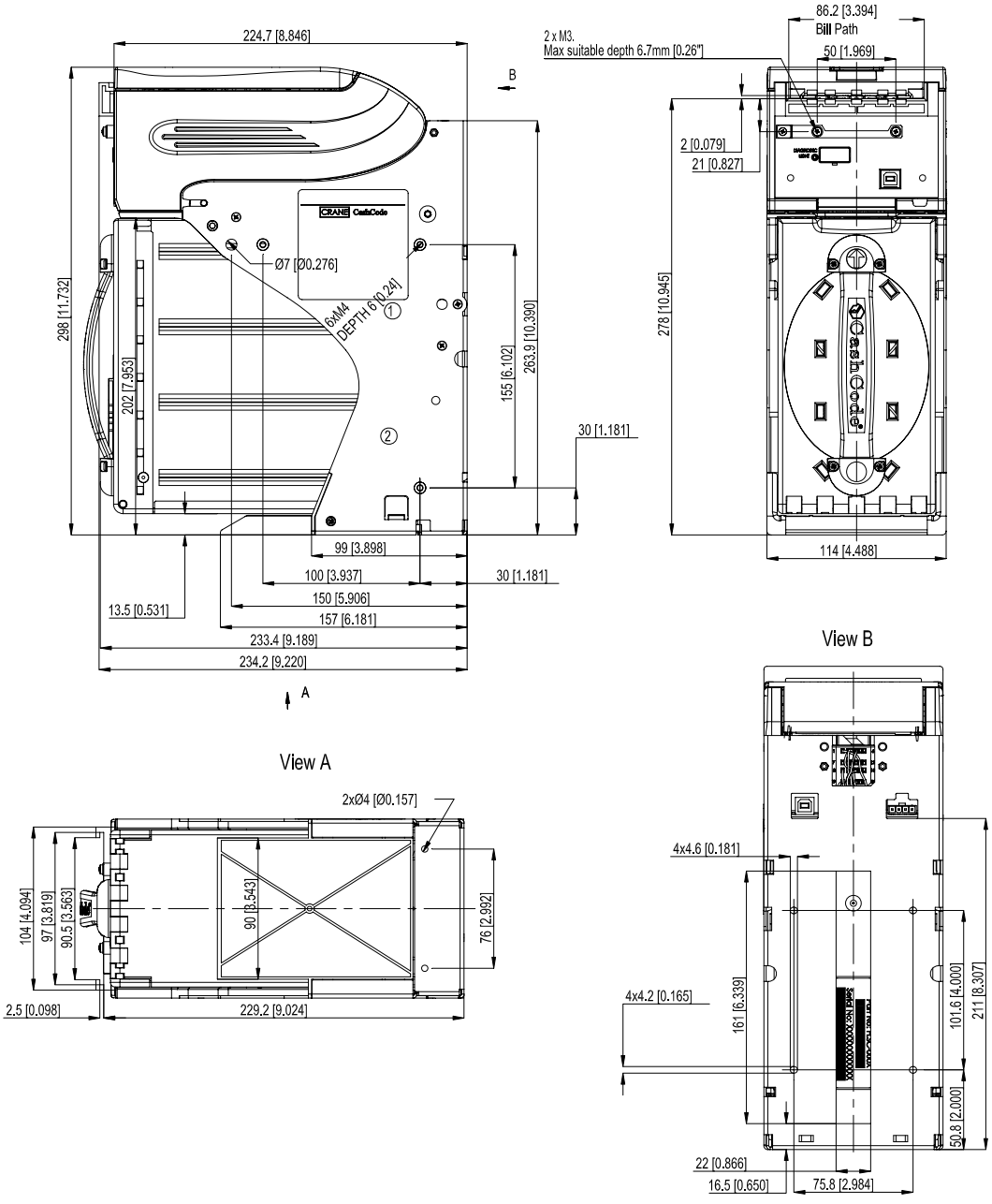
All dimensions are in mm (inches in bracket) & use it for reference only.

1.8.7 BV without Bezel, Flexible Handle Cash Box (1,000 Bills), Short Slide:



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

1.8.8 BV without Bezel, Flexible Handle Cash Box (1,000 Bills), Long Slide:



All dimensions are in mm (inches in bracket) & use it 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:

- Slide - Long or Short
- Cassette – 600 or 1,000 Bills
- USB interface
- 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. Part Number Configuration for Bill Validator:

Final part number for the FrontLoad Standard Validator consists of three parts: prefix, hardware part number and software part number.

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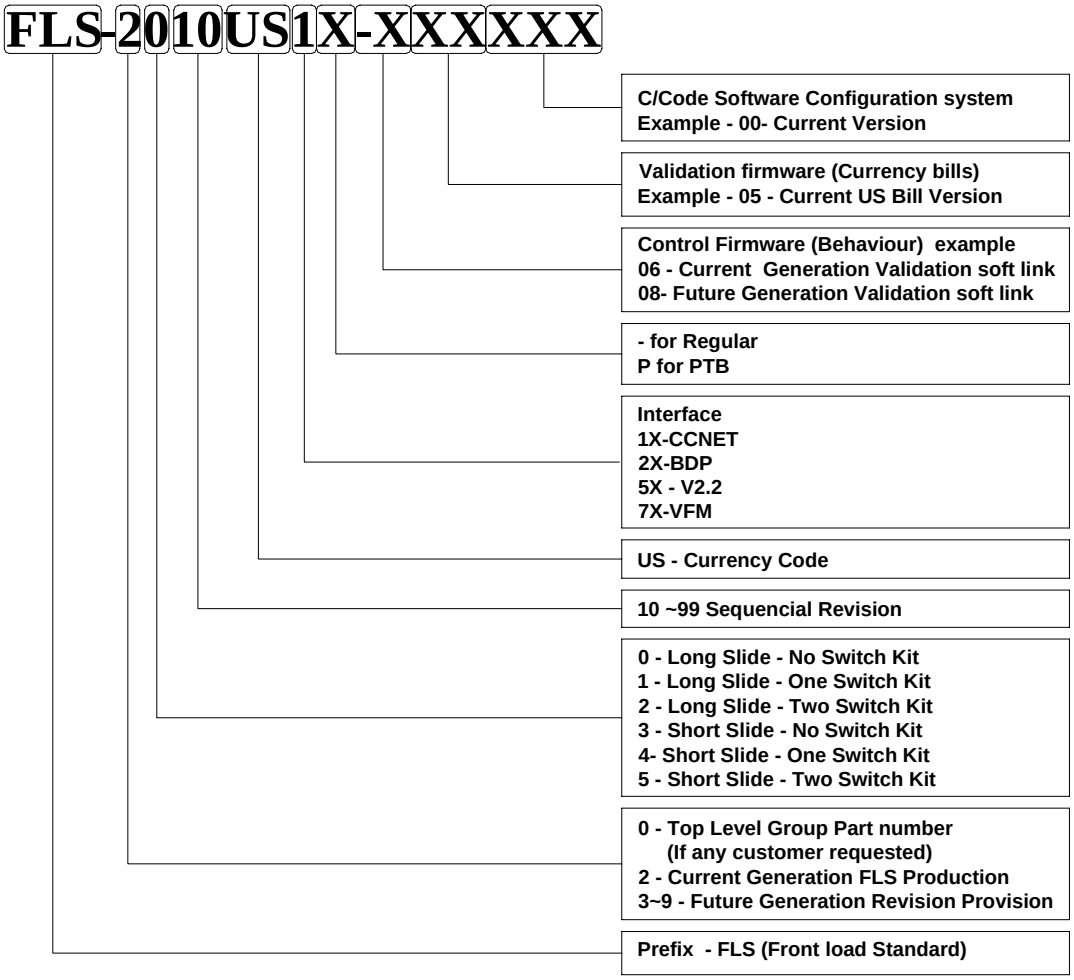


The Prefix defines the device class.

- Here FLS means FrontLoad Standard Bill Validator Hardware with a centering mechanism in the Validating Head.
- Above Hardware part number includes
  - FLS Bill Validator (FLSV-xxxx)
  - FLS Housing (FLSH-xxxx)
  - Bottom Slide Options
  - Switch Kit Set (Factory installed on the housing)

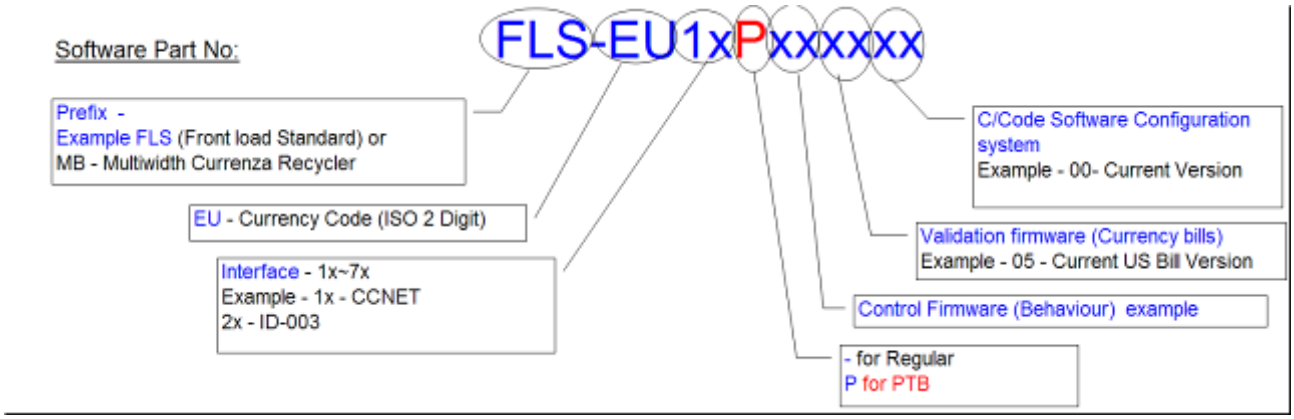
- Mounting Kit (OPT-MKFLS-24)

In order to complete the unit users must order separately following accessories

- Cassette – 600 bills or 1,000 bills (Refer to Section 2.6)
- Applicable bezel (Refer to Section 2.5)
- Any other accessories (Refer to Section 2.7)
- Software Memory card (Refer to Section 2.8)

❖ . Please refer to ACCESSORIES for this. The Software part number reflects country (currency) and communication protocol as well as software customization. The software version field can be omitted and in that case the latest approved software for given interface/currency/customization combination will be used.

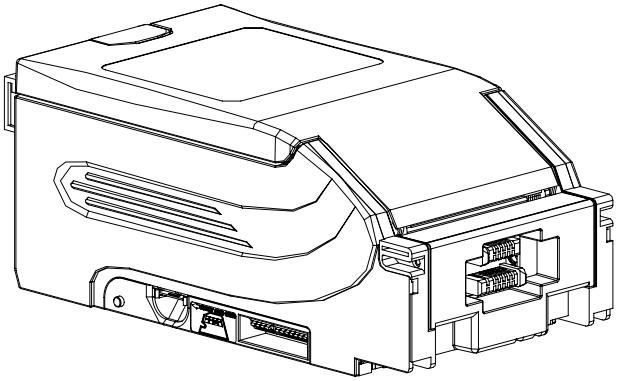
2.2. Software Part Number Configuration:



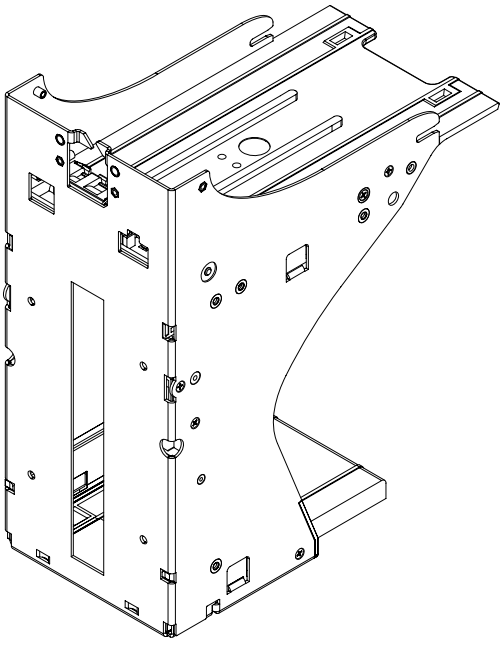
You can also visit our website for list of available software
http://support.cashcode.com/en/documentation/index.php

2.3. Validating Head:

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

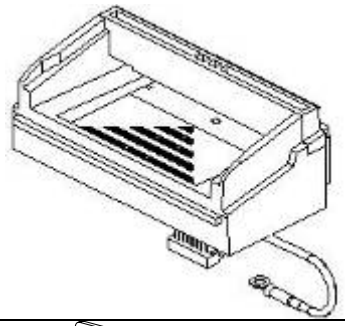
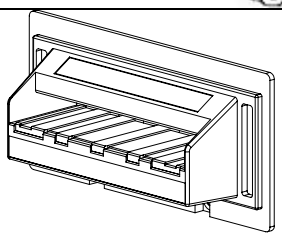
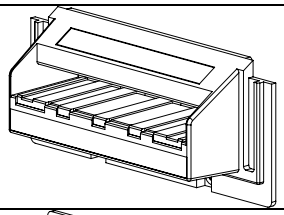
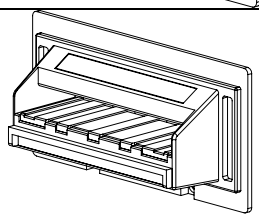


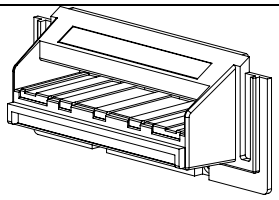
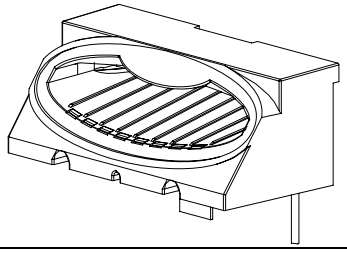
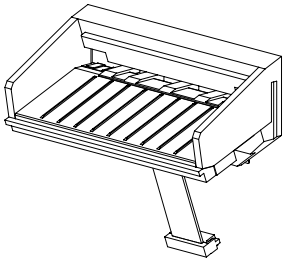
2.4. **Housing:** The Housing is made of rigid metal structure, which allows you to mount from left / right or back side.



2.5. **Bezel:** The Bezels are U/L and CE compliant and 85 mm wide opening. Several Bezel designs are available in order to make the CashCode Bill Validator compatible with different door style.

All Bezels are capable to handle 85 mm wide currency.

Part Number	Picture	Description
FLSB-5101 (GPT Style Bezel)		❖ Type: GPT compatible Bezel ❖ Feature: Bezel with runway lights ❖ LED Option: Green & Red
FLSB-5301 Variant A		❖ Type: Variant A (Cole / JCM compatible Bezel) ❖ Feature: Bezel with indicator light Full rectangle surface around ❖ LED Option: Green & Red
FLSB-5303 Variant B		❖ Type: Variant B (Cole / JCM compatible Bezel) ❖ Feature: Bezel with indicator light top flange cut ❖ LED Option: Green & Red
FLSB-5305 Variant C		❖ Type: Variant C (Cole / JCM compatible Bezel) ❖ Feature: Bezel with indicator light full rectangle flange with raised surface on bottom ❖ LED Option: Green & Red

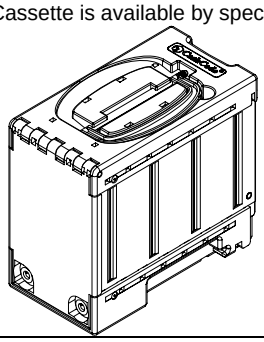
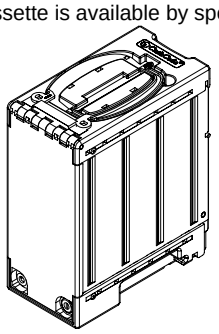
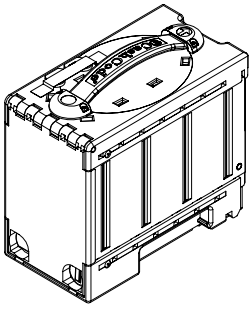
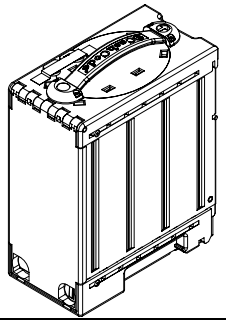
FLSB-5307 Variant D		❖ Type: Variant D (Cole / JCM compatible Bezel) ❖ Feature: Bezel with indicator light top flange cust with raised surface on bottom ❖ LED Option: Green & Red
FLSB-5901 Bat Bezel		❖ Type: BAT Bezel (Aristocrat compatible Bezel) ❖ Feature: Bezel with indicator light oval shaped ❖ LED Option: Blue & Red
FLSB-5701 Konami Style Bezel		❖ Type: Konami Compatible Bezel ❖ Feature: Bezel with runway light, open from top ❖ LED Option: Green & Red

If you have any other custom made bezel requirements, contact CashCode Sales Rep.

2.6. CASH BOX:

The **Cassette** stores and holds validated bills in a stacked formation. The Cassette 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 lock – or two locks for added security. A locking mechanism allows for the installation of a user's security locks (one or two 3/4" tubular locks measuring $1_{1}/_{16}$"$\pm_{1}/_{16}$" or $1_{1}/_{8}$"$\pm_{1}/_{16}$").

The Cassette is available in two sizes – either 600 or 1000 bill storage capacity. Street grade bills require more space and as a result fewer bills may be stored. The Cassette can store bills from 60 to 85 mm wide and from 120 to 172 mm long.

FLSC-0001	FLSC-0101
This Cassette is available by special order only 	This Cassette is available by special order only 
FLSC-0002	**FLSC-0102**
	

The following types of Cassette (Cash Box) are available:

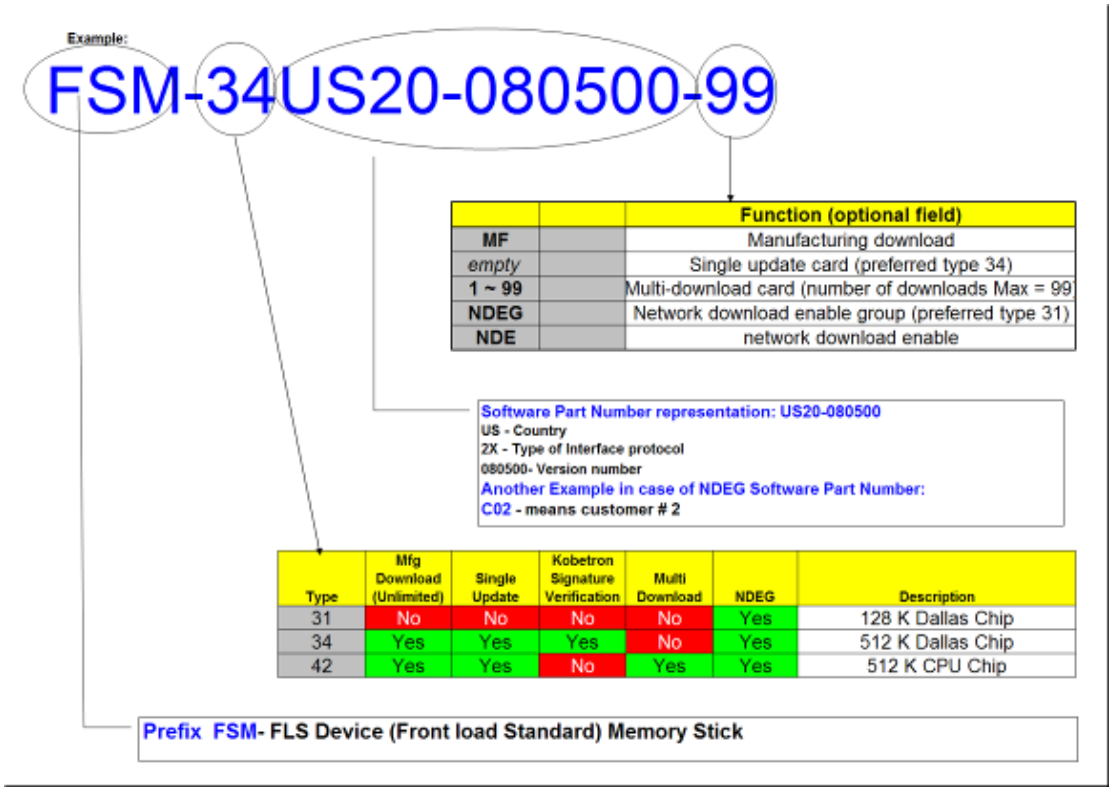
The following types of Cassettes (Cash Box) are available: **Part No.**	**Cassette capacity bills**	**Handle**	**Bill width, mm**	**Bill length, mm**
FLSC-0001	600	Foldable	60 to 85	120 to172
FLSC-0101	1,000			
FLSC-0002	600	Flexible		
FLSC-0102	1,000			

2.7. ACCESSORIES:

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

Accessories P/N	Description	Order Status
OPT-MKFLS-24	Mounting Kit Connector 24 Pin Connector , Pins, Mounting Screws	By Default supplied with every bill Validator
OPT-PS5-FLS-DB9	Power Supply	To be ordered separately
OPT-MKFLS-SWH	Housing Kit with 1 Switch Options (Factory installed)	To be ordered separately. If you need 2 switch, order qty - 2
OPT-MKFLS-USB	Extra Kit for USB enabled device (Factory installed)	To be ordered separately
	Special Lock Cam	To be ordered separately
	Custom Harness (for each cabinet or application)	To be ordered separately

2.8. MEMORY CARD AND SOFTWARE UPDATE OPTIONS:



CashCode FrontLoad Standard Bill Validator is supplied with pre-installed software or Stay in Memory Card (for gaming application), according to users order. A stay in Single Download Memory Card is normally placed in the slot instead of a Memory Card.

Software updates are recommended whenever

- New currency is issued, or
- A new series of counterfeit bills appears on the market.

Software updates are offered in three options:

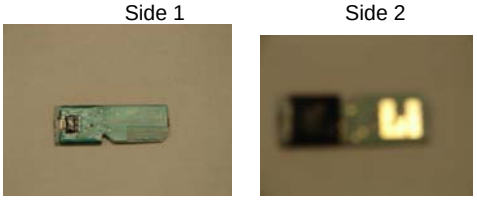
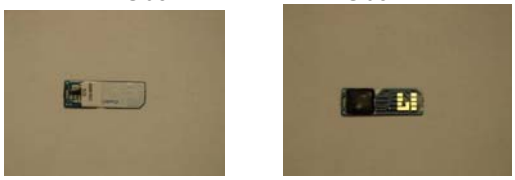
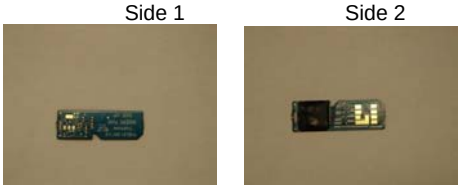
- Single Download Memory Card:
  - **Part Number Scheme:** Example: FSM-34US20-080500
  - New software can be ordered with a single-download Memory Card. The software from the new Memory Card is downloaded as soon as it is inserted into the slot, and the Validating Head is powered on. The Memory Card must be present at all times for the Bill Validator to operate.

For gaming application, single download option is preferred.

- Multi Download Card:
  - **Part Number Scheme:** Example: FSM-34US20-080500-99
  - New software can be ordered with a multi-download Memory Card. The multi-download Memory Card allows the operation of the FrontLoad Bill Validator without the Memory Card. Thus the Memory Card can be used for updating the next FrontLoad Bill Validator, depending on the number of licenses ordered. 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.

- NDEG Enabled Memory Card (Network Download):
  - **Part Number Scheme:** Example: 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).

- Instructions for Memory Card replacement and software updates can be found in the chapter called "SOFTWARE UPDATES" (Refer to section 5).

Type 31 Memory Card Side 1 Side 2  It Has Dallas Chip on one side	**Type 34 Memory Card** Side 1 Side 2  It has Dallas Chip & Extra Memory on other side
Type 42 Memory Card Side 1 Side 2  It has No Dallas Chip but Extra Memory on other side.	

3. START UP & INSTALLATION:

3.1. START-UP:

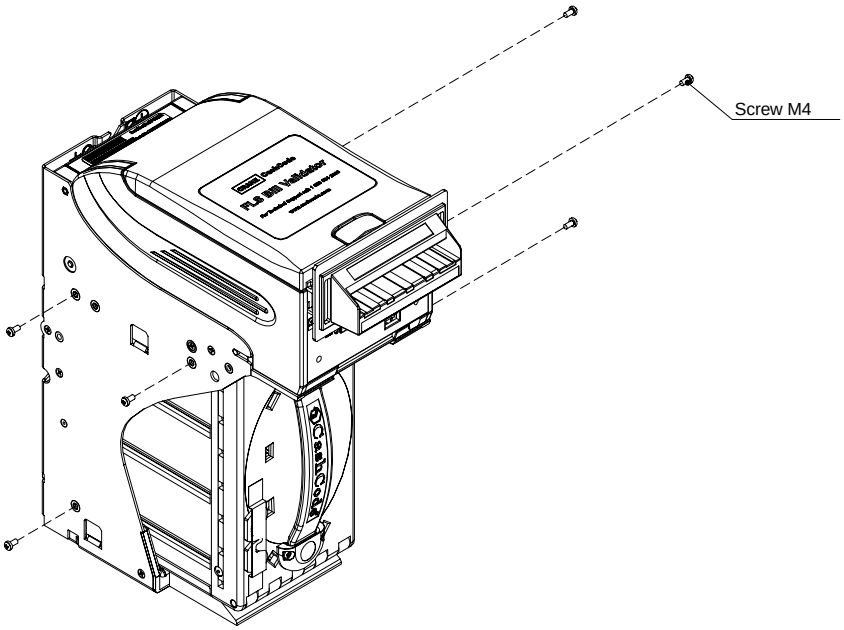
To avoid damage to any kind during start-up process, please carefully check all points specified below:

- 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 FLS Bill Validator in the main cabinet.

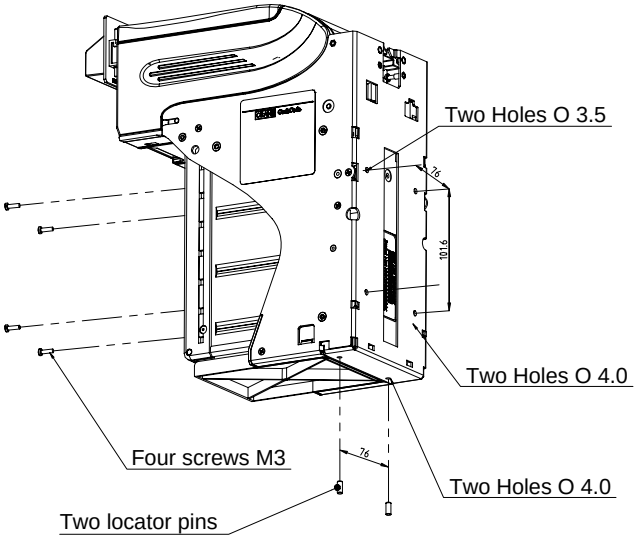
3.2. INSTALLATION OF MAIN UNIT:

The 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.

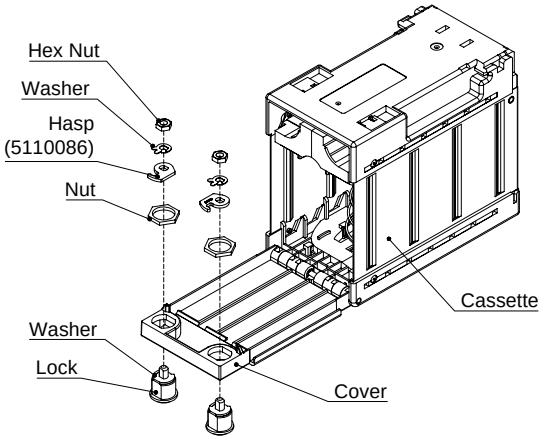
For dimensions of the mounting holes, please refer to the dimensional drawings (Section 1.6).

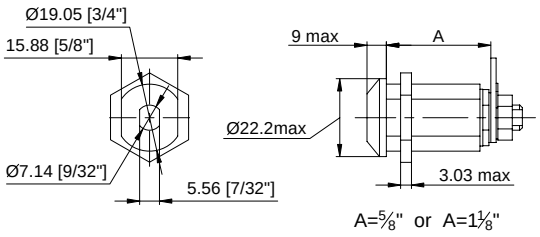


3.3. LOCK INSTALLATION TO CASSETTE:

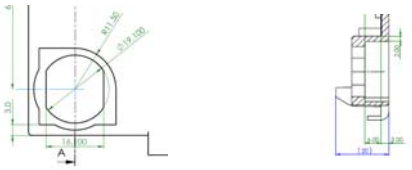
In order to install the security locks into the Cassette, open the Cassette cover, remove the plastic lock and plug, and follow the diagram shown below:

Due to variation of regulatory requirement, CashCode does not provide locks but we provide cam and applicable washers.

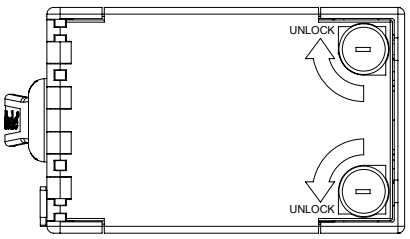




A=⅝" or A=1⅛"



Detailed Dimension of Slot for Lock



Our design supports

1. Upto 2 locks
2. 2 sizes (5/8" or 1-1/8")
3. Range of manufacturers including MEDECO, KABA, ABLOY, VSR, Bilock

In order to lock, they must rotate in opposite directions (one lock 90degree clockwise and second should be 90 degree counterclockwise - see figure above.

Two locking hasps are shipped with every cassette –

1. **P/N - 5110086 Standard**
2. **P/N - 5110086-02 Square head** (according to special order for ABLOY lock only – Australian OEM mainly). You need to specify separately on your order for this.

3.4. INTERFACE CONNECTION:

The FrontLoad Standard Bill Validator has the flexibility to offer fiver different interface options:

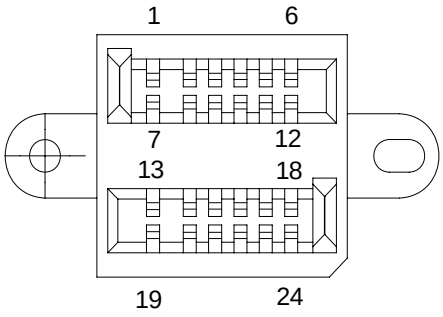
- Type 1: RS232 levels (CCNET) + Opto-Isolated (BDP)+ Isolated Pulse Low Current + RS485, 24 pin validating head.

o

- Type 2: USB, 24 pin validating head.

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

Validating Head FLSV-xxxx
Pin Assignment



View from the back of Bill Validator
Plug Housing 24 Pin # 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 http://support.cashcode.com/en/documentation/index.php

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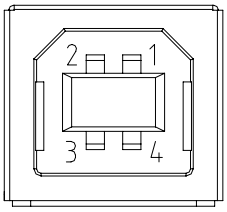
3.5. Signal description for block of interface (Type 1):

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).

Validating Head FLSV-xxxx
USB Pin Assignment

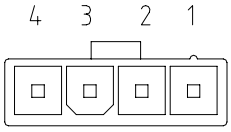


USB “B” Plug

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	-

Optional USB configuration
Power Pin Assignment

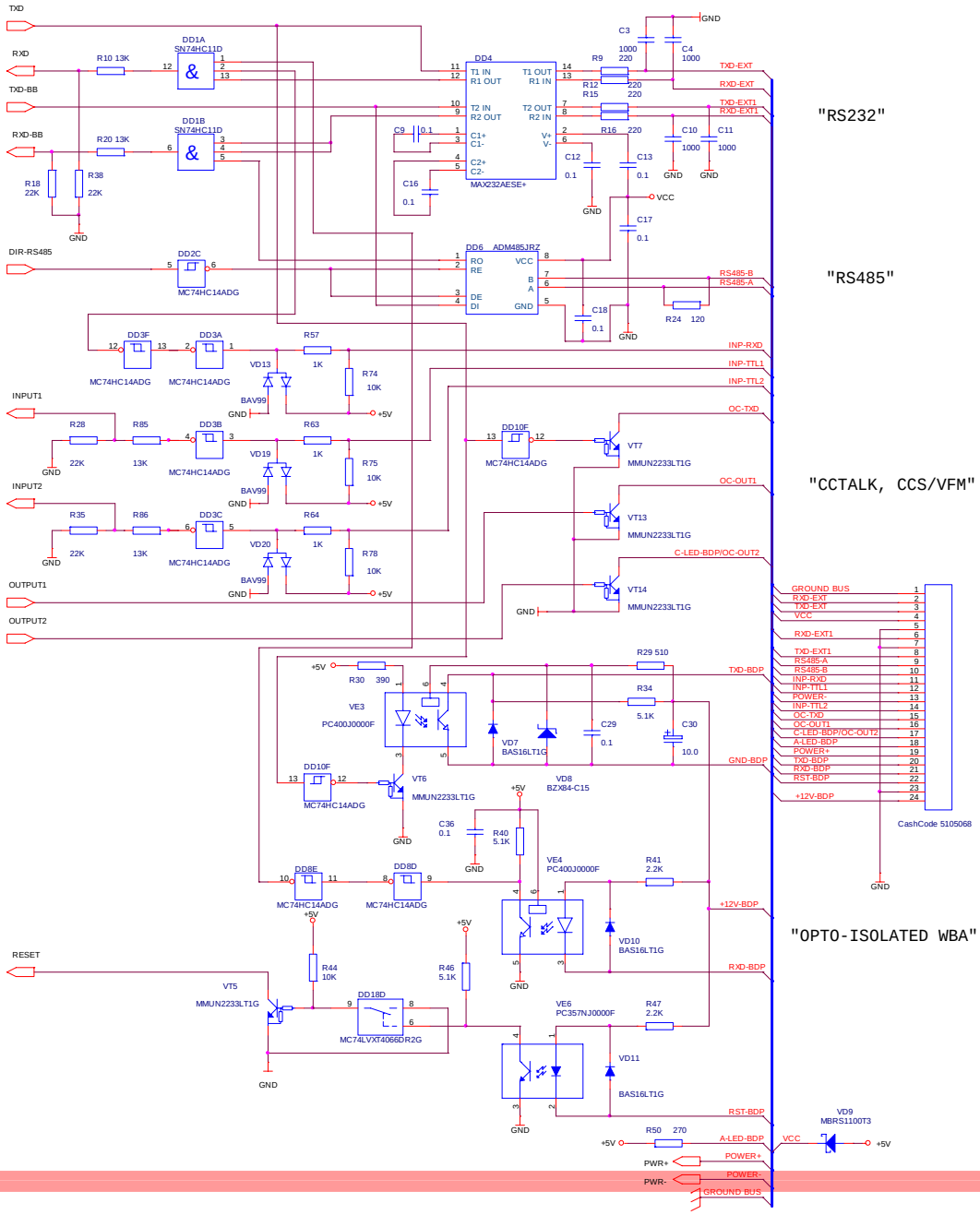


Socket 39-01-4040 (MOLEX)
Contact 44476 (MOLEX)

Signals Description for power connector (Type5)

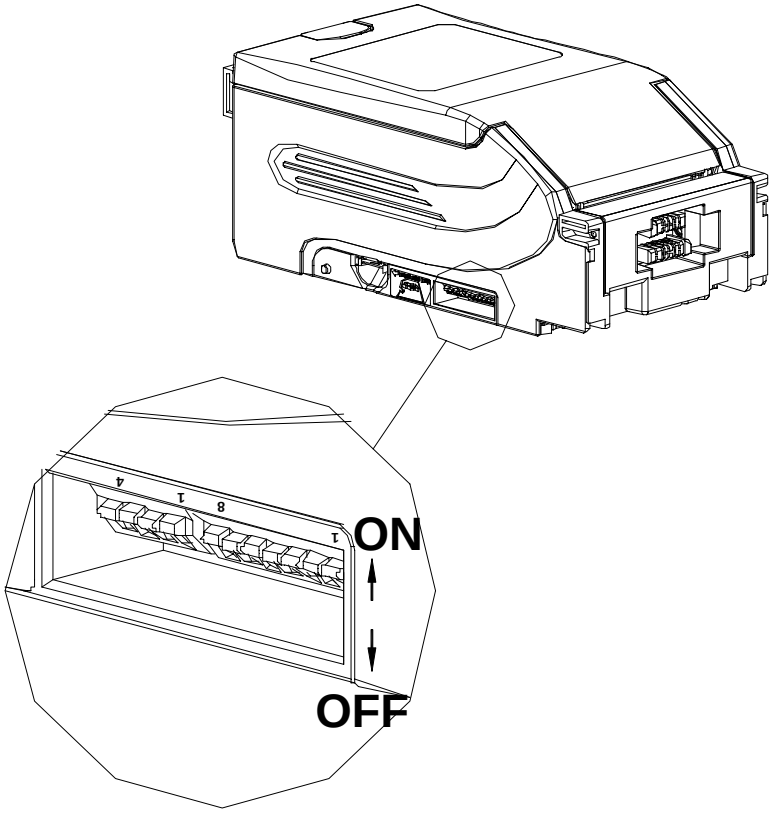
TERMINAL	SIGNAL	FUNCTION	ACTIVITY
1	+12V DC	POWER	-
2	GND	POWER	-
3	GND	POWER	-
4	+24V DC	POWER	-

3.6. Input / Output Circuits: RS 232, RS 485, CCTALK, OPTO ISOLATED ID003, CCS / VFM:

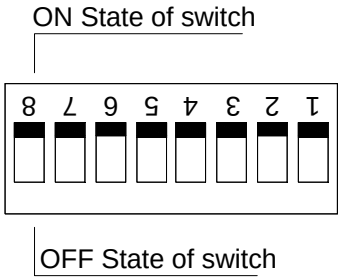


3.7. Switch Settings:

The switches are located at the lateral surface of the Validating head in the bottom part



- **The Bill Validator operates in two basic modes:**
  - **Validation Mode:** This is the mode for normal operation. If a red status light is illuminated, it indicates that the Validator is not ready to accept currency.
  - **Service Mode:** This is the mode for programming and testing the CashCode Bill Validator.
- A series of (8) position DIP switches (SW1) define the settings and program the Bill Validator to recognize and validate a variety of different bill denominations.



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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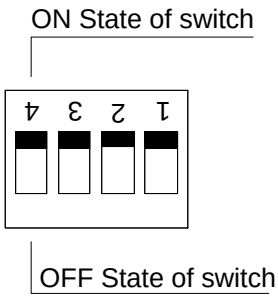
The (4) position DIP switches (SW2) are defined below:



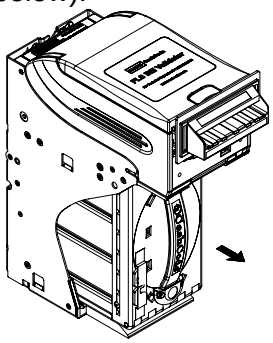
PARAMETER	SWITCH	ON	OFF
Orientation of the ticket	SW2.1	Bar Code - Four-Way	Bar Code – Face Up
Stacker orientation	SW2.2	Down	Up
Interface communication speed	SW2.3	9600 Bps	19200 Bps
Mode	SW2.4	Service Mode	To work with a “Host Machine Controller”

For a complete explanation of switch descriptions, please see the software version description for your particular Bill Validator. You can find at http://support.cashcode.com/en/documentation/index.php

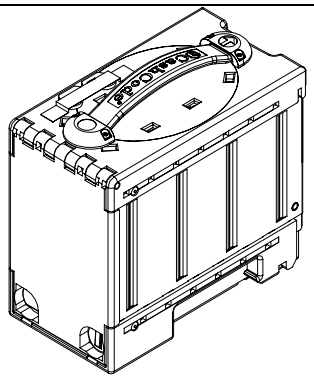
4. MAINTENANCE & SERVICE:

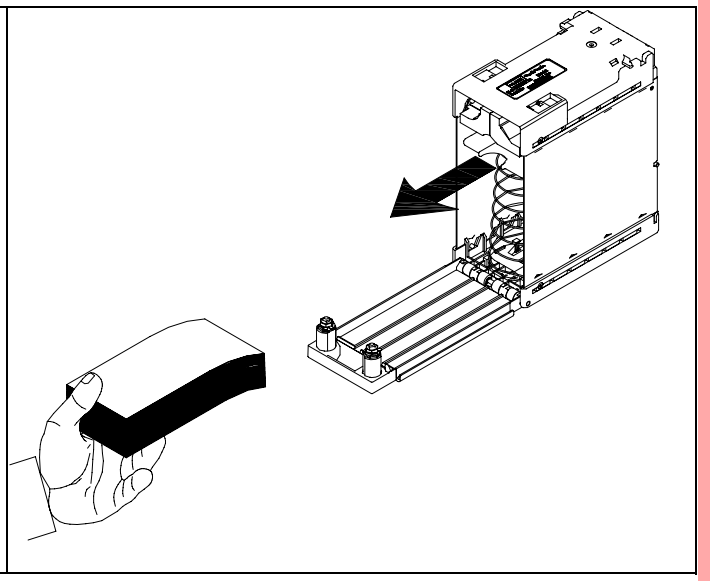
4.1. Collect Bills or Barcode Tickets:

To collect bills from the FrontLoad Bill Validator, simply pull out the Cassette (please see diagram below).



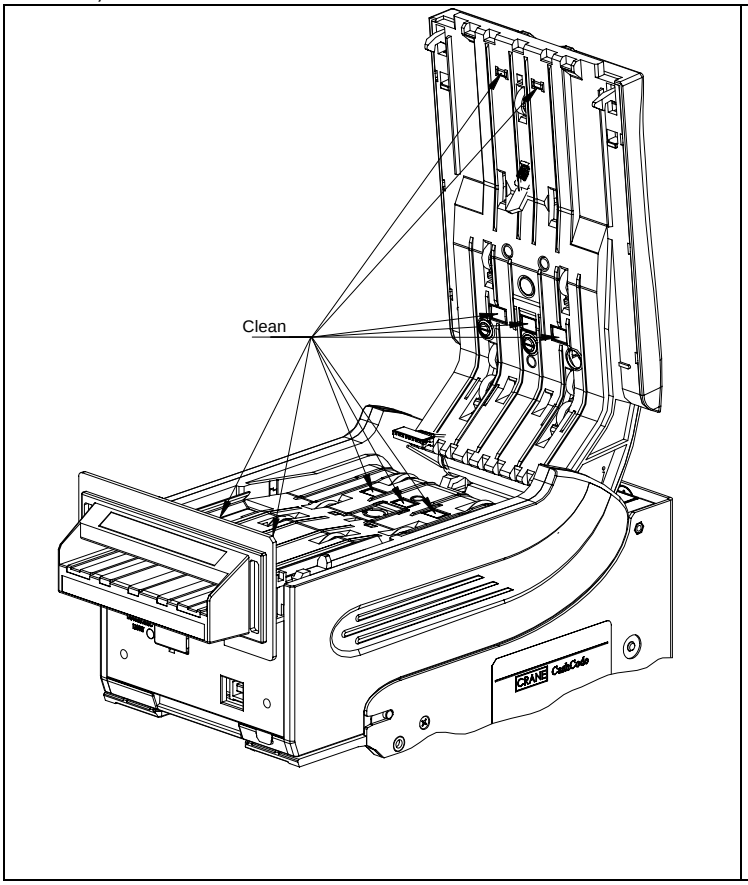
To replace the Cassette, close the Cassette cover, insert the Cassette into the FrontLoad frame.
To open the Cassette cover, simply open the locks – located on the Cassette cover (as shown in the diagram below).





4.2. Scheduled Maintenance:

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



Open Validator head top cover.
Make sure that:

- There are no scratches on the guides and optical sensors
- There is no dirt or cracks on the surface of the transport rollers
- There is no dirt on the surface of the optical sensors
- The entire bill path is clean of paper debris or residue

The dirt must be removed with soft moistened cloth. Isopropyl Alcohol is recommended for cleaning rollers with excessive dirt build up.

Inspect the cassette chamber to see no bill fragments or paper residue is left behind.
This may be blown away with compressed air.

Do not use Acetone or Petroleum based products as they could cause damage to rubber and plastic parts.

5. SOFTWARE UPDATES:

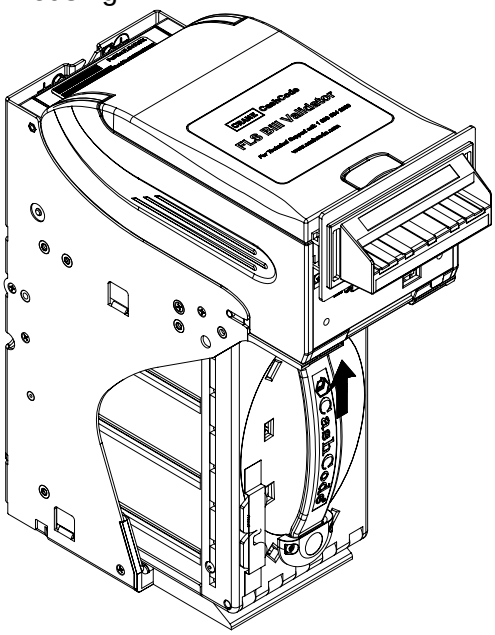
The Front Load Bill Validator is shipped with pre-installed software, according to a user's ordered specifications.

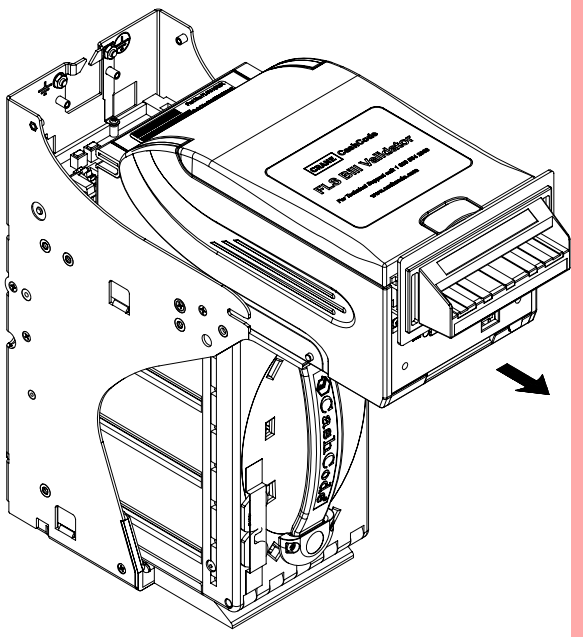
To ensure the proper operation of the FrontLoad Bill Validator, software updates can be ordered according to the original FrontLoad part number.

5.1. Download Procedure for Single Download Memory Card:

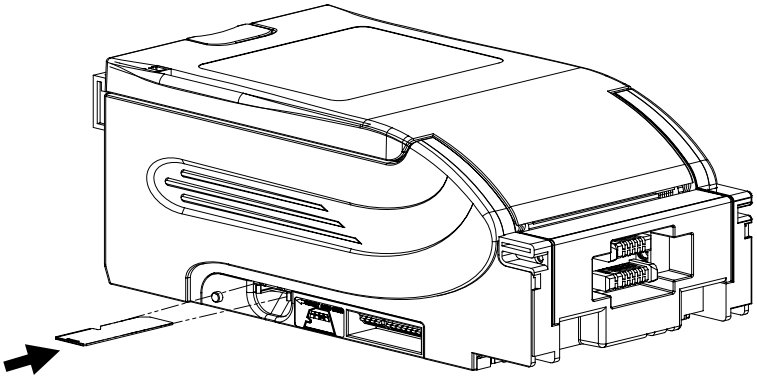
5.1.1 Turn Power OFF.

5.1.2 Lift up the Latch under the Validating Head, and Remove the Validating Head from the Housing.



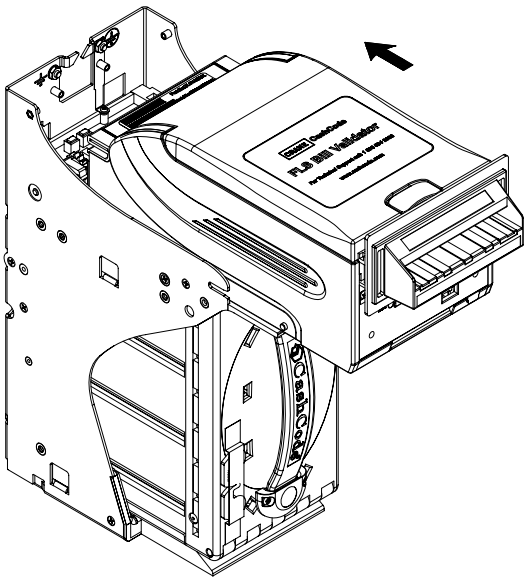


5.1.3 Insert the new CashCode Memory Card into the Memory Card slot of the Validating Head (For correct insertion, please see diagram below).



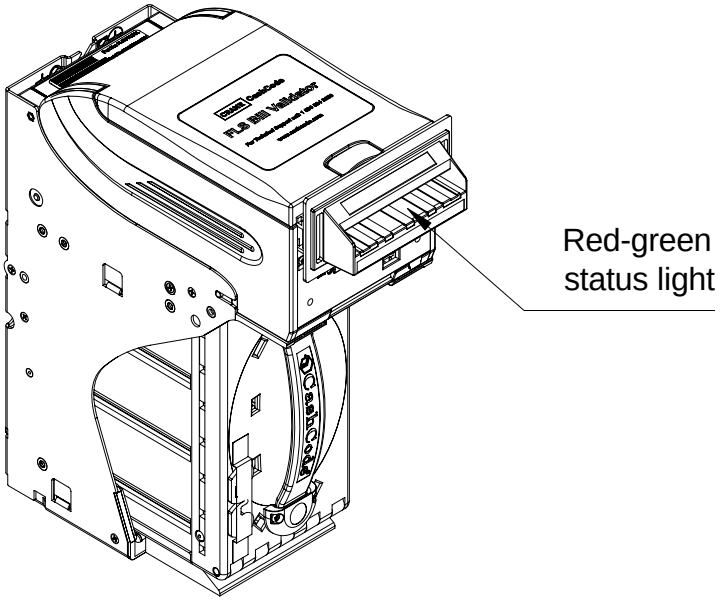
Memory Stick Label should be down ward and notch on memory stick should be on the left as per diagram above.

5.1.4 Insert the Validating Head into the Housing.



5.1.5 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 stay red, this means there is no communication between the FrontLoad Bill Validator and the host controller

5.1.6 A single-download Memory Card must be present in the Bill Validator at all times.



5.2. Download Procedure for Multi Download Memory Card:

Please refer to the instructions concerning the single-download Memory Card. Follow steps 1, 2, 4, 5 and 6. After the successful completion of step 6, follow steps 1, 2, 3 and 5.

The Memory Card can be used to update more units, until the number of licenses is reached

.

5.3. 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.

When the FLS Bill Validator has a CCNET protocol, the software download can be completed via the host controller (refer to CCNET Protocol Description).
For a direct download in the service mode via the interface connector, please follow the instructions below:

5.3.1 Turn power OFF.
5.3.2 Disconnect the interface connector from the Bill Validator.
5.3.3 Remove the Validating Head from the Housing, and set Mode Switch to Service mode (Refer to section 3.7).
5.3.4 Install the Validating Head into the Housing.
5.3.5 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).
5.3.6 From the computer, run the latest software version of the program.
5.3.7 Follow the instructions displayed on the computer screen.
5.3.8 After completing step 7, disconnect the CashCode Adaptor: a) from the power outlet, b) from the Bill Validator, and c) from the Computer.
5.3.9 Remove the Validating Head from the Housing, and set Mode Switch to Validation mode (refer to section 3.7).
5.3.10 Install the Validating Head into the Housing.
5.3.11 Connect the interface connector to the Bill Validator.

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, but short green flashes of light will alternate with a long red light (“green flashes on red”).

The following table lists possible errors which may take place during a download:

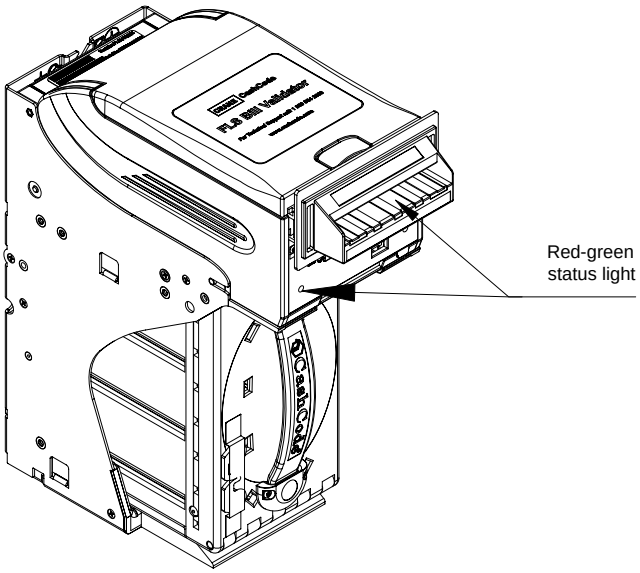
STATUS OF DIAGNOSTIC LIGHT	ERROR DESCRIPTION	FAULT - HANDLING
1 GREEN FLASH ON RED	Unable to write program memory	1. Turn POWER OFF, remove and insert the Memory Card again, turn POWER ON. 2. Send validating head for service
2 GREEN FLASHES ON RED	Firmware integrity error	Reprogram device using proper Memory Card
3 GREEN FLASHES ON RED	Wrong memory card	Follow the next steps checking whether device went back to operation: 1. Verify that the software is suitable to the Bill Validator type. 2. Insert correct type of CashCode Memory Card. 3. Turn POWER OFF, remove and insert the Memory Card again, turn POWER ON. 4. Replace Memory Card with the new one.
4 GREEN FLASHES ON RED	Security error	1. Verify that software is suitable for download. 2. Repeat procedure.

6. TROUBLE SHOOTING:

CashCode's FrontLoad Standard 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.

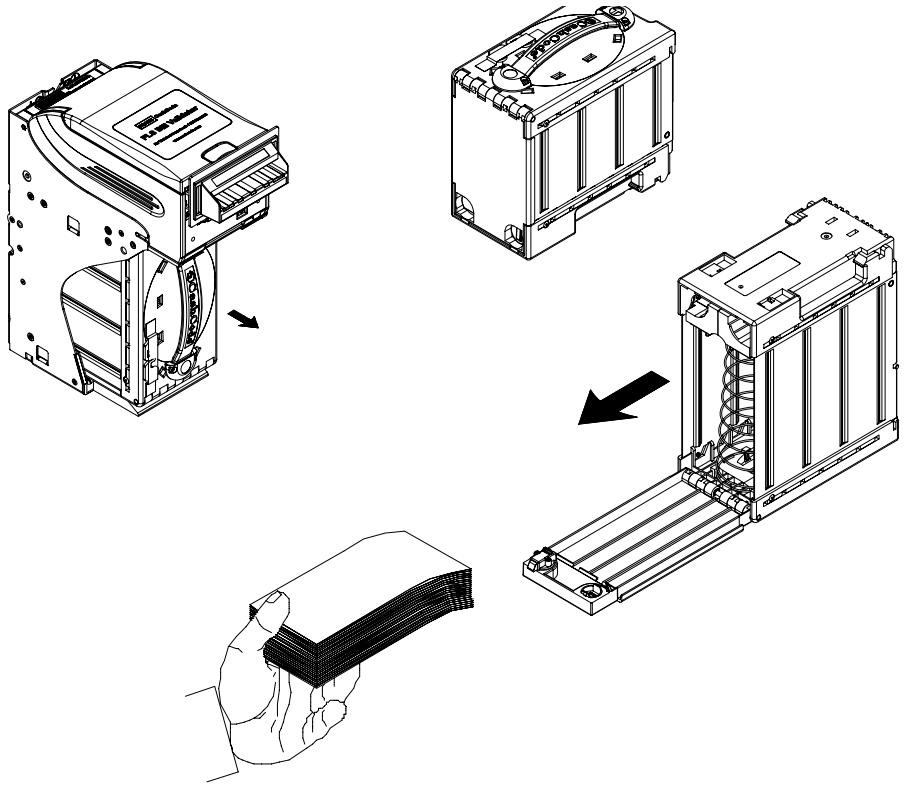
If the self-diagnostic test is passed, then the status light will turn green. If an error is detected, then the status light on the front of the Bill Validator will blink red.

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.

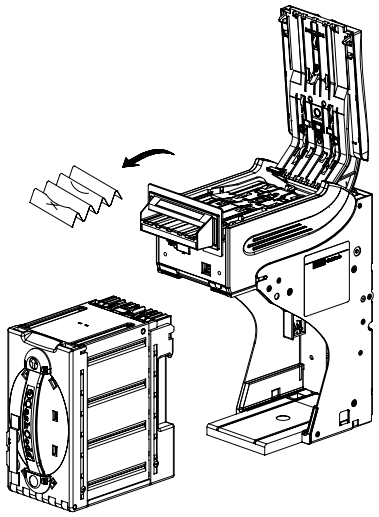


6.1. Operation Mode Diagnostics:

NUMBER OF STATUS LIGHT FLASHES	ERROR DESCRIPTION	FAULT - HANDLING
1 RED	Cassette is removed from bill Validator	Check if cassette is installed correctly
2 RED	An error occurred during CPU exchange with magnetic board	Reset device power, if the problem still exists send device for repair
3 RED	Cassette is full	Remove cassette, empty cassette and insert empty cassette
4 RED	Mechanical Jam in Cassette or Stacker fail	Remove Cassette from Bill Validator Housing and extract crumpled or jammed bill. (see figure below) Turn power on and check if stacker motor rotates.



NUMBER OF STATUS LIGHT FLASHES	ERROR DESCRIPTION	FAULT - HANDLING
5 RED	Failure of die-electric Sensor	Reset device power, if the problem still exists send device for repair.
6 RED	Failure of Optical Sensor	Open Validator head guide, clean optical sensors (please see maintenance section for cleaning details on these sensors)
7 RED	Failure of Magnetic Sensor	Open Validator head guide, clean inductive sensors (please see maintenance section for cleaning details on these sensors)
8 RED	Failure of Transport Motor	1. Open Validator head guide, clean path. 2. Close Validator head guide. 1. If Validator does not start, turn off power, release Validator head and check receiving path. 2. Insert Validator head and turn power on
9 RED	Speed of Transport motor is too fast	check power supply voltage
10 RED	Failure in alignment mechanism	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 (see figure b)
11 RED	Bill pathway is not empty	Open receiving path and check that it is clean
12 RED	Bill jam in entry slot and no credit is issued	Remove cassette from bill Validator and clean path
13 RED	Overload of transport motor	Open Validator head guide and check to see if path is clean.
14 RED	System Error	Reset device power. if the problem still exists send device for repair.



6.2. How to reach us:

6.2.1 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
Website: http://support.cashcode.com

6.2.2 Our Service Center : We have service centers worldwide, please visit our website to locate nearby service center:

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

