SA-4

Currency Validator

SA-4 Down-Stack Unit

Installation Guide

for

SA-4

Currency Validators

Publication Number: G3M5111

1 April 2005

global payment technologies, inc.

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Change History

Throughout its life, this document will undergo changes that reflect improvements to the document and product line. Dates of issue for the original manual and subsequent revisions thereto are listed below:

Revision Status	Reason	Date
Original Issue	--	1 April 2005

Note: A copy of this document is available at *GPT's* Web site:
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1. INTRODUCTION

Global Payment Technologies, Inc., welcomes you to our newest generation of Currency Validators known as **SA-4**. This product continues our tradition of providing the very best in currency validation.

This guide describes installation, operation, simple troubleshooting, and cleaning instructions for the back-stack and down-stack versions of our **SA-4** product line (**Figure 1**). Both versions of **SA-4** can be identified by the Part Number label. For sample part numbers that denote these versions, refer to **Subsection 3.2**.

SA-4 Back-Stack Unit

SA-4 Down-Stack Unit

Figure 1. SA-4 Currency Validators

2. UNPACKING AND INSPECTION

The Currency Validator and Security Removable Cassette are packaged with sufficient cushioning material to protect the equipment during shipment. However, the shipping box or carton should be inspected for any signs of shipping damage (e.g., dents, breaks, water/moisture damage), or other evidence of general mishandling.

If damage is found, file a complaint with the carrier, noting all damage, and notify *GPT* of such action. Also, retain the original shipping box and packaging material for inspection. Whenever possible, taking a photograph of the damaged area may prove useful in documenting the damage.

2.1 Unpacking

To unpack the equipment, proceed as follows:

- *Cut sealing tape at top of box and open the box.*
- *Remove all parts from the box and lay them on a clean work-station.*
- *Refer to invoice, packing slip or shipment breakdown label (used on cartons only) for a complete list of parts, and verify that all parts are present.*
- *Do not discard the shipping box until after all items pass inspection.*

2.2 Inspection

After the equipment is removed from the shipping box or carton, inspect the following items:

- *External surfaces of the unit for signs of damage.*
- *Connectors for physical damage, broken or bent pins.*
- *Cables and accessories for physical damage, broken connectors, and broken or bent pins.*

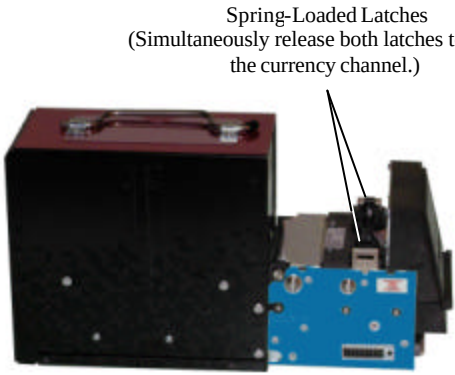
If an item is damaged, report it to the carrier and to *GPT* immediately. Also, do not discard the shipping box and its packaging material.

3. PRODUCT OVERVIEW

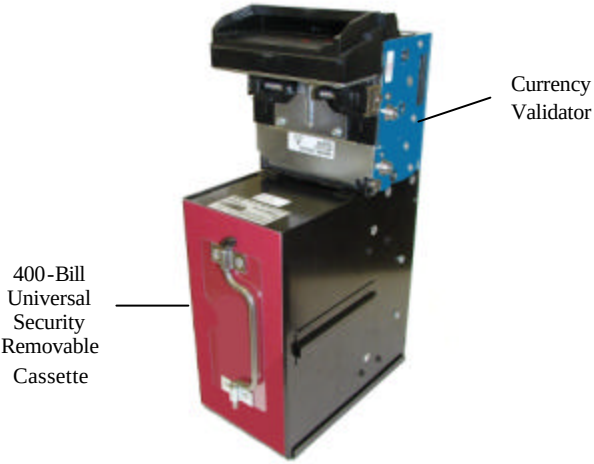
SA-4, which is available in a back-stack or a down-stack configuration, has many features similar to our ARGUS unit. However, this model validator provides a faster processing time of less than 200th/second to validate currency. It also includes a front-drive axle with O-rings for increased torque and Bando drive belts for reliable operation and longer life.

For storing currency, a Security Removable Cassette (SRC) can be mounted either directly below or behind the Currency Validator (**Figure 2**). The addition of a 400-bill, Universal SRC, provides maximum security for storing currency from 62-mm to 85-mm wide. For all currency sizes, the Universal SRC is the only stacker needed for the Currency Validator.

Designed with a configurable head, SA-4 is easily adaptable to meet the needs of different customers. For customers who wish to use their existing 70-mm SRCs for storing narrow-width currencies (i.e., up to 70-mm), SA-4 can be fitted with a specially-designed bezel and channel inserts. With this configuration, *GPT's* 70-mm SRC can be used instead of the Universal SRC to store narrow-width currencies.



SA-4 Back-Stack Currency Validator



SA-4 Down-Stack Currency Validator

Figure 2. SA-4 Currency Validator and Universal SRC

The electrical interface between the Currency Validator and the SRC is made by a blind-mate connector (i.e., standard AMP) or by an external cable (i.e., pigtail) connector. With either option, the Currency Validator can be easily removed as needed.

3.1 Specifications

The mechanical and electrical specifications of the Currency Validator are:

?? *Bank Notes Accepted:*
Four-direction acceptance of bank notes from 2.44 inches (62-mm) to 3.35 inches (85-mm) wide; a range from 40 to 128 bank notes per database can be created for multi-country, multi-note configurations.

?? *Optics:*
Uses red, green, blue, and infrared sensors to generate 56 channels of optical information for a multi-level, high-security validation time of less than 200th/sec (maximum without a SRC installed).

?? *Interface/Protocol:?*
RS-232/V2.2 Protocol?

?? *Environment:*
Operating Temperature: 0°C to 60°C
Storage Temperature: -20°C to 70°C
Humidity: 0% to 95% (non-condensing)

?? *Power Source Required – Standard Operating Voltages are:*
For 24 VDC unit: *GPT* Switching Power Supply, Model 175C0213, or
ELPAC Power Systems[1], Model FW5024
For 12 VDC unit: ELPAC Power Systems[1], Model FW3012

?? *Power Consumption:*
Idle State: 7 Watts (max.)
Accepting/Stacking States: 24 Watts (max.)
In-rush Current: 4.5 amperes (max., current limited) for 5 milliseconds at 24 VDC

?? *Compliance:*
ETL (UL-756)
CSA 22.2
Testable parameters comply with CE requirements.

?? *Shipping Weight (Approximate):*
2.43 lbs (1.1kg) without SRC;
7.25 lbs (3.3 kg) with 400-bill SRC.

[1] Power Supply Adapter Cable Assembly (*GPT* PN 300EX009) is required for use with this power supply.

3.2 Identifying Your Currency Validator

Affixed to the back of SA-4 are five labels (i.e., Part Number, Program, Serial Number, Origin Country Code, and CE/Warning) that identify major characteristics of the unit (**Figure 3**).

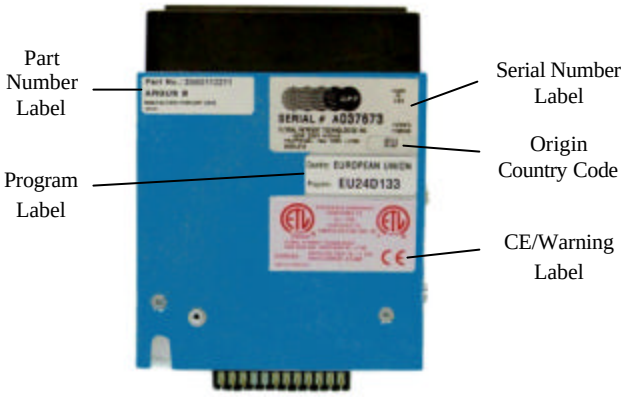


Figure 3. Currency Validator Label Identification

The **Part Number** label contains the date (i.e., month and year) that the Currency Validator was manufactured. It also contains an alphanumeric code that identifies the version number and the configurable components (i.e., mechanical and electrical) of the unit. The numbering scheme for the **Part Number** label is defined below (**Figure 4**):

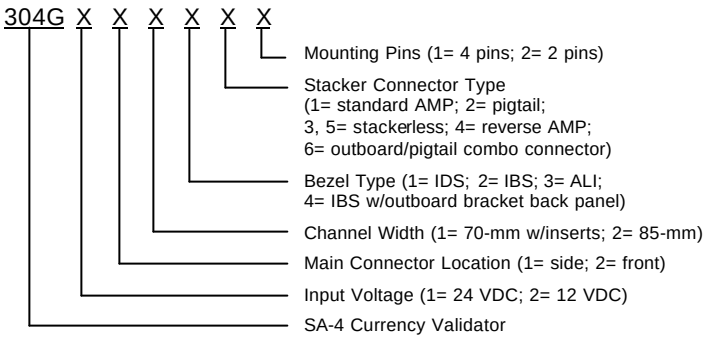


Figure 4. Part Number Label Numbering Scheme

The following is an example of a part number for SA-4:

Sample Part Number: **304G112211**
where:

304G indicates SA-4 with common components
1 indicates 24 VDC is required to operate the unit
1 indicates side-mounted main connector
2 indicates 85-mm channel width
2 indicates IBS bezel for back-stack installation
1 indicates STD AMP connector for stacker hookup
1 indicates four mounting pins

The **Program** label identifies the country and contains an 8-digit alphanumeric code that defines the software characteristics of the Currency Validator. Two different numbering schemes are used to define single-country and multi-country databases. The numbering scheme for a single-country database, shown for the 8-digit number on the sample **Program** label, is defined as follows (**Figure 5**): ?

?? *The first two letters represent the ISO country code*

?? *The next two digits specify the database revision (up to 99, maximum)*

?? *The remaining four characters specify the software revision. The first character of the software revision is a letter that identifies the software type (e.g., network or non-network), and the next three digits define the software revision number.*

Note: If a detailed description of this matrix is required, contact Customer Service (**Section 9**) for assistance.

A sample Program Label for single-country databases is defined below:

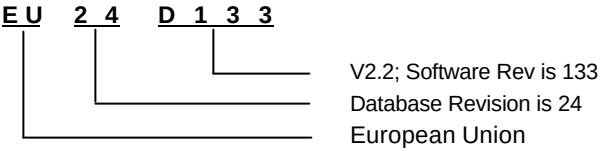


Figure 5. Program Label Numbering Scheme – Single-Country Database

The numbering scheme for multi-currency databases is defined as follows (see **Figure 6**):

- *The first four characters of the alphanumeric code define the database revision (i.e., one letter defines the countries, and three digits define the database revision).*
- *The remaining four characters of the alphanumeric code identify the protocol type and the software revision.*

A sample Program Label for multi-country databases is defined below:

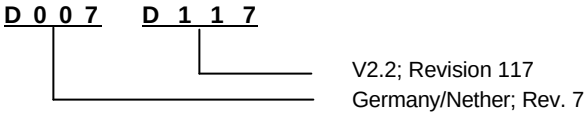


Figure 6. Program Label Numbering Scheme – Multi-Country Database

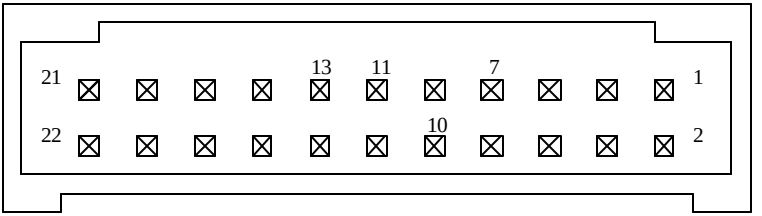
The **Serial Number** label contains a unique alphanumeric code that identifies the Currency Validator.

The **Origin Country Code** mini-label, which is usually affixed on the Serial Number label, uses a two-letter ISO country code to indicate the currency database that the Currency Validator was tested and shipped to.

The **CE/Warning** label indicates the Currency Validator complies with ETL and CETL requirements, and it specifies the rated input power (i.e., voltage and current) that is required to safely operate the unit.

3.3 Main Connector

The Main Connector serves as the electrical interface between the Currency Validator and the Host machine. This 22-pin connector supplies the power and interface signals (**Figure 7**) to operate the unit.



Pin 1:	V Sense (note 2)	Pin 12:	Ground In (note 1)
Pin 2:	Ground	Pin 13:	Ground Out (note 2)
Pin 3:	RS-232 RX	Pin 14:	15 V (reserved)
Pin 4:	RS-232 TX	Pin 15:	VCC (reserved)
Pin 5:	Not connected (reserved)	Pin 16:	SCL (reserved)
Pin 6:	Not connected (reserved)	Pin 17:	SDA (reserved)
Pin 7:	Chassis (note 3)	Pin 18:	Not connected (reserved)
Pin 8:	Ground	Pin 19:	Not connected (reserved)
Pin 9:	Account Number	Pin 20:	Ground
Pin 10:	V In (note 1)	Pin 21:	Ground
Pin 11:	V Out (note 2)	Pin 22:	Ground Sense (note 2)

Figure 7. Currency Validator 22-Pin Main Connector

Notes to Figure 7:

1. Cable design should connect power to pins 10 and 12 on the Currency Validator.
2. The cable should connect 24 V Sense (Pin 1) to V Out (Pin 11) and Ground Sense (Pin 22) to Ground Out (Pin 13). The Currency Validator will not power up if V Sense and Ground Sense are not connected as required.
3. Pin 7 is connected directly to the chassis of the Currency Validator. The chassis is connected to Ground signals internally to the Currency Validator through a 0.1-ohm resistance.

A separate, remotely located power supply is required to operate the Currency Validator. Refer to **CE/Warning** label (**Figure 3**) for the rated input power required to safely operate your unit.

3.4 Communication Protocols

SA-4 supports serial RS-232 communications which is the interface standard used with V2.2 protocol supplied by *GPT*. For information about using SA-4 with other protocols, contact *GPT* Customer Service (**Section 9**).

When SA-4 requires service, changes to the operational setup can be made via the 10-position, DIP-Switch package. To obtain the functions of each switch, refer to the Program Specification Sheet for your software application.

Note: To obtain the Program Specification Sheet for your unit, contact *GPT* Customer Service for assistance.

4. INSTALLATION INSTRUCTIONS

This section describes how to install SA-4 (**Figure 8**) into a Host machine. For dimensional drawings of SA-4 down-stack and back-stack validator heads with stackers, contact Customer Service (**Section 9**).

STOP

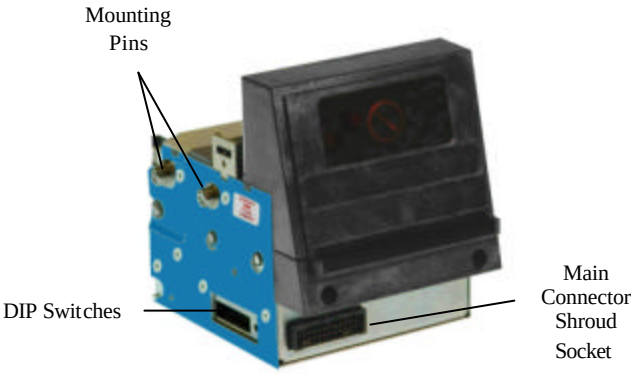
WARNING AVOID PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT. DISCONNECT POWER BEFORE SERVICING THE HOST MACHINE.

4.1 Installation Procedure

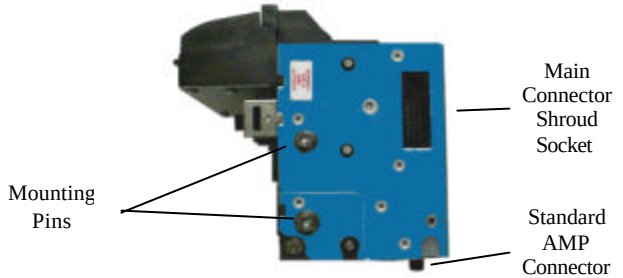
To install SA-4, follow these steps:

1. Disconnect electrical power to Host machine.
2. Ensure all DIP switches (**Figure 8**) are set according to data in Program Specification Sheet.
3. Using appropriate hardware, secure enclosure (if applicable) to Host machine.

Note: The **CAUTION** label (shown below), which is affixed to the Currency Validator, specifies that the latches should be fully engaged prior to installation.



SA-4 Back-Stack Head
(Shown with Front-Mounted Main Connector)



SA-4 Down-Stack Head
(Shown with Side-Mounted Main Connector)

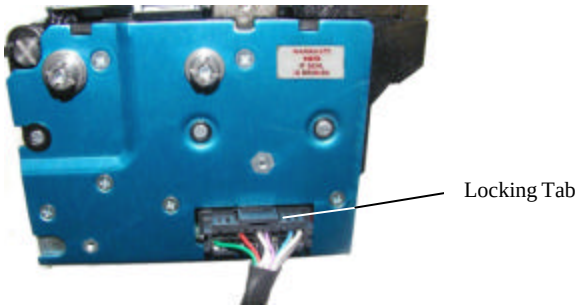
Figure 8. SA-4 Validator Heads – Component Locations

4. Mount SA-4 into enclosure of Host machine; ensure all mounting pins are evenly engaged within slots of enclosure.

CAUTION: DO NOT bend the pins on Main Connector Shroud Socket when attaching Cable Clip. Bent or broken pins can sever electrical connections and disable the Currency Validator.

5. Carefully attach Cable Connector to 22-pin, Main Connector Shroud Socket on SA-4 (**Figure 9**).

Note: Ensure Locking Tab on Cable Connector is properly oriented before attaching it to Main Connector. When properly installed, the Locking Tab should snap into place such that it cannot slide out of Main Connector.



Side-Mounted Main Connector

Figure 9. Attaching Cable Connector to Main Connector

6. Connect appropriate interface-harness cable from Host controller to Main Connector Cable.
7. Carefully place all cables to avoid interference with equipment operation.
8. Mount Security Removable Cassette into enclosure and engage it to blind-mate connector (i.e., inboard AMP configuration) on SA-4; if pigtail connector is used, connect it to stacker.

WARNING PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT MAY RESULT BY APPLYING INCORRECT VOLTAGE TO THE CURRENCY VALIDATOR. ONLY APPLY VOLTAGE AS SPECIFIED ON **CE/WARNING** LABEL (**Figure 3**).

9. Apply power to Host machine.

Note: On the bezel, observe that each pair of green LEDs are flashing sequentially at 4 Hertz. If LEDs are not flashing, or red LED is lit, proceed to Troubleshooting (**Section 6**).

10. Proceed to Video-Level Adjustment (**Section 8**).

5. BEZEL LED DISPLAYS

The LED patterns on the bezel of Currency Validator allow service personnel to view and evaluate equipment operation. This section provides sample bezel displays that represent programmed patterns for V2.2 protocol.

Various display patterns indicate the stages of the bill verification process and denote when an equipment malfunction has occurred. On power-up, the Currency Validator performs a self-test routine. If the unit is operational, the bezel will show a runway light pattern (i.e., Idle State). However, if a malfunction is detected, a self-diagnostic error display will occur as described in **Subsection 5.2**.

Note: Performance data, detailed and historical, is available through RS-232 communication and/or the Soft-Drop Analyzer. For details about the software diagnostics package available from *GPT*, contact Customer Service (**Section 9**).

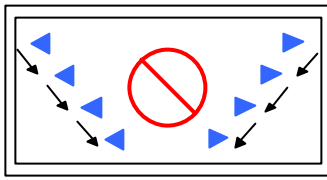
5.1 Displays for Normal Equipment Operation

As the bill moves through the currency channel, light patterns that appear on the bezel identify the current state of the unit. Shown below are light patterns and their associated Currency Validator states for normal equipment operation.

Note: The lit, green LEDs are represented by the solid, triangular-shaped symbols.

?? *Idle State:*

The Currency Validator is operational and ready to accept a bill.

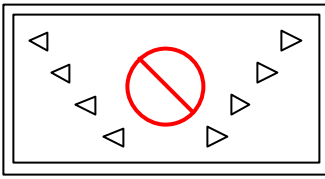


Idle State:

Each pair of green LEDs sequentially flash at 4 Hz. The red, center LED is not lit.

?? *Accepting State:*

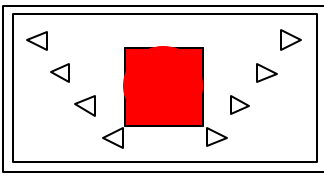
A bill is inserted into the Currency Validator. The front sensor is activated, and the unit is accepting data and evaluating the bill to determine if it is valid.



Accepting State:
All green LEDs are not lit.
The red LED is not lit.

?? *Escrow State, Stacking State, and Rejecting State:*

When the Currency Validator enters the Escrow State, the Stacking State, or the Rejecting State, the light pattern shown below appears.



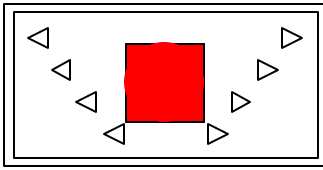
Escrow, Stacking or Rejecting State:
Green LEDs are not lit.
The red LED is lit.

Note: If an equipment malfunction occurs, the Currency Validator will not accept the bill (**Subsection 5.2**).

5.2 Self-Diagnostic Error Displays

Besides the light patterns in **Subsection 5.1**, the Currency Validator provides self-diagnostic error displays when an equipment malfunction occurs. The most common types of errors appear below. For corrective actions, refer to Troubleshooting (**Section 6**).

?? *Any one of the following conditions can cause this display:*



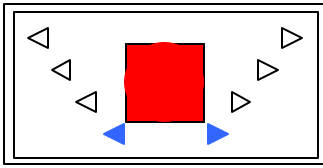
Error – Malfunction:
Green LEDs are not lit.
If front sensor is active, the red LED is lit.

(1) A bill is inserted in the channel but does not advance into the channel.

(2) Stacker is not connected to the Currency Validator and Stacker Required Mode is enabled.

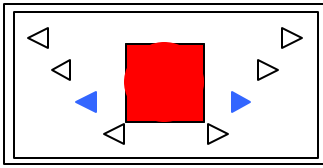
(3) The Currency Validator is operational but has been inhibited (i.e., Inhibit State) from accepting bills. This condition can be caused by an inhibit command issued by the controller or a communication failure between the equipment.

?? *Bill jams in the channel – middle sensor is covered.*



Error – Currency Validator:
If front sensor is active, fourth row of green LEDs are lit and red LED is lit; if front sensor is not active, all LEDs are not lit.

?? *Stacker is jammed or full.*



Error – Stacker Jammed:
Third row of green LEDs are lit, and red LED is lit.

6. TROUBLESHOOTING

The possible causes and corrective actions for malfunctions associated with Currency Validator (**Table 1**) and stacker **(Table 2)** appear in this section. If corrective action fails to resolve the problem, contact Customer Service (**Section 9**). Should the unit require cleaning, refer to Periodic Cleaning (**Section 7**).

Note: Repair of the Currency Validator is restricted to corrective actions in **Table 1**. Unauthorized repair, as indicated by broken Tamper-Evident Seals, will void the warranty.

Table 1. Currency Validator Troubleshooting Chart

Symptom	Possible Causes	Corrective Actions
Currency Validator is not working; bezel LEDs are not lit.	External power or GND is not applied to Currency Validator. Damaged connector and/or pins on Main Connector.	Verify that power and ground are connected to appropriate pins on Main Connector (**Figure 7**). Check for bent, missing or damaged pins on Main Connector.
At power up, stepper motor turns five times and then stops.	Front and/or rear optical sensors are blocked, dirty, or damaged.	Clean front and rear optical sensors, and check that sensors are not blocked or physically damaged. Perform VLA (**Section 8**).
Bills continually jam in channel.	Foreign object(s) is in channel. Pressure rollers are dirty, damaged or loose. Drive belts are damaged.	Remove foreign objects from channel; ensure channel is free of all debris. Clean pressure rollers; check pressure rollers for proper tension. Replace drive belts and check for proper tension.

Table 2. Stacker Troubleshooting Chart

Symptom	Possible Causes	Corrective Actions
Stacker malfunctions.	Stacker entry slot is blocked by Pusher Plate (**Figure 10**).	Check Stacker's entry slot for possible damage and/or blockage. Also, check slide guide for damage.
	Foreign object jamming drive gears.	Remove foreign object from drive gears.
	Stacker may be full or currency slot is blocked.	Empty Stacker. Also, lubricate Stacker components per instructions in Technical Bulletin **GPB2T11** (latest revision).
Bills jam in Stacker.	Dirty bill guides or foreign objects in Stacker.	Clean bill guides; remove foreign objects.
	Stacker may be full.	Empty Stacker.
Currency Validator reports a Stacker jam but bill is not jammed in Stacker.	Pusher Plate Sensor is damaged, and it does not allow Pusher Plate to return to top-most position.	Replace Stacker.

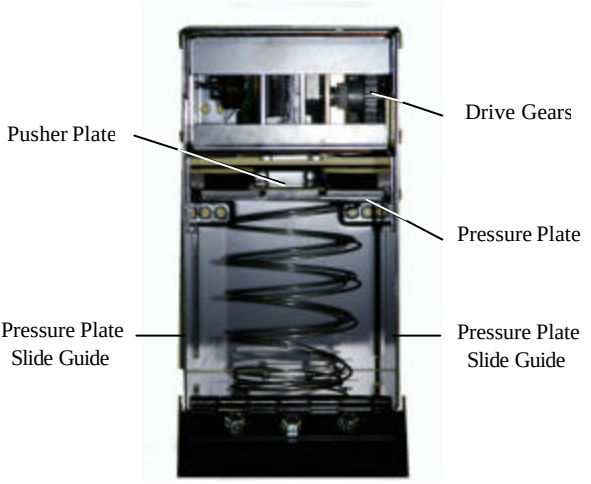


Figure 10. Universal SRC – Back View of Internal Parts

7. PERIODIC CLEANING

Depending on its environment and amount of use, SA-4 may require periodic cleaning to restore it to optimum performance. Under normal use, SA-4 should be cleaned every 6 to 12 months. For unusual operating conditions, such as when the unit is exposed to dirt, dust, water spray, airborne oil, and/or sand, more frequent cleaning will be required.

7.1 Cleaning the Bezel

To remove dirty deposits and smudges from the bezel and other surfaces of SA-4, use a soft, lint-free cloth, dampened with a **90-percent solution of isopropyl alcohol** only.

CAUTION: DO NOT flood the bezel area with alcohol, as this can damage the electronics integrated within the bezel.

7.2 Cleaning the Currency Channel

With constant use, a buildup of dirt, which is transferred from the surface of the currency, will accumulate on the pressure rollers, magnetic head, and optics. Periodically, these items should be cleaned to ensure reliable operation.

7.2.1 Required Items

The following items are required to clean SA-4:

- *Soft, lint-free cloth*
- *Isopropyl alcohol (90-percent solution).*

7.2.2 Procedure

To clean the currency channel, follow these steps:

WARNINGS:

1. AVOID PERSONAL INJURY AND/OR SEVERE DAMAGE TO THE VALIDATOR. DISCONNECT POWER SUPPLY BEFORE CLEANING OR PERFORMING MAINTENANCE ON VALIDATOR.

2. REDUCE AND/OR PREVENT RISK OF ELECTRIC SHOCK. DO NOT CLEAN OR REPAIR THE VALIDATOR IN A DAMP OR WET ENVIRONMENT.

3. AVOID DANGEROUS SITUATIONS. DO NOT INTRODUCE FLAMMABLE LIQUIDS OR GASES TO MAINTENANCE WORK AREA WHEN CLEANING OR PERFORMING MAINTENANCE ON CURRENCY VALIDATOR.

1. Power-down SA-4; disconnect Main Connector Cable from 22-pin Main Connector Shroud Socket of SA-4.
2. Remove SA-4 from its mounting frame.

CAUTIONS:

1. DO NOT scratch the surfaces of the optics windows or the magnetic head while cleaning these devices, as this can impair the validator's performance.

2. DO NOT allow liquids to contact the drive belts or enter the unit, as this can damage components.

3. DO NOT use unapproved cleaners; unapproved cleaners may cause permanent surface damage. Use only cleaners as directed in this procedure.

4. DO NOT use cotton swabs to clean the unit as this can leave unwanted material on the surfaces.

5. DO NOT exceed 90 degrees when opening the Upper-Guide Assembly or damage to wiring can occur.

3. Access currency channel by releasing spring-loaded latches; partially open Upper-Guide Assembly – DO NOT exceed 90 degrees – to expose currency channel with its optical system and magnetic head.
4. Using a soft, lint-free cloth dampened with 90-percent isopropyl alcohol, clean the following areas (**Figure 11**):
   a. Currency channel surfaces: remove surface dirt on both upper and lower guides.
   b. Optics window area: clean all surfaces (top and bottom).
   c. Bar Code Reader and Mag head: carefully remove deposits from surface areas; DO NOT scratch surface area.
   d. Pressure Rollers: clean all surfaces.
   e. Front-Drive Axle with O-Rings: clean all surfaces.
   f. Front and Rear Optical Sensors: clean all surfaces.
   g. Side-looking sensors: clean all surfaces.
5. Swing Upper-Guide Assembly to its closed (locked) position, and verify that spring-loaded latches are fully engaged.

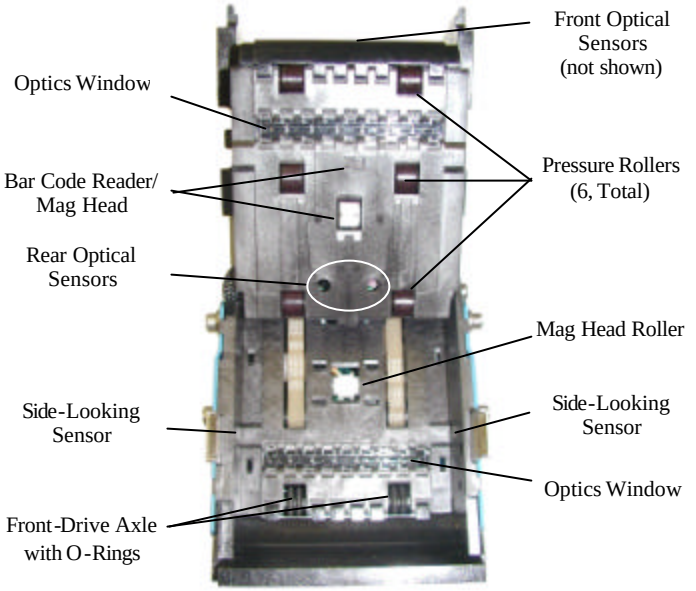


Figure 11. Currency Channel – Cleaning Surfaces for SA-4 Down-Stack Unit

6. Mount SA-4 into enclosure of Host machine.

STOP

WARNING PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT MAY RESULT BY APPLYING INCORRECT VOLTAGE TO THE CURRENCY VALIDATOR. ONLY APPLY VOLTAGE AS SPECIFIED ON **CE/WARNING** LABEL (**Figure 3**).

7. Connect Main Connector Cable from Host controller to 22-pin Main Connector Shroud Socket on SA-4.
8. Apply power and close door of Host machine.

Note: On the bezel, observe that each pair of green LEDs are flashing sequentially at 4 Hertz. If LEDs are not flashing or the red LED is lit, proceed to Troubleshooting (**Section 6**).

9. The Currency Validator is operational and ready to accept currency.

8. VIDEO-LEVEL ADJUSTMENT

The Video-Level Adjustment (VLA) is used to optimize the performance of the Currency Validator. Using an ARGUS-specific VLA card only, the service technician can calibrate the optical sensing circuitry to its optimal levels. This can be done in the gaming machine or at the workbench with just a power source.

This procedure is applicable to all SA-4 Currency Validators and must be performed under the following conditions:

- *At final installation of the gaming machine, prior to public use (this includes retrofitting Currency Validators into gaming machines at the casino or operator site).*
- *After the unit is reconfigured to accept a different size currency (e.g., when the width of the currency channel is changed).*
- *After preventive maintenance.*
- *Whenever bank note acceptance is degraded.*

8.1 Required Items

The items required to perform the VLA are:

- *Applicable Program Specification Sheet*

CAUTION: ONLY USE the correct VLA card, as indicated in your Program Specification Sheet, when doing a VLA. Using the wrong VLA card can cause impaired Currency Validator performance.

- *VLA Card for 70-mm wide channel (GPT PN 300EO005); or,*
- *VLA Card for 85-mm wide channel (GPT PN 300EO019)*
- *Small DIP-switch manipulator (e.g., a small, non-metallic, non-conductive stick-like item such as a toothpick or plastic tweezers).*

8.2 Procedure

To perform VLA, follow these steps:

1. Power-down Currency Validator.
2. Set DIP-Switches 8 and 9 to **on** position (i.e., move switch toward number) (**Figure 12**).

Note: DIP-Switches 8 and 9 are used for servicing the Currency Validator. All other DIP Switches are set to the specific application Program Specification Sheet for your unit and SHOULD NOT be changed.

Figure 12. 10-Pack DIP-Switch Package

3. Power-up Currency Validator.

CAUTION: DO NOT use cut, torn, creased, folded or perforated VLA cards for this test. Damaged cards can skew the VLA; damaged cards should be discarded and replaced with new cards.

4. Insert VLA Card.

   The VLA Card will be drawn into the Currency Validator. If the internal temperature of Currency Validator is between 25°C and 60°C, the red LED will illuminate and stay on, indicating that VLA is being performed. When the temperature is outside the range of 25°C and 60°C, the red LED will flash; the Currency Validator will wait, up to 5 minutes, for the temperature to be within the range previously specified, and then it will proceed with VLA.

Note: The VLA card should be stored on a flat surface to prevent damage (e.g., creases and folds) to the card.

5. Power-down Currency Validator.
6. Set DIP-Switches 8 and 9 to **off** position (i.e., move switch away from number), then set other switches as specified by applicable Program Specification Sheet for your software configuration.

8.3 Description of VLA Process

During the VLA process, the Main Optical Sensors and the Side-Looking Sensors (SLS) are adjusted. Before the card is inserted during the VLA, the Currency Validator will adjust the SLS. This part of the process starts when the Red Status LED is illuminated and remains on for approximately one-quarter (0.25) second. When the Status LED goes off, the SLS adjustment process is underway. This can occur from one to five seconds, but typically is performed in about one second. At the end of the SLS adjustment, the Status LED will either:

1. Illuminate and remain on, indicating the SLS adjustment completed successfully, the settings were stored in non-volatile memory, and the Currency Validator is ready to accept the VLA card for Main Optical Sensor adjustment, or

2. Blink rapidly three times repeatedly, indicating that the SLS adjustment failed. Should the adjustment fail, the Currency Validator will not accept the VLA card to finish the adjustment process.

While the VLA card is in the Currency Validator, the brightness of the emitters and the sensitivities of the detectors are adjusted. If a problem occurs during the adjustment (i.e., inability to adjust correctly), the Currency Validator will eject the VLA card and the Status LED will blink rapidly three times (repeatedly) to indicate the failure. However, if the adjustment is successful, the settings will be stored in non-volatile memory.

8.4 Precautions

The quality of the VLA card will affect the quality of the adjustment. When not in use, the card should be kept in an envelope and stored in a cool, dry environment. If the card becomes soiled or physically damaged (e.g., creased, perforated, bent, etc.), replace it with a new one.

9. REQUESTING SERVICE

When calling for service, have the following information ready so that a *GPT* Customer Service associate can quickly assist you. Refer to the Company Directory (**Subsection 9.1**) for the nearest *GPT* Service Center in your area.

- *Serial number (**Figure 3**)*
- *Part number (**Figures 3** and **4**)*
- *Program revision number (**Figures 3** and **5** or **Figures 3** and **6**)*
- *Self-Diagnostic Error Displays (**Subsection 6.2**) or a description of the problem.*

9.1 Company Directory

Global Payment Technologies, Inc.
General Information: **1-800-472-2506**

E-Mail Addresses:

Sales Information .....**sales@gptx.com**
Customer Service.....**customerservice@gptx.com**

Global Payment Technologies, Inc.
Corporate Headquarters
425-B Oser Avenue
Hauppauge, New York 11788-3640
USA
Tel : +(631) 231-1177 or 1-800-472-2506
Fax : +(631) 434-1771

Global Payment Technologies, Ltd.
Europe
29 Park Royal Metro Centre
Britannia Way, London NW10 7PA
Tel : +(44) 20 8961-6116
Fax : +(44) 20 8961-6117

9.1 Company Directory (Continued)

Global Payment Technologies Australia, (Pty.) Ltd.
13-15 Lyon Park Road
Macquarie Park, NSW 2113
Australia
Tel : +(612) 9887-8600
Fax : +(612) 9887-8601

Global Payment Technologies Holdings (Pty.) Ltd. South Africa
31 Impala Road
Chiselhursten, Sandton 2196
South Africa
Tel : +(27) (11) 217-4600
Fax : +(27) (11) 783-9549

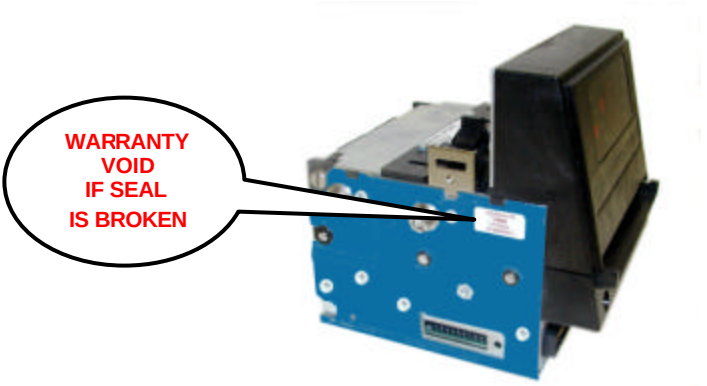
GPT Russia & CIS
Russia, 127030 Moscow
Sushchevskaya 21, Office 31
Tel/Fax: +7 095 973 5760
Tel: +7 095 973 5761

Notes:

Warranty Notice:

SA-4

Currency Validators



Important!

On the Currency Validator, Tamper-Evident Seals have been placed at two locations (see photo above). If these seals are removed or broken, the GPT Warranty, described in this guide, will be voided.

Global Payment Technologies, Inc., (GPT) provides a Warranty to the purchaser of the **SA-4** Currency Validator. Unless otherwise authorized, and agreed to in writing by GPT, repair of the Currency Validator is restricted to GPT-trained and authorized service personnel only. The procedures within this guide do not void the warranty. However, unauthorized repair, as indicated by broken Tamper-Evident Seals, will void the warranty.

GLOBAL PAYMENT TECHNOLOGIES, INC.
LIMITED WARRANTY PROVISION

Global Payment Technologies, Inc. (*GPT*) extends the following limited warranty to the purchaser (Purchaser) of *GPT* products (Products). Unless otherwise authorized and agreed to in writing by *GPT*, all Products are guaranteed to be free of defects in material and workmanship for the period outlined in the Product Line Warranty table noted below. *GPT* agrees to repair or replace, without charge during the applicable warranty period, any unit which proves to be defective upon examination by *GPT* or its licensed affiliates, provided that such unit is accompanied by proof of purchase satisfactory to *GPT*. Any and all associated risks and costs of shipping, including, but not limited to, any applicable duties and tariffs, for an allegedly defective unit to or from the offices of *GPT* or its licensed affiliates shall be borne by the Purchaser.

This warranty applies only if all parts of the Products have been properly serviced according to the applicable product manual, and provided the alleged defective part, upon examination by *GPT* or its licensed affiliates, in their sole determination, shall prove to be defective. This warranty will not apply to any of the Products in which the electronic PCB assemblies, or any other part, has been subject to any modification, accident, abuse, or misuse. Determination of such modification, accident, abuse or misuse will be solely at the discretion of *GPT* or its licensed affiliates.

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Product Line Warranty Table

Product Line	Warranty Period
SA-4 Currency Validators	18 months parts and labor; 24 months parts from the date of shipment of goods from *GPT's* factory.
Security Removable Cassettes (SRC)	One (1) year parts and labor from the date of shipment of goods from *GPT's* factory.
Repaired Products (In-Warranty)	90 days or the remainder of the standard warranty period, whichever is longer. This period is from the date of shipment of goods from *GPT's* factory.
Repaired Products (Out-of-Warranty)	90 days from the date of shipment of goods from *GPT's* factory.