

JetScan[®]

Two-pocket currency scanner

User guide



Safety information, power specifications

WARNING

High-voltage levels may be present. Risk of electric shock.

Turn power **OFF** and unplug power cord from machine before cleaning.

Do not attempt repairs. Repairs must be made by authorized Cummins Allison personnel.

Use grounded plug and properly grounded outlet.

Read and understand all instructions before use.

NOTICE

Only use Cummins Allison supplied power adapter.

Use of any other power adapter may damage equipment.

NOTICE

Improper voltage levels can cause equipment malfunction, damage electrical components, and void warranty.

Provide separate circuit serving only this device and follow listed power requirements to ensure proper operation.

Provide power conditioning/stabilizing devices if necessary.

- **Input voltage:** AC input 100-240 VAC
- **Frequency:** 50/60 Hz
- **Full load amps (FLA):** 3A
- **Power adapter output rating:** 36V DC, 5A (UL, ITE listed, Class 2 power supply).
- **Electrical supply circuit:** The customer must provide a single-phase, dedicated power line that meets the machine's power requirements. Use a properly grounded circuit breaker in compliance with applicable local electrical code.

Environmental operating conditions

- **Temperature:** 60°F - 85°F (15°C - 29°C)
- **Humidity:** 30% to 70% (non-condensing)

Compliance acknowledgments

- **Laser:** This equipment may contain Class 2 laser products and complies with FDA Radiation Performance Standards, 21 CFR Subchapter 1 and the international laser safety standard IEC-60825.1-2001-08.
- **FCC:** This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- **Regulatory:** UL/CUL/FCC/CE.

Table of contents

Safety information, power specifications.....	2
About this guide	3
Machine diagram	4
Getting started	6
Stopping conditions and recovery steps.....	16
Daily cleaning procedures	23

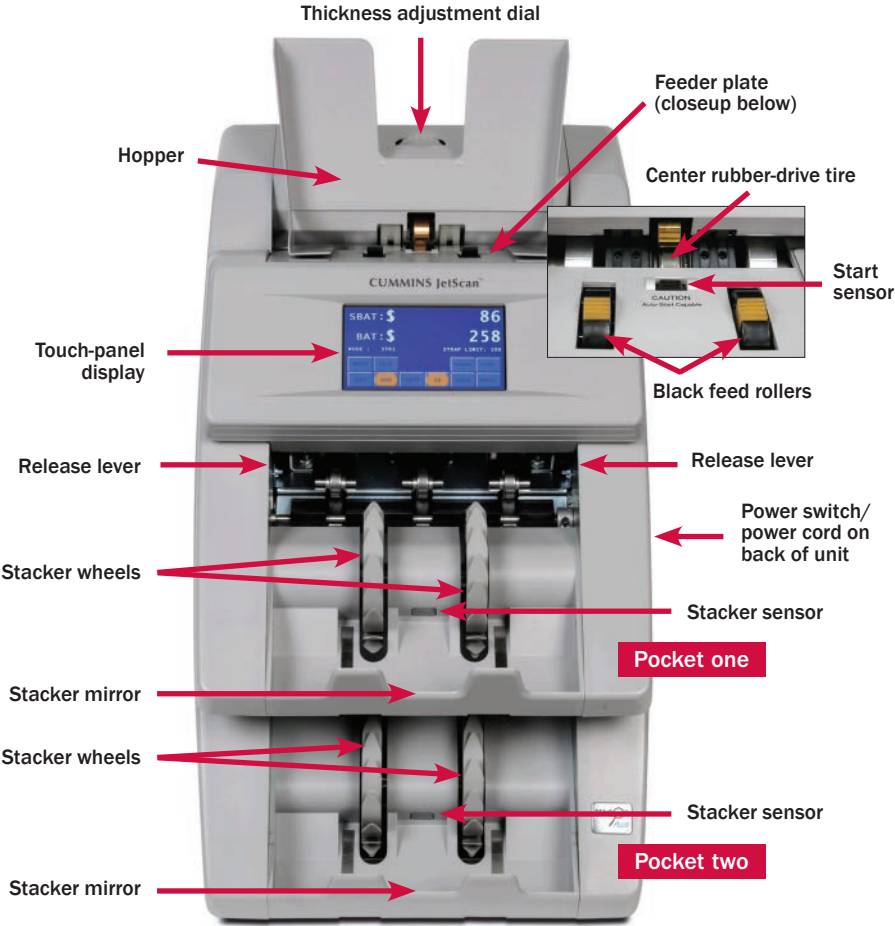
About this guide

The two-pocket JetScan® currency scanner processes U.S. currency. The machine features:

- Selectable operating modes, which process mixed notes, detect stranger notes, and offsort target denominations.
- Facing and orientation functions.
- Configurable strap limits.
- Cumulative counting.
- A setting for recounting notes without impacting totals.
- Flexible configurations. Two or more processing functions can be combined to maximize productivity.
- Several counterfeit detection options.

For more information, contact a Cummins Allison representative.

Machine diagram



Communication ports

Four RJ45 serial communication ports are located on the back panel of the machine. Ports are numbered in sequence from left to right, with one on the far left and four on the far right.

Hopper



Machine is auto-start capable. Feed rollers in hopper rotate inward. Entanglement and drawing-in hazard.

Do not operate with exposed long hair, neckties, jewelry or loose clothing.

The hopper is the area on the top of the machine where notes are placed for processing. If the machine is configured to auto-start, the rollers and wheels begin moving as soon as the machine detects notes in the hopper.

Thickness adjustment dial

The dial located on top of the machine adjusts the tightness of the feeder through which notes pass during operation. The dial has positive and negative adjustment numbers, with **0** at the center of the adjustment range.



For normal feeding, start with **0** at the top of the dial.

To help reduce the occurrence of doubles or chains, turn the dial to the right, so a negative number is at the top, decreasing the distance between the rollers.

Turning the dial to the left, so a positive number is at the top, increases the spacing between the rollers, allowing notes to pass through more easily.

Getting started

This section outlines basic features and functions of the two-pocket JetScan currency scanner.

Powering ON/OFF

WARNING

High-voltage levels may be present. Risk of electric shock.

Turn power **OFF** and unplug power cord from machine before cleaning.

Do not attempt repairs. Repairs must be made by authorized Cummins Allison personnel.

Use grounded plug and properly grounded outlet.

Read and understand all instructions before use.

NOTICE

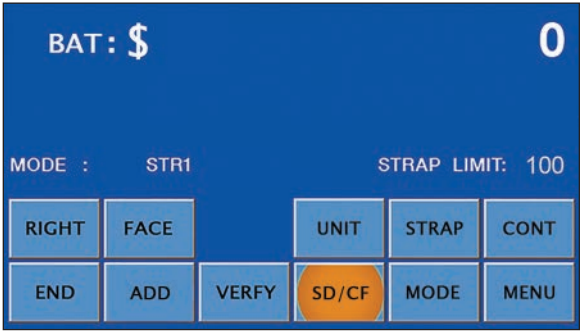
Only use Cummins Allison supplied power adapter.

Use of any other power adapter may damage equipment.

To turn the machine **ON**, set the rocker switch located in the lower-right rear corner when facing the front of the machine to the **ON** position (**I**). Allow the machine to complete its power-on sequence. The machine is ready to process notes when the touch panel displays the main screen.

To turn the machine **OFF**, ensure the machine is not processing notes, and then set the rocker switch located on the rear of the machine to the **OFF** position (**O**).

Touch-panel display: Main screen



Main screen key	Description
RIGHT (Orient)	Press to quickly right (orient) notes without accumulating totals. The machine scans the first note and delivers notes of this orientation to the upper pocket and notes with the opposite orientation to the lower pocket.
FACE	Press to quickly face notes without accumulating totals. The machine scans the first note and delivers notes faced in this direction to the upper pocket and notes faced in the opposite direction to the lower pocket.
UNIT	Press to change the batch total and sub-batch total to piece counts.
STRAP	Press to prompt the STRAP SETTINGS screen, where strap limits are set and strap counts are cleared.
CONT (Continue)	Press to start the motor and clear totals on the screen.

Main screen key	Description
END	Press END to clear current batch totals. When SBAT STATUS is ON in SETUP , pressing END once clears the sub-batch total and pressing END a second time clears the batch total.
ADD	Press to enable or disable the ADD function. When enabled, sub-batch or batch totals accumulate after notes are removed from the pockets.
VERIFY (Verify)	<p>Press to enable the verify function, which allows notes to be processed off-line. This function can be used to recount and reconcile any count suspected of being wrong without adding to current batch or day totals.</p> <p>When VERIFY is pressed, machine totals return to zero, and the machine processes notes following rules of the indicated mode. When VERIFY is pressed again to exit the function, the machine returns to the operating mode, as well as totals and settings, that were active prior to using the verify function.</p>
SD/CF	Press to activate counterfeit detection on applicable models.
MODE	Press to prompt the MODE SELECTION screen, which displays all processing modes that are enabled in SETUP .
MENU	Press to prompt the MAIN SUB MENU, which provides access to additional menus for reports and machine adjustments.

Operating modes

Pressing **MODE** from the main screen displays all modes that are enabled in **SETUP** and available for use. The following screen shows all modes enabled.



Mode key	Description
STR1 (Stranger 1)	Scans notes for the target denomination (first note processed). The machine sorts the target denomination into the designated pocket and offsorts strangers, no calls and suspect documents, as well as double, chain or spacing errors, to the designated offsort pocket. A grand total is provided; strangers are not included in the grand total.
STR2 (Stranger 2)	Scans notes for the target denomination (first note processed) and then begins filling the upper pocket with that denomination. The machine switches to the lower pocket when the strap limit or pocket limit is reached. The machine stops and presents no-call, suspect-document or stranger notes, as well as double, chain or spacing errors, in the current sorting pocket.

Mode key	Description
<p>STRFO (Stranger face/orient)</p>	<p>Scans notes for the target (first note processed) and facing or orientation. The machine begins filling the upper pocket with the target note. The machine sorts and counts non-faced/non-oriented notes to the lower pocket. The machine stops and presents no calls and strangers in the upper pocket. Double, chain and spacing errors stop in the current sorting pocket. Suspect documents stop in the pocket with the same facing or orientation. A grand total is provided.</p>
<p>MIX1 (Mixed 1)</p>	<p>Used for counting mixed denominations without presorting. The machine begins filling the upper pocket and offsorts no calls and suspect documents, as well as double, chain or spacing errors, to the lower pocket. A grand total is provided.</p>
<p>MIX2 (Mixed 2)</p>	<p>Used for counting mixed denominations without presorting. The machine begins filling the upper pocket and switches to the lower pocket when the upper pocket is full. The machine stops and presents no calls or suspect documents, as well as double, chain or spacing errors, in the current sorting pocket. A grand total is provided.</p>
<p>MIXFO (Mixed face/orient)</p>	<p>Used for counting mixed denominations without presorting. The first note processed determines facing or orientation. The machine begins filling the upper pocket. The machine sorts and counts non-faced/non-oriented notes to the lower pocket. The machine stops and presents no calls in the upper pocket. Double, chain or spacing errors stop in the current sorting pocket. Suspect documents stop in the pocket with the same facing or orientation. A grand total is provided.</p>

Mode key	Description
<p>SORT1 (Sort 1)</p>	<p>Scans notes of all denominations and is best used when notes are presorted by denomination and then stacked together. The machine scans and separates denominations by sending them to different pockets or by stopping and presenting the denomination change. The machine sorts the first denomination to the upper pocket. When a different denomination is encountered, it is offsorted to the lower pocket. For subsequent denomination changes, the machine sorts them to an empty pocket or stops in the current sorting pocket. The machine stops and presents no calls or suspect documents, as well as double, chain or spacing errors, in the current sorting pocket. A grand total is provided.</p>
<p>SORT2 (Sort 2)</p>	<p>Scans notes of all denominations and is best used when notes are presorted by denomination and then stacked together. The machine counts and sorts the first denomination to the upper pocket. When it encounters a note of a different denomination, the machine stops and indicates a denomination change. No calls or suspect documents, as well as double, chain or spacing errors, are offsorted to the lower pocket. A grand total is provided.</p>
<p>SORT3 (Sort 3)</p>	<p>Scans notes of all denominations and is best used when notes are presorted by denomination and then stacked together. The machine sorts the first denomination to the upper pocket. When it encounters a different denomination, it is offsorted to the lower pocket. The machine stops, indicates a denomination change, and stops on all subsequent denomination changes in the lower pocket. The machine stops and presents no calls or suspect documents, as well as double, chain or spacing errors, in the current sorting pocket. A grand total is provided.</p>

Mode key	Description
<p>SRTFO (Sort face/orient)</p>	<p>Scans notes of all denominations while facing or orienting and is best used when notes are in a presorted stack. Users must choose FACE or ORIENT. The machine sorts to pocket one. In SETUP, users have the option to offsort into pocket two or stop in pocket one or two on a non-faced/non-oriented note. The machine always stops and presents no calls, suspect documents or denomination changes in pocket one. Double, chain or spacing errors stop in the current sorting pocket.</p>
<p>COUNT</p>	<p>Counts any type of media that complies with document-size and density-setting specifications. This mode only counts pieces; note scanning does not occur. The machine begins filling the upper pocket and switches to the lower pocket when the strap limit is reached or the upper pocket is full. The machine stops and presents double, chain or spacing errors in the current sorting pocket. Totals can be displayed as a unit or denominational value.</p>
<p>OFSRT (Offsort)</p>	<p>This mode sorts and straps the user-selected target denomination to the upper pocket. All other denominations are counted and offsorted to the lower pocket. Non-target denomination notes are added into totals but are not included in strap counts. The machine stops and presents no calls or suspect documents, as well as double, chain or spacing errors, in the lower pocket. If FACE or ORIENT is also selected, non-faced/non-oriented notes of the target denomination are counted and offsorted to the lower pocket but are not included in the strap count.</p>

Memory levels

The machine has four memory levels.

Memory level	Description
STRAP	Strap limits can be set from 1 - 100 or infinite (INF) . The machine stops when it reaches a strap limit. Available in STR1, STR2, STRFO, SORT1, SORT2, SORT3, SRTFO and OFSRT modes.
SUB BATCH	A sub-batch is a deposit processed from one or several sources and treated as sub-groups within a batch. Sub-batch tracks individual amounts and provides a total by category, as well as a grand total. Available in all operating modes.
BATCH	A batch is a deposit processed from one general source. Batch tracks individual amounts and provides a total by category, as well as a grand total. Available in all operating modes.
DAY	A day total is the grand total of deposits processed since the last time day totals were cleared. Day total tracks individual amounts and provides a total by category, as well as a grand total. Available in all operating modes.

Strap counts and strap limits

To view current strap limits and counts, press **STRAP** on the main screen. The STRAP SETTINGS screen is displayed, similar to the following example.

DENOM	UNIT	LIMIT		
\$1	0	100		
\$2	0	100		
\$5	0	100		
\$10	0	100		▼ ▲
\$20	0	100		
\$50	0	100		
\$100	0	100		CLEAR ALL
COUNT	0	100		
5	10	20	25	+
50	75	100	INFIN	- EXIT

Strap limits may be set for each denomination in all operating modes, except **MIX1**, **MIX2** and **MIXFO**. Denominations are itemized in the DENOM column. The UNIT column indicates the current strap count. The LIMIT column indicates the current strap limit. The COUNT row refers to the non-value piece count and appears in **COUNT** mode only.

How to set strap limits

To set a strap limit:

1. Press ▲ or ▼ to scroll through the denominations. Stop on the desired denomination.
2. Enter a strap limit by doing one of the following:
 - Press one of the preset values.
 - Press the preset value that is closest to the desired quantity. Next, add to (+) or subtract from (-) the quantity as required.
 - Press **INFIN** for **infinite**.
3. Press ▲ or ▼ to select the next desired denomination and repeat Step 2.
4. When configuration is complete, press **EXIT** to return to the main screen.

How to clear strap counts

To clear a note's strap count to **0**, select the note using ▲ or ▼ and then press **CLEAR**. To clear all note strap counts to **0**, press **CLEAR** followed by **ALL**. If STRAPS CLEAR is set to **ENDBT** in **SETUP**, then ending a batch automatically clears all strap counts.

Printed reports

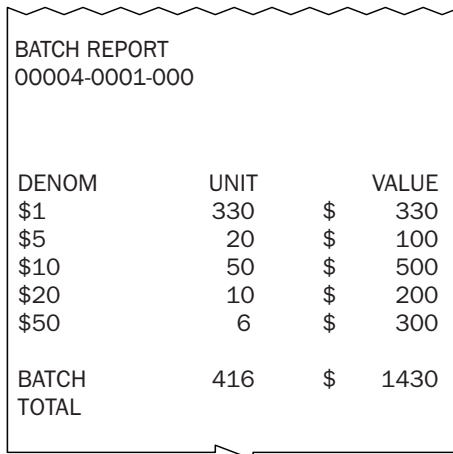
When an optional printer is connected to and configured on the machine, reports:

- Automatically print after batches or sub-batches are ended.
- Can be generated by pressing **MENU** on the main screen. Next select **BATCH**, **SUB BATCH** or **DAY** and press **PRINT**.

Each report shows an audit number. Within the audit number:

- The first five digits represent the transaction number of this report among all reports sent to the printer. The transaction number increments each time a report is sent and resets to one when the day total is cleared.
- The next four digits represent the batch number.
- The final three digits represent the sub-batch number.

Batch report example



The image shows a printed report with a decorative wavy top border. The text is as follows:

BATCH REPORT
00004-0001-000

DENOM	UNIT	VALUE
\$1	330	\$ 330
\$5	20	\$ 100
\$10	50	\$ 500
\$20	10	\$ 200
\$50	6	\$ 300
BATCH TOTAL	416	\$ 1430

Stopping conditions and recovery steps

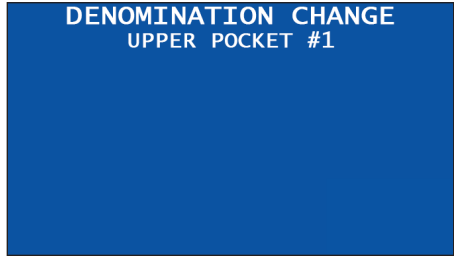
The following conditions cause the machine to stop and require action by the user.

Condition ▶ While in a sort mode, the machine identified a note that is different than those it has been processing.

The change in denomination is the top note in the pocket.

Action ▶ Remove all notes from the pocket indicated on the screen. Separate the top note from the remaining notes. Put the top note in the location for that denomination. Put all the other notes (they are all the same) in the location for that denomination.

The machine will automatically restart.



Condition ▶ The machine diverted notes to the wrong pocket.

Action ▶ Remove all notes from the pocket indicated on the screen and place them in the hopper; press **CONT**. The machine reverts to the note count that preceded the error with no impact on strap, sub-batch and day counts.



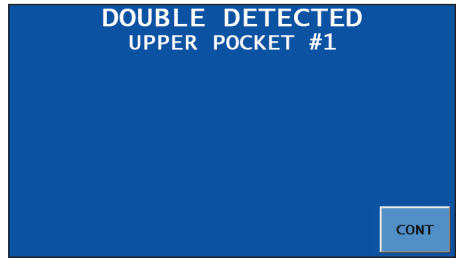
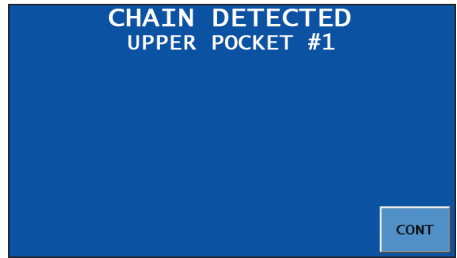
Feed errors

Conditions ▶

- The machine detected notes that were not adequately spaced apart.
- The machine may have processed two or more notes as one.

Action ▶ Remove all notes from the pocket indicated on the screen and place them in the hopper. Press **CONT**. The machine reverts to the starting point that preceded the error, with no impact on strap, sub-batch, batch and day counts.

If the alarm repeatedly sounds, turn the gray thickness adjustment dial on top of the machine behind the hopper extension. Rotate the dial in the negative (-) direction indicated by numbers on the front of the dial.

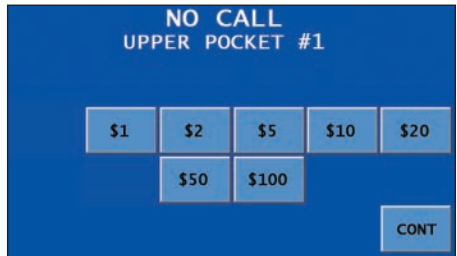


Condition ▶ The machine stopped on a note because it cannot recognize the denomination. The NO CALL note is in the top of the pocket indicated on the screen and is not included in the count.

Action ▶ Inspect the top note in the pocket indicated on the screen. **Do not** remove all notes from this pocket.

If the note should be counted, return it to the same pocket and then enter its denomination by pressing the correct **denomination value key** (\$1, \$5, \$10, etc.). The machine restarts, and the note is added to the count.

If the note should not be counted, remove it and press **CONT**. The machine restarts without adding the NO CALL note to the count.



Notes at limit

Conditions ▶

- The number of notes in the pocket reached the pocket limit selected in **SETUP**.
- The number of notes in the pocket reached the preset strap limit.

Action ▶ Remove notes from the pocket indicated on the screen.

The machine automatically continues processing if additional notes remain in the hopper.



STACKER FULL
UPPER POCKET #1



STRAP LIMIT
UPPER POCKET #1

Condition ▶ The machine detected a note of a different denomination from those being counted and has stopped. This STRANGER note is the top note in the pocket and has not been included in the count.

Action ▶ Remove the top note from the pocket indicated on the screen. Press **CONT** to continue.



REMOVE STRANGER
UPPER POCKET #1

CONT

Condition ▶ The machine identified a sorting error.

Action ▶ Remove all notes from the pocket indicated on the screen and place them in the hopper. Then press **CONT**.



SORTING ERROR
UPPER POCKET #1

CLEAR AND RE-RUN POCKET

PRESS THE <CONT> KEY TO RESUME PROCESSING

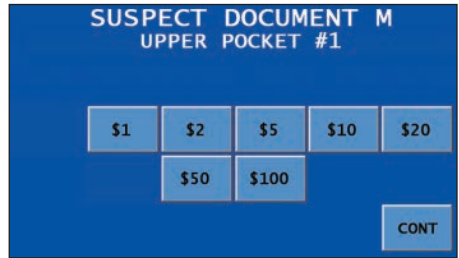
CONT

Condition ▶ Sensors detected a possible counterfeit note. The machine stopped with this note as the top note in the pocket. This note has not been included in the count.

Action ▶ Inspect the top note in the pocket indicated on the screen; then choose one of the following options:

- If the note is deemed genuine, return it to the pocket and press the appropriate **denomination value key**. The machine restarts and adds this note to the count.
- If the note is deemed counterfeit, place it aside and press **CONT**. It is not included in the count.

Appears on select models



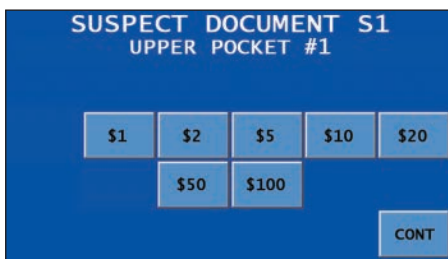
SD code *	Possible causes
M	<ul style="list-style-type: none"> • Incorrect-ink error • Worn note
UV	<ul style="list-style-type: none"> • Incorrect note paper • Soiled note
FL	<ul style="list-style-type: none"> • Incorrect note paper • Machine-washed note • Taped note
* Multiple codes may appear on a screen	

Condition ▶ Sensors detected a possible counterfeit note. The machine stopped with this note as the top note in the pocket. This note has not been included in the count.

Action ▶ Inspect the top note in the pocket indicated on the screen; then choose one of the following options:

- If the note is deemed genuine, return it to the pocket and press the appropriate **denomination value key**. The machine restarts and adds this note to the count.
- If the note is deemed counterfeit, place it aside and press **CONT**. It is not included in the count.

Appears on select models



Lower probability of a super note, but commonly identifies poor-quality counterfeit notes

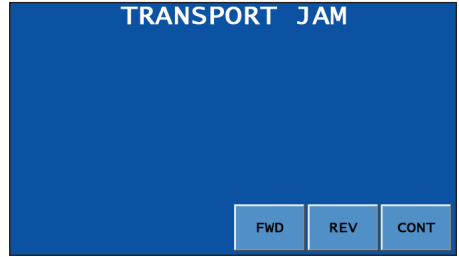


Higher probability of a super note

SD code	Possible causes
S1	<ul style="list-style-type: none"> • Incorrect note paper • Soiled note
S2	<ul style="list-style-type: none"> • Incorrect note paper • Machine-washed note • Taped note
S3	<ul style="list-style-type: none"> • Incorrect note paper • Soiled note
S5	<ul style="list-style-type: none"> • Incorrect-ink error • Worn note
S8*	<ul style="list-style-type: none"> • Note failed advanced-counterfeit test • Worn note
S10*	<ul style="list-style-type: none"> • Incorrect-ink error • Genuine AK series \$100 • Worn note
S11*	<ul style="list-style-type: none"> • Incorrect-ink error • Worn note
<p>* These error codes are most common among super notes, which are high-quality counterfeits. Notes producing these codes should be carefully examined.</p>	

Condition ▶ Notes or foreign material are jammed in the paper path.

Action ▶ To clear a jam, follow these procedures:



NOTICE

Do not use tools or metal devices to remove jammed notes from paper path.

Use of tools or metal devices could cause machine damage and void existing warranty.

For proper removal of jammed notes, follow the steps listed below.

1 Remove all notes from the hopper and both pockets.

2 Remove hopper.

3 Remove feeder plate.



4 Raise the two red plastic “T” handles at the same time and hook them onto the metal shaft.





5 Firmly push down on the left and right release levers and pull the front enclosure open for access to the paper path.

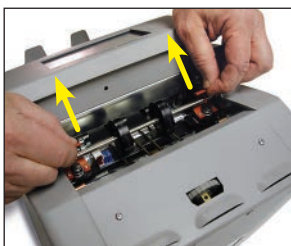
Then do one of the following:

- Move jammed notes forward/back by manually rotating the large black feed rollers.
- Press **FWD** on the display to move rollers forward.
- Press **REV** on the display to move rollers in reverse.

Remove all jammed notes and foreign material.

6 Push the front enclosure back until it clicks into its normal operating position.

7



Unhook the two red plastic "T" handles from the metal shaft and lower them at the same time.

8



Curved edge

Replace the feeder plate. Insert the curved edge of the feeder plate first. Gently press down on the feeder plate until it snaps into position.

9

Replace the hopper. Press **CONT**. Reprocess all notes that were in the hopper and both pockets at the time of the jam.

Daily cleaning procedures

Daily cleaning of the two-pocket JetScan currency scanner is recommended to ensure maximum productivity and reliability, especially for high-volume applications, as well as for those processing highly circulated (dirty) notes.

Recommended cleaning materials

CAUTION

Simple Green, the recommended cleaning agent, can be an eye irritant. Avoid eye contact.

If eye contact occurs, flush eye(s) with cool water for 5 minutes – remove contact lenses if present – continue flushing eye(s) with cool water for 15 more minutes. If irritation persists, consult physician.

Individuals with sensitive skin should rinse hands after using.

- **Simple Green Safety Towels.** (Part number: 022-2118-00.) A pre-moistened microfiber towel also may be used. If using Simple Green concentrate, dilute to: 1 ounce of Simple Green per 8 ounces of water. For material-safety-data sheets, see simplegreen.com.
- **Microfiber towels.** (Part number: 022-2223-00.)
- **A clean, soft eraser.** (Part number: 022-1695-00.)
- **Vacuum.** (Part number for standard vacuum: 022-1959-00; part number for heavy-duty vacuum: 022-1308-00.)

Daily cleaning

WARNING

High-voltage levels may be present. Risk of electric shock.

Turn power **OFF** and unplug power cord from machine before cleaning.

NOTICE

To avoid machine/component damage and potential voiding of existing warranty, follow these procedures:

Only use specified tools for cleaning machine. Never use metal tools.

If using Simple Green concentrate, dilute to: 1 ounce of Simple Green per 8 ounces of water.

Never use cleaners containing ammonia. Ammonia may remove labels from machine.

Never spray cleaners directly on machine components.

1 Turn power switch **OFF** (rocker panel to **0**).

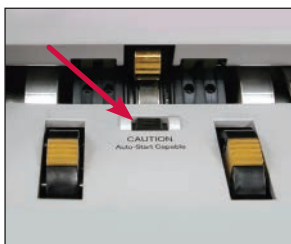
2



On the back of the machine, grasp the release sleeve on the power-cord connector and disconnect the power cord.

3 Remove hopper.

4



Clean the black start sensor with a microfiber towel.

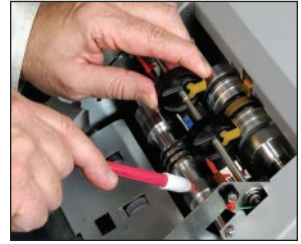
5



Remove feeder plate.



6 Firmly push down on left and right release levers and pull front enclosure open for access to paper path.



7 Clean the upper and lower aluminum rollers by:

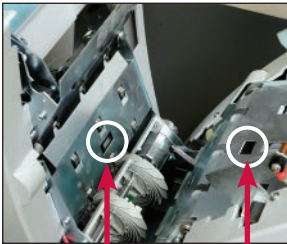
- Using a Simple Green Safety Towel.
- Removing heavy buildup with a clean, soft eraser.

To clean the entire surface of each aluminum roller, turn the large black feed rollers forward (direction of note flow). This action moves other shafts and rollers while sending dirt or stray material out of the unit.

8 Use a Simple Green Safety Towel to clean:

- All rubber sections of the large black feed rollers. Turn the rollers to clean the entire surface of each roller.
- The center rubber-drive tire.

9 Paper path



Reflector

Sensor

Starting from the top and moving to the bottom, use a microfiber towel or vacuum to clean both sides of the paper path.

Be sure to clean the two sensors and two reflectors in the paper path.

10 Push the front enclosure back until it clicks into its normal operating position.

11 In each pocket, use a microfiber towel or vacuum to clean the stacker-sensor lens located between the two gray stacker wheels.

Next, use a microfiber towel or vacuum to clean the stacker mirror located directly across from the stacker-sensor lens.

12



Curved edge

Replace feeder plate. Insert curved edge of feeder plate first. Gently press down on feeder plate until it snaps into position.

13

Replace hopper.

NOTICE

Avoid damaging touch-panel display.

Only clean touch-panel display with dry microfiber towel as directed.

14

Clean the touch-panel display with a dry microfiber towel.

15

Clean remaining hard-plastic exterior surfaces as necessary with a Simple Green Safety Towel.

16

Carefully reconnect power cord on the back of the machine.

17

Turn power switch **ON** (rocker panel to I).

18

Perform a test run with some notes.



Cleaning supplies

The following items are available for purchase through **Cummins Allison**

Desktop currency equipment cleaning kit

406-1000-01

The kit contains:

- Two stick erasers
- 20 microfiber towels
- 50 Simple Green Safety Towels
- User guides

Items sold separately

- One stick eraser. 022-1695-00
- 10 microfiber towels. 022-2223-00
- 50 Simple Green Safety Towels. 022-2118-00
- Vacuum, for use in the United States only.

Standard vacuum: 022-1959-00

Heavy-duty vacuum: 022-1308-00

How to order

To place an order in the United States, visit store.cumminsallison.com.

To place an order outside of the United States, contact your local Cummins Allison representative.



852 Feehanville Drive
Mt. Prospect, IL 60056
800 786 5528
cumminsallison.com

© 2015 Cummins-Allison Corp. All rights reserved.

All trademarks remain the property of their respective owners.

Information is subject to correction or change without prior notice.

This manual contains proprietary information of Cummins Allison. It is intended solely for the information and use of parties authorized by Cummins Allison to maintain the equipment described herein. Such proprietary information may not be used, reproduced, or disclosed to any other parties for any other purpose without express written permission of Cummins Allison.

022-7684-00 Rev. B