CRANE PAYMENT SOLUTIONS

2720 Steeles Avenue West, Unit 2-3
Concord, ON Canada L4K 4S3
phone 905 303 8874 fax 905 303 8875

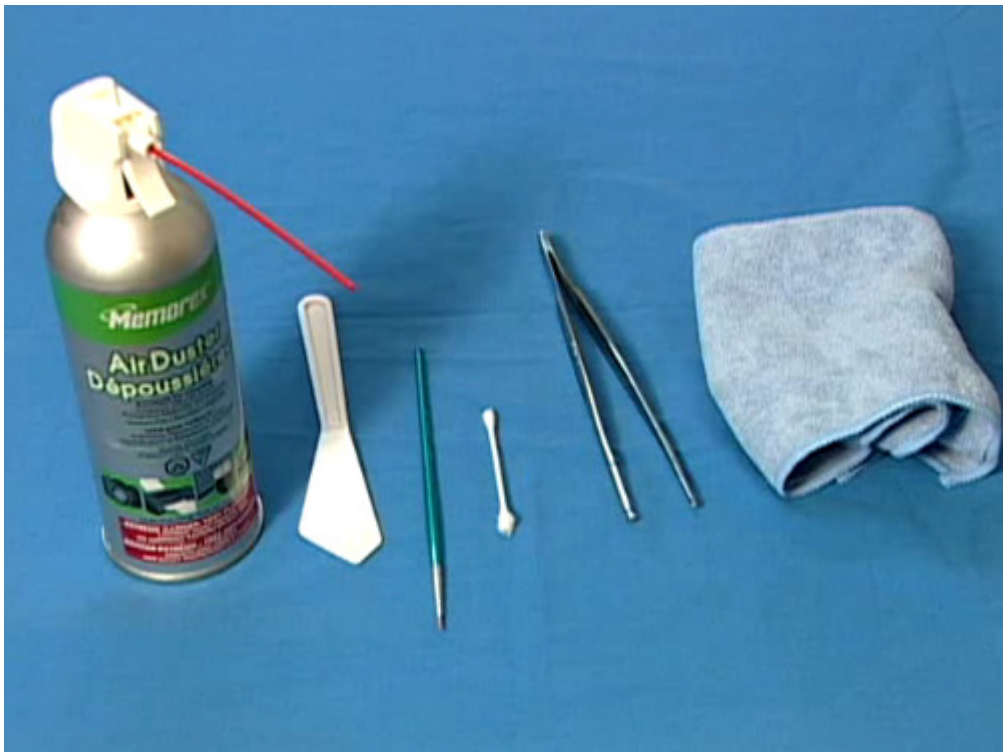
Subject: **Preventive Maintenance and Cleaning Procedure for FL/MFL Bill Validator**

Objective:

To outline a preventive maintenance and cleaning procedure to ensure your CashCode bill validator continues to operate as per factory specifications. Dust and particles of dirt can accumulate on the sensors and rollers during normal operation, negatively impacting the performance of the device (both speed and acceptance rate).

Tools required:

Compressed air (clean and dry supply)
Plastic scraper
Cotton swabs
Tweezers
Soft moist cloth
Isopropyl Alcohol (in the case of extremely contaminated parts, use it with the cloth)



Frequency Required:

Every 6 months or 60,00 bills whichever comes first. In adverse conditions (high humidity, dusty environment, temperature) increase frequency of cleaning.

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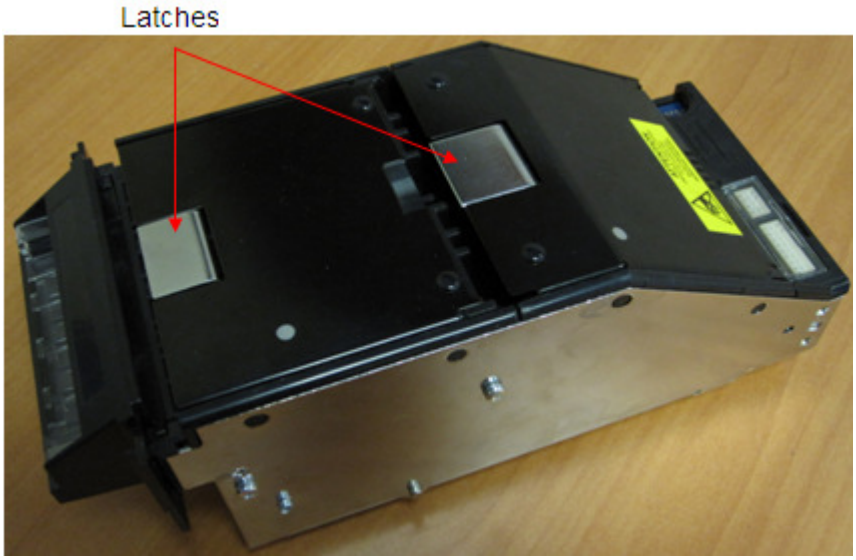
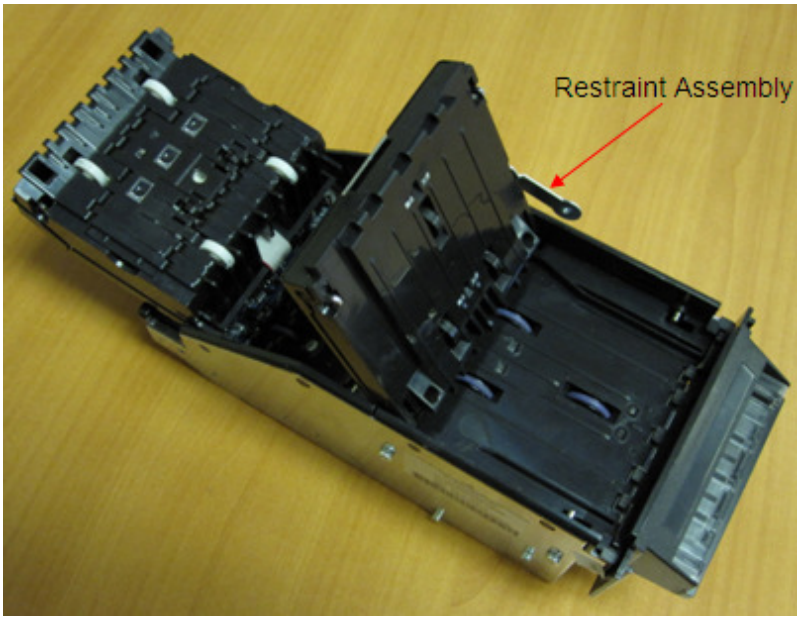
Procedure:



WARNING!
DO NOT USE ACETONE OR MINERAL OIL BASED SOLVENTS AS THEY WILL DAMAGE THE LENSES, PLASTIC COMPONENTS AND VOID THE WARRANTY.



Cleaning Procedure:

1. **Remove Bill Validator from Housing**
   - **a.** Lift tab and pull validator forward
   - **b.** Place on a clean, dry surface
   - **c.** Open door latches to expose bill path and sensors (release restraint assy).

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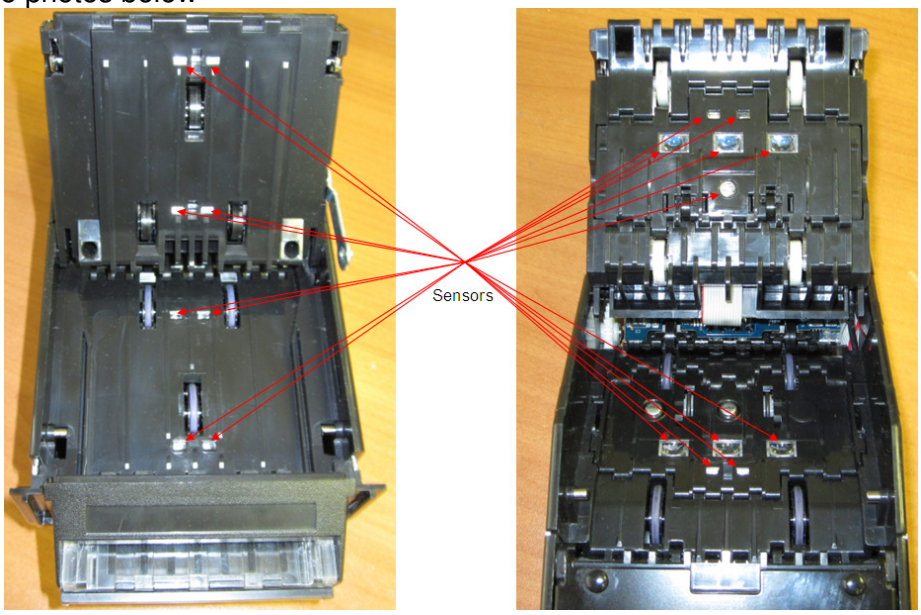
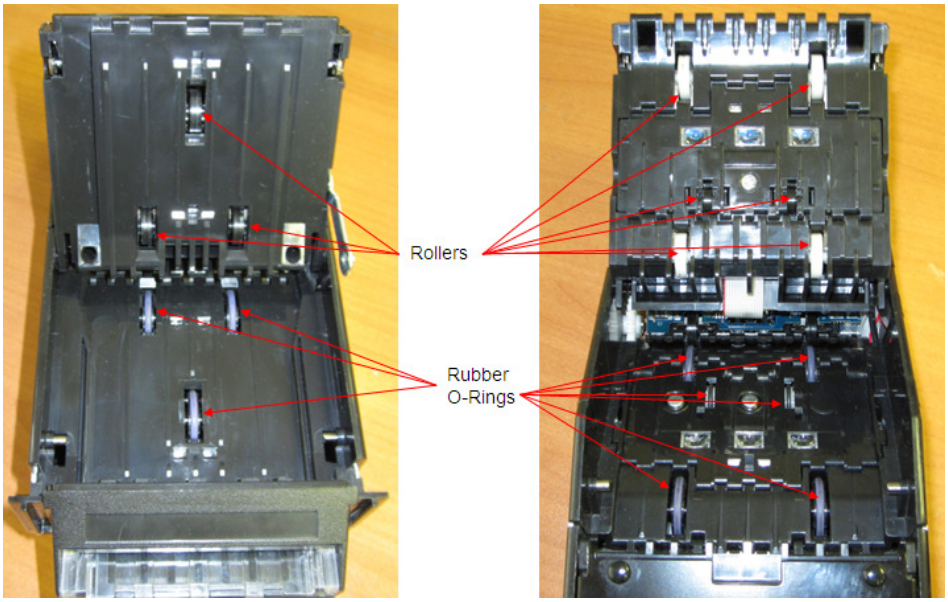
2. **Sensor Cleaning**
   - **a.** Using the compressed air, remove all fine dust and loose particles
   - **b.** Clean sensors using the soft moist cloth (moisten cloth with **clean water only)**
   - **c.** See photos below



Be sure there is no dust accumulation, scratches or other mechanical damage.
Performance will be greatly impacted.

3. **Transport Drive Mechanism**
   - **a.** First blow entire bill path with compressed air, special attention to wheels and rollers
   - **b.** Use the soft moist cloth to remove contaminants still remaining
   - **c.** In the case of extremely contaminated rollers and rubber o-rings, use the cloth with isopropyl alcohol



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4. Inspection

a. Self Test Functionality:

CashCode's FL/MFL Bill Validator is equipped with a self-diagnostic feature to aid in repair and maintenance. When the Bill Validator is powered on, it performs self diagnostic operation. If the self-diagnostic test is passed, the status light will turn green. If an error is detected, the light will blink red. Please refer to the Diagnostic section of the manual for a complete list of error codes and corrective actions.

b. Visual Inspection:

Open the guide assembly to access the bill path
Ensure:
No scratches present on the guides and optical sensors
No dirt or cracks present on the surface of the transport rollers and rubber o-rings.
No dirt on the surface of the optical sensors
The entire bill path is clean of paper debris or residue

## of flashes	Malfunction
1 red on black	Cassette is out of position
2 red on black	Wrong Sense-A-Click type or communication with Sense-A-Click failed.
3 red on black	Cassette is full
4 red on black	Mechanical jam in the cassette (stacking motor can not stack the bill)
5 red on black	Failure of capacitance sensors
6 red on black	Failure of optical sensors
7 red on black	Failure of magnetic sensors
8 red on black	Transporting motor failure (timeout)
9 red on black	Speed of transporting motor is too fast
10 red on black	Failure of Aligning motor or sensor
11red on black	Bill pathway latch is not empty (bill is jam)
12 red on black	Banknote jammed in the entry slot of the cassette and credit were not issued
13 red on black	Transport Motor overload
1 green on red	COM port CRC Error
2 green on red	Internal CRC Error
3 green on red	Improper CCMS format
4 green on red	CCMS is absent
5 green on red	Improper type of CCMS
6 green on red	Download Error