


Revision	Date	Written by	Description
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**GBM – 2MRS2 Manual**  
**GBM – MS2 Manual**


Wizmechatronics CO. Ltd.,

<b>MODEL: GBM-2MRS2/GBM-MS2</b>		<b>Written</b>	<b>Kim In Eun</b>	<b>09-04-15</b>	<b>Sheet</b>
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	<b>41700301-01</b>	<b>Approved</b>	<b>Youn Ki Cho</b>	<b>09-04-15</b>	<b>30</b>

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# 1. Specification

## 1.1. Specification

Feature	Specifications		Remark
	GBM-2MRS2	GBM-MS2	
Loading Type	Back Loading	Front Loading	
Dispensing speed	6 notes per second		
Supporting Note size	Horizontal	120~170mm	Contact us different size
	Vertical	63~80mm	
	Thickness	0.07~0.18mm	
Number of cassettes	4 Cassette		4 Cassettes (max.)
Cassette capacity	2000 notes per cassette		230mm
Cassette Key	Exist		Same key as the return box
Reject type	Note by note reject		
Reject capacity	200 note (max.)		
Reject box	BIN type		Front Loading
Reject Key	exist		
Near and sensing	30 note ± 10 note		Base on new note
Dimension size	309.6mm(W)X578.3mm (D)X462mm(H)	309.6mm(W)×578mm (D)×446.5mm(H)	Base on 2 cassettes, Add a Feed Module 154mm/FM
Power	+5V (1.2A, PEAK 1.5A)		
	+24V (3.5A, PEAK 5.0A)		
Weight	Body		Without Cassette
	GBM-2MR1: 16.9kg GBM-2MR 2: 21.6kg GBM-2MR 3: 26.4kg GBM-2MR 4: 31.1kg	GBM-M1: 13.9kg GBM-M 2: 18.6kg GBM-M 3: 23.3kg GBM-M 4: 28.0kg	
	Cassette 3.65kg(EA)		
	Shutter 1.7kg		
Interface	RS-232C		9 Pin D-Sub Male Connector

## 1.2. Use Environment

Feature		Specifications	Remark
Temperature	Operation	5℃ ~ 35℃	
	Storage	-5℃ ~ 45℃	
Humidity	Operation	35% ~ 85%	
	Storage	10% ~ 90%	
Vibrate		Below the 0.25G	

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### 1.3. GBM-M2 Structure

#### 1.3.1. GBM-2MRS2

- Body
- Cassette
- Main Control Board
- Power Supply (Option)
- Maintenance Box (Option)
- Shutter (Option)




< 2 Cassettes Type >



< Cassette >



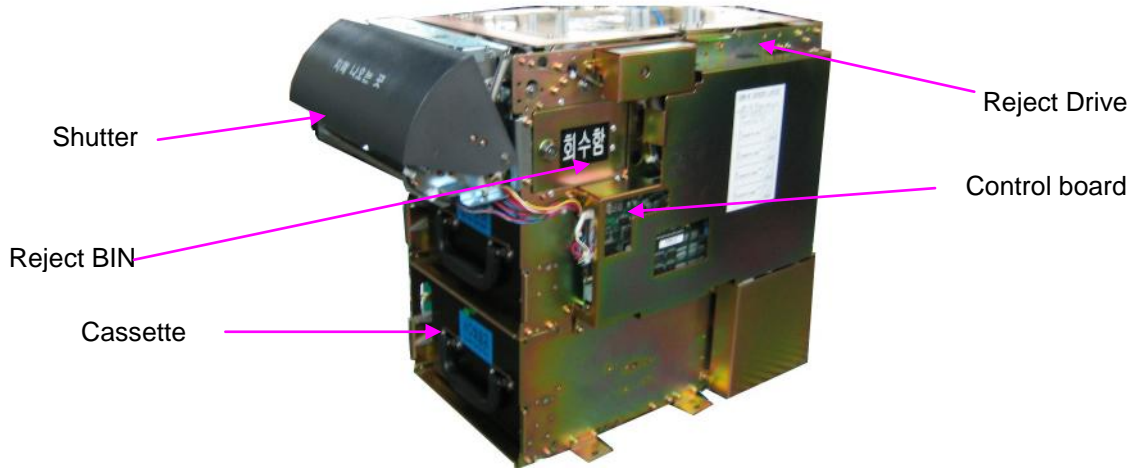
< Maintenance Box >

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1.3.2. GBM-MS2

- Body
- Cassette
- Main Control Board
- Power Supply (Option)
- Maintenance Box (Option)
- Shutter (Option)




< 2 Cassettes Type >



< Cassette >



< Maintenance Box >

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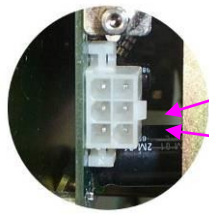
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## 2. Instruction

### 2.1. External Connector Condition

#### 2.1.1. Power Cable

- Connect Power Cable to the Power Connector (CN17) of the Main Board.



<Power Connector>



<GBM-2MRS2>



<GBM-MS2>

#### 2.1.2. Interface Cable or Maintenance Box (MT-BOX) Cable


- Connect Interface Cable to the Serial Port Connector (CN1) of the Main Board.
- Connect MT-2003 Cable to the Serial Port Connector (CN1) of the Main Board.



<GBM-2MRS2>



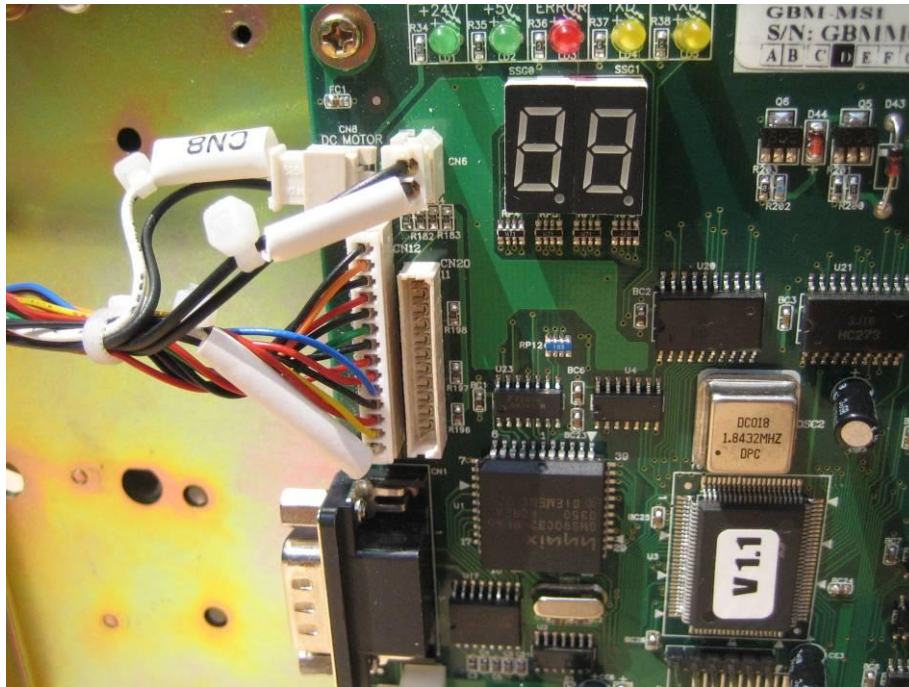
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2.1.3. SHUTTER CABLE [GBM-2MRS2 / GBM-MS2]

- Connect 3 Shutter Cable to the Connector (CN6, CN8, CN12) of the Main Board.



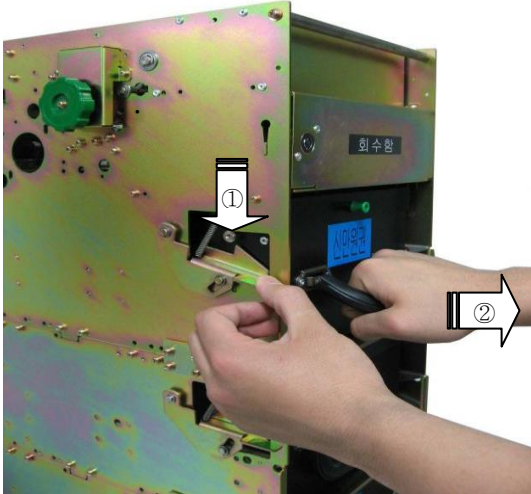
<Attention> Check up the “power off” status when you connected cable

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## 2.2. Replenishing Cassette

- 1) Push the lock-bracket of the dispensing mechanism, at the same time, grasp the handle of the cassette and pull out the cassette to the front.

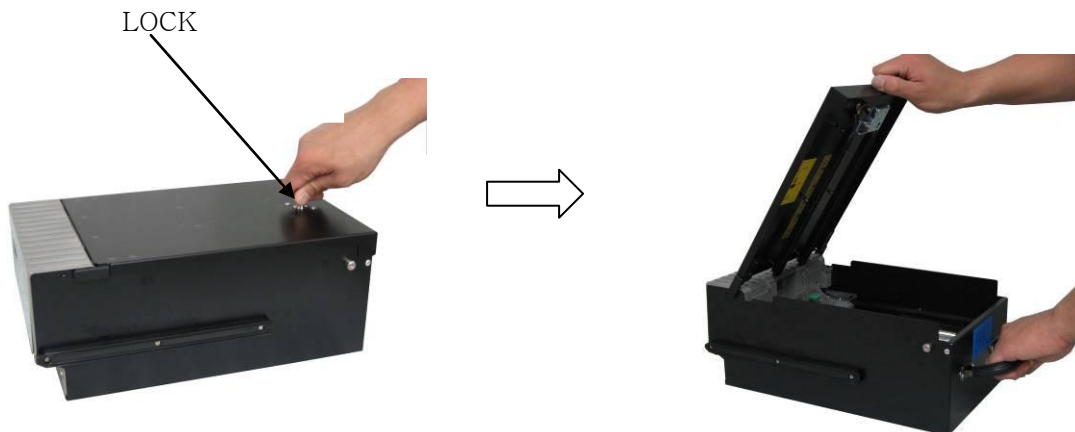



<GBM2-MRS2>



<GBM-MS2>

- 2) After rotating the lock to the right with a cassette key, open the cassette lid upward.



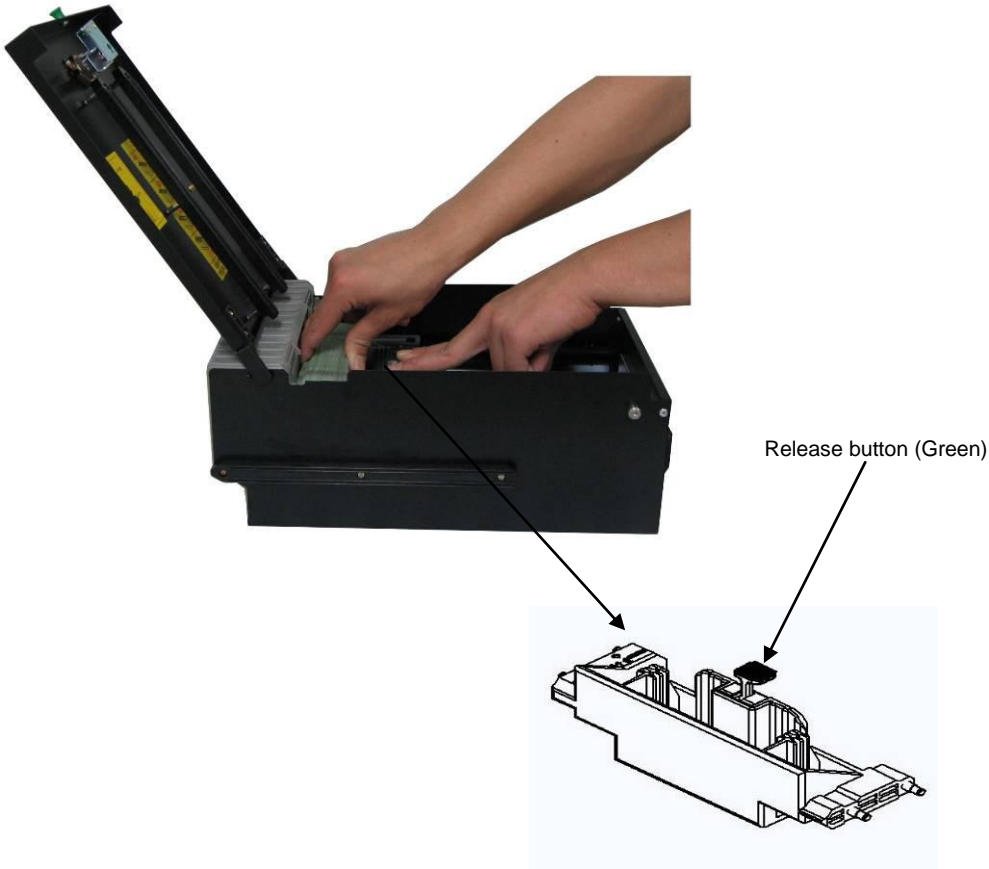
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3) Push the push plate to the back till locking.



4) Setting the notes evenly and pushing the release button smoothly until the push plate contacts the notes.



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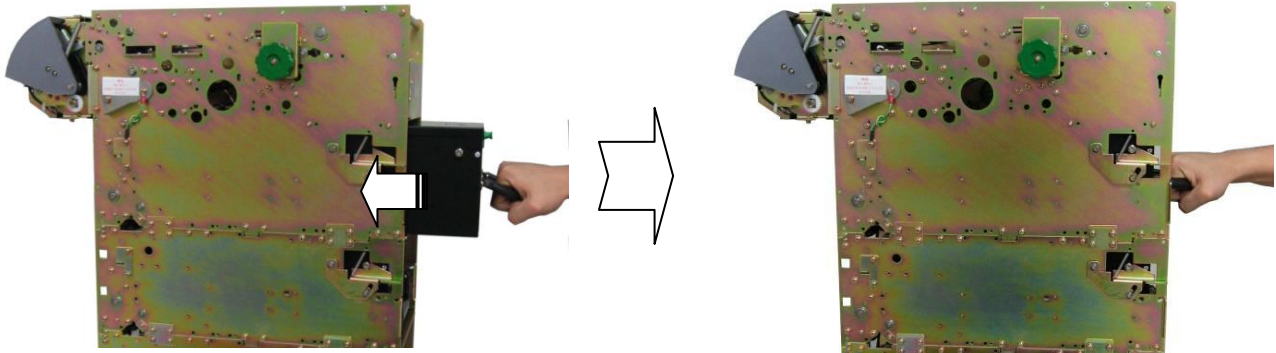
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5) After closing the cassette lid and turning the cassette key to the upper side.

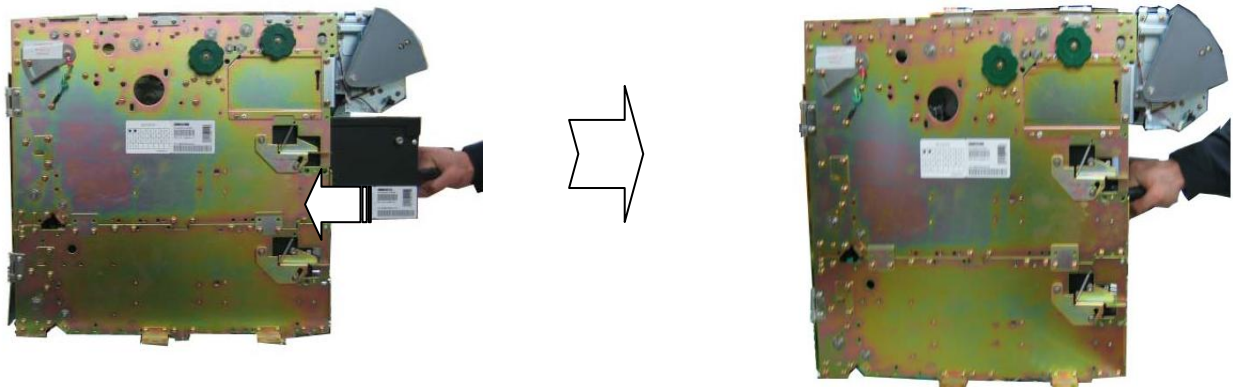
<Attention> Check the cassette lid locking.



6) Push the cassette into the dispensing mechanism till locking entirely.



<GBM-2MRS2>



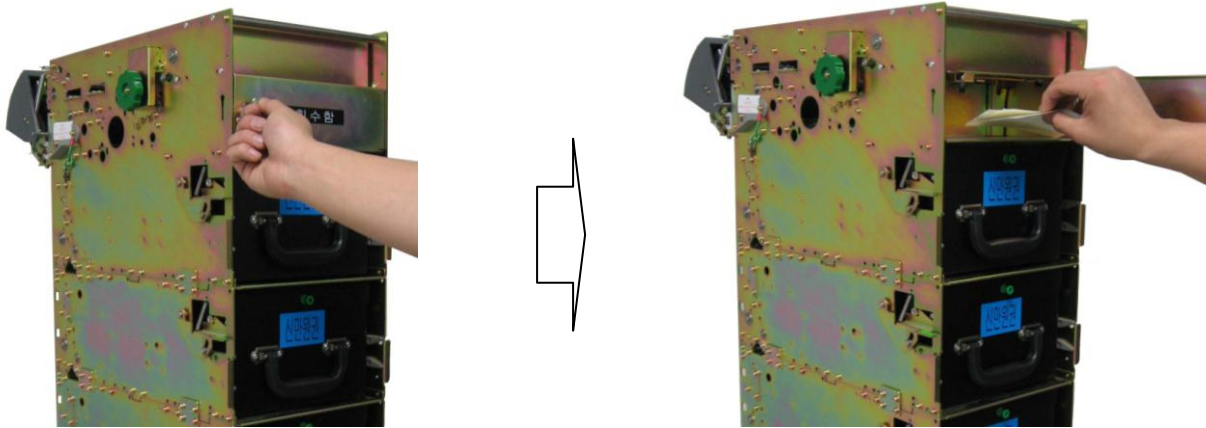
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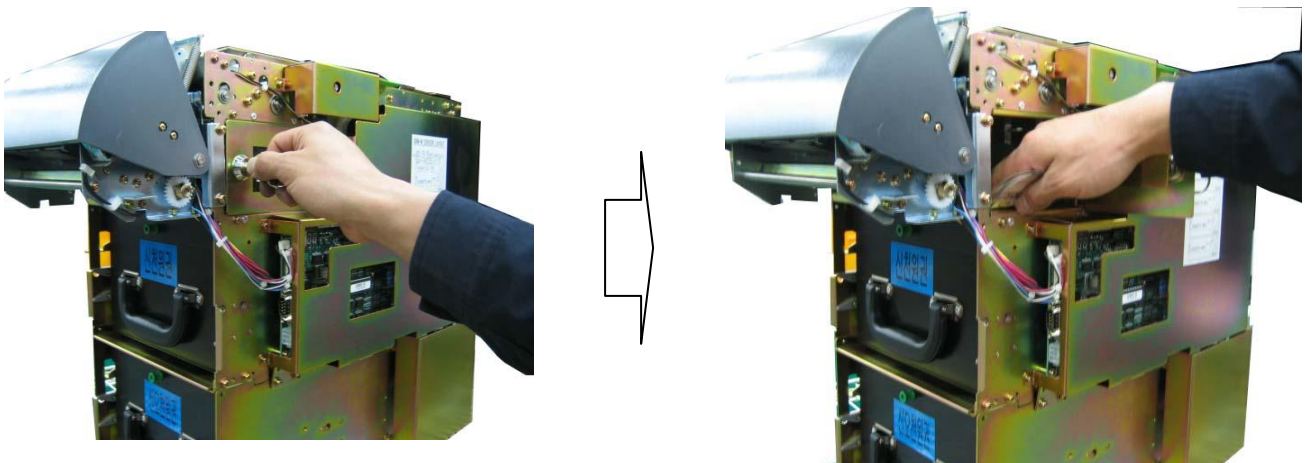
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### 2.3. Remove Rejected notes

- 1) Put a key in the Reject Box and turn it to the right.
- 2) Open the Reject Box cover.
- 3) Remove the rejected notes from the Reject Box.
- 4) Shut the Reject Box cover and lock the cover with a key.



<GBM2-MRS2>



<GBM-MS2>

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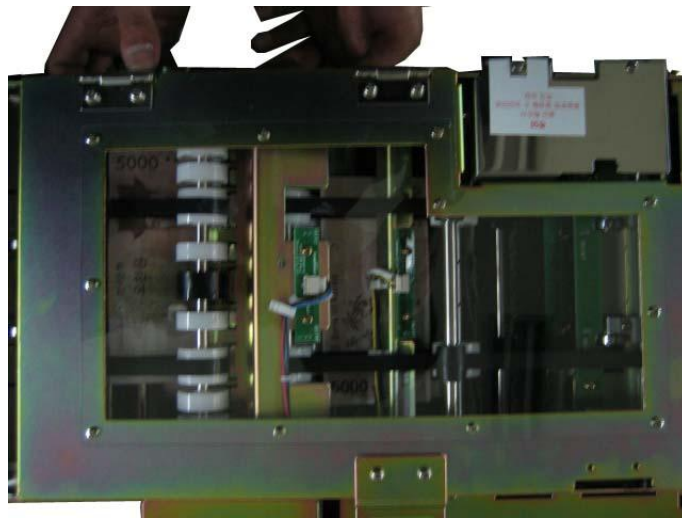
## 2.4. Remove Mistracked notes

- Cash can be remained between the GBM-M Reject Belt if there's note jam or any other error things causes to make the cassette stopped.

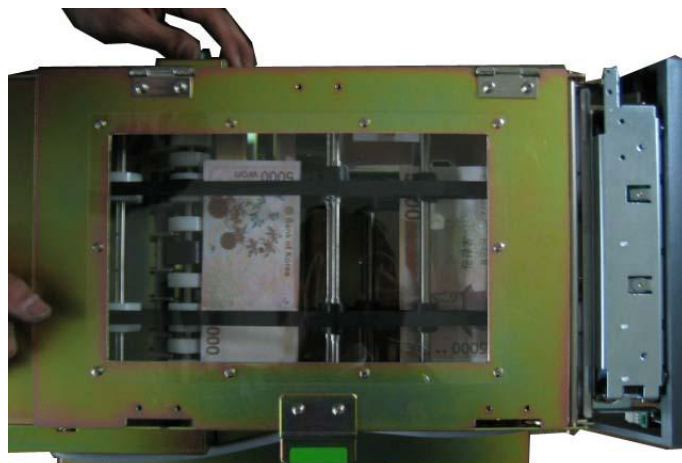
At this time when reactivate the machine, you should remove rejected notes out of the Cassette Reject Unit.

In this case turn the KNOB to the clockwise to remove the notes.

Finish to completed above step, reactivate the GBM-M.



<GBM-2MRS2>



<GBM-MS2>

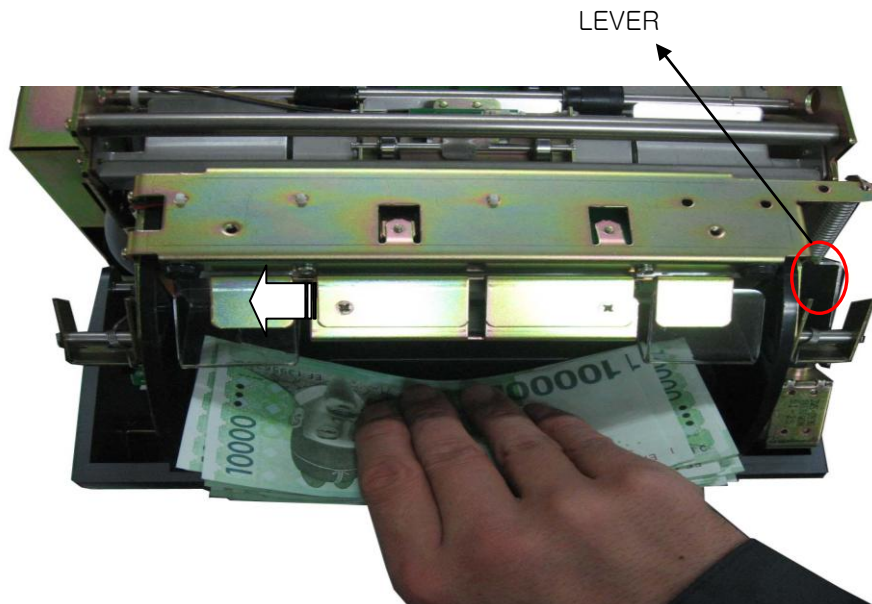
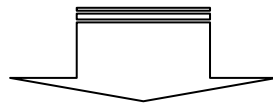
<attention> Check up the “power-off” status when you removed notes in shutter.


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## 2.5. Remove notes in shutter

- When bills are in shutter, you can open the tray by pressing [LEVER] as shown in the following figure.




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## 2.6. Checking Method

- User can check out the condition of GBM by the LED and 7-Segment simply.
  - Check out Power Supply, M/B and Power Cable when Green power LED turned off.
  - Check out Interface Cable, M/B and Power Cable when Red TxD LED turned off.
  - Check out Interface Cable, M/B and Power Cable when Red RxD LED turned off.
  - Check out Errors by the Error Code on the 7-Segment when Red error LED turned on. (“00” means normal.)
  - The ROM Version of M/B can check out like below picture.

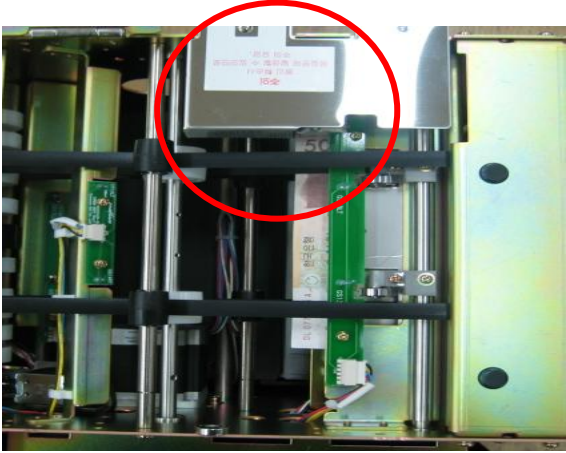
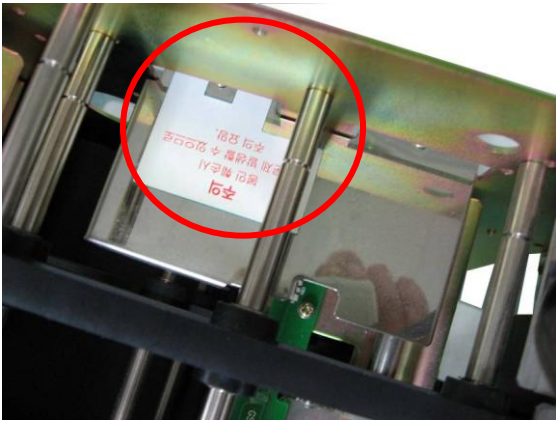


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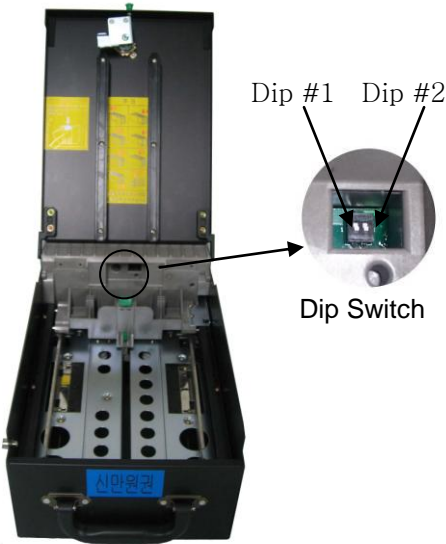
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### 2.7. Notice

- Do not damage the label.  
Keep the double detect as it is. Adjusting the double detect causes a failure of note detecting.



Don't control Dip Switch in the cassette without any special reason.  
If don't, it can be a matter of serious note jam problem.



<Dip Switch Setting Example>

TYPE	Dip #1	Dip #2	Bills Type
Type 1	↓	↓	EURO 10
Type 2	↑	↓	EURO 20
Type 3	↓	↑	EURO 50
Type 4	↑	↑	EURO 100

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### 3. ERROR CODES

The rest except 00 hex (good operation) are returned if only an abnormal event occurs during operation. For proper operation, there should not be notes on the delivering belts. If not, the CDU will automatically remove such notes into the reject bin before its operation.

Code	Error	The cause of errors, or explanation
00	Good operation	It is no error.
01	No detect cassette #1	Though required dispensing, cassette #1 is not found in the CDU's body.
02	No detect cassette #2	Though required dispensing, cassette #2 is not found in the CDU's body.
03	No detect cassette #3	Though required dispensing, cassette #3 is not found in the CDU's body.
04	No detect cassette #4	Though required dispensing, cassette #4 is not found in the CDU's body.
05	Cassette #1 leeno pin contact error	The cassette #1 was separated from the CDU's body in dispensing.
06	Cassette #2 leeno pin contact error	The cassette #2 was separated from the CDU's body in dispensing.
07	Cassette #3 leeno pin contact error	The cassette #3 was separated from the CDU's body in dispensing.
08	Cassette #4 leeno pin contact error	The cassette #4 was separated from the CDU's body in dispensing.
0A	GS11 error	GS11 Off-Sensor Test error
0B	GS21 error	GS21 Off-Sensor Test error
0C	GS31 error	GS31 Off-Sensor Test error
0D	GS41 error	GS41 Off-Sensor Test error
11	Cassette #1 empty or misfeed	The cassette #1 has no notes or its notes were not picked up as missed.
12	Cassette #2 empty or misfeed	The cassette #2 has no notes or its notes were not picked up as missed.
13	Cassette #3 empty or misfeed	The cassette #3 has no notes or its notes were not picked up as missed.
14	Cassette #4 empty or misfeed	The cassette #4 has no notes or its notes were not picked up as missed.
15	Cassette #1 jam	A jam event occurred at the GS11 sensor.

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16	Cassette #2 jam		A jam event occurred at the GS21 sensor.
17	Cassette #3 jam		A jam event occurred at the GS31 sensor.
18	Cassette #4 jam		A jam event occurred at the GS41 sensor.
1C	Cassette #1 misfeed		Cassette #1 failed in picking up a note with near-end off.
1D	Cassette #2 misfeed		Cassette #2 failed in picking up a note with near-end off.
1E	Cassette #3 misfeed		Cassette #3 failed in picking up a note with near-end off.
1F	Cassette #4 misfeed		Cassette #4 failed in picking up a note with near-end off.
21	GS13 pass time out		A note was not passed the GS13 sensor within the fixed time.
22	GS14 pass time out		A note was not passed the GS14 sensor within the fixed time.
23	GS17 pass time out		A note was not passed the GS17 sensor within the fixed time.
24	GS16 pass time out		A note was not passed the GS16 sensor within the fixed time.
25	GS16 pass count error		The note count detected by the GS16 is more than the count detected by the GS17..
26	GS17 JAM		A note was not passed the GS17 within the fixed time
27	Detect bad note at the GS16		The note count detected by the GS31 sensor is more than the required number.
29	Too many notes		The note count detected by the GS16 sensor is more than the required number.
2B	Gate close error		A normal note was failed to pass the GS17 sensor as the gate has been opened.
2C	One note's thickness detect error		A note's thickness is less than the basis.
2D	Gate open error		An abnormal note was failed to reject as the gate has been closed.
2E	More than three times re-dispense		Dispensing the required notes was repeated more than three times due to reject events.
30	Reject events of 5 notes and up		It occurred the reject events of 10 notes and up in a cassette.
34	RAM error		The CDU has identified whether its 'Random Access memory' is an error status or not. No operation is permitted.
35	ROM error		The CDU has identified whether its program memory is an error status or not. No operation is permitted.
38	Shutter open error		The shutter is not opened
39	Shutter close error		The shutter is not closed
3A	Shutter close error		When the shutter closing, the note remained inside the shutter

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3B		Shutter Status Error	In the dispense and purge operation, the shutter sensor is abnormal.
3C		The note is detecting inside the shutter	In the dispense and purge operation, the note is detecting inside the shutter.
3D		Note detecting failed	After note dispensing, the note is not detecting inside the shutter.
40		Delivery motor echo error	The delivery motor failed to function or its cable was not connected.
41		Cassette #1 motor echo error	The cassette #1 motor failed to function or its cable was not connected.
42		Cassette #2 motor echo error	The cassette #2 motor failed to function or its cable was not connected.
43		Cassette #3 motor echo error	The cassette #3 motor failed to function or its cable was not connected.
44		Cassette #4 motor echo error	The cassette #4 motor failed to function or its cable was not connected.
45		Solenoid echo error	The solenoid failed to function or its cable was not connected.
46		Clutch echo error	The clutch failed to function or its cable was not connected. (GBM-M type only)
48		Rejecting note detect at Gs16 (Exit)	Rejecting note is detected at the Gs16.
51		Jam at the cassette #1 during Purge.	A jam event occurred at the GS11 sensor during Purge operation.
52		Jam at the cassette #2 during Purge.	A jam event occurred at the GS21 sensor during Purge operation.
53		Jam at the cassette #3 during Purge.	A jam event occurred at the GS31 sensor during Purge operation.
54		Jam at the cassette #4 during Purge.	A jam event occurred at the GS41 sensor during Purge operation.
55		Jam at the GS13 sensor during Purge	A jam event occurred at the GS13 sensor during Purge operation.
56		Jam at the GS14 sensor during Purge	A jam event occurred at the GS14 sensor during Purge operation.
57		Jam at the GS17 sensor during Purge	A jam event occurred at the GS17 sensor during Purge operation.
58		Jam at the GS16 sensor	A jam event occurred at the GS16 sensor during Purge

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		during Purge	operation.
59		Note got out of the exit during Purge	A note got out of the CDU's exit during Purge operation.
5A		Gate open error during Purge	It failed to purge notes as the gate has been closed during Purge operation
5C		Reverse purge jam at GS17 sensor	GS17 pass time out during reverse Purge
61		GS11,21,31,41(Cassette pickup sensor) ~ GS13 pass time out	A note was not detected the GS13 sensor within the fixed time.
62		GS13 ~ GS14 pass time out	A note was not detected the GS14 sensor within the fixed time.
63		GS14 ~ GS17 pass time out	A note was not detected the GS17 sensor within the fixed time.
64		GS17 ~ GS16 pass time out	A note was not detected the GS16 sensor within the fixed time.
6F		Command error	Received an abnormal Cmd (command) or Data character.
91		GS13 error	GS13 Off-Sensor test error
92		GS14 error	GS14 Off-Sensor test error
93		GS15 error	GS15 Off-Sensor test error
94		GS16 error	GS16 Off-Sensor test error
95		GS17 error	GS17 Off-Sensor test error
96		SS1 error	SS1 Off-Sensor test error
97		SS2 error	SS2 Off-Sensor test error
98		SS3 error	SS3 Off-Sensor test error

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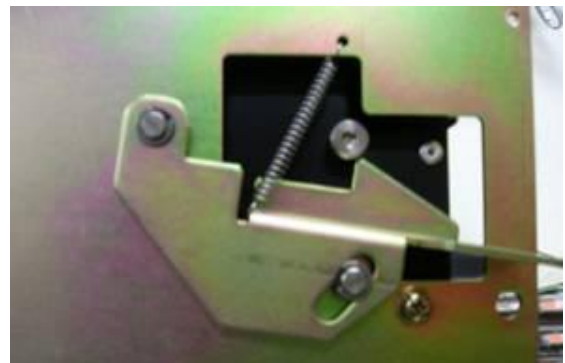
## 4. Suggested resolution for the main errors

### 4.1. Code 05~08: Cassette #1~4 Leeno PIN disconnected

Check Point	Repair Method
Cassette not properly set	Check out the cassette lock properly set.
Leeno PIN cable ASS'Y stuck inside and not popped out	Replace with a Leeno PIN cable ASS'Y.



<Cassette properly set>




<Cassette not properly set>

### 4.2. Code 1C~1F: Cassette #1~4 Misfeed

Check Point	Repair Method
Cassette not properly set	Check out the cassette lock properly set.

### 4.3. Code 21~24: GS13, GS14, GS17, GS16 Passing Timeout

Check Point	Repair Method
Sensor Jam	<ol style="list-style-type: none"> <li>1. Check out the Sensor by the MT-Box.</li> <li>2. Inspect sensor after removing dust and stains.</li> <li>3. Replace with a sensor ASS'Y.</li> </ol>
Cassette eject Unit Over-Lap failure	Replace with a new cassette.

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#### 4.4. Code 2B: Reject gate close failure

Check Point	Repair Method
Note Jam	Remove jammed note then, reset the machine.
GS15 Sensor Jam	1. To open and close the gate by the MT-Box and check out GS15. 2. Failure, replace with a GS15 Sensor.

#### 4.5. Code 2D: Reject gate open failure

Check Point	Repair Method
Note Jam	Remove jammed note then, reset the machine.
GS25 Sensor Jam	1. To open and close the gate by the MT-Box and check out GS25. 2. Failure, replace with a GS15 Sensor.

#### 4.6. Code 35: ROM Error

Check Point	Repair Method
ROM not properly set	Push the Flash ROM into the ROM socket till locking entirely.
ROM Error	Replace with a new ROM.

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#### 4.7. Code 40: Echo Motor Error

Check Point	Repair Method
Motor Cable not properly connect	Check out Motor Cable properly connected to the CN3 connector of the M/B.
M/B failure	Replace with a M/B.
Echo Motor failure	Replace with a new M/B, if problems persists, please replace with an Echo Motor.

#### 4.8. Code 41~44: Cassette #1~4 Motor Error

Check Point	Repair Method
Motor Cable not properly connect	Check out the Cable properly connected to the CN13~CN16 connector of the M/B.
Leeno PIN cable ASS'Y stuck inside and not popped out	Replace with a Leeno PIN cable ASS'Y.
M/B failure	Replace with a M/B.
Motor failure	Replace with a new M/B, if problems persists, please replace with a cassette.

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## 5. Cleaning and Check Points

### 5.1. Cleaning and Check List

	Cleaning	Check List
Essential parts	<ul style="list-style-type: none"> <li>• One body sensors</li> <li>• Separate sensors</li> <li>• Cassette pick up roller</li> </ul>	<ul style="list-style-type: none"> <li>• Connection condition of the each connectors</li> <li>• Abrasion condition of pick up roller</li> <li>• Double detect sensor value condition</li> </ul>
Optional parts	<ul style="list-style-type: none"> <li>• Dusts of the bill transportation</li> <li>• Dusts of the reject transportation</li> </ul>	<ul style="list-style-type: none"> <li>• Inspecting cassette pick up</li> <li>• Inspecting cassette roller installation</li> <li>• Inspecting overall moving mechanism as a whole</li> </ul>

### 5.2. Cassette Module Check

	Position	Method	Notice	Period
1	Separate roller	<p>Use a piece of alcoholic cotton rag and smoothly brush away dust on the surface of roller</p> <p>Inspect the operation of separate roller as turning it back and forth</p>	Inspect strange noise and operation	6Month
2	Lock device	Inspect the lock condition as pushing it		6Month
3	External appearance	Inspect the cassette condition as a whole		6Month

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### 5.3. Returned Module Check

	Position	Method	Notice	Period
1	Antistatic Brush	Inspect as a whole the worn condition		6Month
2	SE Belt and Timing Belt	Inspect mechanism and belt condition when moving green knob	Inspect strange noise and operation	6Month
3	Solenoid & Gate	Inspect solenoid operation and S25 sensor	Inspect spring and solenoid Adjust the position of solenoid and S25 sensor	6Month
4	Feed motor	Inspect feed motor and external cable		6Month
5	Double detect sensor & structure	Inspect external condition as a whole and inspect double detect lever by hand		6Month
6	Lock lever	Inspect external structure as a whole		6Month
7	Cable / Connector	Inspect external structure as a whole	Inspect mounting of screw	6Month
8	Cable / Connector	Inspect external condition as a whole	Inspect sensors after removing dust and stains	6Month
9	Separate sensor	Use a piece of cotton bud and remove stain	Inspect sensors after removing dust and stains	1Month
10	One body sensor	Use a piece of cotton bud and remove stain in sensors	Inspect sensors after removing dust and stains	3Month

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### 5.4. Sensor Check

- 1) There's no feature to check a single sensor at GBM-M model.
- 2) To check out the sensor, user need to use the Test program from the extra PC or MT-Box serviced as an option.
- 3) To see & check the other power sensors using he multi meter like below.

① Turn off the power and put a jumper into #8 pin of JP8.



② Turn on the power and the sensor also gets on accordingly.  
(The unit is not operating at this time)

③ Use multi-meter to check connecter pin hooked up each sensor. It will allow to inspect sensor output voltage. (use heat sink for ground)

④ After the inspection, remove JP8 jumper and reboot.

⑤ Recommended rate of output voltage is as below

	No paper	With Paper	Remark
Power	Below the 1.5V	Over the 3.5V	1 real note


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⑥ If the inspection is out of range, check the assembling condition of sensor. If no assembling problem found, replace sensor PCB ASS'Y.

⑦ The sensor on the Main Board position is as follows.

Sensor	Position (Pin No)	Sensor	Position (Pin No)
GS11L	CN13 (8)	GS13L	CN9 (3)
GS11R	CN13 (9)	GS13R	CN9 (4)
GS21L	CN14 (8)	GS14L	CN10 (4)
GS21R	CN14 (9)	GS14R	CN10 (5)
GS31L	CN15 (8)	GS17L	CN11 (8)
GS31R	CN15 (9)	GS17R	CN11 (9)
GS41L	CN16 (8)	GS16	CN11 (3)
GS41R	CN16 (9)		
SS1	CN12 (2)	SS3L	CN12 (9)
SS2	CN12 (5)	SS3R	CN12 (11)

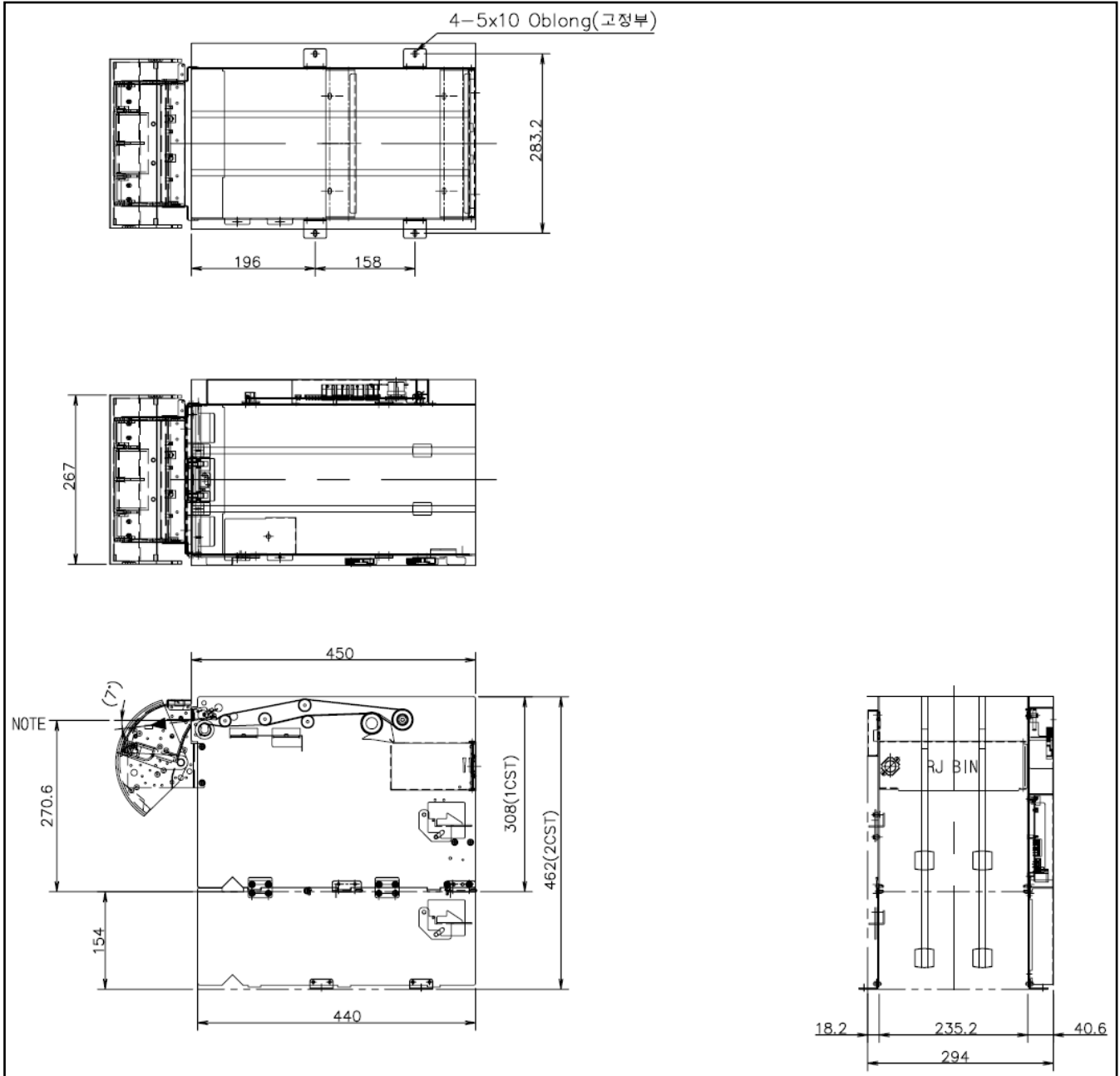
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## 6. Reference Drawing

### 6.1. Appearance

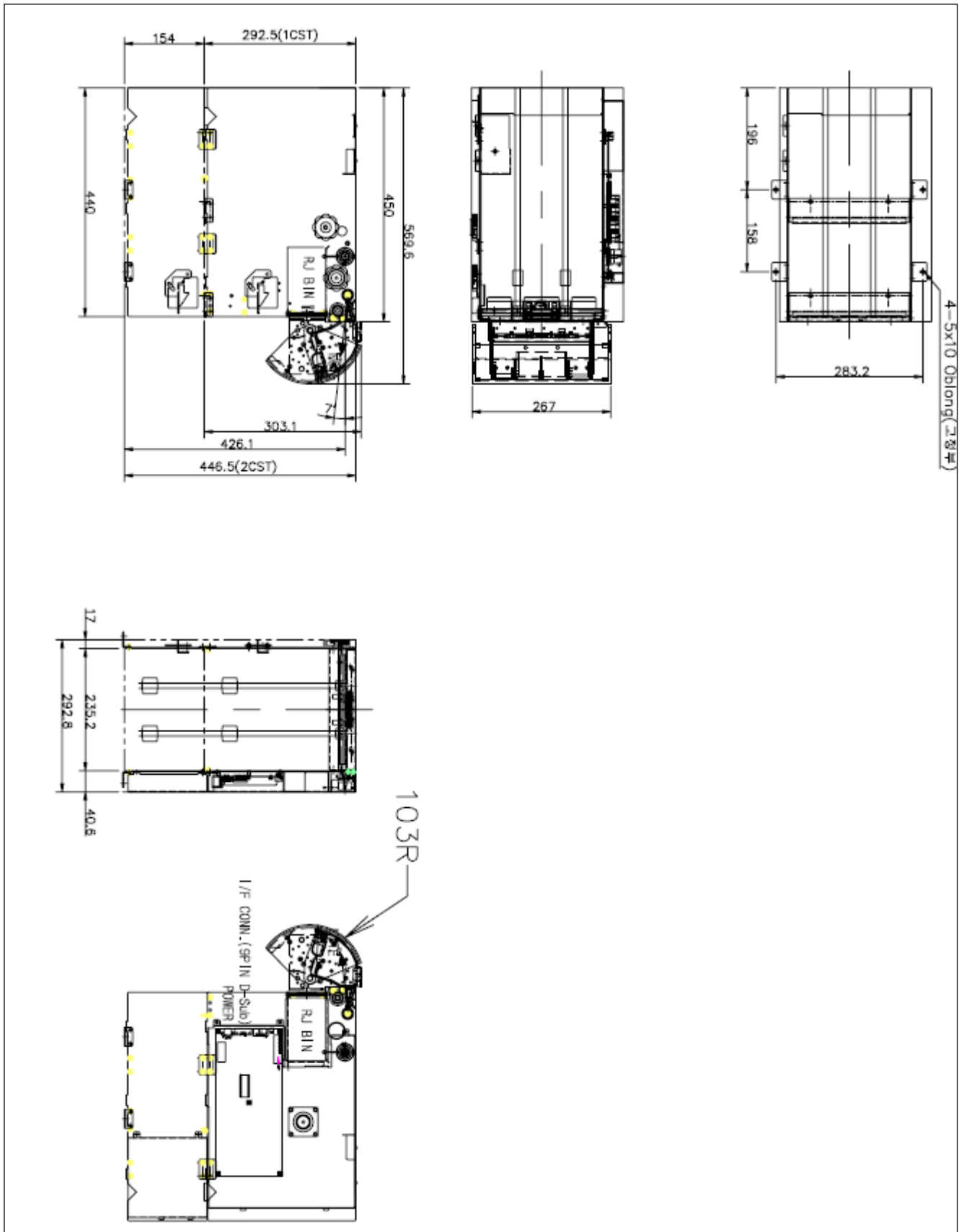
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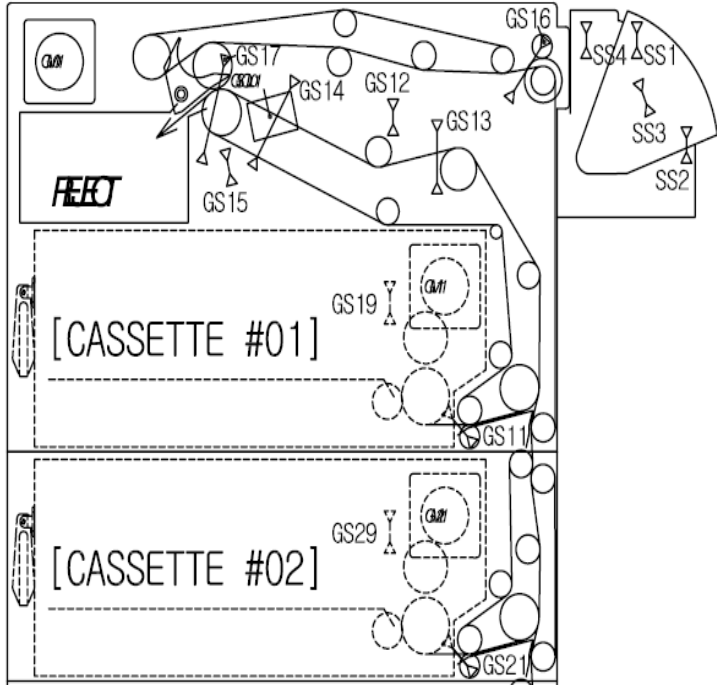
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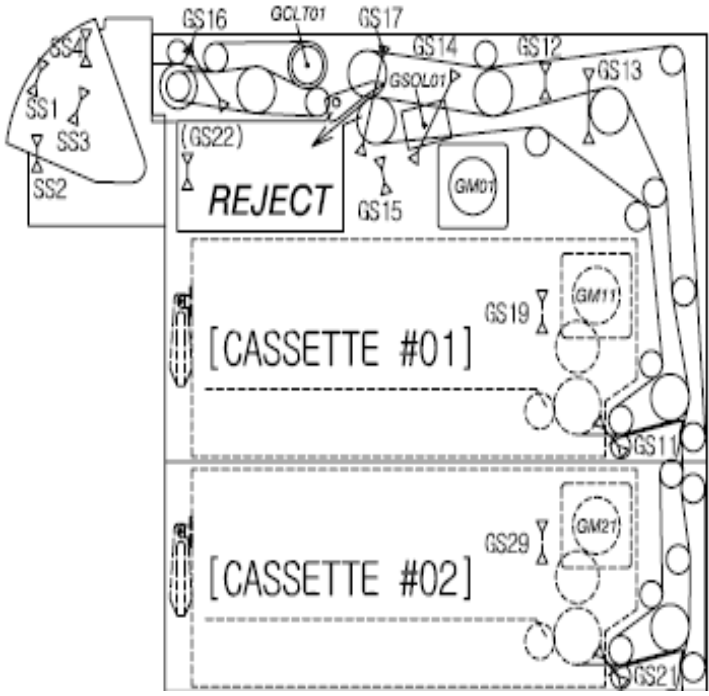
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6.2. Sensor Diagram



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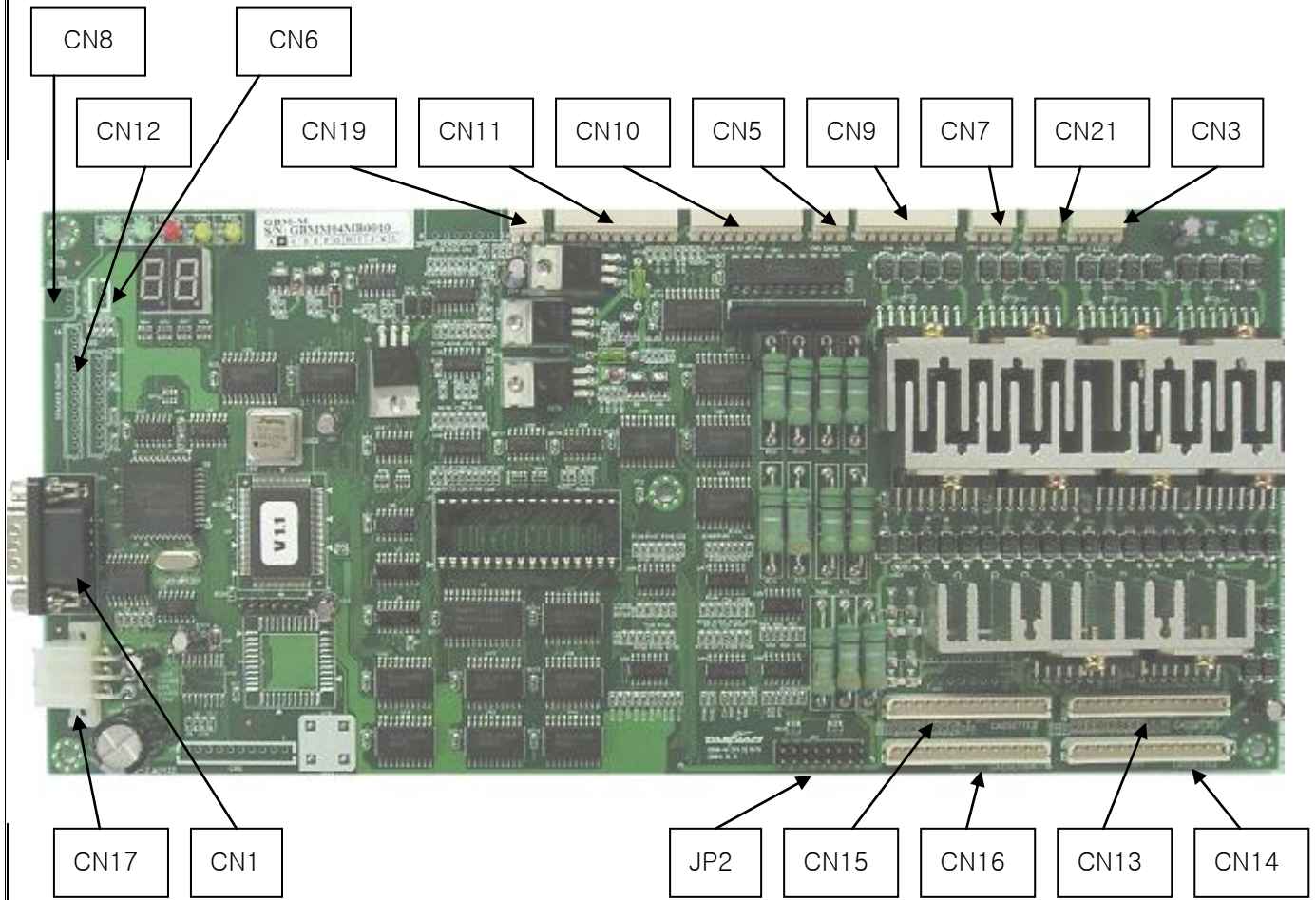


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### 6.3. Main Board Connector Layout



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