

Diamond Cabinet

Excel (type)

User's Manual
Revision 1.1

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2 Revision History

Version	Date	Author	Description
1.0	2015.15.09	DLV	Initial document release
1.1	2015.28.10	DLV	Added the Audio Amplifier Added the D-Pro board Added the LED PCB control board

3 Overview

3.1 Dimensions

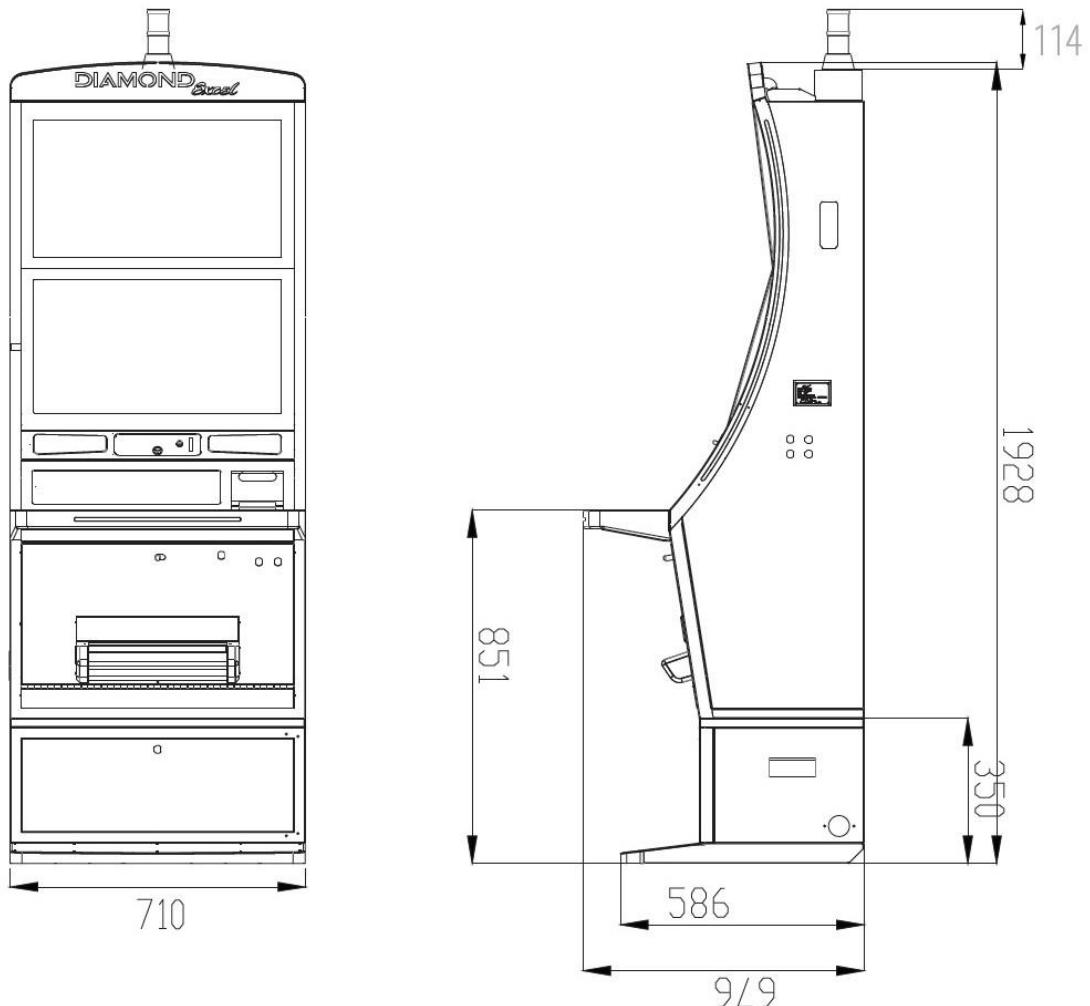


Figure 1: Machine dimensions with base

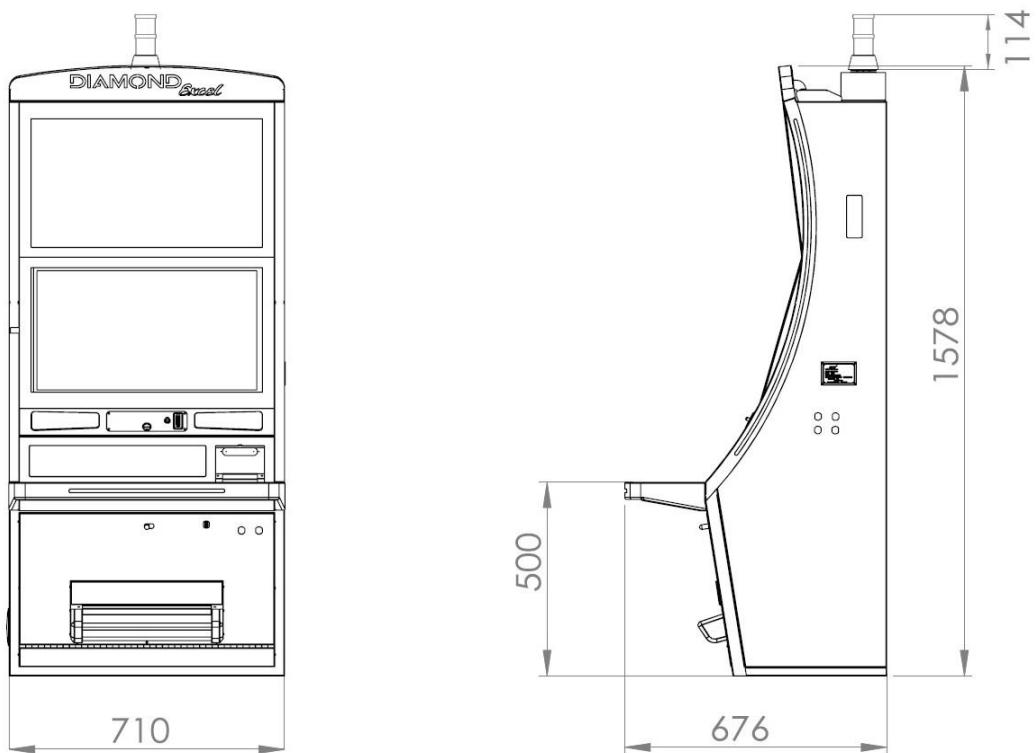


Figure 2: Machine dimensions

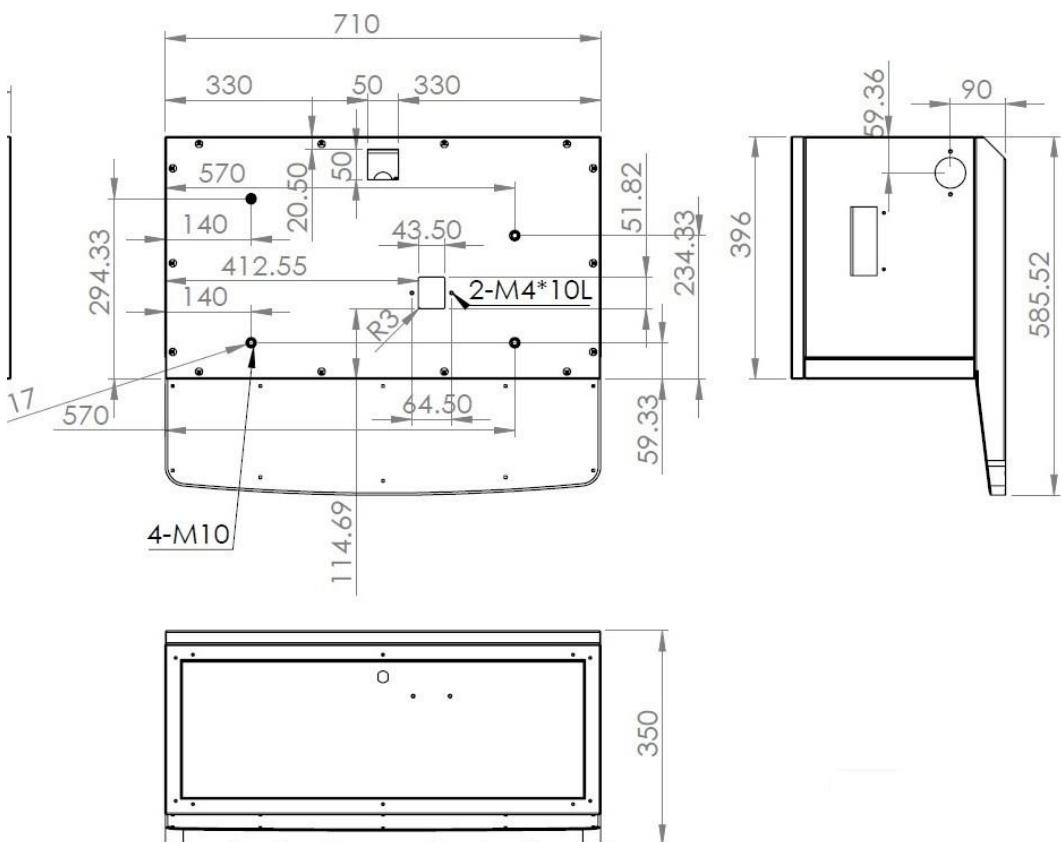


Figure 3: Machine base dimensions

3.2 Operating Elements

1. Coin entry
2. Bill entry
3. Main door lock
4. Monitor door lock
5. Coin tray
6. Machine Base

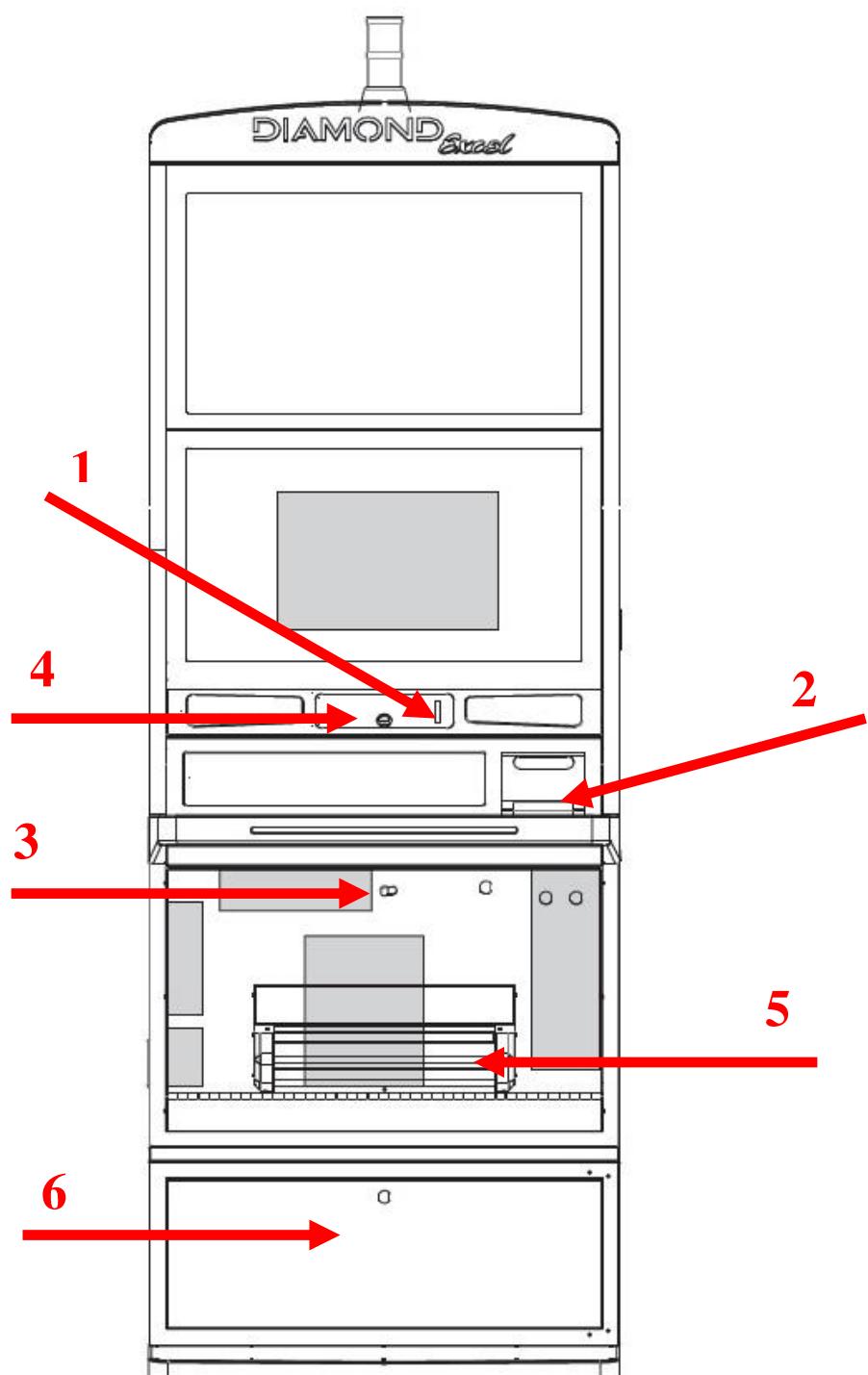


Figure 4: Machine Operating Elements

3.3 Description of components

1. Top light
2. Monitors
3. Game PCB
4. Power Supply Unit
5. Power Supply Main
6. Bill Acceptor
7. Hopper
8. Coin Acceptor
9. Loudspeaker
10. Button panel

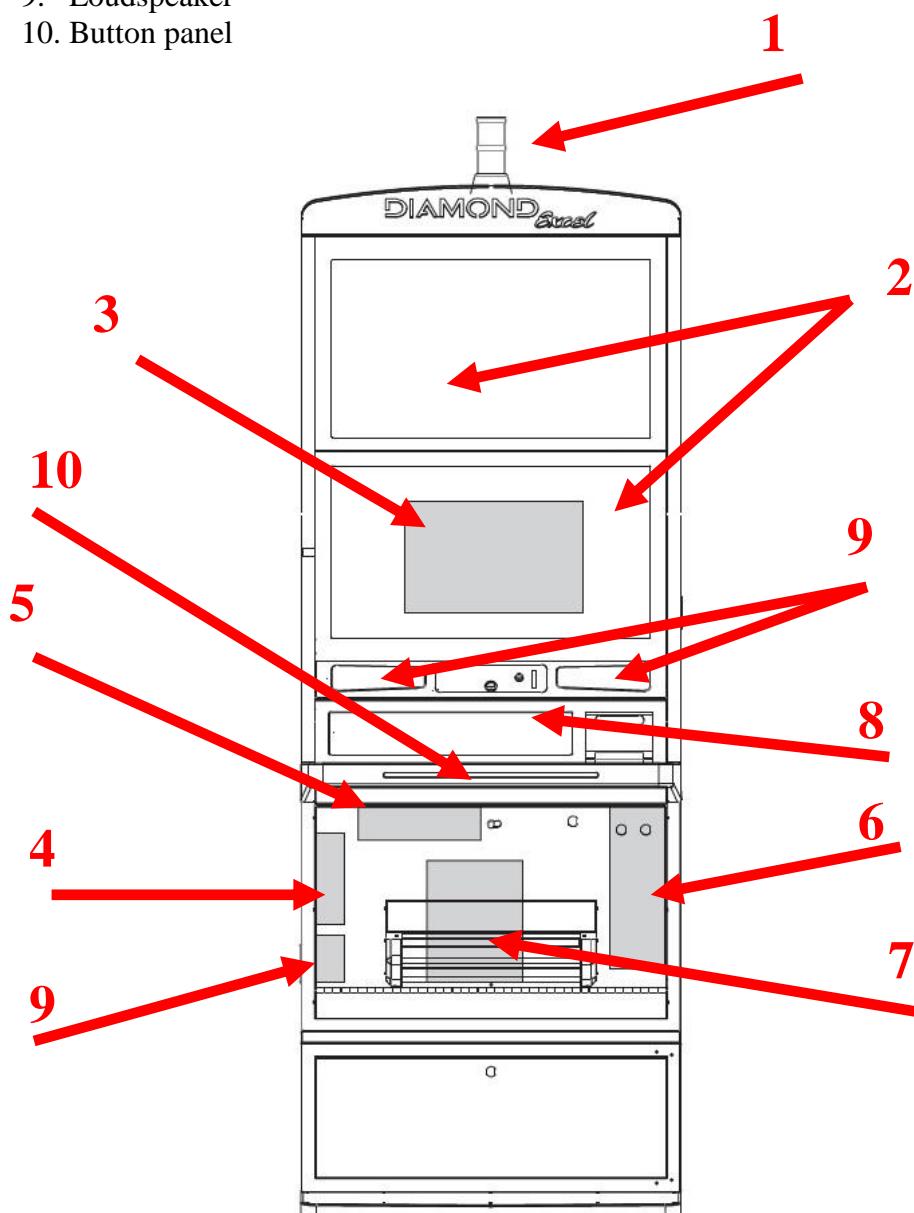


Figure 5: Description of components

4 Installation

4.1 Installation instructions

It must be ensured that the machine is operated in an upright position.

The minimum distance between two machines should be 10 cm to avoid possible damage when opening the main door. The minimum distance to a possible back wall or the like should be 10 cm.

4.2 Base installation instructions

It must be ensured that the machine is operated in upright position.

Further, the machine has to be screwed tightly to the base by means of the mounting material included in the delivery. The minimum distance to a possible back wall or the like should be 10 cm. The mounting holes (figure 6) should be used in case if the machine is to be installed on a table provided by the customer (the machine has been delivered without a base).

All dimensions are in mm.

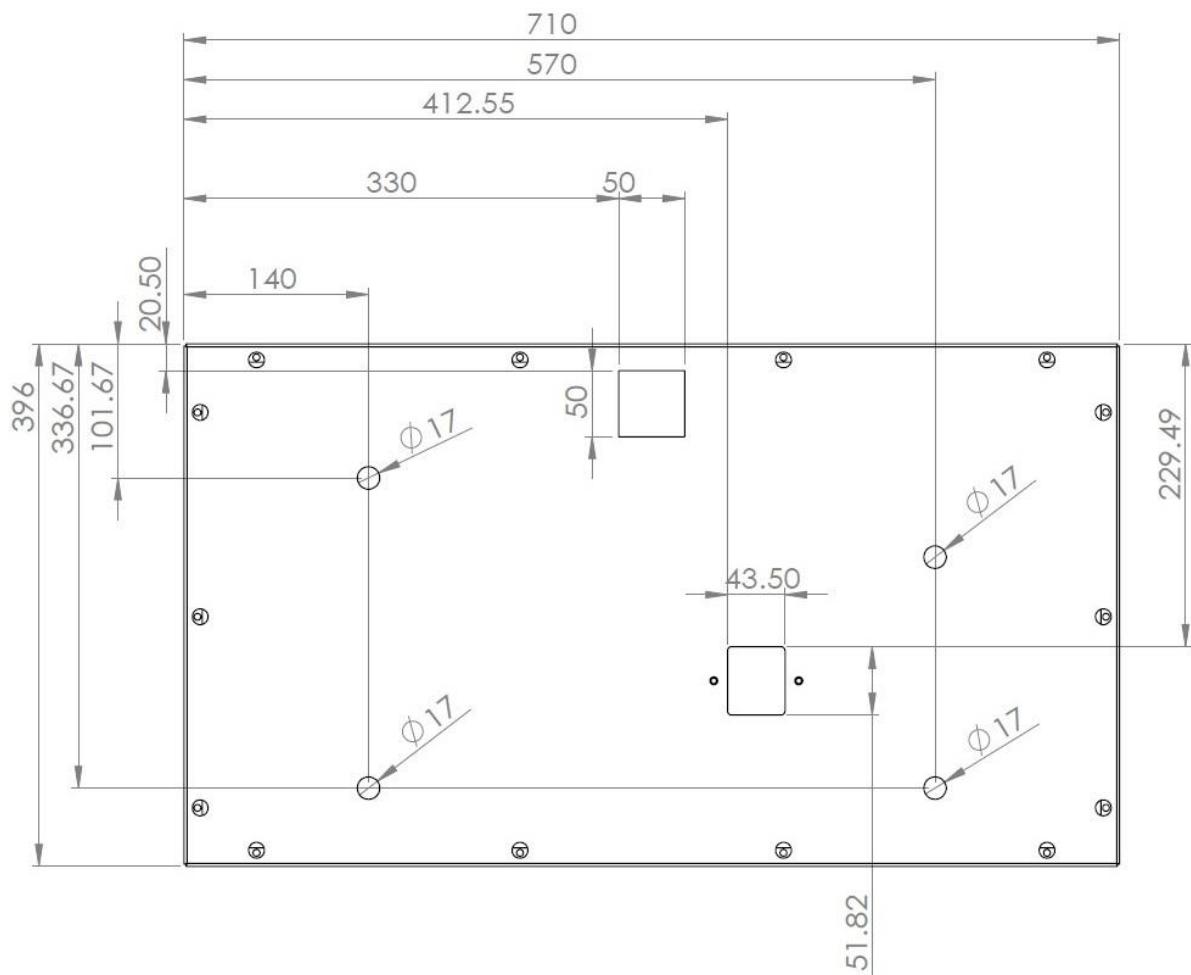


Figure 6: Machine mounting holes and dimensions



4.3 Power up

Before start check the line voltage and grounding. Machine is designed to operate at 100~120V/200~240V, 50-60Hz.

AC power outlet to which machine is connected should be easily accessed in case of emergency.

4.4 Safety precautions

This section is provided to avoid damage to the machine and minimize damage and chances of electric shock to maintenance personnel and users.

ATTENTION:

The following service instructions are for use by qualified or trained personnel only.

The appliance is not to be used by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction and children being supervised not to play with the appliance

4.4.1 Static sensitive parts

Machine contains static-sensitive components, which could be damaged by electric discharges. Before maintaining inner components of the machine always touch ground straps inside the machine to neutralize electric charges.

4.4.2 Power off

In case of emergency power off the machine!

The machine will be completely powered off only when the AC plug is removed from the outlet. If the machine is connected with the uninterruptible power supply, be sure to switch it off.

WARNING: Unplugging the machine with wet hands or in wet environment can result in electric shock.

4.4.3 Cabinet ventilation

Do not block or insert any objects into the ventilation holes. This may result in machine overheating or could result in risk of fire or electric shock.

Provide adequate space between machine and other objects, to allow normal ventilation conditions.

4.4.4 Liquid

Avoid spilling any kind of liquids on the machine. **Never don't clean the machine with the water jet.** This may result in risk of fire or electric shock. In case of the accident, unplug the machine immediately and contact the qualified technical stuff.

4.4.5 Avoid damages to the wires

Damaged power cord can result in a risk of fire or short circuit. If the power cord is damaged, it must be replaced by a special cord available from the manufacturer or its service agent.

4.4.6 Uncommon behavior

If there are unusual sounds, lights or smells coming out of the machine, power off the machine completely and contact the qualified technical stuff. Failure of doing so may result in risk of fire.

4.4.7 Wires

Make sure that all the wires inside and outside of the machine are not damaged, squeezed or stretched. Also check the wire near the AC plug is not frayed.

Damaged wires can cause short circuit or fire risks.

4.4.8 Environment

Machine is suitable for indoor use only!

Do not expose the machine under any circumstances to wet environments or temperatures greater than 50°C.

After transportation or storage in cold environments do not power up machine immediately, wait for machine to reach normal operating temperature.

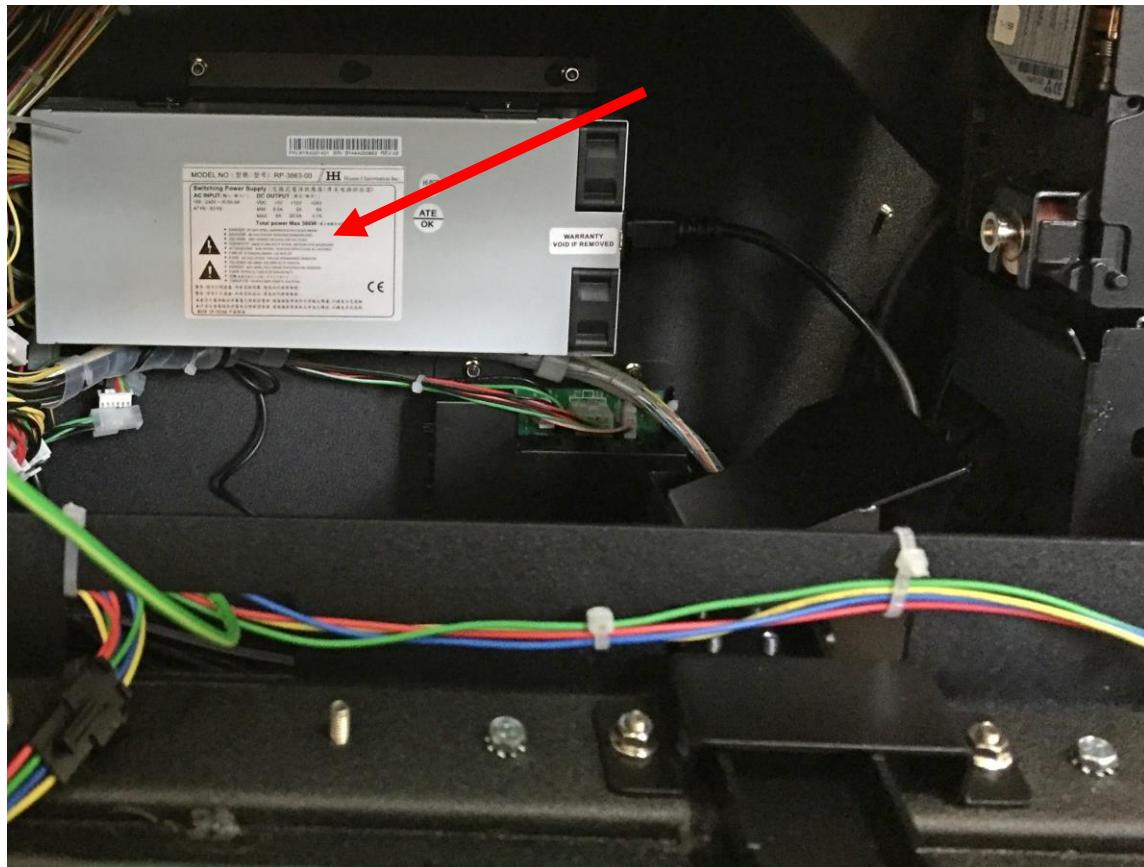
The recommended operating temperature is between 10°C and 35°C and relative humidity of 30% to 80% (non-condensing).

Do not install machine near heaters or other electronic devices that produce a lot of heat or dust. Failure of doing so can result in risk of machine malfunction, overheating or fire.

5 Power supply

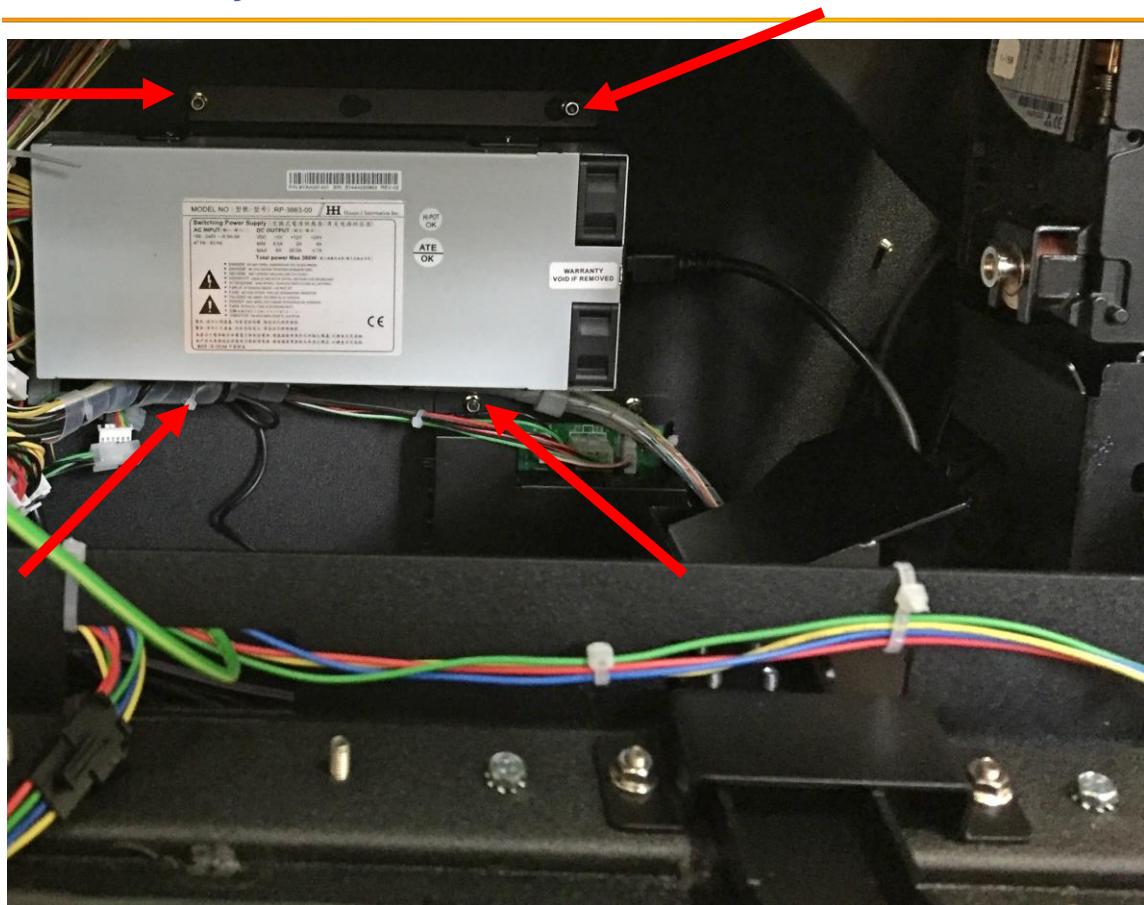
5.1 Position in the machine

The power supply is located on the backside (as shown in the picture).



5.2 Removal

To remove the power supply, disconnect all the wiring and unscrew four nuts that hold the power supply in place (shown with red arrows).



5.3 Characteristics

Type	Hsuan-I International
Model	PR-3863-00
Input	100-240V~, 47Hz-63Hz
Output	+5V:6A
Output	+12V:20.5A
Output	+24V:4.7A
Output watt	386 W

5.4 Connectors

5.4.1 DC Output Connector

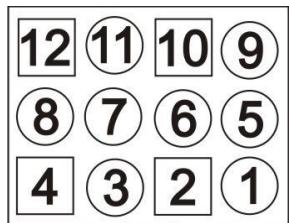


Figure 7: DC Output Connector

Pin No.	Color	Description
4, 8, 12	RED	+5V
5, 9	YELLOW	+12V
7, 11	GREEN	+24V
2, 3, 6, 10	BLACK	GND

Table 1: DC Output Connector Pin Layout

6 Coin Acceptor

6.1 Function

Type **NRI G-13 (parallel or CCTalk mode)** or compatible coin acceptor with up to 6 pre-programmed coin channels

The coin diverter is mounted underneath the coin acceptor and sorts the coins depending on the hopper fill level either to the hopper or directly to the cash box.

6.2 Accepted coins

Machine can accept following coins:

Country	Coin value
Latvia	1 EUR

Table 2: Accepted coin table

6.3 Error Handling

1. Unplug the machine and open the monitor door;
2. Check that the coin acceptor is positioned correctly, remove any jammed coins;
3. Ensure that the coin acceptor cable is connected properly to the device;
4. Check if the coin sorter can freely move from one position to another.

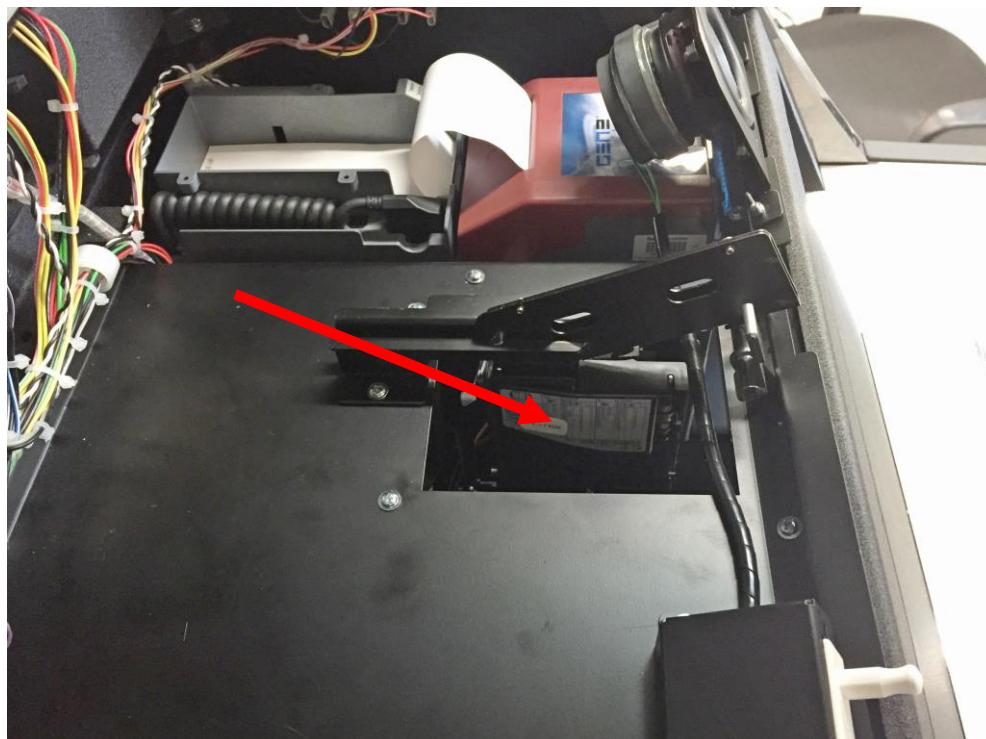


Figure 8: Coin Acceptor position in the machine

6.4 Replacement

If coin acceptor cannot be fixed in-place, the complete device should be replaced.

1. Unplug the machine and open the monitor door;
2. Loosen metal brackets;
3. Tilt the upper part of coin acceptor first, and then remove coin acceptor from the bracket;
4. Unplug the cable;
5. Repeat steps above in the reverse order;

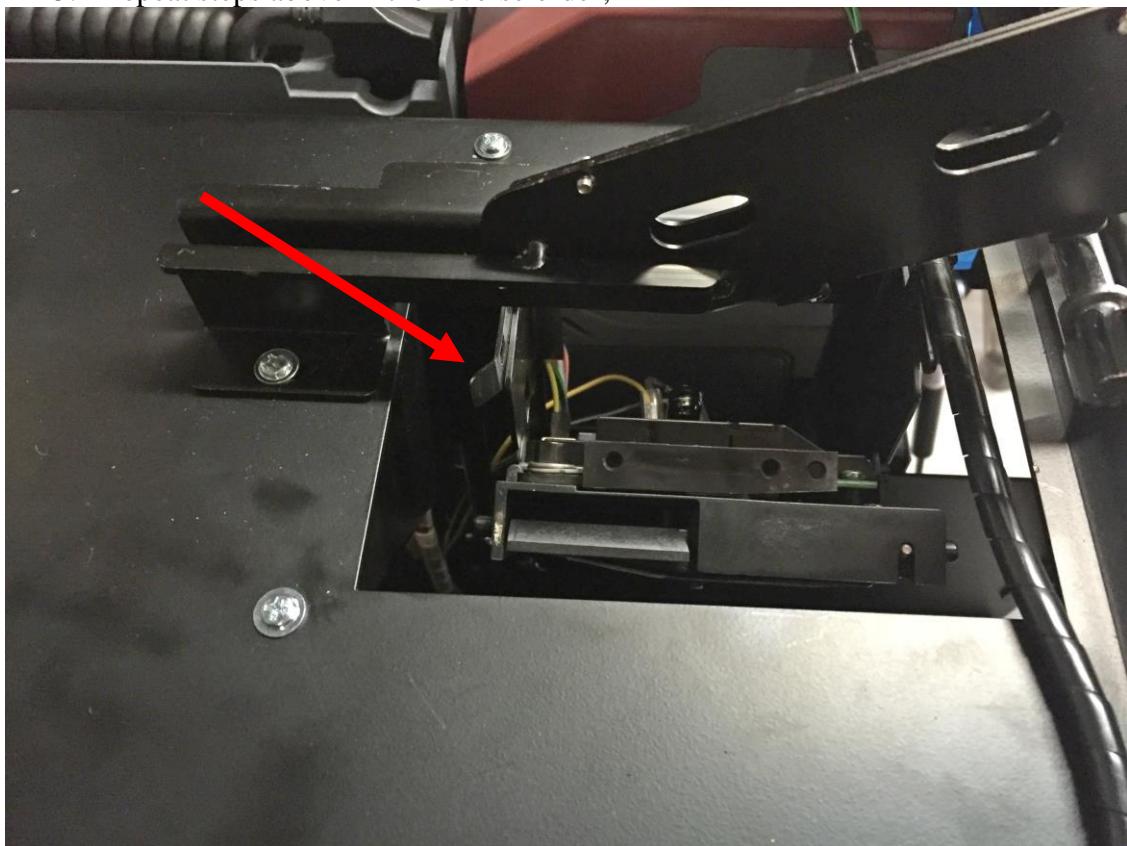


Figure 9: Coin Acceptor bracket position

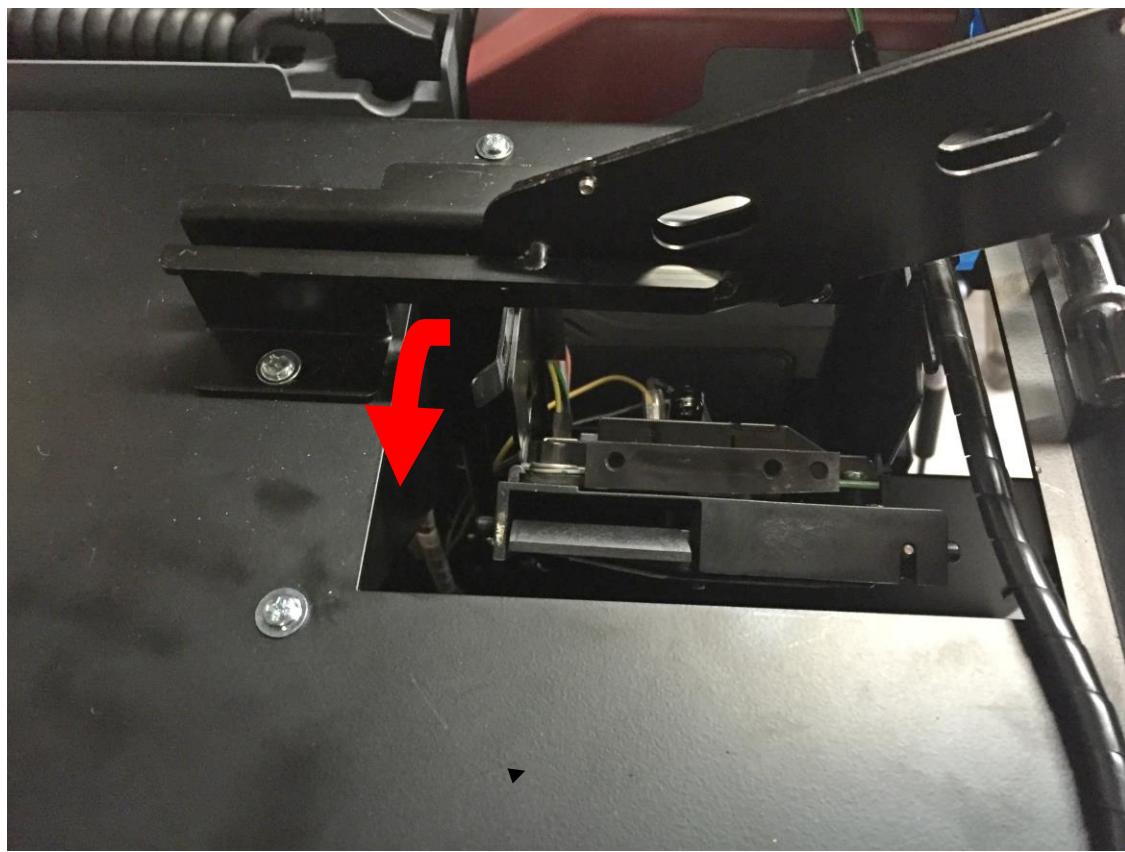


Figure 10: Coin acceptor removal

6.5 Connector

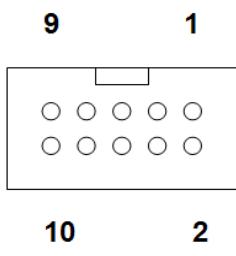


Figure 11: Coin Acceptor Connector

Pin No.	Description	Potential
1	GND	Low
2	+12V DC	High
3	Coin E	Active low
4	Coin F	Active low
5	Return	Active low
6	Common inhibit	Active high
7	Coin A	Active low
8	Coin B	Active low
9	Coin C	Active low
10	Coin D	Active low

Table 3: Coin Acceptor Connector Pin Layout

7 Coin Hopper

7.1 Function

Type Alberici Hopper Kid_(Standart or CCTalk mode) or compatible hopper

WARNING: Machine should be powered off before removing or installing coin hopper!

7.2 Payout coins

Machine can pay out following coins:

Country	Coin value
Latvia	1 EUR

Table 4: Payout coin table

7.3 Error Handling

1. Check the correct mounting of the hopper;
2. Check the plug fitting;
3. Remove jammed coins if such exist
4. Clean the hopper from dirt and dust

7.4 Replacement

1. Unplug the machine and open the main door forward
2. Remove the hopper forward and lift it up.



Figure 12: Hopper Position in the Machine

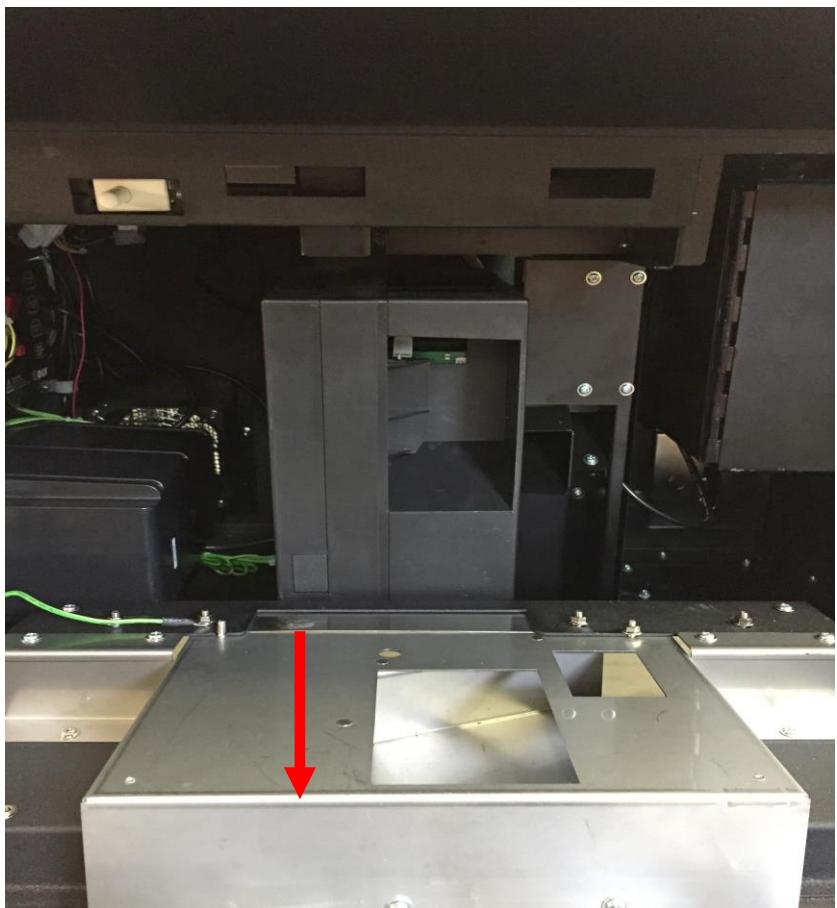


Figure 13: Coin Hopper Removal Direction

7.5 Connector

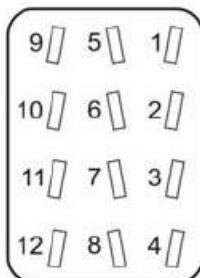


Figure 14: Coin Hopper Connector

Pin No.	Description
1	Motor supply 0 volt
2	Logic 0 volt
3	uP Sensor Output
4	IN1
5	Security output
6	High level sense output
7	Low level sense output
8	IN2
9	Motor supply +24V
10	Logic supply
11	Raw Sensor Output
12	IN3

Table 5: Coin Hopper Connector Pin Layout

8 Bill Acceptor

8.1 Function

Type JCM UBA, iPRO, iVizion/Cash Code / MEI Cashflow

The Bill validator accepts the bank notes in all 4 directions and tickets. By changing software in flash memory any country settings can be adjusted.

8.2 Accepted bills

Machine can accept and handle following banknotes

Country	Bill value
Latvia	5 EUR
	10 EUR
	20 EUR
	50 EUR
	100 EUR
	200 EUR
	500 EUR

Table 6: Accepted bill table

8.3 Adjustment and troubleshooting

Check +12V with Voltmeter at the output of the power supply unit.

In case of a short circuit in the machine the power supply switches off automatically.

Switch machine back on after repair of the short circuit. In most cases the power supply unit works properly again (yellow lit).

8.4 Error handling

1. Unplug the machine and open the main door;
2. Turn the handle down.
3. Move the bill acceptor head forward
4. Check that the bill acceptor is positioned correctly, remove any jammed notes;



Figure 15: Bill Acceptor Position in the Machine

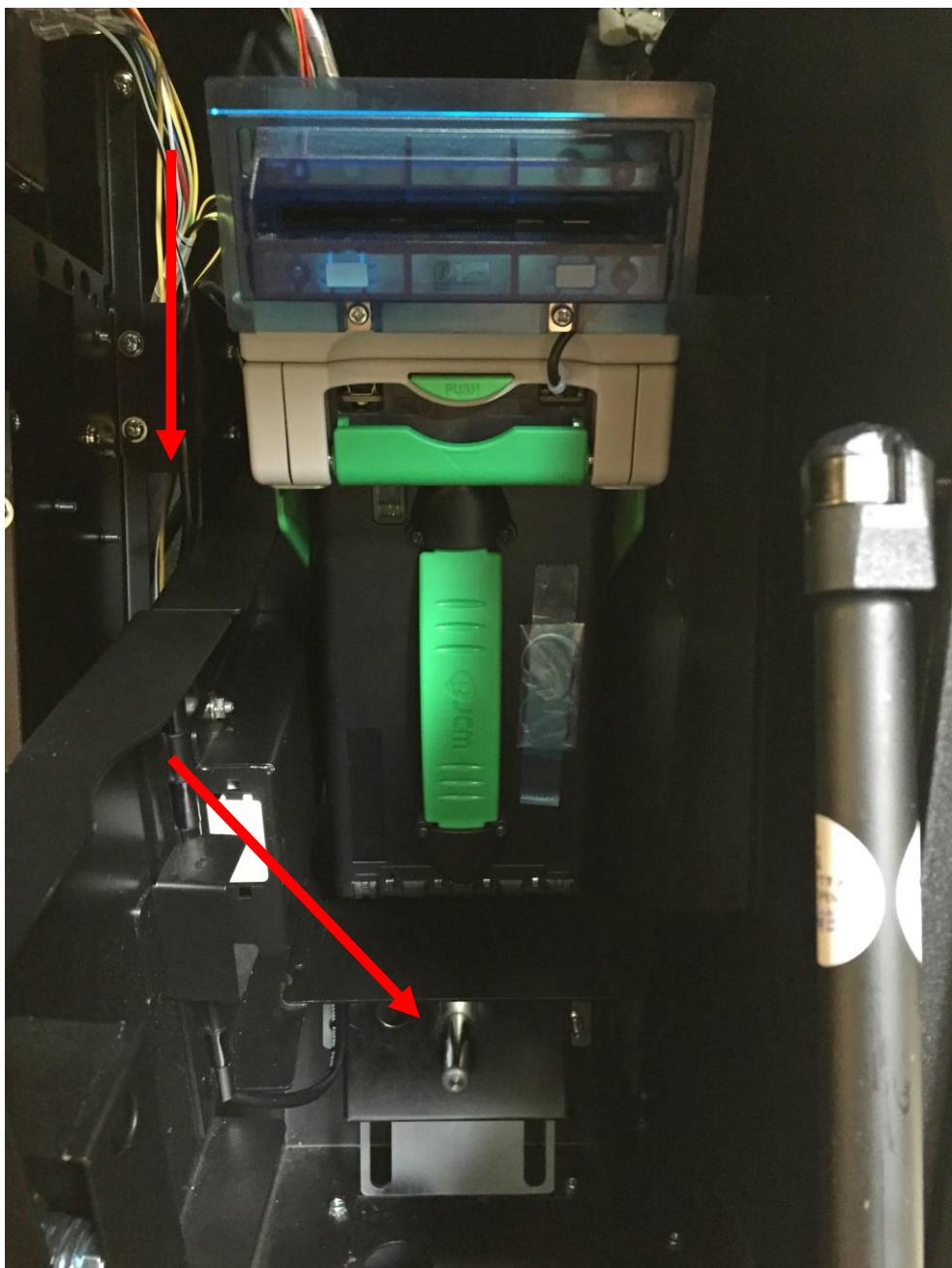


Figure 16: Direction to change handle position

8.4.1 Cleaning

To clean the lenses, use a lint-free cloth and mild nonabrasive detergent such as liquid dish soap mixed with water.

1. Pull the tabs on both sides of the acceptor forward to open the acceptor's head;
2. Open the acceptor head front and rear covers to clean bill path, rollers and belts.

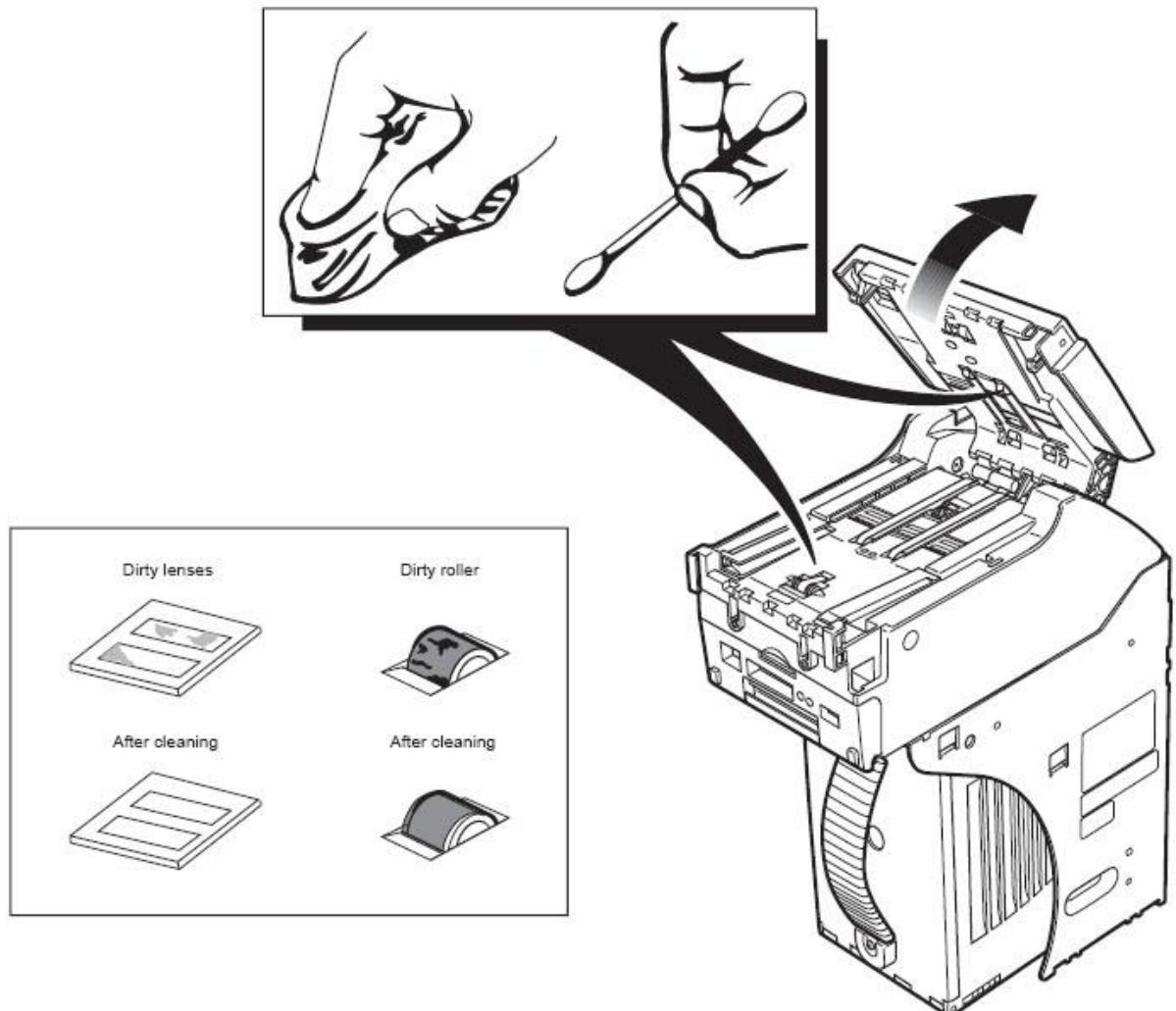


Figure 17: Bill Acceptor Cleaning

8.4.2 Bill is jammed in Acceptor

When a bill is jammed near the entrance of the stacker box, unlock the box and pull it out to remove the jammed bill.

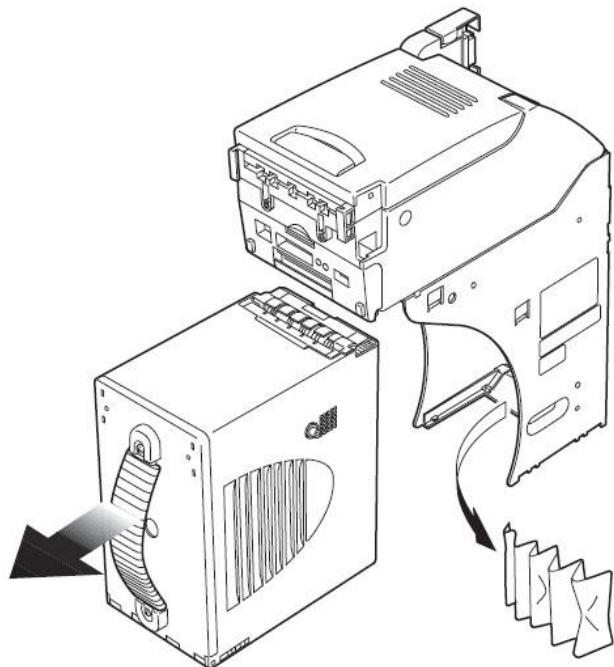


Figure 18: Removing jammed bill from the Bill Acceptor Stacker

8.4.3 Bill is jammed near the acceptor's entrance

When a bill is jammed near the acceptor's entrance, pull the tabs on the top of the acceptor to open the cover of acceptor unit. Remove the jammed bill.

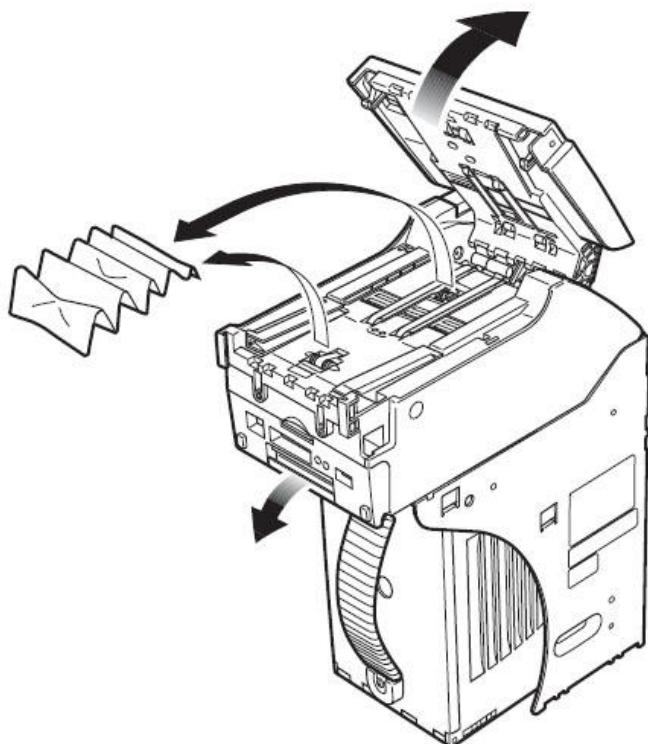


Figure 19: Removing jammed bill from the Bill Acceptor entrance

8.5 Connectors

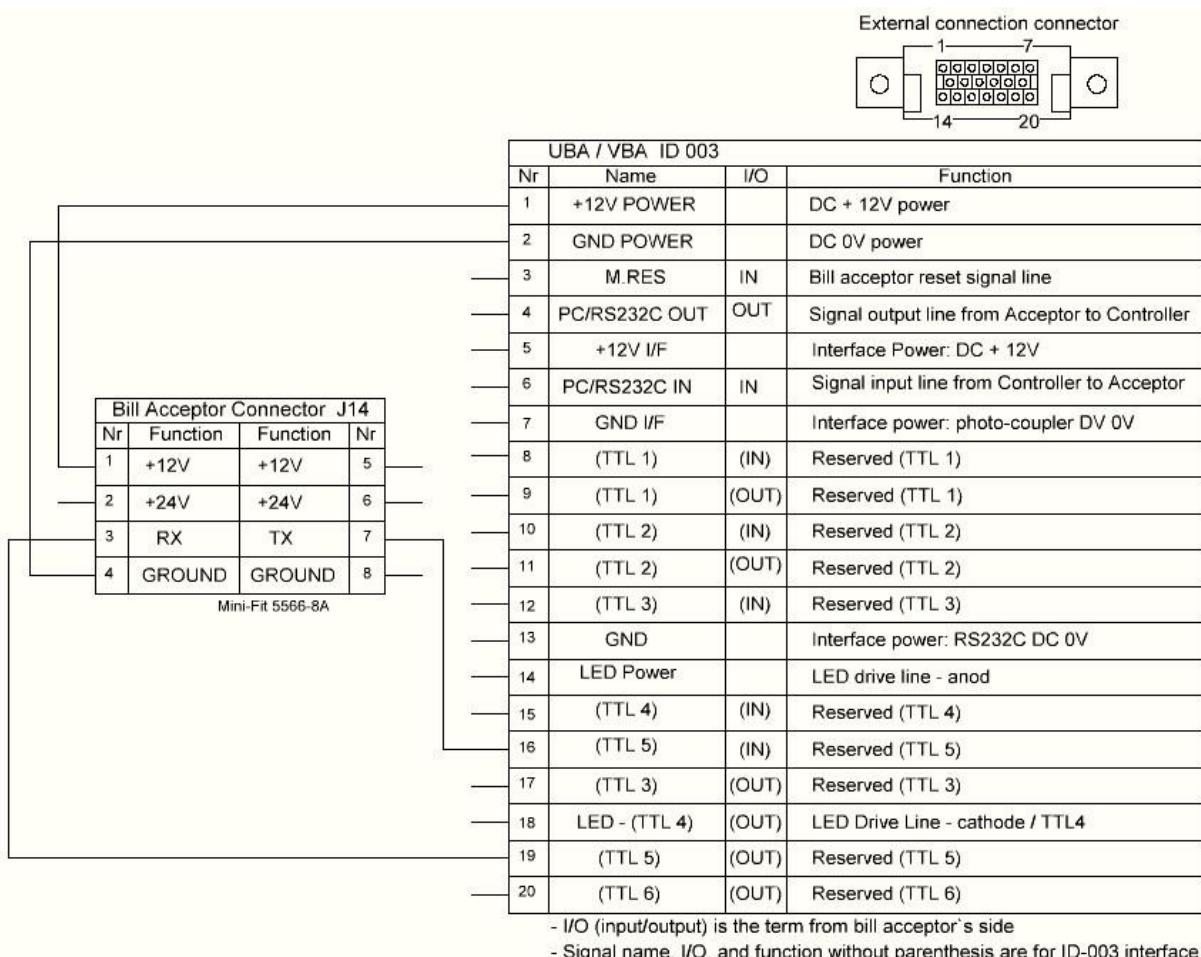


Table 7: Bill Acceptor JCM: UBA 10 and IPRO Connector Pin Layout

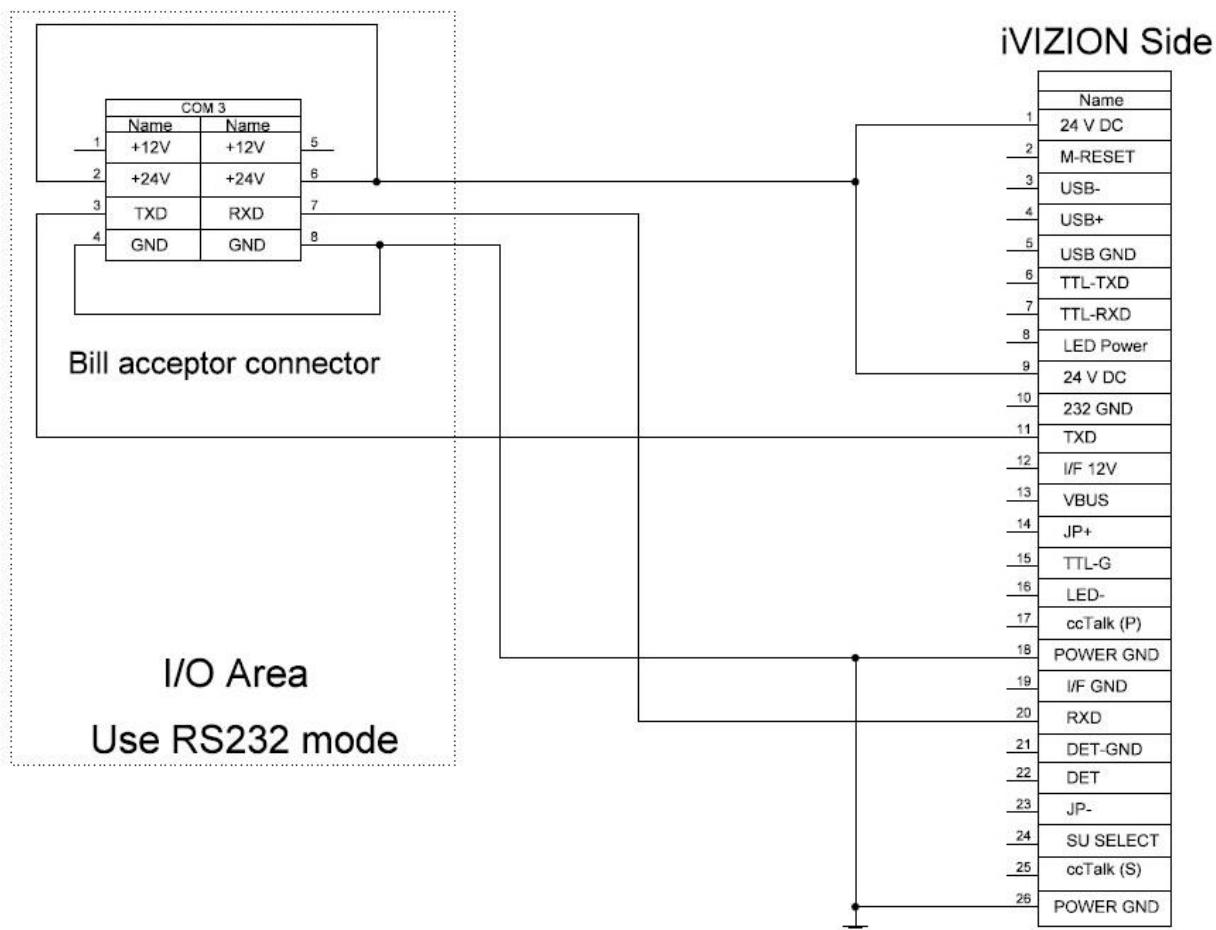


Table 8: Bill Acceptor JCM iVizion Connector Pin Layout

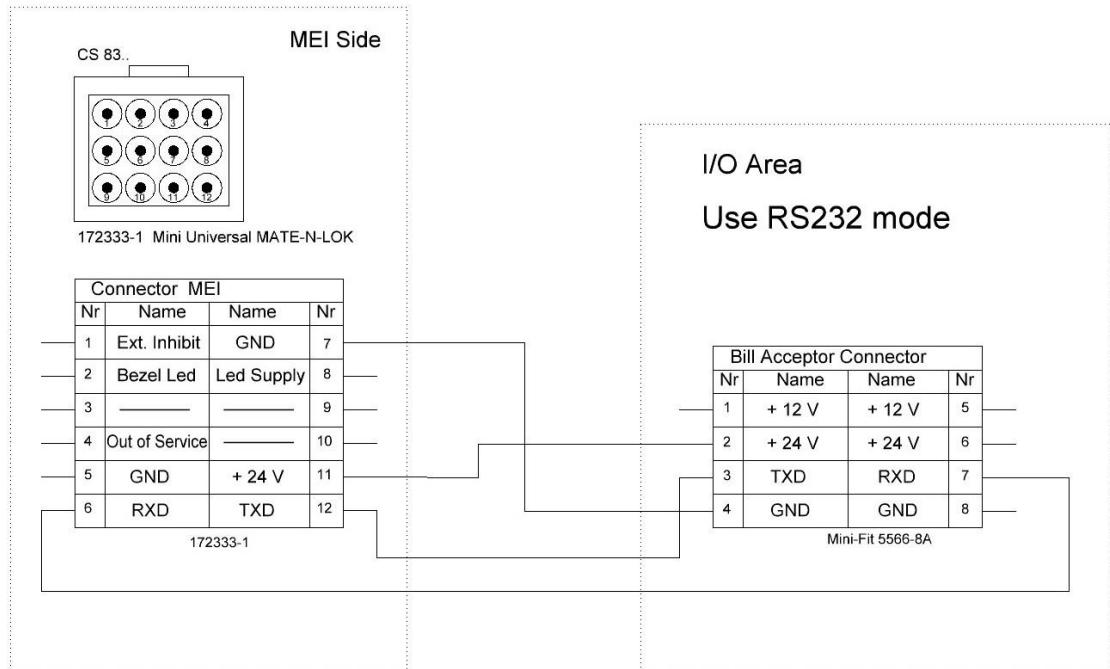


Table 9: Bill Acceptor Mei SC Advance Connector Pin Layout

9 Ticket Printer

9.1 Position in the machine

The ticket printer is located above the bill acceptor (as shown in the picture).



9.2 Function

Model/Type

FutureLogic GEN2U / TransAct Epic 950

The player can print out a ticket with the remaining credits by pressing the Payout button on the machine. The ticket can be redeemed at the cash desk or by inserting the ticket into the bill acceptor; the value of the ticket will be indicated in the credit area on the machine screen.

9.3 Error Handling

1. Unplug the machine and open the main door
2. Check the plug fitting
3. Check the power supply of the printer and the plug connection to the backplane
4. Switch on the machine.
5. When the program is loaded, enter the Service menu → Diagnostic → Ticket printer Test and print a test ticket.

9.4 Replacement

To remove the ticket printer: open the button panel, move the speaker, disconnect all the wiring and unscrew the screws that hold the ticket printer in place (shown with red arrow).

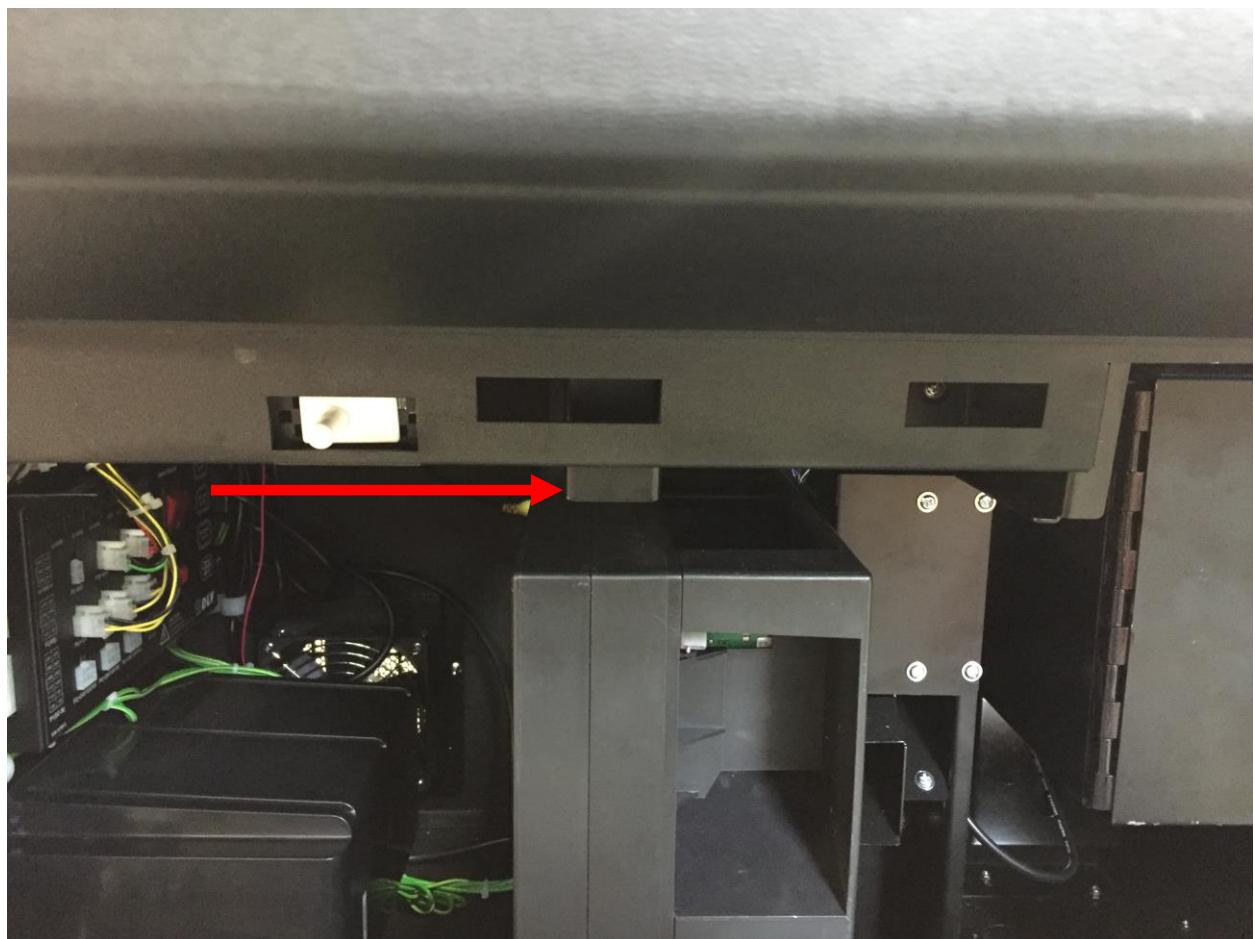


Figure 20: Direction to change handle position

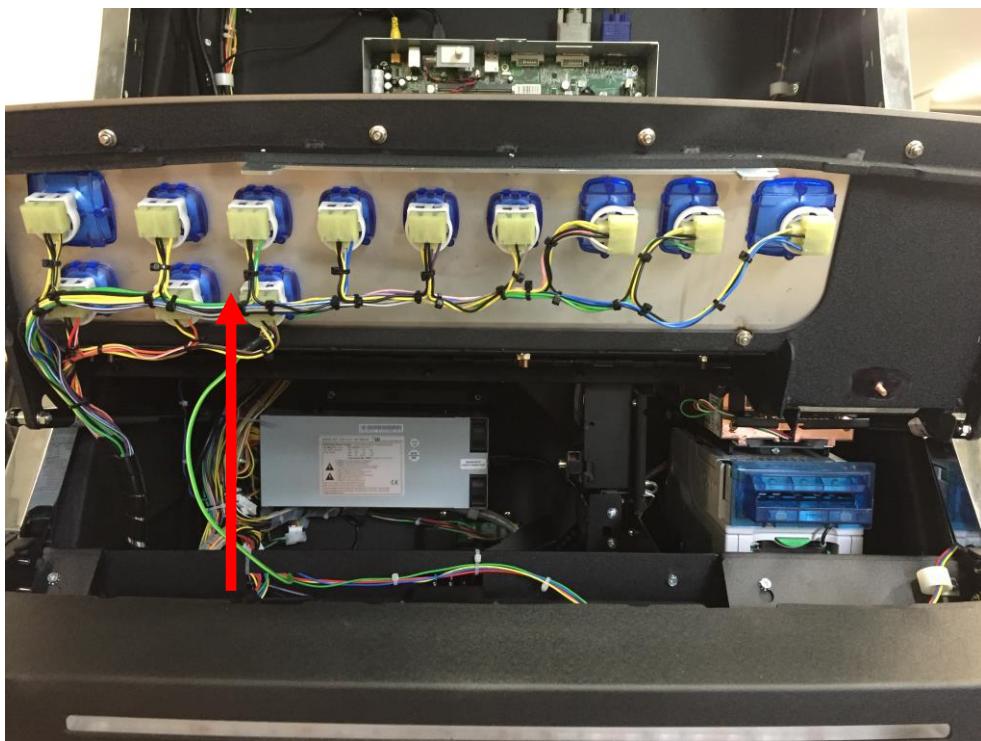


Figure 21: Button panel position

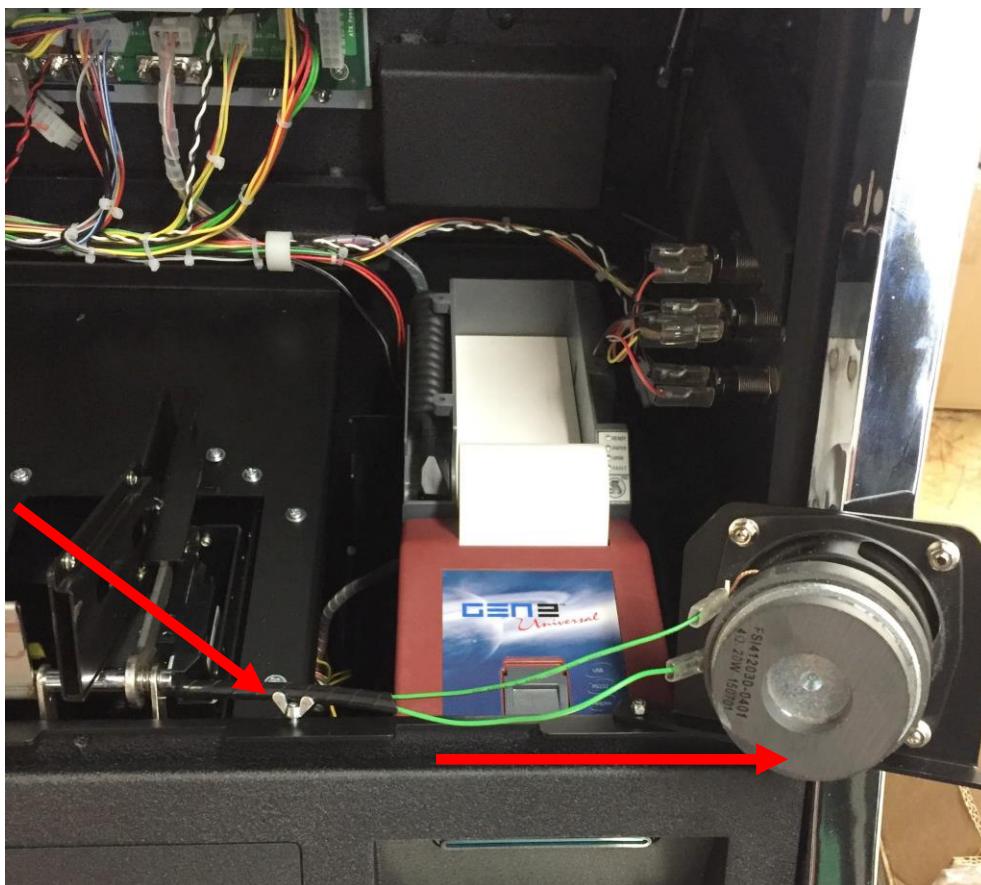


Figure 22: Speaker position

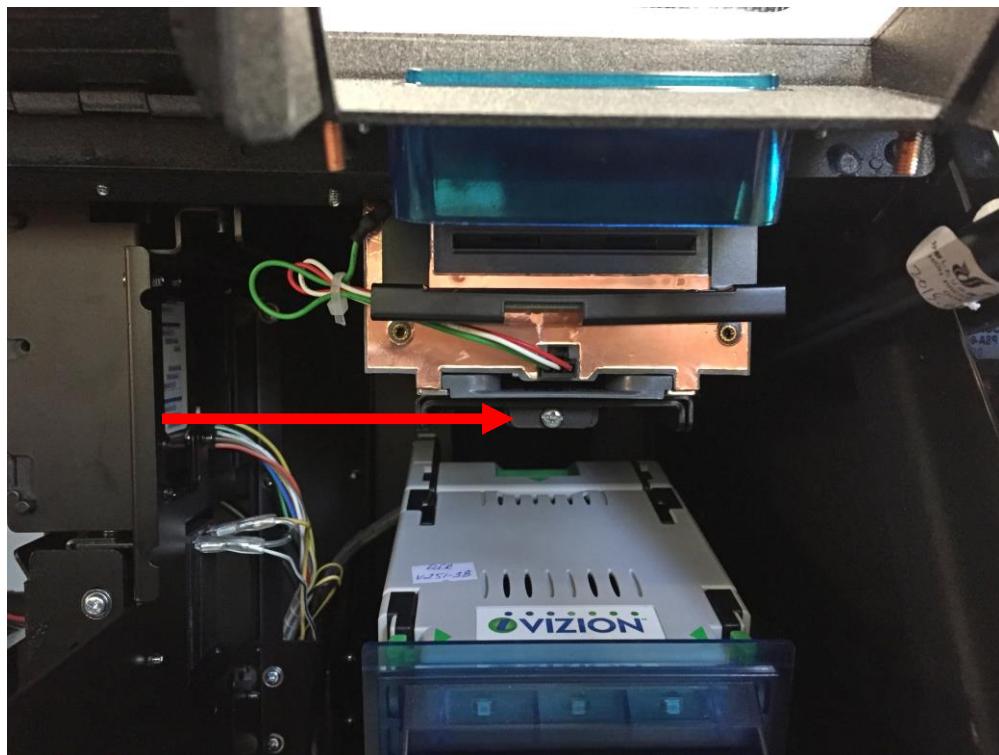


Figure 23: Ticket printer removal

9.5 Connector

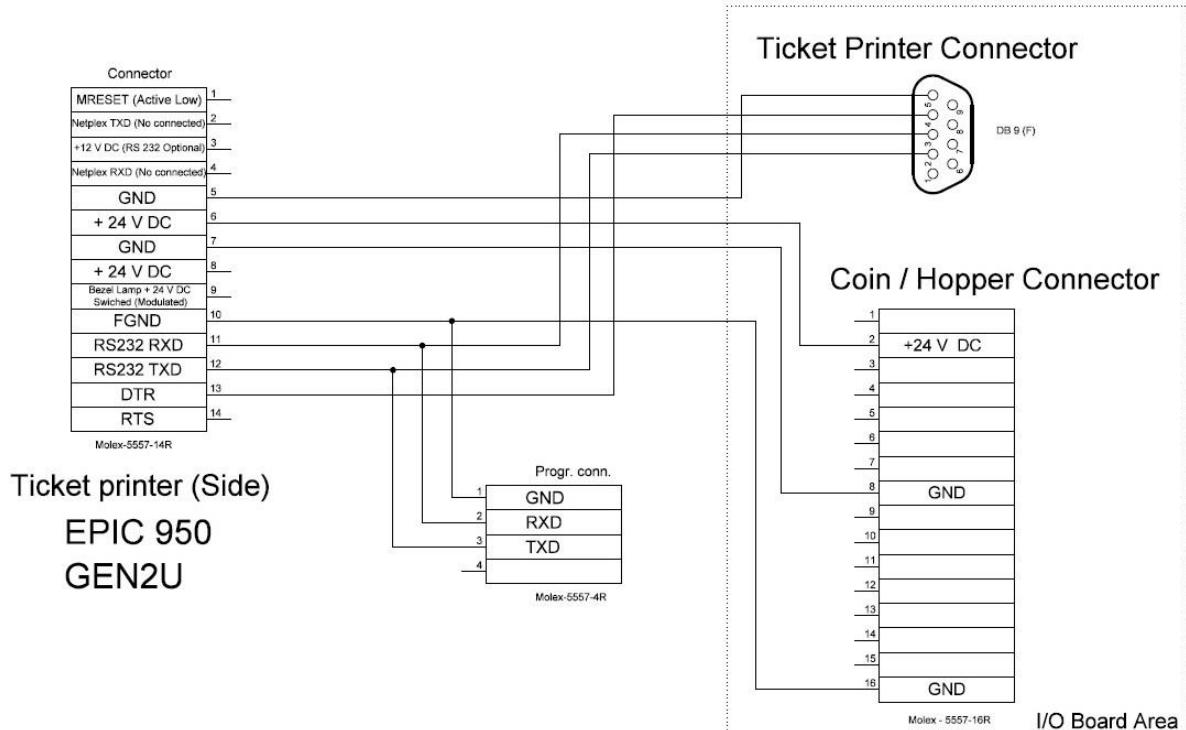


Table 10: Ticket printer GEN2U_RS232 / Epic 950 RS232 Connector Pin Layout

10 Hardware meters

10.1 Position in the machine

Hardware meters are mounted on the right wall inside the cabinet next to gaming board.



Figure 24: Hardware Meters Position in the Machine

10.2 Function

1. CREDITS WAGERED
2. CREDITS WON
3. GAMES PLAYED
4. BILL IN
5. COIN DROP
6. HANDPAY

10.3 Troubleshooting

1. Check the connectors of the meter unit.
2. If an error message is triggered by a malfunction or non-activation of individual meter, the device must be removed from the operation and the meters circuit board must be exchanged.

10.4 Exchange of the meters

If there are defects that cannot be repaired, the defective meter has to be exchanged.

1. Unplug the machine and open the monitor door;
2. Unscrew the nut as shown in the picture;
3. Remove the meters circuit board;
4. Unplug the cable from the meters circuit board;

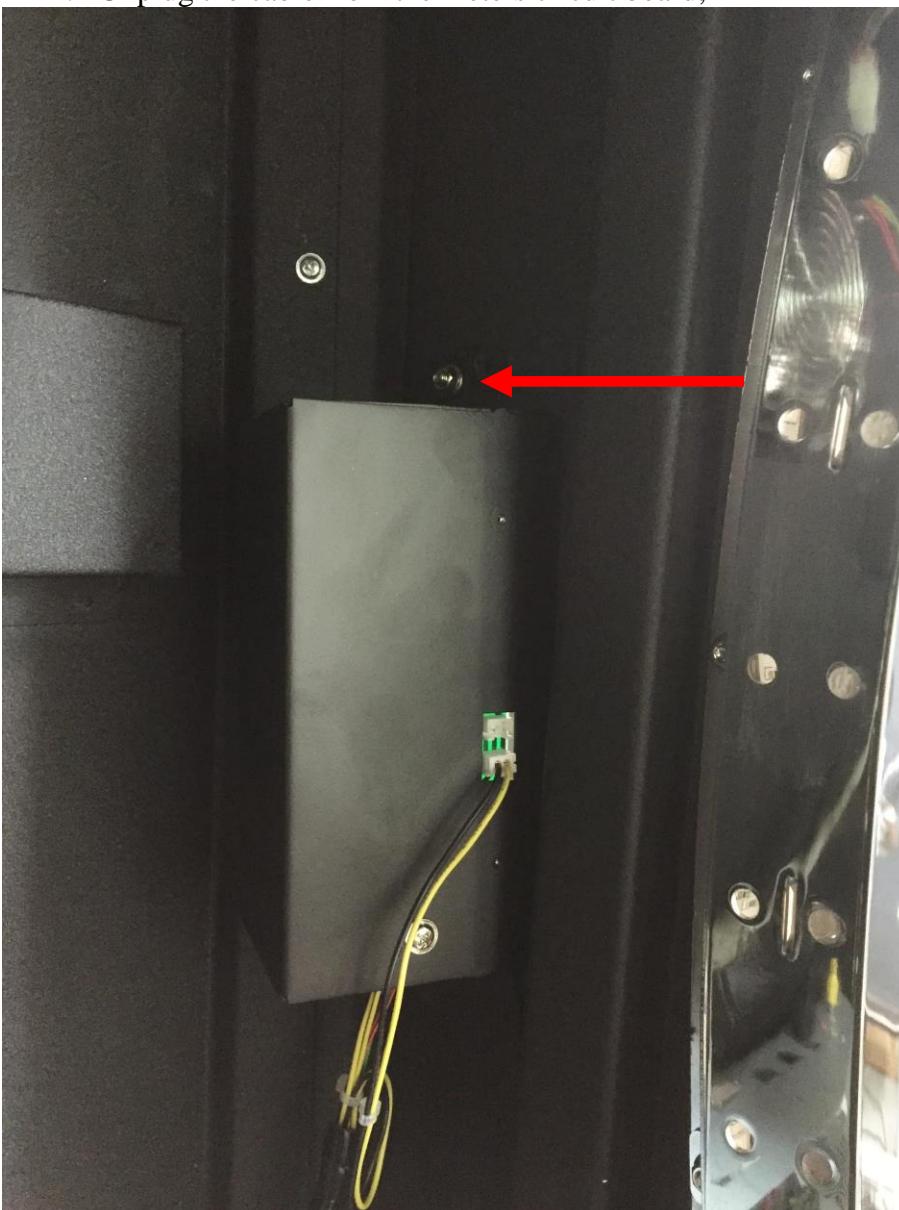


Figure 25: Exchange on the Hardware Meters Circuit Board

11 Monitors

11.1 Position in the machine



Figure 26: Monitors Position in the Machine

11.2 Function

The monitors show the game play, the error messages and the audit system.

11.3 Troubleshooting

Check if the monitors and the connectors of the cables are fixed correctly in their mounting.

11.4 Exchange of the monitors

If any defects cannot be repaired, the defective monitor has to be exchanged.

1. Unplug the machine and open the monitor door;
2. Unscrew screws as shown on picture (shown with red arrows).
3. Unscrew screws a bit as shown on picture (shown with white arrows) and move plates to the monitor center.
4. Remove monitor;

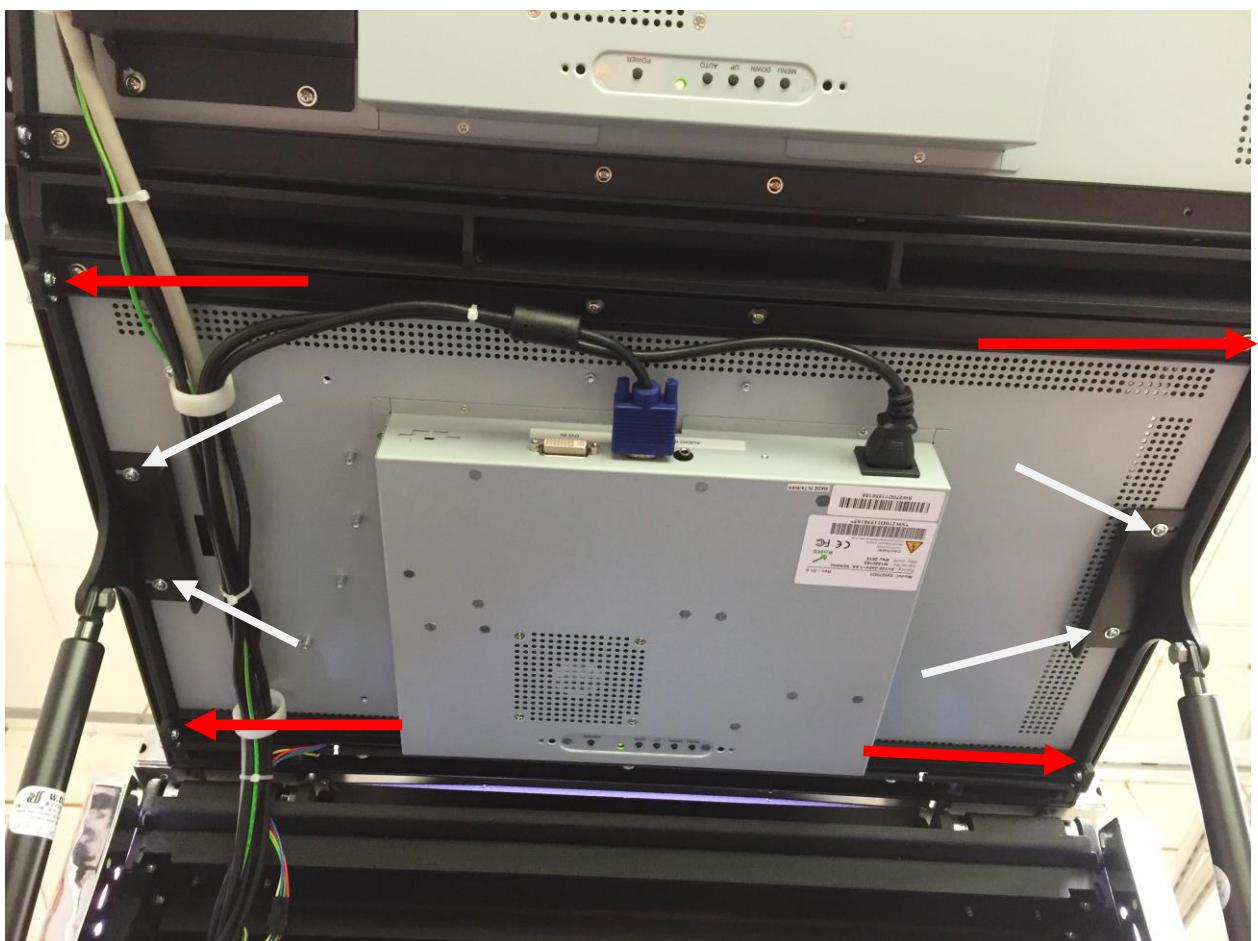


Figure 27: Monitors Exchange

12 Audio Amplifier

12.1 Function

Type

Grantech 4.1CH Audio Amplifier & SPDIF Board_Rev. A

The Audio Amplifier is mounted on the back wall of the machine, behind the Hopper.



Figure 28: Audio Amplifier Position in the Machine

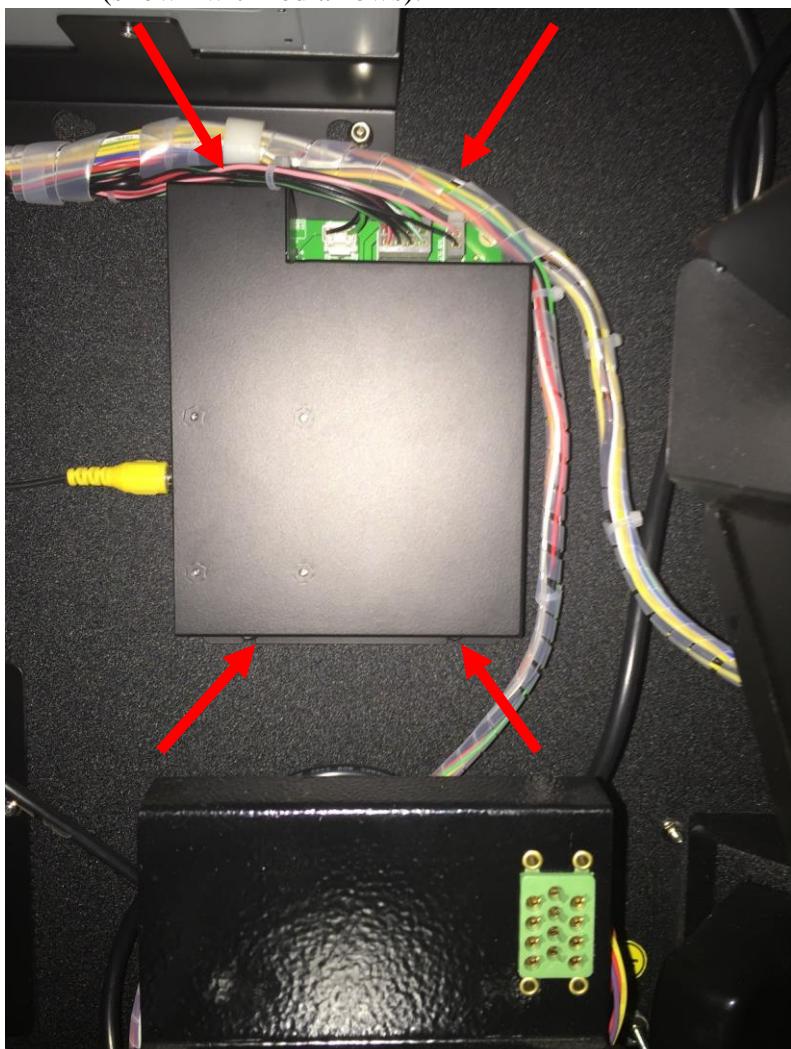
12.2 Error Handling

1. Unplug the machine and open the main door forward
2. Remove the hopper forward and lift it up.
3. Check that the all connector cables are connected properly to the device

12.3 Replacement

If Audio amplifier cannot be fixed in-place, the complete device should be replaced.

1. Unplug the machine and open the main door forward
2. Remove the hopper forward and lift it up.
3. Disconnect all the wiring and unscrew four nuts that hold the audio amplifier in place (shown with red arrows).



12.4 Connectors

A) Amplifier Board I/O & Control:

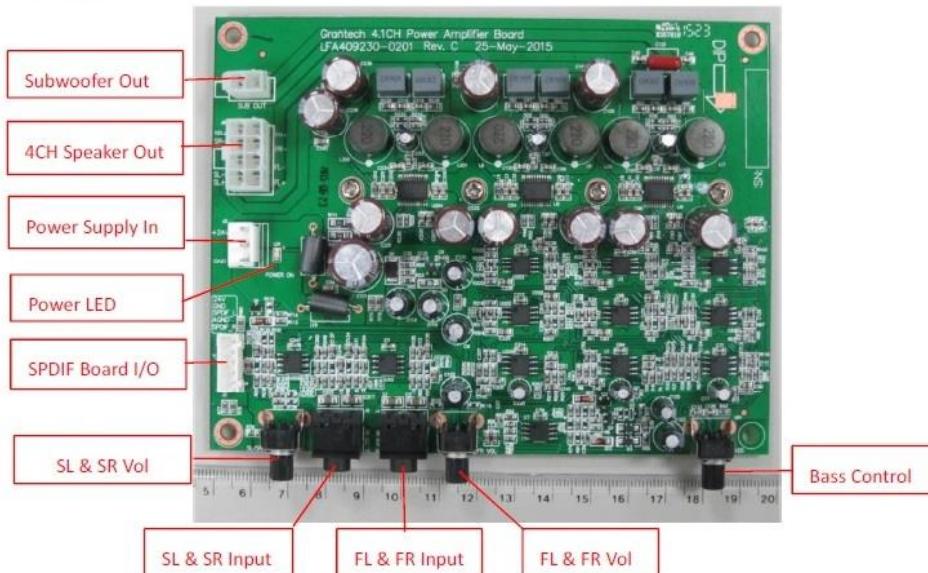
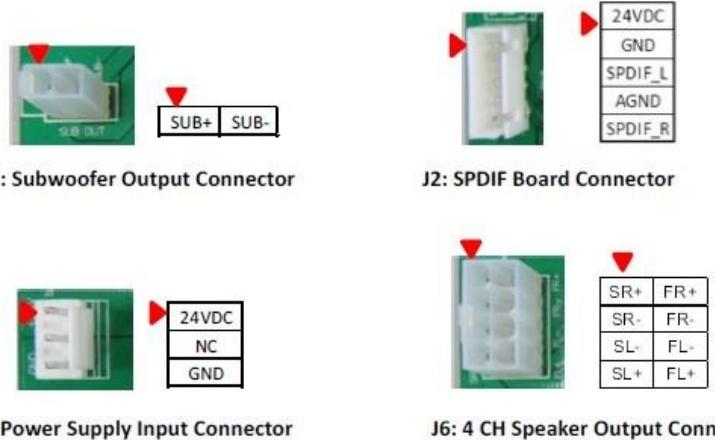
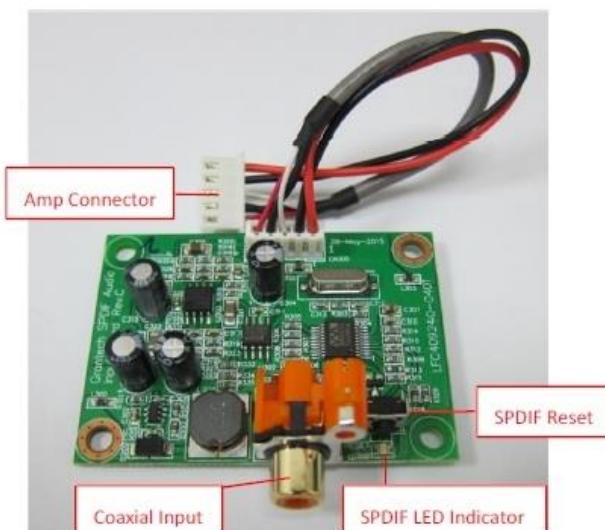


Fig1: Amplifier Board

1. **Power Supply In**: Operation Voltage 12 ~ 24VDC , 24VDC 5A Power Supply Input (Recommended)
2. **Power LED**: Power Supply Input , Green LED On
3. **SPDIF Board I/O**: Connected 24VDC to SPDIF and Analog stereo signal from SPDIF Board
4. **FL & FR Input**: Analog Front Left & Front Right Input Jack
5. **SL & SR Input**: Analog Surround Left & Surround Right Input Jack
(When SL & SR not Connected, FL & FR Signal will feed to SL & SR)
6. **4 CH Speaker Out**: FL , FR , SL & SR Speaker Output (20W/4ohm)
7. **Subwoofer Out**: 40W/8ohm Subwoofer Output.
8. **FL & FR Vol**: FR & RL Analog input level attenuator
9. **SL & SR Vol**: SR & SL Analog input level attenuator
10. **Bass Control**: ± 10dB Bass Boost & Cut control

Figure 29: Audio Amplifier Connector Description

Amplifier Board Pin Assignment:

B) SPDIF BOARD I/O and Control:

Fig2: SPDIF Board

1. **Coaxial Input**: Support Audio PCM Format Only
2. **Amp Connector**: Connect to Amplifier Board
3. **SPDIF Reset**: SPDIF Receiver Chip Reset
4. **SPDIF LED Indicator**: Green >> PCM , Red >> Non PCM

Figure 30: Audio Amplifier Connectors Pin Layout

13 LED Control Board

13.1 Function

Type

RGB Rendering board

This control board is intended to ensure external illumination of the machine
The LED Control Board is mounted above the Power Supply Unit

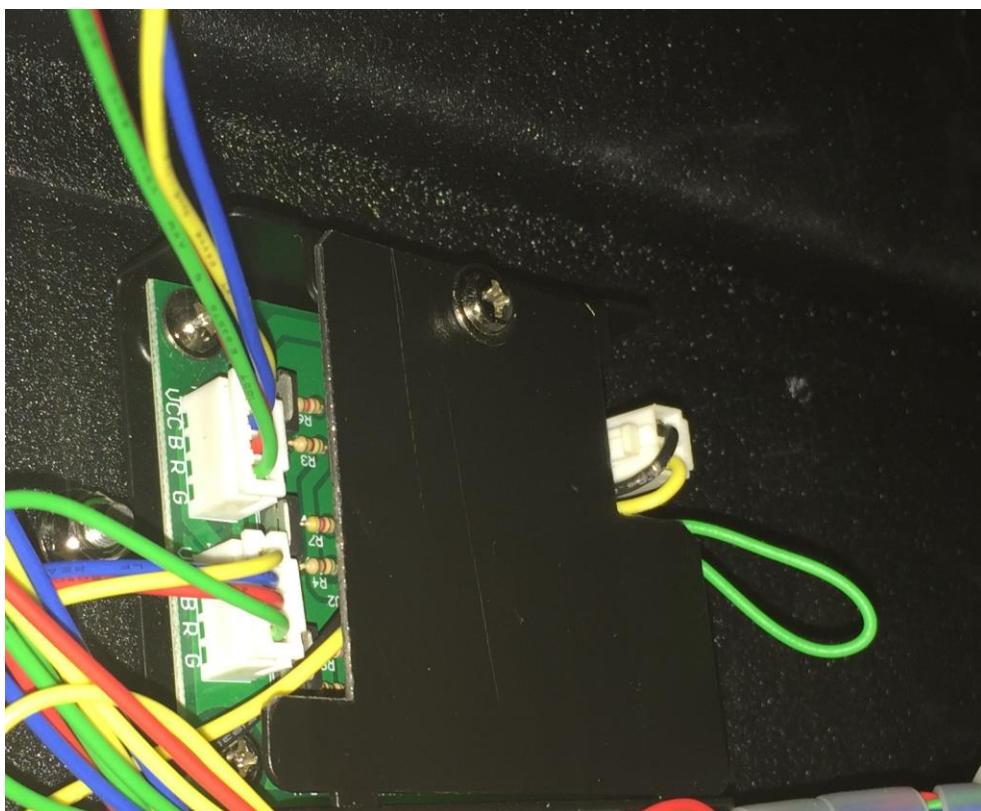


Figure 31: LED Control Board Position in the Machine

13.2 Connector

COM1, COM2 Output Port

- PIN1=Vcc+12V
- PIN2=B
- PIN3=R
- PIN4=G

COM4 INPUT Mode Selection

- PIN1=SW1
- PIN2=SW2
- PIN3=SW3
- PIN4=GND

COM5, COM6, COM7 POWER IN

- PIN1=Vcc+12V
- PIN2=GND

COM3 TEST SW

- PIN1=TEST SW
- PIN2=GND

Mode Selection:

Input sw			Mode
Sw1	Sw2	Sw3	
OFF	OFF	OFF	OFF
ON	OFF	OFF	RED only
OFF	ON	OFF	GREEN only
ON	ON	OFF	BLUE only
OFF	OFF	ON	SLOW transition
ON	OFF	ON	FAST transition
ON	ON	ON	NORMAL Speed

Table 11: LED PCB Mode Selection

14 Gaming Platform Board D-PRO

14.1 Function

Type

The Main Board D-Pro is an industrial PC based processor board provided with high-performance embedded graphics, audio controller, network adapter, mSATA socket, etc.

The Gaming Platform Board is a complete all-in-one solution designed to suit all the gaming needs. The platform consists of a Chassis and a Main board.

The Gaming Platform Board is mounted on the back wall of the machine, behind the monitor door.

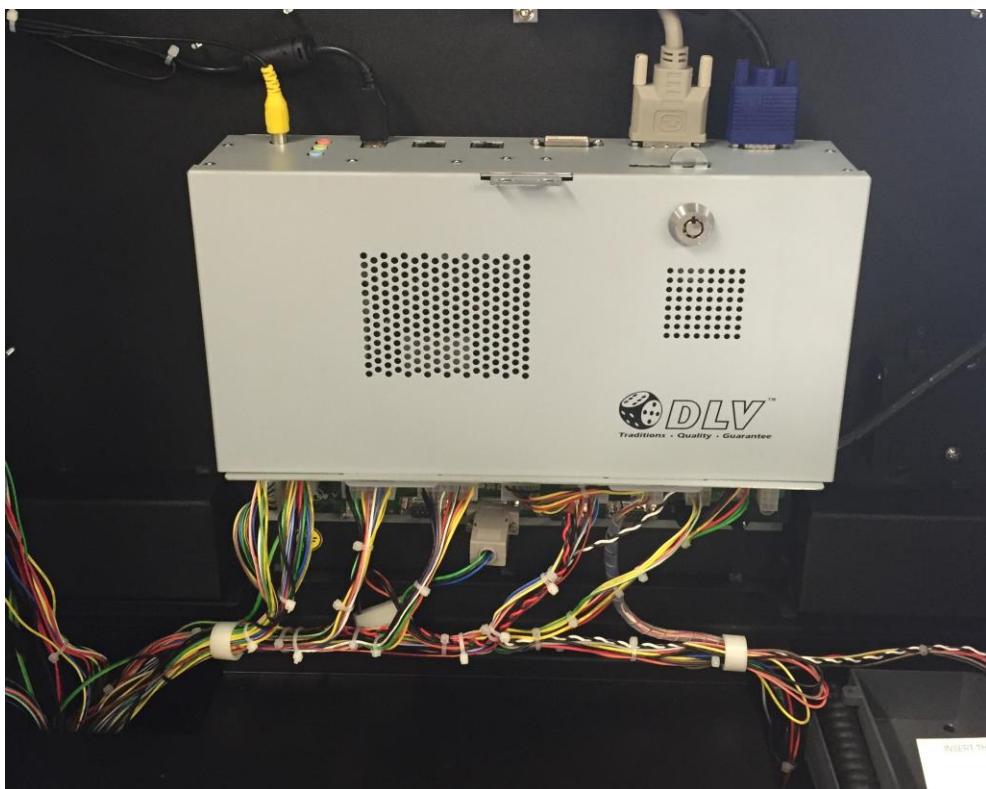


Figure 32: Gaming Platform Board Position in the Machine

WARNING:

The main board contains one fan and the chassis - several holes for ventilation purposes. Fan speed is controlled by the software. Ventilation holes should not be covered.

14.2 Error Handling

1. Unplug the machine and open the main door upwards
2. Check that all connector cables are connected properly to the device
3. Check that the power voltage is + 12V and indicated LED are lighting.

14.3 Replacement

If the Main Board D-Pro cannot be fixed in-place, the complete device should be replaced.

1. Unplug the machine and open the main door upwards
2. Disconnect all the wiring and unscrew 4 nuts that hold the Main Board in place (shown with red arrows).



Figure 33: Gaming Platform Board Exchange

15 Harness

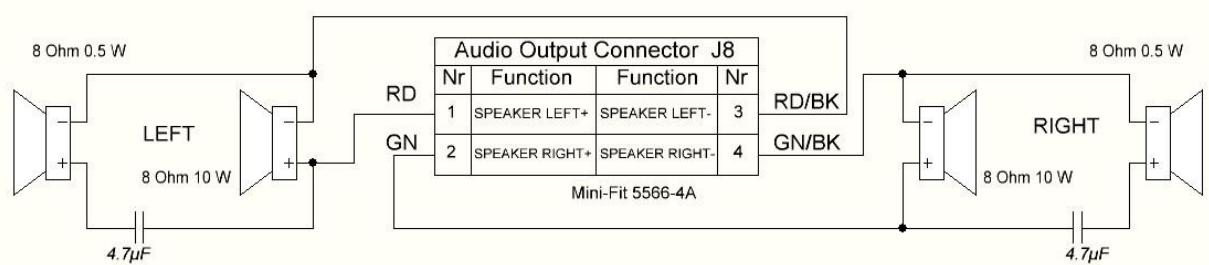


Figure 34: Audio Connector

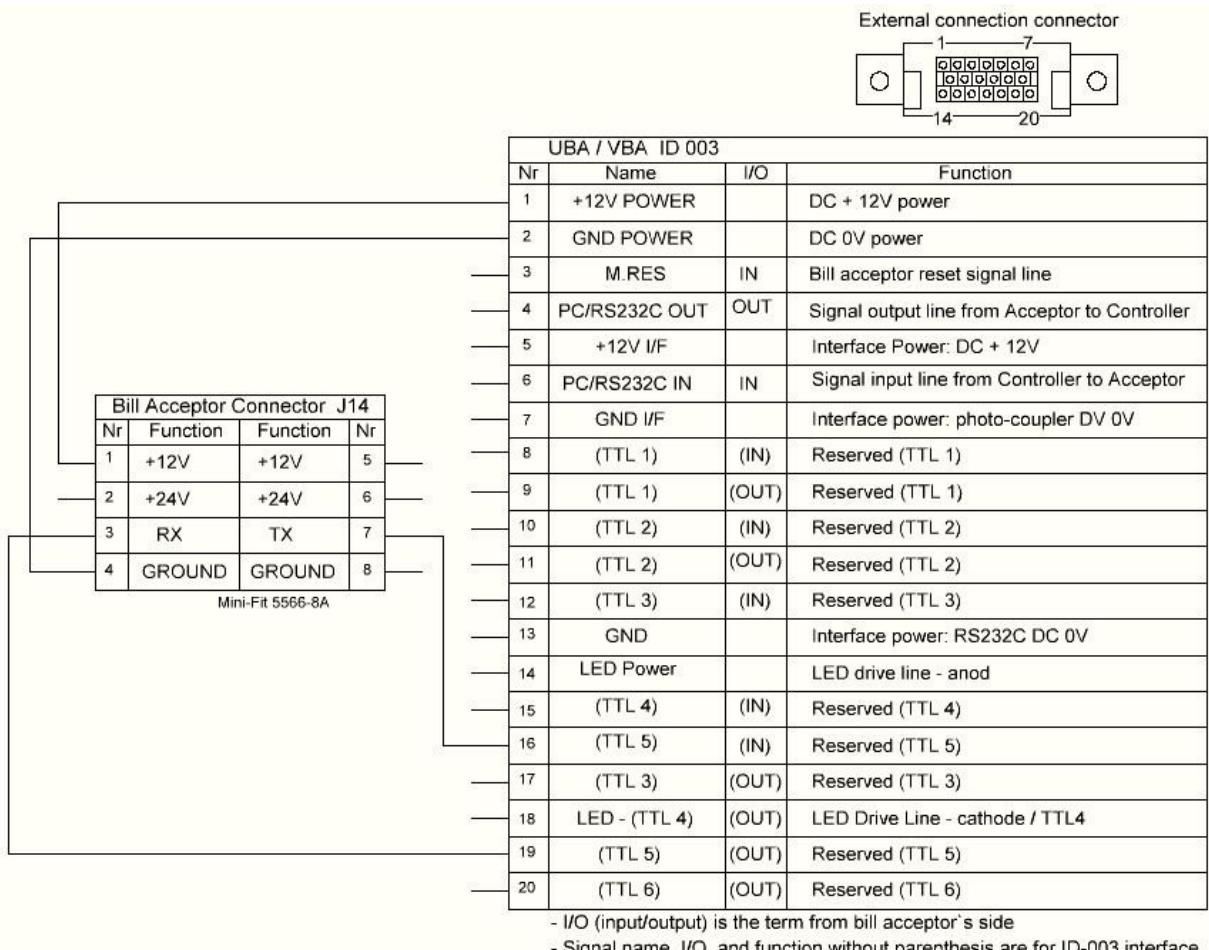


Figure 35: JCM UBA10 Connector

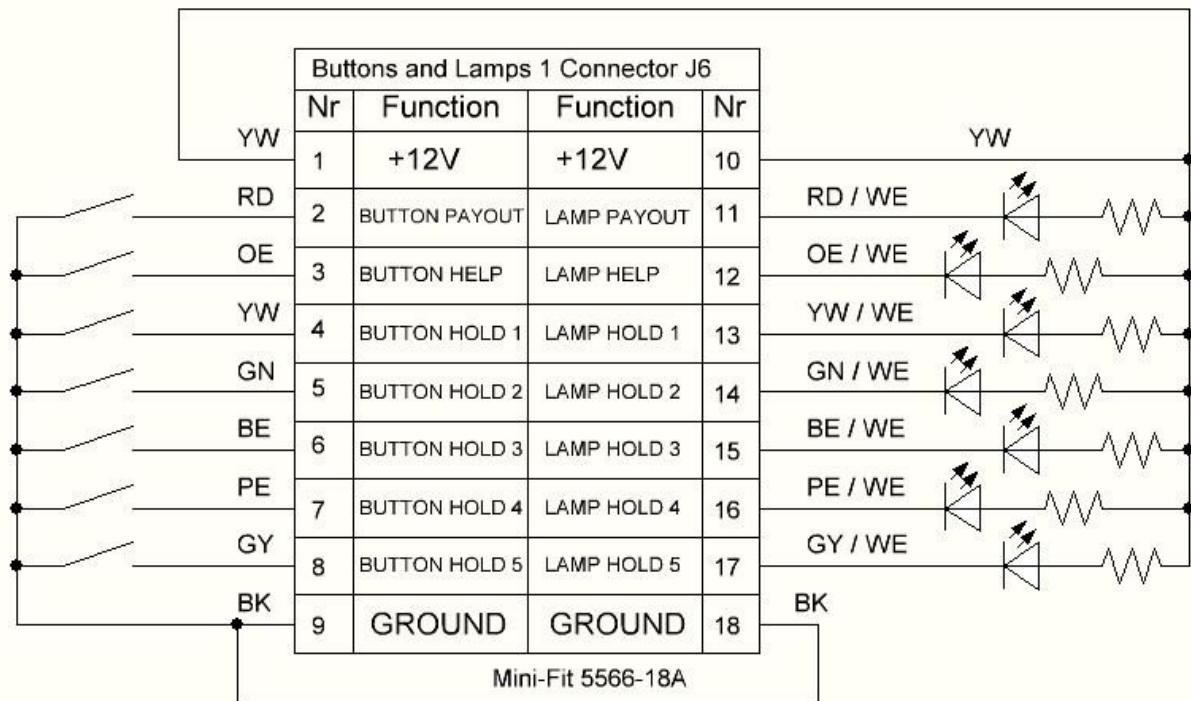


Figure 36: Buttons and Lamps Connector 1

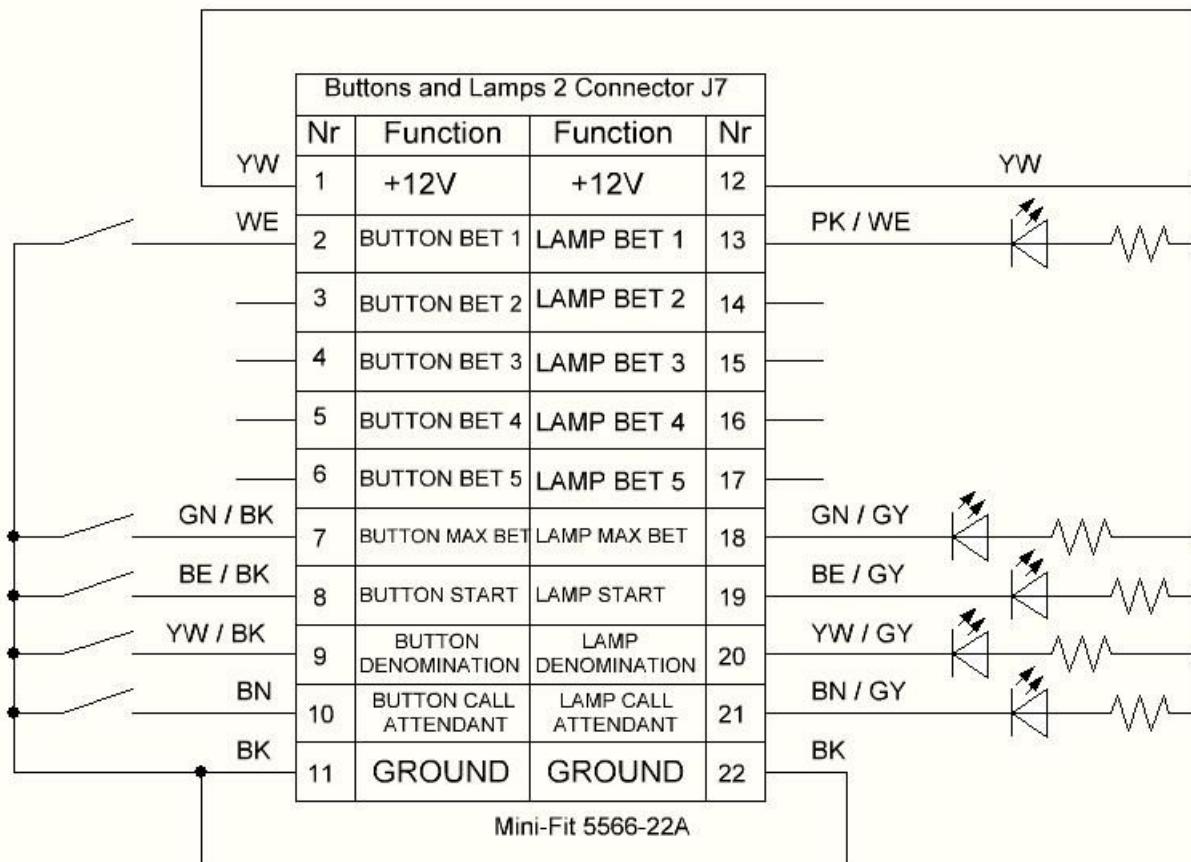


Figure 37: Buttons and Lamps Connector 2

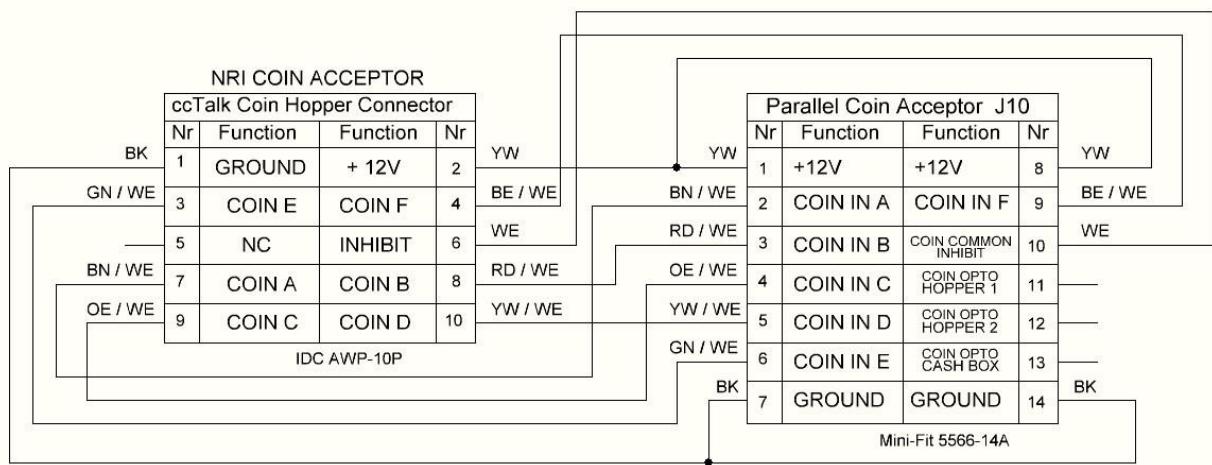


Figure 38: Coin Acceptor Connector

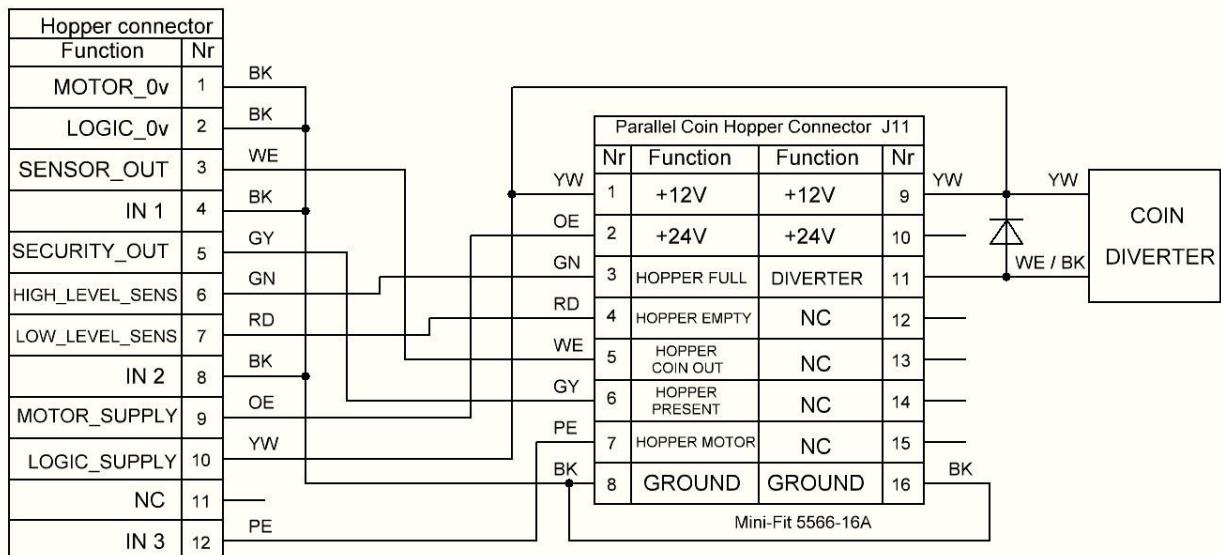


Figure 39: Coin Hopper Connector

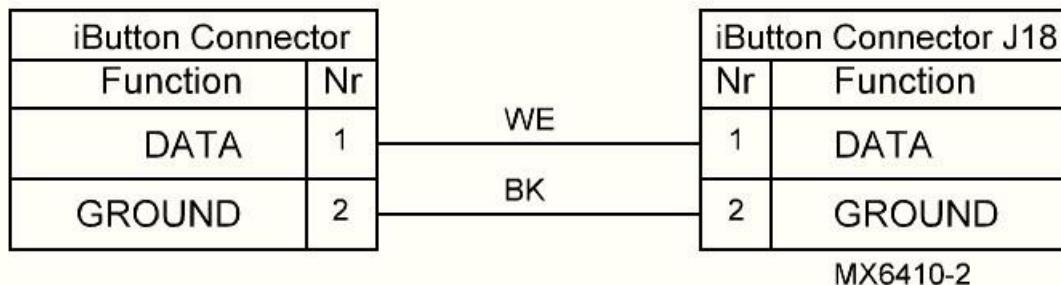


Figure 40: iButton Connector

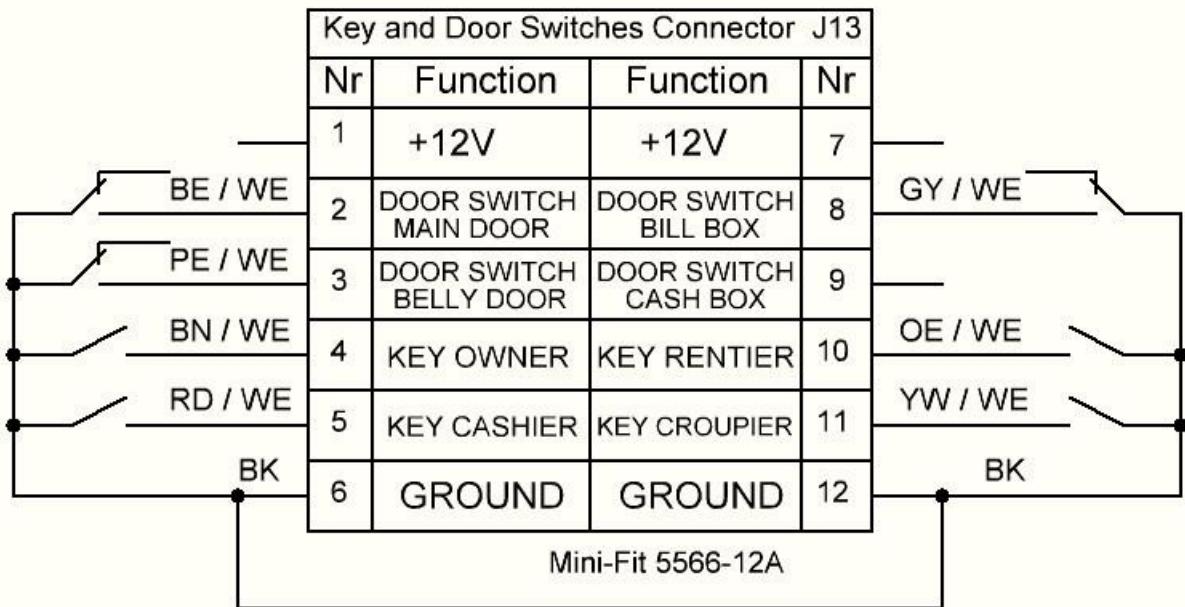


Figure 41: Key and Door Switch Connector

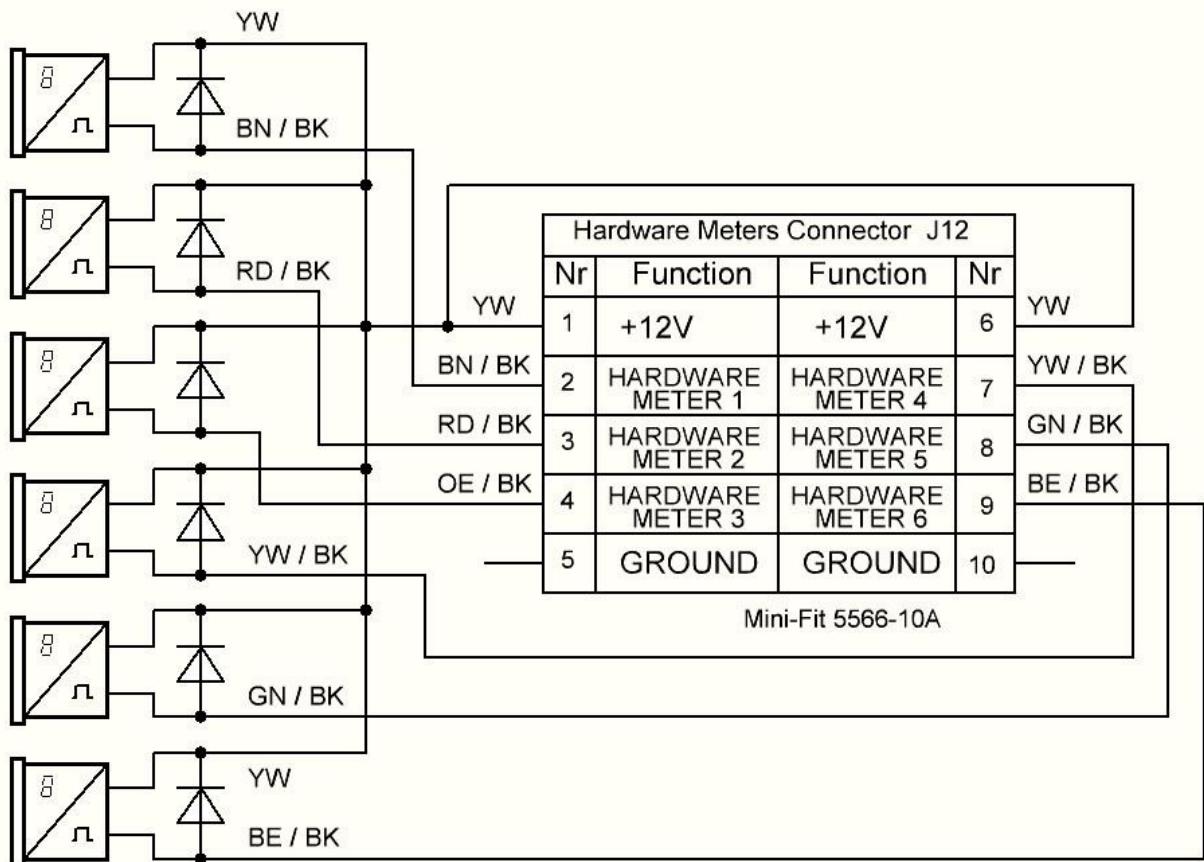
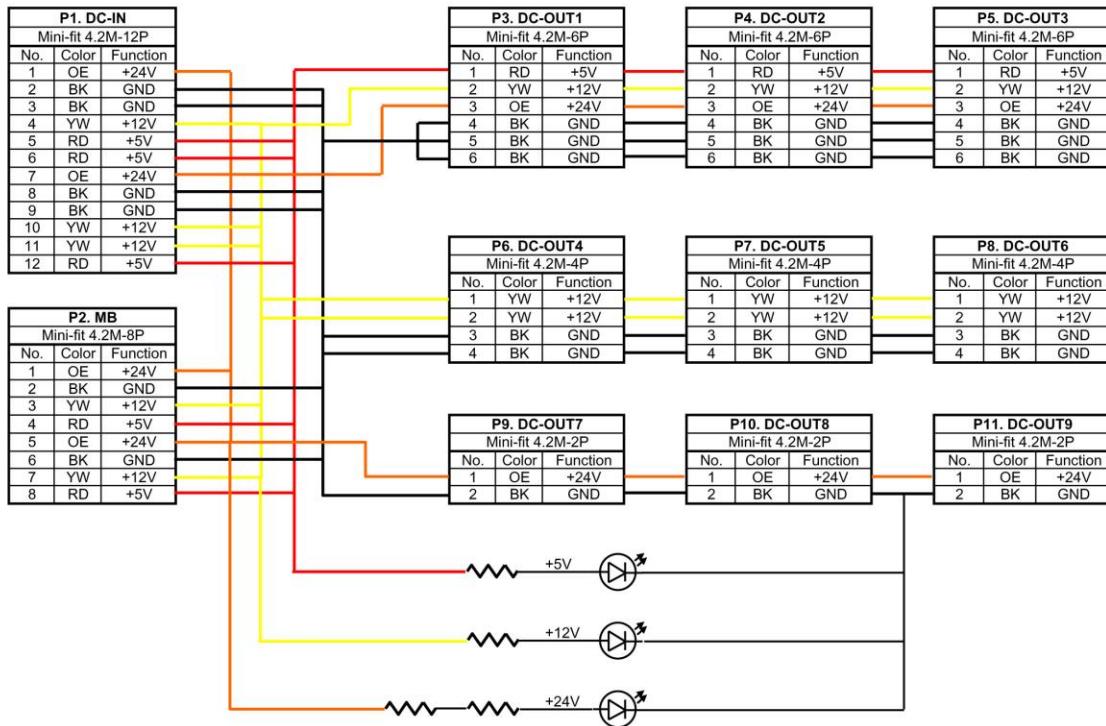
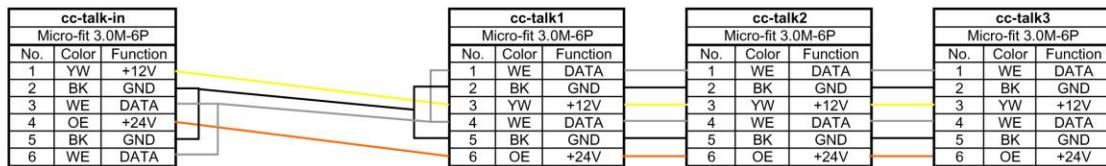
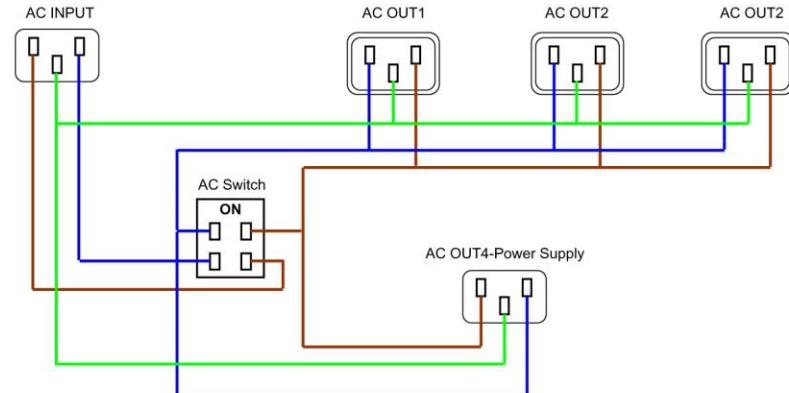


Figure 42: Hardware Meters Connector



Figure 43: Tower Light Connector

DC Connection:

cc-talk Connection:

AC Connection:

Figure 44: Power Supply Unit Connector