

# UserGuide

# ZigZagBall



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# 1. Safety Precautions

## Read Before Using

To ensure the safe usage of this product, carefully read and understand these instructions before operating your game. Save these instructions for future reference.



- This equipment works under high voltage which can cause electrical shock. Only qualified personnel should service the machine.
- Read the entire manual before using the machine. The following guide is intended for the users, operators, and the personnel in charge of the operation of the machine. Be sure to keep this manual close to the machine.



- High voltage can cause electric shock. Turn off or unplug power before servicing.

- When unplugging the machine from electrical outlet, always grasp the plug, not the cord.
- Always connect the machine to grounded electrical outlet.



- The wiring system is under voltage that is safe in normal use but may be harmful while improper use.
- Always use digital multimeter, logic tester or oscilloscope for testing integrated circuits.
- Do not connect or disconnect any of the integrated circuits while the machine is turned ON.
- Do not subject the machine to extreme temperature variations.

## Before turning the power on

After receiving the shipment, inspect the product thoroughly to ensure that it has been shipped with care. Before turning the power on, please check:

- the cabinet for damage or shifting that may have occurred during shipping;
- if power supply meets machine electrical requirements;
- if all wires linked correctly and securely connected to each other;  
**Notice:** If coupled in an incorrect manner, the connection will not be made accurately and it could cause not only irreparable damage to the machine, but also is a potential fire hazard.  
**Warning:** DO NOT INSERT CONNECTORS FORCIBLY.
- if all the cables, including power cables, are undamaged;
- if all of the accessories listed in package contents were provided;
- if all doors/lids can be opened with the accessory keys;
- if doors/lids can be firmly closed;
- if the coin box key opens the coin box.

## 2. Package Contents

Open the package and make sure that all items are included:

- Body assembly,
- Set of washers and wing nuts for the roof marquee (on top of the machine),
- Set of service keys,
- Service keyboard (inside the machine),
- Display remote control (inside the machine).

If anything from the list above is missing, please contact your sales representative for help immediately.

## 3. Technical Specifications

### Operating size

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Height: 265 cm / 104 in

Width: 80 cm / 31.5 in

Depth: 120 cm / 47.5 in

Weight: 155 kg / 342 lbs

### Shipping size

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Height: 220 cm / 87 in

Width: 80 cm / 31.5 in

Depth: 120 cm / 47.5 in

Weight: 155 kg / 342 lbs

### Electrical requirements

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Voltage: 90 V – 240 V

Frequency: 50 Hz – 60 Hz

Power Consumption: 140 W

### Extensions

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Compatible with most popular currency acceptors and ticket dispensers.

### Display

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Resolution: Full HD (1080 x 1920 pixels)

Size: 50 inches

### Sound

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System: Stereo speaker system

Amplifier: High-efficiency audio amplifier

### Software features

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Digital ticket and currency counters.

Advanced operator settings.

Volume adjustment for standby and game.

Attraction mode.

Free-play mode.

### Other features

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Players avatar capturing.

Safety glass.

Full LED illumination.

RGB LED controller.

### Patent pending

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Application number: EP24209083.5

### Copyright and Fair Use notice

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Our program uses animations that are protected by copyright. These animations are used under the principles of FAIR USE for purposes such as parody. If you are a copyright holder and have any concerns about the use of animations in this program, please contact us, and we will make every effort to address any issues.

## 4. Installation

1. Before proceeding, ensure the machine is not damaged and all accessories are present.
2. Transport the machine to the desired location.  
**Warning:** Do not install the machine in areas that may obstruct evacuation routes during an emergency.  
**Caution:** Do not place any objects on top of the machine, as this may cause damage.
3. Apply the brakes on each wheel to secure the machine in place and prevent movement.
4. Unfold the marquee located on top of the machine, and secure it using the provided washers and wing nuts.
5. If the machine has been exposed to cold temperatures, allow it to acclimate for approximately 30 minutes before powering it on to ensure proper operation of electronic components.
6. Close the machine, connect the power cable to a suitable power outlet, and turn the power switch to the **ON** position.
7. Open the service door to adjust volume and game settings as needed.

## 5. Settings

### Volume adjustment

The operator menu allows you to set different volume levels for:

- Standby mode
- Gameplay
- Announcements

The machine is also equipped with a master volume adjustment knob. To access it:

1. Open the front service door.
2. Locate the electronics board inside the machine.
3. Use the control knob on the board to adjust the master volume of the machine's audio amplifier.

### Operator menu navigation

To access the operator menu:

1. Use the service key to open the service door.
2. Locate the service keyboard.
3. Press **Button 2** to enter the operator menu.

Navigate through the operator menu as follows:

- Use **Button 8** to move up.
- Use **Button 2** to move down.

To confirm a selection, press **Button 5**.

To adjust values within the menu, use:

- **Button 4** to decrease values.
- **Button 6** to increase values.

## Operator menu structure

### ■ gameplay

#### ➔ Difficulty

- **easy**: A skull tile appears every 20th row.
- **medium**: A skull tile appears every 15th row.
- **hard**: A skull tile appears every 12th row.

#### ➔ Tutorial

- **on**: The player is required to complete the tutorial before starting the game.
- **skippable**: The player has the option to skip the tutorial.
- **off**: The tutorial is disabled and will not be shown.

### ■ credits

➔ **Freeplay**: Enables gameplay without requiring credits.

➔ **Game Cost**: Defines the number of credits required to play a single game.

➔ **Payment Method**: Select the preferred payment method for user interface prompts:

- **Coin**
- **Swipe Card**
- **Bill**

➔ **Pulse Anti Cheat**: Adjusts the precision of the currency validator's signal measurement to prevent cheating.

### ■ sound

➔ **Game Volume**: Adjusts the volume level during gameplay.

➔ **Standby Volume**: Sets the volume level while the machine is in standby mode.

➔ **Announcement Volume**: Controls the volume level for voiceover announcements during standby.

### ■ tickets

➔ **Ticket Dispensers**: Enables or disables the ticket dispensers.

➔ **Ticket Strategy**: Defines how the machine rewards players with tickets. Choose from:

- **Direct**: Players collect tickets during gameplay.
- **Thresholds**: Tickets are awarded based on predefined point thresholds.
- **Fixed**: A fixed number of tickets is awarded, regardless of the player's score.

➔ **Jackpot Tickets (Cap and Bells)**: Sets the number of tickets awarded for collecting a special tile.

➔ **Ticket Per Game**: If the Ticket Strategy is set to **Fixed**, specifies the number of tickets the machine awards per game.

➔ **Ticket Frequency**: If the Ticket Strategy is set to **Direct**, defines how often tickets appear during gameplay.

➔ **Daily Highscore Tickets**: Sets the number of tickets awarded to a player for beating the daily high score.

➔ **All Time Highscore Tickets**: Sets the number of tickets awarded to a player for beating the all-time high score.

➔ **Ticket of Mercy**: Sets the minimum number of tickets awarded to a player, regardless of their score.

➔ **Ticket Threshold Settings**: If the Ticket Strategy is set to **Thresholds**, specifies the number of tickets awarded for reaching certain point thresholds.

## ■ bonus

- ➔ **Min points:** The minimum number of points required to collect the bonus (crown) tile.
- ➔ **Max points:** The maximum number of points required to collect the bonus (crown) tile.
- ➔ **Min tickets:** The minimum number of tickets awarded for collecting the bonus (crown) tile.
- ➔ **Max tickets:** The maximum number of tickets awarded for collecting the bonus (crown) tile.

## ■ camera

- ➔ **Avatar camera:** Enables the camera to create the player's avatar.
- ➔ **Timer:** Sets the number of seconds the player has to opt-in for avatar creation.
- ➔ **Live Image in Standby:** Determines if the camera live feed should be displayed during standby mode.
- ➔ **Avatar recording trigger:** Defines when the camera should capture the avatar:
  - **before press:** The avatar is created from frames captured before the button press.
  - **after press:** The avatar is captured after the button press.
  - **while playing:** The avatar is captured during gameplay, when the player collects a bonus tile or finishes the game.
  - **game over:** The avatar is captured when the player ends the game.

## ■ attraction

- ➔ **Mechanism Lock:** Activates or deactivates the locking of the control mechanism if movement is detected during standby mode.
- ➔ **Autoplay:** Controls whether automatic gameplay should be shown during standby mode.
- ➔ **Announcement Delay:** Sets the time delay between standby announcement messages.
- ➔ **Strobe Effect Delay:** Sets the time delay between strobe flashes during standby mode.

## ■ resets

- ➔ **Tickets Dispensers:** Unlocks the ticket dispensers if they are locked due to running out of tickets. Use after the operator refills the ticket feeder.
- ➔ **Tickets Owed:** Resets the tickets owed counter after the operator manually awards tickets that the machine owes to the player.
- ➔ **Short Term Credit Counter:** Resets the short-term credit counter.
- ➔ **Short Term Game Counter:** Resets the short-term game counter.
- ➔ **Short Term Ticket Counter:** Resets the short-term ticket counter.
- ➔ **Active Credits:** Resets the currently inserted credits.
- ➔ **Leaderboard Scores:** Resets the high scores leaderboard memory.
- ➔ **Leaderboard Avatars:** Removes avatars from the high scores leaderboard memory.
- ➔ **Statistics:** Resets the gameplay history statistics.
- ➔ **WiFi Configuration:** Removes connected WiFi networks from the memory.
- ➔ **Default Settings:** Restores the factory settings of the operator menu.

## ■ statistics

- ➔ Gameplay history information.

## ■ diagnosis

- ➔ **A/V test:** Displays the display test pattern and plays test sound in a loop.
- ➔ **CAMERA test:** Displays live image from the avatar camera with the avatar crop border.
- ➔ **INPUT test:** Displays live states of the digital signal inputs.
- ➔ **TOUCH test:** Shows live position and filtered position from the touch sensor.
- ➔ **SERVO test:** Moves the servo mechanism in both directions.

➔ **SEND LOGS:** Forces sending logs if the machine is online.

➔ **SYSTEM RESTART:** Reboots the machine.

#### ■ **wifi**

➔ Displays available WiFi networks with the option to connect to them.

#### ■ **copyrights**

➔ Copyright information.

#### ■ **exit**

#### ■ **other menu elements**

➔ **Credits (short term/long term):** Erasable and non-erasable credits counter.

➔ **Games (short term/long term):** Erasable and non-erasable money counter.

➔ **Tickets (short term/long term):** Erasable and non-erasable tickets counter.

➔ **Game:** Game name, game version, machine location.

➔ **S/N:** Serial number of the electronics board.

➔ **QR Code:** Scan the code with your mobile phone to access the latest version of this user guide.

## 6. Software Update

### Update procedure

We are constantly improving our products, which means that occasionally a new software update will be available for your machine. The update may introduce new features, fix bugs, enhance the player experience, and improve the machine's profitability.

When a major software update is available, your sales representative may contact you, provide the software update package file, and assist you during the process. You can also download the update package yourself from our update server.

**Warning:** Always ensure you are using the correct update files for supported machines only. Updates are designed for specific game and software versions. Attempting to update an unsupported machine may result in the machine not working.

**Notice:** The update procedure may overwrite your machine's settings with factory defaults and reset the statistics history. Please ensure you record your settings before proceeding.

1. Turn the machine power on and wait for the machine to fully load.
2. Open the service door and locate the service keyboard inside the machine.
3. Press **Button 2** on the keyboard to enter the operator menu. In the bottom-right corner of the operator menu, you will see the currently installed software name and version.
4. Prepare an empty USB drive. It should be formatted with the FAT32 file system.
5. Unzip the update package.
6. Copy the unzipped update package to the root directory of the USB drive.
7. Turn off the machine.
8. Connect the USB drive to one of the free USB ports on the side of the electronics board.
9. Turn the machine on and wait for the update procedure to complete. You can observe the update process on the display.

**Warning:** Do not interrupt the update procedure. Do not disconnect power or any accessories connected to the machine while the update is being performed.

10. After the update is complete, the machine will automatically start in normal operation mode.
11. Press **Button 2** on the keyboard to enter the operator menu and confirm that the machine is now running the new software version.
12. Turn off the machine and remove the USB drive.
13. Turn the machine back on.
14. Adjust operator settings if needed.

## 7. Maintenance

**Warning:** High voltage can cause electric shock. Turn off and unplug the power before servicing.

- Use paper towels and window cleaner to clean the machine.
- Do not apply window cleaner or any other liquid directly onto the machine. Instead, apply it to the paper towel.

### Refilling tickets

1. Open the service door.
2. Insert tickets and feed the ticket dispenser.  
**Notice:** There is a button on the side of the ticket dispenser to activate the mechanism and properly feed the dispenser.
3. Close the service door.
4. Confirm that the ticket dispensers have been refilled by one of the following methods:
  - Press **SPACE** on the service keyboard.
  - Press **000** on the service keyboard.
  - Press **Button 2** to enter the Operator Menu, go to **Resets**, and select the "**Ticket Dispensers REFILLED**" option.

### Checking counters

1. Open the service door.
2. Locate the service keyboard and press **Button 2** to enter the operator menu.
3. At the bottom-left of the Operator Menu, you will see the tickets and games counters.

## 8. Troubleshooting

Below you will find solutions to the most common problems. If your issue is not listed or if you require further assistance, please contact technical support at [service@arcadebee.com](mailto:service@arcadebee.com) and [support@arcadebee.com](mailto:support@arcadebee.com).

### Restore default settings

If you have made changes in the operator menu and wish to return to the factory defaults, follow these steps:

1. Turn the machine power on and wait for the machine to fully load.
2. Open the service door and locate the service keyboard.
3. Press **Button 2** on the service keyboard to enter the operator menu.
4. Use **Button 2** and **Button 8** to highlight the "**Resets**" menu. Press **Button 5** to enter the "**Resets**" menu.
5. Use **Button 2** and **Button 8** to highlight "**Default Settings**." Press **Button 5** to confirm.

6. Highlight "**Back**" and press **Button 5** to exit the "Resets" menu.
7. Use **Button 2** and **Button 8** to highlight "**Exit**" and press **Button 5** to exit the operator menu.
8. The machine should now use the factory default settings.

## Sound issues

Check the following:

1. Is the master volume knob set correctly?
2. Are the volume levels in the operator menu set correctly?
3. Are both speakers connected properly?
4. Is the sound output plug (**J1**) connected properly?
5. Is the 3.5mm jack plug connected properly?
6. Is the red LED next to the master volume knob turned on?

## Display issues

Check the following:

1. Is the machine powered on?
2. Is the display powered on?
3. Is the electronics board powered on?
4. Is the HDMI cable connected properly at both ends?
5. Is the display set to the correct HDMI input?

## Ticket dispenser

Check the following:

1. Is the ticket dispenser connected properly?
2. Is the ticket dispenser jammed with tickets?
3. Does the ticket dispenser work when pressing the yellow ticket feeding button on its side?

## Currency acceptor

Check the following:

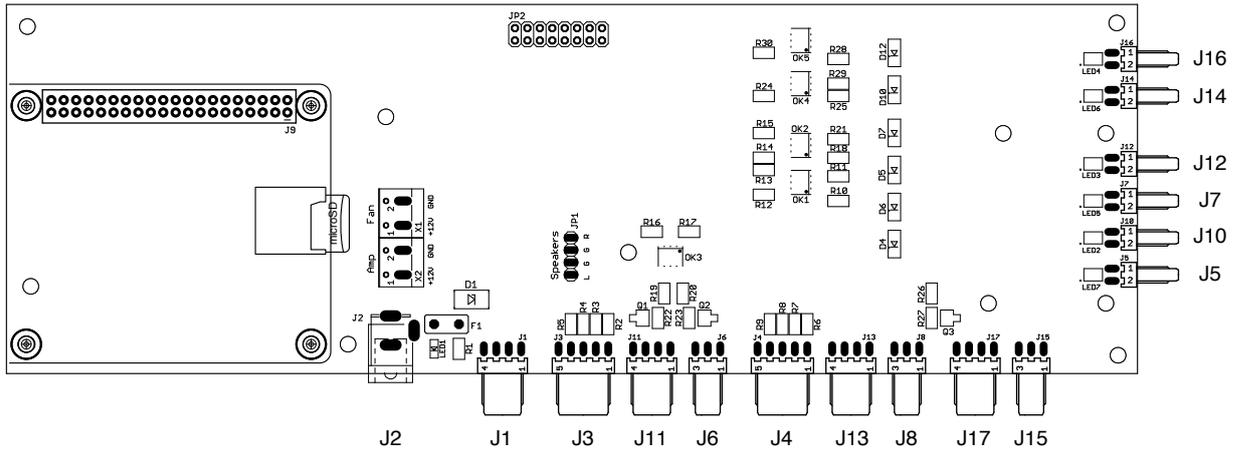
1. Is the currency acceptor connected correctly?
2. Is the currency acceptor jammed?
3. Does the currency acceptor validate currency properly?
4. Is the Game Cost option in the operator menu set correctly?

## Button

Check the following:

1. Is the button wiring connected properly at both ends?
2. Is the microswitch installed correctly in the button?

# Electronic board schematics



## J2 - Power supply 12V

## J1 - Audio output

- Pin 1 - Left channel
- Pin 2 - Left channel GND
- Pin 3 - Right channel GND
- Pin 4 - Right channel

## J3/J4 - Button

- Pin 2 - Signal
- Pin 5 - GND

## J6/J8/J15 - Currency validators

- Pin 1 - +12V
- Pin 2 - Pulse (GND 100ms)
- Pin 3 - GND

## J11/J13 - Ticket dispensers

- Pin 1 - +12V
- Pin 2 - Ticket Notch
- Pin 3 - Enable
- Pin 4 - GND

## 9. Warranty Terms and Conditions

- a) All of Arcade Bee products are designed and manufactured according to best standards and they guarantee high quality, simplicity of use and assembly. In case of any trouble we advise to read the instruction and information published in technical support section on our website: <https://arcadebee.com/>.
- b) Warranty rights are entitled to purchasers of Arcade Bee products and are based on an invoice or receipt. Arcade Bee products are under warranty for:
  - 24 months starting from the date of purchase made by consumers for non-commercial use,
  - 12 months starting from the date of purchase made by company for a commercial use.
- c) In case the product appears to be faulty Arcade Bee hereinafter called Arcade Bee, will organize repair in order to restore the functionality of the product.
- d) If any defects due to faulty materials and / or workmanship appears during the warranty period Arcade Bee will arrange repair free of charge. Repair in the first place is organized through consultation by telephone or e- mail and sending spare parts to replace defective items. In case of replacement of parts / components the beginning of the warranty period for this part shall be the original date of purchase. Arcade Bee warranty covers only products used for their intended purpose according to the information published in the manual.
- e) Beneficiary of the warranty is not entitled to claim compensation of the lost benefits for the period in which the unit under warranty fails to operate properly. Arcade Bee is not responsible for any damage to property or person caused by improper use of the Arcade Bee products.
- f) Arcade Bee warranty does not apply in the following cases:
  - purchasing documents have been altered in any way or made illegible,
  - model and / or serial number ( if available) has been altered, removed or defaced,
  - repairs or modifications have been made without consulting Arcade Bee service department,
  - product is used contrary to its purpose,
  - damage is caused by improper use of the product or environmental conditions do not comply with the recommended operation,
  - damage is caused by improper connection of equipment ,additional equipment or accessories other than those recommended by Arcade Bee,
  - the damage was caused by an external force (including lightning, surges in the power supply, fire, natural disaster)or during transport,
  - the product is defective due to the decline in the quality of items that are subject to natural wear and tear or damage to the parts subject to natural scratching,
  - natural wear and tear of consumable parts or accessories such as lighting , gaskets , pucks, mallets, hammers or contacts,
  - defects or damage caused by accident, rollover, product's fall, mechanical damage caused by the users intentionally abusing physical force in the game,
  - defects and damage resulting from improper use of accessories to play,
  - defects or damage due to changes in the original form and/or function of the product specified in the product's manual - defects caused by incorrect connection , use, or storage of the product.
- g) Any defect should be reported in writing, or via e-mail sent to the Arcade Bee service department immediately, not later than seven days from the date of detection. Complaints made of non-compliance procedures and time limits set forth in this warranty will void the warranty and will not be considered.

- h) Removal of identified defects must be made within not more than 14 days from the date of notification to Arcade Bee service department. If it happens that due to the incorrect diagnose of failures problem remains unsolved, a 14-day period is counted again from the date of re-application.
- i) Parts removed as a part of warranty service remain the Arcade Bee property and beneficiary of the warranty is obliged to return them immediately (in person at the Arcade Bee premises or by sending by a courier at their own cost). Failure to return the exchanged part within 30 days of the dispatch of spare parts / repair will form the basis for the invoice in the sum of the equivalent of spare parts.
- j) For warranty repair shall be considered only repair of a defective product made in the warranty period and under the conditions of this warranty. Any other activities such as: maintenance, periodic inspection, adjustment, checking and cleaning of the product will not be treated as a warranty repair.
- k) Product is not under the warranty in case of:
- failure to report defects immediately upon discovery, but not later than seven days from the date of detection,
  - failure to follow product's manual in the operation, maintenance and adjustment of the product,
  - failure to comply with the mandatory terms of guarantee of the product,
  - any modification of the Product without the prior consent of the Arcade Bee.
- l) Arcade Bee has the right to refuse warranty service if the purchaser is in arrears with payments, regardless of their title, in particular default of payment for goods delivered by Arcade Bee to the Purchaser or service provided by Arcade Bee. In the case referred to in this section, Arcade Bee may refuse to perform any services under the guarantee and is exempt from liability to the purchaser under warranty.
- m) Only products purchased directly from Arcade Bee or its authorized dealers are under warranty. Further disposal of the product does not transfer rights under this warranty to a subsequent purchaser.