# Table of Contents

- **Manual Revision History** ........................................................................................................... 2
- **Basic Components** ....................................................................................................................... 3
- **Game Setup** ................................................................................................................................. 4
  - Game Play Sequence/Behavior ........................................................................................................ 4
  - Payouts and adjustments .................................................................................................................. 5
- **Programming Option** ................................................................................................................... 6
  - Programing Menu Tree .................................................................................................................... 6
- **Technical Operation** .................................................................................................................... 7
  - Ball Drop Operation ....................................................................................................................... 7
  - Wheel Location and Ball Scoring ..................................................................................................... 7
  - Ball Lift Operation ......................................................................................................................... 7
- **Main Electronic Components** ..................................................................................................... 8
  - Circuit Board Location .................................................................................................................... 8
- **Error Codes and Trouble Shooting Guide** .................................................................................... 12
  - E-1 .................................................................................................................................................. 12
  - E-2 .................................................................................................................................................. 12
  - E-3 .................................................................................................................................................. 13
  - E-4/E-11/E-13 ................................................................................................................................ 13
  - E-5 .................................................................................................................................................. 13
  - E-6 .................................................................................................................................................. 14
  - E-7 .................................................................................................................................................. 15
  - E-8 .................................................................................................................................................. 15
  - E-9 .................................................................................................................................................. 16
  - E-10/E-12 ....................................................................................................................................... 16
  - E-14-E-16 ....................................................................................................................................... 18
- **Board Pin Out Sheets** .................................................................................................................. 19
- **Game Components** ....................................................................................................................... 22
Manual Revision History

Revision A – Released to production 01/29/18
Revision B – Updated Programing chart 06/11/18
Revision C – Updated Wheel Options 07/23/18
Revision D – Updated Part Numbers and images 04/29/19
Basic Components:

- Header/Marquee
- Ball Drop Assembly
- Bonus/Credit Displays
- Ball Lift Belt
- Playfield Wheel
- Button/Coin Tower
- Ticket Door
Game Setup:

Unloading/Assembly:

Carefully remove packing material and unload machine from pallet.

Locate power cord shipped in bag in the cash box. Connect cord to power input on the game. Plug cord into the wall. Toggle power switch to power game on.

- Run through the ‘Programming Mode’ options and define your desired settings, like credits settings, sound volumes, etc. (See Programming Options Section for defaults and further instructions).

Game Play Sequence/Behavior

I. Power-Up Initialization Sequence
   a. Wheel begins spinning, displays and LED’s light up, and ball lift may run to fill the ball trough if it needs a ball or balls.

II. Attraction Mode:
   a. Various lights and sounds are triggered at a programmable frequency

III. Adding Money:
   a. “Coin-in” or “bill-in” sound is heard on speaker.
   b. When enough money is added to buy credit(s), the current credits value will be shown on the Credit display, and the game will enter Play-Mode

IV. Play Mode:
   a. Play sounds start
   b. Play buttons flash

V. Player Hits Button:
   a. Press the Stop Wheel button to slow and stop the wheel momentarily.
   b. Press the Drop Ball button and ball drops onto playfield
   c. Ball Lift begins to run to replenish played ball
   d. Ball lift stops when played balls are replenished in the ball trough

VI. Scoring/Payout
   a. Ball drops into hole on wheel
   b. Light and Sound celebration if Bonus is hit or standard win sound when other value is hit
   c. Game pays appropriate tickets
   d. If player has more credits, the machine will continue play mode, otherwise the game will go back into Attract-Mode.
Payout and Adjustment

*Note: Standard machine assumes 1 cent ticket value. Custom wheel values may be necessary if running anything different. We recommend running the machine at the default factory settings as a starting point.

Table 1 (Dollar Wheel)                                    Table 2 (25 Cent - Standard)

Table 3 (50 Cent)                                    Table 4
Programing Options:

To Enter Programming mode, you will need to locate the Power Distribution Board (see Main Electronic Components). There are 3 buttons labeled “Back”, “Program”, and “Next”.

1. Press the middle button or “Program” once to enter Program mode.
2. Navigate using the “Back” and “Next” buttons.
3. Press “Program” to select option. (See all options in Tree list on the next page)
Technical Operation:

Ball Drop Operation

When the ball is lifted to the Ball Drop Assembly it will roll down until it hits the ball alert switch indicating that a ball is ready to be played.

Once a credit is inserted and the Drop Ball Button has been pressed, the Solenoid is activated pulling the plunger up and away from the ball allowing it to roll down the Ball Chute and on the playfield. The plunger returns to its original state in time to block the next ball from falling.

Wheel Location and Ball Scoring:

The playfield wheel is driven by the Playfield Stepper Motor using a friction drive blue rubber wheel. Under the playfield wheel the is a pin that marks where the home position(Zero) is on the wheel. The pin will travel through the Home Sensor once per revolution. Each revolution the wheel is set to zero and work together with the step count of the Playfield Motor to determine the position of the wheel for scoring.

Once the ball is dropped to the playfield and falls through the whole it is sensed by a pair of optics a Transmitter board and a Receiver board. When the signal between them is blocked by the falling ball the game will pay out the value it landed in. Since the computer knows where the pin in the wheel is relative to each hole position and it knows how many motor steps from home to each hole, we know exactly which hole the ball fell through allowing a payout accurately corresponding to the hole position.

Ball Lift Operation

The Ball Lift motor (a stepper motor) is connected to the large Ball Lift Belt via a small urethane belt. The Ball Lift motor will only run after the ball has been released from the Ball Drop Assembly at the top of the game. The Ball sits on the Ball Alert Switch to stop the motor. Once the Switch is released the motor will begin to rotate to replenish the missing ball.
Main Electronic Components

Circuit Board Location

Located in the lower cabinet on the left-hand side.
Main CPU Board
Part Number: 166PCB001
Location: In lower cabinet on the left.
ID Switch Setting: 0100(Off, On, Off, Off)

This board is the main controller of the game. It decides all the game actions and commands the other boards to act according to the game scheme.

Quad Stepper Controller Board
Part Number: PCB00068
Location: In lower cabinet on the left.
ID Switch Setting: 0000(All Off)

This Stepper-motor controller board handles the movements of the wheel motor and the ball lift motor inside the game.

LED RGB Controller Board
Part Number: PCB00086
Location: In lower cabinet on the right.
ID Switch Setting: 0000(All Off)

The Light Board run the lights behind the ball drop section, as well as the lights on the sides.
Power Distribution Board

Part Number: PCB00032
Location: In lower cabinet on the left.
ID Switch Setting: None

This board sends power to the main board, light board, quad board, and lights.

Coins in/ Tickets out Meter

Part Number: 500ASM024
Location: In lower cabinet on the floor on the game.

These meters measure the Coins entered the machine and how many Tickets have been paid out.
**Bonus 4 Digit Display**

Part Number: PCB00120  
Location: On the back wall on the top right. Above the credit display.  
ID Switch Setting: 0000 (All Off)

This display shows the value of the bonus to be won when ball lands on the Fireball Bonus hole.

---

**Credit/Ball Count 2 Digit Display**

Part Number: PCB00003  
Location: On the back wall on the top right. Below the Bonus display.  
ID Switch Setting: 1000 (On, Off, Off, Off)

This displays the number or credit or plays the machine has accumulated by inserting coins/tokens.

---

**Triple Ticket Dispenser**

Part Number: 112ASM001  
Located: In lower cabinet on the white plastic bezel.  
ID Switch Setting: 0000 (Off, Off, Off, Off)

This mechanism dispenses tickets. The triple ticket dispenser keeps game earnings high and down time low.
Scoring Opto Receiver

Part Number: PCB00025
Location: Under the playfield wheel toward the back of the game.
ID Switch Setting: N/A

These receiver boards look for the opposite transmitter and send a signal to score the ball as it passes through.

Scoring Opto Transmitter

Part Number: PCB00029
Location: Under the playfield wheel toward the back of the game.
ID Switch Setting: N/A

These transmitter boards send a steady beam for the opposite receiver to read.

Home Opto Sensor

Part Number: PCB00077
Location: Under the playfield wheel toward the front right of the game.
ID Switch Setting: N/A

This board reads the small pin located under the playfield wheel. Once the pin passes it signals the main board of the zero position.
Error Code and Troubleshooting Guide

When the game registers an error, the game will start a self-diagnosis to clear any errors found. If the Error could not be self-resolved please review trouble shooting guides below.

E-1: General RS485 Communication Error

This error occurs when the 485-communication chain has been disrupted.

Troubleshooting:

Check the 2 Pin 485 plug coming out of the Main board.

1. Check that there are no cold solder joints.
2. Plug is not missing.
3. Check that the Blue and Gray wires are connected and seated properly.

Check the 2 Pin plug going into the Quad Stepper Board.

1. Check that there are no cold solder joints.
2. Plug is not missing.
3. Check that the Blue and Gray wires are connected and seated properly.

Check continuity on the Blue and Gray wires.

1. Set their volt meter to Ohms Ω.
2. Place prongs on both end one gray wire. You should have 0 Ohms Ω.
3. Repeat step 2 for blue wire.

Check continuity between the blue and gray wires.

1. Set their volt meter to Ohms Ω.
2. Place one prong on Blue end and the other on Gray. You should have 0 Ohms Ω.

E-2: Ball Lift Jammed

This error occurs when balls have become stuck or motor has stopped running.

Troubleshooting:

Check that the balls have been loaded into machine.

Check for physical jam.

1. In lower Ball Catch assembly.
2. On Ball Lift Belt.
3. On the top Ball Drop assembly.

Check Components.

1. Check the Ball Alert Switch is working properly and sending the right signal.
2. Check the Quad Stepper Board is receiving the signal.
3. Check motor for physical damage.
**E-3: Game is Out of Tickets**

This error occurs when Ticket Disperser does not sense the tickets.

**Troubleshooting:**

Check ticket bins have tickets and are loaded onto the ticket dispenser.

*For Triple Ticket Dispenser trouble shooting please see page (Enter Page number)*

**E-4/E-11/E-13: Quad Stepper Communication Error/Wheel Stepper Communication error**

This error occurs when the Quad stepper controller board is not communication with the Main board.

**Troubleshooting:**

Check the 2 Pin plug going into the Quad Stepper Board.

1. Check that there are no cold solder joints.
2. Plug is not missing.
3. Check that the Blue and Gray wires are connected and seated properly.

Check continuity on the Blue and Gray wires.

1. Set their volt meter to Ohms $\Omega$.
2. Place prongs on both end one gray wire. You should have 0 Ohms $\Omega$.
3. Repeat step 2 for blue wire.

Check continuity between the blue and gray wires.

1. Set their volt meter to Ohms $\Omega$.
2. Place one prong on Blue end and the other on Gray. You should have 0 Ohms $\Omega$.

Check Power is going to board

1. On the board there are 2 lights.
   a. The VCC light. Should be on solid.
   b. The CPU light. Should be blinking.
2. On the J3 Connector check your voltage.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the yellow power wire.
   c. Put the Black Probe onto any ground/common black wire on the game.

Check for any physical damage on board and harness.

**E-5: Bonus Display Communication Error**

This error occurs when the 4-digit display is not communicating with the Main board.

**Troubleshooting:**

Check the plug going into the 4-digit Bonus Display Board.

1. Check that there are no cold solder joints.
2. Plug is not missing.
3. Check that the Blue and Gray wires are connected and seated properly.
Check continuity on the Blue and Gray wires.

1. Set their volt meter to Ohms $\Omega$.
2. Place prongs on both end one gray wire. You should have 0 Ohms $\Omega$.
3. Repeat step 2 for blue wire.

Check continuity between the blue and gray wires.

1. Set their volt meter to Ohms $\Omega$.
2. Place one prong on Blue end and the other on Gray. You should have 0 Ohms $\Omega$.

Check Power is going to board

1. On the board there are 2 lights.
   a. The VCC light. Should be on solid.
   b. The CPU light. Should be blinking.
2. On the J3 Connector check your voltage.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the yellow power wire.
   c. Put the Black Probe onto any ground/common black wire on the game.

Check for any physical damage on board.

**E-6: Credit Display Communication Error**

This error occurs when the 2-digit display is not communicating with the Main board.

**Troubleshooting:**

Check the plug going into the 2-digit Credit Display Board.

1. Check that there are no cold solder joints.
2. Plug is not missing.
3. Check that the Blue and the Gray wires are connected and seated properly.

Check continuity on the Blue and Gray wires.

1. Set their volt meter to Ohms $\Omega$.
2. Place prongs on both end one gray wire. You should have 0 Ohms $\Omega$.
3. Repeat step 2 for blue wire.

Check continuity between the blue and gray wires.

1. Set their volt meter to Ohms $\Omega$.
2. Place one prong on Blue end and the other on Gray. You should have 0 Ohms $\Omega$.

Check Power is going to board

1. On the board there are 2 lights.
   a. The VCC light. Should be on solid.
   b. The CPU light. Should be blinking.
2. On the J3 Connector check your voltage.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the yellow power wire.
   c. Put the Black Probe onto any ground/common black wire on the game.
E-7: LED RGB Communication Error.

This error occurs when the LED RGB light board not communicating with the Main board.

Troubleshooting:

Check the plug going into the LED RGB Light Board.

1. Check that there are no cold solder joints.
2. Plug is not missing.
3. Check that the Blue and Gray wires are connected and seated properly.

Check continuity on the Blue and Gray wires.

1. Set their volt meter to Ohms $\Omega$.
2. Place prongs on both end one gray wire. You should have 0 Ohms $\Omega$.
3. Repeat step 2 for blue wire.

Check continuity between the blue and gray wires.

1. Set their volt meter to Ohms $\Omega$.
2. Place one prong on Blue end and the other on Gray. You should have 0 Ohms $\Omega$.

Check Power is going to board

1. On the board there are 2 lights.
   a. The VCC light. Should be on solid.
   b. The CPU light. Should be blinking.
2. On the J6 Connector check your voltage.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the yellow power wire.
   c. Put the Black Probe onto any ground/common black wire on the game.

E-8: SD-Card Read

This error occurs if the Main board cannot find the SD card or files have been corrupted.

Troubleshooting:

Take SD Card out and reseat.

Take SD Card out and open with a computer and check for corrupt files.

Check Power is going to board

1. On the board there are 2 lights.
   a. The 3.3V light. Should be on solid.
   b. The CPU light. Should be blinking.
2. On the J1 Connector check your voltage.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the yellow power wire.
   c. Put the Black Probe onto any ground/common black wire on the game.

Check for any physical damage on board.
E-9: EEPROM R/W Failure

Troubleshooting:

Check Power is going to board

1. On the Main board there are 2 lights.
   a. The 3.3V light. Should be on solid.
   b. The CPU light. Should be blinking.

2. On the J1 Connector check your voltage.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the yellow power wire.
   c. Put the Black Probe onto any ground/common black wire on the game.

Check for any physical damage on board.

E-10/ E-12: Wheel Home Position Error

Troubleshooting:

Check Power is going to board

1. On the board there are 2 lights.
   a. The VCC light. Should be on solid.
   b. The sensor light should blink when obstructed.

2. On the Connector check your voltage.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the yellow power wire.
   c. Put the Black Probe onto any ground/common black wire on the game.

3. Check Signal Wire
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the signal wire.
   c. Put the Black Probe onto any ground/common black wire on the game.
   d. You should read a steady 5V.
   e. When sensor is obstructed the voltage should drop to 0V
   f. If nothing replace sensor.

4. Check Signal at the Quad Stepper.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the signal wire (same as on sensor board).
   c. Put the Black Probe onto any ground/common black wire on the game.
   d. You should read a steady 5V.
   e. When sensor is obstructed the voltage should drop to 0V
   f. If nothing, check the signal wire for continuity, break, loose connection.

Check for any physical damage on board.
**E-14 - E-16: Main Board Software Errors**

This error occurs when internal checks in board report fault.

**Troubleshooting:**

Check Power is going to board

1. On the Main board there are 2 lights.
   a. The 3.3V light. Should be on solid.
   b. The CPU light. Should be blinking.
2. On the J1 Connector check your voltage.
   a. Set your volt meter to V (DC) for voltage.
   b. Put the Red Probe onto the yellow power wire.
   c. Put the Black Probe onto any ground/common black wire on the game.

**Reset Game**

1. Start first with turning the game off *(leave off for about 10 seconds)* and on again.
2. Enter programing
3. Select Exit
4. Choose “Restore Game Default” *(Note: this will set all setting back to factory standards. You will need to reset your setting after restarting game)*

**Customer Service:**

If any errors persist or you would like to order any parts, please contact our Customer Service team. We are open Monday - Friday form 9:00am to 5:00pm EST. You can reach any of our team members by calling us at (561)253-3311.
## Board Pin Out Sheets

### Main Board:

<table>
<thead>
<tr>
<th>Connector</th>
<th>Pin #</th>
<th>Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>J3</td>
<td>1</td>
<td>OUTPUT</td>
<td>Ticket Enable</td>
</tr>
<tr>
<td>J3</td>
<td>2</td>
<td>OUTPUT</td>
<td>Ticket Run</td>
</tr>
<tr>
<td>J3</td>
<td>3</td>
<td>OUTPUT</td>
<td>Ball Drop Solenoid</td>
</tr>
<tr>
<td>J3</td>
<td>4</td>
<td>OUTPUT</td>
<td>Inside cabinet Lights</td>
</tr>
<tr>
<td>J3</td>
<td>5</td>
<td>OUTPUT</td>
<td>Black Lights</td>
</tr>
<tr>
<td>J3</td>
<td>6</td>
<td>OUTPUT</td>
<td>Playfield Lights</td>
</tr>
<tr>
<td>J3</td>
<td>7</td>
<td>OUTPUT</td>
<td>Marquee</td>
</tr>
<tr>
<td>J3</td>
<td>8</td>
<td>OUTPUT</td>
<td>Ball Drop Solenoid Bottom</td>
</tr>
<tr>
<td>J3</td>
<td>9</td>
<td>OUTPUT</td>
<td>Hard Meter (Tickets)</td>
</tr>
<tr>
<td>J3</td>
<td>10</td>
<td>Not used</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>1</td>
<td>12V</td>
<td>Hard Meter (Credit)</td>
</tr>
<tr>
<td>J5</td>
<td>2</td>
<td>OUTPUT</td>
<td>Hard Meter (Credit)</td>
</tr>
<tr>
<td>J5</td>
<td>3</td>
<td>OUTPUT</td>
<td>Wheel Stop Button LED</td>
</tr>
<tr>
<td>J5</td>
<td>4</td>
<td>OUTPUT</td>
<td>Credit Indicator LED</td>
</tr>
<tr>
<td>J5</td>
<td>5</td>
<td>OUTPUT</td>
<td>Ball Drop Switch LED</td>
</tr>
<tr>
<td>J5</td>
<td>6</td>
<td>OUTPUT</td>
<td>Bonus Indicator LED</td>
</tr>
<tr>
<td>J5</td>
<td>7</td>
<td>OUTPUT</td>
<td>Bonus Indicator LED</td>
</tr>
<tr>
<td>J5</td>
<td>8</td>
<td>OUTPUT</td>
<td>Tickets indicator LED</td>
</tr>
<tr>
<td>J5</td>
<td>9</td>
<td>OUTPUT</td>
<td>Coin Enable</td>
</tr>
<tr>
<td>J5</td>
<td>10</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>11</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>12</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>13</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>14</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>15</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>16</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>17</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>18</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>19</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>20</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>21</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>22</td>
<td>OUTPUT</td>
<td></td>
</tr>
<tr>
<td>J4</td>
<td>1</td>
<td>INPUTS</td>
<td>Ticket Notch Signal</td>
</tr>
<tr>
<td>J4</td>
<td>2</td>
<td>INPUTS</td>
<td>Credit / Menu UP sw.</td>
</tr>
<tr>
<td>J4</td>
<td>3</td>
<td>INPUTS</td>
<td>Ball Drop switch</td>
</tr>
<tr>
<td>J4</td>
<td>4</td>
<td>INPUTS</td>
<td>Ball Lift (ball ready sensor)</td>
</tr>
<tr>
<td>J4</td>
<td>5</td>
<td>INPUTS</td>
<td>External row, Wheel Score Sensor</td>
</tr>
<tr>
<td>Connector</td>
<td>Pin #</td>
<td>Type</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
<td>--------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>J4</td>
<td>6</td>
<td>INPUTS</td>
<td>Internal row, Wheel Score Sensor</td>
</tr>
<tr>
<td>J4</td>
<td>7</td>
<td>INPUTS</td>
<td>Player Sw.2/Menu Down sw.</td>
</tr>
<tr>
<td>J4</td>
<td>8</td>
<td>INPUTS</td>
<td>Menu / Enter switch</td>
</tr>
<tr>
<td>J1</td>
<td>1</td>
<td>GROUND</td>
<td>12V Negative</td>
</tr>
<tr>
<td>J1</td>
<td>2</td>
<td>GROUND</td>
<td>12V Negative</td>
</tr>
<tr>
<td>J1</td>
<td>3</td>
<td>12V+</td>
<td>12V Positive</td>
</tr>
<tr>
<td>J1</td>
<td>4</td>
<td>12V+</td>
<td>12V Positive</td>
</tr>
<tr>
<td>J2</td>
<td>1</td>
<td>Speaker -</td>
<td>Speaker Negative</td>
</tr>
<tr>
<td>J2</td>
<td>2</td>
<td>GROUND</td>
<td>Ground</td>
</tr>
<tr>
<td>J2</td>
<td>3</td>
<td>Speaker +</td>
<td>Speaker Positive</td>
</tr>
<tr>
<td>485</td>
<td>1</td>
<td>RS485 A</td>
<td>Serial COM Port</td>
</tr>
<tr>
<td>485</td>
<td>2</td>
<td>RS485 B</td>
<td>Serial COM Port</td>
</tr>
</tbody>
</table>

**RGB LED Light Controller Board:**

<table>
<thead>
<tr>
<th>Connector</th>
<th>Pin #</th>
<th>Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>J5</td>
<td>1</td>
<td>12V</td>
<td>12V Positive</td>
</tr>
<tr>
<td>J5</td>
<td>2</td>
<td>GND</td>
<td>12V Negative</td>
</tr>
<tr>
<td>J5</td>
<td>3</td>
<td>SYNC</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>4</td>
<td>RS485 A</td>
<td>Serial COM Port</td>
</tr>
<tr>
<td>J5</td>
<td>5</td>
<td>12V</td>
<td>12V Positive</td>
</tr>
<tr>
<td>J5</td>
<td>6</td>
<td>GND</td>
<td>12V Negative</td>
</tr>
<tr>
<td>J5</td>
<td>7</td>
<td>N/C</td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>8</td>
<td>RS485 B</td>
<td>Serial COM Port</td>
</tr>
<tr>
<td>J1</td>
<td>1</td>
<td>DATA</td>
<td>Left Side (Length 18)</td>
</tr>
<tr>
<td>J1</td>
<td>2</td>
<td>GND</td>
<td>Left Side</td>
</tr>
<tr>
<td>J1</td>
<td>3</td>
<td>12V</td>
<td>Left Side</td>
</tr>
<tr>
<td>J2</td>
<td>1</td>
<td>DATA</td>
<td>Right Side (Length 18)</td>
</tr>
<tr>
<td>J2</td>
<td>2</td>
<td>GND</td>
<td>Right Side</td>
</tr>
<tr>
<td>J2</td>
<td>3</td>
<td>12V</td>
<td>Right Side</td>
</tr>
<tr>
<td>J3</td>
<td>1</td>
<td>DATA</td>
<td>Ball Drop (Length 7)</td>
</tr>
<tr>
<td>J3</td>
<td>2</td>
<td>GND</td>
<td>Ball Drop</td>
</tr>
<tr>
<td>J3</td>
<td>3</td>
<td>12V</td>
<td>Ball Drop</td>
</tr>
<tr>
<td>J4</td>
<td>1</td>
<td>DATA</td>
<td>Console (Length 4)</td>
</tr>
<tr>
<td>J4</td>
<td>2</td>
<td>GND</td>
<td>Console</td>
</tr>
<tr>
<td>J4</td>
<td>3</td>
<td>12V</td>
<td>Console</td>
</tr>
</tbody>
</table>
Quad Stepper Controller Board:

<table>
<thead>
<tr>
<th>Connector</th>
<th>Pin #</th>
<th>Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1</td>
<td>1</td>
<td>M1-A</td>
<td>Wheel (blue)</td>
</tr>
<tr>
<td>J1</td>
<td>2</td>
<td>M1-A</td>
<td>Wheel (green)</td>
</tr>
<tr>
<td>J1</td>
<td>3</td>
<td>M2-A</td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>4</td>
<td>M2-A</td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>5</td>
<td>M3-A</td>
<td>Ball Lift (blue)</td>
</tr>
<tr>
<td>J1</td>
<td>6</td>
<td>M3-A</td>
<td>Ball Lift (green)</td>
</tr>
<tr>
<td>J1</td>
<td>7</td>
<td>M4-A</td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>8</td>
<td>M4-A</td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>9</td>
<td>M1-B</td>
<td>Wheel (pink)</td>
</tr>
<tr>
<td>J1</td>
<td>10</td>
<td>M1-B</td>
<td>Wheel (black)</td>
</tr>
<tr>
<td>J1</td>
<td>11</td>
<td>M2-B</td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>12</td>
<td>M2-B</td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>13</td>
<td>M3-B</td>
<td>Ball Lift (pink)</td>
</tr>
<tr>
<td>J1</td>
<td>14</td>
<td>M3-B</td>
<td>Ball Lift (black)</td>
</tr>
<tr>
<td>J1</td>
<td>15</td>
<td>M4-B</td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>16</td>
<td>M4-B</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>1</td>
<td>Inputs</td>
<td>Home</td>
</tr>
<tr>
<td>J2</td>
<td>2</td>
<td>Inputs</td>
<td>Outer Row Score</td>
</tr>
<tr>
<td>J2</td>
<td>3</td>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>4</td>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>5</td>
<td>Inputs</td>
<td>Inner Row Score</td>
</tr>
<tr>
<td>J2</td>
<td>6</td>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>7</td>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>8</td>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>9</td>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>10</td>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>11</td>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>J3</td>
<td>1</td>
<td>GND</td>
<td>12V Negative</td>
</tr>
<tr>
<td>J3</td>
<td>2</td>
<td>GND</td>
<td>12V Negative</td>
</tr>
<tr>
<td>J3</td>
<td>3</td>
<td>12V</td>
<td>12V Positive</td>
</tr>
<tr>
<td>J3</td>
<td>4</td>
<td>12V</td>
<td>12V Positive</td>
</tr>
<tr>
<td>485</td>
<td>1</td>
<td>RS485 A</td>
<td>Serial COM Port</td>
</tr>
<tr>
<td>485</td>
<td>2</td>
<td>RS485 A</td>
<td>Serial COM Port</td>
</tr>
<tr>
<td>485</td>
<td>3</td>
<td>RS485 B</td>
<td>Serial COM Port</td>
</tr>
<tr>
<td>485</td>
<td>4</td>
<td>RS485 B</td>
<td>Serial COM Port</td>
</tr>
</tbody>
</table>
Game Components:

Balls
Part Number: 115BLL001
Description: This game requires 7 balls at any given time. 
Note: We recommend changing the balls every 6-9 months, depending on game usage.

Drive Belt
Part Number: BLT10011
Description: Small Belt located in the back of the cabinet. Attaches the Ball Lift motor to the pulley system.

Ball Lift Belt Assembly
Part Number: 115ASM017
Description: Elevator belt that carries ball from under the cabinet to the top of the game.
Blue Roller for Motor

Part Number: GEN00169
Description: Rubber roller that sits on the playfield motor and spins the large playfield wheel.

Roller Bearing Assembly for Wheel

Part Number: 115ASM016
Description: Roller bearing assembly that the playfield wheel rides on.

Playfield Motor Assembly

Part Number: 500ASM127
Description: This motor spins the playfield wheel for game play.

Ball Lift Motor Assembly

Part Number: TBA
Description: This motor spins the small belt that attaches to the Ball Lift Belt that takes the balls all the way up the game.