

SKEE BALL Extreme
Assembly and Operation
Manual 990070 (E)

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I. INTRODUCTION

Congratulations! You have purchased Skee-Ball Extreme, the most popular and exciting alley game available in the world. Inside this manual, you will learn about the many features of this product including the wide variety of programming capabilities for redemption and game play.

A. WARNINGS

Read this manual thoroughly before assembling your game. Failure to follow the instructions could cause damage to your game and void your warranty. In addition, the manual explains the game in detail and the options you have so that you and your players can enjoy the game to its fullest.

1. The power cord must be plugged into a grounded, three-prong outlet. Failure to do so could cause permanent injury or game damage.
2. This game is suitable for indoor use only. The game should not be installed outdoors or in areas directly exposed to sunlight, high humidity, direct water contact, dust, high heat or extreme cold. Installation in any such environment shall void the warranty.
3. Replacement of fuses, lamps and any other servicing on the product shall be conducted by trained personnel.

B. SPECIFICATIONS

Height	72"
Width	30"
Length	120"
Weight	390 lbs Uncrated 510 lbs Crated
Power	Maximum: 110 volts, 562 Watts 3.00 Amps Average: 110 Volts, 158 Watts 1.12 Amps
Power Supply	5 Amp Fast-Blo Little Fuse #218-005

II. FUNCTIONAL DESCRIPTION

A. MAJOR GAME COMPONENTS

1. Back Cabinet Assembly - This portion of the game houses all of the electronics and score target.
2. Runway Assembly - This assembly houses the ticket dispenser, coin acceptor mechanism, game instructions and the alley carpet.
3. Target Board Assembly - This part of the game is removable and holds the score sensors.
4. Scoreboard Display Glass - Located above the target board and secured in place with a metal clip on top of the cabinet. It can be removed to gain access to the controller, display, lamps & power supply. You do this by loosening the clip on top and lifting the panel upward a few inches (using 2 handles at lower left and right sides) and then pull the panel down and towards you.
5. Display - Located behind display panel. This LED display shows score on the 3 left digits and number of balls played on the right digit.
6. Controller Assembly - This assembly controls all game functions. It is programmable through the use of the **AUX1**, **AUX2**, and **RESET** buttons.
7. Power Supply - Located on the shelf above the controller assembly. The on/off switch is located on the front right side of the supply.
8. Score Sensor - Located on the back of the Target Board and in the right side channel for the Ball Count and Ball Release sensors. It is an Omron opto sensor (part #EE-SPY415). This part is used for all score pockets, ball count and the ball release areas.
9. Fluorescent Lamp - One is mounted to the back of the ceiling of the Back Cabinet and backlights the display glass. Another is mounted on the shelf to illuminate the Target Board. The bulb part # is F20T12/CW and the fixture uses an FS22 starter.
10. Ball Release Assembly - Located under the right side channel cover and secured with 4 phillips head wood screws. It has a solenoid connected by a link to a release arm. Upon start of the game the solenoid engages and allows the balls to roll down to the player. A sensor is mounted to a bracket next to the release arm which counts the balls as they roll down according to how many the game is programmed for. After counting the appropriate amount, the solenoid disengages due to pressure applied by a spring to stop balls in play. Example: The game is set for 9 balls of play but you only have 5 balls loaded into the game. The solenoid will remain engaged until the sensor detects 9 balls and will then immediately disengage.
11. Ball Release Sensor - Located on a bracket next to the Ball Release assembly. This sensor counts the number of balls that have been released to the player.

12. Ball Count Sensor - Located in the right side ball return channel and mounted to the rear bulkhead of the alley. It counts the balls as they are played. Main function is to count balls that are not thrown into the score holes and it decides the game end when number of balls is returned.
13. Speaker - Located on the shelf above the Target Board inside the Back Cabinet assembly. Volume is controlled via software and can be accessed according to the *Option* setup section of this manual.
14. Score Panel Protective Cage - There are 3 different panels fabricated out of powder coated wire. These are fastened to the back cabinet assembly and protect the Target Board from players trying to cheat by dropping balls into the score track (vs. rolling the balls).
15. Ticket Dispenser - Located on the left front side of the game and is accessed using key to open the front door. You may also access the ticket bin by removing the left front channel cover. The bin can hold 4000 tickets and it employs the use of a switch connected to a red LED. to alert the attendant that the machine will require re-loading.
16. Coin Mechanism - Located on the front right hand side of the game. Houses the mechanism for accepting coins according of the preferred denomination. The number of coins required to receive a credit is programmable. The coin box is located directly underneath the coin door.
17. Reset (Program) Button - Located under the Ticket Bin Access Cover along with the coin and ticket meters. Pushing this button enables the operator to access software used for testing the game and reprogramming the playing options. It is also used as the enter key during programming.
18. AUX1 - Allows forward movement **within** the various options. If it is pressed and released at the same time as the AUX2 button it will allow you to exit from the programming mode at any time.
19. AUX2 - Allows forward movement **through** the various options.

B. OPERATOR CONTROLS

1. Power Button - The main power on/off switch is located on the right side of the power supply inside of the back cabinet assembly.
2. Reset Button - Located under the ticket bin access cover on the coin and ticket meter bracket. Pushing this button enables the operator to access software used for testing and making adjustments to the game (see "*TESTS and OPTIONS*").
3. Free Credit - The game software has the ability to give free credits other than setting the game for free play. To issue free credits push the **AUX1** and **AUX2** buttons simultaneously. The display will ask you the number of credits you wish to give from 1-99. The **AUX1** increments the total number of free credits while the **AUX2** button allows you to decrement the number.
4. AUX 1 - Allows *forward* movement through the various options. It also allows you to view the last game score if depressed at the end of the game.
5. AUX 2 - Allows *reverse* movement through the various options. It will display the number of tickets given for the last game if depressed at the end of a game.
6. Volume - The volume is controlled by changing the stored setting in the option table.

III. ASSEMBLY INSTRUCTIONS

A. PRE-ASSEMBLY

1. Remove all parts from the shipping boxes and inspect for any possible damage during handling. Use the following list to inventory the items. If any part (s) are missing, call your salesperson immediately. If shipping damage is noted, call the trucking company making the delivery.
2. Shipping Parts Inventory
 - 1 - Back Cabinet
 - 1 - Runway
 - 2 - Side Cages (left and right side)
 - 1 - Front Cage
 - 5 - Skee Ball balls (fewer balls are required because of the single ball release assembly)
 - 1 - Coin box
 - 1 - Ticket Bin with low ticket indicator switch (attached)
 - 6 - Leveling glides
 - 14- #8-32 buttonhead machine screw (for side cage)
 - 14- black decorative washers
 - 2 - 1/4-20 mounting bolts and washers (to secure back cabinet to runway)

Note: Runways and back cabinets do not need to be matched sets.

B. ASSEMBLY

1. Install four leveling glides to the bottom of the back cabinet assembly through the pre-drilled holes and screw them all the way in.
2. Install the two remaining leveling glides to the bottom of the runway in the pre-drilled holes located at the end of the runway closest to the back cabinet.

The leveling glides may need adjustment after bolting the 2 main assemblies together if the unit is not level.

3. Locate the front and side cage parts which come packed in a separate box. The cage assembly consists of three different parts: left, right and front. When positioning the cage parts, *the angle brackets point toward the center of the game*. Each side of the back cabinet has a recessed area where the right and left cages are placed. Affix each side cage using (5) #8-32 buttonhead screws and washers. The front cage sits on top of the right and left sides by aligning the pre-drilled holes. Use the remaining four #8-32 buttonhead screws and washers to attach the front cage.
4. Place the back cabinet and the runway in their approximate final position leaving a 12" gap in between them so that the cables can be plugged in.

Carefully cut the cable tie at the bottom of the rear cabinet which holds the cables during shipment. Route the cables behind the No Score Floor and to the bottom floor of the rear cabinet. Connect the five junction plugs. They are as follows: (P1)15 pin, (P11)4 pin, (Solenoid) 3 pin, (P17)9 pin, and (GND)1 pin.

5. Slide the runway up against the back cabinet being careful not to crimp the cables between the two assemblies. Align the pre-drilled holes in the runway and back cabinet using the leveling guides, and secure them together from the cabinet side (above black no-score floor) using the 1/4-20 x 2" Hex bolts and washers through cabinet into runway T-Nut.
6. Unlock and remove the ticket bin access cover at the left front side of the game. Connect the wire harness for the ticket low indicator switch, which is mounted to the ticket bin, to the receptacle under the slot. Place the ticket bin into the slot with the switch toward the rear of the game.
7. Unpack the coin box and place it in position under the coin mechanism.
8. Remove the display glass and check all lamps to be certain they have not come loose in shipment.
9. Install 5 balls (maximum of 6 balls) in the alley.
10. Plug the AC cord into a known good 120VAC power source. If the game does not light, check the on/off switch on the power supply. The game is now ready to play or program.

IV. GAME PLAY

Skee-Ball Extreme is designed to be universal by offering an extensive array of programming capabilities in hopes that you, the game operator, will have specific settings regarding tickets, coins, number of balls, etc. available for your location.

A. TEST

Prior to leaving your game for open play, be sure to test the game, to ensure proper operation. See "Hardware Tests".

B. OPTIONS

The game may be programmed according to the specific location desires and any particular circumstances. See "Game Options".

C. COINS

1. Insert coin(s). (Not necessary if the game is set for free play. See "Game Options - Free Play"). It is also not necessary if free credits have been inserted. See "Free Credits" under operator controls.
2. The number of coins required for one credit is adjustable. See "Game Options - Coins Per Credit".

D. GAME PLAY

The object is to score as many points as possible with the number of balls given by rolling them up the alley and into the target area skillfully landing them into the holes marked with the highest value. The number of balls allowed is adjustable. See "Game Options - Game Play". After the number of balls is released, the solenoid disengages and traps the balls thrown.

E. SCORING

Balls successfully thrown into any hole will score the number of points labeled on each hole. When the ball enters the hole it is detected by an opto light emitting diode and receiver (Omron EE-SPY415) which is transmitted back to the main controller. The score is then displayed. The value for each score slot is adjustable. See "Game Options - Game Play/Set Target".

F. END OF GAME

1. At the end of the game, the display will show the final score total and go back into the attract mode until additional coins are inserted.
2. As an added convenience at end of game, the software allows the operator to view the last game statistics including game score and ticket payout. To view, remove the ticket access cover and push the **AUX1** button to view score. To view payout of tickets during the last game push **AUX2** button. To return to the attract mode, push **RESET**.

G. CREDITS

The game accepts money at any time. At the end of the game, if there are any credits remaining, at the end of the game, the final score will be displayed and the balls will release to the player automatically beginning the next game.

H. TICKETS

1. The game will dispense tickets to the player according to the many different operator adjustable options. See “Game Options - Payout”.
2. In the event the game is out of tickets or a malfunction occurs, the display will inform the player “*CALL.*” The attendant must correct the malfunction or reload the tickets and press the **AUX1** button. Tickets owed to the player will be displayed and pressing the **RESET** button will dispense that amount and return the game to the attract mode. If the player has walked away, you may elect to press the **RESET** button twice after correcting the problem to clear ticket error without having to dispense the tickets owed. If the ticket alarm feature is disabled, the game simply continues as if tickets were not to be dispensed. See “Game Options - Payout/Ticket Alarm”.

V. OPTIONS AND TESTS

The *Program Mode* is used to change options and to run the hardware tests. To enter *Program Mode* press the button labeled “**RESET**” located behind the ticket door channel cover. The display will read **xxx**, which is the checksum of the software. Pressing “**AUX1** and **AUX2**” both together at the same time will exit the test mode.

VI. OPTIONS

Programmable Options

Pressing the **RESET** button will display the EPROM Check Sum #. Pressing the **AUX2** button will bring you into the menu mode(*unless you are in a ticket fault condition*). ***In the program mode you can change the settings for each option.***

The following describes how the **RESET**, **AUX1** and **AUX2** buttons are used to change or view the current game settings. These 3 buttons are located on the left side of the game underneath the channel cover in front of the ticket tray. The rightmost digit displays the current option step, the other digits display the value of the current setting.

NOTE! *The rightmost digit displays the current step/option. After you pass F it will display 0 again, but you will actually be on step/option 20.*

BUTTON

FUNCTION

RESET/MENU:	<ol style="list-style-type: none">1. Enter the Program Mode.2. Enter the new setting during programming.
AUX1	<ol style="list-style-type: none">1. Moves you forward through the selections within an option.2. Used during diagnostic mode to toggle an output on or off.
AUX2	<ol style="list-style-type: none">1. Moves you from one option to the next. <i>Allows you to enter the programming section from option 0.</i>2. In Diagnostic mode, it cycles through the different tests.
AUX1 & AUX2:	When depressed twice at the same time, they will let you exit the programming mode or diagnostic mode.

OPTIONS - SELECTIONS WITHIN THE OPTION

- Option 0:** Select one of the following :
- 0 - Exit Program Mode and change nothing.
 - 1 - Load defaults and Exit.
 - 2 - Run Diagnostics.
- Option 1:** Turns the ticket dispenser on or off.
- 0 - Disable the Ticket Mech.
 - 1 - **Enable** the ticket dispenser. (**DEFAULT**)

Option 2: Sets the fixed amount of tickets at coinup.
0 - 9 (**DEFAULT = 1**)

Option 3: Set the maximum amount of tickets that can be won during a game. This
does not include jackpot tickets. This
0 - 99 (**DEFAULT = 99**)

Option 4: Sets the ticket multiplier. This determines the # of tickets that are paid out
every xx points after the **Winner Score** has been reached.
1-9 (**DEFAULT = 1**)

OPTIONS - SELECTIONS WITHIN THE OPTION

Option 5: Sets the **Winner Score**, this is the score at which the tickets start paying out.
10 - 950 (**DEFAULT = 60**)

Option 6: Sets the ticket span. This determines the # of additional points required
before the next payout after the **Winner Score** has been reached.
10-90 (**DEFAULT = 30**)

Option 7: Sets the amount of coins per game.
1-4 (**DEFAULT = 1**)

Option 8: Sets the number of balls per game.
1-9 (**DEFAULT = 9**)

Option 9: Set the last ball played time-out in seconds. How many seconds
between until the game automatically ends after a ball is thrown.
(WALK-AWAY RESET)
5 - 95 (**DEFAULT is 60**)

Option A: Sets the volume level for the attract song.
0 - 9 – 0 turns it off (**DEFAULT is 5**)

Option B: Sets the volume level for the game sounds.
0 - 9 – 0 turns it off (**DEFAULT is 5**)

Option C: Set the delay in minutes between attract song cycles.
1-9 (**DEFAULT =2**)

Option D: Determines if the Jackpot Sign is enabled.
0 -No Jackpot Sign. (**DEFAULT**)
1 - Jackpot Sign installed & enabled.

Option E: Sets the **Jackpot Score**, this is the score at which the tickets displayed in the Jackpot Sign are won.
400 - 900 (**DEFAULT = 450**)

Option F: Sets the **Midway Score**, this is the score at which the Bell & Beacon are turned on to indicate a Winner in a Midway or Portable application. It contains two sub-options. (bell time & win meter)

0 - 900 (**DEFAULT = 0**)

Sub Option 0 – Sets the time the bell will ring after a winning score.

1 – 9 seconds(**DEFAULT = 5**)

Sub Option 1 – Enables the Win meter. (disables the ticket meter)

0 – 1 (**DEFAULT = 1**)

NOTE! BECAUSE THERE IS ONLY ONE DIGIT TO DISPLAY THE STEP/OPTION, WE HAVE TO START OVER WITH 0 AGAIN.

Option 0: Sets the **Bonus Pocket Points**, this is the amount of points you receive when you roll a ball into the bonus pocket.

50 or 100 (**DEFAULT = 100**)

Option 1: Sets the **Free Game Score**, this is the score at which a free game is won.

NOTE! Only 1 free game can be won per credit/coin.

0 - 900 (**DEFAULT = 0**)

Hardware Tests

The rightmost digit(DS1) displays the test step for the first nine then DS2 is used for the rest of the remaining steps. The first 3 digits(for some tests) show the state of different switches in the game, 0 for open and 1 for closed. **To enter the diagnostics, press the reset button, then press the AUX1 button until the #2 appears on the left of the display, then press the RESET button.** Depressing the AUX1 and AUX2 button at the same time will exit you from the diagnostic mode. The AUX1 button is used to go from one test to another. The AUX2 button is used to turn the different outputs on & off while in the TEST mode.

SEVEN SEGMENT DISPLAY

* MEANS OPTIONAL

HUNDREDS DS4	TENS DS3	UNITS DS2	BALL CNT DS1	FUNCTION
10 pt pkt	20 pt pkt	30 pt pkt	0	Display the status of 0 = off & 1 = on
40 pt pkt	50 pt pkt	100 pt pkt	1	Display the status of 0 = off & 1 = on
TD Notch P6-7 / pc6	Jp-data	Jp-clk	2	Display the status of 0 = off & 1 = on
Ball cnt sensor	Ball release sensor	Start button	3	Display the status of 0 = off & 1 = on
TD Notch 0/1	Blank	Blank	4	Aux1 btn turns on the TD motor DS4 shows status of TD Notch
Ball Release 0/1	Ball count 0/1	Blank	5	Aux1 btn turns on the Solenoid DS4 Shows status of BR sensor DS3 shows status of BC sensor
Blank	Blank	Blank	6	Aux1 btn turns on the Coin counter
Blank	Blank	Blank	7	Aux1 btn turns on the Ticket counter
Blank	Blank	Blank	8	Aux1 btn tests audio out by playing a tune

SEVEN SEGMENT DISPLAY

*** MEANS OPTIONAL**

HUNDREDS DS4	TENS DS3	UNITS DS2	BALL CNT DS1	FUNCTION
Blank	Blank	Blank	9	Aux1 btn sends a coin pulse to the Bonus sign
Blank	Blank	1	0	Aux1 btn sends a jackpot pulse to Bonus sign
Blank	Blank	1	1	Aux1 btn sends a reset pulse to Bonus sign. <i>Sign takes about 10 seconds to indicate it's reset.</i>
Blank	Blank	1	2	Aux2 btn loops back to test 0. Aux1/Aux2 together exits.

VII. TICKET DISPENSER

A. Basic operation of ticket dispenser model DL1275S

When the control unit calls for a ticket to be issued, the motor in the dispenser is turned on. When a ticket is dispensed, the opto beam breaker senses a notch in the ticket and sends back a signal to the control unit. At this time the ticket counter is incremented. If no more tickets are called for the motor is turned off.

Tickets are moved through the ticket chute by means of a power driven roller which is spring loaded against an idler roller. The power driven roller is mounted on the output shaft of the motor gear train assembly. The motor assembly is mounted to the pivot bracket assembly in the two Oilite Bearings. The motor assembly has a limited free swing, limited by a single pin engaged in the brake sprag. The brake sprag engages the roller as an anti-theft device. With the free swing of the motor assembly, the direction of torque, when the electric power is applied, is in a direction so as to release the brake sprag. When an attempt is made to pull tickets from the machine with the power off, the torque is reversed and the brake sprag is engaged. Also, the pulling of tickets will cause the pivot bracket assembly to apply a pressure to the power driven roller against the ticket and idler roller greater than the pre-set spring load. This will cause the coarse knurled surface of the rollers to increase the grip on the tickets. One ounce of pull will apply 20 lbs. of pressure on the rollers.

B. Ticket Dispenser Components

1. Controller Board

Attached to the ticket machine is a transistor motor controller which provides dynamic braking to ensure accurate and repeatable ticket stopping after issuing any number of tickets. Included as part of the controller is ticket sensing by means of an Opto Beam Breaking Sensor. Also included is signal conditioning which provides high electrical noise immunity. The output of the ticket sensing circuitry is equivalent to a single pole double throw switch.

2. Roller Tension Spring

The roller tension spring keeps constant tension on the tickets, which insures proper delivery and prevents tickets from being pulled through when the dispenser is idle. To increase tension, loosen screw, move spring forward, and retighten screw. Tension is adjusted correctly when the tickets cannot be pulled from the dispenser.

3. Ticket Guide Spring

The ticket guide spring insures that the notches in the tickets pass through the Opto Beam Breaker Sensor. To increase tension, loosen screw, and move the outer spring up, and retighten screw. This changes the tension on the inner spring. Tickets should be snug between spring and side plate but not deformed by excess tension. This spring is adjusted at the factory for 1-3/16" wide tickets.

4. Ticket Stop Adjustment

The ticket stop adjustment allows positioning of tickets while machine is off. The ticket should protrude through slot approximately 1/16". The ticket dispenser PC board is mounted with two screws and two slotted holes. Loosening the screws and moving the board forward will allow the tickets to stop farther out beyond the edge of the slot.

C. Conditions Which Could Cause Ticket Error Code "CALL" To Be Displayed.

1. Dispenser out of tickets.
2. Insufficient tension on roller tension spring.
3. Tickets stopping back too far in slot causing tickets to jam.
4. Ticket guide spring not guiding tickets.
5. Dirt on opto beam breaker.
6. Missing notches on tickets.
7. Defective dispenser controller board or motor.

D. Loading of Tickets

Tickets are entered in the rear of ticket chute and pushed forward. The power driven roller will be spring loaded against the idler roller and tickets will not pass until the rollers are clear of each other. This is accomplished by use of thumb and index finger, one placed on the block to which the spring is attached, the other on the pivot bracket assembly, then squeeze. Push the tickets through until you see the edge of the ticket. Align the notch in the center of the optic sensor.

E. Ticket Dispenser Replacement

The ticket dispenser can be removed and replaced by removing the nut on the rear of the lock on the door and lifting out the dispenser. Remove the door stop chain on the old dispenser and connect to the new using the same hardware. Place the dispenser into the slot on the door making sure that the left side of the unit is against the left inner frame of the door (This is to insure clearance of the dispenser connector and the door frame). Tighten the bracket onto the lock reusing the nut. Reconnect the connector.

F. Ticket Sales Information

Tickets are available through: National Ticket Company in Shamokin, Pennsylvania (717) 648-6803. We have found these tickets to be of the best quality for use in Skee-Ball Machines.

**SKEE-BALL EXTREME
TROUBLESHOOTING GUIDE**

Prior to calling Skee-Ball with questions regarding service or parts orders, please have the Model # and Serial # available. These numbers can be found behind the display glass on the left inside of the cabinet, and on the back of the rear cabinet assembly.

It is also important to know the Software Revision Number. To get the software number, open display glass and remove display assembly. E-prom number will be located at the bottom right corner of logic board.

Problem:

Suggested Action:

No Display.....

1. Check to see that the alley is plugged in.
2. Remove the display glass and check the **ON/OFF** switch located on the power supply. It should be pushed in.
3. Check the 5 amp Fast-Blo Fuse located on the power supply for continuity.
4. Check cable connections to logic board.
5. Replace the display assembly with a tested new assembly.

Display not showing proper information

1. Power the game down for 10 seconds and then plug it back in.
2. Inspect the cable between the 2 PCB assemblies.
3. Replace the display.

Problem:

Suggested Action:

- | | |
|--|---|
| Ball count inaccurate or missing altogether..... | <ol style="list-style-type: none">1. Check the connector on the sensor mounted to the side of the rear cabinet next to the No Score track or in the ball return channel at the bracket mounted to the rear bulkhead of the alley.2. Clean the optic sensor.3. Replace the optic sensor. |
| Ball release inaccurate or missing altogether..... | <ol style="list-style-type: none">1. Remove channel cover and sensor mounting bracket and check the connection at the optic sensor.2. Clean the optic sensor.3. Replace the optic sensor. |

NOTE: Refer to Figure 1 when replacing or cleaning the optic sensor. The sensor must be mounted properly or it can miss balls at game start.

- | | |
|--|---|
| Coins up but does not release balls..... | <ol style="list-style-type: none">1. Check the fuse on the logic PCB at F4. This is a 1 amp Slo-Blo fuse. Littlefuse # 239.004.2. If the fuse blows repeatedly, the solenoid may be shorted. Using an OHM meter, measure across the solenoid coil. If it is shorted, replace before continuing. A good solenoid should read about 21 Ohms.3. Remove the channel cover and solenoid plate to check the 2 connections.4. Inspect the spring and control rod, as well as the solenoid plunger for any possible jams.5. Replace the Logic assembly. |
|--|---|

Problem:	Suggested Action:
Game will not coin up.....	<ol style="list-style-type: none">1. Check the connections at the coin switch.2. OHM across the coin switch. If you do not read from a normally open to a closed position, replace the switch.3. Manually activate the switch.4. Replace the Logic assembly.
Target lamp does not light.....	<ol style="list-style-type: none">1. Check to see light is plugged in.2. Check to see bulb or starter hasn't come loose.3. Replace bulb.4. Replace starter.
Game does not give tickets.....	<ol style="list-style-type: none">1. Check to see that there are tickets in the bin.2. Are tickets jammed in the dispenser? Can you manually feed them through?3. Go into the option setup and check to see that tickets are enabled.4. Go into ticket test and perform the test according to the Hardware Test section of this manual.5. Replace ticket dispenser.6. Replace the Logic Assembly.

Problem:	Suggested Action:
Game does not score properly.....	<ol style="list-style-type: none">1. Lift the target panel up and check the connections on the sensors.2. Clean the sensors.3. If all sensors are not working, check the connections on the main logic PCB at J16 according to the wiring schematics.4. Check +5VDC at power supply.5. Replace power supply.6. Replace Logic/Display Assembly.
No Sound.....	<ol style="list-style-type: none">1. Go into Option Setup and check to see that the volume is turned up and that sound is not disabled.2. Check the connections at J21 and speaker.3. Replace speaker.4. Replace Logic board.
Counters do not work.....	<ol style="list-style-type: none">1. Perform Hardware Test. If the meter still does not increment, check the connections.2. Replace counter.3. Replace Logic board.

CLEANING AND ROUTINE MAINTENANCE

1. Plastic Channel Covers, Display Panel:
Skee-Ball, Inc. recommends using “Kleenmaster Brillianize” which can be purchased through Skee-Ball as Part Number 800600-1.
2. Painted Wood Surfaces:
Skee-Ball, Inc. recommends any good furniture polish. Try on an area not seen by the public first. If the polish does not react with the paint or wood, use on the rest of the wood surfaces.
3. Black Bumper Strip on Runway:
Skee-Ball, Inc. recommends “Armour All” protectant.
4. White Target Rings:
Skee-Ball, Inc. recommends warm soapy water. Do not use bleach. For excess dirt, a daub pad may be used away from the score stickers.
5. Runway Carpet:
The flooring material requires periodical maintenance. The frequency that one must clean the flooring will depend on the intensity of play on the game. For areas where the material has been relatively clean, the flooring can be *well mopped and cleaned with clean water*.

For areas under heavy use, where the floor gets very dirty or soiled, the use of a detergent or cleaner will be necessary. **Note: This detergent must be of the mild *non phosphate* type such as Glass Plus.**

To avoid possible damage to the product, precautions must be taken in order to ensure that the following products and equipment are *never* used to maintain it. These are:

- a. **Floor maintenance pads** of any type of manufacture (RG.3M or Scotch Bright composition type cleaning or polishing pads).
 - b. **Steel Wool** or abrasive brushes.
 - c. **Cotton mops** (leave behind lint).
 - d. **Abrasive or very alkaline cleaners** (such as conventional wax strippers, powdered cleaners, butyl cleaners) **Note: Any cleaner used must have a neutral PH rating.**
 - e. **Solvents** of any type, such as ether, acetone, ketone or any other product whose effects on PVC is not known.
6. Sensors:
Skee-Ball, Inc. recommends blowing off the photosensors every month.

PART #	REPLACEMENT / SPARE PARTS DESCRIPTION
DECALS	
800136-1	DECAL, SET - #10-50 BLACK
800136-2	DECAL, SET - #1 (8 PCS) BLACK
800136-3	DECAL, SET - #0 (6 PCS) BLACK
TICKET	
800051-1	COUNTER, COIN/TICKET
200042-1	DOOR, TICKET DISPENSER
800507-1	FRAME, TICKET DOOR
800142-1	DISPENSER, TICKET
800253-1	PLATE, NARROW FACE
200053-1	LED, LOW TICKET
800449-2	BIN, TRIPLE STACK TICKET
800490-1	SWITCH, MICRO - LOW TICKET
COIN MECHANISM	
200044-1	ASSY, COIN MECHANISM
800508-2	DOOR & FRAME, COIN MECHANISM
800602-3	PLATE, FACE – COIN MECHANISM
800671-X	COIN MECHANISM
900035-1	CHAIN, STEEL
800421-1	SHIELD, COIN BOX
800446-1	BOX, COIN
CARPET	
200051-5	CARPET, BLACK BATECO
800397-1	PLATE, KICK
800229-2	CLAMP, CARPET
CHANNEL COVERS	
800774-11	CHANNEL COVER, LEFT REAR
800774-22	CHANNEL COVER, RIGHT REAR
360015-2	CHANNEL COVER, LEFT FRONT
360015-1	CHANNEL COVER, RIGHT FRONT
360016-1	SUPPORT PLATE, RIGHT FRONT
360016-2	SUPPORT PLATE, LEFT FRONT

PART #	REPLACEMENT / SPARE PARTS DESCRIPTION
BALL SCORE TRACKS	
100053-1	BALL TRACK, NO SCORE FLOOR
800129-1	BALL TRACK, BALL DROP ABS (CUT)
800085-1	BALL TRACK, BONUS POCKET BALL DROP
UPPER CABINET	
800760-2	CONTROLLER, NIE
800312-5	DISPLAY, SBD-5E
360010-1	DISPLAY PANEL
800758-1	POWER SUPPLY
800452-1	FIXTURE, FLORESCENT LIGHT
SIDE NETS	
800396-8	NET, L. SIDE
800396-7	NET, R. SIDE
320018-1	NET, FRONT
CABLES	
360003-1	CABLE, DISPLAY
800883-10	CABLE, BACK CABINET MAIN
800883-18	CABLE, SENSOR LEAD BACK
800883-28	CABLE, J1 DC POWER
800883-25	CABLE, J2 AC POWER
800883-23	CABLE, J3 AC OUT
800883-15	CABLE, BACK CABINET GROUND
800883-19	CABLE, POCKET SENSOR
800504-17	CABLE, AUX / RESET
800883-12	CABLE, LOW TICKET SWITCH
800883-11	CABLE, RUNWAY MAIN
800883-16	CABLE, RUNWAY GROUND
800883-24	CABLE, BALL RELEASE SENSORS
800883-29	CABLE, BALL RELEASE
801033-1	CABLE, SENSOR PIGTAIL
800883-22	CABLE, SPEAKER
SINGLE BALL ASSY.	
800956-2	ASSY., COMPLETE SINGLE BALL
800954-1	MOUNT, BALL STOP
800067-1	SOLENOID, 4x240
100020-1	PIVOT ARM
600003-1	CONNECTING ROD

REPLACEMENT / SPARE PARTS

PART #	DESCRIPTION
800072-4	SPRING
800070-5	COTTER PIN, 3/32" DIA.
800070-3	COTTER PIN, 1/16" DIA.
800511-1	SPACER, #10 x 3/16" (LARGE)
800511-1	SPACER, #10 x 3/16" (SMALL)
800069-4	CLEVIS PIN, 3/16" x 5/8"
800069-5	CLEVIS PIN, 5/32" x 1 1/4"
800069-1	CLEVIS PIN, 5/16" x 1"
800960-2	BRACKET, SENSOR
800773-3	SENSOR, OMRON 415
MISCELLANEOUS	
900036-1	BANKING STRIP, RUBBER – 90" LONG
100069-1	BANKING STRIP, FRONT EDGE
800179-15	BALL, PLASTIC - SKEE
800065-4	LOCK, BH754 – CASH BOX
800065-1	LOCK, 1612 – COIN DOOR
800065-3	LOCK, 2316 – TICKET DISPENSER
800065-2	LOCK, 2316 – TICKET DOOR
800109-BH754	KEY, BH754 – CASH DOOR
800109-1612	KEY, 1612 – COIN DOOR
800109-2316	KEY, 2316 – TICKET DISPENSER / DOOR

FCC INFORMATION

This equipment has been tested and found to comply with the limits for a class “A” digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC WARNING

Substitute part or equipment modifications may void FCC type acceptance.

UL NOTICE

This game complies with UL22 Standard for amusement and gaming machines.

UL WARNING

Substituting parts or equipment modifications will void the UL listing.

RETURNED COMPONENTS

Should your product need servicing, please have the following information ready prior to contacting Skee-Ball, Inc.

1. Model # of the Unit
2. Serial # of the Unit
3. Serial # of the Part (i.e. – Main Processor Board) if applicable.

Most of this information can be found on the UL tag attached to rear of the product.

When returning a unit for repair, call prior to returning your product to obtain a Return Material Authorization number (RMA#). Failure to obtain an RMA# can lead to parts being delayed in repairs / shipping or return without repairs being completed. Write the RMA# on the outside of the package. Include the following information inside of the packaging:

1. Name, Address, Phone & Fax Numbers including Area Code.
2. Product Serial & Model Numbers.
3. RMA#
4. Contact Name
5. If possible, symptoms and / or problems experiencing.

Postage, insurance and / or shipping costs incurred while presenting your unit for repairs (in or out of warranty) is the responsibility of the consumer. Skee-Ball, Inc. will ship warranty repaired / replaced items back to the consumer free of charge via UPS Ground, U.S. Mail or other comparable shipping means. Any Express Mail or Overnight Shipping expenses are at cost to the consumer.

Skee-Ball, Inc. can be contacted at:

Skee-Ball, Inc.
121 Liberty Lane
Chalfont, PA 18914
(215) 997- 8900 – Voice
(215) 997-8982 – Fax
penn@skeeball.com
Mon – Fri 8:30am – 5pm E.S.T

Skee-Ball, Inc.'s distributors are independent, privately owned and operated. In their judgement, they may sell parts or accessories other than those manufactured by Skee-Ball, Inc. We can not be responsible for the quality, suitability, or safety of any non- Skee-Ball, Inc. part, or any modification, including labor, which is performed by such distributor.

WARRANTY INFORMATION

Skee-Ball, Inc. warrants to the original purchaser that the product will be free of defects in workmanship and materials. The main processor and display boards are warranted for 1 year from the date of purchase. During the first 6 months, the main processor and display boards will be replaced by our Advanced Exchange Program. All other components are warranted for 90 days from the date of purchase. These parts will be replaced under our Advanced Exchange Program for a period of 90 days.

If your equipment fails to conform to the above mentioned warranty, Skee-Ball, Inc.'s sole liability shall be, at its option, to repair or replace any defective component with a new or re-manufactured component of equal or greater OEM specifications.

Skee-Ball, Inc. will assume no liability whatsoever, for costs associated with labor to replace defective parts, or travel time associated therein.

This warranty is contingent upon proper and normal use of the product and does not cover equipment, which has been modified without Skee-Ball, Inc. written consent. Which has been subject to unusual physical stress, incorrect assembly, hook-up, other misuse, neglect, improper electrical current, failures caused by natural disasters such as fire, flood, and lightning or as a result of any unauthorized repairs or alterations.

