

# ALLEYROLLER

Classic™



## OWNERS AND SERVICE MANUAL INNOVATIVE CONCEPTS IN ENTERTAINMENT INC.

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# INTRODUCTION

## GAME FEATURES

Thank you for your purchase of the new **ALLEY ROLLER CLASSIC™** game from I.C.E. Through extensive testing and consultation with game operators, we have developed a game with all of the features and serviceability you've been asking for. We have gone to great lengths to manufacture an Alley Roller game that is far easier to service and operate than anything before it. The features we have added, truly bring this game up to date.

The game starts off with unparalleled ease of assembly. The games go together in just a few minutes.

The game cabinetry is a unique plywood construction with a special overlay for a superior finish. A special lacquer finish is applied over the wood for a beautiful rich, deep look. All of the cabinet panels interlock together, are reinforced with cleats and are glued together to produce a cabinet that can handle all of the abuse you can give it.

Long life fluorescent lighting is used throughout the game to lower maintenance and create a bright playfield area. Even the ball return area is back lit to add to the appearance and serviceability of the game.

Reliability is the name of the game with our new ball release assembly. With a specially engineered solenoid and double linkages, this mechanism has been tested to last for years. Best of all, the entire assembly simply lifts out of the cabinet with no tools needed!

The best state of the art sound on sound audio is used to create an exciting atmosphere for the game player. Even our background theme is synchronized so all games play the theme at the same time, even when only one game is being played.

**ALLEY ROLLER CLASSIC™** allows the operator to give the players extra balls when a certain point threshold is reached. In addition, double scores can be awarded if desired. This extends the total points possible and adds a great deal to player appeal. These features also add excitement when used in conjunction with the optional Jackpot Marquee.

Another important feature of our game is the operator selectable "Balls per game". This feature allows the operator to control how many balls the game will normally deliver. This amount is adjustable from 1 to 20 balls per game. It is however important to note that **THE BALLS PER GAME IS NOT RELATED TO HOW MANY BALLS ARE IN THE GAME**. The quantity of balls in the game is only for reference based on the normal 9 balls given in the traditional game. The game will work with 1 to 15 balls in the game, yet deliver the proper amount programmed into the game every time. (It is a good idea however to have at least 3 balls in the game to avoid slow play)

All programming is accomplished from the Main P.C. Board which is conveniently located at the front end of the cabinet. This make servicing and adjusting as easy as turning a key.

## GAME PLAY

Game play begins when a player has swiped his card through the card reader or inserts a coin. The player receives credit for one game. Additional card swipes give the player additional credits. As soon as the card is swiped, the balls release from the game and the game begins.

The player throws balls at the target pockets and is awarded the points indicated on those pockets.

The player continues to throw balls until they are all used up. If the player breaks a predetermined score during game play, he may be entitled to get "Free Balls".

At the end of the game, the player will receive credit for the tickets won. To receive the credit for the tickets, the player must swipe his card through the card reader.

# INSTALLATION

## BEFORE YOU BEGIN

**WARNING: WHEN INSTALLING THIS GAME, A 3 PRONG GROUNDED A.C. RECEPTACLE MUST BE USED. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY TO YOURSELF OR OTHERS. FAILURE TO USE A GROUNDED RECEPTACLE COULD ALSO CAUSE IMPROPER GAME OPERATION, OR DAMAGE TO THE ELECTRONICS**

**DO NOT DEFEAT OR REMOVE THE GROUNDING PRONG ON THE POWER CORD FOR THE SAME REASONS AS GIVEN ABOVE. USING AN IMPROPERLY GROUNDED GAME COULD VOID YOUR WARRANTY.**

**HAVE A QUALIFIED ELECTRICIAN CHECK YOUR A.C. RECEPTACLE TO BE SURE THE GROUND IS FUNCTIONING PROPERLY.**

This installation is intended to be performed by a 2 man installation crew. No special electrical or "Electrician" skills are needed for installation, as all electrical connections are simple plug in types.

The following tools will be necessary for installation:

- Step ladder \*
- Cordless Drill with Phillips head bit
- Diagonal cutters
- Ratchet with 5/16" socket
- 5/32" Allen wrench
- 3/16" Allen wrench
- #2 square drive bit (supplied)
- Measuring tape
- 7/16" Combination wrench
- Ratchet with 7/16" socket
- 2 - 6 receptacle outlet strips
- Heavy Duty extension cords\*
- Utility Knife

\* Might be required in some situations.

## INSTALLATION

1. Remove the banding from the pallet.

**NOTE: BE SURE TO STAND TO THE SIDE WHEN CUTTING THE BANDS, AS THEY ARE UNDER PRESSURE, AND COULD SPRING OUT CAUSING INJURY.**

2. Lift out all cage parts as well as any other parts shipped along with the game.

3. Remove the 2 game halves from the pallet.

## REAR CABINET INSTALLATION

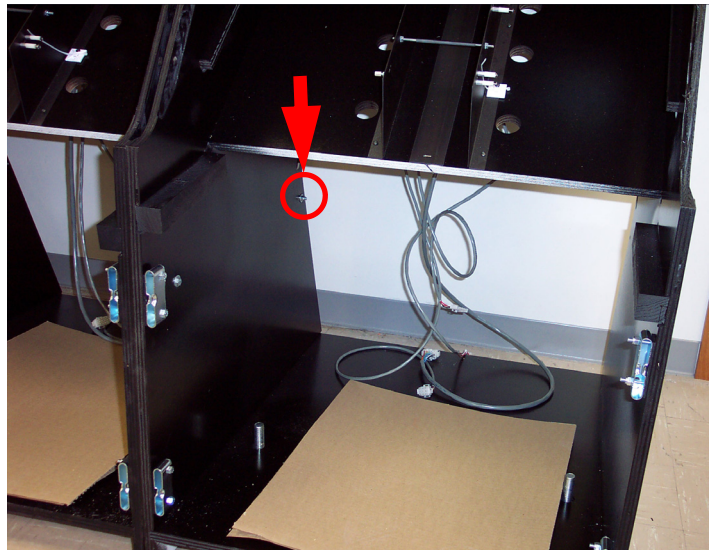
1. Remove all of the cabinets from their packaging and skids.

2. Position the back half of the alley cabinets as shown below.



**NOTE: ALL HARDWARE SHOULD BE LEFT LOOSE UNTIL ALL BOLTS HAVE BEEN ATTACHED TOGETHER FOR ALL OF THE ALLEYS.**

3. Loosely bolt all of the cabinets together in the rear as shown using the 1/4-20 x 2" bolts, nuts and flat washers. There is one bolt located in the bottom section.



4. Remove the top display cover by sliding the plastic to the right. Now remove the two black plastic supports and slide the display board assembly up and out.



# INSTALLATION



5. Loosely bolt the top fronts of the cabinets together as shown using the 1/4-20 x 2" bolts, nuts and flat washers.

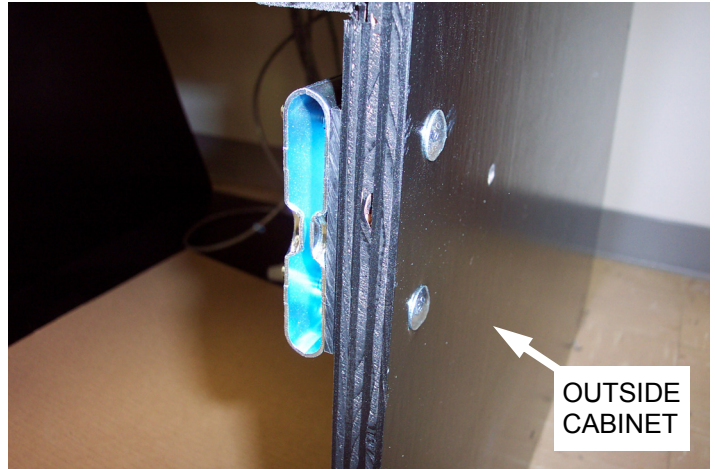
6. Loosely install the cabinet latches using the 1/4-20 x 3" full thread bolts, nuts and flat washers and spacer plates as shown. The order of assembly is: Bolt - washer - latch - shim - cabinet - cabinet - shim - latch - washer - Keep nut.



6. Repeat the above step with all of the cabinets. there are 4 latches per cabinet.\*\*\*



\*\*\*NOTE: THE OUTSIDE CABINETS USE CARRIAGE BOLTS TO ATTACH THE LATCHES ON THE OUT-SIDES AS SHOWN. The order of assembly is : Carriage bolt - cabinet - shim - latch - washer - Keep nut. (See below)



7. At this time, TIGHTEN ALL HARDWARE.

8. The rear cabinets should now be moved into place. THE CABINETS SHOULD BE MOVED EXACTLY 12 INCHES FROM THE BACK WALL AS MEASURED FROM THE LOWEST POINT ON THE CABINET.



# INSTALLATION

## REAR CABINET INSTALLATION

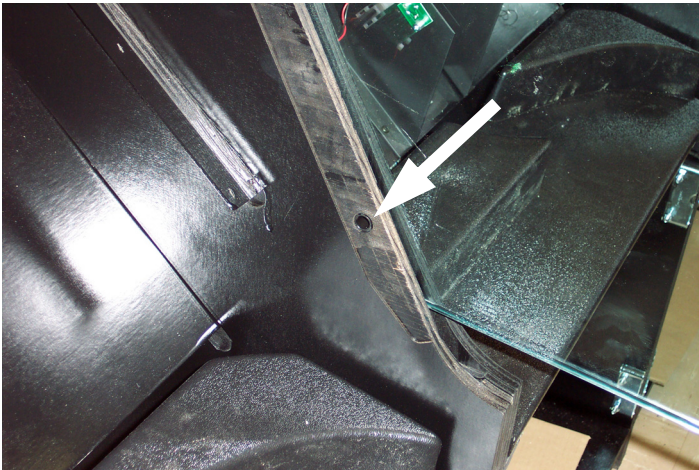
INSTALL THE GLASS PARTITIONS TO THE REAR CABINETS.

You will need the following parts for each glass divider you install. HAVE THESE PARTS READY AHEAD OF TIME.

- Glass divider (1)
- Joint connector nut (6)
- Connecting stud (3)
- Glass insulator bushing (3)
- Glass edge protector (3)

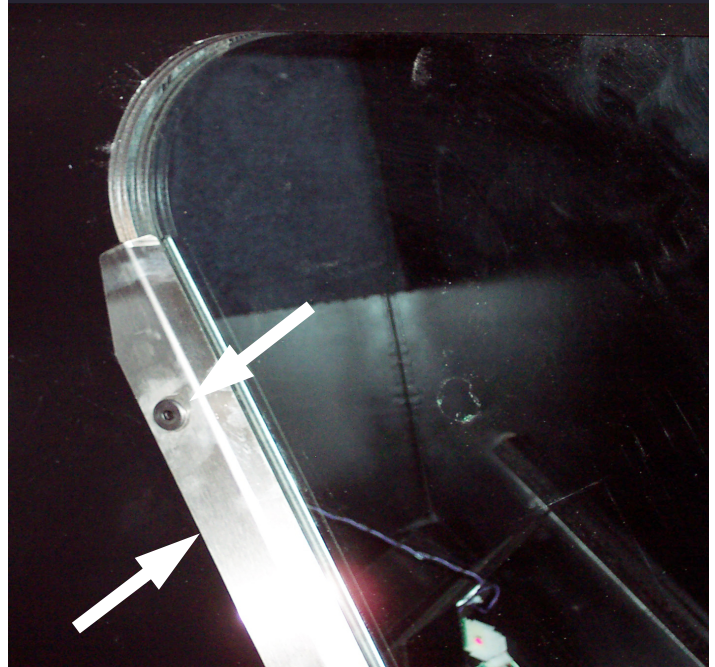
NOTE: USE THE PROVIDED PHOTOGRAPHS TO GUIDE YOU THROUGH THE INSTALLATION.

1. Slide a glass partition into the slotted area between the cabinets.
2. Slip a Glass insulator bushing into each of the three mounting holes. This will keep the glass from falling out and protect the glass from the hardware.



3. Screw the connecting studs into the ends of the Joint connector nuts.

4. Hold a Glass edge protector in place and run the Joint connector/stud thru the protector and thru the insulator.



5. Place the remaining protector on the other side of the glass and secure with the Joint connector nut.

6. Install the remaining glass separators.

NOTE: THERE ARE PLASTIC SPACER STRIPS THAT NEED TO BE USED BEHIND THE GLASS EDGE PROTECTORS ON THE OUTSIDE CABINETS. THESE ARE NEEDED TO TAKE UP THE SPACE SINCE THERE ARE NO OTHER CABINETS TO TAKE UP THE SPACE.

7. Tighten the hardware securely with an Allen wrench.



# INSTALLATION

## FRONT CABINET INSTALLATION

1. Unpack the front cabinets and set in front of the rear cabinets .

STARTING AT ONE END AND WORKING YOUR WAY THROUGH, PERFORM THE FOLLOWING STEPS:

2. Open the ticket door and slide the left hand rail cover open. Release the wire harness to remove the rail cover off. Be careful not to destroy the key switch.

3. Connect all of the connectors from the rear and front cabinets together except the phone cords.

4. There are two phone cords for every alley. One cord has a female to female adaptor attached to it. This is meant to daisy chain the next alley together by connecting it's phone cord without the female to female adaptor. Continue to daisy chain each alley together.

5. Connect the alley's end that is female to the marquee male phone cord. This completes the daisy chain.

THESE PHONE CORDS WILL BE USED TO "LINK" THE GAMES TO EACH OTHER AS WELL AS THE OVERHEAD MARQUEE.

6. At this time, run the A.C. power cord down the channel, thru the access holes and into the Power Module (A.C. switch) in the front cabinet under the Main P.C. Board drawer.

7. After all of the harnesses have been connected on the game, slide the front cabinet into position in front of the rear cabinet.

IT IS VERY IMPORTANT TO LINE UP THE CABINETS AS EXACTLY AS POSSIBLE.

8. Slide the rail cover back on and slide the ticket drawer back in and lock shut.

9. Using a 5/16" 1/4" drive socket and ratchet, tighten the lock latches that connect the front and back cabinets as shown in the photograph.

NOTE: YOU ONLY HAVE TO TIGHTEN ONE SIDE, A THRU ROD AUTOMATICALLY TIGHTENS THE OTHER SIDE FOR YOU.

10. Repeat this operation with all remaining cabinets.

DON'T FORGET TO LINK THE GAMES WITH THE PHONE CORDS AS YOU GO.



## MARQUEE INSTALLATION

1. Unpack and with two people place the marquee and center on to the top of the back cabinet assembly .

2. Mark and drill the mounting holes.

3. Remove the front display cover by sliding it to the right and remove the two support bars as previous shown. Lift and remove the display board assembly to allow access underneath to install mounting hardware.

4. Replace display board assembly, support bar screws, and display cover.

5. Connect the phone cord to which ever end cabinet has the female to female adaptor attached.

**\*\* BE CAREFUL NOT TO STEP ON THE BALL JUMP OR DIRECTLY ON THE RAMP WHILE INSTALLING THE MARQUEE. KEEP FOOTING ONLY ON SIDE RAILS DURING MARQUEE INSTALLATION \*\***

# SET-UP/GAME TESTING

## PREPARING THE GAMES

**IMPORTANT: THE GAMES WILL NOT FUNCTION PROPERLY WITHOUT TICKETS.**

PLEASE LOAD TICKETS BEFORE PROCEEDING WITH PROGRAMMING AND TESTING.

## ERROR CODES

When the games are first turned on, it is possible that an error code could be displayed.

**NOTE: THE GAMES WILL NOT FUNCTION IF THEY ARE DISPLAYING AN ERROR CODE.**

Please review the error code and correct the error before proceeding.

- 1 = 0 Ball Return Sensor (top of the ball return)
- 2 = 1K Score Sensor
- 3 = 2K Score Sensor
- 4 = 3K Score Sensor
- 5 = 4K Score Sensor
- 6 = 10K Right Sensor
- 7 = 10K Left Sensor
- 8 = Ball Count Sensor (sensor at ball release)
- 9 = Coin Counter Disconnect
- 10 = Ticket Counter Disconnect
- 11 = Coin Switch Stuck
- 12 = Not Used
- 13 = Opto Net (tilt) Blocked
- 14 = Ball Release (key) Switch Stuck Closed
- 15 = Not Used
- 16 = Ball Trough Not Plugged In

**NOTE: IF YOU GET AN ERROR "0", PLEASE CALL OUR SERVICE DEPARTMENT.**

## ALLEY INDICATORS

The alley number indicators will normally be lit when the games are functioning properly and have a sufficient amount of tickets in the bin.

When the ticket bin is nearly empty, the alley indicator will flash.

When out of tickets, the alley indicator will go dark and the game will become inoperative.

## PROGRAMMING BUTTONS

The programming buttons have multiple function. They will have certain functions in normal game play mode and different functions when in programming mode.

**NOTE: SINCE THE BUTTON FUNCTIONS CHANGE FROM MODE TO MODE, USE THE SWITCH NUMBERS TO DETERMINE PROPER FUNCTION.**

TO ENTER THE PROGRAMMING MODE, PRESS SW1 (PROGRAM). TO EXIT PROGRAMMING, PRESS THE BUTTON ONCE AGAIN.

## NORMAL GAME MODE

**VOLUME - SW4** Press this button repeatedly to scroll through the different volume levels.

**BALLS PER GAME - SW5** Press this button repeatedly to select between 7-8-9 balls per game. Your selection will be shown on the display. Once you choose your value, the game will lock that amount into memory.

## PROGRAMMING MODE

**CHANGE TICKET VALUE - SW2** This button will change the value of the TICKET BONUS payout. each press of the button will increase the ticket value by 25. this will loop around from minimum to maximum.

**INCREASE SCORE - SW4** Pressing this button will increase the value of the score needed to win the ticket bonus by 1000 point increments.

**DECREASE SCORE - SW3** Pressing this button will decrease the value of the score needed to win the ticket bonus by 1000 point increments

## LINKED GAMES

Each Alley Roller main board must be set to a different ID number when setup is complete and before power is applied. Your options are one through nine and zero which is equal to ten. The Marquee is set to fourteen and cannot be changed.

# QUICK TROUBLESHOOTING

## **GAME WILL NOT TAKE OR ADD MONEY CORRECTLY**

Micro switch not working or returning properly. Check and repair or replace as necessary.  
Game programming set-up incorrectly. Refer to service manual for proper settings.  
Bad harnessing or connector. Check w/ohm meter and repair if necessary.  
Bad Main P.C. Board. Check and repair or replace as necessary.

## **GAME HAS NO SOUND**

Bad speaker. Check w/ohm meter for 8-ohm load and replace if defective.  
Volume level set incorrectly. Check service manual for volume setting procedures.  
Bad Harnessing or connector. Check w/ohm meter and repair if necessary.  
Bad Main P.C. Board. Check and repair or replace as necessary.

## **BALLS WILL NOT RELEASE OR WILL NOT STOP RELEASING**

Solenoid burned out. Replace solenoid.  
Solenoid sticks in. replace solenoid.  
Release lever binding. Check or replace as necessary.  
Release return spring broken. Replace spring.  
Bad ball count sensor. Check and replace as necessary.  
Bad connector or harnessing. Check w/ohm meter and repair as necessary.  
Bad Opto-isolator. Check w/ohm meter and replace if necessary.  
Bad Main P.C. Board. Check and repair or replace as necessary.  
Debris jamming ball return system. Clean return area.

## **GAME WILL NOT ADD POINTS CORRECTLY / COUNTS BALLS WHEN THROWN**

Bad score sensor. Check and repair or replace.  
Score sensor wiring bad. Check w/ohm meter and repair or replace.  
Cabinet harnessing bad. Check w/ohm meter and repair or replace as necessary.  
Sensors loose or misaligned. Realign sensors.  
Main P.C. Board bad. Check and repair or replace as necessary.

## **TICKET DISPENSER DOES NOT WORK OR WORKS IMPROPERLY**

Bad harnessing. Check w/ohm meter and repair if necessary.  
Bad ticket dispenser. Repair or replace ticket dispenser.  
Dispenser out of tickets. Add tickets.  
Bad Main P.C. Board. Check and repair or replace as necessary.  
Optical sensor on dispenser dirty. Clean sensor.

## **SCORE DISPLAY WILL NOT LIGHT OR WORKS IMPROPERLY**

No power on Main P.C. Board. Check transformer and fuses / check power module  
Bad connectors or harnessing. Check w/ohm meter and repair as necessary.  
Bad Display P.C. Board. Repair or replace as necessary.  
Bad Main P.C. Board. Repair or replace as necessary.

## **NO FLUORESCENT LIGHTING**

Bad connectors or harnessing. Check w/ohm meter and repair as necessary.  
Bad ballast transformer. Replace ballast transformer.  
Bad bulb. Replace bulb.  
No A.C. power to game. Check main fuses in power module.

## **GAMES ACT STRANGELY FOR NO APPARENT REASON**

Game I.D.'s set improperly. Refer to service manual for proper settings.  
Game hit by electrostatic discharge. Turn games off, wait 15 seconds and turn back on.  
Bad Main P.C. Board. Check and repair or replace as necessary.

## **MARQUEE DOES NOT WORK OR RESPOND CORRECTLY**

Linking cable not connected or damaged. Replace cable  
Marquee P.C. Board bad. Repair or replace P.C. Board  
Bad display P.C. Board. Repair or Replace P.C. Board  
Marquee Electronics Cabinet not plugged in or turned off. Check for A.C. Power.

# DETAILED REPAIR

**WARNING: ALWAYS REMOVE POWER TO THE GAME BEFORE ATTEMPTING ANY SERVICE, UNLESS NEEDED FOR SPECIFIC TESTING. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SERIOUS INJURY TO YOURSELF OR OTHERS.**

## OPERATIONAL BACKGROUND

The **ALLEY ROLLER CLASSIC™** alley roller games have been designed with MODULAR repair in mind. The coin drawers and ticket drawers can be slid out and removed in their entirety to be worked on in another area if desired. The ball release assembly can be removed as a unit with no tools necessary, making repair a snap.

The ball release system utilizes an A.C. Pull type solenoid that has been specifically designed to eliminate residual magnetism problems commonly found in this type of solenoid. The solenoid is powered via an Opto-isolator, to eliminate solenoid noise from the electronic circuitry.

Other than the display, all electronics and power supply components are located on the Main P.C. Board to make modular type replacement fast and simple.

The display board has been designed to be very reliable and easy to repair. Very few drive components are necessary for this type of display.

## TROUBLESHOOTING PHILOSOPHY

To find problems with the game, always first check what should be obvious. See that the game is plugged in and that all of the fuses on the game are good. This includes the fuse that is located INSIDE the power module.

Next, check to see that all of the connectors are firmly seated and that none of the wires have pulled out of them.

When trying to find out if specific components are bad or not, try swapping them with components from another player station to see if the problem moves with the component, or stays where it was. This will help you to know if you have a problem with a specific component, or maybe a problem with either the wiring or the Main P.C. Board.

Use extreme caution when using probes or volt if the game is powered up. If doing continuity checks, it is important to disconnect the harnessing at both, as attached they may yield erroneous results.

If P.C. Boards are suspected as causing problems, check to see that all of the I.C. chips are firmly seated on the boards.

If light bulbs are suspected, swap them with one that is known to work to narrow the problem down to the bulb or P.C. Board.

## MECHANICAL REPAIR

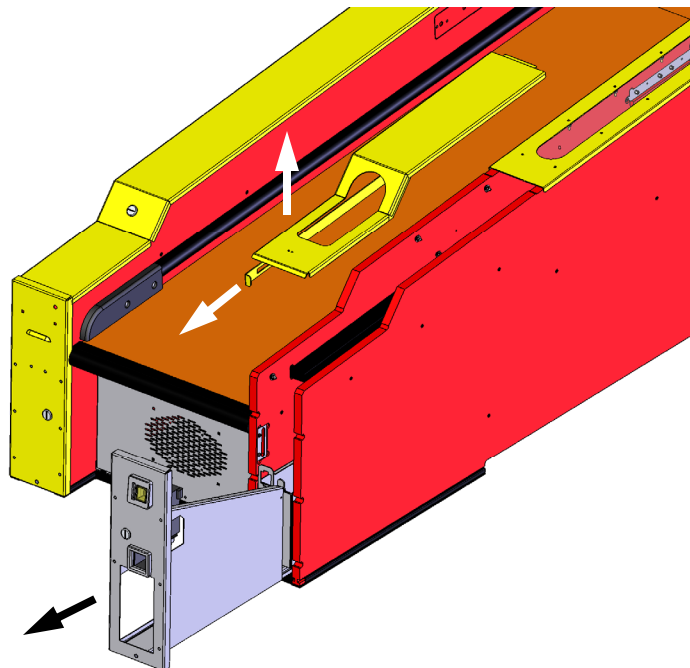
### BALL RELEASE ASSEMBLY

**WARNING: BE SURE POWER HAS BEEN REMOVED FROM THE GAME BEFORE PROCEEDING.**

Open the cash box drawer at least 6 inches.

Pull forward on the ball release cover. (The panel with the clear plastic window) about 3 inches to disengage, then lift off.

Remove the balls from the game.



Grasp the release assembly by the rail and slowly lift out, being careful to avoid hitting the sensors on the cover retaining screws.

Disconnect the connector that connects the release assembly to the game.

# DETAILED REPAIR

## SOLENOID REPLACEMENT

Remove the spring from the solenoid and mounting bolt.

Remove the cotter pin from the clevis pin and slide the clevis pin from the solenoid shaft and linkage.

Carefully scribe a mark when removing the solenoid to be sure the replacement is properly located.

Remove the hardware that secures the solenoid to the mounting plate.

When re-assembling, be sure to use the same size cotter pin to retain the clevis pin, as this pin is needed to hold the spring to the solenoid assembly.

Be sure the bent over end of the cotter pin is trimmed so it cannot contact the solenoid body.

## PLAYFIELD BULB REPLACEMENT

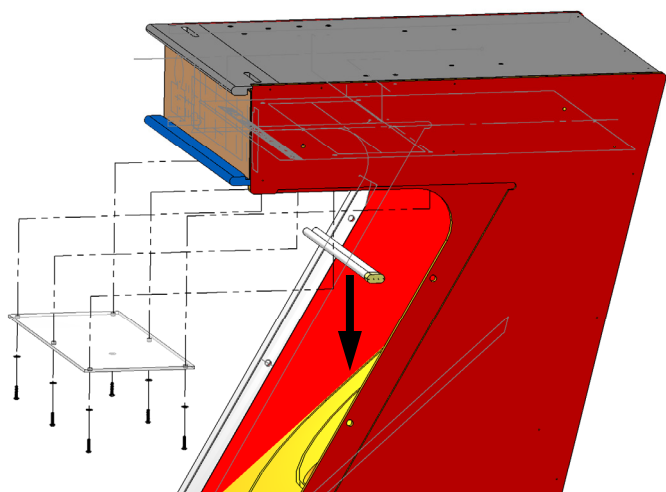
The bulbs replace easily. Remove the bolts that hold the bulb cover in place.

Remove the Pull the bulb straight out of the socket.

Insert the new bulb into the socket and snap into place.

Replace the bulb retaining clip.

Screw the cover back in place.



## MARQUEE BULB REPLACEMENT

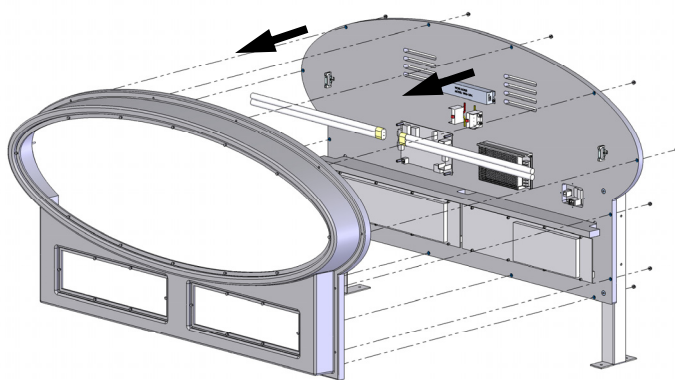
Remove the A.C. power cord from the back of the marquee.

Remove the nuts from the rear panel of the marquee and remove the front vacuum formed plastic marquee.

Remove the bulb retaining clip. Pull the bulb straight out of the socket.

Insert the new bulb into the socket and snap into place. Replace the bulb retaining clip.

Re-assemble in reverse order.



## ELECTRONIC REPAIR

### SCORE DISPLAY ASSEMBLY

Remove the graphic header retaining strip on the end panel of the games display.



Lift the display panel straight up, pull the bottom out and remove the panel.

# DETAILED REPAIR

Remove the two black plastic supports and lift the entire display assembly straight up, then pull the bottom forward and remove connector from the rear.



Unscrew the display from the mounting bracket.

Assemble in reverse order.

## MAIN P.C. BOARD

Turn off A.C. power and remove the power cord from the power module.

Open the front speaker door and pull the PCB tray out.

Remove all P.C. Board connectors noting where each one connects into the board.



Remove the 4 hex fasteners that retain the board to the mounting bracket.

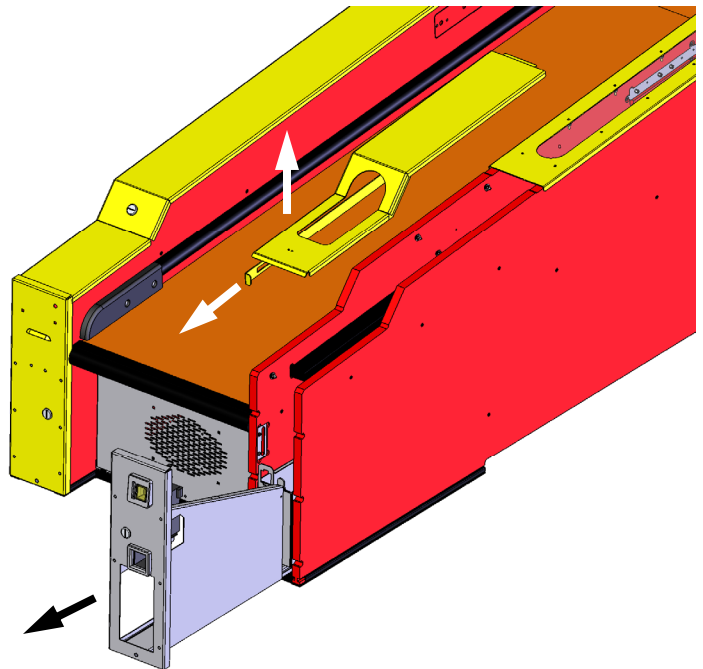
Re-assemble in reverse order.

## BALL COUNT SENSOR

Turn off A.C. power and remove the power cord from the power module.

Open the cash box drawer at least 6 inches.

Pull forward on the ball release cover. (The panel with the clear plastic window) about 3 inches to disengage, then lift off.



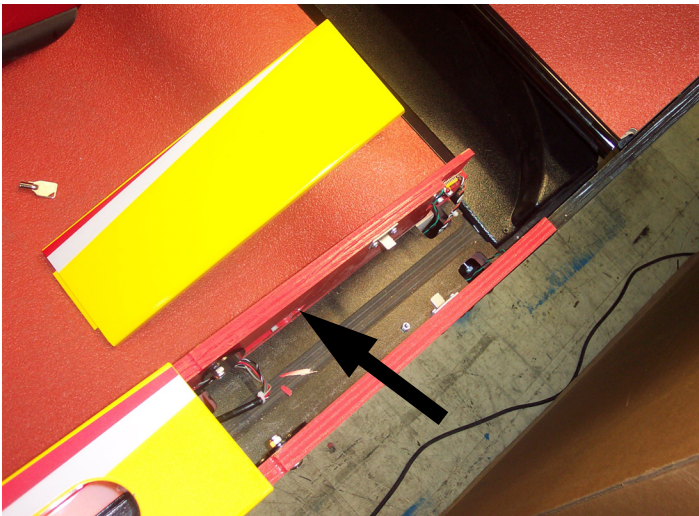
Remove the balls from the game. Pivot the ball release cover upward and remove the top cover of the ball return channel to expose the sensor mounting bracket.



NOTE: THE FRONT CABINET MAY HAVE TO BE PULLED FORWARD TO BE ABLE TO SLIDE AND REMOVE THE TOP COVER.

# DETAILED REPAIR

From the inside of the ball channel, remove the six hex nuts that secure the sensors to the channel wall.



Unscrew the sensor assembly and remove.

Assemble in reverse order.

NOTE: BE SURE THE TRANSMITTER WIRING IS KEPT HIGH ENOUGH FOR THE BALLS TO PASS UNDER. IF THERE IS ANY SLACK, IT IS IMPORTANT TO REMOVE IT USING A TIE WRAP, ETC.

## BALL RETURN SENSOR

Turn off game power.

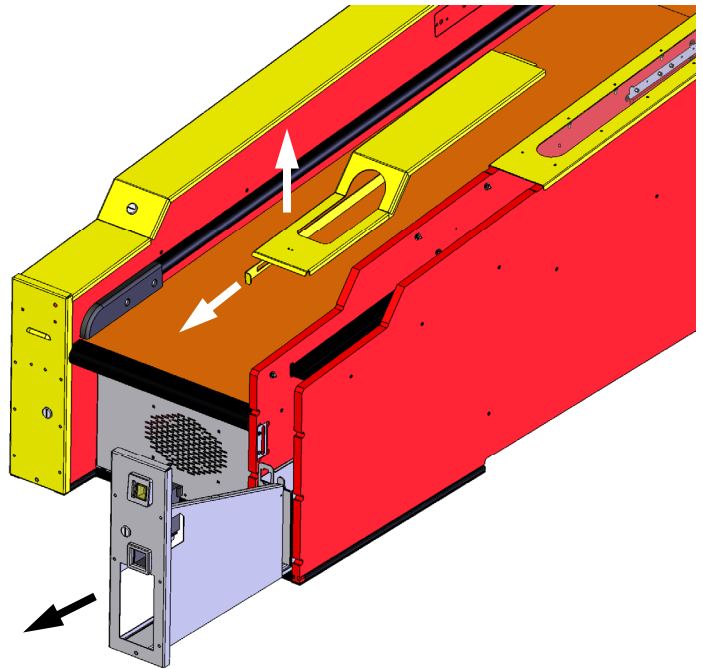
The ball return sensor is located at the rear of the ball return channel where the 2 cabinets meet.

Open cash drawer at least 6 inches.

Pull forward on the ball release cover. (The panel with the clear plastic window) about 3 inches to disengage, then lift off.

Remove the balls from the game. Pivot the ball release cover upward. Remove the black screw from the rear cabinet, just behind the top cover. Slide the top cover of the ball return channel upward to expose the sensor mounting bracket.

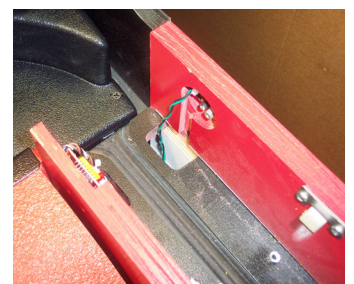
NOTE: THE FRONT CABINET MAY HAVE TO BE PULLED FORWARD TO BE ABLE TO SLIDE AND REMOVE THE TOP COVER.



Unscrew the sensor assembly and remove. Replace sensor assembly.

Assemble in reverse order.

NOTE: BE SURE THE TRANSMITTER WIRING IS KEPT HIGH ENOUGH FOR THE BALLS TO PASS UNDER. IF THERE IS ANY SLACK, IT IS IMPORTANT TO REMOVE IT USING A TIE WRAP, ETC.

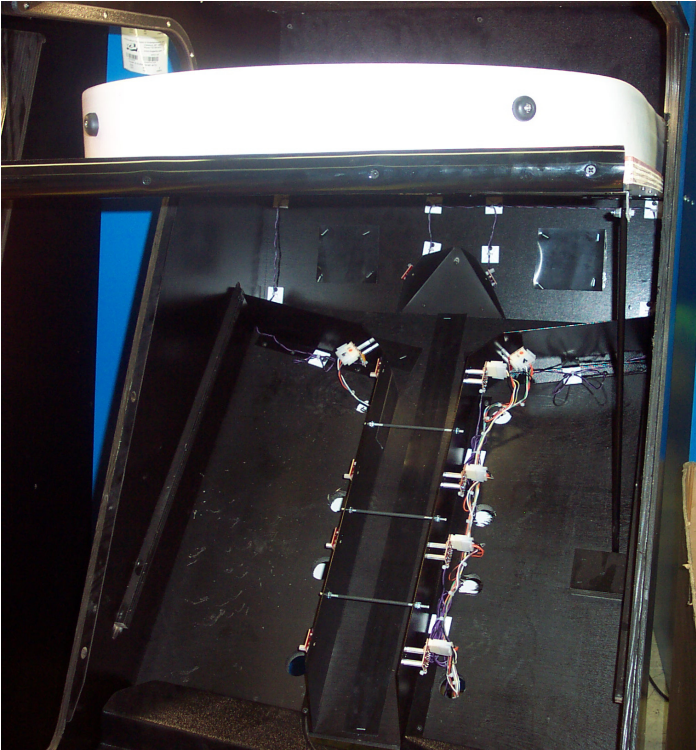


# DETAILED REPAIR

## SCORE SENSORS

Remove all A.C. power from the game.

Lift the playfield up and support with the prop rod.



Remove the screws that hold the sensor in place and replace the sensor.

Re-connect power to the game.

Run your hand through each sensor pair during a game and listen for the sound to indicate proper function.

If the sensor still does not indicate proper function, check for bad harnessing or Main P.C. Board.

## 0 COUNT SENSOR

Open the center cover to the ball release mechanism.

lift and slide the right rear channel cover off of the alley.

Replace the sensor and re-assemble in reverse order.

# PARTS LISTINGS

## MECHANICAL PARTS

1024	Ticket Bin
1026	Ticket Bin Switch Mounting Bracket
5014	Coin Door Lock
5014CE	LOCK - KEY SWITCH
5101	Mech Holder
6105	Latch Tool
6111	Fiber Lever Washer
6117	Clevis Pin 3/4"
6118	Clevis Pin 1"
AR1001	Ball Rail
AR1002	Ball Return Tray
AR1003	Rail Support Spacer
AR1004	Ball Release Lever Spring
RB1005	Cash Box
AR1007	Solenoid Linkage
AR1009	Ball Release Lever Bracket
AR1018	Ball Release Lever
AR1020	Cup Connecting Plates
AR3006	Playfield Light Cover
AR3008	PL7 Light Diffuser
AR3015	Cup, Bottom Ring
AR3017	Insulating Grommet
AR3020	Runaway Ball Bumper Material
AR3021	Ball Stop Grommet
RB3124	Ball (Blue)
AR3065	Runaway Ball Bumper Cap, Left Side
AR3066	Runaway Ball Bumper Cap, Right Side
NA3016X	Ball Diverter
AR3101	Ball Jump
RB1042	Channel Cover Right (Front)
RB1043	Channel Cover Right (Middle)
RB1044	Channel Cover Right (Rear)
RB1045	Target Prop Rod
RB1111	Channel Cover, LEFT
RB3003	Playfield Hole Guard
RB3005	Ball Cover Window
RB3030	Spacer (Glass)
RB3033	Glass (Partition)
RB3100	Runway Material (Red)
RB4004	Bumper

## GRAPHICS & DECALS

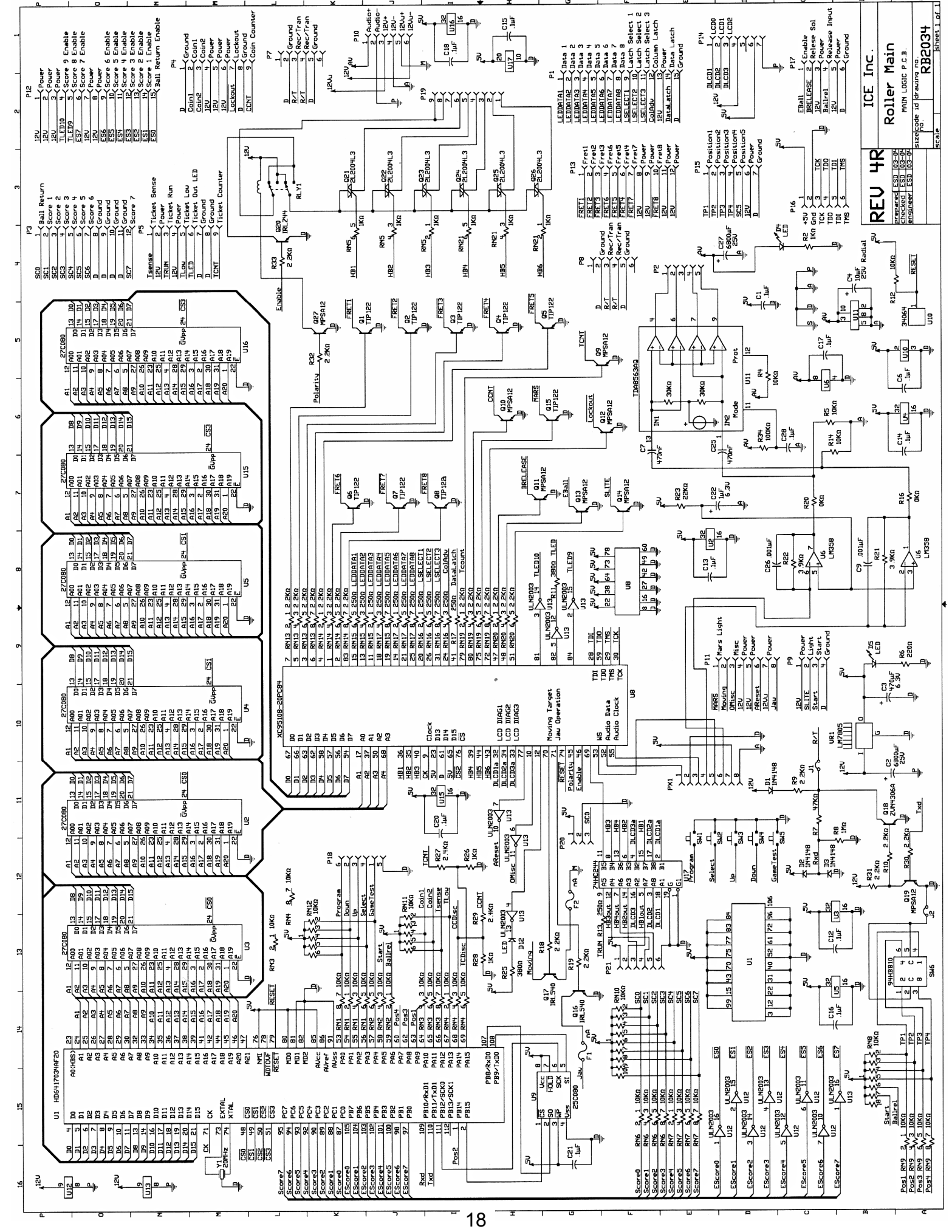
AR7003	Coin Door Decal
AR7004	Ticket Door Decal
AR7008	Instruction Panel
AR7201	Display Panel
AR7221	Programming Decal (Part 1)
AR7222	Programming Decal (Part 2)
RB7014	Overlay, 10,000 Point (Left)
RB7015	Overlay, 5,000 Point
RB7016	Overlay, 4,000 Point
RB7017	Overlay, 3,000 Point
RB7018	Overlay, 2,000 Point
RB7019	Overlay, 1,000 Point
RB7020	Overlay, 10,000 Point (Right)
RB9101	Service Manual
RB7009	Fuse Rating Decal

## ELECTRICAL / ELECTRONIC PARTS

211	Low Ticket Switch
248	PL7 Transformer
249	PL7 Bulb
251	PL7 Socket
2111	Solid State Relay
2426	12 Ft. Modular Phone Cord
8312	BULB PL-L 40W
AR2007	Speaker 6 X 9
AR2008	Solenoid
CL2027	20 Ft. Computer Style Power Cord
DA2002X	Transformer
DA2033X	PCBA - (Small Display)
HH5005	Ticket Dispenser (Entropy)
PC20224	Counter, 12 Volt D.C.
PC20429	Red Diffused L.E.D.
RB2032X	PCBA - (Large Display)
RB2009AX	PCBA - (Opto Sense Point)
RB2009BX	PCBA - (Opto Sense Point Zero)
RB2009CX	PCBA - (Opto Sense Ball Count)
RB2009X	PCBA - (Opto Sense Point 10K)
RB2034X	Main P.C. Board Assembly

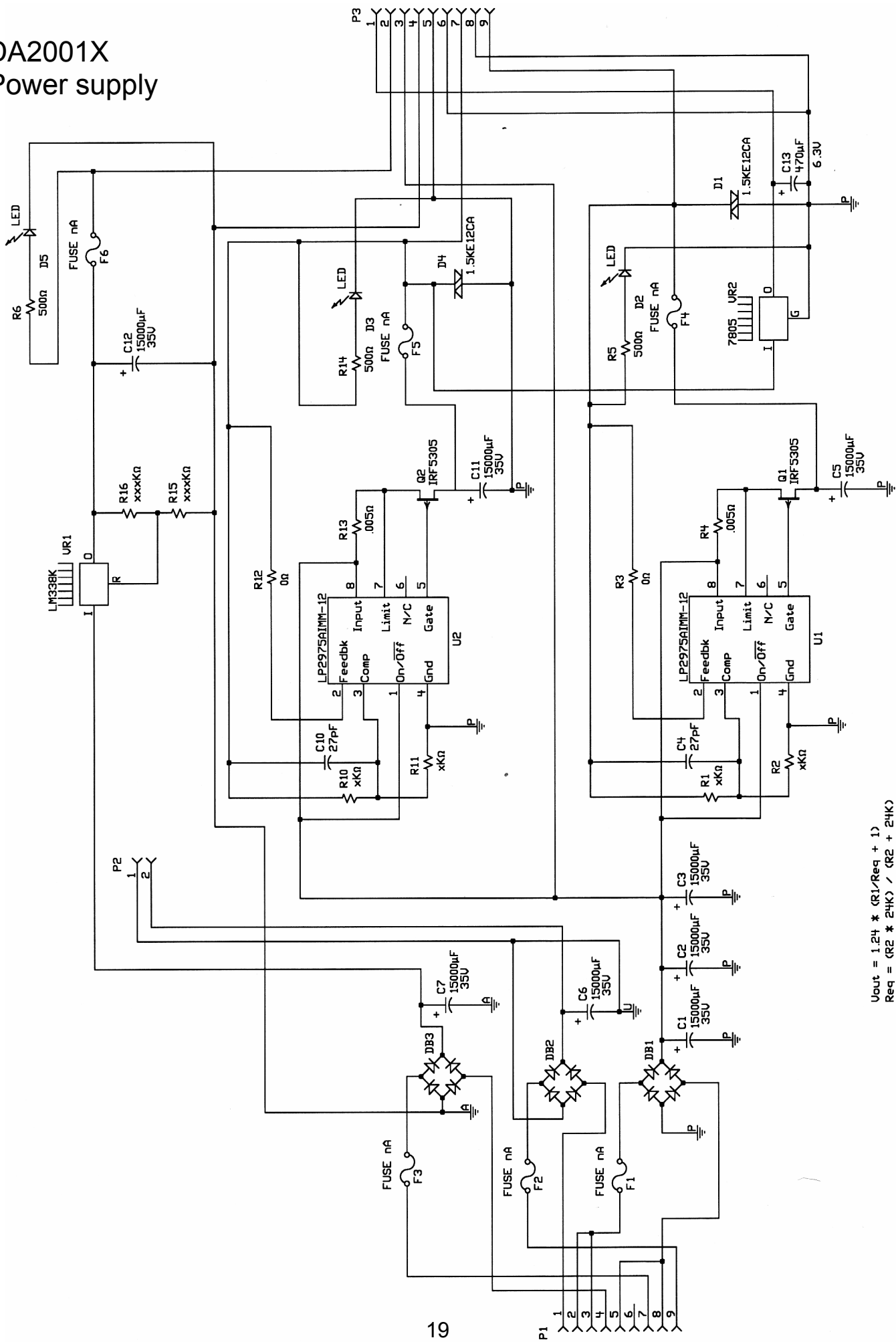
PLEASE CALL OUR SERVICE  
DEPARTMENT FOR HELP WITH ANY  
PARTS NOT SHOWN ON THIS LIST  
MON-FRI 9:00 AM TO 6:00 PM EST

PHONE 1-716-759-0360  
FAX 1-716-759-0884



**REV 4R**  
 ICE Inc.  
 Roller Main  
 MAIN LOGIC P.C.B.  
 size: 10.0 x 10.0  
 R82034  
 Scale

# DA2001X Power supply



$$U_{out} = 1.24 * (R1/Req + 1)$$

$$Req = (R2 * 24K) / (R2 + 24K)$$







# WARRANTY POLICY

I.C.E. Inc warrants all components in new machines to be free of defects in materials and workmanship for the period listed below:

- 180 days on Main PCB's, Computers & Motors
- 1 year on all LCD monitor panels
- 90 days on all other electronic and mechanical components
- 30 days on all I.C.E. repairs and parts purchases

I.C.E. Inc shall not be obligated to furnish a warranty request under the following conditions:

- Equipment or parts have failed through normal wear and tear
- Equipment has been subjected to unwarranted stress, abuse or neglect
- Equipment has been damaged as a result of arbitrary repair/modification

Products will only be covered under warranty by obtaining an I.C.E. authorized RMA #. To obtain an RMA # please provide I.C.E. tech support with the game serial # or original I.C.E. invoice # and a detailed description of the failure or fault symptoms.

I.C.E. Inc will assume no liability whatsoever for costs associated with labor or travel time to replace defective parts. All defective warranty covered components will be replaced with new or factory refurbished components equal to OEM specifications.

I.C.E. Inc will cover domestic UPS ground, or comparable shipping costs during the warranty period. International or expedited shipments are available for an additional charge. To obtain credit defective parts must be returned to I.C.E. Inc, at the customer's expense, within 30 days. After 30 days a 15% re-stocking fee will apply to all returns.

ICE distributors are independent, privately owned and operated. In their judgment, they may sell parts and/or accessories other than those manufactured by I.C.E. Inc. We cannot be responsible for the quality, suitability or safety of any non-I.C.E. part or modification (including labor) that is performed by such a distributor.

**Innovative Concepts in Entertainment  
10123 Main St.**

**Clarence, NY 14031**

**Phone #: (716) - 759 - 0360**

**Fax #: (716) - 759 - 0884**

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