MILK JUG TOSS™

ICE™

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SAFETY AND WARNINGS BEFORE YOU BEGIN

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

NOTE: THIS GAME IS INTENDED FOR INDOOR USE ONLY.

DO NOT DEFEAT OR REMOVE THE GROUNDING PRONG ON THE POWER CORD FOR THE SAME REASON 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 GAME IS DESIGNED TO DISSIPATE STATIC ELECTRICITY THROUGH THE GROUNDING PLANE OF THE GAME. IF THE A.C. GROUND DOES NOT WORK, THE GAME COULD DISCHARGE STATIC ELECTRICITY THROUGH THE GAME CIRCUITRY, WHICH COULD CAUSE DAMAGE.

THE POWER SUPPLY IS NOT VOLTAGE ADJUSTABLE. TO OPERATE THE GAME AT VOLTAGES OTHER THAN THOSE IT WAS DESIGNED FOR. PLEASE CONTACT OUR SERVICE DEPARTMENT FOR VOLTAGE CONVERSION INFORMATION.

WARNING
DO NOT remove any of the components on the main board (e.g. compact flash and eproms) while the game is powered on. This may cause permanent damage to the parts and the main board. Removing any main board component part while powered on will void the warranty.

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.

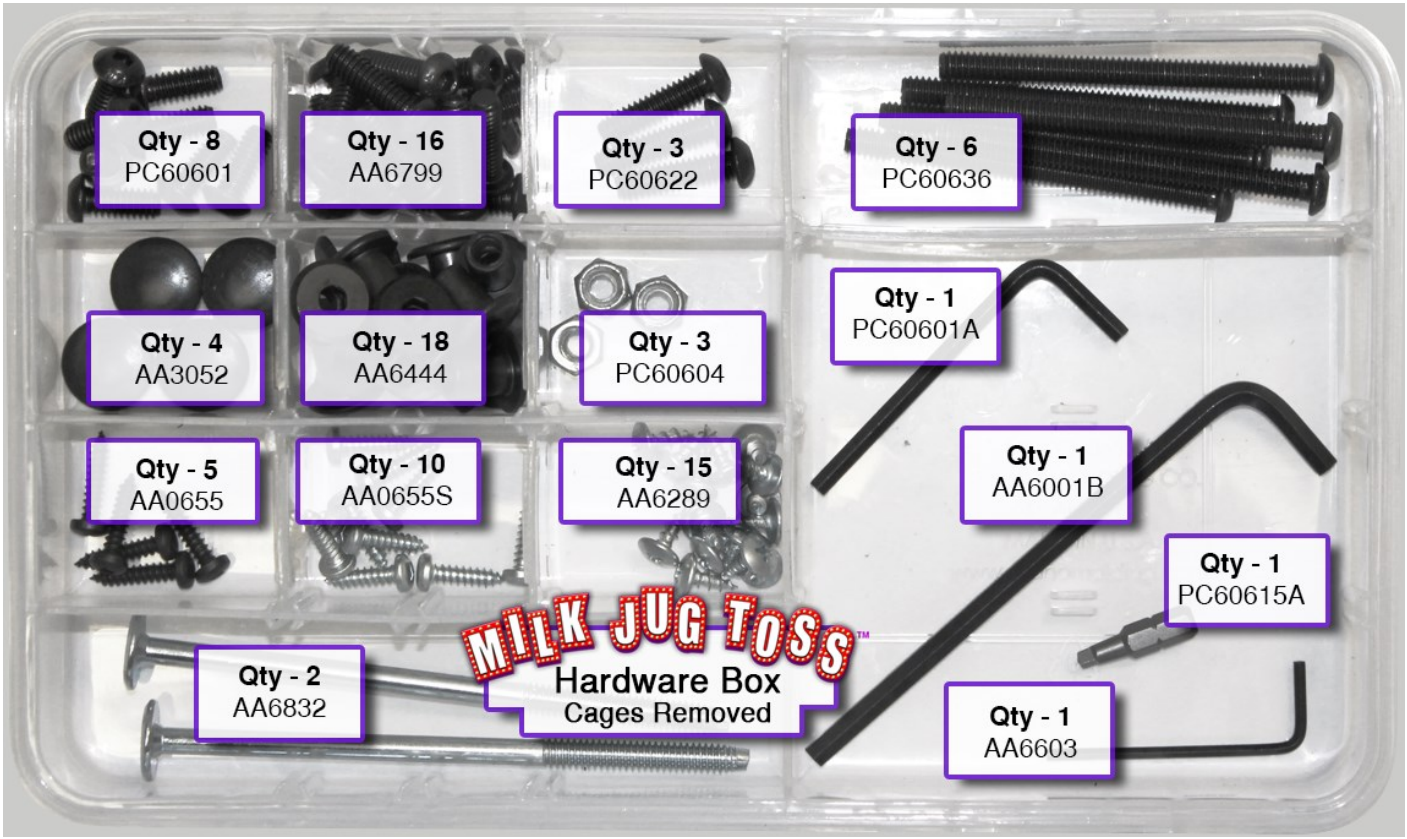
THIS GAME IS NOT SUITABLE FOR INSTALLATION IN AN AREA WHERE A WATER JET COULD BE USED.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance

AC Power Information

The games main fuse is accessed through the back of the game at the power mod. Above the power cord is a small panel that contains the main fuse. The value of the fuse for 110 volt users is 6 AMPS at 250Volt type slow blow. The value of the fuse for 220 users is 3 AMPS at 250Volt type slow blow.

HARDWARE PARTS PACKAGES



Game Introduction:

The all time carnival hit is now a redemption game. Players skillfully toss the balls into the milk jug or surrounding holes to win tickets. The interactive “Carny” voice heckles and entertains players, while they shoot for the Super Bonus by getting all the balls in the jug.

STOP– Important setup info:

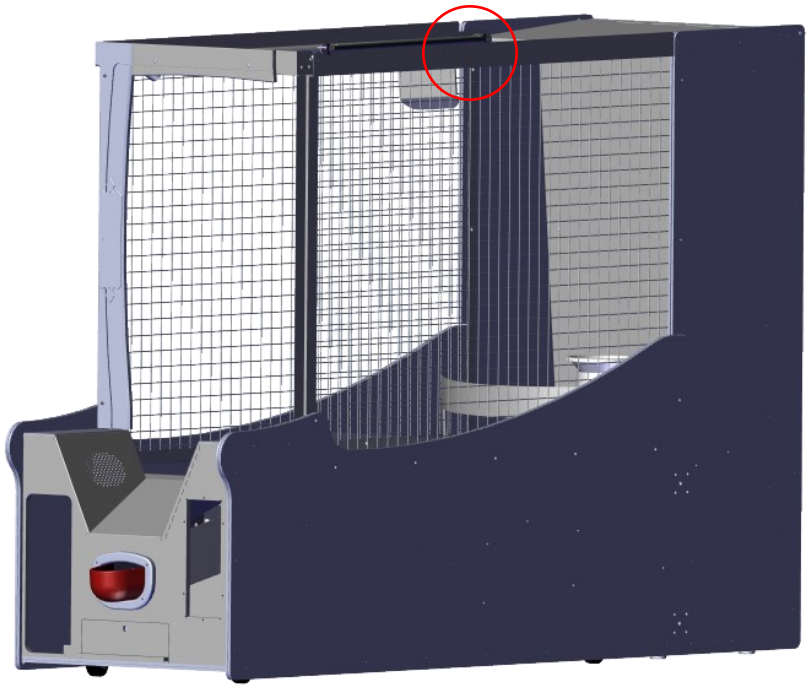
Your game can be configured in different ways. We have included decals that you need to apply to match your desired settings. Please read all of the setup sections and programming recommendations before you begin to assemble your game. The Graphic decals can be applied at any time and can be changed later if desired.

SETUP - Shipped with cages attached assembly instructions.

The game can be shipped in two ways. Follow these Instructions if your game was shipped with both the front half, back half, and cages completely assembled together and only the canopy is not attached. If your game is split in half, see the section entitled "**Separated Cabinet Assembly**".

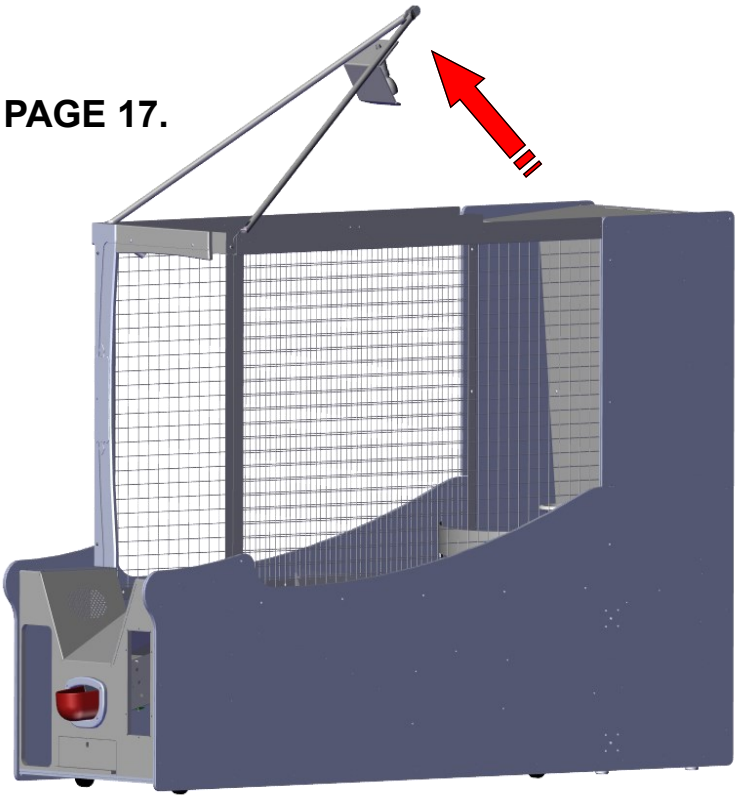
Step 1:

Remove ties that hold the upper supports to the shipping 2x4 and lift the upper supports up.



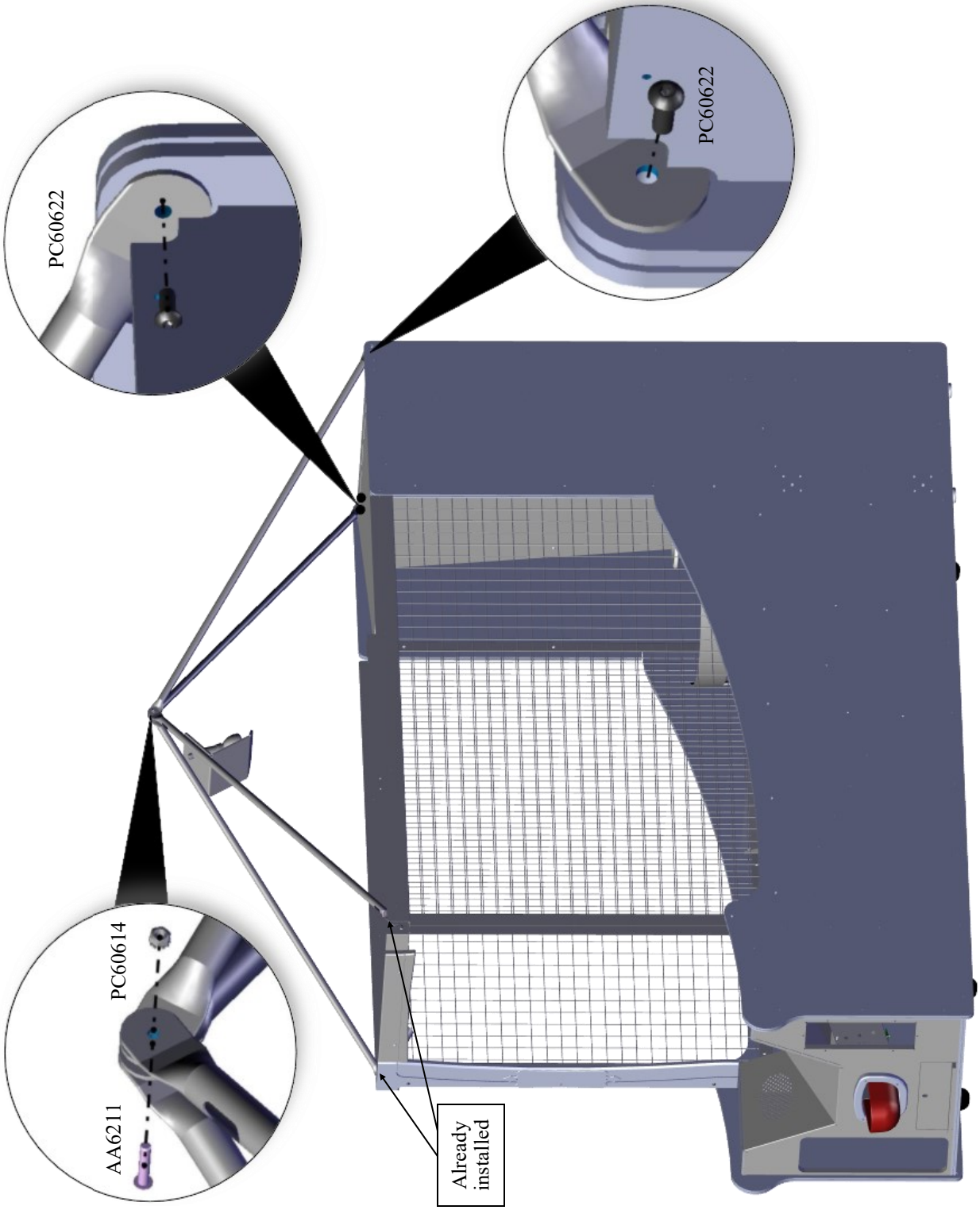
Step 2: IF FLAT ROOF SKIP TO PAGE 17.

Raise the bars to their upright position.



Step 3:

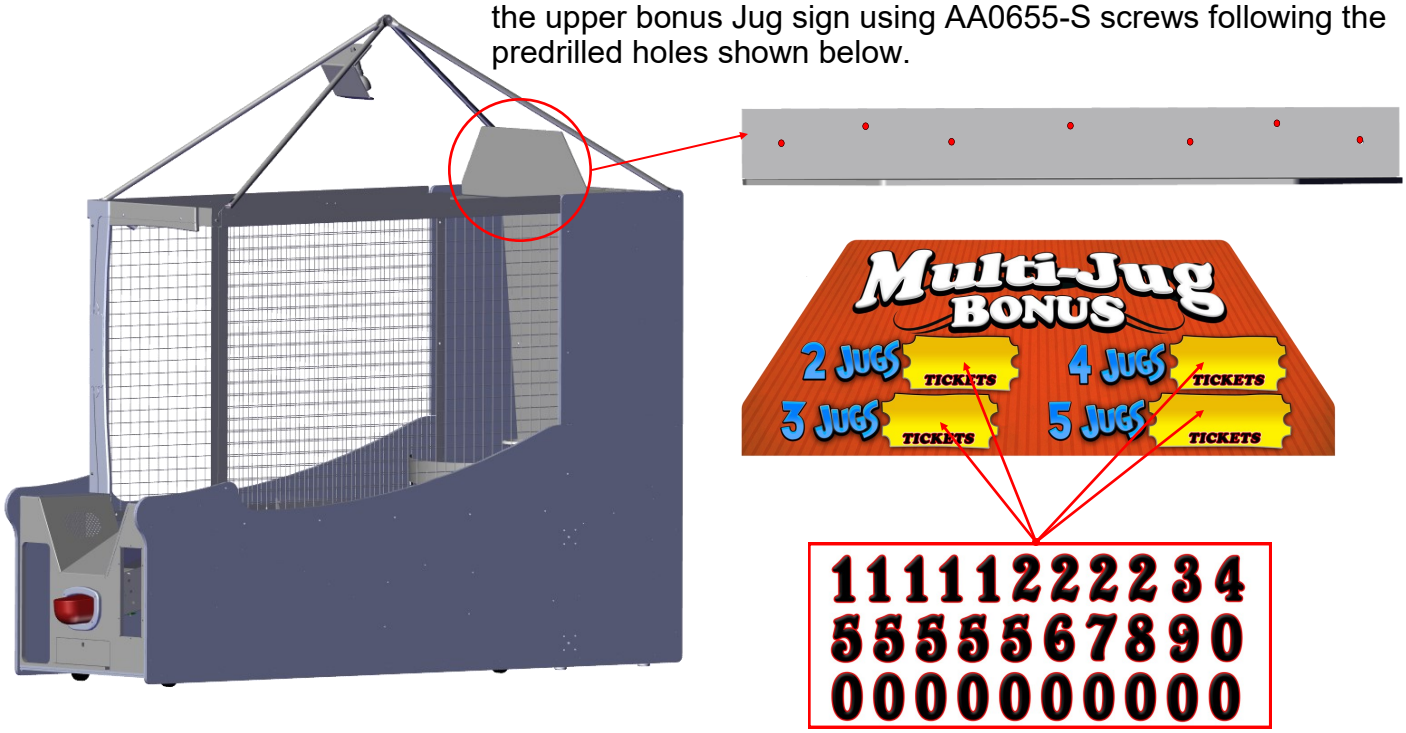
Attach the upper back supports to the front back supports using the supplied hardware as shown. At this time attach the earth ground wire to the grounding lug at the light. Connect the AC harness for the light fixture. Tighten all hardware. It is recommended to use a long extension when attach the Allen bolts.

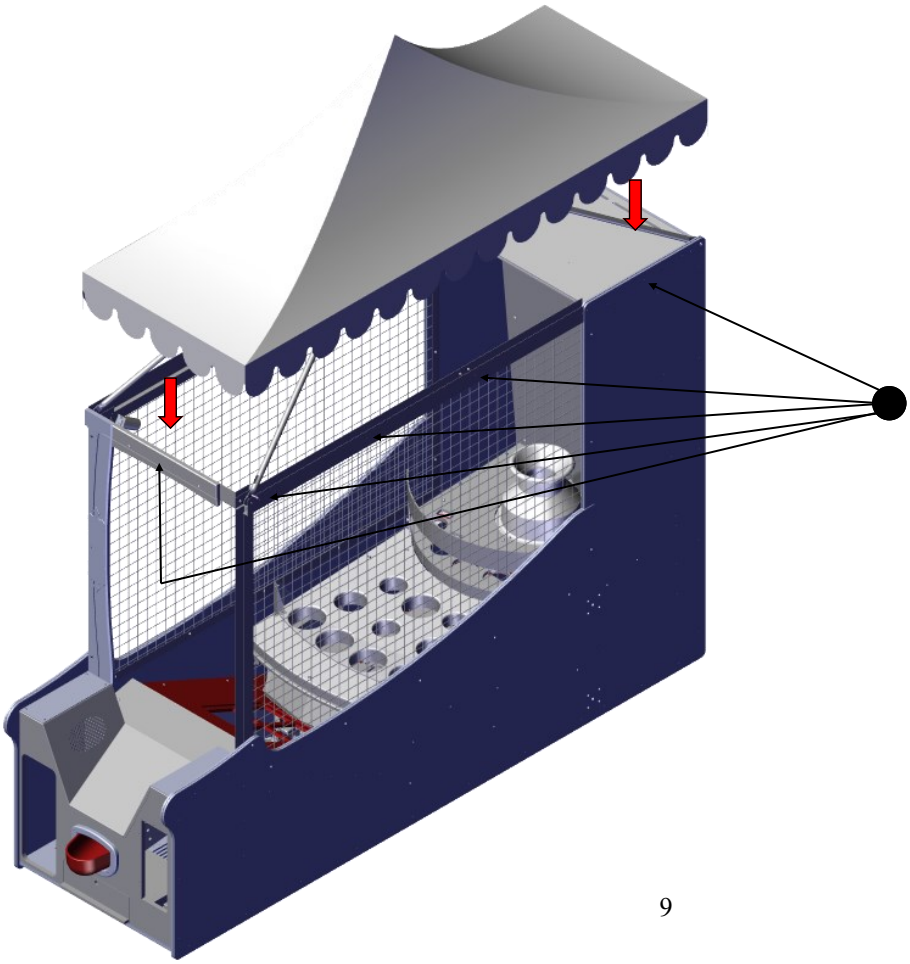


** NOTE**
Front bars are attached.
Remove hardware and reuse.

Step 4:

Before proceeding it is recommended to apply the decals to this before installing. See page 18 for recommended settings. Attach the upper bonus Jug sign using AA0655-S screws following the predrilled holes shown below.



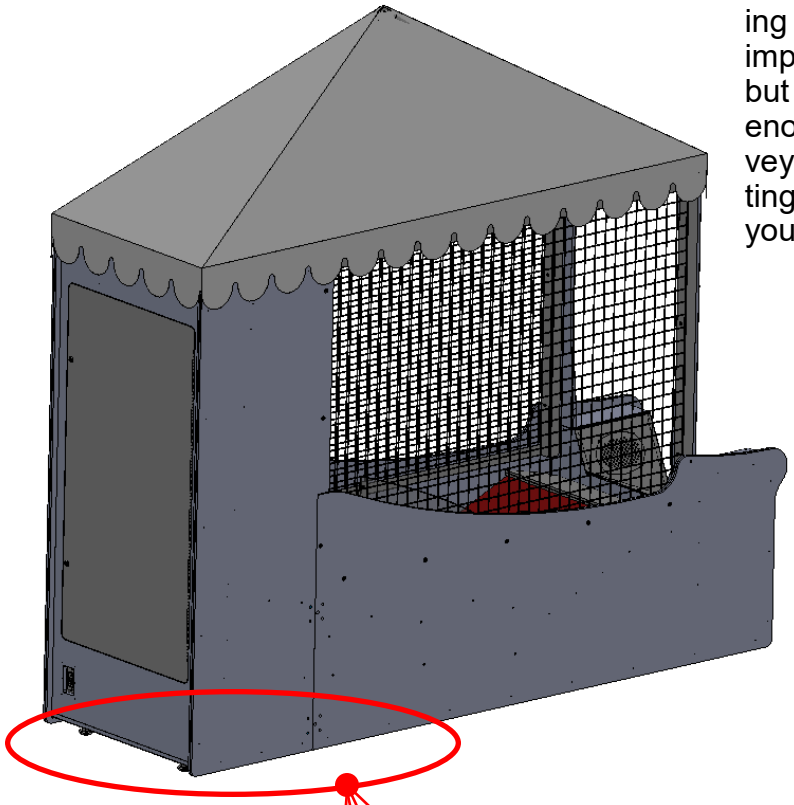


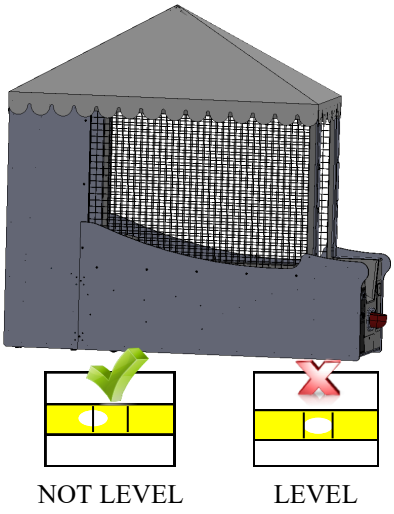
Step 5:

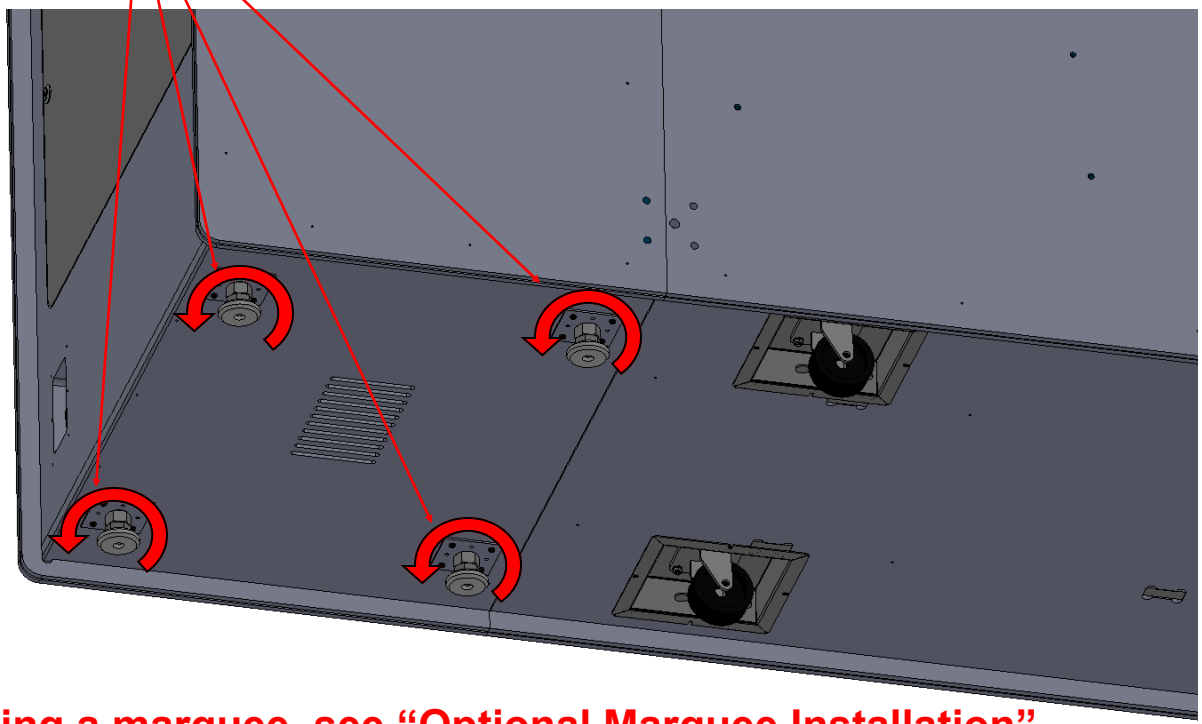
Attach the upper marquee using the AA6289 screws following the arrows shown. Only one side is shown for clarity.

Step 6:

Finally raise the back end of the game by twisting the back leg levers counter-clockwise. It is important not to have the game totally leveled but instead, have the back slightly raised enough so that the balls can return to the conveyor easier. If you find that your balls are getting hung up when returning to the conveyor, you do not have the back raised enough.







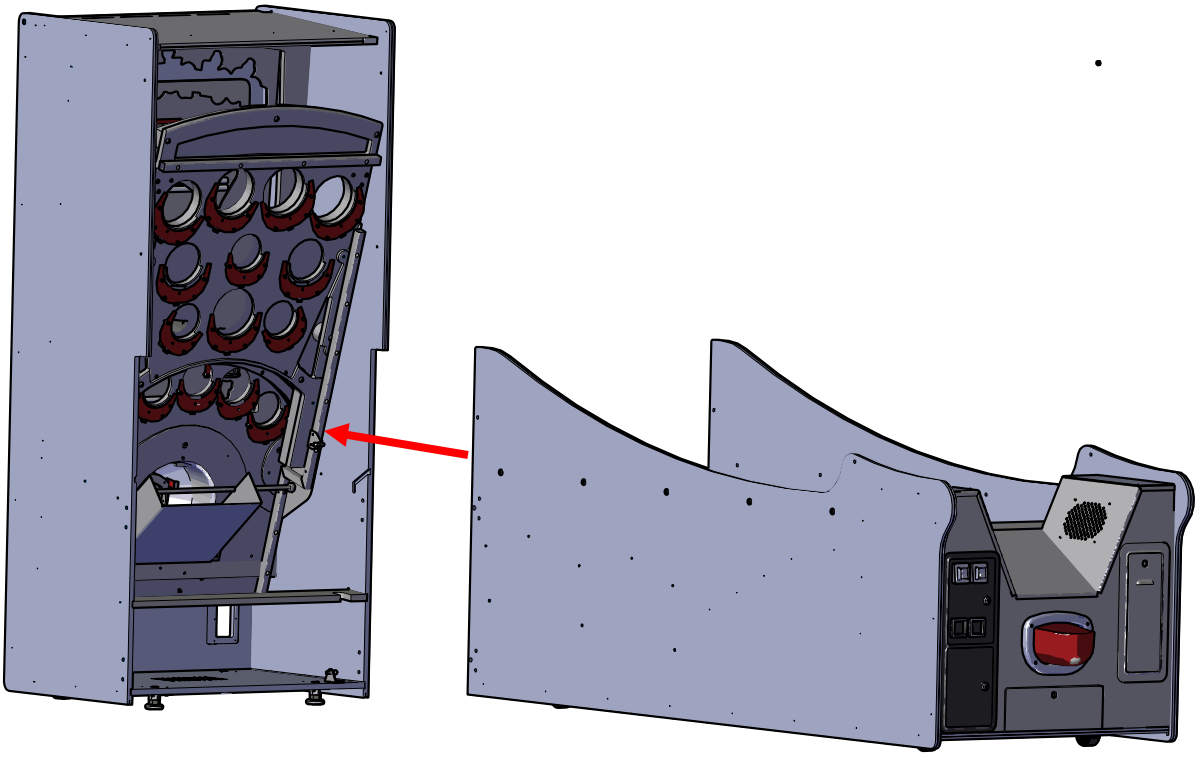
If installing a marquee, see “Optional Marquee Installation”.
If not installing a marquee, proceed to “Decal Install locations”.

SETUP - Separated cabinet assembly instructions

If your game has been shipped with the back and front separated, follow these instructions first.

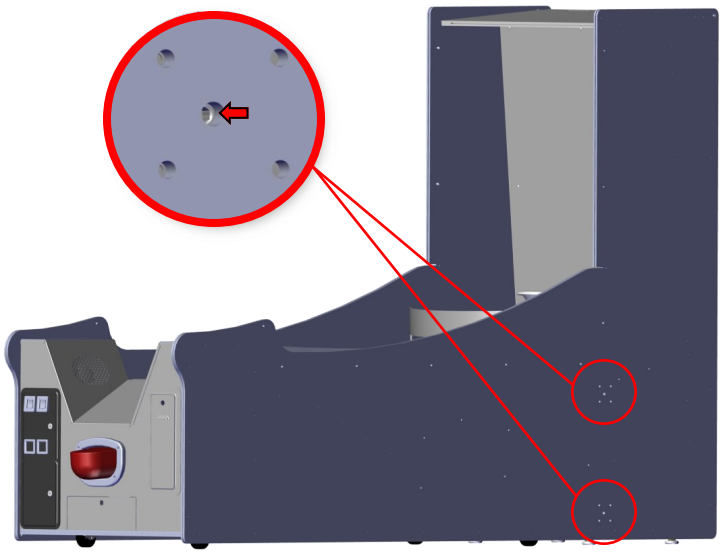
Step 1:

Position the two halves as shown and on the left side attach the signal wire harnesses and on the right side attach the AC harness. Now slide the two halves together.



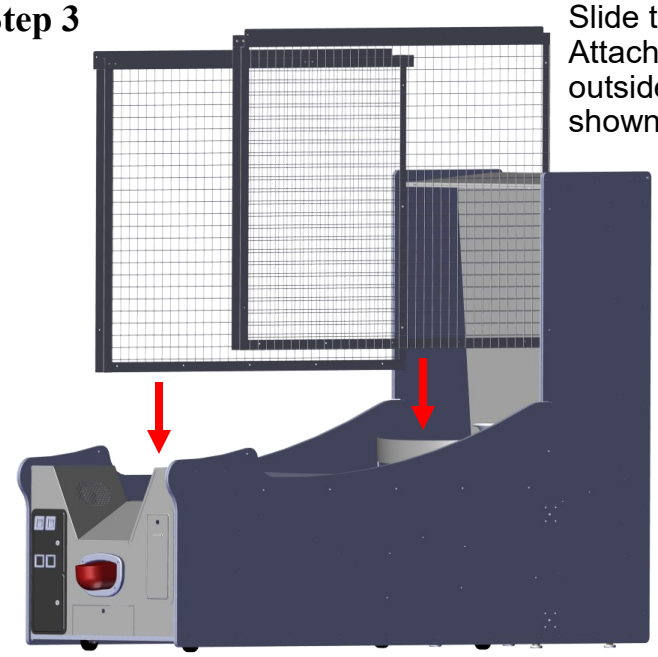
Step 2:

Using the provided latch tool, latch the front half to the back half by inserting the wrench into the hex holes and turning clockwise.

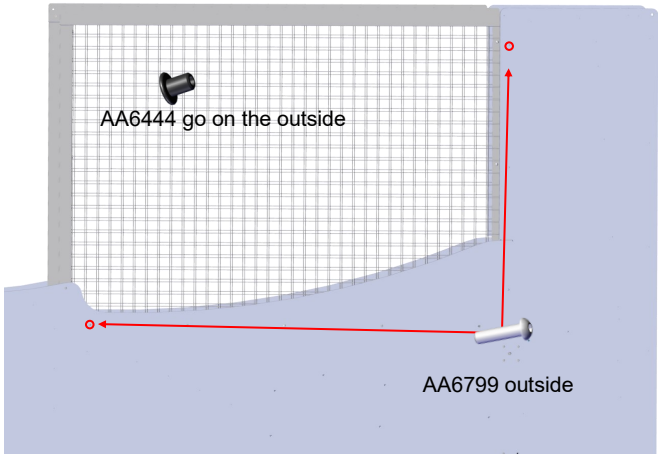


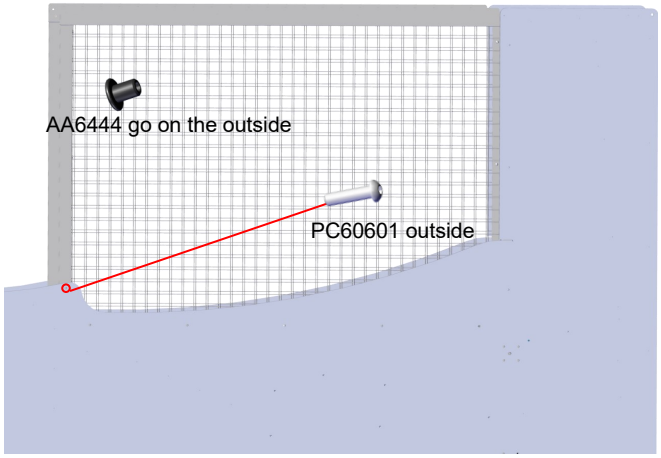
Latch tool

Step 3



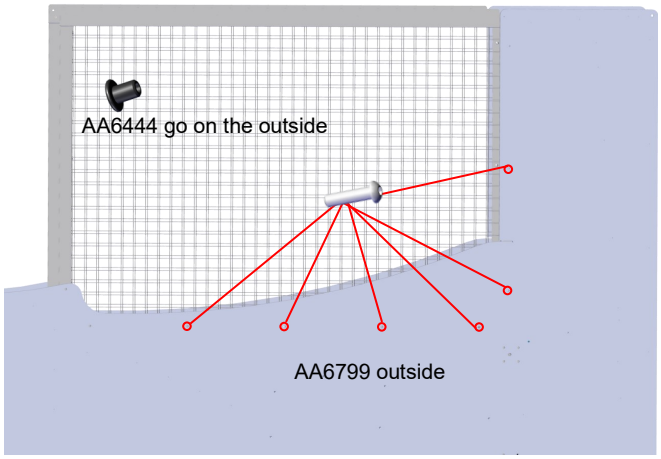
Slide the cages down and inside the bottom cabinet. Attach the cages to the cabinet using AA6444 on the outside and AA6799 on the inside to the two locations shown below. DO NOT TIGHTEN AT THIS TIME.





Using one hat nut on the outside and the shorter PC60601 on the inside . A tool is provided in the parts package.

DO NOT TIGHTEN AT THIS TIME.



Now install the remaining hat nuts and AA6799 bolts.

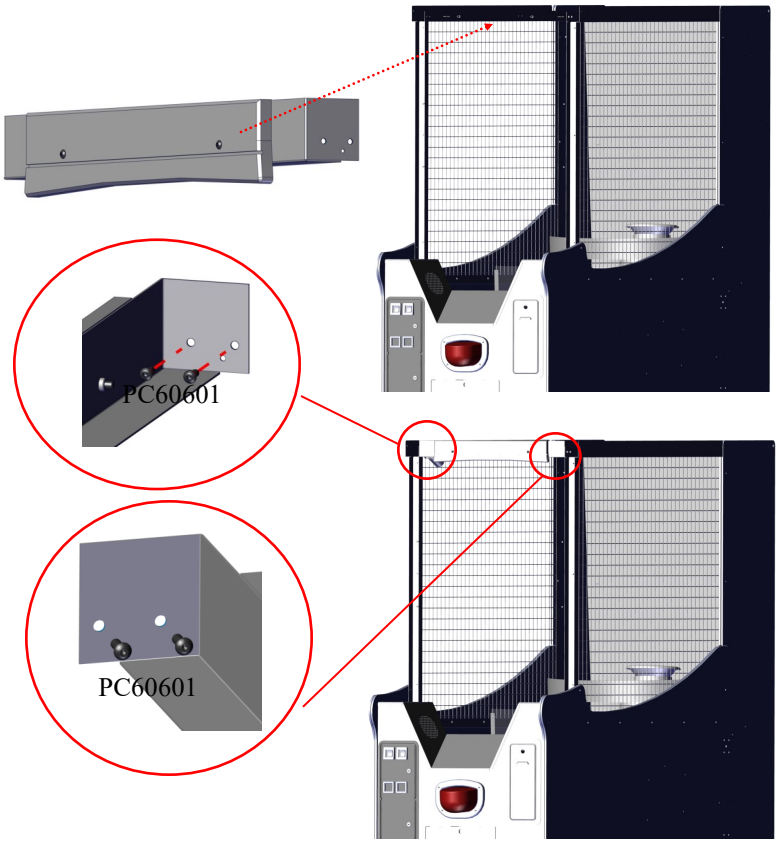
DO NOT TIGHTEN UNTIL EVERY BOLT HAS BEEN INSTALLED.

This will allow you to align the cage better.

Now tighten all bolts.

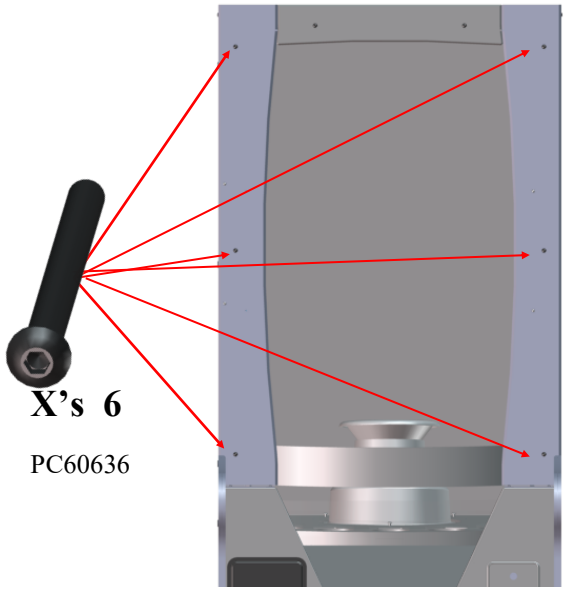
Step 4

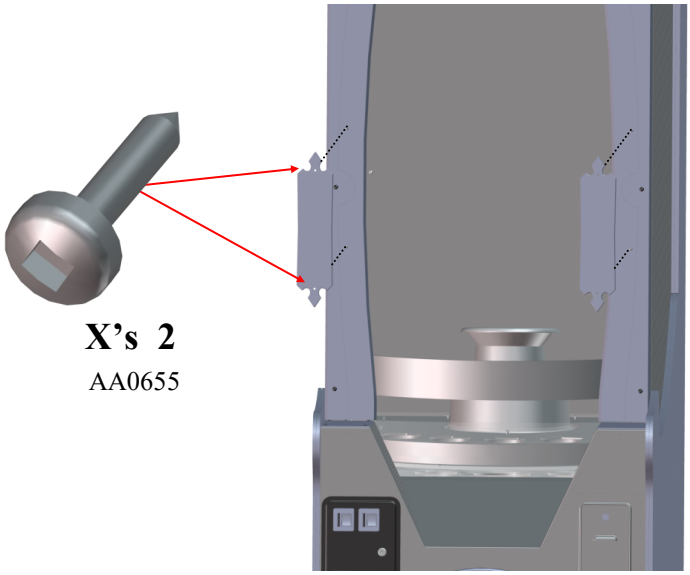
Attach the upper support to the cabinet using two PC60601 bolts on each side.



Step 5

Run the proximity sensor harness inside down the left side of the front cage channel and attach the plastic trim on both sides using PC60636 bolts. Attach the two plates with black AA0655 screws to cover the center trim.

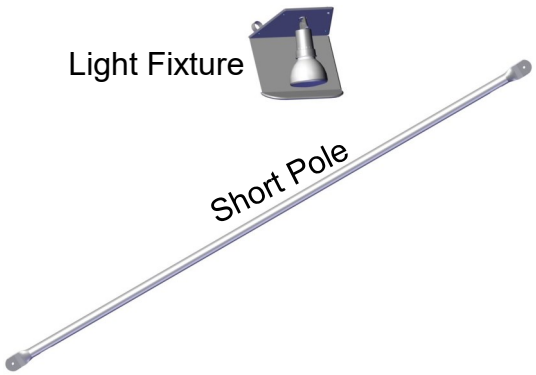


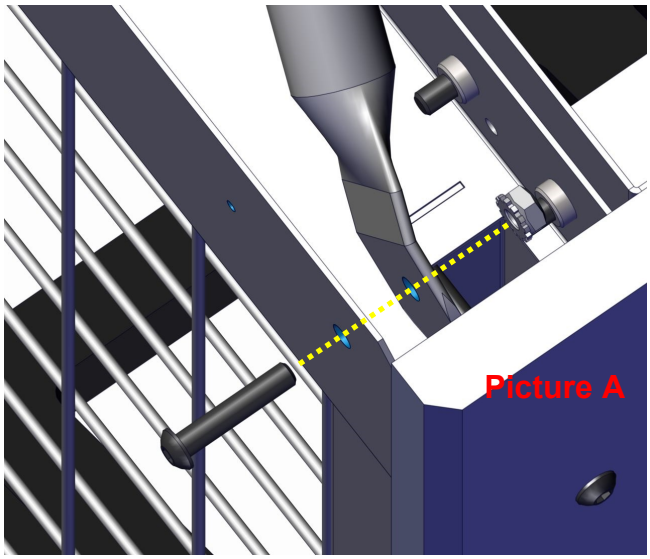


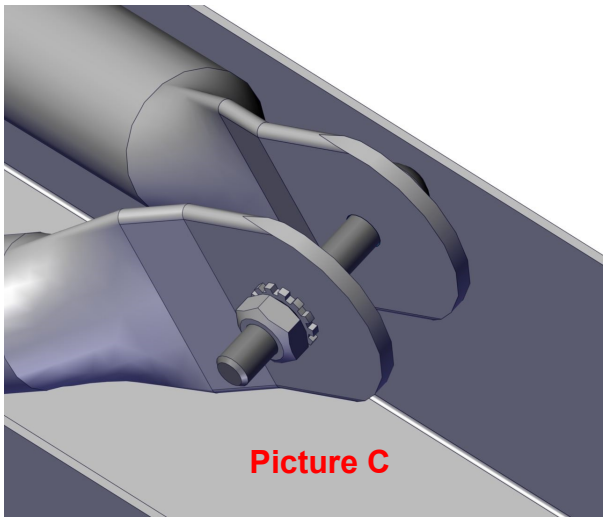
Step 6: Standard Roof install (If flat Roof, skip to Step 10)

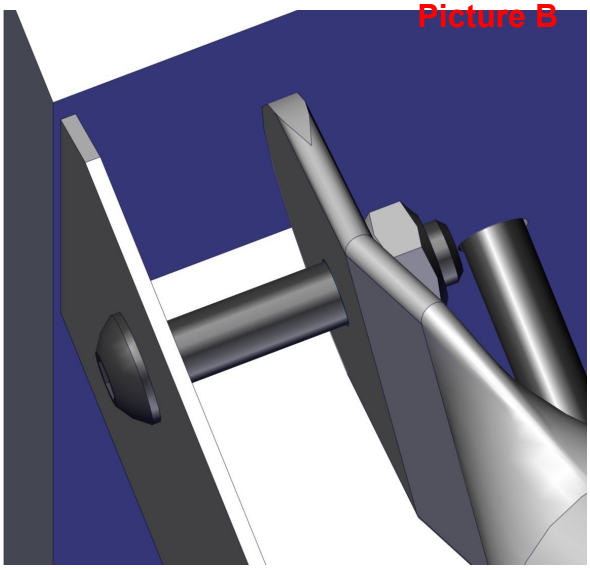
Using the short poles, attach one side of the pole to the front side of the cabinet using one PC60601 and PC60604. MAKE SURE the two predrilled holes for the light fixture are facing down. Then attach another pole to the other side using the same hardware.
See pictures A and B.

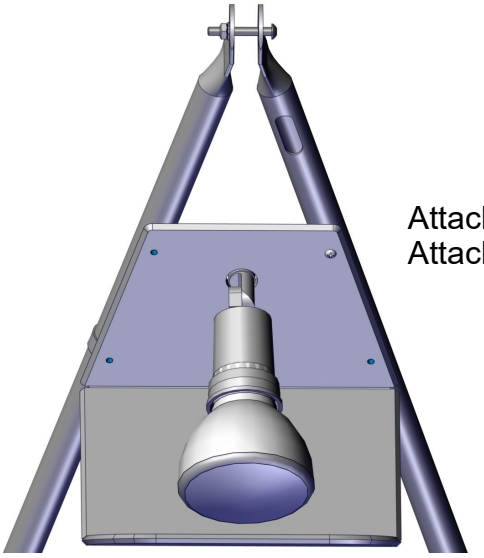
At the other end of the poles temporally attach them using AA6220 bolt and PC60604 nut.
See picture C.







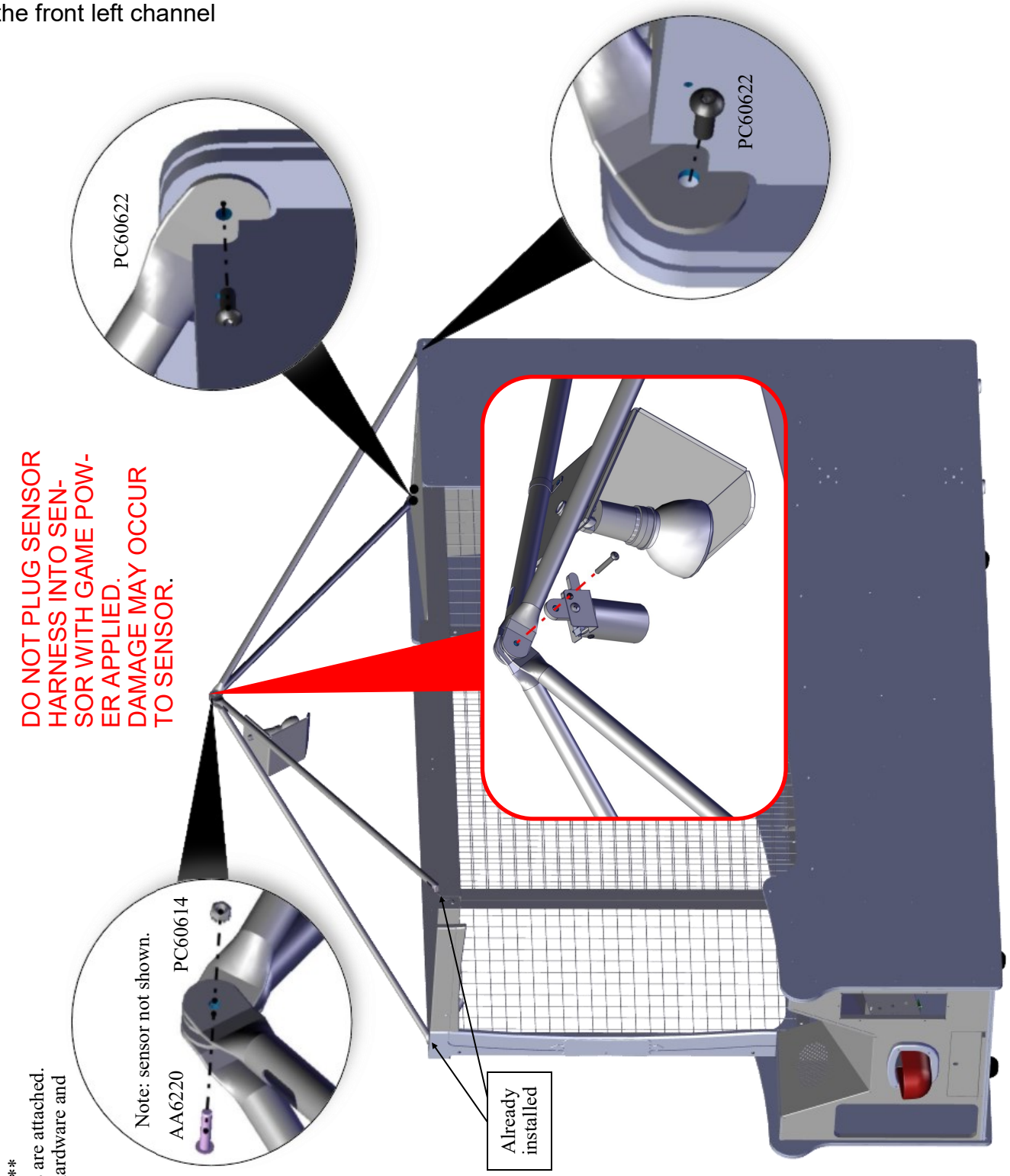




Attach the light fixture to the poles using four AA655 screws.
Attach the earth ground lug onto one of the four AA655 screws.

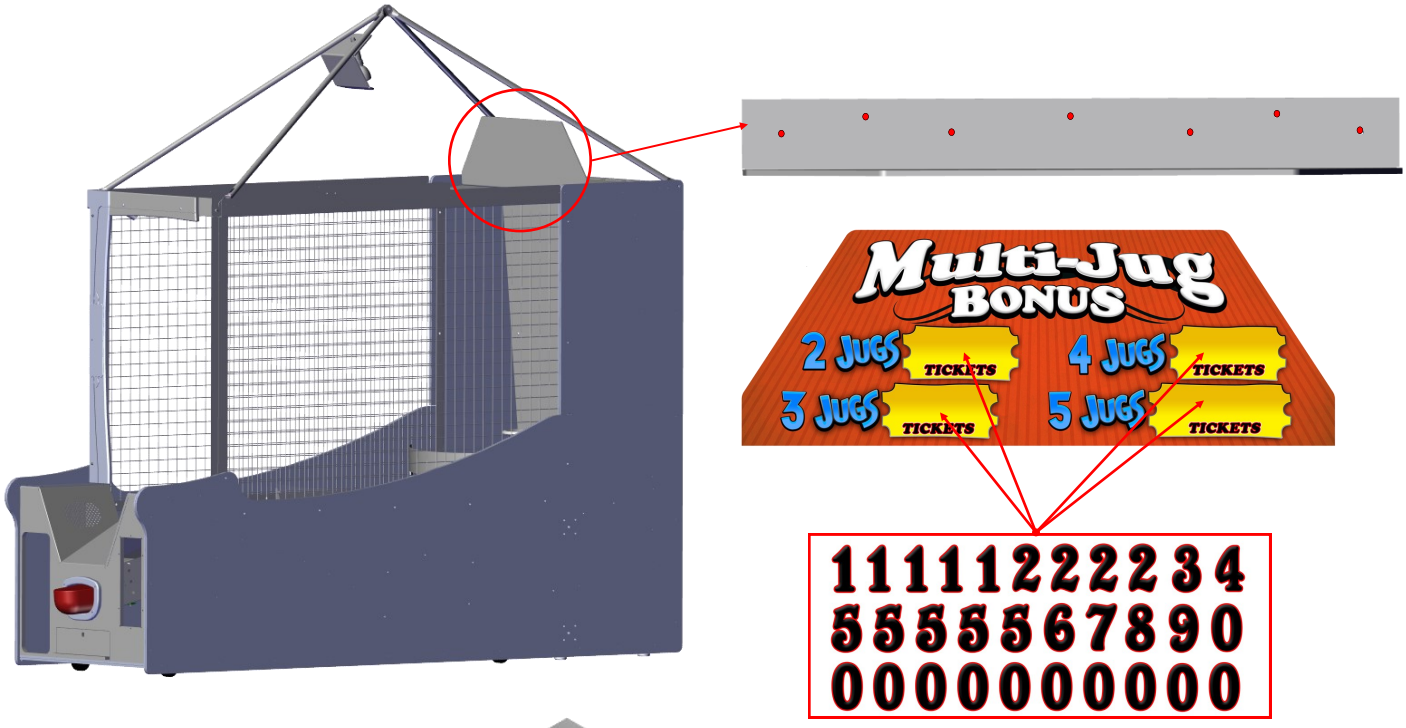
Step 7: Standard Roof install (If flat Roof, skip to Step 10)

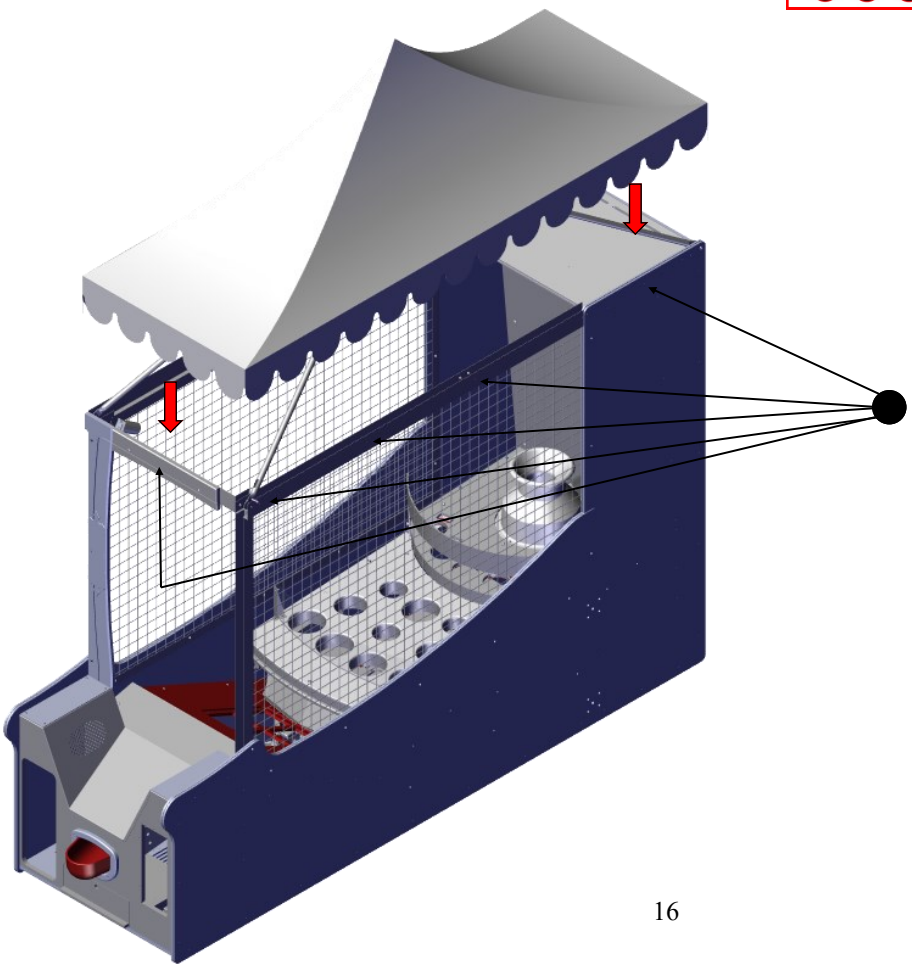
Attach the upper back supports to the front back supports using the supplied hardware as shown. At this time attach the earth ground wire to the grounding lug at the light. Connect the AC harness for the light fixture. Tighten all hardware. It is recommended to use a long extension when attach the Allen bolts. The proximity sensor can be found in the parts package located in the cash box. Attach the sensor wire harness to the sensor. The path of the wire should travel along the front left channel



Step 8: Standard Roof install (If flat Roof, skip to Step 10)

Before proceeding it is recommended to apply the decals to this before installing. See page 18 for recommended settings. Attach the upper bonus Jug sign using AA0655-s sliver screws following the predrilled holes shown below.





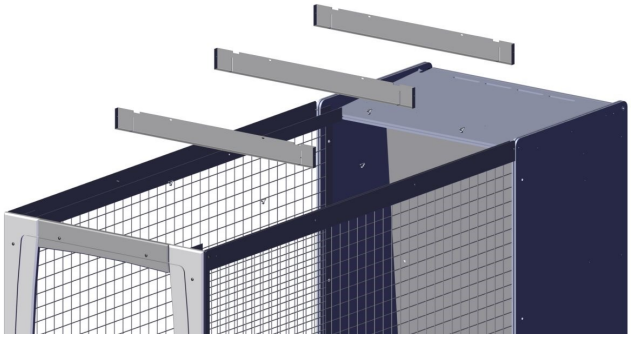
Step 9:

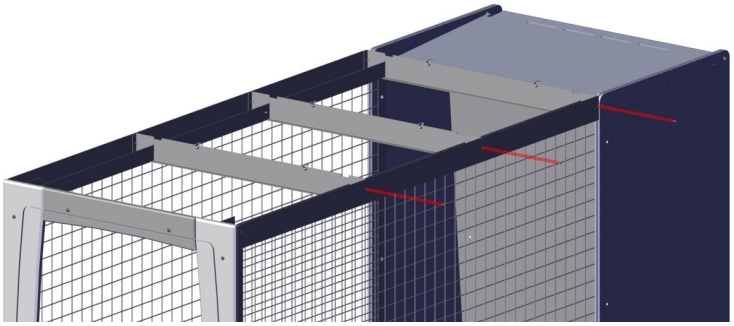
Attach the upper marquee using the AA6289 screws following the arrows shown. Only one side is shown for clarity.

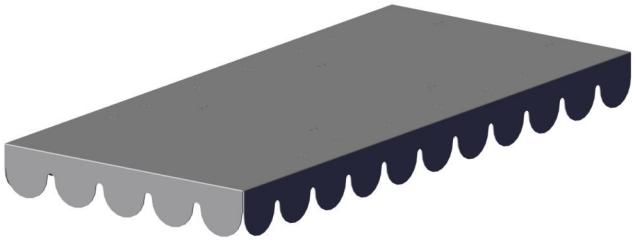
Skip to Step 11.

Step 10a: Flat Roof Install (Purchased option)

Attach the three MJ1340 supports using one AA6071 bolt on each side.



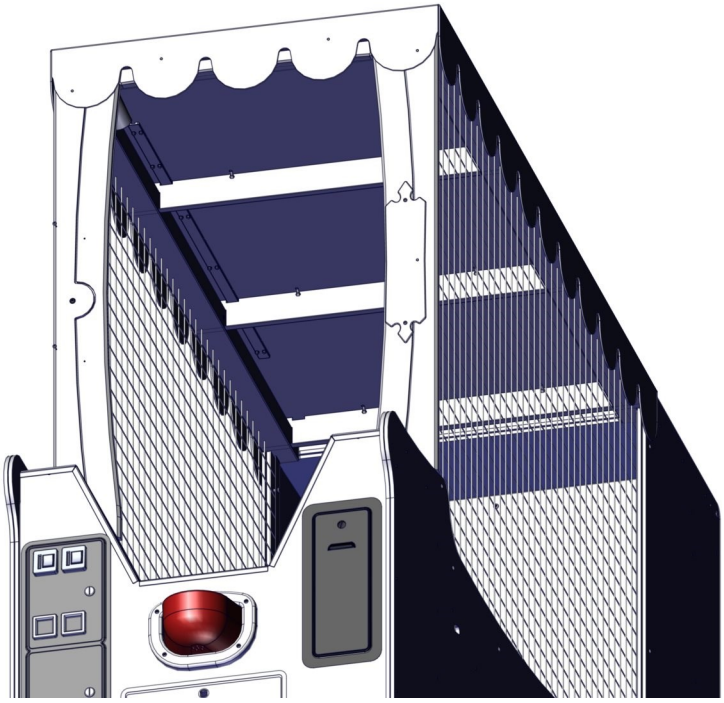




Step 10b: Flat Roof Install

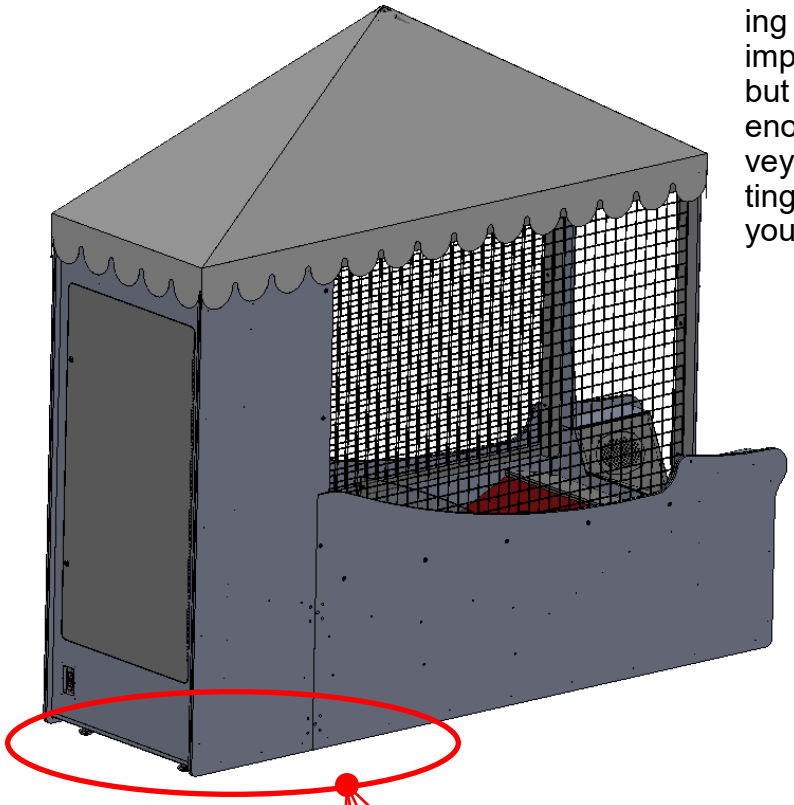
Place the roof assembly to the top and secure using supplied tie-wraps.

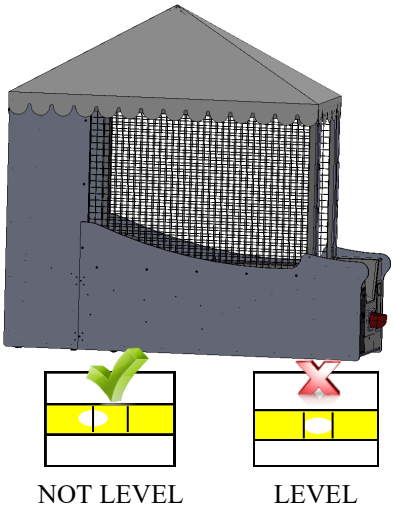
Attach the LED wiring to the +12 plug at the front of the cabinet.

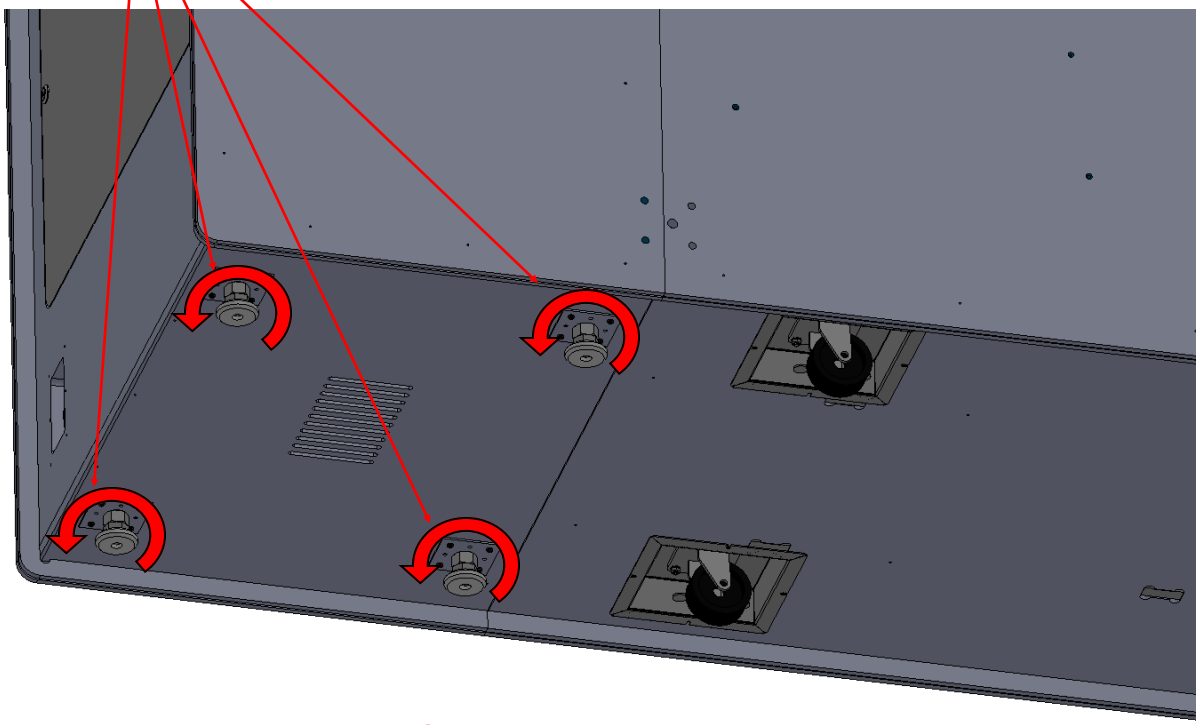


Step 11:

Finally raise the back end of the game by twisting the back leg levers counter-clockwise. It is important not to have the game totally leveled but instead, have the back slightly raised enough so that the balls can return to the conveyor easier. If you find that your balls are getting hung up when returning to the conveyor, you do not have the back raised enough.

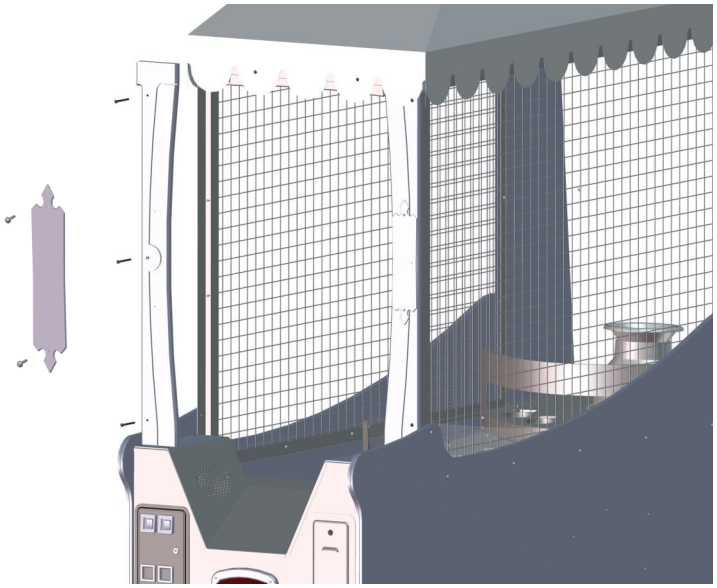






If installing a marquee, see "Optional Marquee Installation".

Optional Marquee Installation



Step 1:

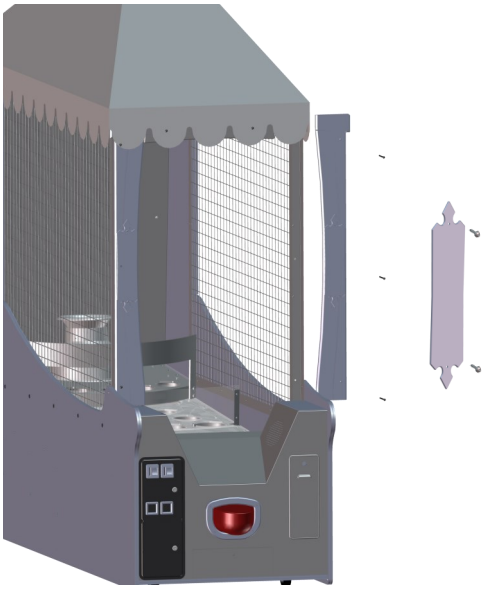
Remove the left side display plate and then the plastic trim from the front of the game. Do not discard the three bolts. Do not discard the display Plate. Discard the 2 Square bit screws as they are not needed.

X's 2

AA0655

X's 3

PC60636



Step 2:

On the second game remove the right side display plate and plastic trim piece from the front of the game. Do not discard the three Allen bolts. Do not discard the display Plate.

X's 2

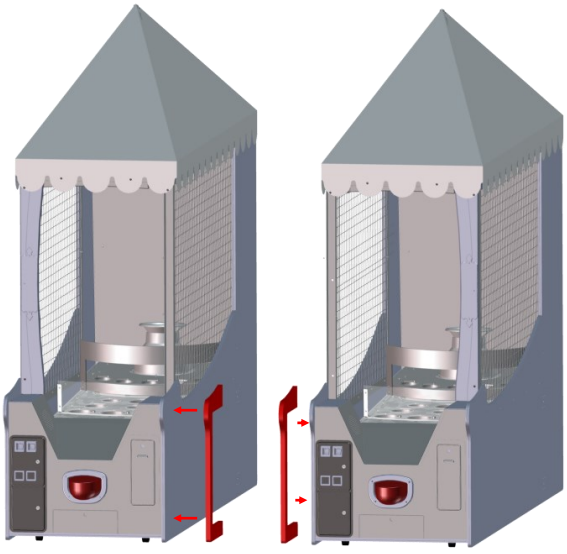
AA0655

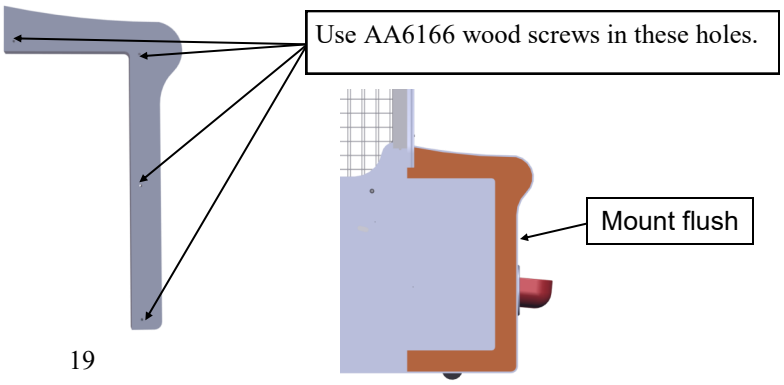
X's 3

PC60636

Step 3:

Attach one of the L-shaped spacers to the left side of a game using four 1 1/2" wood screw (AA6166) and the other L-shaped spacer to the right side of the other game. Mount the spacer flush to the outside of the cabinet. No spacer is used in back of game.

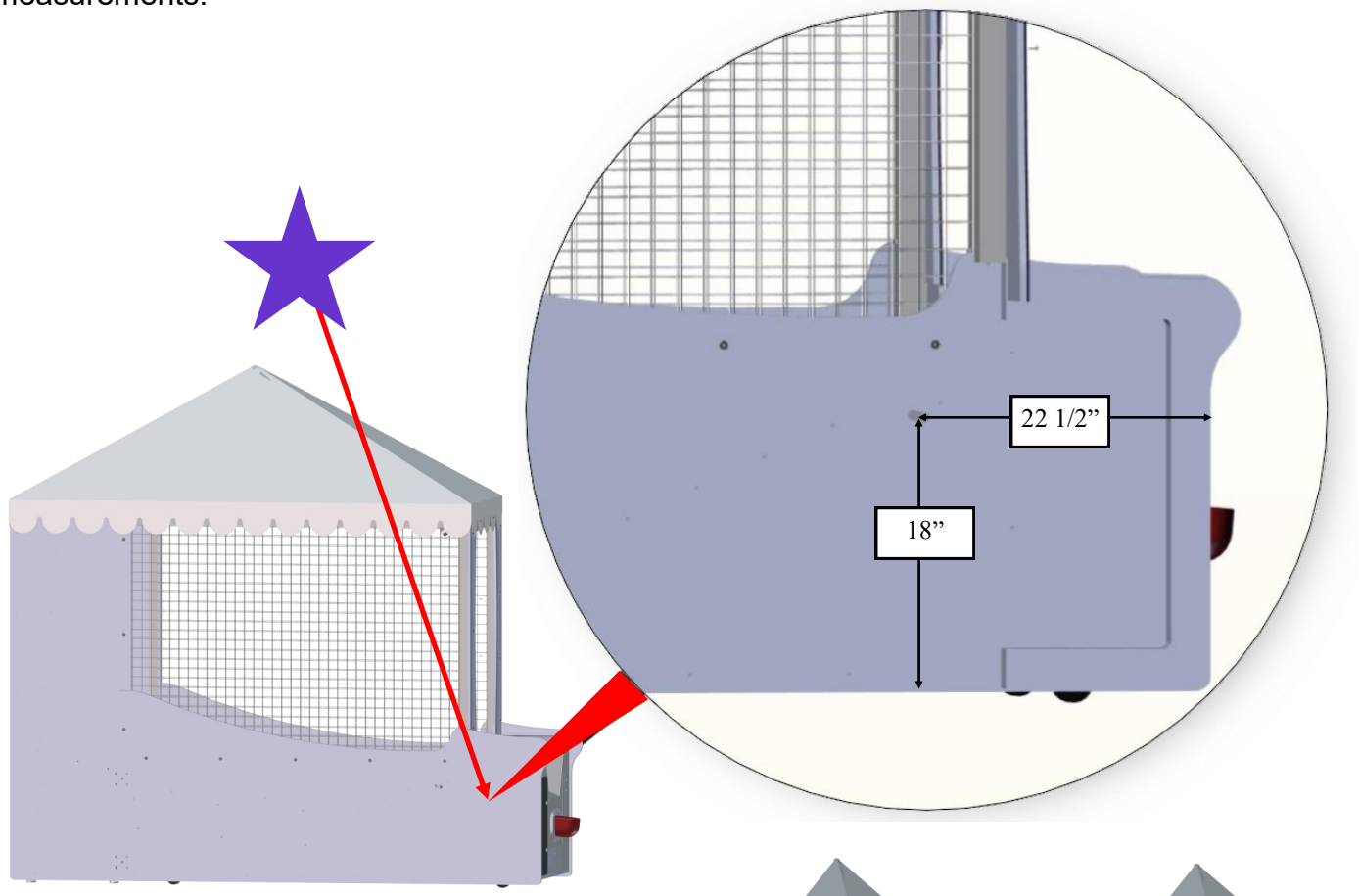




Optional Marquee Installation

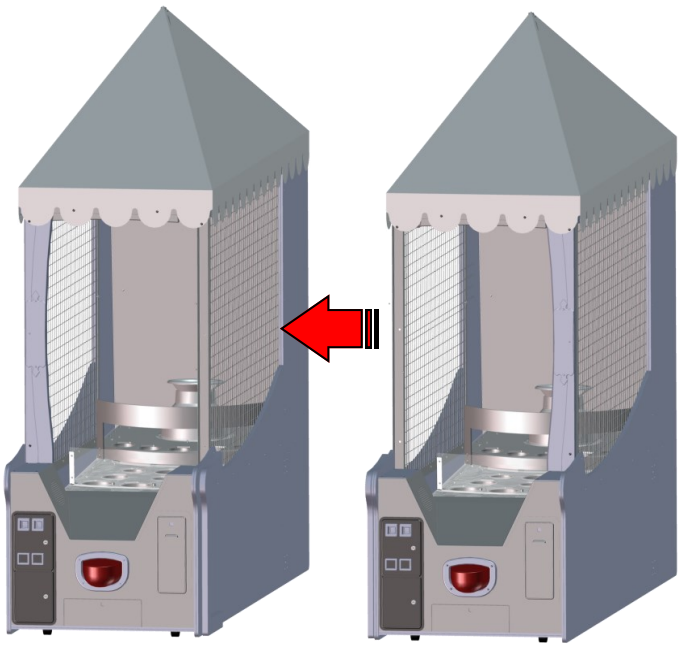
Step 4:

Drill a one inch hole on the same side that you attached a spacer to if your game doesn't have a hole already present. Remove the star plaque if present to expose the hole. This hole is used to route the phone cord and marquee wiring (Deluxe only) that is installed later on. Refer below for measurements.



Step 5:

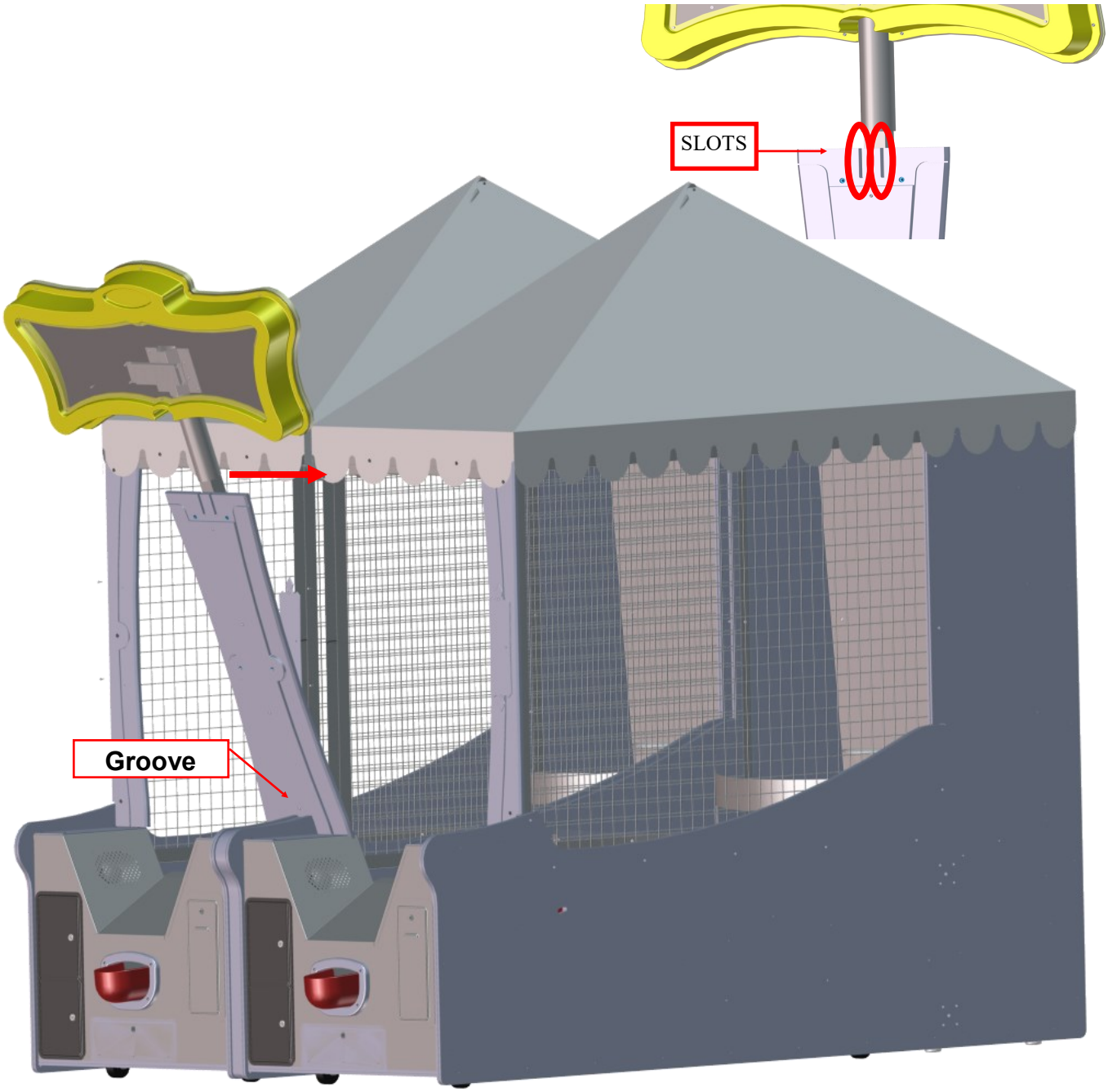
Position the two games as shown and slide the two games together. It is not critical that the games be 100% parallel to each other, they can be off at the back by up to a few inches. The front needs to be flush in order for the marquee mount to attach properly. Both games need to be at the same level in front.



Optional Marquee Installation

Step 6a:

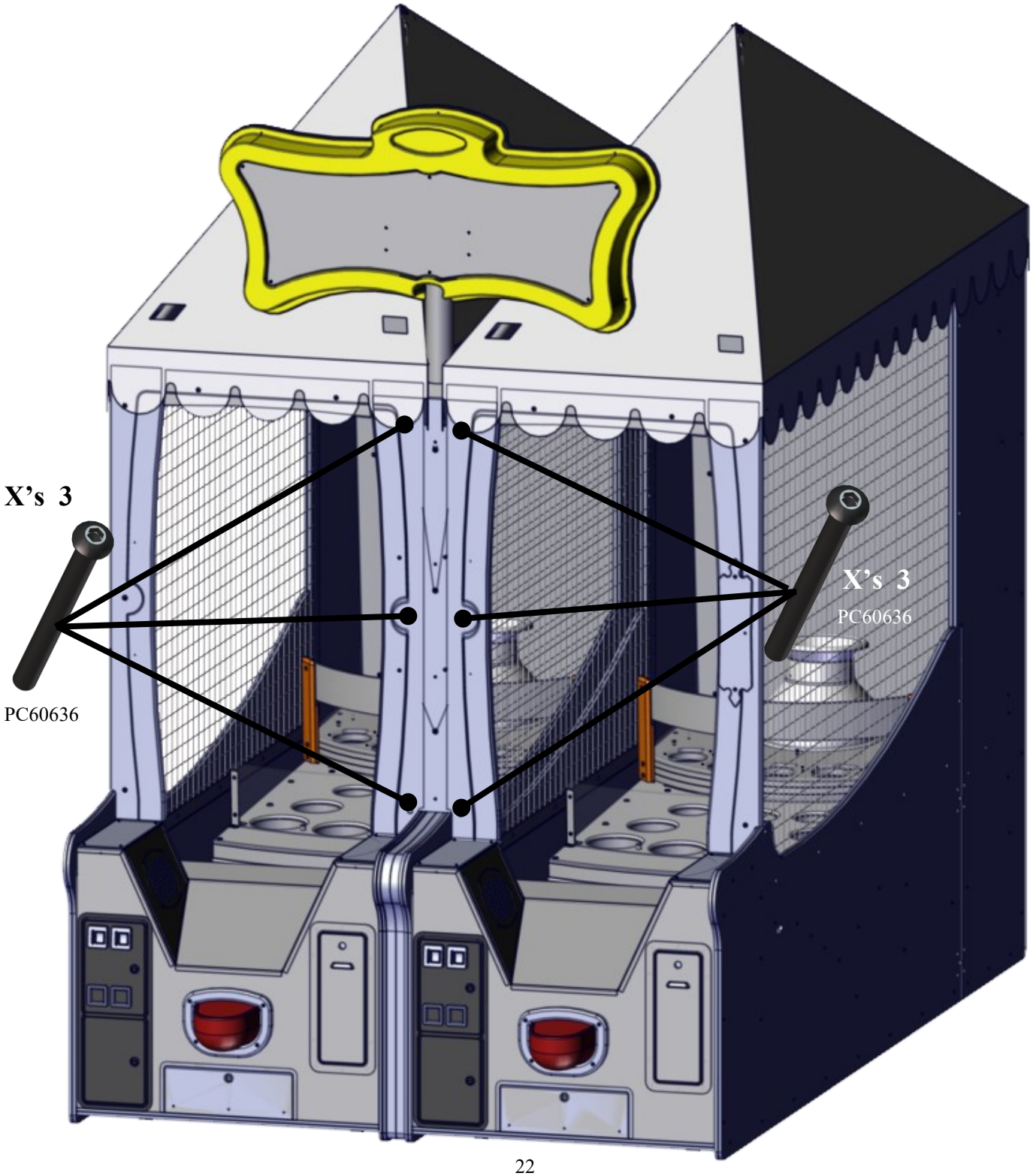
Place the marquee assembly so that the bottom groove is at an angle as shown below. The fit is tight and will require a little force to bring the games into alignment. Once the marquee assembly is firmly resting at the bottom of the groove, push the top flush with the cabinet. Before fully resting the marquee against the cabinet, insert the canopy side flaps into the slots circled below at the top of the plastic face. Do not pinch the canopy flaps behind the marquee. It will result in a unfinished look. Also pay attention to the wire harnesses so that you do not pinch them against the cabinet cages.



Optional Marquee Installation

Step 6b:

Attach the marquee to the cabinet using the bolts you had removed in step 1 of Optional Marquee Installation. The bolt locations are circled below.



Optional Marquee Installation

Step 6b:

Attach the center pole graphic to the marquee using 8-32x1”. The bolt locations are circled below. Re-attach one display plate you took off in steps 1 or 2 of “Optional Marquee Installation”. Use the two 8-32 x1 “ PPHMS screws supplied to attach the plate.

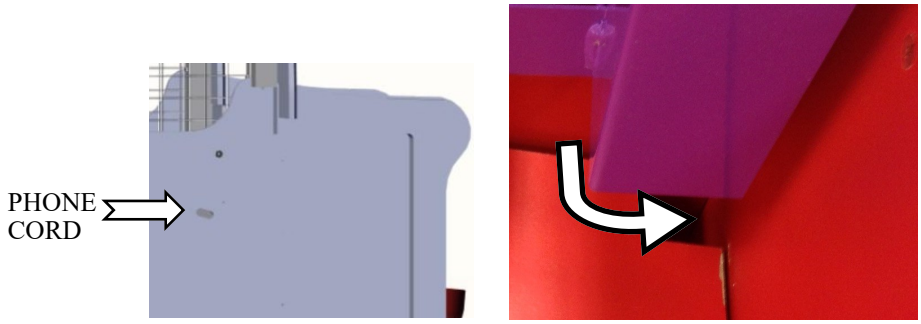
See “DECAL INSTALL LOCATIONS” to pick your plate decal if blank.

AA6177
Silver

Optional Marquee Installation

Step 7:

Route the wire harness from the marquee to the left game through the side hole from step 4. Now run a phone cord from the left game's main board to the right game's main board through the hole from step 4. Open the bottom drawer to access the main board. It doesn't matter which phone connector you use, they are both the same.

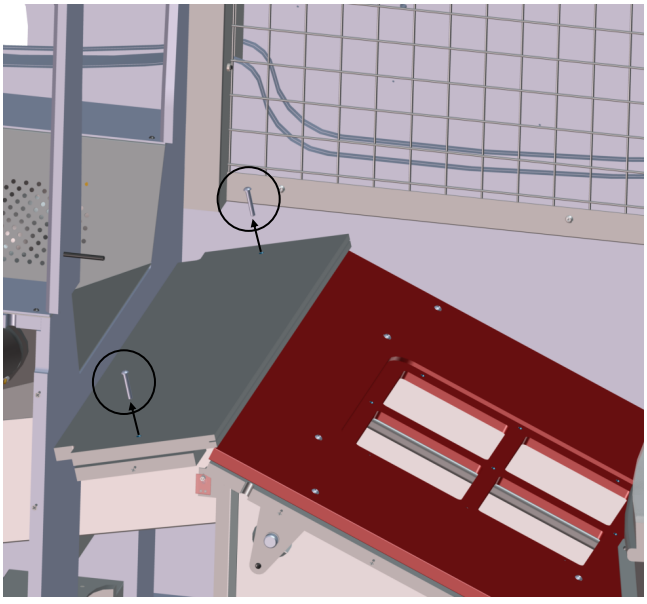


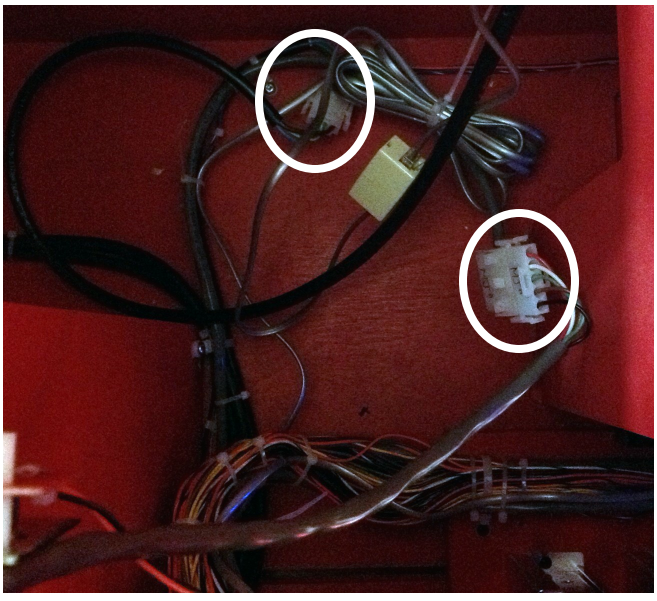
Step 8: LAST STEP FOR STANDARD MARQUEE INSTALL

Remove the two Allen bolts shown below and remove the cover on both games. Located at the right of the game is the AC plug, and in some units the data display plug for the marquee. See the picture below, they are circled. Refer to the wiring schematic insert for further harness information.

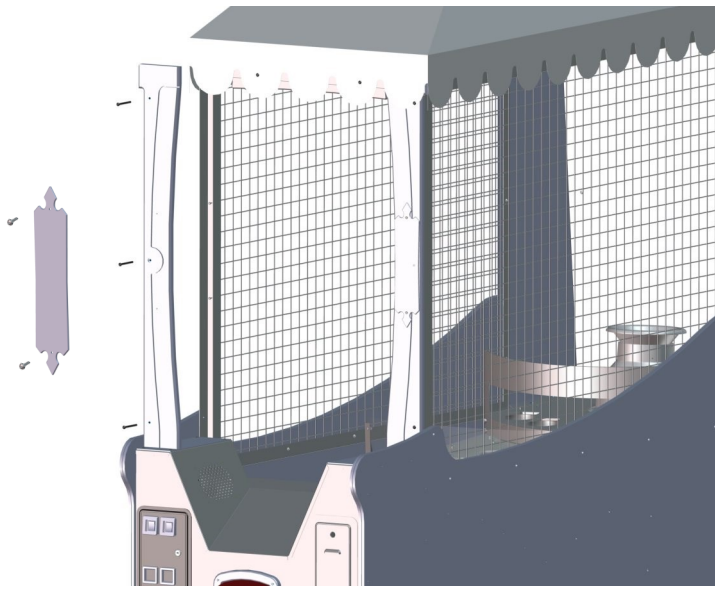
NOTE:

BOTH GAMES MUST BE SETUP EXACTLY THE SAME IN PROGRAMMING. EVEN THOUGH THEY ARE LINKED THEY DO NOT SHARE INFORMATION BETWEEN EACH OTHER.





Optional Deluxe Marquee Installation



Step 1:

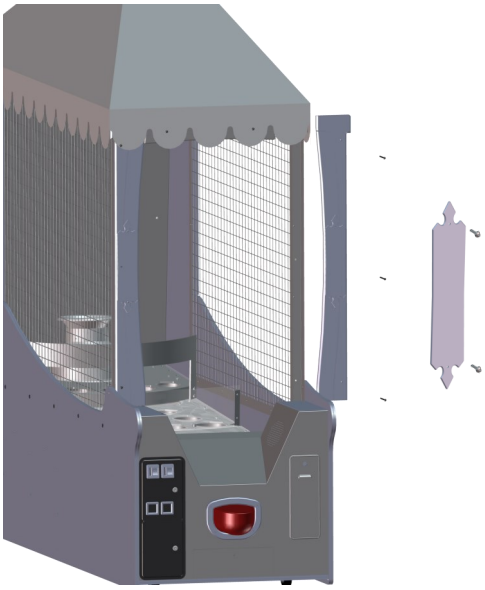
Remove the left side display plate and then the plastic trim from the front of the game. Do not discard the three bolts. Do not discard the display Plate. Discard the 2 Square bit screws as they are not needed.

X's 2

AA0655

X's 3

PC60636



Step 2:

On the second game remove the right side display plate and plastic trim piece from the front of the game. Do not discard the three Allen bolts. Do not discard the display Plate.

X's 2

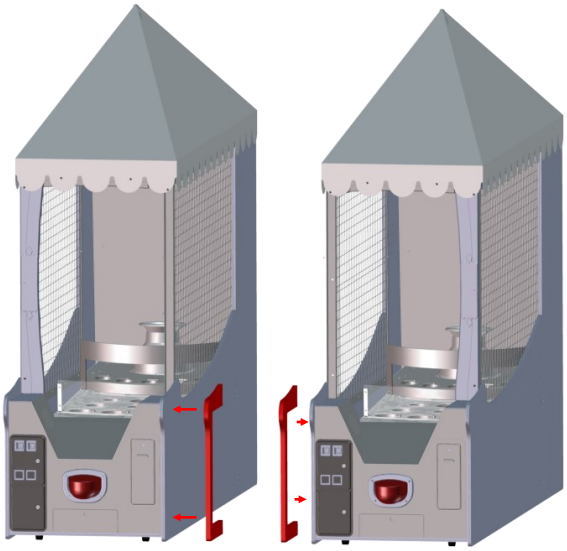
AA0655

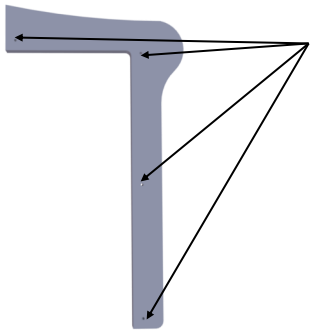
X's 3

PC60636

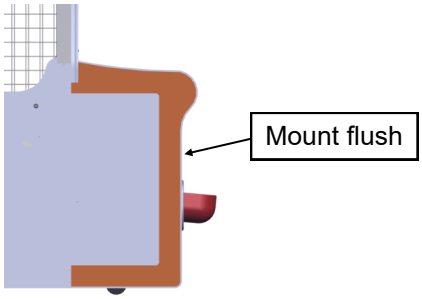
Step 3:

Attach one of the L-shaped spacers to the left side of a game using four AA6166 wood screw and the other L-shaped spacer to the right side of the other game. Mount the spacer flush to the outside of the cabinet. No spacer is used in back of game.





Use AA6166 wood screws in these holes.

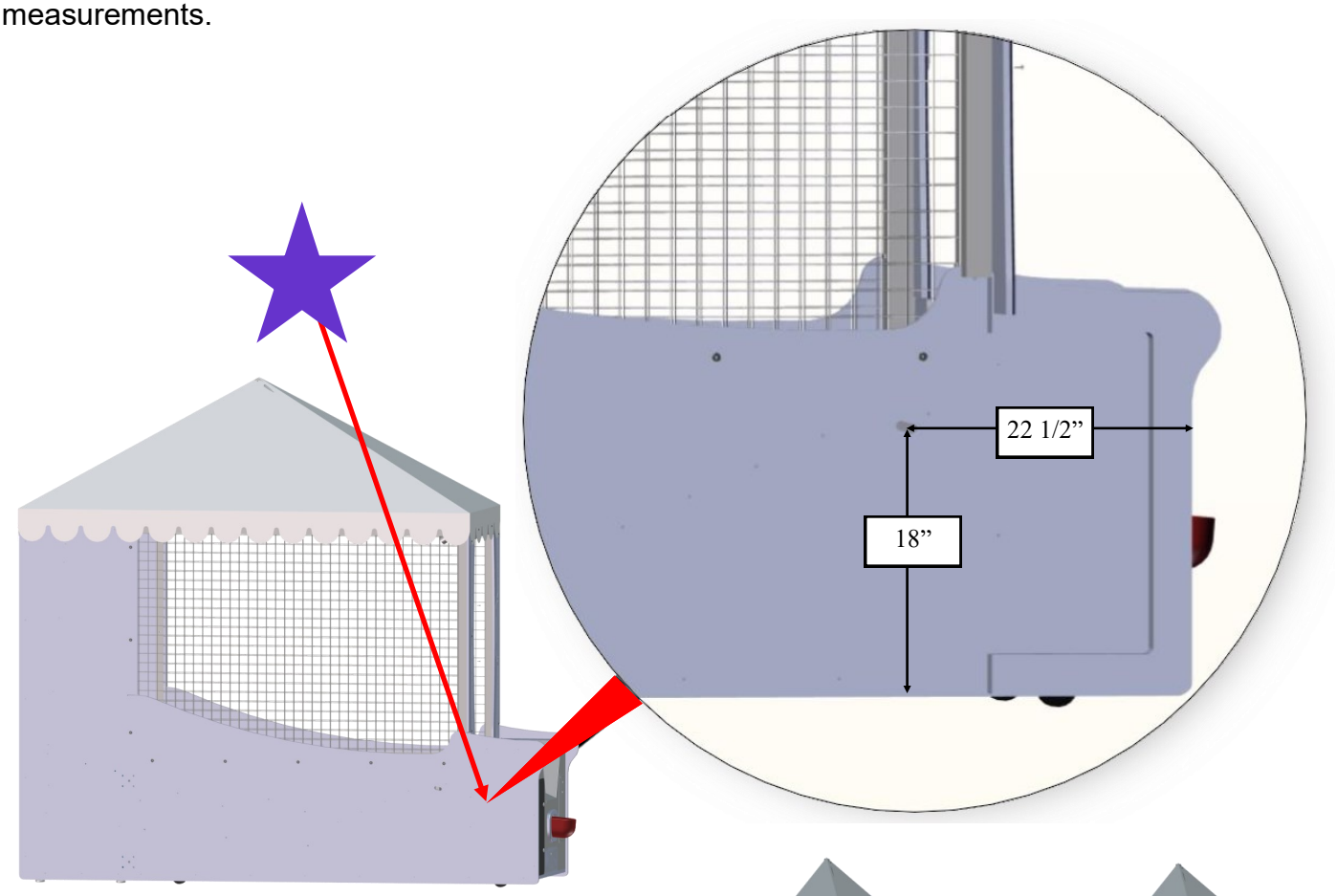


Mount flush

Optional Deluxe Marquee Installation

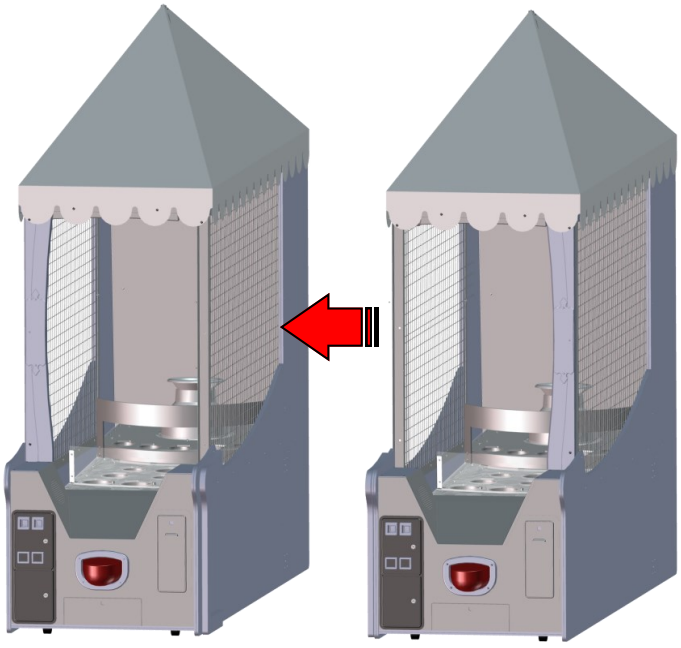
Step 4:

Drill a one inch hole on the same side that you attached a spacer to if your game doesn't have a hole already present. Remove the star plaque if present to expose the hole. This hole is used to route the phone cord and marquee wiring (Deluxe only) that is installed later on. Refer below for measurements.



Step 5:

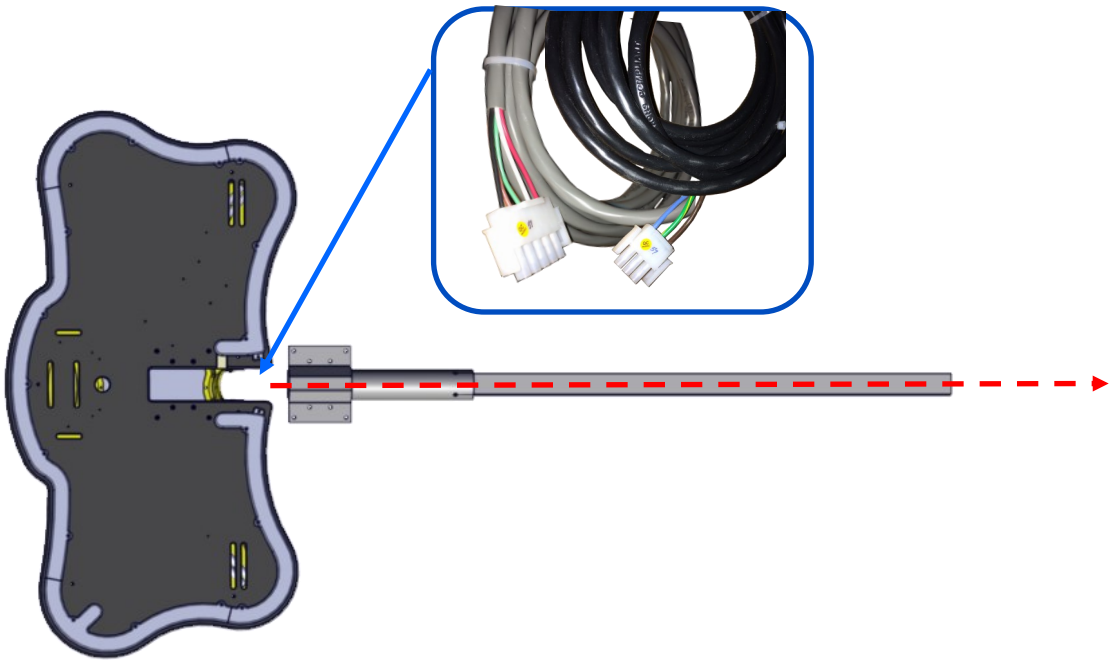
Position the two games as shown and slide the two games together. It is not critical that the games be 100% parallel to each other, they can be off at the back by up to a few inches. The front needs to be flush in order for the marquee mount to attach properly. Both games need to be at the same level in front.



Optional Deluxe Marquee Installation

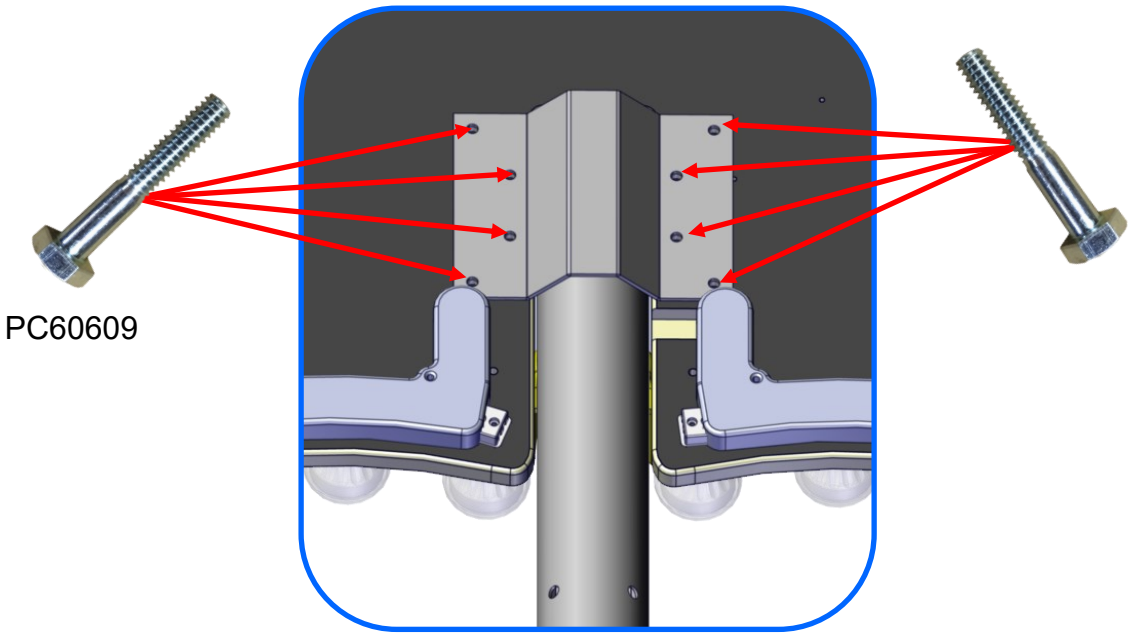
Step 6:

Position the metal support pole to the backside of the marquee. Before attaching the pole to the marquee insert the two wire harnesses through the inside of the pole and out the other side.



Step 7:

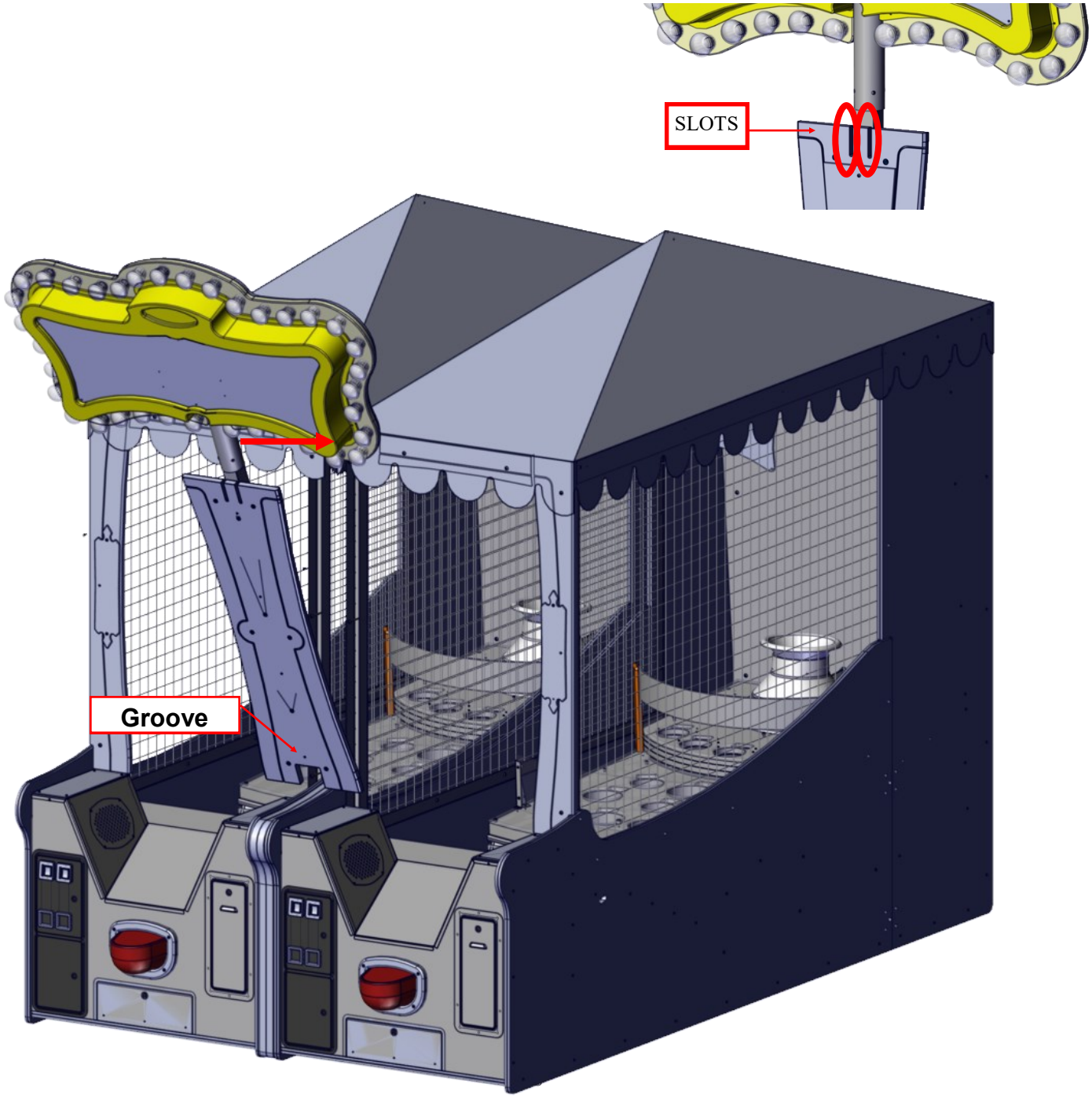
Slide the metal pole assembly and attach the metal pole assembly to the marquee using 8 PC60609 bolts.
You will need to slightly lift up at the bottom of the pole to align the bracket to the bolt holes.



Optional Marquee Installation

Step 8:

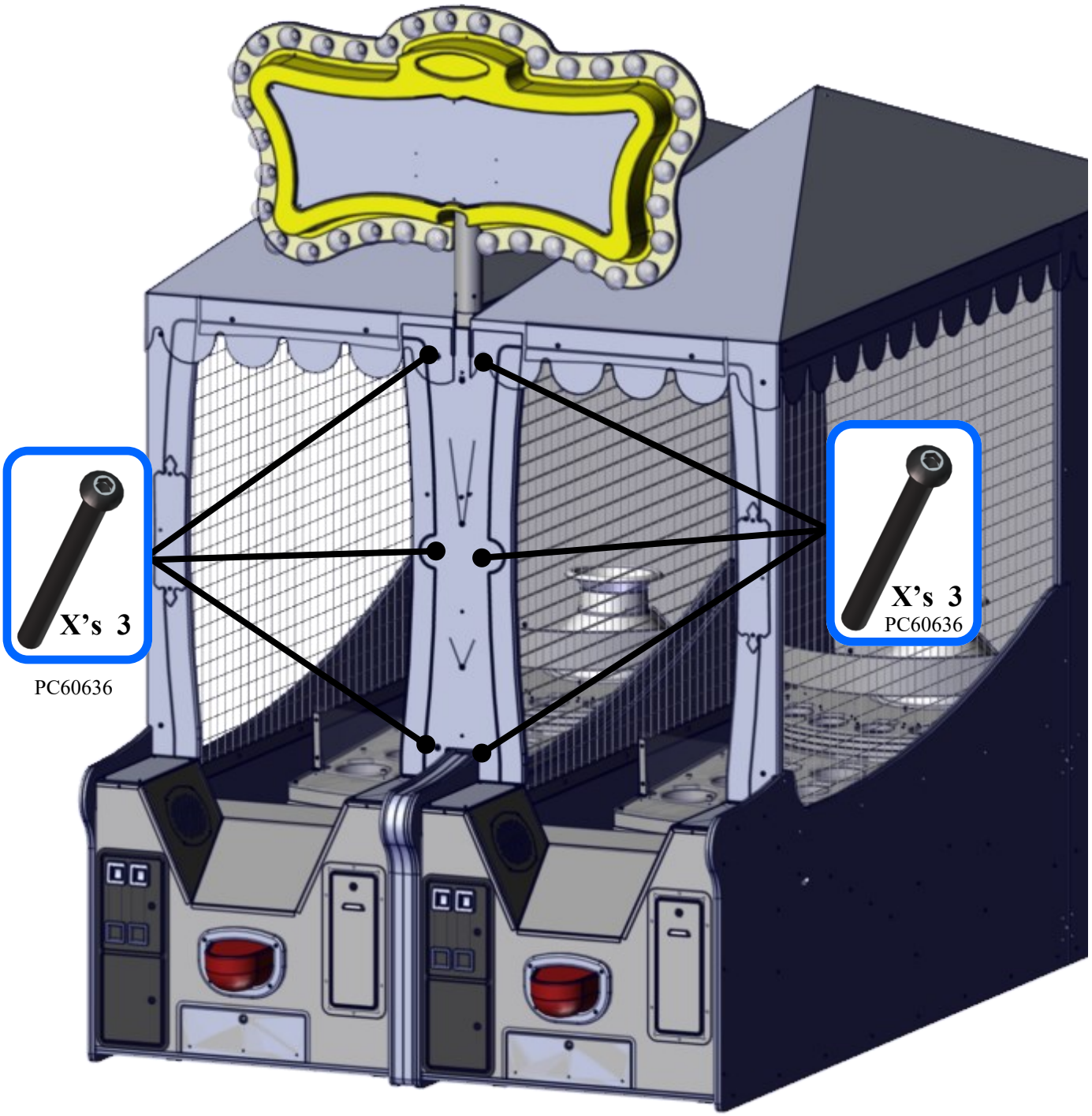
Place the marquee assembly so that the bottom groove is at an angle as shown below. The fit is tight and will require a little force to bring the games into alignment. Once the marquee assembly is firmly resting at the bottom of the groove, push the top flush with the cabinet. Before fully resting the marquee against the cabinet, insert the canopy side flaps into the slots circled below at the top of the plastic face. Do not pinch the canopy flaps behind the marquee. It will result in a unfinished look. Also pay attention to the wire harnesses so that you do not pinch them against the cabinet cages.



Optional Deluxe Marquee Installation

Step 9:

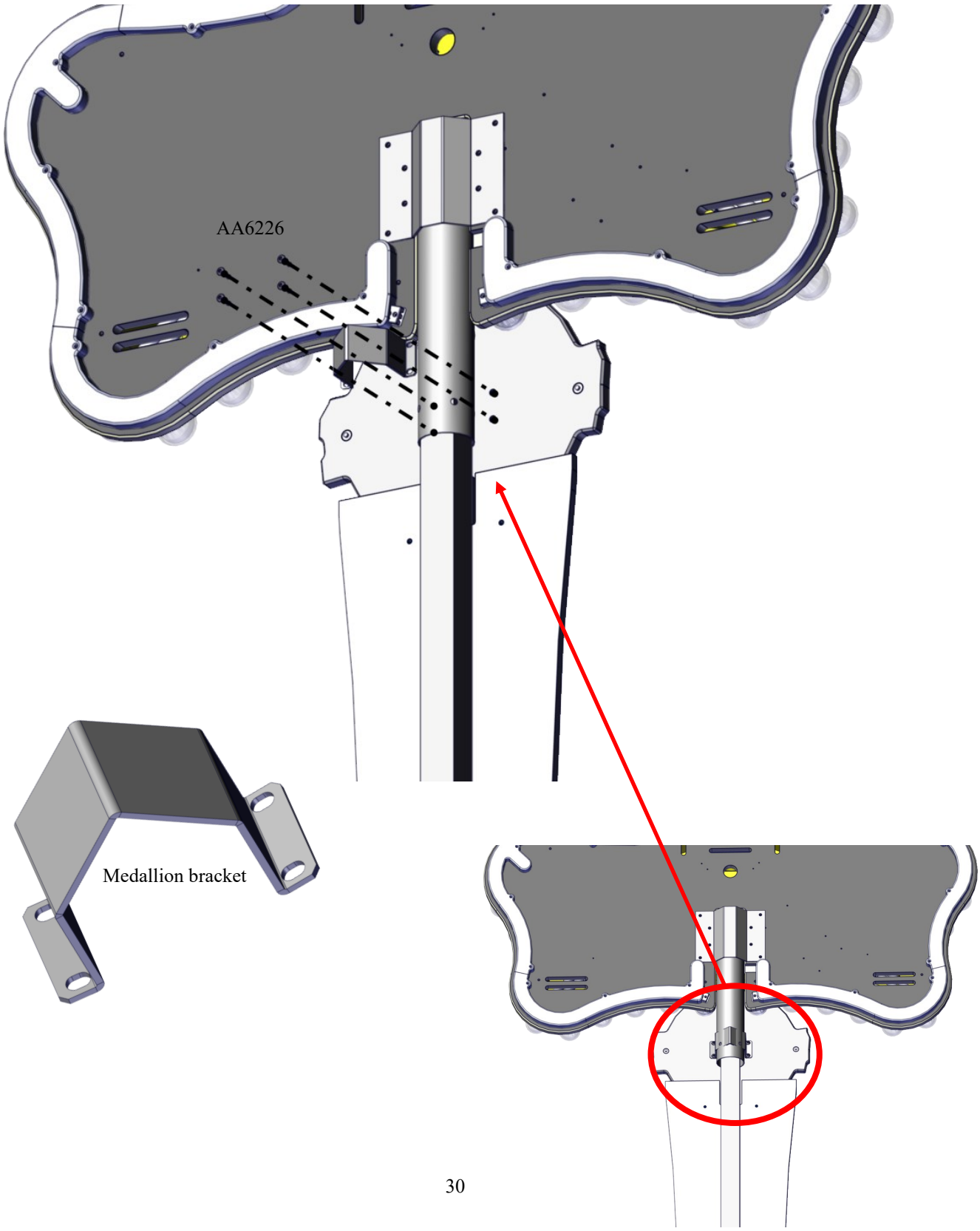
Attach the marquee to the cabinet using the bolts you had removed in step 1 of Optional Marquee Installation. The bolt locations are circled below.



Optional Deluxe Marquee Installation

Step 10:

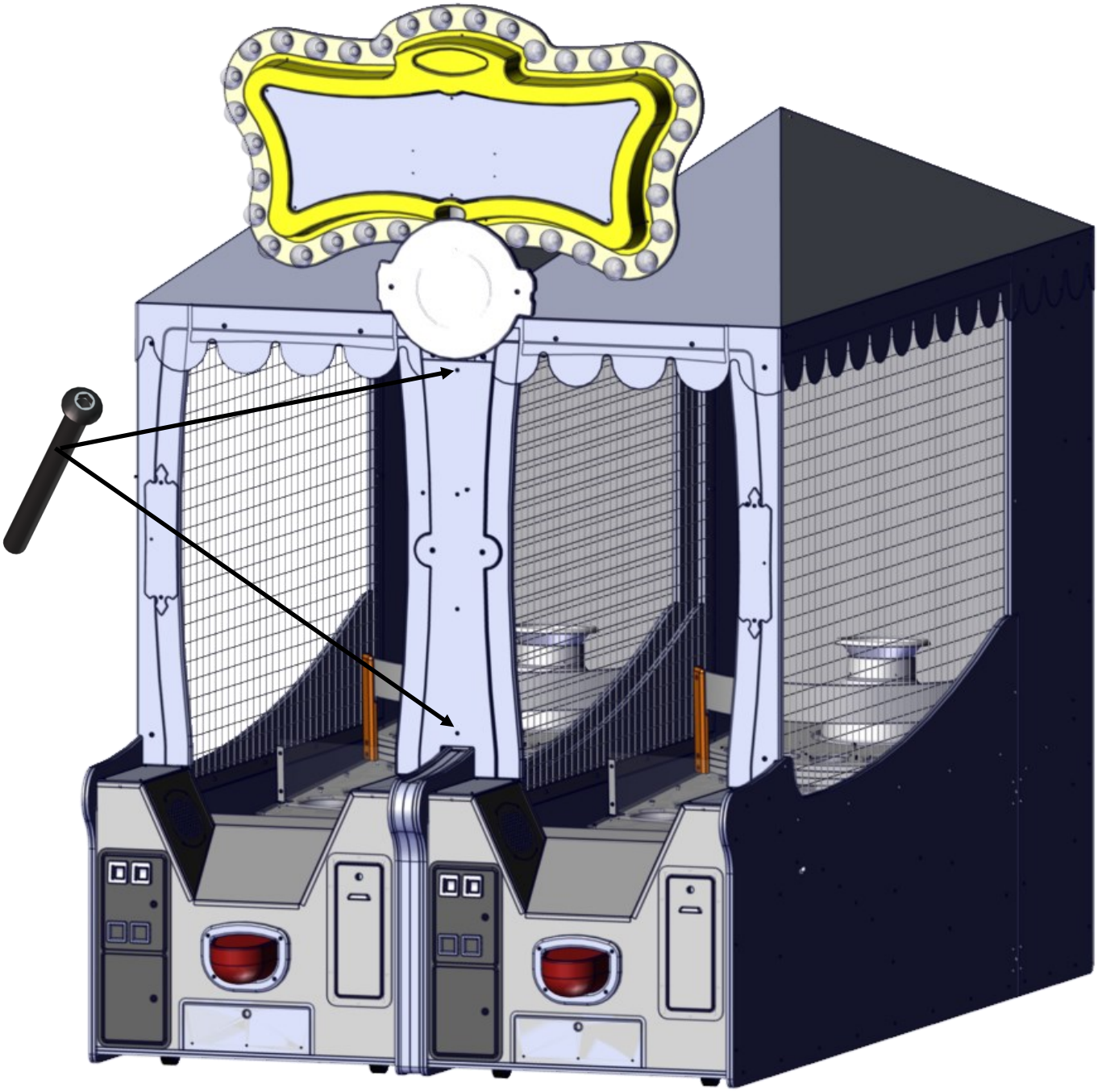
Attach the medallion bracket to the back of the medallion sign using 4 AA6226 bolts.
Plug in two pin power plug located at the back.



Optional Deluxe Marquee Installation

Step 11:

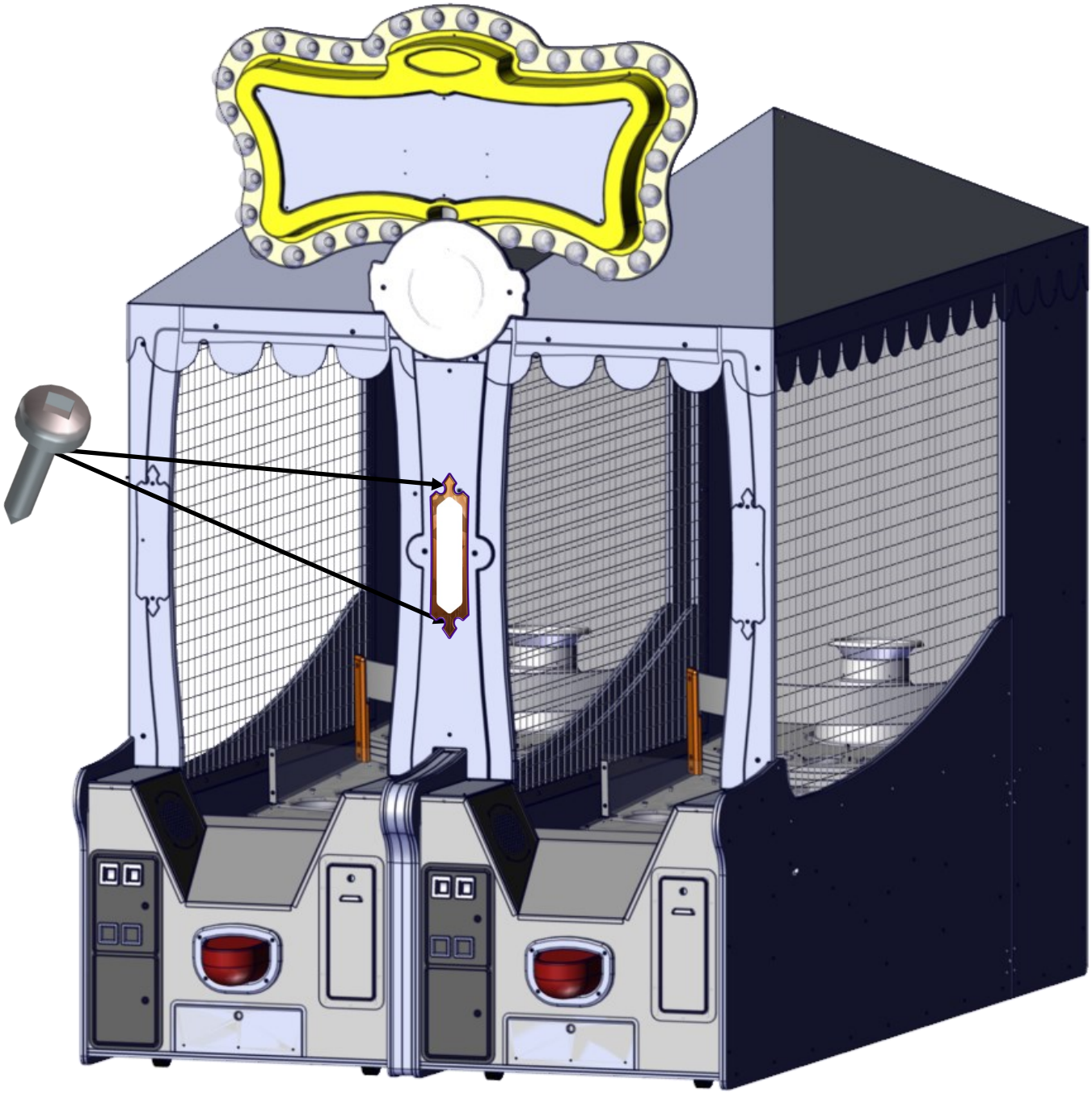
Attach the center graphic using two 8-32 x 1” screws



Optional Deluxe Marquee Installation

Step 12:

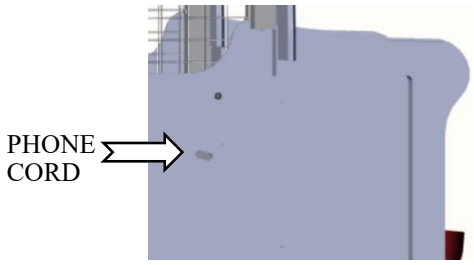
Attach the center plaque using two AA0655 square bit screws. Insert the “5 Balls” graphic before tightening the plaque.

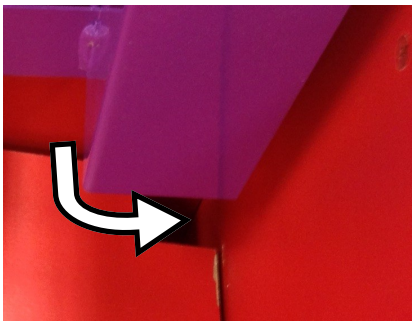


Optional Deluxe Marquee Installation

Step 13:

Route the wire harness from the marquee to the left game through the side hole from step 4. Now run a phone cord from the left game's main board to the right game's main board through the hole from step 4. Open the bottom drawer to access the main board. It doesn't matter which phone connector you use, they are both the same.



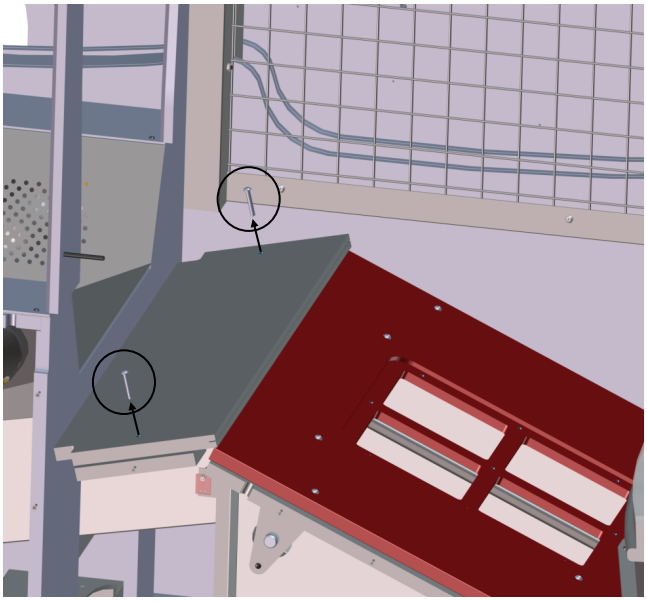


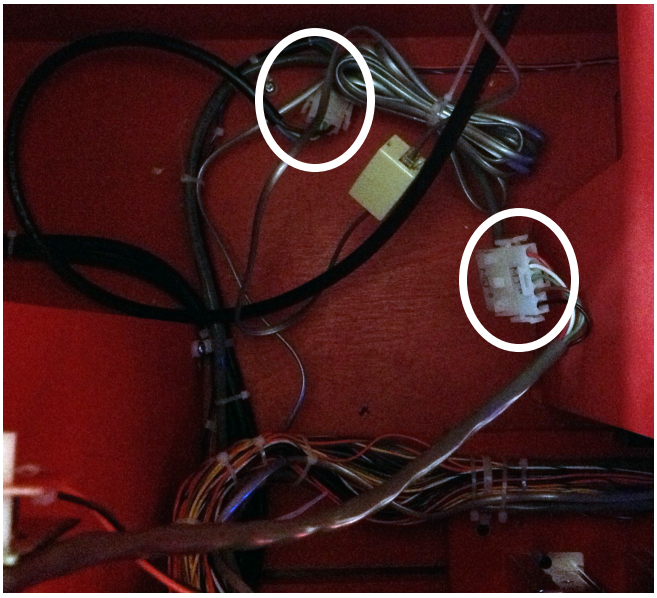
Step 14: LAST STEP FOR DELUXE MARQUEE INSTALL

Remove the two Allen bolts shown below and remove the cover on both games. Located at the right of the game is the AC plug, and in some units the data display plug for the marquee. See the picture below, they are circled. Refer to the wiring schematic insert for further harness information.

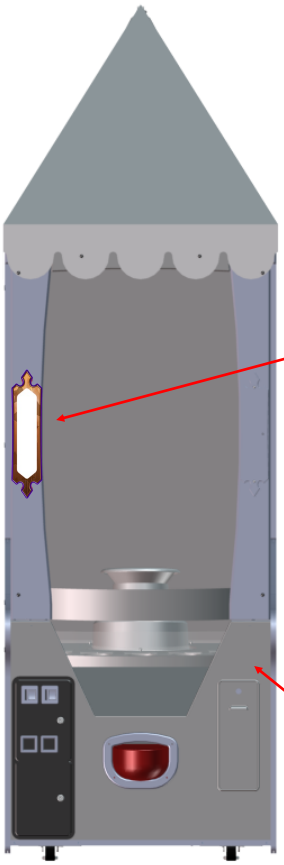
NOTE:

BOTH GAMES MUST BE SETUP EXACTLY THE SAME IN PROGRAMMING. EVEN THOUGH THEY ARE LINKED THEY DO NOT SHARE INFORMATION BETWEEN EACH OTHER.

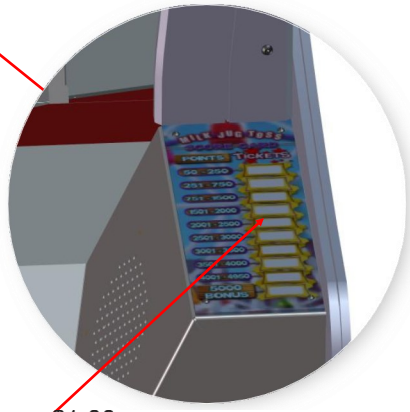




Decal Install locations



Choose the decal that best suits your taste.



25 cent game	50 cent game	$1.00 game
2	3	5
3	5	10
4	10	25
5	15	40
10	25	50
15	30	75
25	50	100
50	75	250
100	250	500
250	500	1000

Use the correct decal for the amount of money you wish to charge. You will need to adjust your software settings to match the values you use here. Refer to the next few pages for further information.

SETUP - Game Options, Audits, and Meters.

To access either the game options or perform the game audits, open the upper coin door as shown below and press the “PROG” button to enter game options or press the “DOWN” button to enter game audits.

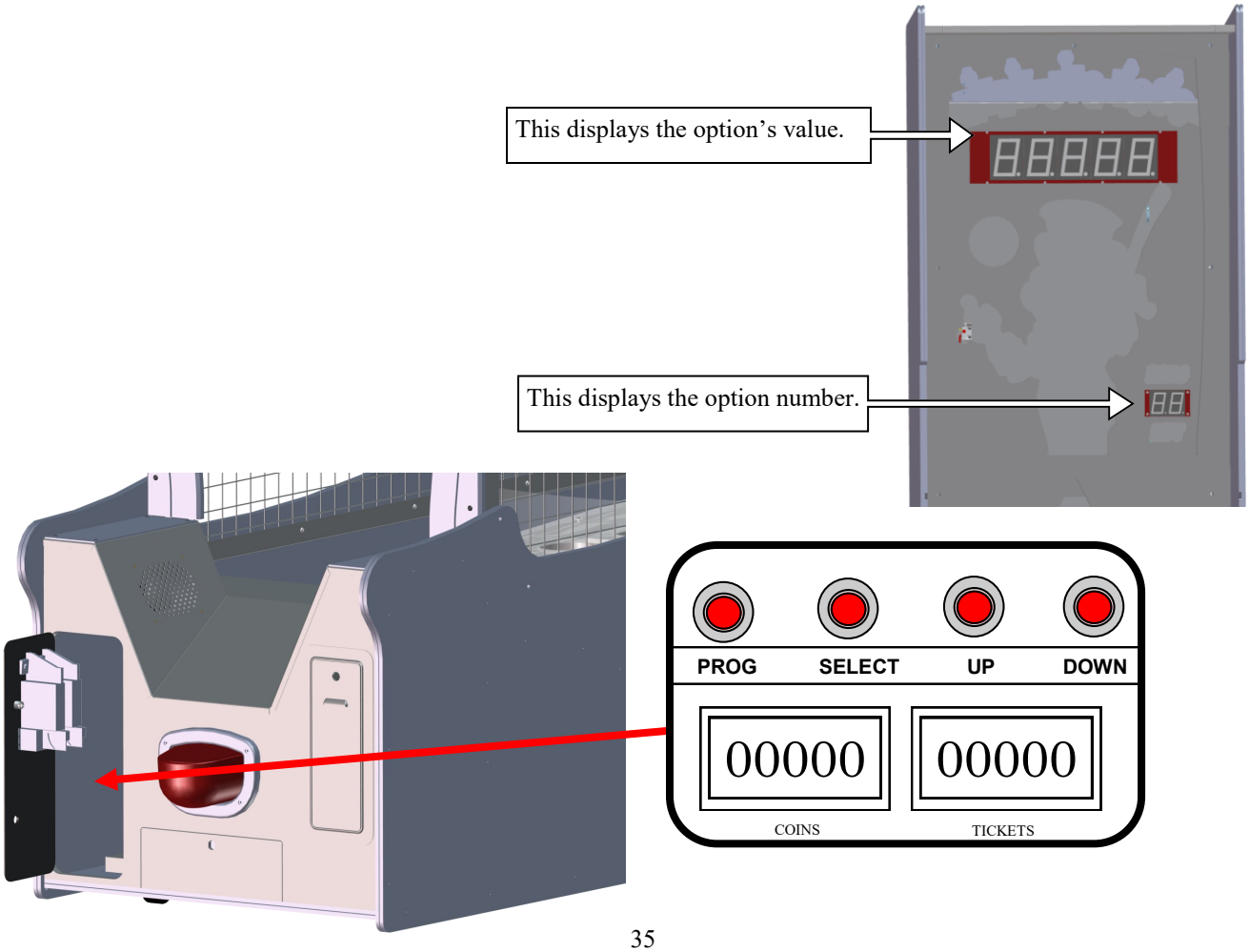
In Game Options:

The how many balls are left display shows which option you are currently on. The score display shows the current value for that option. Pressing the UP or DOWN buttons will either increase or decrease the options’ value. Pressing the “SELECT” button will go to the next option. To exit and save changes press the “PROG” button. See page 24 for a list of options and descriptions.

In Audit mode:

The game will display in the points display how many times that sensor has been scored. The how many balls left display tells you the sensor number. If a light is available for that sensor it will also light. See page 26 for more details.

The coin meter and ticket meter is also located in the upper coin door.



Programming Options for Milk Jug Rev 3.51

Option		Default	Min	Max	Inc	
0	Game Volume	5	0	7	1	Game sounds
1	Music Volume	3	0	7	1	Music sounds
2	Coin 1	2	0	10	1	Cost of Game
	This tells the game how many pulses to start a game.					
3	Coin 2	1	0	10	1	# of Coin 1's
4	DBV	4	0	10	1	# of Coin 1's
	Coin 2 = how many coin 1 pulses it is worth. DBV is how many pulses per Dollar.					
5	Discount	0	0	10	1	0 = Disable
	Determines how many games in a row needed to be purchased for a free game.					
6	Minimum Tickets option	1	0	20		0 = Disable
	Game will pay out at least this many tickets if a value is set.					
7	Attract Time	1	0	90	1	Attract time
8	Jug 1 Bonus	10	0	100	1	Bonus Tickets
9	Jug 2 Bonus	25	0	250	1	Bonus Tickets
10	Jug 3 Bonus	50	0	500	5	Bonus Tickets
11	Jug 4 Bonus	250	0	1000	10	Bonus Tickets
12	Jug 5 Bonus	500	0	5000	50	Bonus Tickets
	Options 7-12 sets how many tickets you win by getting xx jugs.					
13	Points 0-250	3	0	100	1	Points to Tickets
14	Points 251-750	5	0	100	1	Points to Tickets
15	Points 751-1500	10	0	100	1	Points to Tickets
16	Points 1501-2000	15	0	100	1	Points to Tickets
17	Points 2001-2500	25	0	250	1	Points to Tickets
18	Points 2501-3000	30	0	250	1	Points to Tickets
19	Points 3000-3500	50	0	1250	5	Points to Tickets
20	Points 3501-4000	75	0	1250	5	Points to Tickets
21	Points 4001-4950	250	0	1250	5	Points to Tickets
22	Points 5000	500	0	2500	10	Points to Tickets
	Options 13 - 22 determines how many tickets you win for xx points scored.					
23	Timeout of Balls	30	30	60	1	Timeout in Seconds
	*** Option 23 will add 50 points to the score when it doesn't see a ball thrown. ***					
24	Bonus Type	0	0	1	1	0=Bonus or Score 1=Score + Bonus
	If set for 0 players win either jug tickets or score tickets (whichever is higher) or jug tickets and score tickets combined if set to 1.					
25	Ticket Multiplier	1	0	2	1	0= Just for Fun ** See Note 1 1=1 tickets 2=2 tickets
26	Game lock	0	0	1	1	0=tilt, 1=lockup
27	Factory Reset	0	0	1	1	Factory Reset

This option will reset the game to factory defaults and clears all audits.

NOTE 1: Setting Option 25 to 0 will enable the ability to give a free game instead of tickets. Setting any value other than 0 in options 8 through 12 (jugs 1-5) will allow you to give one game away per credit if that jug with the value is won. For example if you wanted to give a free game away when the player gets 5 jugs you would set option 25 to 0, options 8 through 11 to 0, and option 12 to any number other than 0.

With average skilled players your payout will be around 30% to 35%

Milk Jug Accounting Version 3.20

Milk Jug accounting is entered by pressing the far right (down) button when NOT in programming mode. The game will cycle through each of the different locations and will wrap to the beginning. To zero the values press the third button (up) as counting from the left. When zeroed the game should exit accounting to signify that you have zeroed the values. To exit without zeroing the values press the same button used to enter into accounting mode.

Most locations will flash where the value showing is coordinated with. The numbers are from bottom left to top right and then Jug, etc.

Number	Locations
1	Lower Playfield Left (50)
2	Lower Playfield Second from Left (50)
3	Lower Playfield Second from Right (50)
4	Lower Playfield Right (50)
5	Lower Playfield Middle Row Left (100)
6	Lower Playfield Middle Row Middle (250)
7	Lower Playfield Middle Row Right (100)
8	Lower Playfield Top Row Left (150)
9	Lower Playfield Top Row Middle (50)
10	Lower Playfield Top Row Right (150)
11	Upper Playfield Left (200)
12	Upper Playfield Second from Left (250)
13	Upper Playfield Middle (300)
14	Upper Playfield Second from Right (250)
15	Upper Playfield Right (200)
16	Jug (1000)
17	Zero Jug Games
18	One Jug Games
19	Two Jug Games
20	Three Jug Games
21	Four Jug Games
22	Five Jug Games
23	Tilted Games

NOTE:

To prevent hiccups in the game the results of the game are stored when the game is idle. If there are constant credits in the game then the above values will not be able to store into non-volatile memory and will be lost if power is removed. So to insure that all values are saved the game should be in attract for 20 seconds.

For a quick check of sensors, any value at 0 should be checked.

Milk Jug Error Codes Version 3.20

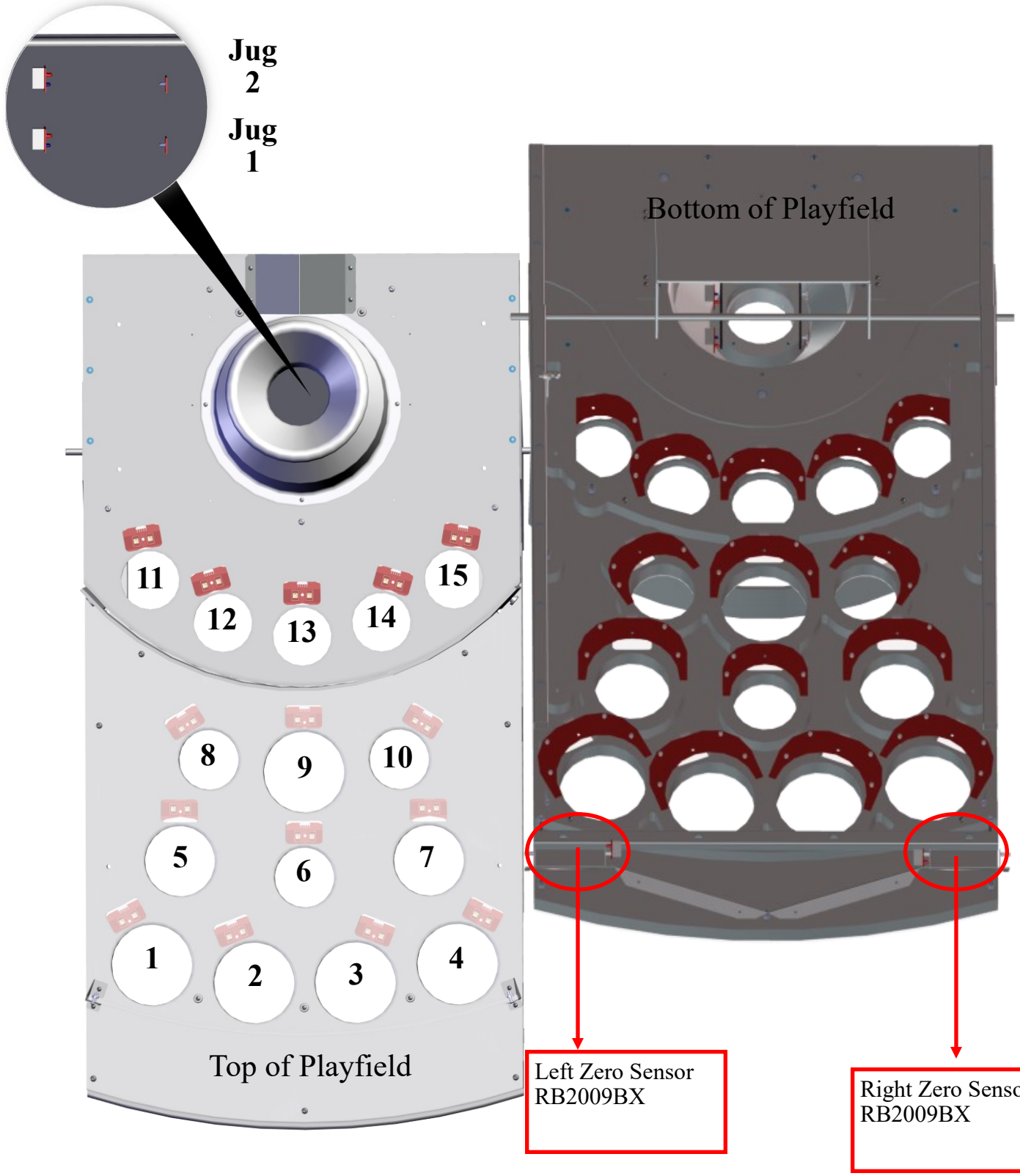
Error	Reason	Halt Game
1	Ticket Error	N
2	Compact Flash Error	N
3	Error Sensor Hole 1	N
4	Error Sensor Hole 2	N
5	Error Sensor Hole 3	N
6	Error Sensor Hole 4	N
7	Error Sensor Hole 5	N
8	Error Sensor Hole 6	N
9	Error Sensor Hole 7	N
10	Error Sensor Hole 8	N
11	Error Sensor Hole 9	N
12	Error Sensor Hole 10	N
13	Error Sensor Hole 11	N
14	Error Sensor Hole 12	N
15	Error Sensor Hole 13	N
16	Error Sensor Hole 14	N
17	Error Sensor Hole 15	N
18	Jug Sensor 1	Y
19	Jug Sensor 2	Y
20	Ball Dispense Sensor Front	Y
21	Ball Dispense Count	N
22	Left Zero Sensor	N
23	Coin 1 Switch stuck	N
24	Coin 2 Switch stuck	N
25	DBV Switch stuck	N
26	- Not Used -	-
27	Cheat Sensor 1 stuck	-
28	Right Zero Sensor	N
29	Program button stuck	N
30	Select button stuck	N
31	Up button stuck	N
32	Down button stuck	N

Upon power up the error codes will cycle for 5 loops displaying any error codes that are currently active. The game will then continue on, unless a Jug error code exists.

***** The high score display will show a 2000 as its current highest score if a error is detected on power up.***

***** A high score of 1050 means the game has just been powered on or has rebooted.***

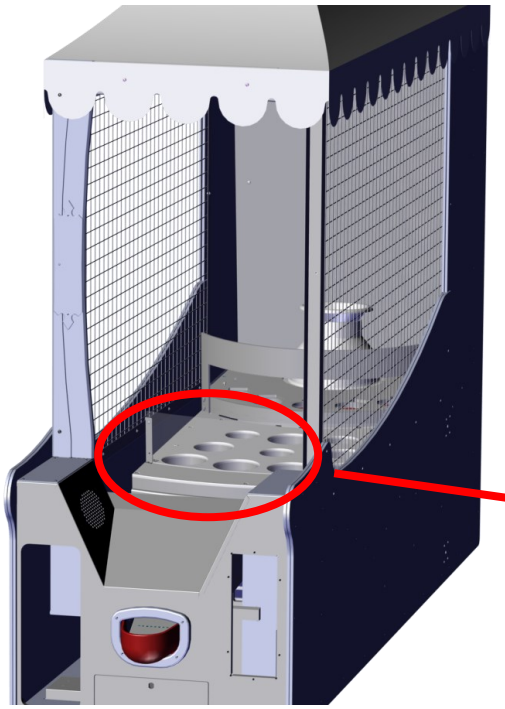
Score Sensor Layout

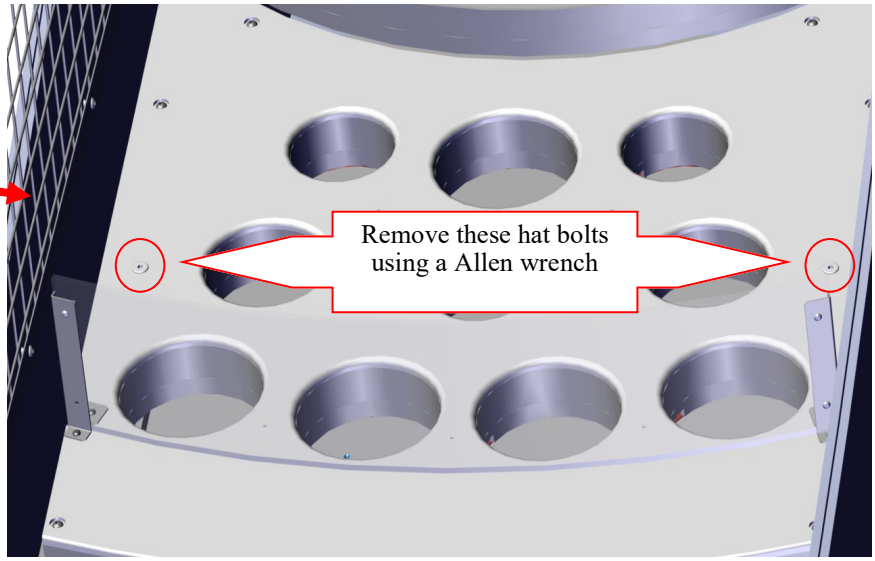


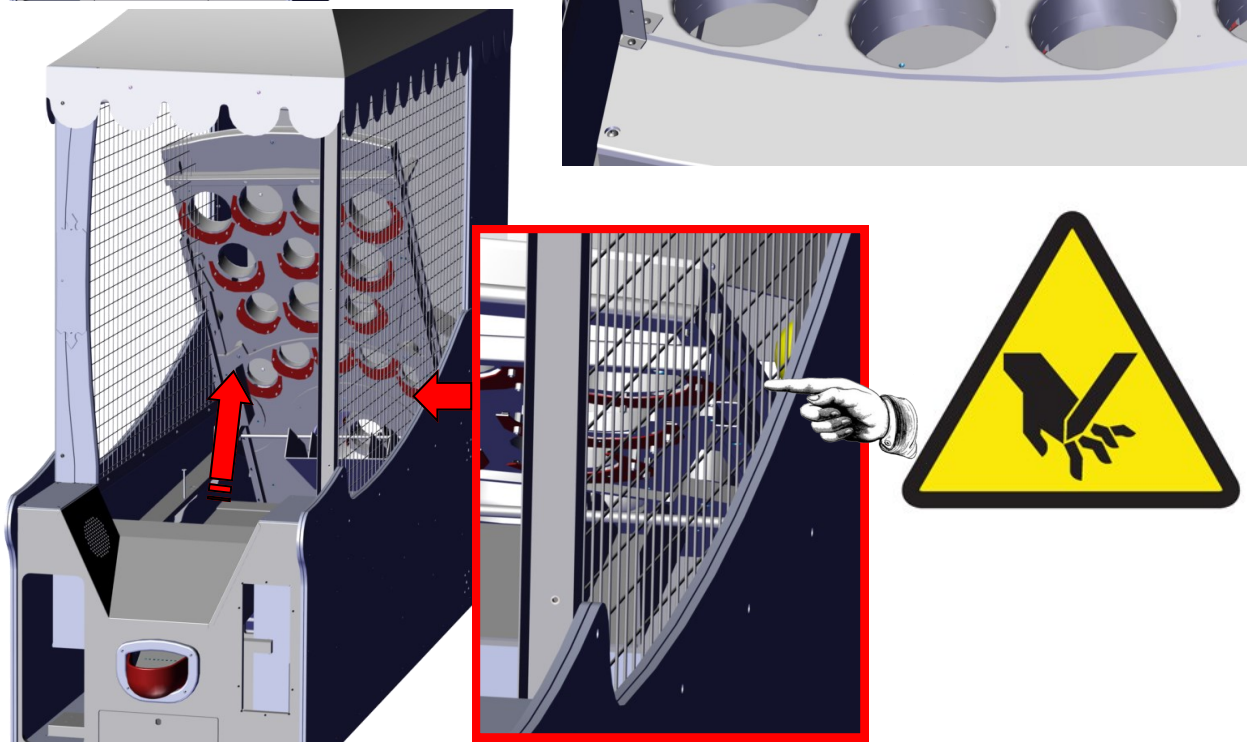
Playfield Service

The playfield flips open for easy access to all score sensors and it is also how you access the illegal ball trap door.

Remove the two hat bolts shown below using a Allen wrench. ** WARNING** Be sure that no persons fingers finger's are holding onto the side cages when raising or lowering the playfield. Lift the playfield all the way as far as it will go, the shocks will keep the playfield up in the air during servicing.

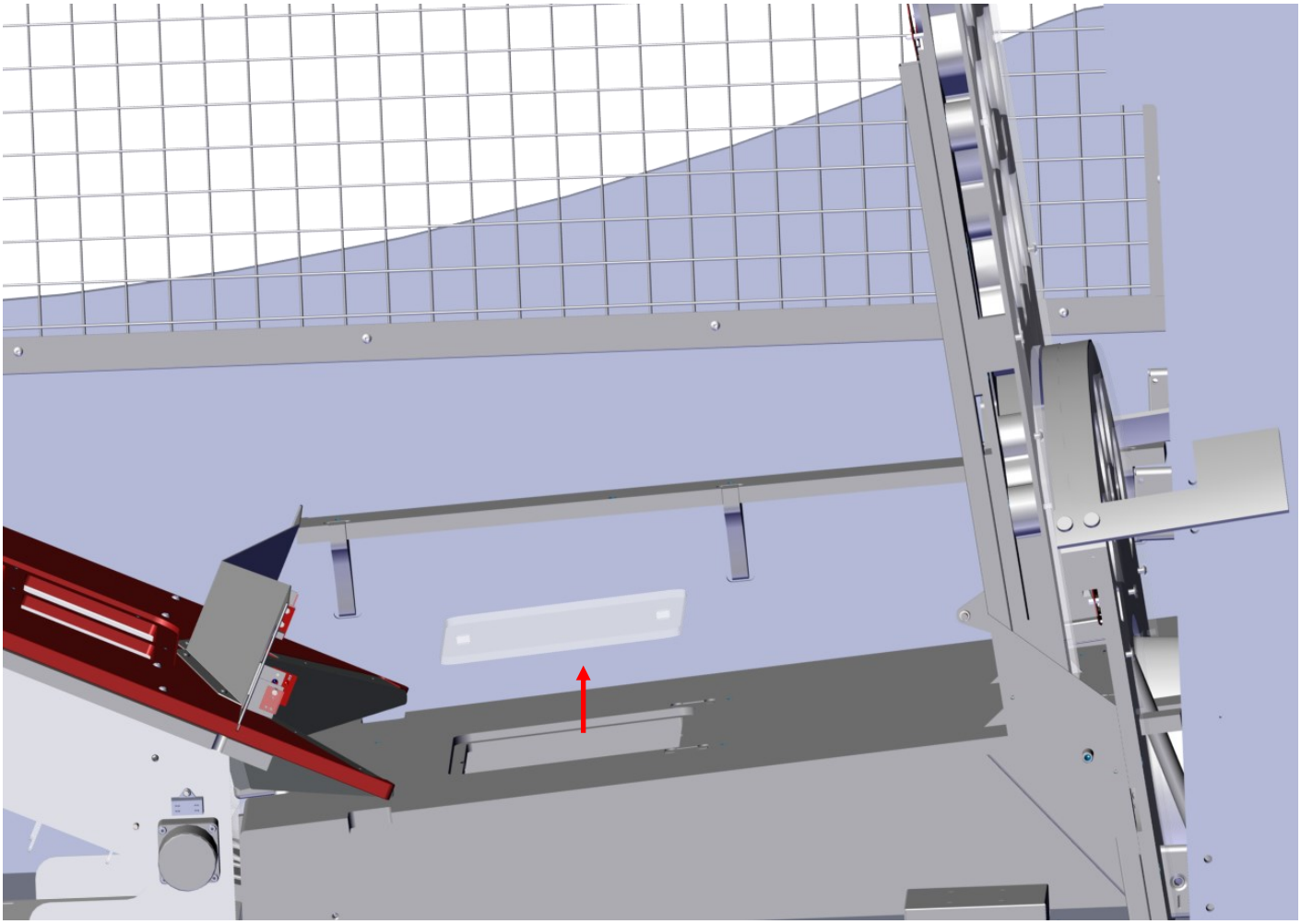






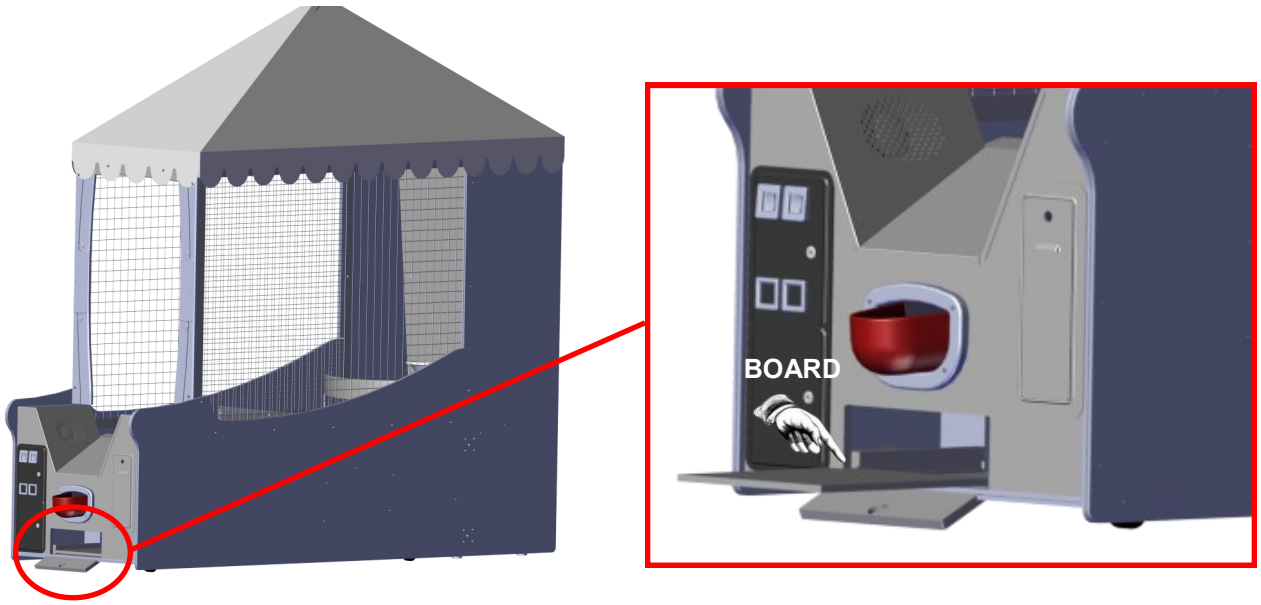
Illegal Ball Size Access Door

During game play if any balls used is not of the correct size it will fall into the games' "illegal ball trap" storage located under the playfield. To access this and remove the balls, follow the instructions in the section titled "Play field Service". Using your keys, unlock the plastic cover and remove. You can now remove the balls. Replace cover and close the playfield. The diagram below shows the cover. Side of cabinet removed for clarity.



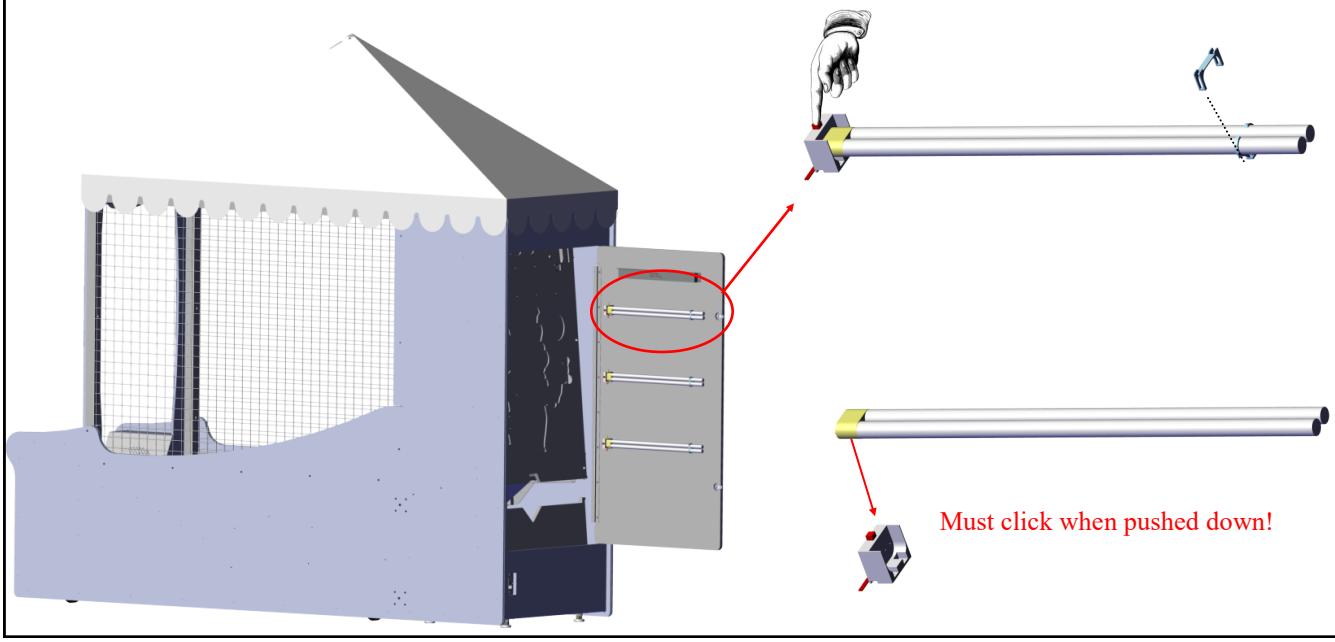
Accessing the Main Board and Power Supply

To gain access to the main board, open the bottom door and pull the drawer out. There you will find the main circuit board and power supply.

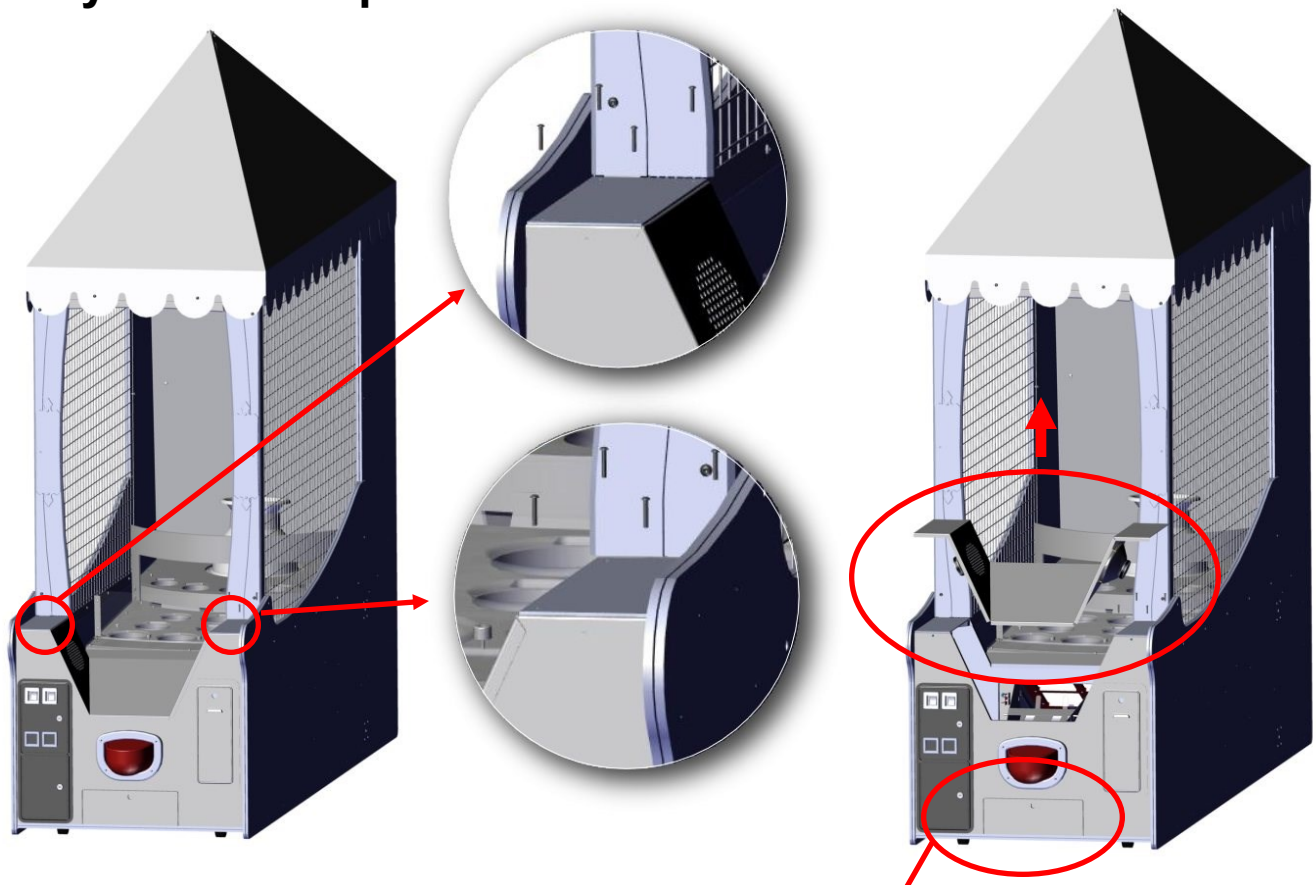


PLL Bulb Replacement

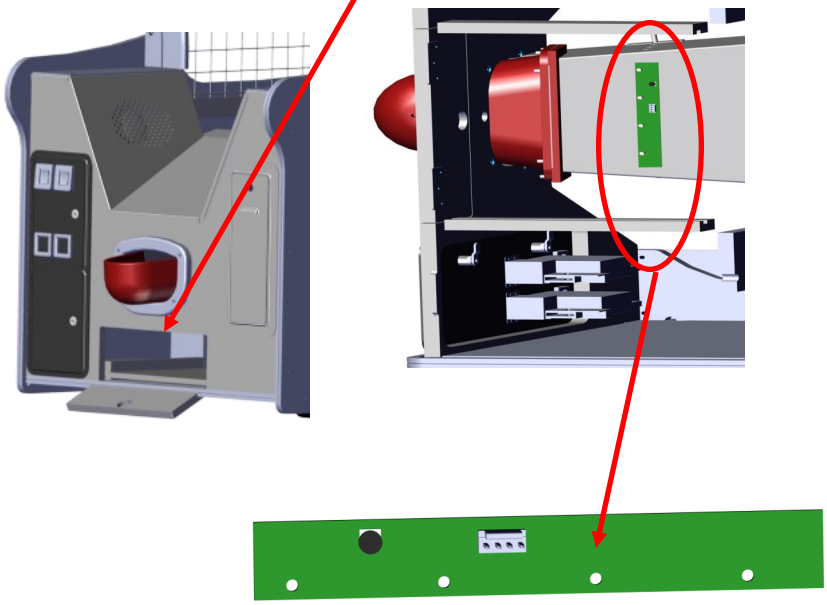
Attached to the back door are 3 PLL bulbs that provide back lighting to the cabinet. To replace a defective bulb, open the back door, remove the bulb clip, and press the red button to release the bulb from the socket. To install a PLL bulb, push the bulb down onto the socket, DO NOT SLIDE THE BULB INTO THE SOCKET, until you hear a “CLICK” noise from the socket. Now re-attach the bulb clip to complete the bulb replacement.



Safety Sensor Replacement

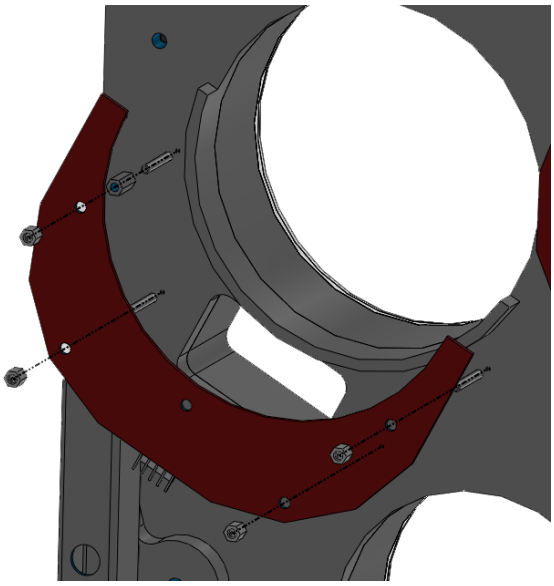


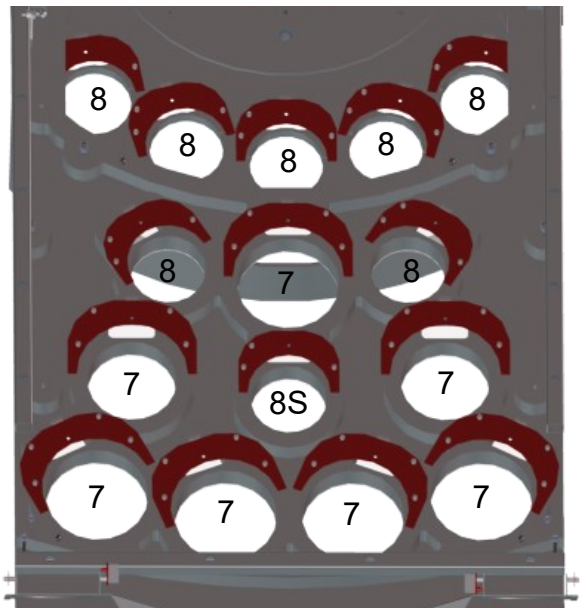
The game will not dispense balls if this sensor is not working. .



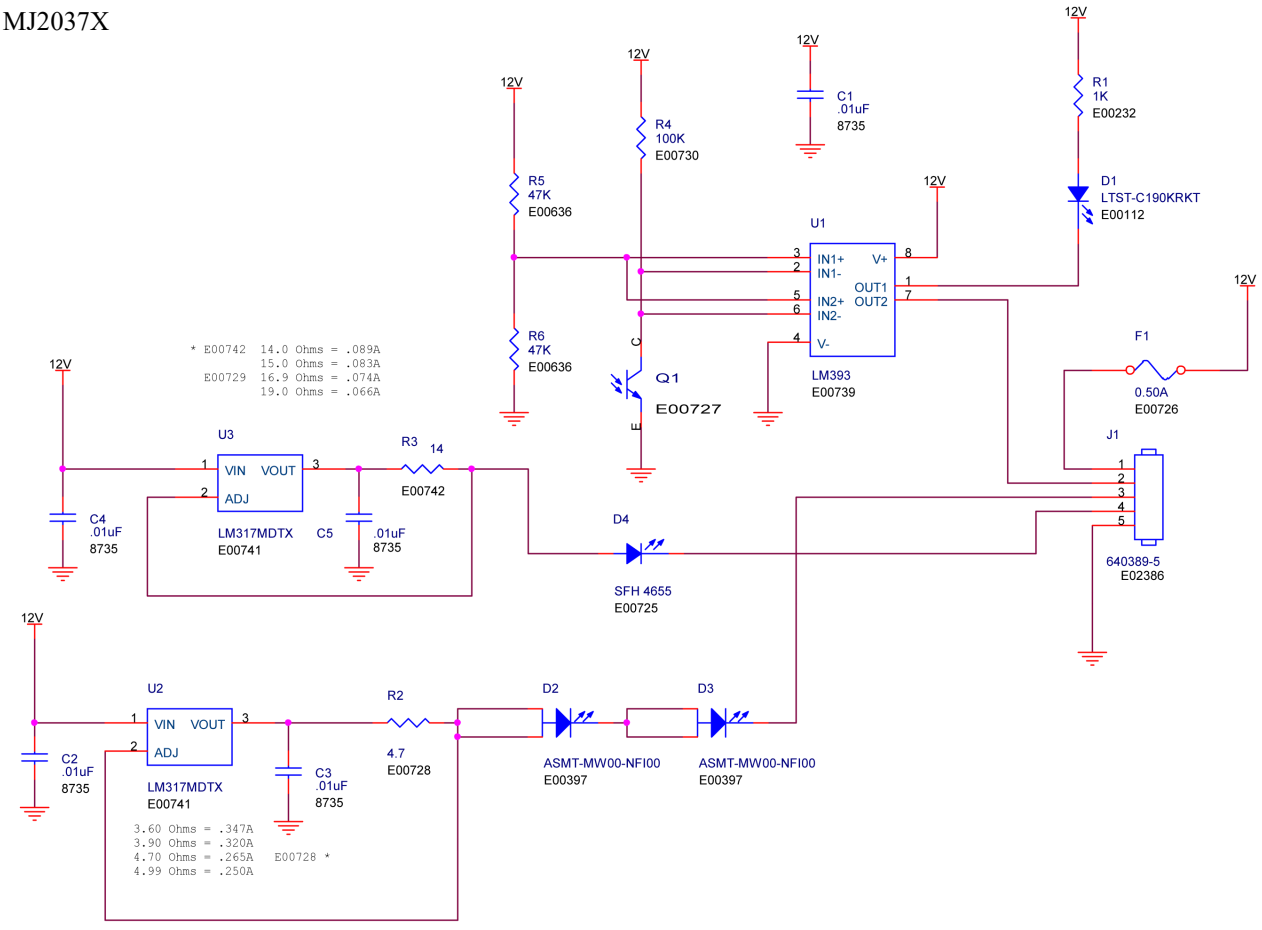
Score Sensor Replacement

There are three types of score sensors used in Milk Jug. MJ2037X, MJ2038X, and MJ2038SX. Following the instructions in section “Play Field Service” to gain access to these sensors. Both sensors mount the same way as shown. See Wiring insert for location of sensors or look below. Last number of part shown.

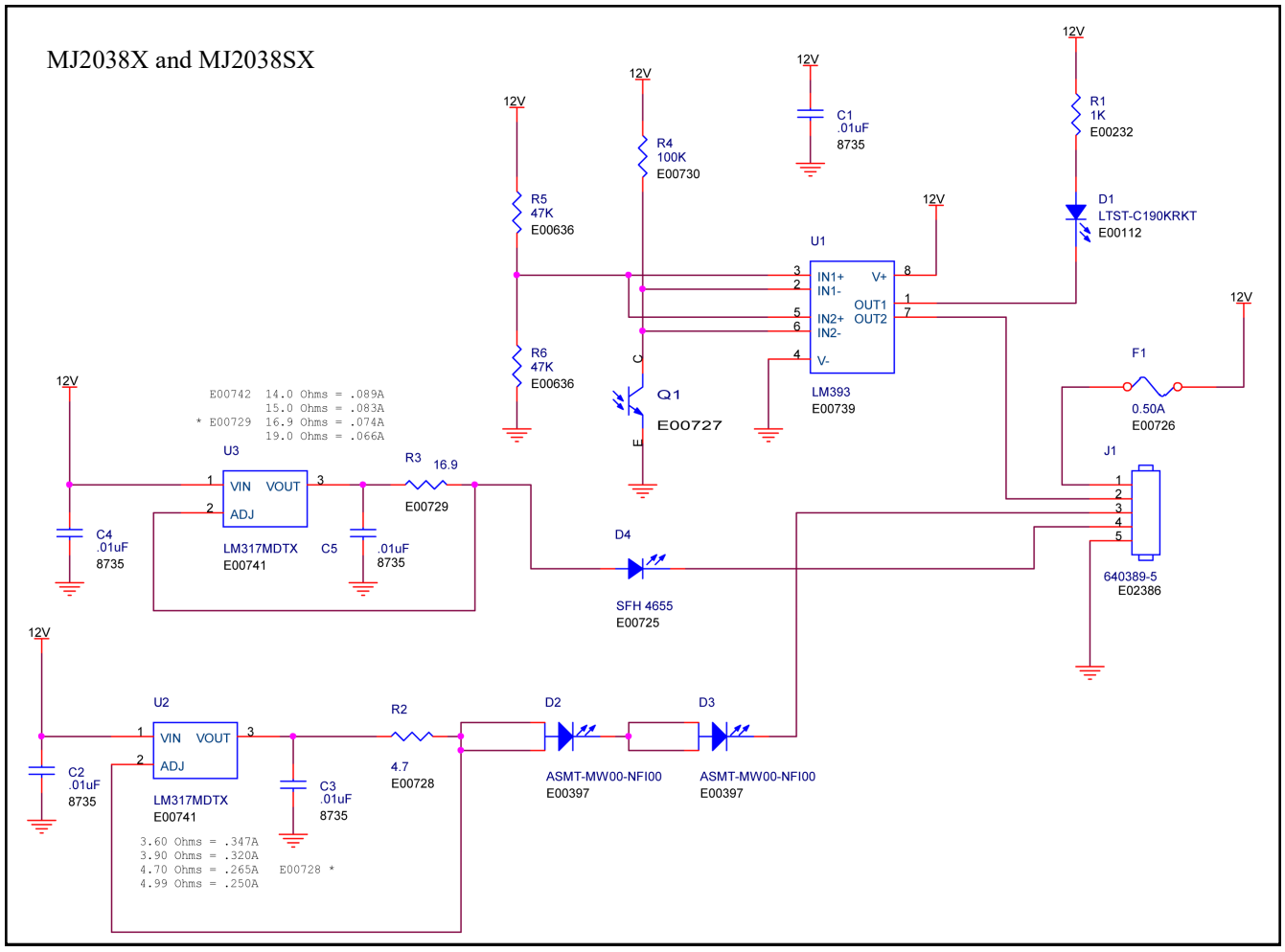


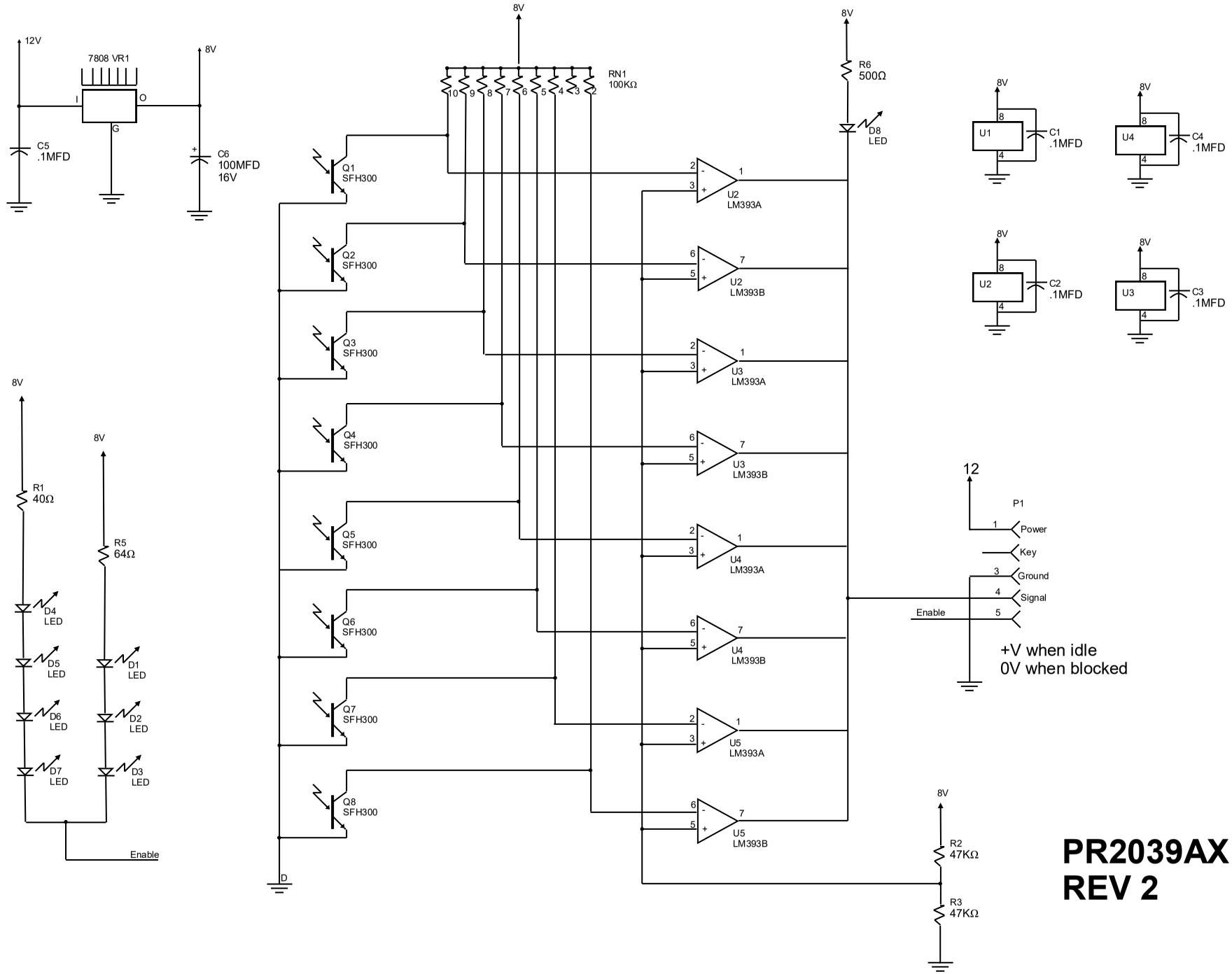


MJ2037X



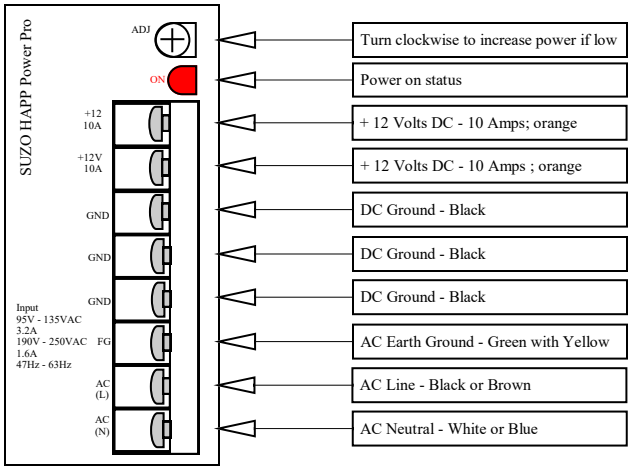
Score Sensor Replacement




12V
7808 VR1
8V
I
O
G
C5
.1MFD
C6
100MFD
16V
8V
RN1
100KΩ
10
9
8
7
6
5
4
3
2
R6
500Ω
D8
LED
Q1
SFH300
Q2
SFH300
Q3
SFH300
Q4
SFH300
Q5
SFH300
Q6
SFH300
Q7
SFH300
Q8
SFH300
U2
LM393A
U2
LM393B
U3
LM393A
U3
LM393B
U4
LM393A
U4
LM393B
U5
LM393A
U5
LM393B
U1
C1
.1MFD
U4
C4
.1MFD
U2
C2
.1MFD
U3
C3
.1MFD
8V
R1
40Ω
R5
64Ω
D4
LED
D5
LED
D6
LED
D7
LED
D1
LED
D2
LED
D3
LED
Enable
12
P1
Power
Key
Ground
Signal
Enable
+V when idle
0V when blocked
R2
47KΩ
R3
47KΩ
D
PR2039AX
REV 2

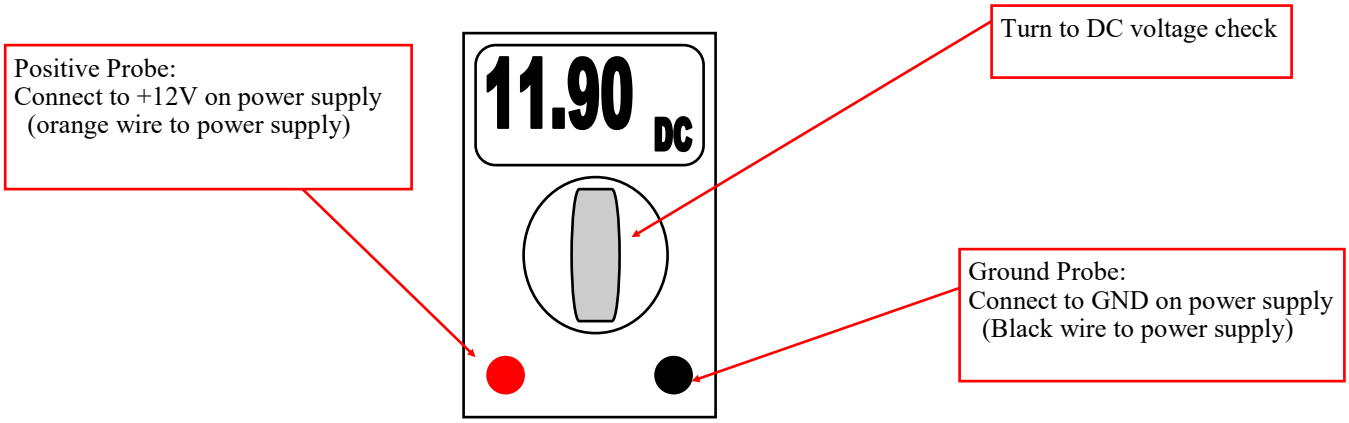
Power Supply Access

The power supply is a IA2010 and is accessed from the front of the game through the bottom drawer. See the section “Accessing the main board and power supply”.



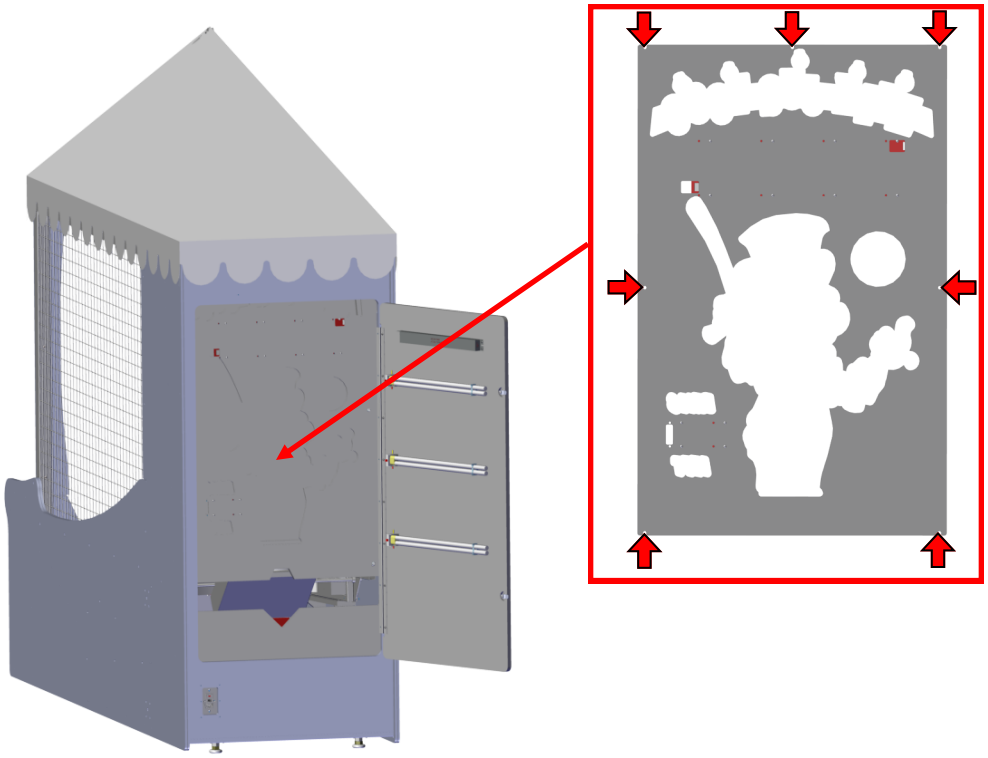
Checking DC Voltages

Volt test with the volt meter set to DC voltage. The +12 output can be adjusted by turning the adjustment screw of the power supply. Adjust to as close to +12 as possible. Increasing the +12. The voltage range can be plus or minus 5%.



Replacing Playfield Displays

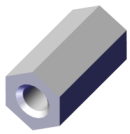
Open the back door and remove the seven nuts that hold the display panel to the cabinet. Disconnect the display harnesses and remove the entire assembly.



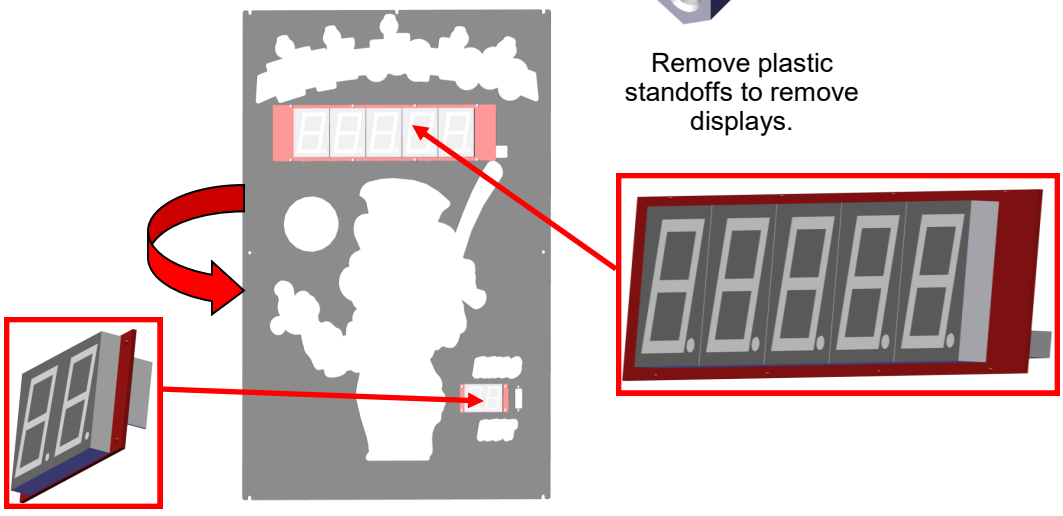
Remove nuts shown with arrows

Lay the assembly on its back and remove the plastic standoffs to remove the display. Assembly in reverse order.

Small display is a DA2133X.
Large display is a RB2032X

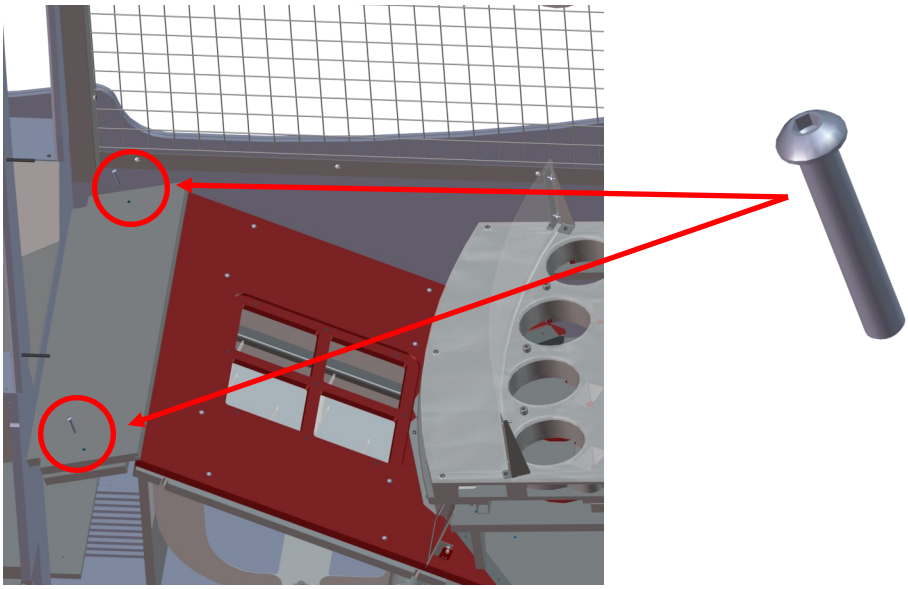


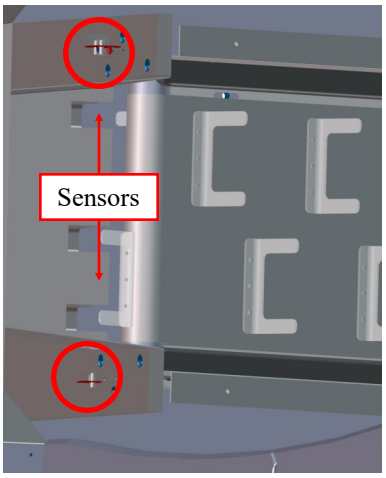
Remove plastic standoffs to remove displays.



Ball count Sensor - RB2009BX

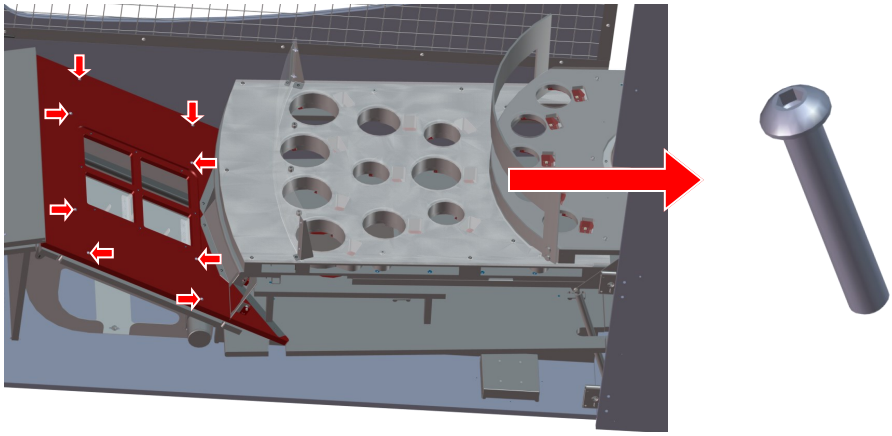
To access the ball count sensors you only need to remove the front panel.

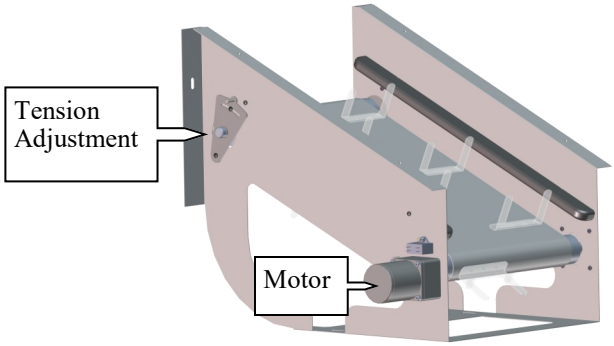


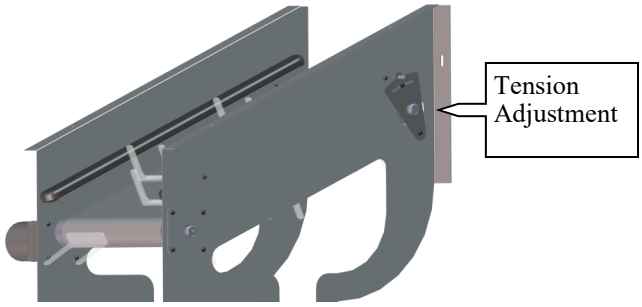


Conveyor Access

Remove the bolts shown with the arrows. Now remove the cover. The motor assembly is ICE part MJ2009X. The gearbox head is ICE part MJ2009A.

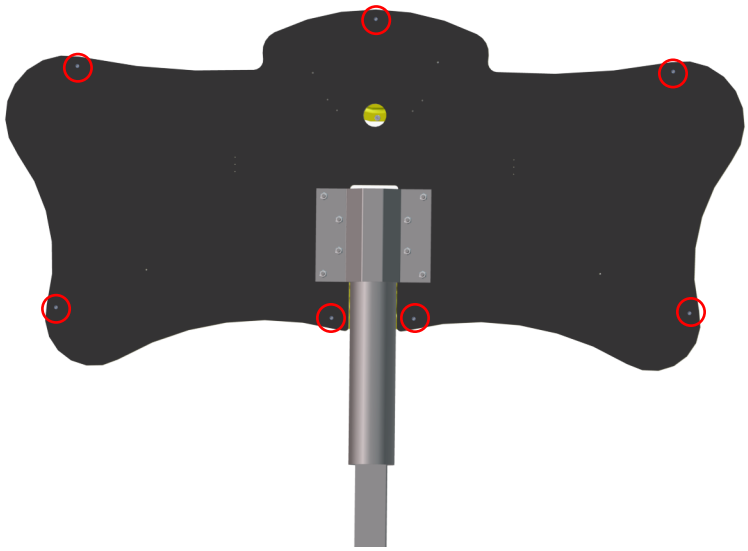




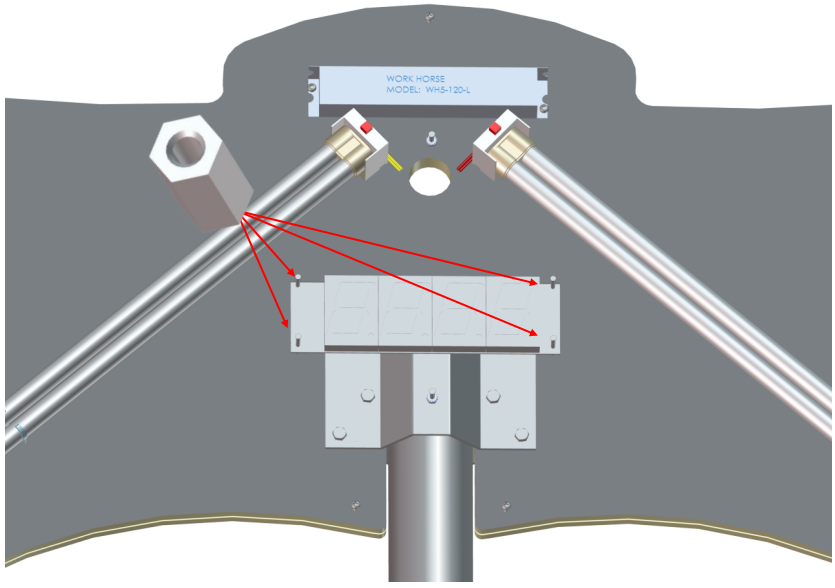


Optional Marquee - Bulb and Bonus display replacement

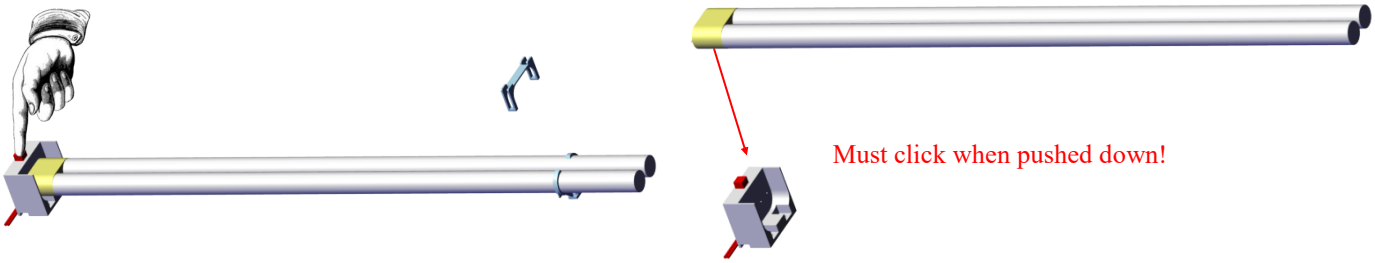
Remove the front panel of the marquee by unscrewing the screws at the locations shown with the circles below.



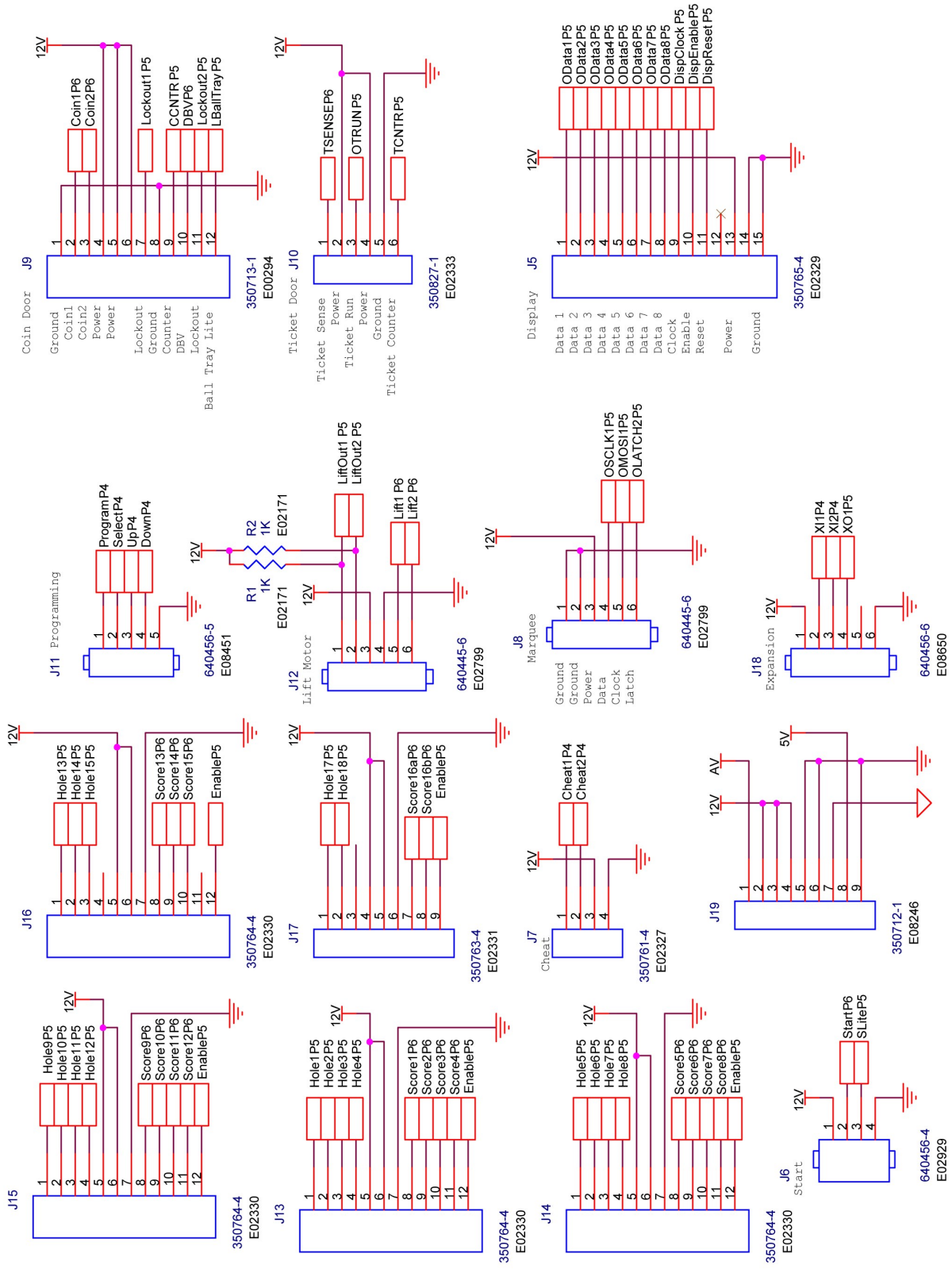
To replace the display, remove the four plastic stand off nuts that hold the display to the marquee.



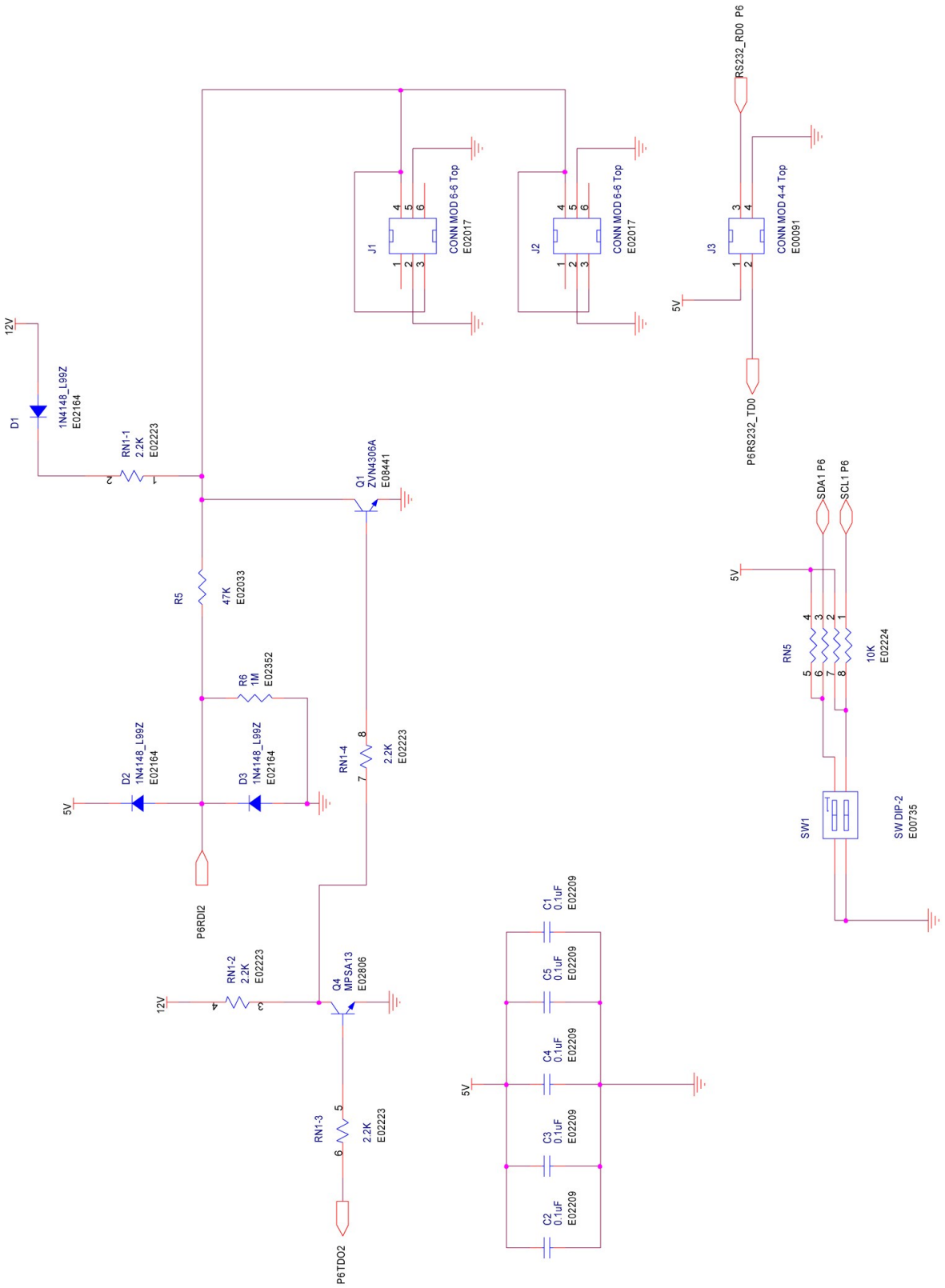
To replace a bulb, remove the plastic clip and press the red button to release the blub. Be sure to push down on the bulb until it clicks when inserting a new bulb into the PLL socket.



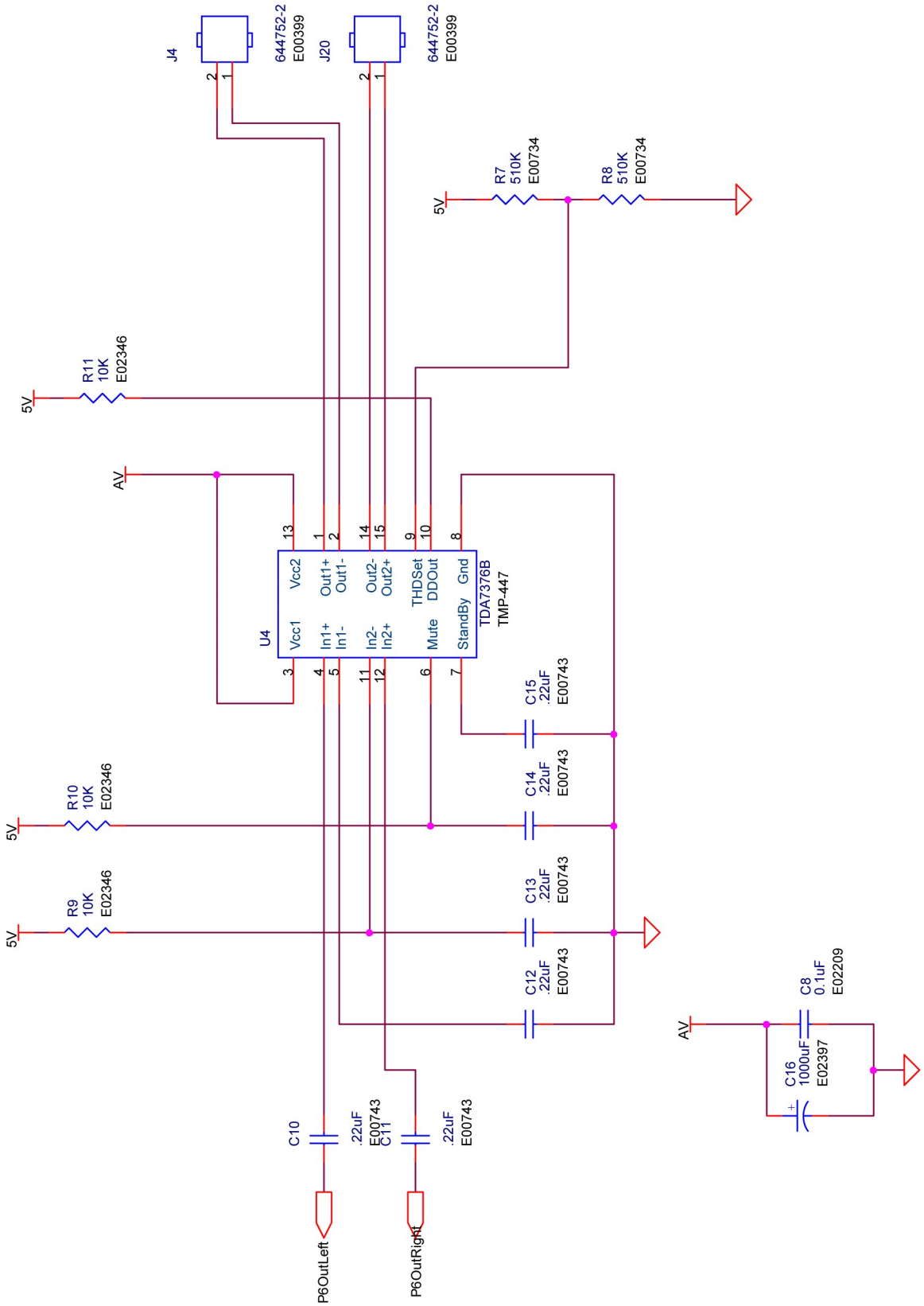
Main Schematics



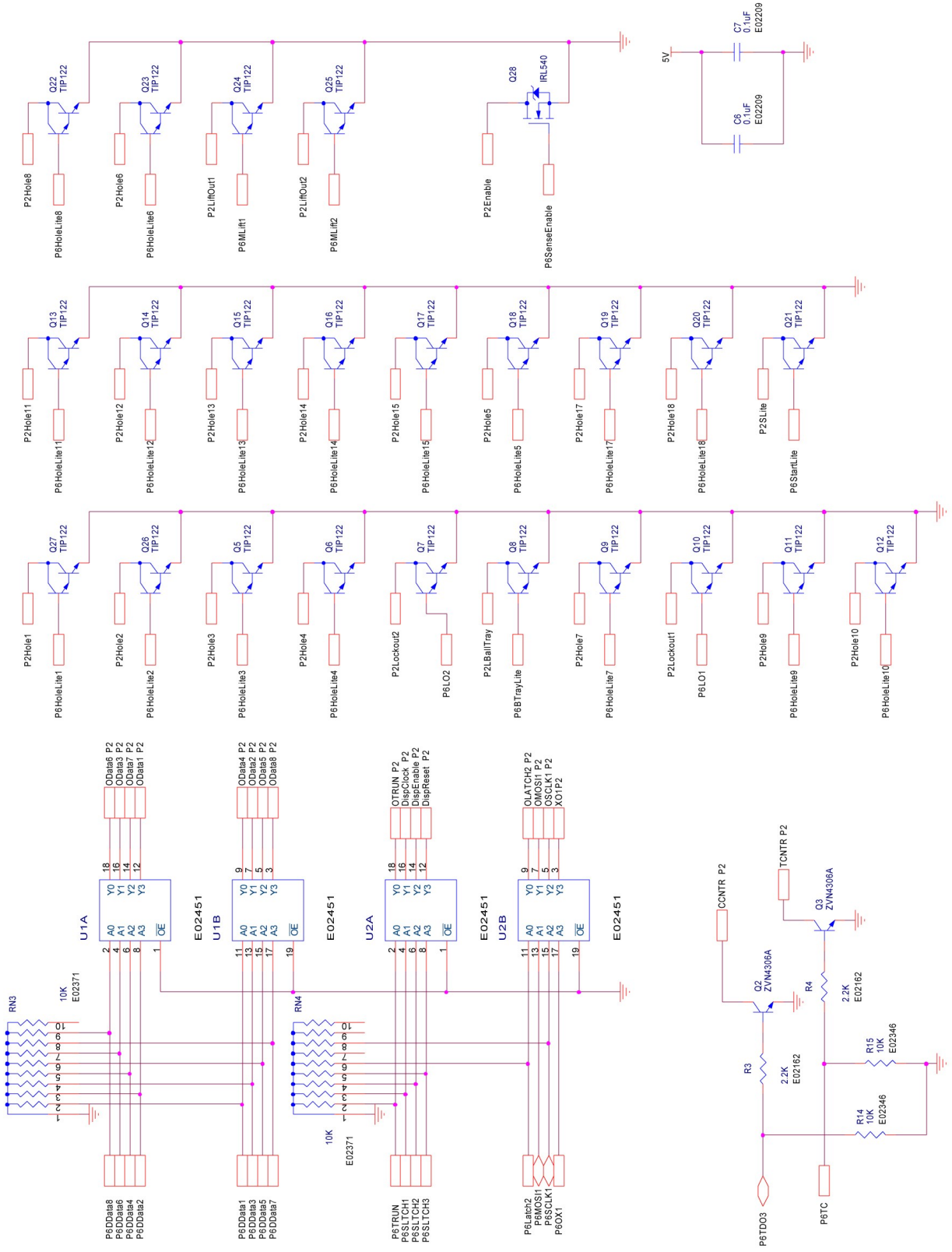
Main Schematics



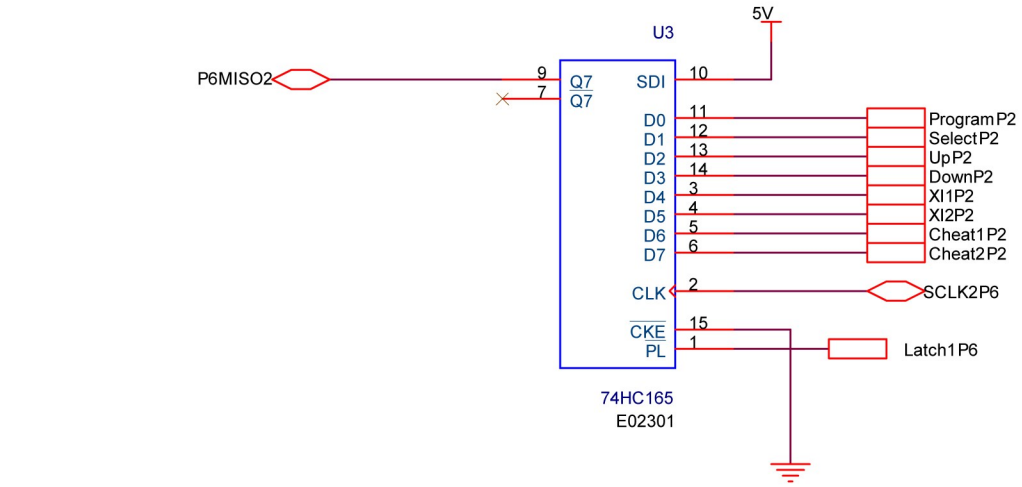
Main Schematics

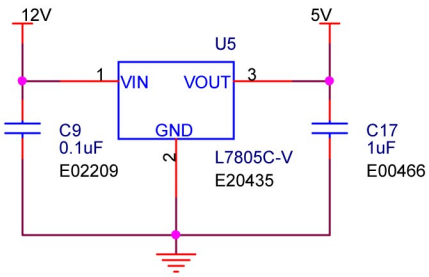


Main Schematics



Main Schematics





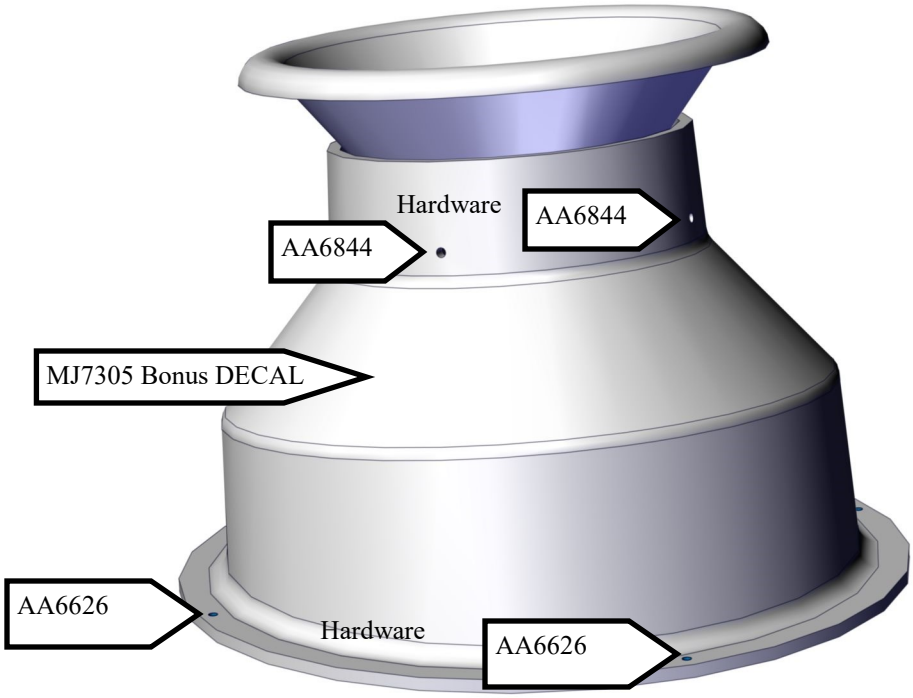
Spares List

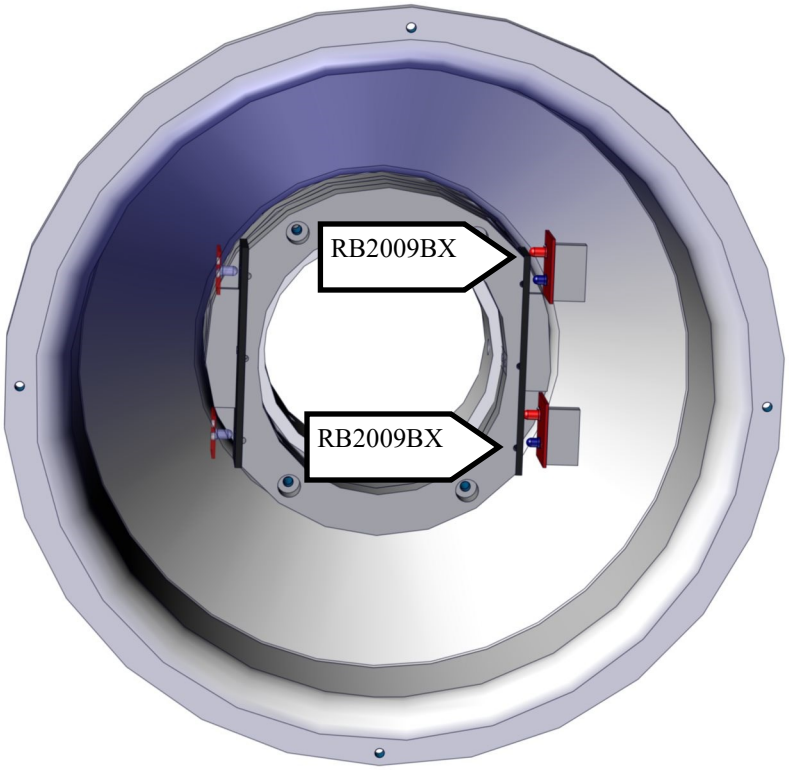
Electronics:	**Where used?**
RB2032X	Big display board located behind playfield.
DA2133X	Small display board located behind the playfield.
PP250X	PLL bulbs located in the marquee and behind the playfield.
E00377	Spot light used at top of game canopy.
E00670MJX	Workhorse 8 ballast used behind the playfield.
MJ2007X	Power module (6amps) used in back of game, incoming AC.
MJ2009A	Gearbox head for motor used in the conveyor.
MJ2009X	Motor assembly used in the conveyor.
MJ2037X	Score sensor (see playfield score layout).
MJ2038X	Score sensor (see playfield score layout).
MJ2038SX	Score sensor (same as MJ2038X but with a straight connector)
RB2009BX	Optical sensor, used in ball return and 50 point score sensors.
AR2007	Speakers
IA2010	12 volt power supply used to power game.
2111	Ball conveyor relay.
MJ2034X	Main board with CPU board.
E00156	Rocker switch
HH5005	Ticket dispenser, used in front door assembly.
CX8384X	Marquee ballast, workhorse 5, used in marquee.
E00414MJX	Blue LED strip.
NA2032X	Marquee display
PR2039AX	Reflective sensor board used in ball conveyor.
8982RBX	Pir sensor located in the top, left front of cabinet.
E00418MJX	White LED strip.
E02295	6 amp 250V slo blo mdl fuse

Mechanical:	
211	T-molding blue
BW2017	Plastic clip for PLL bulbs
BW2018	Plastic Bulb support
CG1052	3” swivel caster
CG3019	Cage retainer cap

Graphic Locations and Part Numbers

Bonus Jug


Hardware
AA6844
AA6844
MJ7305 Bonus DECAL
AA6626
Hardware
AA6626


RB2009BX
RB2009BX

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.

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