

Service Manual



Innovative Concepts in Entertainment
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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.

The game's foot print is 56" x 50" x 86"

”

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 120 volt users is 3 AMPS at 250Volt type slow blow. The value of the fuse for 230 users is 2 AMPS at 250Volt type slow blow.



Accessing the playfield:

Remove the outer ring and push back on the upper sign assembly.



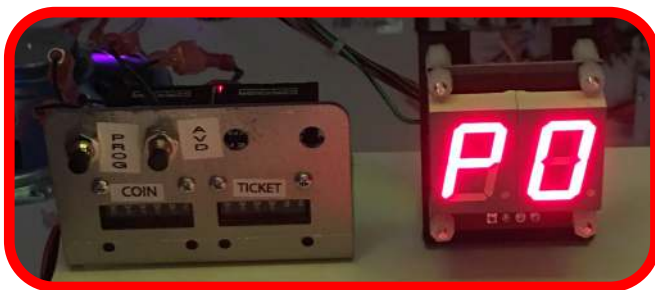
Software Options:

To access the Game's programming options and tests, open the coin door and press the "PROG" button.

The two digit display next to the buttons will show the program option number.

The bonus display will show the value for the option.

Use the Spinner to change values, press the "AVD" button to advance through the program options.



Program Options: The game requires 22 balls to be loaded into the playfield.

On the next page is a chart showing the suggestive settings for the desired cost of play. The program options are listed above the suggestive values. When a card swipe system is used program option 3 should always be set to 1 regardless of the desired price of play.

Program Option	Description	Min	Max
p0	Game Volume	1	10
p1	Attract volume	0	10
p2	How often to run Attract mode	0	30
p3	Pulses to start a game (Cost of Play)	1	25

This program option determines how many coin pulses to start a game.

p4	Coin 1 value	1	25
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This program option is not used.

p5	Coin 2 value	1	25
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This program option is not used.

p6	Bonus Round Time Setting	1	5
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This program option determines how much time is allowed to play the bonus around at the end of the game. The lower the number the more time is allowed. This is by default set to 3. Adjust higher if players are winning too many tickets on average. Adjust lower if players are not winning enough tickets on average.

P7	Minimum Tickets Won (see chart)	0	50
p8	# of Tickets paid with 5 cups to go (see chart)	0	60
p9	# of Tickets paid with 4 cups to go (see chart)	0	70
pa	# of Tickets paid with 3 cups to go (see chart)	0	100
pb	# of Tickets paid with 2 cups to go (see chart)	0	120
pb	# of Tickets paid with 1 cups to go (see chart)	0	150
pd	# of Tickets paid with all cups (see chart)	0	2000
pe	Ticket Emulator	0	1

This program option allows the game to be used without tickets or just for fun. Default is 0.

pf	Ticket Multiplier	1	2
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This Program option allows the use of double tickets. A setting of 1 means ticket is worth 1. A setting of 2 means each ticket paid is worth two tickets. Default is 1.

pr	Default settings - Used by factory - Not for end user adjustments.		
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BONUS ROUND

p3	p7 & p8	p9	pa	pb	pc	pd
COST PER PLAY	5 TICKETS	10 TICKETS	15 TICKETS	20 TICKETS	25 TICKETS	WIN BONUS!
\$ 0.50						250

Expect 15 to 20 tickets on average.

p3	p7 & p8	p9	pa	pb	pc	pd
COST PER PLAY	10 TICKETS	20 TICKETS	30 TICKETS	40 TICKETS	50 TICKETS	WIN BONUS!
\$ 1.00						500

Expect 30 to 40 tickets on average.

p3	p7 & p8	p9	pa	pb	pc	pd
COST PER PLAY	20 TICKETS	40 TICKETS	60 TICKETS	80 TICKETS	100 TICKETS	WIN BONUS!
\$ 2.00						1000

Expect 60 to 80 tickets on average.

Program Options: Continued

The next few program options are not really program options but either a test or audit.

- 8.8 Tests all displays - The game will show all eights in the displays showing all segments work.
- a1 Bonus WIN audits
- a2 1 Cup to go Audit - How many times a player had one cup left during bonus round.
- a3 2 Cup to go Audit - How many times a player had two cups left during bonus round.
- a4 3 Cup to go Audit - How many times a player had three cups left during bonus round.
- a5 4 Cup to go Audit - How many times a player had four cups left during bonus round.
- a6 5 Cup to go Audit - How many times a player had five cups left during bonus round.
- a7 6 Cup to go Audit - How many times a player had six cups left during bonus round.
- t Memory Test (a spinning circle informs you it is checking).

Attach Marquee Ticket Decals

Once you have programmed the options you will need to install the ticket decals on the marquee.

Remove the upper signage using a #2 screw driver.

Using the recommended ticket decals and starting with the lowest value, lay each decal face down and tape them onto the back of the panels using clear tape.



Errors and their meanings:

Error #1: Ball eject error We recommend to clean sensors every 30 days to prevent this error.

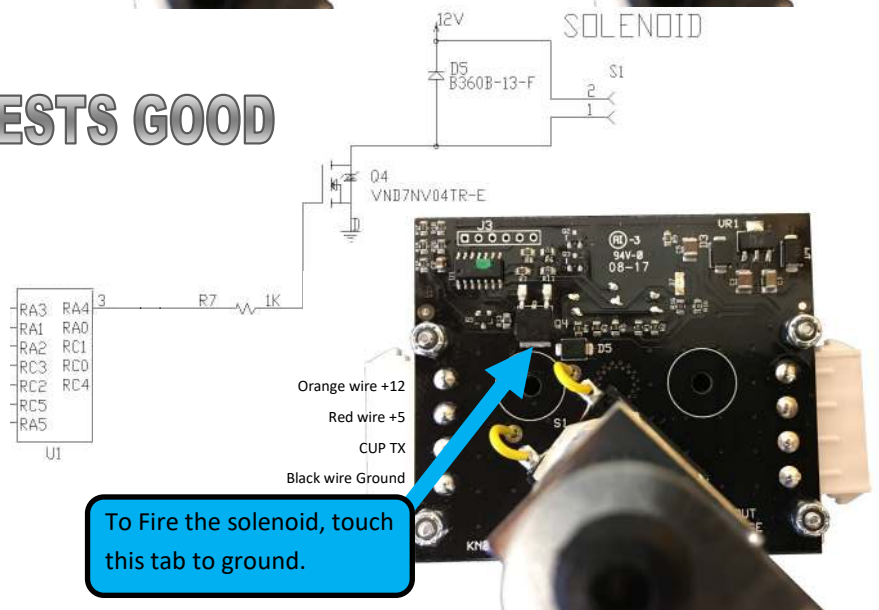
This error indicates a problem with one or more of the cup/sense PCB's. It can be caused by bad sensors, dirty sensors, or a bad solenoid.

If the game displays Error #1:

- AND no balls are in any of the cups, turn off the game and wait five seconds. Then turn the power back on and listen for the solenoid to fire four times and stop. This would indicate that the sensor is detecting a ball in the cup when there is no ball in that cup. Clean out the sensors at the top with compressed air. Turn off the game again, wait five seconds, and turn it back on. If the sensor still reports a ball when no ball is in the cup, replace the sensor board.
- AND a ball is in the cup, first inspect the solenoid and ball. It is possible that the ball could have cracked and caused the solenoid pin to be stuck in the ball. If this is the case, discard the ball and replace it with a new one. Turn the game off and wait five seconds. Turn the power back on. If still in error, check the function of the solenoid. This can be done by touching a wire from ground to the casing of the FET. From underneath the cabinet, briefly touch a short wire from the black wire in (ground) to the case of the FET (shown by the arrow). To measure the FET with your meter, set the meter to diode check. See below.



TESTS GOOD



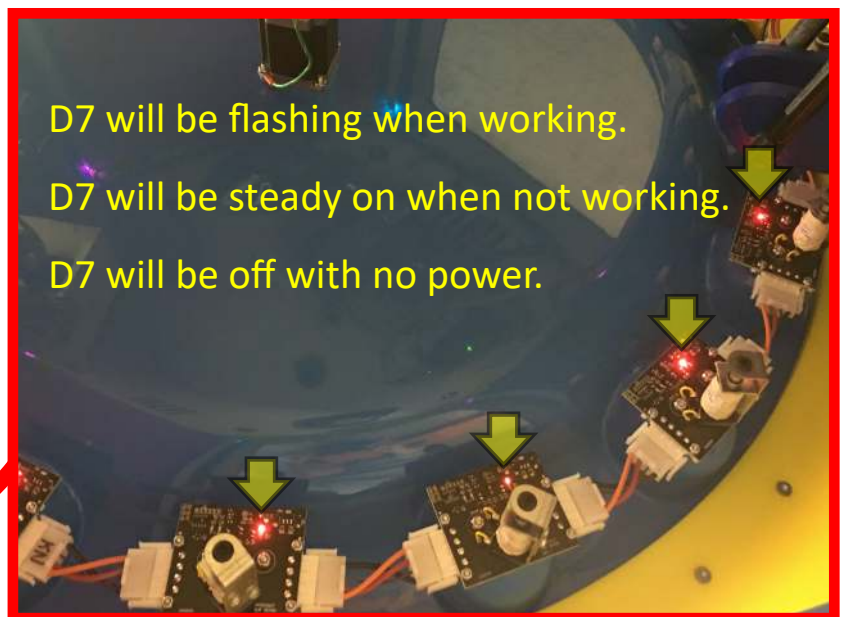
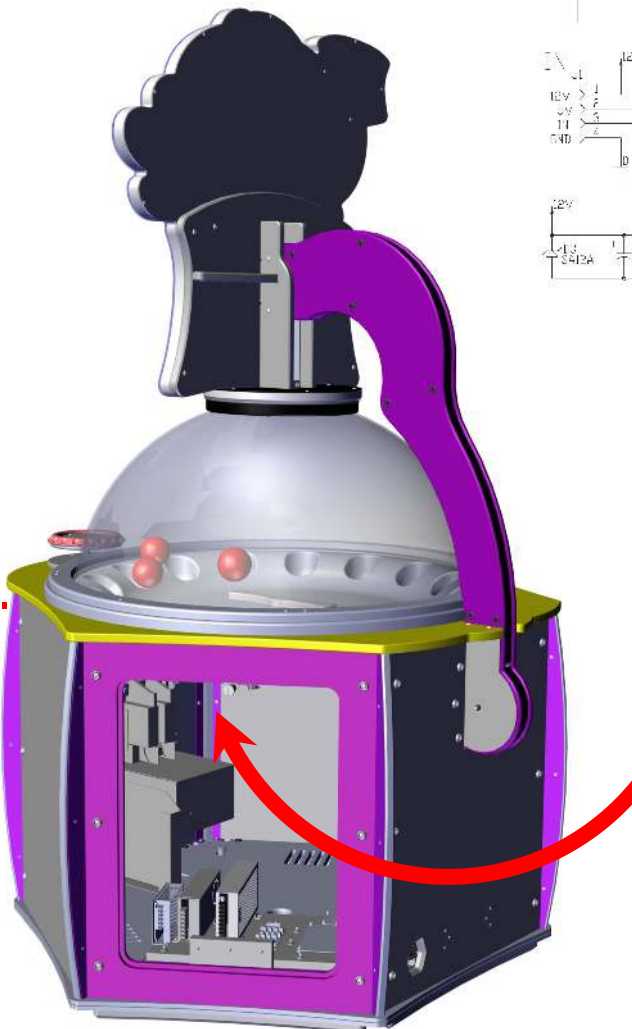
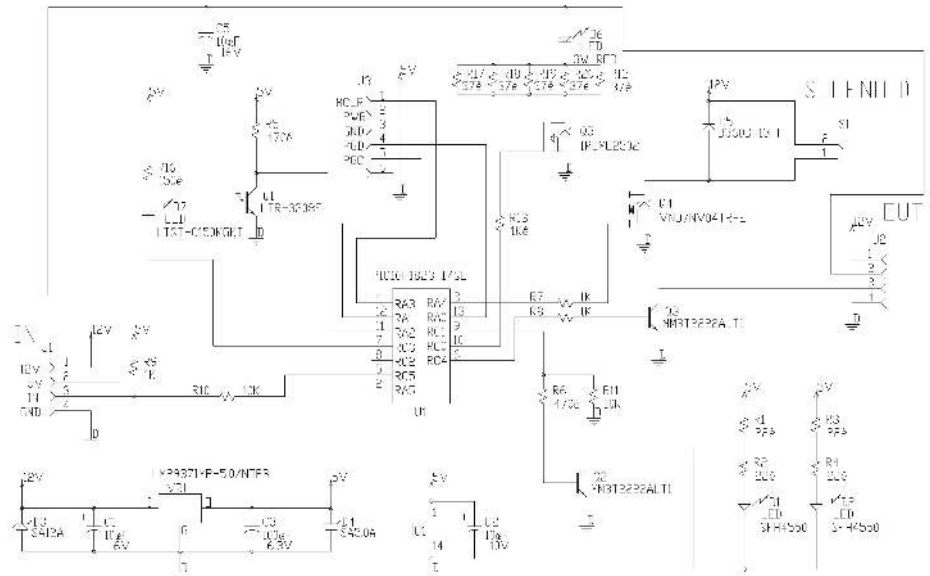
Error #2: Cup communication failure

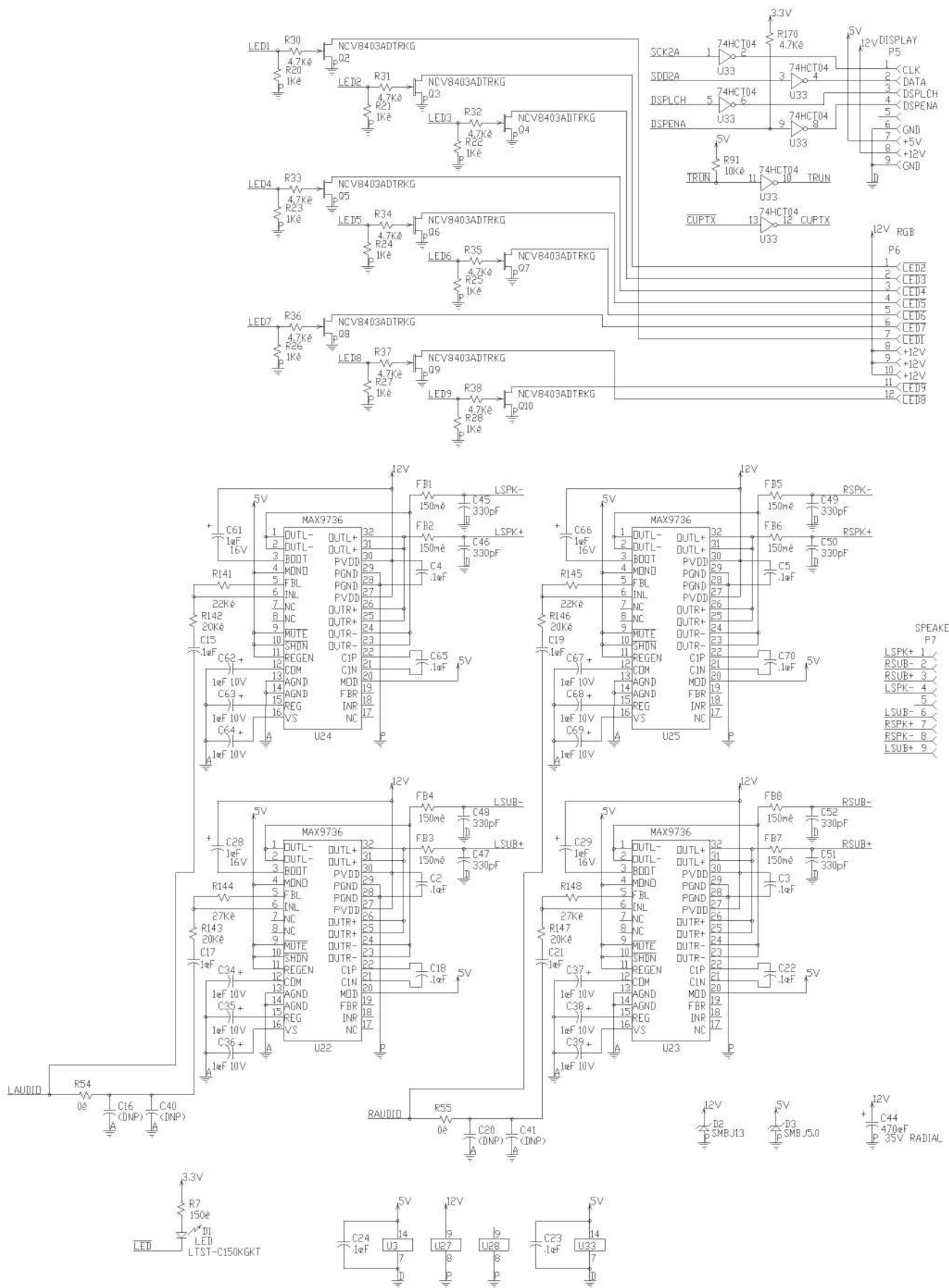
This error indicates a problem with the daisy chain communication from the Main logic PCB, through all 16 cup sensor PCB's, back to the main logic board. A break in this chain will be displayed on the cup sensor diagnostic red LED's, D7. A flashing Red LED indicates it is receiving valid commands from the Main logic PCB. A steady red LED indicates power but no data is being received. If you follow the chain of flashing LED's to the last one flashing, this will help you to determine the break in communication.

Either the last one flashing is not outputting the information to the next sensor, the input of the next sensor is faulty, or the wire harness is bad.

Upon power the sensor's RX line starts at 3.3 volts DC but drops to 2.0 when the sensor is in communication with the Main board. When the RX line is not connected to another sensor it will be at +5 VDC (reference to ground).

If all 16 cup sensor LED's are not flashing, check to make sure the OUTPUT from the main logic is connected to the INPUT of the 1st cup sensor PCB at J1, not J2 (and not to the last one in the chain).





How to test the encoder:

Step 1:

With the power on, press the program button in the upper coin door. Spin the wheel to the right at a modern pace (slowly spinning will result in no change). Verify the "Time Bonus" display increases until it is at 10. Now spin the wheel to the left to see if it decreases until it is at 1. Repeat this test several times.

- If the number changes up and down consistently, then play a game to confirm the encoder is working properly in game mode (maybe you are experiencing a motor failure?).
- If the option changes are inconsistent (goes up and down but doesn't stop when the wheel stops or changes erratically then go to step 3).

If no option changes are observed:

Step 2:

Check for the +5 VDC and DC ground at the encoder connector with the volt meter.

- If 0 VDC:

re-check at the main board.

- If still 0 VDC:

Replace main board.

- If +5 VDC:

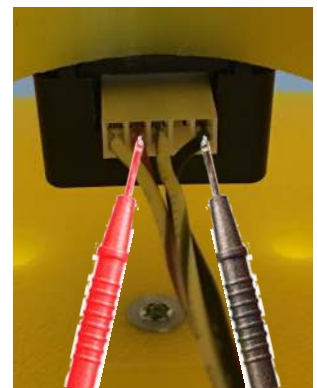
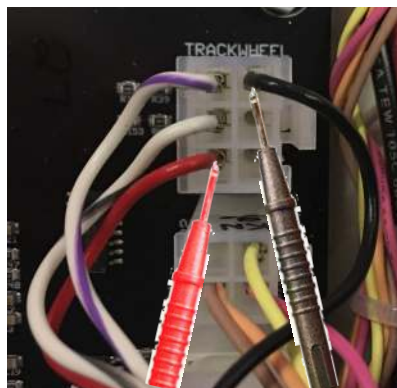
Repair the harness.

Do not continue if no +5 VDC!

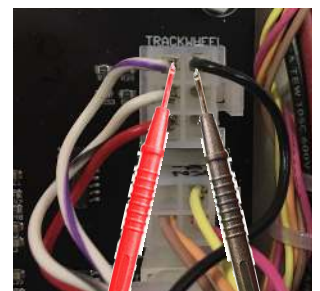
Step 3:

Verify the encoder is outputting its two phases. At the connector labeled "Trackwheel" on the main board, insert the red probe on the white with purple stripe wire and the black probe on the black wire. Move the wheel VERY SLOWLY. The voltage should change as you spin the wheel. It will vary from 0 volts up to 5 volts and back down. It should only change when the wheel is turned.

Repeat this with the other white with grey stripe wire.



Voltages should range between:
0.00 through 5.00 VDC
as the wheel is turned VERY SLOWLY!



How to test the encoder: (continued)

If none of the outputs change, then go to step 4.

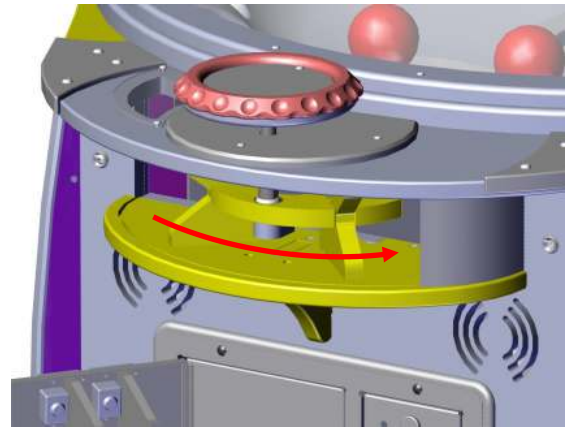
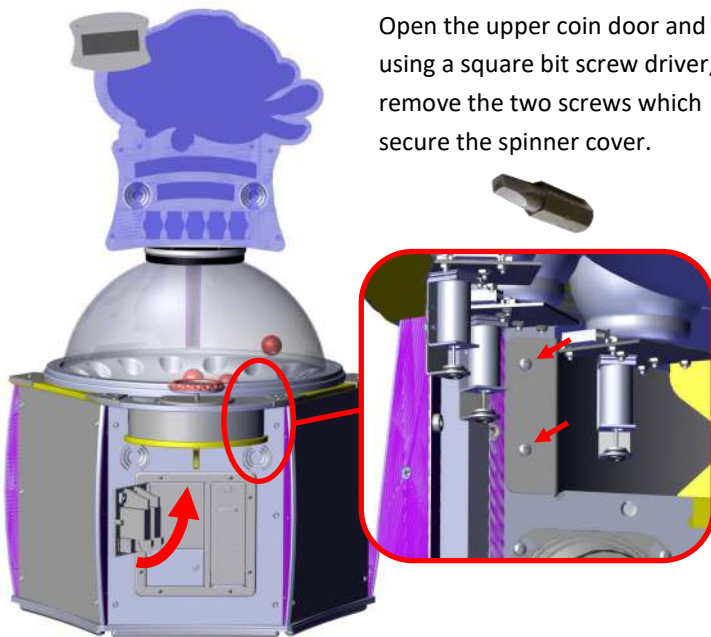
If only one of the outputs change, then replace the encoder.

If both encoder outputs produce changes at the main board.

Replace the main logic PCB.

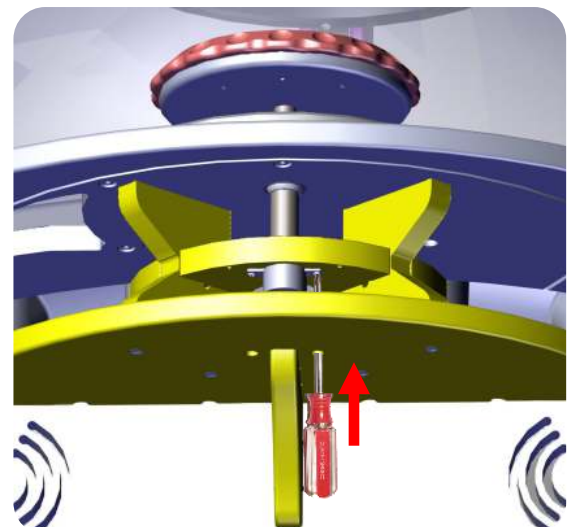
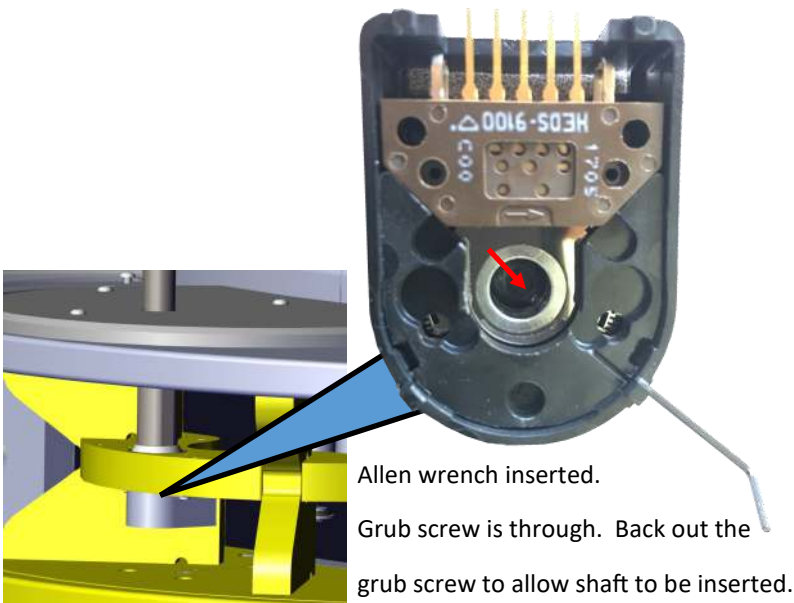
Step 4:

Slide the front cover out of the way to exam the wheel assembly. A small Allen wrench was included with the game. Insert the Allen wrench into the encoder. Spin the wheel VERY SLOWLY. If the shaft of the wheel is "locked" into the encoder, you will feel the Allen wrench lock into the grub screw. If after rotating the wheel 360 degrees you do not feel the grub screw, remove the encode and visually inspect for it.



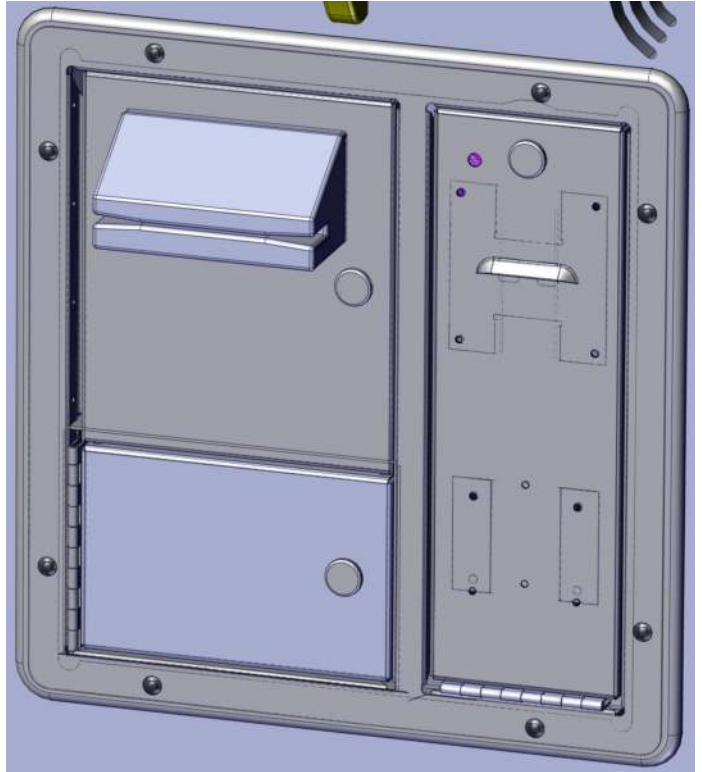
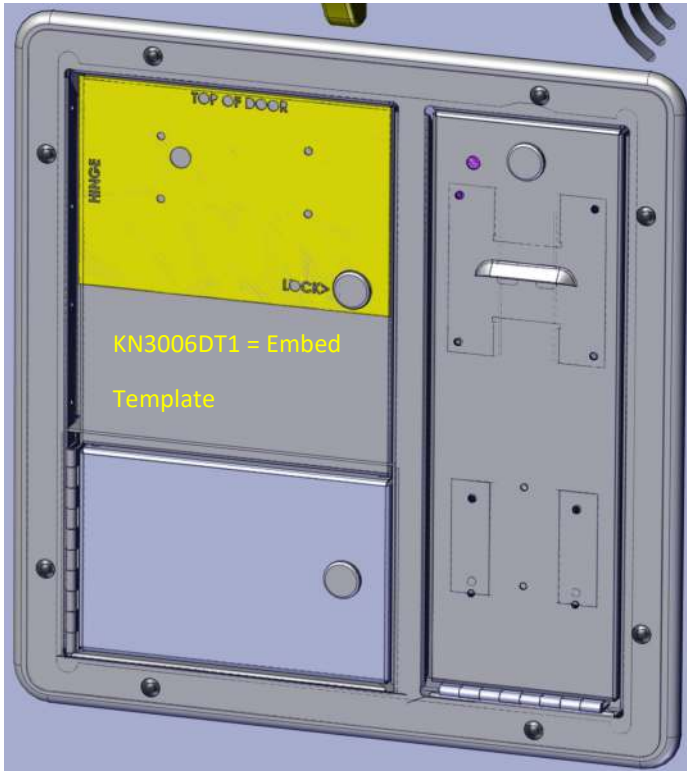
The slide the cover to the right after removing the two square head screws.

This will allow access to the spinner assembly.

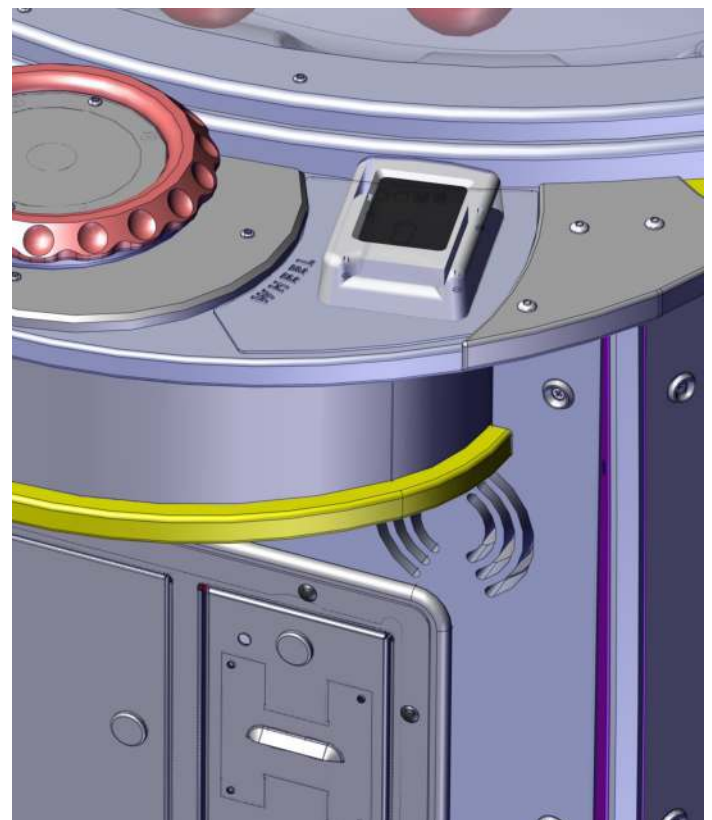
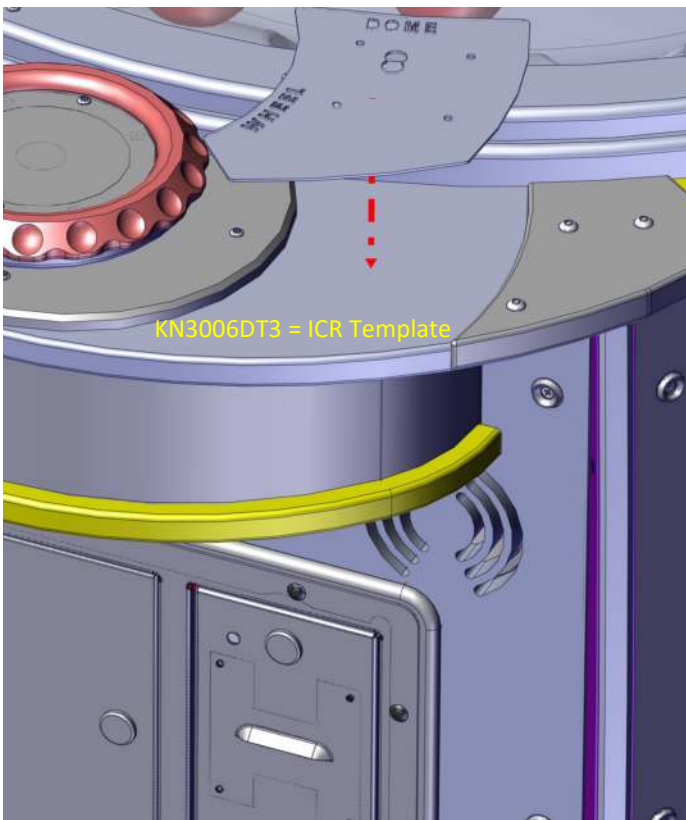


Use a Phillips screwdriver from underneath to remove the encoder.

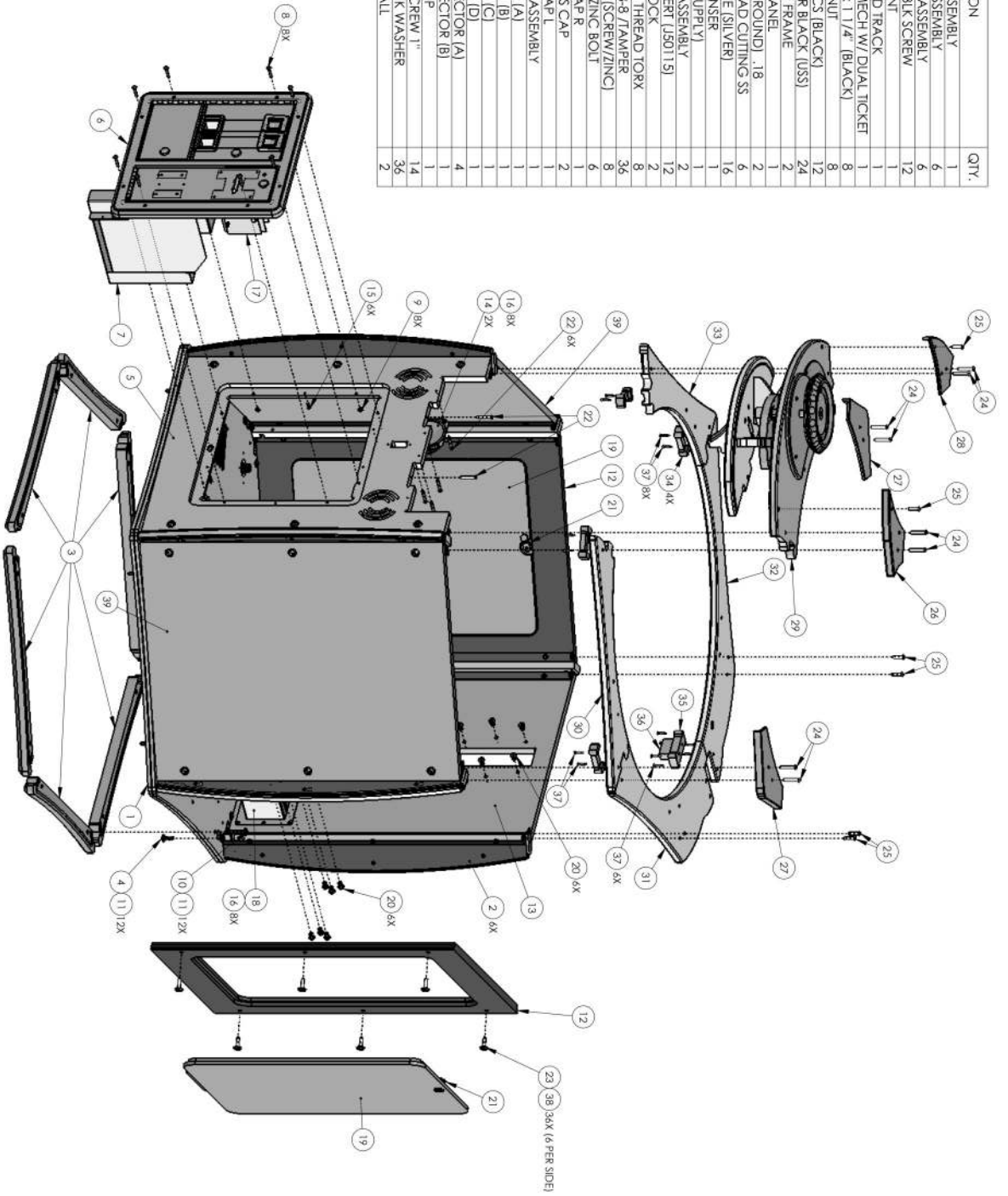
Recommended position for Card Swipe Style System.



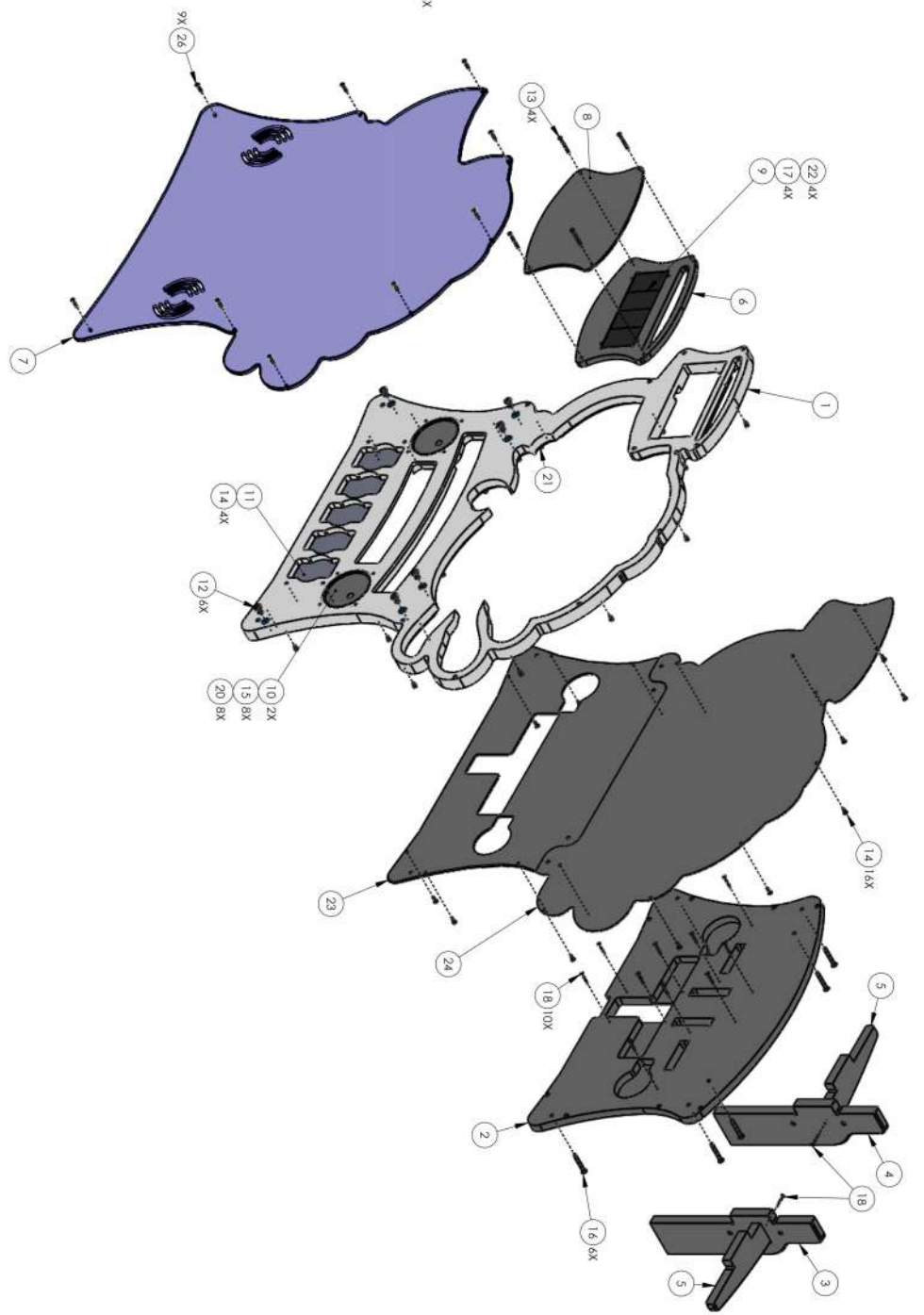
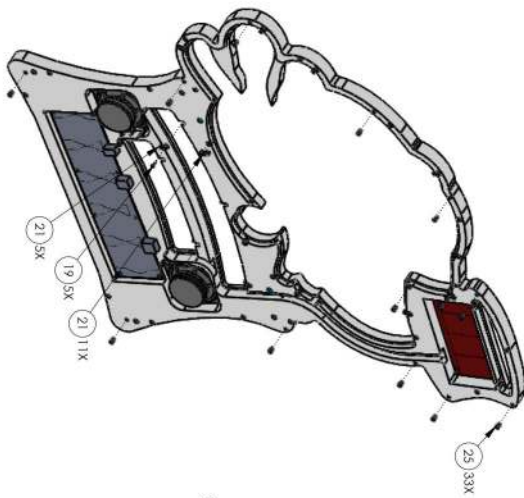
Recommended Position Insert Card Style Swipe System.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	KN3054CX	CAB FLOOR ASSEMBLY	1
2	KN3010X	LED CORNER ASSEMBLY	6
3	KN3015	GROUND EFFECT ASSEMBLY	6
4	PC40622	1/4-20 X 1 BSHCS BLK SCREW	12
5	KN3056	CAB FRONT	1
6	KN3008	TICKET DOOR LED TRACK	1
7	GR0001	COIN DOOR (TRIPLE) DUAL MECH W/ DUAL TICKET	1
8	4077	CARRIAGE BOLT 10-24 X 1 1/4" BLACK	8
9	6040	10-24 KEP NUT	8
10	6220	1/4-20 X 1-3/4 BSHCS [BLACK]	12
11	6212	1/4 X 3/4 FLAT WASHER BLACK [USS]	12
12	KN3053	ACCESS DOOR FRAME	24
13	KN3055	CAB BACK PANEL	2
14	FP2007	SPEAKER (4/4 OHM ROUND) .18	2
15	AA6936	8-32 X 3/4 PHMS THREAD CUTTING SS	6
16	6555	#8 X 5/8 SQ. DRIVE [SILVER]	16
17	HH5005CL	TICKET DISPENSER	1
18	DD2007X	ASY [POWER SUPPLY]	1
19	KN3052X	ACCESS DOOR ASSEMBLY	2
20	PC60631	025-20 CABINET INSERT [J50115]	12
21	5014	7/8" CAM LOCK	2
22	AA6883	10 X 1-1/2 HHMS FULL THREAD TORX	8
23	AA6477	1/4-20 X 1 BSHC [18-8 /TAMPER	36
24	AA6102	1/4-20 X 1-1/2" BSHCS [SCREW/ZINC]	8
25	AA6048	1/4-20 X 1 BSHCS ZINC BOLT	6
26	KN3013	CORNER CAB R	1
27	KN3012	CORNER SIDES CAP	2
28	KN3014	CORNER CAP L	1
29	KN3077X	CONTROL PANEL ASSEMBLY	1
30	KN3063	TOP PANEL (A)	1
31	KN3064	TOP PANEL (B)	1
32	KN3065	TOP PANEL (C)	1
33	KN3066	TOP PANEL (D)	1
34	KN3067	CAB TOP CONNECTOR (A)	4
35	KN3068	CAB TOP CONNECTOR (B)	1
36	KN3069	ARM STOP	1
37	6019	#6 DRYWALL SCREW 1"	14
38	AA6959	1/4" COUNTERSUNK WASHER	36
39	KN3057	BLANK WALL	2



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	KN3030	MG CENTER	1
2	KN3032	MG BACK SUPPORT	1
3	KN3033	MG VERTICAL BRACE L	1
4	KN3034	MG VERTICAL BRACE R	1
5	KN3035	MG HORIZONTAL BRACE	2
6	KN3036	HEADER FRAME	1
7	KN7027M	MARQUEE	1
8	KN7028M	HEADER	1
9	FA2032	TOP DISPLAY	1
10	FP2007	SPEAKER 4/4 OHM ROUND .18	2
11	KN2035	PCBA TH MARQUEE	1
12	PC60631	025-20 CABINET INSERT (J50115)	6
13	AA6934	8-32 X 1/2 SECURITY BRCS BL	4
14	AA6904	8-32 X 1/2 PHNS (BLACK)	20
15	AA6941	6-32 X 3/8 TEN (SLD)	8
16	AA6942	6-32 X 3/4 BRCS (BLACK)	8
17	AA6943	6-32 X 1/2 BRCS (BLACK)	4
18	AA6930	1-1/4 SCREEN NUMBER 8 W/MS	12
19	AA6971	6 X 1/2 SELF-TAP (BLACK)	5
20	60049	8-32 KEP NUT	8
21	EG9072	CABLE TIE DOWN W/CLAMP ATTCHD	16
22	PC60643	6-32 X 1/4 HI SPACER	4
23	KN3031B	MG BACKER B	1
24	KN3031A	MG BACKER	1
25	AA6116	8-32 KNIFE EDGE INSERT	33
26	AA6913	8-32 X 3/4 BRCS SECURITY BLACK	9



Item number	Description		
AA0201	T MOLDING (25/32 CHROME)	KN2034X	PCBA MAIN
AR2007	SPEAKER (ROHS) (6X9) U694 W/.	KN2038X	PCBA DRIVER
AR2010	POWER SUPPLY +12VDC 17A (ROHS)	KN2050HX	HARNNESS (MAIN)
BL1050	CAM (DRIVE) SILVER	KN2051MX	HARNNESS (ARM)
E00724KNBX	ASY (LED STRIP LARGE RGB 19 CUTS	KN3019	PLAYFIELD
E00724KNCX	ASY (LED STRIP RGB 64 CUTS)	KN3024	BALL
E00724KNDX	ASY (LED STRIP RGB 30 CUTS)	KN3043	HIT PADDLE
E00788KNAX	ASY (LED STRIP LARGE WHITE 6 CUT	KN3044	HIT PADDLE SPACER
E00850KNAX	ASY (LED TAPE STRIP LARGE WP RGB	KN3061	WHEEL
E01213KNAX	ASY (LED TAPE RA WHITE 16 CUT)	KN3069	ARM STOP
E01213KNBX	ASY (LED TAPE RA WHITE 12 CUTS)	KN7003	CENTER COVER LEFT (MAT/PRINT)
E01213KNCX	ASY (LED TAPE RA WHITE 8 CUTS)	KN7004	COVER CENTER FRONT (MAT/PRINT)
E01297KNAX	ASY (LED TAPE ST CHASING RGB 5V	KN7009	CONTROL PANEL SHROUD (MAT/PRINT)
E01215	ENCODER	KN7012	CABINET GRAPHIC (MAT/PRINT)
FP2007	SPEAKER (4/4 OHM ROUND) .18	KN7013	DECAL (ICE LOGO)
HH3001	DOME (CYCLONE/HH)--(18 pc-pall	KN7014	DECAL (BONUS)
HH5005	TICKET DISPENSER (CLE) W/FRONT	KN7015	WHEEL COVER (MAT/PRINT)
KF2007X	ASY (POWER MODULE 6 AMP)	KN7017	DECAL (TICKET)
KF2011PNCX	PCBA FUSE BOARD 8 X 7 AMP	KN7019	DECAL (PLAYFIELD)
KN2008	MOTOR	MN1051	SHOCK (HYDRAULIC)
KN2009X	ASY (SOLENOID)	KN2033X	PCBA (2 DIGIT DISPLAY)
E00788KNBX	ASY (LED STRIP LARGE WHITE 43 CU	KN7112	CABINET GRAPHIC (MAT/PRINT)
E00788KNDX	ASY (LED STRIP LARGE WHITE DUAL	KN7114	DECAL (BONUS) CEC
E00788KNEX	HARNNESS (LED STRIP LRG WHITE DUA	KN7115	WHEEL COVER (MAT/PRINT)
E00788KNGX	ASY (LED STRIP LARGE WHITE 3 CUT	KN7127X	ASY (MARQUEE CEC)
FP2007	SPEAKER (4/4 OHM ROUND) .18	WN2010	POWER SUPPLY (5VDC, 40A) SP-200-
KN2035X	PCBA (MARQUEE)	ZS2010	POWER SUPPLY
KN7027	MARQUEE (MAT/PRINT)	KN2035X	PCBA (MARQUEE) CEC ONLY
TA2032X	PCBA (DISPLAY)	TA2032X	PCBA (DISPLAY)
KN2039X	Solenoid Board	KN2008	Motor
E00972	7 Amp Fuse	E01215	Encoder
KN3024	Balls		

Recommended Spares



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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