JOHN WICK
SERVICE AND OPERATION MANUAL

WARNING

IMPORTANT HEALTH WARNING: PHOTOSENSITIVE SEIZURES - A very small percentage of people may experience a seizure when exposed to certain visual images, including flashing lights or patterns. Even people with no history of seizures of epilepsy may have an undiagnosed condition that can cause "photosensitive epileptic seizures" due to certain visual images, flashing lights or patterns. Symptoms can include lightheadedness, altered vision, eye or face twitching, jerking or shaking of arms or legs, disorientation, confusion, momentary loss of awareness, and loss of consciousness or convulsions that can lead to injury from falling down or striking nearby objects.

IMMEDIATELY STOP PLAYING AND CONSULT A DOCTOR IF YOU EXPERIENCE ANY OF THESE SYMPTOMS.

ATTENTION! IMPORTANT WARRANTY INFORMATION

The electronics system, node network architecture, mechanical devices and associated software control systems in this pinball machine are designed to work with genuine Stern Pinball accessories and devices.

Installation of non-authorized accessories, lamps, LED's, motors or other devices or modification of electro-mechanical devices may damage the system and will void your warranty.

Stern Pinball machines are assembled in Elk Grove Village, Illinois, USA. Stern Pinball has inspected each game element to ensure it meets our quality standards.

Each pinball machine has unique characteristics that make it a one-of-a-kind American made product. Each will have variations in appearance resulting from differences in the machine's particular wood parts, individual printed art and mechanical assemblies. No playfield is perfectly flat and varies depending on the season. Game play will result in playfield dimpling as the harder steel ball contacts the wood and coating; over time multiple dimples will blend to make them less noticeable. Normal plastic insert crazing (tiny stress cracks) and ghosting (small cloudy areas around insert edges) are often seen in pinball machines, due to a combination of plastic mold stress, pushing of inserts into purposely undersized holes, and heating and breaking of inserts' plastic "skin" when the playfield is sanded.

Games configured for North America operate on 60 cycle electricity only. These games will not operate in countries with 50 cycle electricity (Europe, UK, Australia).

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JOHN WICK PRO MANUAL 500-55W5-01

1. SETUP AND MOVING

1.1 FIRST-TIME SETUP INSTRUCTIONS

Your brand new Stern Pinball Machine is carefully packed for safety and security. For your safety, exercise caution and use the correct tools and sufficient help when setting up your new game.

TOOLS REQUIRED ⓘ

- 5/8" Socket Wrench
- Utility Knife
- Snips
- An Assistant

CAUTION: AT LEAST TWO (2) PEOPLE ARE REQUIRED TO MOVE AND MANEUVER THE GAME. USE PROPER MOVING EQUIPMENT AND EXTREME CARE WHILE HANDLING. STERN PINBALL MACHINES WEIGH OVER 250LBS BOXED.
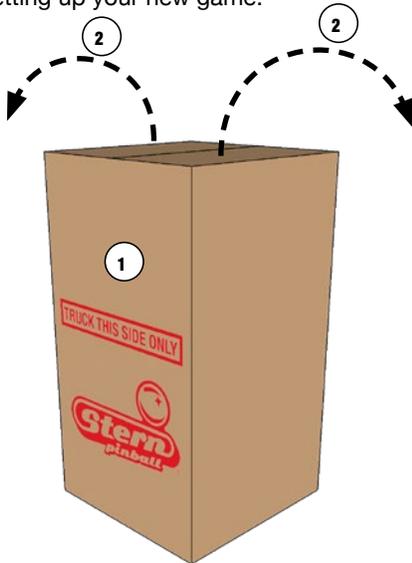
1. Locate the side labeled "TRUCK THIS SIDE ONLY". The bottom of the game faces this side.
2. Open the top box flaps by pulling hard in an upward motion on each flap. If the flaps are taped, cut the tape first, taking care to avoid the box staples.

3. Remove the four (4) foam pieces and two (2) narrow box tubes which contain the four (4) identical legs with levelers.
4. DO NOT CUT STRAPPING YET. Keep backbox secured in the down position.
5. With the utility knife, carefully cut down the left and right corners of the box.
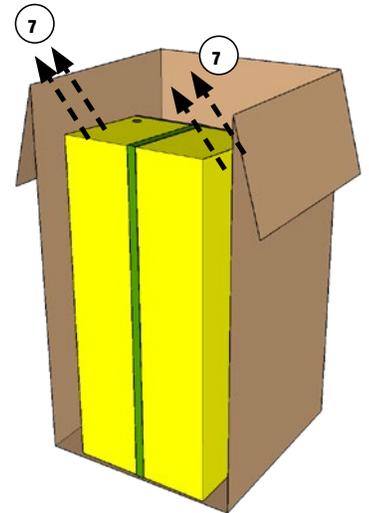
6. Let the face fall forward and remove the entire side by carefully cutting the bottom.
7. With the game still in its folded position, use a ☐" wrench to loosen and remove the 2 leg bolts on each side of the front cabinet. Ensure the leg levelers are screwed all the way into the legs.
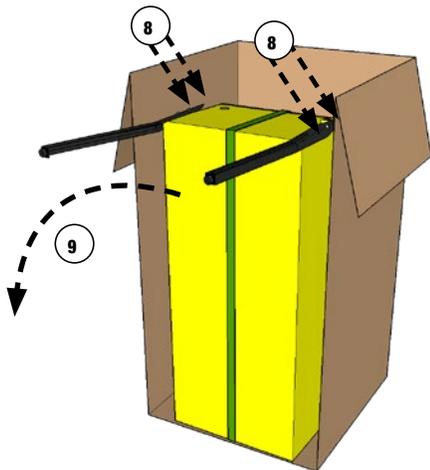
8. Install front legs using the bolts removed from the cabinet. Secure tightly.
9. Have someone help you carefully set the game down on the front legs.
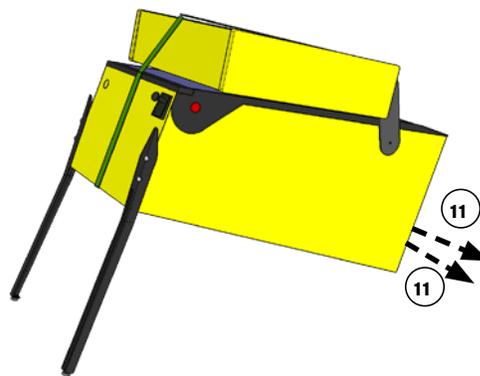
10. Set aside the open box.
11. With a ☐" socket wrench, loosen and remove the 2 leg bolts on each side of the rear cabinet, 4 total.
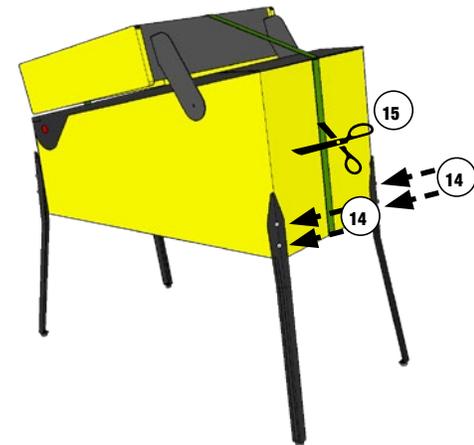
12. Using supports or two people, prop the rear of the cabinet up.
13. Ensure the rear leg levelers are screwed all the way into the legs.
14. Install rear legs using the 4 bolts removed from step 11.

FIRST-TIME SETUP CONTINUED

15. Cut nylon strapping and remove protective strap corner guards.
16. Locate the factory keys, either on the shooter rod or taped to the playfield glass.
17. Using snips, cut the tie-wrap securing the keys if required. One set of keys is for the front coin door, the other set of keys is for accessing components in the backbox.
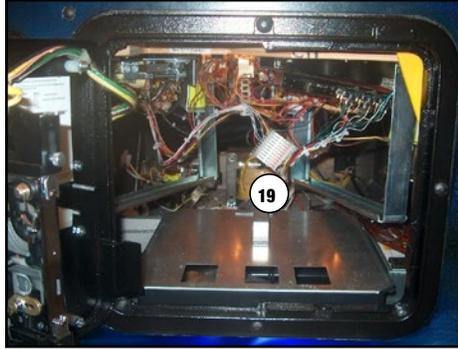
18. Open the front coin door.
19. Reach into the game and remove the retaining clip at the rear of the cash box.
20. Remove the cash box lid by sliding it toward you.
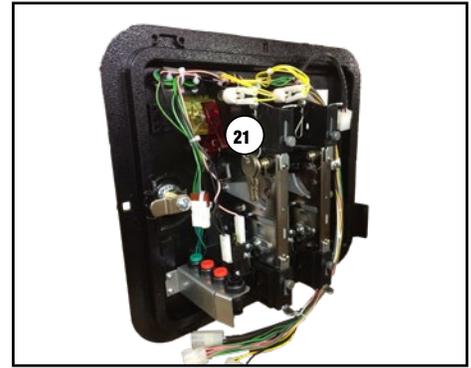
21. Store the backbox keys, if desired, on the metal hook located in the coin door.
22. Locate and remove the pinballs, plumb bob, and backbox bolts from the cash box.
23. Replace the cash box lid and retaining clip for future use.
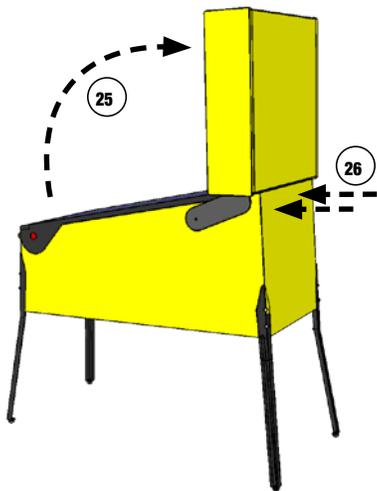
24. Locate the two (2) backbox bolts in the cash box.
25. Carefully raise backbox to upright position while ensuring that cables are not pinched.
26. Use the ☐" wrench to Install the two (2) backbox bolts to secure the backbox as indicated on the back of the cabinet.
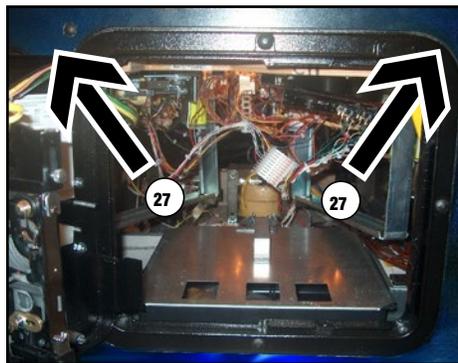
27. Reach inside the cabinet and lift the two latches located on either side of the coin door.
28. Remove the front top molding.

29. Remove the playfield glass by sliding it toward you and carefully place it in a safe location. Remove all playfield shipping tie downs, shipping blocks, and packing foam, and follow any game-specific unpacking instructions included in the playfield, if present.

CAUTION: PLAYFIELD GLASS IS MADE FROM HIGH-STRENGTH TEMPERED GLASS. TEMPERED GLASS IS SENSITIVE TO EXTREME TEMPERATURE SHIFTS AND CORNER NICKS, WHICH CAN CAUSE THE GLASS TO FAIL CATASTROPHI-CALLY. TAKE CARE TO STORE THE GLASS ON A SOFT, ROOM-TEMPERATURE SURFACE AND PREVENT THE CORNERS FROM BEING DAMAGED.

FIRST-TIME SETUP CONTINUED

30. If pinballs were already installed into the lower ball trough, remove them before lifting the playfield.
31. Grasp the lower arch between the flippers, and firmly but gently pull directly up to raise the playfield 8 to 12 inches.
32. While holding the playfield up, pull the playfield toward you until the two playfield supports are over the front edge of the cabinet.
33. Rest the playfield on the front edge of the cabinet.
34. Raise the playfield and rest it against the backbox.
35. Visually inspect all cabinet cables and connector terminations; ensure no wires or cables are pinched and that cable harnesses are not pulled tight.
36. Locate the plumb bob in the parts bag in the cash box.
37. Slide plumb bob onto the hanger wire. Note: the vertical position of the plumb bob affects tilt sensitivity - higher makes the game more sensitive to tilting.
38. Tighten the thumb screw finger-tight.
39. Install the correct number of pinballs. Refer to the decal on the lock down assembly for the correct number of pinballs.

LOCATING, LEVELING, AND FINAL SETUP

1. Select a location that is indoors, out of direct sunlight, and climate controlled. Excessive moisture/humidity can cause long-term damage to your game.
2. Adjust the front or rear levelers as necessary to position the playfield level bubble, located on the front right of the playfield next to the shooter lane, to float between the two (2) black lines. This will place the playfield at the recommended 6.5° pitch. Playfield angles greater than 6.5° can be achieved by turning out the rear leg leveler(s) for increased difficulty and faster gameplay.
3. Use a pinball to roll down the center of the playfield for side-to-side leveling, or use an external bubble level, digital level, or smartphone level app.
4. Plug into a grounded outlet and check for proper operation through DIAGNOSTICS.
5. Check the coin door: With the door closed, insert coins to verify proper operation.
6. Play game: Check for satisfactory operation and adjust game volume (push the Red Buttons inside the Coin Door).
7. If desired, perform any game diagnostics, game adjustments, and pricing settings at this time.

SPIKE PINBALL SOFTWARE UPDATE INSTRUCTIONS

1. Obtain game software update file (filename ends in ".spk") from www.sternpinball.com or from authorized Stern distributor.
2. Place game software update file (".spk") in root directory of a blank FAT32-formatted USB flash drive
3. Use backbox power switch to turn off game
4. Plug in USB flash drive to CPU board USB connector (CN20 or CN21). Refer to www.sternpinball.com
5. Turn on game
6. The game will automatically begin software update
7. Select the correct .spk update file from list.
8. Press Enter on the service switches to start update
9. When the display indicates "Update Complete", turn off game
10. Remove USB flash drive from CPU board
11. Turn game on to complete the update and play pinball!
12. Detailed instructions and troubleshooting tips are available in the game manual, www.sternpinball.com and authorized Stern distributors.

POWER SWITCH

The game's power switch is located on the right-hand side underneath the backbox.
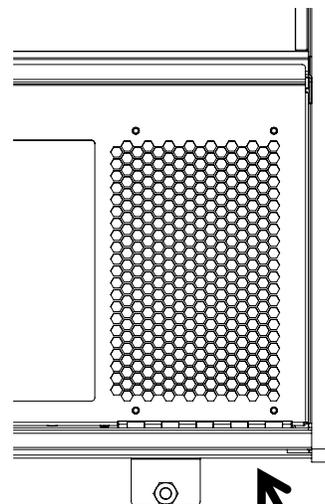
ON/OFF Switch

1.2 ADJUSTMENTS MENU

STANDARD ADJUSTMENTS

Perform the below steps to review the adjustments.

Enter the Service Menu, then enter the Standard Adjustments Menu.

Press SELECT to access the Service Menu. Press BACK to exit or escape at any time.

Press [>]. Go to the ADJ icon. Press SELECT.

Go to the S.P.I. icon. Press SELECT.

STANDARD ADJUSTMENT #1 appears with the adjustment name flashing. While the adjustment name is flashing press [<] [>] to move between adjustments.

To change the adjustment setting press SELECT. While the adjustment setting is flashing, press [<] [>] repeatedly until the desired setting appears. Press the SELECT button to "install" the change. The adjustment comment (bottom line) will indicate if the factory default setting is selected or will display INSTALLED if the change is not a factory default setting.

ID	Adjustment Name	Default Setting
1	REPLAY TYPE	AUTO
2	REPLAY PERCENTAGE	10%
3	REPLAY AWARD	CREDIT
4	REPLAY LEVELS	1
5	AUTO REPLAY START	150,000,000
6	DYNAMIC REPLAY START	150,000,000
7	REPLAY LEVEL #1	150,000,000
8	REPLAY LEVEL #2	175,000,000
9	REPLAY LEVEL #3	225,000,000
10	REPLAY LEVEL #4	350,000,000
11	REPLAY BOOST	YES
12	SPECIAL LIMIT	1
13	SPECIAL PERCENTAGE	10%
14	SPECIAL AWARD	CREDIT
15	FREE GAME LIMIT	5
16	EXTRA BALL LIMIT	5
17	EXTRA BALL PERCENTAGE	25%
18	GAME PRICING	USA 13
19	MATCH PERCENTAGE	9%
20	MATCH AWARD	CREDIT
21	BALLS PER GAME	3
22	MAX PLAYERS PER GAME	4
23	TILT WARNINGS	2
24	TILT DEBOUNCE	750
25	CREDIT LIMIT	30
26	REMOVE FRACTIONAL CREDITS	AFTER 30 MINUTES IDLE
27	ALLOW HIGH SCORES	YES
28	HIGH SCORE AWARD	CREDIT
29	GRAND CHAMPION AWARDS	1
30	HIGH SCORE #1 AWARDS	0
31	HIGH SCORE #2 AWARDS	0
32	HIGH SCORE #3 AWARDS	0
33	HIGH SCORE #4 AWARDS	0
34	GRAND CHAMPION SCORE	60,000,000
35	HIGH SCORE #1	50,000,000
36	HIGH SCORE #2	40,000,000

ID	Adjustment Name	Default Setting
37	HIGH SCORE #3	30,000,000
38	HIGH SCORE #4	25,000,000
39	HSTD INITIALS	3 INITIALS
40	HSTD RESET COUNT	2000
41	FREE PLAY	YES
42	LANGUAGE	ENGLISH
43	PLAYER LANGUAGE SELECT	YES
44	CUSTOM MESSAGE	ON
45	KNOCKER VOLUME	LOW
46	START GAME ON CREDIT	OFF
47	START BUTTON BEHAVIOR	ALL LOGGED IN
48	GAME RESTART	YES
49	GAME MODE ON START	STANDARD
50	INSIDER LOGIN TIMER	30
51	INSIDER PLAY AGAIN TIMER	20
52	USE INSIDER HOME TEAM	FREE PLAY ONLY
53	ENABLE HOME TEAM IN COINPLAY	YES
54	HOME TEAM GUEST RETENTION	NEVER
55	START BUTTON ATTRACT MODE ILLUM.	BLINKING
56	ALLOW LEFT+RIGHT TO END	ALWAYS
57	BALL SAVE TIME	0:01
58	TARGET GAME TIME	1:45
59	TIMED PLUNGER	OFF
60	FLIPPER BALL LAUNCH	OFF
61	COINDOOR BALL SAVER	NO
62	COMPETITION MODE	NO
63	FAST BOOT	YES
64	Q24 OPTION	COIN METER
65	TICKET DISPENSER	NONE
66	PLAYER GAME MODE	YES
67	PLAYER COMPETITION MODE	YES
68	PLAYER CHALLENGE MODE	YES
69	PLAYER COOPERATION MODE	YES
70	DJ MIXER MODE	YES

ID	Adjustment Name	Default Setting
71	DJ MIXER PLAYLIST MODE	ORDERED PLAYBACK
72	DJ MIXER PLAYLIST REPEAT	YES
73	LOCATION ID	0
74	GAME ID	0
75	TIME FORMAT	12-HOUR
76	PRICING FORMAT	MIN W/ MONETARY SYMBOL
77	CREDIT FORMAT	ACTUAL FRACTION
78	COIN INPUT DELAY	30
79	COIN ACCEPTOR	MECHANICAL
80	LOST BALL RECOVERY	YES
81	COIN DOOR DISABLE TILT	NO
82	COIN DOOR OPEN NODE BUS POWER	YES
83	PLAY ATTRACT TUTORIAL VIDEOS	YES
84	FRONT VOLUME KNOB	HEADPHONES VOL. ONLY
85	MUTE IF HEADPHONES DETECTED	YES
86	MUTE KNOCKER IF HP DETECTED	NO
87	DISABLE Q24 KNOCK IF HP DETECTED	NO
88	GI LED BRIGHTNESS	100%
89	GI LED MAX BRIGHTNESS	255
90	INSERT LED BRIGHTNESS	100%
91	INSERT LED MAX BRIGHTNESS	255
92	FLASHER LED BRIGHTNESS	100%
93	FLASHER LED MAX BRIGHTNESS	255
94	CABINET LED BRIGHTNESS	100%
95	LCD DISPLAY BRIGHTNESS	7
96	ATTRACT MODE B.BOX BRIGHTNESS	0%
97	GAMEPLAY B.BOX BRIGHTNESS	0%
98	SERVICE MENU B.BOX BRIGHTNESS	2%

FEATURE ADJUSTMENTS

Each table has feature adjustments specific to the characteristics of that game. To access feature adjustments enter the Service Menu and then enter the Adjustments Menu.

Press SELECT to access the Service Menu. Press BACK to exit or escape at any time.

Press [>]. Go to the ADJ icon. Press SELECT.

Go to the game icon. Press SELECT.

FEATURE ADJUSTMENT #1 appears with the adjustment name flashing. With the adjustment name flashing press [<] [>] to move between adjustments. Feature adjustments are changed similarly to standard adjustments using the SELECT button to choose options and the [<] [>] buttons to cycle through available settings.

1.3 TRANSPORTING THE GAME

When transporting the game, such as in the back of a truck or with a hand truck, the game's backbox must be secured to prevent damage to the side rails.

1. SECURE THE BACKBOX

1. Ensure that the pinballs are removed from the playfield, and secure any free-moving mechanisms that may get damaged in transport

TOOLS REQUIRED

- STRAP (500LB OR GREATER)
- AN ASSISTANT
- HAND TRUCK

2. REMOVE THE LEGS AND STAND UP
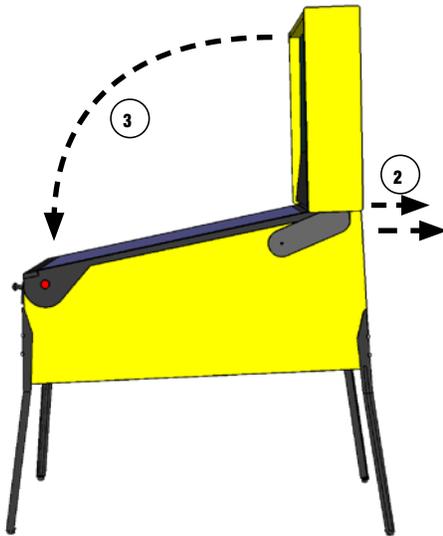
2. Remove the backbox securing bolts
3. Carefully lower the backbox onto the side rails. Use a piece of cardboard or suitable padding between the backbox and the game.
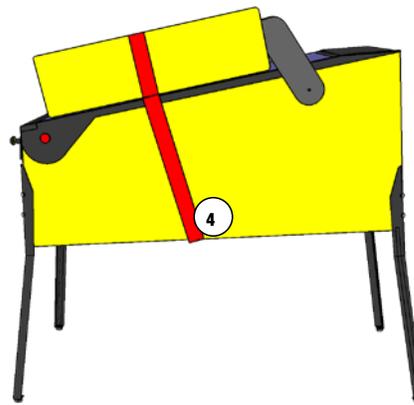
4. Securely strap the back box to the game
5. The game may be transported with the legs on. If the legs must be removed, follow the remaining steps.
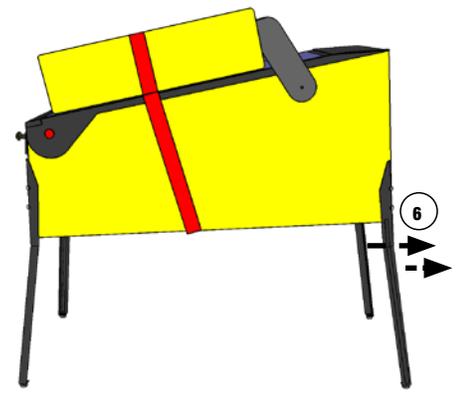
6. Remove the legs, rear legs first. Use a stool or a friend to support the rear of the game.
7. Rest the rear of the game on the ground.
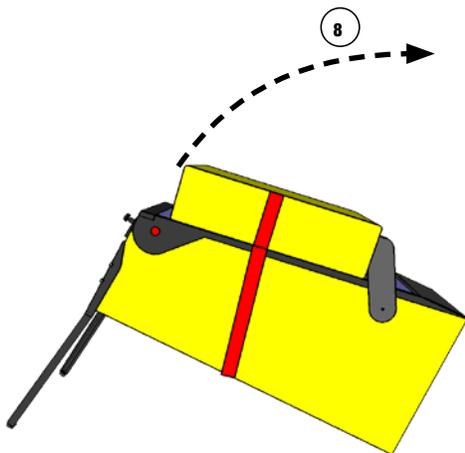
8. Stand the game up on its back.
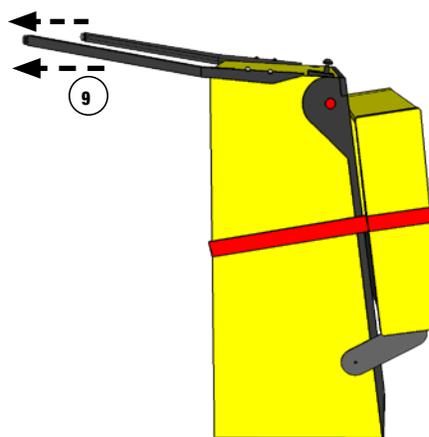
9. Remove the front two legs.
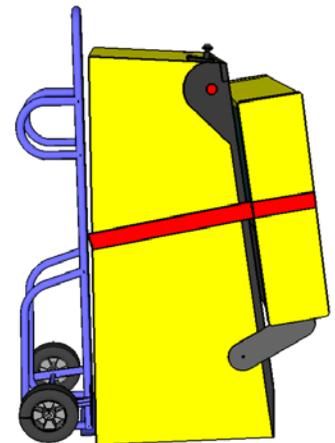
10. Secure all loose parts and transport with a hand truck in the upright position.

1.4 MAINTENANCE

REGULAR MAINTENANCE - (MONTHLY/500 GAMES)

- Remove the playfield glass
- Enter the software diagnostics menu, start lamp test, then clean and wax the playfield.
  - While cleaning the playfield, identify and repair malfunctioning lights, loose parts, cracked plastics and worn rubber parts.
- While in diagnostics, enter the switch test (Select the "SW" Icon, then "TEST" Icon).
  - Use a pinball to actuate all switches and verify the correct switch registers with the switch test.
  - The game will play a sound to confirm the switch.
- Lift the playfield and inspect all assemblies for loose parts, broken wires or excessive wear. Look at the bottom of the cabinet for any parts that may have worked loose, then find the source.
- Check all coin door mechanisms and bill acceptor (if installed) for proper operation
- Play the game to ensure all coils and features are working
- Check the playfield to ensure it is level and set to the proper pitch using the bubble level on the right side wood rail.
- Check game audits: Replay % and Ball Time and note abnormal values which can indicate problems.
- Ensure game volume is set appropriately for the location.
- Clean both sides of the playfield glass and reinstall.
- Check and clean pinballs and replace if excessively worn or scuffed. Dirty pinballs accelerate game wear.

OVERHAUL MAINTENANCE - (5000 GAMES)

- Verify latest game software is installed
- Check flippers for excessive wear. Excessive flipper sloppiness (vertical or horizontal) or weakness indicates a flipper rebuild is required.
- Clean machine inside and out and check leg levelers for free operation.
- Visual check for loose or broken playfield and cabinet parts and repair as necessary.
- Electrical check: Plug into grounded outlet and check for proper operation through DIAGNOSTICS.
- Replace worn or dirty rubbers.
- Replace pinballs.
- Check all playfield switches with a pinball.
- Check all settings (refer to manual for factory settings).
- Check coin door: With door closed, insert coins to verify proper operation.
- Check for proper adjustment of the plumb bob tilt.
- Play game: Check for satisfactory operation.

COMMON PINBALL TOOLS

- Common nut drivers (¼", 5/16", 11/32", ⅜")
- Phillips screwdriver
- Standard Allen wrench/Hex key set
- ⅝" Socket with ratchet
- Adjustable wrench (5/8" & 9/16")
- 6" Torpedo Level (or use a pinball
- Flashlight or headlamp
- Soldering Iron (60w with flat tip), lead-free solder
- Wire cutter
- Wire stripper
- Long nose ("needle nose") pliers

1.5 MAINTENANCE KITS

Description	Part Number
John Wick Playfield Plastics Kit	803-5000-W5
John Wick Playfield Decals Kit	802-5000-W5
John Wick Backbox Decal Left	820-76W5-01
John Wick Backbox Decal Right	820-76W5-02
John Wick Cabinet Decal Left	820-76W5-03
John Wick Cabinet Decal Right	820-76W5-04
John Wick Cabinet Decal Front	820-76W5-05
John Wick Playfield, Bare	830-5100-W5
John Wick Translite	830-8427-W5

1.6 COMMON PARTS

Description	Part Number
8 oz Pinball Playfield wax (Novus # 2)	675-0003-01
Standard Pinball, 1-1/16 in	260-5000-00
Flipper Rebuild Kit Left (Standard)	500-6307-10
Flipper Base Plate Kit Left	515-6617-01
Flipper Rebuild Kit Right	500-6307-00
Flipper Base Plate Kit Right	515-6617-00
Memory Card - SD 16GB	970-0140-16
Memory Card - MicroSD	970-0141-32
Wi-Fi Adapter	509-2013-00

2. SPIKE SYSTEM AND NODE GUIDE

2.1 SPIKE SYSTEM OVERVIEW

The SPIKE Pinball system is a rugged, distributed, and embedded platform custom-designed for the rigors of the pinball machine environment. SPIKE takes advantage of modern technologies to deliver an immersive pinball experience that supports modern features, reduces cabling, and increases serviceability and reliability.

A Stern Pinball machine based on the SPIKE system will have at least two nodes networked together with the SPIKE node bus, a custom industrial pinball control bus that is designed around industry standards and optimized for the pinball environment. The primary CPU node is networked to one or more input/output nodes over standard Category 5 UTP (unshielded twisted pair) ethernet cabling.

There are five primary types of nodes that are found in the game.

- CPU node (Node 0) - The primary node that controls other nodes in the system. Contains the primary game software for the system and provides SPIKE node bus power for other nodes.
- Cabinet 48V node (Node 1) - Specialized node with specific inputs and outputs for coin doors, tilt mechanisms, and other bottom-cabinet devices.
- 48V playfield node - Controls high power devices such as coils and flashers, and also supports a few switch and low-power outputs. Powered by the system 48V power supply.
- Light and switch node - High-density switch and low-power LED outputs, bus-powered from the node bus. These boards contain as many 32 switch inputs and light outputs.
- Node extensions - These sub-nodes add additional low-power input and outputs to a specific Power or I/O node and are connected with simple serial bus.

2.2 NODE BUS CABLING

The SPIKE node bus utilizes standard Ethernet-style RJ45 8-pin modular jacks, and off-the-shelf Category 5e or better ethernet cabling. The node bus is electrically different from Ethernet and does not utilize Ethernet or TCP/IP protocols or signaling standards. SPIKE nodes are not compatible with standard computer networking equipment.

CAUTION: Plugging a SPIKE Node or CPU board into a standard Ethernet port may damage one or both devices and void your warranty.

2.3 SYSTEM POWER

The SPIKE System is powered from an 48V DC power supply bus. Each SPIKE node converts this voltage to lower voltages required by the node and its specific components. A SPIKE 48V node typically controls high-power outputs such as game coil mechanisms and high-brightness LEDs. These powered nodes are supplied directly with 48V system power. SPIKE standard I/O nodes are low-power nodes that read switch inputs and output to standard-brightness LEDs. Standard I/O nodes use the node bus power, which is supplied by the main CPU node over the node bus modular jack connectors.

2.4 SPIKE NODE ADDRESSES

Each SPIKE node has a unique address ranging from 0 to 15. Not all addresses are used in all games. Nodes can be of the same part number, so the address is specified on the DIP switches on each node. When replacing a node, be certain that the correct address is set. Nodes can have 3-position and 4-position DIP switches. Refer to the appropriate table to set the address for each type of Node. The correct address for a node can be found in the SPIKE node reference section of the manual or in the game diagnostic software. Address 0 is reserved for the backbox CPU node, where the game software resides. Address 1 is reserved for the cabinet node, located inside the coin door. These two nodes do not have DIP switches as their address is not configurable.

Address	1	2	3
8	OFF	OFF	OFF
9	OFF	OFF	ON
10	OFF	ON	OFF
11	OFF	ON	ON
12	ON	OFF	OFF
13	ON	OFF	ON
14	ON	ON	OFF
15	ON	ON	ON

SPIKE node addresses for nodes with 3-position DIP switches. Addresses 0-7 are not used by SPIKE nodes with 3-position DIP switches.

Address	1	2	3	4
8	OFF	OFF	OFF	OFF
9	OFF	OFF	ON	OFF
10	OFF	ON	OFF	OFF
11	OFF	ON	ON	OFF
12	ON	OFF	OFF	OFF
13	ON	OFF	ON	OFF
14	ON	ON	OFF	OFF
15	ON	ON	ON	OFF

SPIKE node addresses for nodes with 4-position DIP switches. Addresses 0-7 are reserved for fixed-function nodes and do not require configuration.

SPIKE SYSTEM AND NODE GUIDE CONTINUED

2.5 SPIKE NODE PROGRAMMING

The SPIKE nodes are smart nodes that have on-board processors and run embedded code. The nodes are programmed automatically by the CPU node whenever software updates are installed to the CPU. When replacing a node, the CPU node will detect and update the node to the latest software with no user intervention. Always replace nodes with the power to the game turned OFF.

2.6 SPIKE SYSTEM TERMINOLOGY

MULTI GENERAL ILLUMINATION LIGHTING

General Illumination Lighting is two or more lights powered by one control source. These are often a number of LEDs connected in parallel and the system controls these as one large LED. A missing LED will not affect these circuits, however a shorted LED can cause the entire string of LEDs to turn off.

SINGLE LIGHTS

Single lights and LEDs are direct-controlled from SPIKE node boards. A common power source is grounded by individual transistors to turn individual LEDs on and off. Groups of LEDs, usually by node connector, share a common power source, so if a group of LEDs is out, check the wiring for the power source.

FLASHERS

SPIKE games treat flashers the same as single LEDs that draw more power. Flashers are controlled from the same circuits that power regular lights.

DRIVERS

A driver is a circuit that controls a high power-device such as a coil, magnet, or motor. Each device has a common 48V power source that is then connected to ground by a dedicated control transistor. Each driver is protected against shorting, static electricity, and over-current conditions. Take caution as 48V is always present on a device even when it is not energized.

OPTOS

Certain types of optical switches ("optos") require external signal conditioning. For these optos, they will interface to a SPIKE node via an opto signal conditioning board. Other optical switches connect directly to the Spike node board.

CAUTION: Unless explicitly directed by an Authorized Stern Repair technician, perform ALL work on your pinball machine with the power disabled!

INPUT/OUTPUT PROTECTIONS

SPIKE features built-in short-circuit, static electricity, and other protections to maximize reliability. If an LED, coil or other device shorts, it will be disabled but will not shut down the entire system in most circumstances. Groups of LEDs, coils, and switches often share common power supplies or other circuits, so it is possible that a bad device will affect the group of related devices and require removal or repair to fix the group. The system diagnostics will inform the technician of shorted or otherwise malfunctioning devices whenever possible. While the system is protected against permanent damage, it is strongly recommended to repair or replace these bad components as soon as possible to minimize downtime and maximize game earnings.

2.7 COMMON SPIKE NODE BOARDS

Description	Type	Part Number
SPIKE CPU Node	Node	509-1003-01
Cabinet Node	Node	520-6967-72
Playfield 48V Core-Driver Node	Node	520-1070-00 520-1057-00
Trough Serial Opto Receiver Extension	Extension	520-8516-00

3. LIGHT, SWITCH, AND DRIVER REFERENCE

JOHN WICK
PRO EDITION

NODE 4

PLAYFIELD FRONT

BACKBOX

NODE 0

CPU NODE 0

OPTIONAL TOPPER

Node Bus Cable (RJ45)
604-5004-08-XX

Serial Data Cable
036-8054-XX

When replacing node boards, ensure DIP address switches are set correctly!

CABINET

CABINET NODE 1

NODE 8

NODE 9

PLAYFIELD REAR
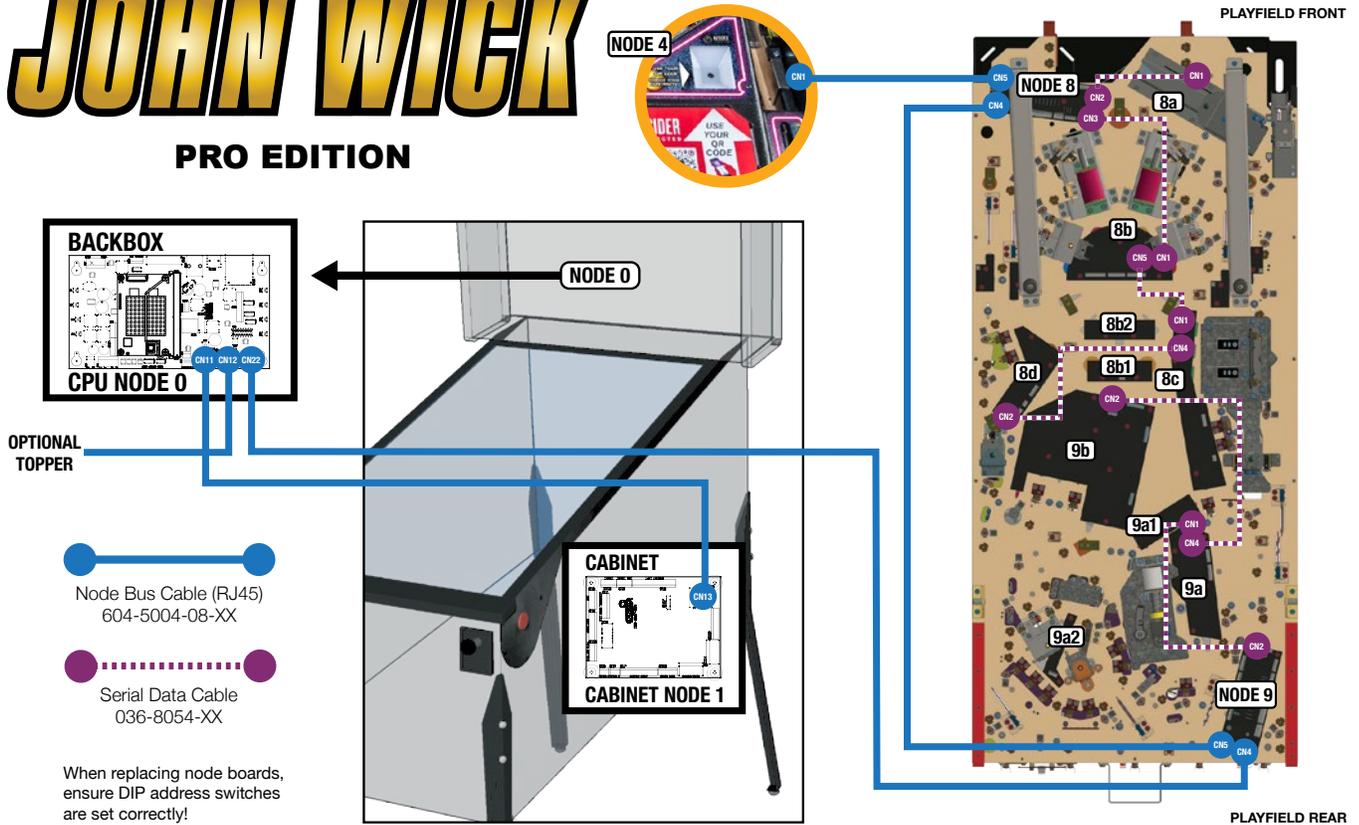
3.1 SPIKE NODE BOARDS

ID	DIP Address	Description	Location	Part Number
Node 0	n/a	SPIKE 2 CPU Node	Backbox	509-1003-01
Node 1	n/a	Cabinet Node	Cabinet	520-6967-72
Node 2	ON-OFF-ON-ON	SPI Node-PWM (Optional)	Cabinet-Expression	520-5370-72
Node 4	n/a	QR Reader Node	Bottom Arch	509-2020-00
Node 7	OFF-OFF-OFF-ON	SPI Node Board (Optional)	Backbox-LEDs	520-5370-72
Node 8	OFF-OFF-OFF-OFF	Core - Driver Node (Playfield)	Lower Playfield	520-1070-00 / 520-1057-00
8a	n/a	Trough Serial Opto Receiver Extension	Playfield	520-8516-00
8b	n/a	7 Wht Center Bottom LED Board	Playfield	520-8608-00
8b1	n/a	3 Flash Center Bottom LED Board	Playfield	520-8602-00
8b2	n/a	3 Wht Center Bottom LED Board	Playfield	520-8603-00
8c	n/a	8 Wht - 1 Red Right Bottom LED Board	Playfield	520-8607-00
8d	n/a	6 Wht - 1 Red Left Bottom LED Board	Playfield	520-8605-00
Node 9	OFF-OFF-ON-OFF	Core - Driver Node (Playfield)	Playfield	520-1070-00 / 520-1057-00
9a	n/a	10 Wht - 1 Red Right Top LED Board	Playfield	520-8604-00
9a1	n/a	4 Wht Center Top LED Board	Playfield	520-8601-00
9a2	n/a	5 Wht Left Top LED Board	Playfield	520-8600-00
9b	n/a	17 Wht - 4 Red Left Center LED Board	Playfield	520-8606-00
Node 12	ON-OFF-OFF-OFF	Topper (Optional)	Topper	

3.2 DRIVER REFERENCE

ID	Name	Node	Connector	Ret. Pin	Ret. Wire	Voltage	V+ Pin	V+ Color	Location	Type	Address	Part Number
1	Trough	8	CN8	7	ORG GRY	48V	1-4	GRY ORG	Playfield	Coil - 27-1500	8-DR-1	090-5004-ND
2	Auto Plunger	8	CN8	9	ORG WHT	48V	1-4	GRY ORG	Playfield	Coil - 23-800	8-DR-4	090-5001-ND
3	Left Flipper	8	CN8	6	ORG YEL	48V	1-4	GRY ORG	Playfield	Coil - 23-1080	8-DR-5	090-5032-ND
4	Right Flipper	8	CN8	5	ORG GRN	48V	1-4	GRY ORG	Playfield	Coil - 23-1080	8-DR-0	090-5032-ND
5	Left Slingshot	8	CN8	11	ORG BLU	48V	1-4	GRY ORG	Playfield	Coil - 26-1200	8-DR-3	090-5044-ND
6	Right Slingshot	8	CN8	10	ORG VIO	48V	1-4	GRY ORG	Playfield	Coil - 26-1200	8-DR-2	090-5044-ND
7	Shaker Motor	1	CN16	1	BLU	48V	5	RED	Cabinet	Motor	1-DR-0	041-5029-04
8												
9												
10	Left Eject	8	CN7	2	YEL RED	48V	1	GRY ORG	Playfield	Coil - 26-1200	8-DR-8	090-5044-ND
11												
12	Right VUK	9	CN8	9	ORG RED	48V	1-4	GRY BRN	Playfield	Coil - 23-800	9-DR-4	090-5001-ND
13	Car	9	CN8	6	YEL VIO	48V	1-4	GRY BRN	Playfield	Coil - 23-800	9-DR-5	090-5001-ND
14												
15												
16	Top Sling	9	CN8	7	YEL WHT	48V	1-4	GRY BRN	Playfield	Coil - 26-1200	9-DR-1	090-5044-ND
17	Pop Bumper	9	CN8	10	ORG BLK	48V	1-4	GRY BRN	Playfield	Coil - 26-1200	9-DR-2	090-5044-ND
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33	Coin Meter	1	CN3	2	BLK	12V	1	RED	Cabinet	Digital Out	1-DR-2	500-9946-00
34	Ticket Meter	1	CN4	2	BLK	12V	1	RED	Cabinet	Digital Out	1-DR-3	500-9946-00
35	Ticket Dispenser	1	CN11	3		12V	1		Cabinet	Digital Out	1-DR-4	

DRIVER REFERENCE CONTINUED
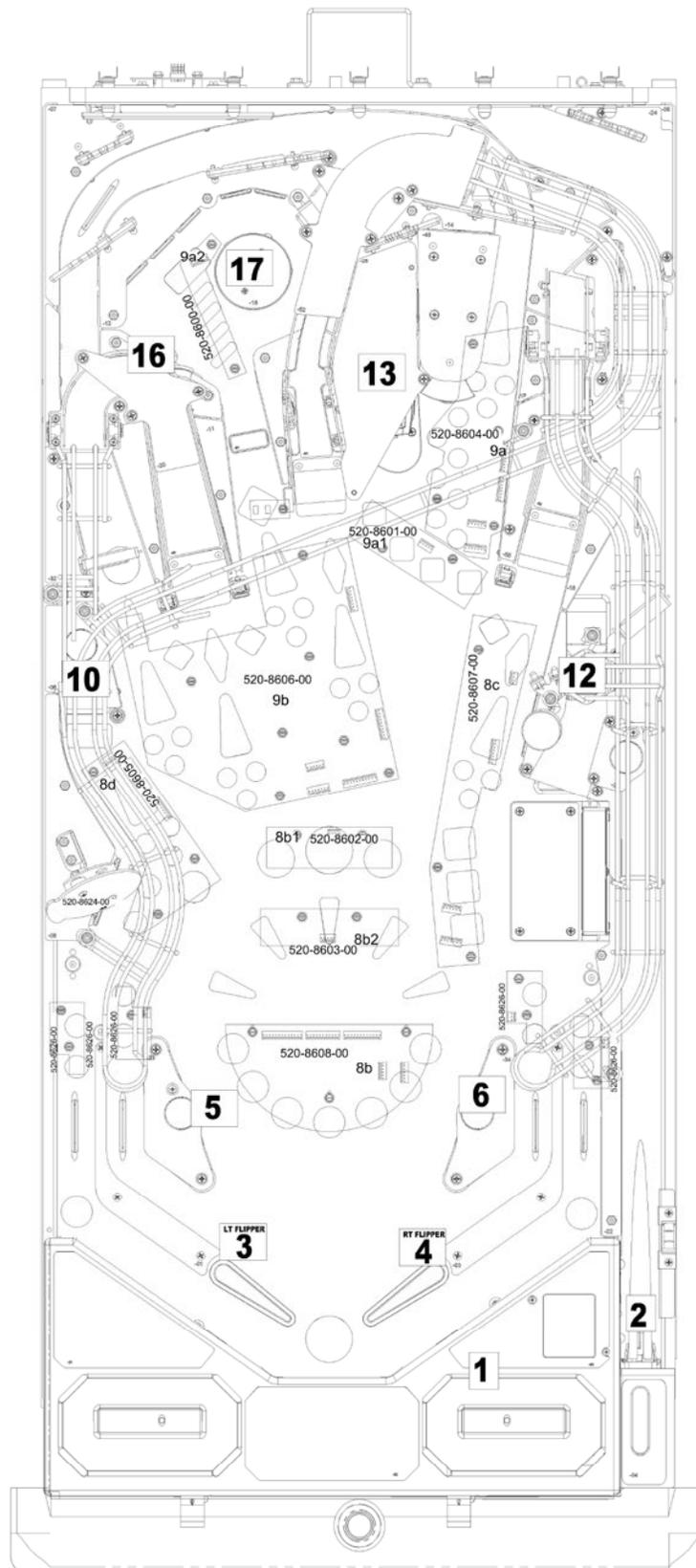
Figure 3.2.1. Playfield driver locations (top view).

3.3 SWITCH REFERENCE

ID	Name	Node	Node Ext	Conn.	Input Pin	Input Wire	GND Pin	Ground Wire	Location	Type	Address	Part Number
1	Left Outlane	8	-	CN11	4	LGN RED	11/12	BLK ORG	Playfield	Rollover	8-SW-17	500-9935-03
2	Left Return Lane	8	-	CN11	5	LGN ORG	11/12	BLK ORG	Playfield	Rollover	8-SW-18	500-9935-03
3												
4												
5	Right Return Lane	8	-	CN11	6	LGN YEL	11/12	BLK ORG	Playfield	Rollover	8-SW-19	500-9935-04
6	Right Outlane	8	-	CN11	7	LGN BLU	11/12	BLK ORG	Playfield	Rollover	8-SW-20	500-9935-04
7	Left Slingshot	8	-	CN10	4	GRY BLU	8	BLK GRN	Playfield	Leaf	8-SW-30	180-5231-00
8	Right Slingshot	8	-	CN10	3	GRY VIO	8	BLK GRN	Playfield	Leaf	8-SW-29	180-5231-00
9	Left Flipper Button	8	-	CN9	4	GRY BRN	7	BLK GRN	Cabinet	Leaf	8-SW-25	180-5160-01
10	Right Flipper Button	8	-	CN9	3	GRY RED	7	BLK GRN	Cabinet	Leaf	8-SW-24	180-5160-01
11	Left Flipper EOS	8	-	CN10	6	GRY YEL	9	BLK GRN	Playfield	Leaf	8-SW-16	180-5149-00
12	Right Flipper EOS	8	-	CN10	5	GRY GRN	9	BLK GRN	Playfield	Leaf	8-SW-31	180-5149-00
13												
14												
15	Trough 6	8	8a	CN14	-		-		Playfield	Opto	8-SW-32	520-5344-00 tx 520-8516-00 rx
16	Trough 5	8	8a	CN14	-		-		Playfield	Opto	8-SW-33	520-5344-00 tx 520-8516-00 rx
17	Trough 4	8	8a	CN14	-		-		Playfield	Opto	8-SW-34	520-5344-00 tx 520-8516-00 rx
18	Trough 3	8	8a	CN14	-		-		Playfield	Opto	8-SW-35	520-5344-00 tx 520-8516-00 rx
19	Trough 2	8	8a	CN14	-		-		Playfield	Opto	8-SW-36	520-5344-00 tx 520-8516-00 rx
20	Trough 1	8	8a	CN14	-		-		Playfield	Opto	8-SW-37	520-5344-00 tx 520-8516-00 rx
21	Trough Jam	8	8a	CN14	-		-		Playfield	Opto	8-SW-38	520-5344-00 tx 520-8516-00 rx
22	Shooter Lane	8	-	CN10	2	GRY WHT	7	BLK GRN	Playfield	Rollover	8-SW-28	180-5157-01
23												
24	Skill Shot 1	8	-	CN12	2	WHT BRN	10	BLK RED	Playfield	Rollover	8-SW-8	500-9935-04
25	Skill Shot 2	8	-	CN12	3	WHT RED	10	BLK RED	Playfield	Rollover	8-SW-9	500-9935-04
26												
27	Left Eject	8	-	CN13	2	PNK RED	10	BLK BRN	Playfield	Micro	8-SW-0	180-5209-00
28	Left 2 Bank Tgt Top	8	-	CN13	6	PNK BLU	10	BLK BRN	Playfield	Leaf, Target	8-SW-4	515-9783-00-00
29	Left 2 Bank Tgt Bot	8	-	CN13	7	PNK VIO	10	BLK BRN	Playfield	Leaf, Target	8-SW-5	515-9783-00-00
30												
31	Right VUK Opto	9	-	CN12	9	WHT VIO	10	BLK WHT	Playfield	Opto	9-SW-15	515-0215-00 tx 515-0215-01 rx
32	Crate	8	-	CN11	9	LGN GRY	11/12	BLK ORG	Playfield	Leaf, Target	8-SW-22	510-5820-01
33	Mid Right Tgt Top	8	-	CN12	6	WHT GRN	10	BLK RED	Playfield	Leaf, Target	8-SW-12	515-9783-00-00
34	Mid Right Tgt Bot	8	-	CN12	7	WHT BLU	10	BLK RED	Playfield	Leaf, Target	8-SW-13	515-9783-00-00
35	Left Ramp Left Tgt	8	-	CN13	3	PNK ORG	10	BLK BRN	Playfield	Leaf, Target	8-SW-1	515-9785-00-00
36	Left Ramp Right Tgt	8	-	CN13	4	PNK YEL	10	BLK BRN	Playfield	Leaf, Target	8-SW-2	515-9785-00-00
37	Left Ramp Exit Opto	8	-	CN13	5	PNK GRN	10	BLK BRN	Playfield	Opto	8-SW-3	515-0215-00 tx 515-0215-01 rx
38	Left Spinner Opto	8	-	CN13	8	PNK GRY	10	BLK BRN	Playfield	Opto	8-SW-6	520-8541-00
39												
40												
41												
42	Car Hit Opto	9	-	CN13	4	PNK YEL	10	BLK BRN	Playfield	Opto	9-SW-2	520-8541-00
43	Captive Ball Tgt	9	-	CN12	4	WHT ORG	10	BLK WHT	Playfield	Leaf, Target	9-SW-10	515-9783-00-00
44												

SWITCH REFERENCE CONTINUED

ID	Name	Node	Node Ext	Conn.	Input Pin	Input Wire	GND Pin	Ground Wire	Location	Type	Address	Part Number
45												
46	Center Ramp Exit Opto	9	-	CN12	5	WHT YEL	10	BLK WHT	Playfield	Opto	9-SW-11	515-0215-00 tx 515-0215-01 rx
47												
48	Right Orbit	9	-	CN12	7	WHT BLU	10	BLK WHT	Playfield	Rollover	9-SW-13	500-9935-04
49	Right Ramp Exit Opto	9	-	CN12	8	WHT VIO	10	BLK WHT	Playfield	Opto	9-SW-14	515-0215-00 tx 515-0215-01 rx
50	Right Ramp Tgt	8		CN12	5	WHT YEL	10	BLK RED	Playfield	Leaf, Target	8-SW-11	515-9785-00-00
51												
52	Pop Bumper	9	-	CN10	2	GRY BLK	7/8/9	BLK BLU	Playfield	Leaf	9-SW-28	180-5232-00
53	Top Sling	9	-	CN10	3	GRY BRN	7/8/9	BLK BLU	Playfield	Leaf	9-SW-29	180-5231-00
54												
55												
56												
57												
58												
59	Left Orbit	9	-	CN12	2	WHT BRN	11/12	BLK WHT	Playfield	Rollover	9-SW-8	500-9935-03
60	Pop Enter	9	-	CN11	2	TAN BLK	11/12	BLK GRY	Playfield	Rollover	9-SW-26	500-9935-04
61	Pop Exit Opto	9	-	CN11	3	TAN RED	11/12	BLK GRY	Playfield	Opto	9-SW-27	515-0215-00 tx 515-0215-01 rx
62	Pop Target 1	9	-	CN11	4	TAN ORG	11/12	BLK GRY	Playfield	Leaf, Target	9-SW-17	515-9783-00-00
63	Pop Target 2	9	-	CN11	5	TAN YEL	11/12	BLK GRY	Playfield	Leaf, Target	9-SW-18	515-9783-00-00
64	Pop Target 3	9	-	CN11	6	TAN GRN	11/12	BLK GRY	Playfield	Leaf, Target	9-SW-19	515-9783-00-00
65	Pop Target 4	9	-	CN11	7	TAN BLU	11/12	BLK GRY	Playfield	Leaf, Target	9-SW-20	515-9783-00-00
66	Pop Target 5	9	-	CN11	8	TAN VIO	11/12	BLK GRY	Playfield	Leaf, Target	9-SW-21	515-9783-00-00
67	Pop Target 6	9	-	CN11	9	TAN WHT	11/12	BLK GRY	Playfield	Leaf, Target	9-SW-22	515-9783-00-00
68	Pop Target 7	9	-	CN11	10	TAN	11/12	BLK GRY	Playfield	Leaf, Target	9-SW-23	515-9783-00-00
69												
70												
71												
72												
73												
74												
75												
76												
77												
78												
79												
80												
81												
82												
83												
84												
85												
86												
87												
88												
89												
90	Lockdown Button	1	-	CN7	8	TAN WHT	5	BLK WHT	Cabinet	Leaf	1-SW-2	180-5218-00
91												
92												

SWITCH REFERENCE CONTINUED

| ID	Name	Node	Node Ext	Conn.	Input Pin	Input Wire	GND Pin	Ground Wire	Location	Type	Address	Part Number
93	Start Button	1	-	CN6	10	GRY	5	BLK WHT	Cabinet	Micro	1-SW-11	500-1060-44-LED
94	Tournament Start Button	1	-	CN6	9	GRY WHT	5	BLK WHT	Cabinet	Micro	1-SW-12	500-6587-06-TL
95												
96	Left Coin	1	-	CN5	9	PNK BRN	3	BLK	Cabinet	Micro	1-SW-16	
97	Right Coin	1	-	CN5	7	PNK ORG	3	BLK	Cabinet	Micro	1-SW-18	
98	Center Coin	1	-	CN5	8	PNK RED	3	BLK	Cabinet	Micro	1-SW-17	
99	Fourth Coin	1	-	CN5	6		-		Cabinet	-	1-SW-19	
100	Fifth Coin	1	-	CN5	5		-		Cabinet	-	1-SW-20	
101	Tilt Pendulum	1	-	CN6	7	WHT	5	BLK WHT	Cabinet	Plumb Bob	1-SW-14	516-0007-00
102	Sixth Coin	1	-	CN9	5		-		Cabinet	-	1-SW-21	
103	Ticket Notch	1	-	CN11	5		-		Cabinet	-	1-SW-8	
104	Slam Tilt	1	-	CN5	4	LGN RED	3	BLK	Cabinet	-	1-SW-22	
105												
106												
107												
108												
109												
110												
C1	DIP 1	0	-	-	-		-		CPU Node		0-SW-0	-
C2	DIP 2	0	-	-	-		-		CPU Node		0-SW-1	-
C3	DIP 3	0	-	-	-		-		CPU Node		0-SW-2	-
C4	DIP 4	0	-	-	-		-		CPU Node		0-SW-3	-
C5	DIP 5	0	-	-	-		-		CPU Node		0-SW-4	-
C6	DIP 6	0	-	-	-		-		CPU Node		0-SW-5	-
C7	DIP 7	0	-	-	-		-		CPU Node		0-SW-6	-
C8	DIP 8	0	-	-	-		-		CPU Node		0-SW-7	-
C9	Service Select	0	-	CN25	4	LGN GRY	6	BLK	Coin Door		0-SW-8	515-1963-00
C10	Service Plus	0	-	CN25	3	LGN VIO	6	BLK	Coin Door		0-SW-9	515-1963-00
C11	Service Minus	0	-	CN25	2	LGN BLU	6	BLK	Coin Door		0-SW-10	515-1963-00
C12	Service Back	0	-	CN25	1	LGN BLK	6	BLK	Coin Door		0-SW-11	515-1963-00
C17	Headphone Detect	0	-	-	-	-	-	-	Coin Door		0-SW-16	-
C18	Headphone Kit Cable Detect	0	-	CN3	5	BLK	4	BLK	CPU Node		0-SW-17	-
C19	Volume Encoder 1	0	-	CN3	6	WHT	1	DRAIN	CPU Node		0-SW-18	-
C20	Volume Encoder 2	0	-	CN3	7	GRN	1	DRAIN	CPU Node		0-SW-19	-
C24	Coin Door Interlock	0	-	CN4	1	GRY	4	GRY RED	Backbox		0-SW-23	180-5248-00

SWITCH REFERENCE CONTINUED
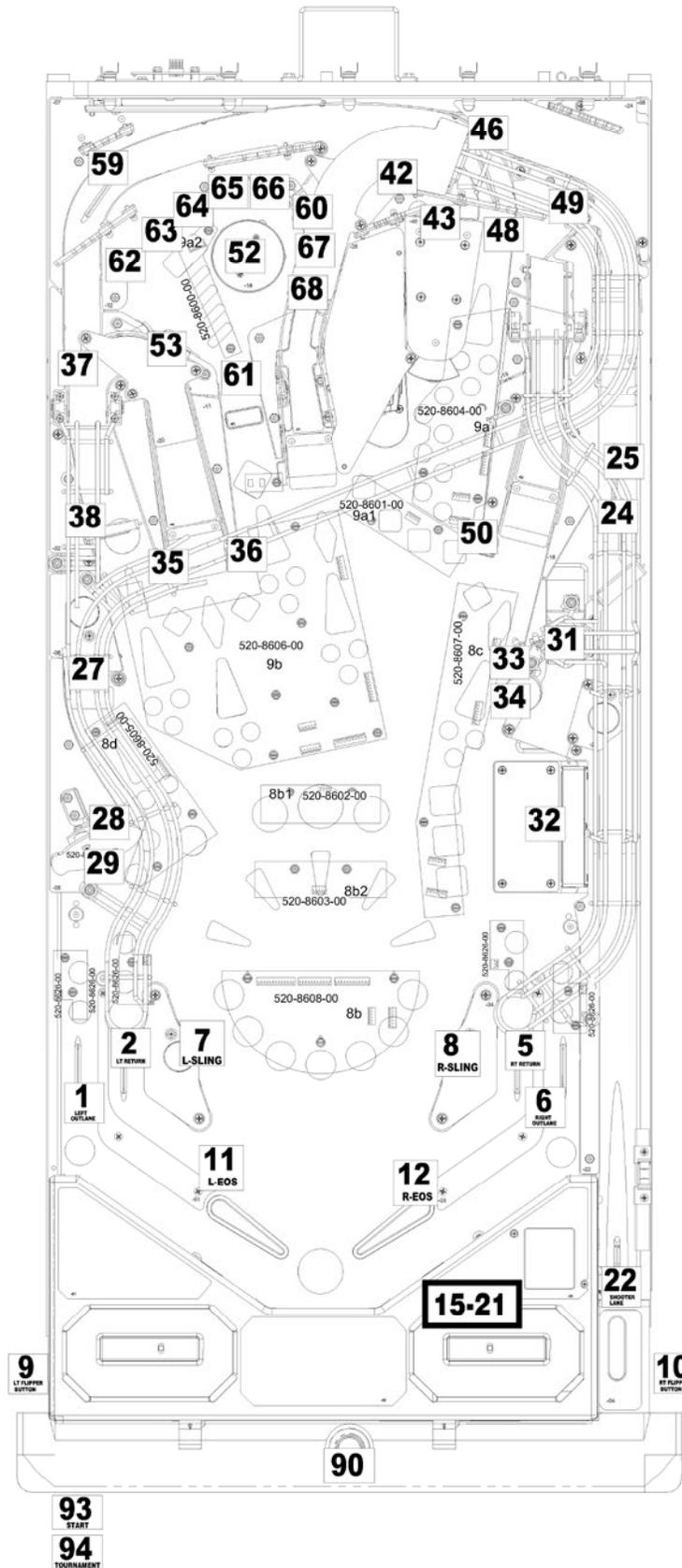
Figure 3.3.1. Playfield switch locations (top view).

3.4 LIGHT REFERENCE

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
1	Coin Enable	1	-	CN8	6	BLK GRY	2	GRY RED	Coin Door	Digital Out		1-LP-0	
2	Start Button	1	-	CN6	3	YEL BRN	1	RED	Cabinet	Feature	White	1-LP-2	113-5071-00
3	Tournament Start	1	-	CN6	2	YEL RED	1	RED	Cabinet	Feature	White	1-LP-3	112-5031-01
4	Lockdown Button-R	1	-	CN7	2	RED WHT	1	RED	Cabinet	Feature	RGB	1-LP-5	520-5333-00
5	Lockdown Button-G	1	-	CN7	3	GRN WHT	1	RED	Cabinet	Feature	RGB	1-LP-4	520-5333-00
6	Lockdown Button-B	1	-	CN7	4	BLU WHT	1	RED	Cabinet	Feature	RGB	1-LP-7	520-5333-00
7													
8													
9													
10													
11	Left Outlane-Top	8	b	CN4	5	BRN RED	1/2/3/4	RED	Playfield	Feature	White	8-LP-32	520-8626-00
12	Left Outlane-Bot	8	b	CN4	6	BRN WHT	1/2/3/4	RED	Playfield	Feature	White	8-LP-33	520-8626-00
13	Left Return Lane-Top	8	b	CN4	7	BRN ORG	1/2/3/4	RED	Playfield	Feature	White	8-LP-34	520-8626-00
14	Left Return Lane-Bot	8	b	CN4	8	BRN BLK	1/2/3/4	RED	Playfield	Feature	White	8-LP-35	520-8626-00
15	Left Ball Save	8	b	CN4	9	ORG YEL	1/2/3/4	RED	Playfield	Feature	White	8-LP-36	520-5307-00
16	Shoot Again	8	b	CN4	10	ORG GRN	1/2/3/4	RED	Playfield	Feature	White	8-LP-37	520-5307-00
17	Right Return Lane-Top	8	b	CN2	4	BRN YEL	1/2/3	RED	Playfield	Feature	White	8-LP-15	520-8626-00
18	Right Return Lane-Bot	8	b	CN2	5	BRN VIO	1/2/3	RED	Playfield	Feature	White	8-LP-16	520-8626-00
19	Right Outlane-Top	8	b	CN2	6	BRN BLU	1/2/3	RED	Playfield	Feature	White	8-LP-17	520-8626-00
20	Right Outlane-Bot	8	b	CN2	7	BRN GRN	1/2/3	RED	Playfield	Feature	White	8-LP-18	520-8626-00
21	Right Ball Save	8	b	CN2	8	ORG BRN	1/2/3	RED	Playfield	Feature	White	8-LP-19	520-5307-00
22													
23													
24	Center Arrow 1	8	b	CN3	4	BLU BRN	1/2/3	RED	Playfield	Feature	White	8-LP-24	520-5307-00
25	Center Arrow 2	8	b	CN3	5	BLU RED	1/2/3	RED	Playfield	Feature	White	8-LP-25	520-8603-00
26	Center Arrow 3	8	b	CN3	6	BLU ORG	1/2/3	RED	Playfield	Feature	White	8-LP-26	520-8603-00
27	Center Arrow 4	8	b	CN3	7	BLU YEL	1/2/3	RED	Playfield	Feature	White	8-LP-27	520-8603-00
28	Center Arrow 5	8	b	CN3	8	BLU	1/2/3	RED	Playfield	Feature	White	8-LP-28	520-5307-00
29	Faction 1	8	b	LED7	-	-	-	-	Playfield	Feature	White	8-LP-14	520-8608-00
30	Faction 2	8	b	LED6	-	-	-	-	Playfield	Feature	White	8-LP-13	520-8608-00
31	Faction 3	8	b	LED5	-	-	-	-	Playfield	Feature	White	8-LP-12	520-8608-00
32	Faction 4	8	b	LED4	-	-	-	-	Playfield	Feature	White	8-LP-11	520-8608-00
33	Faction 5	8	b	LED3	-	-	-	-	Playfield	Feature	White	8-LP-10	520-8608-00
34	Faction 6	8	b	LED2	-	-	-	-	Playfield	Feature	White	8-LP-9	520-8608-00
35	Faction 7	8	b	LED1	-	-	-	-	Playfield	Feature	White	8-LP-8	520-8608-00
36													
37													
38	Left 2 Bank Tgt Top	8	d	LED5	-	-	-	-	Playfield	Feature	White	8-LP-60	520-8605-00
39	Left 2 Bank Tgt Bot	8	d	LED4	-	-	-	-	Playfield	Feature	White	8-LP-59	520-8605-00
40	Administrator	8	d	CN3	7	ORG GRN	1/2	RED	Playfield	Feature	White	8-LP-71	520-5307-00
41	Left Eject-R	8	d	LED9	-	-	-	-	Playfield	Feature	RGB	8-LP-64	520-8605-00
42	Left Eject-G	8	d	LED9	-	-	-	-	Playfield	Feature	RGB	8-LP-65	520-8605-00
43	Left Eject-B	8	d	LED9	-	-	-	-	Playfield	Feature	RGB	8-LP-66	520-8605-00
44	Left Eject 1	8	d	LED6	-	-	-	-	Playfield	Feature	White	8-LP-61	520-8605-00
45	Left Eject 2	8	d	LED1	-	-	-	-	Playfield	Feature	White	8-LP-56	520-8605-00
46	Left Eject 3	8	d	LED2	-	-	-	-	Playfield	Feature	White	8-LP-57	520-8605-00
47	Extra Ball	8	d	LED3	-	-	-	-	Playfield	Feature	White	8-LP-58	520-8605-00
48													
49													
50	Crate Top	8	c	LED3	-	-	-	-	Playfield	Feature	White	8-LP-42	520-8607-00
51	Crate Mid	8	c	LED2	-	-	-	-	Playfield	Feature	White	8-LP-41	520-8607-00

LIGHT REFERENCE CONTINUED

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
52	Crate Bot	8	c	LED1	-	-	-	-	Playfield	Feature	White	8-LP-40	520-8607-00
53													
54													
55													
56	Left Orbit Top Arrow	9	b	LED32	-	-	-	-	Playfield	Feature	White	9-LP-67	520-8606-00
57	Left Orbit-R	9	b	LED33	-	-	-	-	Playfield	Feature	RGB	9-LP-68	520-8606-00
58	Left Orbit-G	9	b	LED33	-	-	-	-	Playfield	Feature	RGB	9-LP-69	520-8606-00
59	Left Orbit-B	9	b	LED33	-	-	-	-	Playfield	Feature	RGB	9-LP-70	520-8606-00
60	Left Orbit 1	9	b	LED34	-	-	-	-	Playfield	Feature	White	9-LP-71	520-8606-00
61	Left Orbit 2	9	b	LED35	-	-	-	-	Playfield	Feature	White	9-LP-72	520-8606-00
62	Left Orbit 3	9	b	LED36	-	-	-	-	Playfield	Feature	White	9-LP-73	520-8606-00
63													
64													
65	Left Ramp Left Tgt	9	b	LED31	-	-	-	-	Playfield	Feature	White	9-LP-66	520-8606-00
66	Left Ramp Diamond	9	b	LED30	-	-	-	-	Playfield	Feature	White	9-LP-65	520-8606-00
67	Left Ramp Right Tgt	9	b	LED29	-	-	-	-	Playfield	Feature	White	9-LP-64	520-8606-00
68	Left Ramp-R	9	b	LED37	-	-	-	-	Playfield	Feature	RGB	9-LP-74	520-8606-00
69	Left Ramp-G	9	b	LED37	-	-	-	-	Playfield	Feature	RGB	9-LP-75	520-8606-00
70	Left Ramp-B	9	b	LED37	-	-	-	-	Playfield	Feature	RGB	9-LP-76	520-8606-00
71	Left Ramp 1	9	b	LED38	-	-	-	-	Playfield	Feature	White	9-LP-77	520-8606-00
72	Left Ramp 2	9	b	LED39	-	-	-	-	Playfield	Feature	White	9-LP-78	520-8606-00
73	Left Ramp 3	9	b	LED40	-	-	-	-	Playfield	Feature	White	9-LP-79	520-8606-00
74													
75													
76	Drop Tgt Entrance	9	b	CN1	10	YEL GRY	1-8(CN4)	RED	Playfield	Feature	White	9-LP-41	520-5307-00
77	Drop Target-R	9	b	LED27	-	-	-	-	Playfield	Feature	RGB	9-LP-60	520-8606-00
78	Drop Target-G	9	b	LED27	-	-	-	-	Playfield	Feature	RGB	9-LP-61	520-8606-00
79	Drop Target-B	9	b	LED27	-	-	-	-	Playfield	Feature	RGB	9-LP-62	520-8606-00
80	Drop Target 1	9	b	LED28	-	-	-	-	Playfield	Feature	White	9-LP-63	520-8606-00
81	Drop Target 2	9	b	LED25	-	-	-	-	Playfield	Feature	White	9-LP-58	520-8606-00
82	Drop Target 3	9	b	LED24	-	-	-	-	Playfield	Feature	White	9-LP-57	520-8606-00
83													
84													
85	Center Ramp Diamond	9	b	LED26	-	-	-	-	Playfield	Feature	White	9-LP-59	520-8606-00
86	Center Ramp-R	9	b	LED23	-	-	-	-	Playfield	Feature	RGB	9-LP-54	520-8606-00
87	Center Ramp-G	9	b	LED23	-	-	-	-	Playfield	Feature	RGB	9-LP-55	520-8606-00
88	Center Ramp-B	9	b	LED23	-	-	-	-	Playfield	Feature	RGB	9-LP-56	520-8606-00
89	Center Ramp 1	9	b	LED22	-	-	-	-	Playfield	Feature	White	9-LP-53	520-8606-00
90	Center Ramp 2	9	b	LED21	-	-	-	-	Playfield	Feature	White	9-LP-52	520-8606-00
91	Center Ramp 3	9	b	LED20	-	-	-	-	Playfield	Feature	White	9-LP-51	520-8606-00
92													
93													
94	Car 1	9	a	CN3	4	GRN VIO	1/2/3	RED	Playfield	Feature	White	9-LP-18	520-8601-00
95	Car 2	9	a	CN3	5	GRN GRY	1/2/3	RED	Playfield	Feature	White	9-LP-19	520-8601-00
96	Car 3	9	a	CN3	6	GRN WHT	1/2/3	RED	Playfield	Feature	White	9-LP-20	520-8601-00
97	Car 4	9	a	CN3	7	GRN	1/2/3	RED	Playfield	Feature	White	9-LP-21	520-8601-00
98	(W)INSTON	9	a	LED18	-	-	-	-	Playfield	Feature	White	9-LP-25	520-8604-00
99	W(I)NSTON	9	a	LED17	-	-	-	-	Playfield	Feature	White	9-LP-24	520-8604-00
100	WI(N)STON	9	a	LED10	-	-	-	-	Playfield	Feature	White	9-LP-17	520-8604-00
101	WIN(S)TON	9	a	LED9	-	-	-	-	Playfield	Feature	White	9-LP-16	520-8604-00
102	WINS(T)ON	9	a	LED3	-	-	-	-	Playfield	Feature	White	9-LP-10	520-8604-00

LIGHT REFERENCE CONTINUED

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
103	WINST(O)N	9	a	LED2	-	-	-	-	Playfield	Feature	White	9-LP-9	520-8604-00
104	WINSTO(N)	9	a	LED1	-	-	-	-	Playfield	Feature	White	9-LP-8	520-8604-00
105													
106													
107	Right Orbit-R	9	a	LED22	-	-	-	-	Playfield	Feature	RGB	9-LP-29	520-8604-00
108	Right Orbit-G	9	a	LED22	-	-	-	-	Playfield	Feature	RGB	9-LP-30	520-8604-00
109	Right Orbit-B	9	a	LED22	-	-	-	-	Playfield	Feature	RGB	9-LP-31	520-8604-00
110	Right Orbit 1	9	a	LED20	-	-	-	-	Playfield	Feature	White	9-LP-27	520-8604-00
111	Right Orbit 2	9	a	LED21	-	-	-	-	Playfield	Feature	White	9-LP-28	520-8604-00
112	Right Orbit 3	9	a	LED19	-	-	-	-	Playfield	Feature	White	9-LP-26	520-8604-00
113													
114													
115	Right Ramp Left Tgt	8	c	LED7	-	-	-	-	Playfield	Feature	White	8-LP-46	520-8607-00
116	Right Ramp Diamond	8	c	LED8	-	-	-	-	Playfield	Feature	White	8-LP-47	520-8607-00
117	Right Ramp-R	8	c	LED9	-	-	-	-	Playfield	Feature	RGB	8-LP-48	520-8607-00
118	Right Ramp-G	8	c	LED9	-	-	-	-	Playfield	Feature	RGB	8-LP-49	520-8607-00
119	Right Ramp-B	8	c	LED9	-	-	-	-	Playfield	Feature	RGB	8-LP-50	520-8607-00
120	Right Ramp 1	8	c	LED6	-	-	-	-	Playfield	Feature	White	8-LP-45	520-8607-00
121	Right Ramp 2	8	c	LED5	-	-	-	-	Playfield	Feature	White	8-LP-44	520-8607-00
122	Right Ramp 3	8	c	LED4	-	-	-	-	Playfield	Feature	White	8-LP-43	520-8607-00
123													
124													
125	Marker Left	8	d	CN1	3	RED VIO	1/2	RED	Playfield	Feature	White	8-LP-62	520-8624-00
126	Marker Right	8	d	CN1	4	RED GRY	1/2	RED	Playfield	Feature	White	8-LP-63	520-8624-00
127													
128													
129													
130	Dance Floor 1	9	a	CN2	4	GRN BRN	1/2/3	RED	Playfield	Feature	White	9-LP-11	520-8600-00
131	Dance Floor 2	9	a	CN2	5	GRN RED	1/2/3	RED	Playfield	Feature	White	9-LP-12	520-8600-00
132	Dance Floor 3	9	a	CN2	6	GRN ORG	1/2/3	RED	Playfield	Feature	White	9-LP-13	520-8600-00
133	Dance Floor 4	9	a	CN2	7	GRN YEL	1/2/3	RED	Playfield	Feature	White	9-LP-14	520-8600-00
134	Dance Floor Large	9	a	CN2	8	GRN BLU	1/2/3	RED	Playfield	Feature	White	9-LP-15	520-8600-00
135	Pop Bumper-R	9	b	CN1	1	RED BRN	1-8(CN4)	RED	Playfield	Feature	RGB	9-LP-32	520-5374-00
136	Pop Bumper-G	9	b	CN1	2	GRN BRN	1-8(CN4)	RED	Playfield	Feature	RGB	9-LP-33	520-5374-00
137	Pop Bumper-B	9	b	CN1	3	BLU BRN	1-8(CN4)	RED	Playfield	Feature	RGB	9-LP-34	520-5374-00
138													
139	Lock 1	9	b	CN1	4	YEL BRN	1-8(CN4)	RED	Playfield	Feature	White	9-LP-35	520-7011-00
140	Lock 2	9	b	CN1	5	YEL RED	1-8(CN4)	RED	Playfield	Feature	White	9-LP-36	520-7011-00
141	Lock 3	9	b	CN1	6	YEL ORG	1-8(CN4)	RED	Playfield	Feature	White	9-LP-37	520-7011-00
142													
143													
144													
145													
146													
147													
148													
149													
150	Coin Door GI	1	-	CN5	2	YEL	1	YEL-WHT	Coin Door	G.I.	White	1-LP-1	112-5033-08
151	Bottom GI (x16)	8	-	CN15	5	WHT BLK	1	YEL BLK	Playfield	G.I.	White	8-LP-0	112-5034-08F 520-7000-00 (Bot Arch)

LIGHT REFERENCE CONTINUED

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
152	Top Left GI (x14)	8	-	CN15	6	RED BLK	2	YEL RED	Playfield/ Back Panel	G.I.	White	8-LP-1	112-5034-08F 520-5307-00(Back Pnl)
153	Top Right GI (x9)	8	-	CN15	7	BLU BLK	3	YEL BLU	Playfield/ Back Panel	G.I.	White	8-LP-2	112-5034-08F
154													
155	Top GI-RED (x9)	9	-	CN15	5	RED BLK	1	YEL	Playfield	G.I.	RGB	9-LP-0	520-5333-00
156	Top GI-GRN (x9)	9	-	CN15	6	GRN BLK	2	YEL	Playfield	G.I.	RGB	9-LP-1	520-5333-00
157	Top GI-BLU (x9)	9	-	CN15	7	BLU BLK	3	YEL	Playfield	G.I.	RGB	9-LP-2	520-5333-00
158													
159													
160													
161	Left Sling Flash	8	b	CN4	12	ORG VIO	1/2/3/4	RED	Playfield	Flash	White	8-LP-39	520-7000-00
162	Right Sling Flash	8	b	CN2	9	ORG RED	1/2/3	RED	Playfield	Flash	White	8-LP-20	520-7000-00
163													
164	Left Eject Flash	8	d	CN3	4	ORG RED	1/2	RED	Playfield	Flash	White	8-LP-68	520-7000-00
165	Spinner Flash	8	d	CN3	3	ORG BRN	1/2	RED	Playfield	Flash	White	8-LP-67	113-5045-08
166	Center Circle 1 Flash	8	b	CN3	9	BLU GRN	1/2/3/4	RED	Playfield	Flash	White	8-LP-29	520-8602-00
167	Center Circle 2 Flash	8	b	CN3	10	BLU VIO	1/2/3/4	RED	Playfield	Flash	White	8-LP-30	520-8602-00
168	Center Circle 3 Flash	8	b	CN3	11	BLU GRY	1/2/3/4	RED	Playfield	Flash	White	8-LP-31	520-8602-00
169	Crate Flash (2x)	8	c	CN3	7	ORG BLK	1/2	RED	Playfield	Flash	White	8-LP-55	520-7000-00
170	Right VUK Flash	8	c	CN3	6	ORG	1/2	RED	Playfield	Flash	White	8-LP-54	520-7000-00
171	Job Start Flash	8	c	CN3	3	BLU ORG	1/2	RED	Playfield	Flash	Red	8-LP-51	113-5045-02
172	Dancefloor Flash Left	9	b	CN3	2	ORG BLU	1-8(CN4)	RED	Playfield	Flash	White	9-LP-43	113-5045-08
173	Dancefloor Flash Right	9	b	CN3	3	ORG VIO	1-8(CN4)	RED	Playfield	Flash	White	9-LP-44	113-5045-08
174													
175	Backpanel Flash	9	b	CN3	1	ORG GRN	1-8(CN4)	RED	Playfield	Flash	White	9-LP-42	520-7000-00
176	Building Spotlight	9	b	CN1	9	YEL VIO	1-8(CN4)	RED	Playfield	Flash	White	9-LP-40	520-8625-00
177	Car Spotlight	9	a	CN3	8	ORG WHT	1/2/3	RED	Playfield	Flash	White	9-LP-22	520-8625-00
178	Continental Flash WHT	9	b	CN1	7	YEL GRN	1-8(CN4)	RED	Playfield	Flash	White	9-LP-38	113-5045-08
179	Continental Flash RED	9	b	CN1	8	YEL BLU	1-8(CN4)	RED	Playfield	Flash	Red	9-LP-39	113-5045-02
180													
181	Coins Flash	8	c	CN3	4	BLU VIO	1/2	RED	Playfield	Flash	White	8-LP-52	515-1895-06(ASM) 113-5070-00(LED)
182													
183													
184													
185													
186													
187													
188													
189													
190													
191													
192													
193													
194													
195													
196													
197													
198													
199													
200													

LIGHT REFERENCE CONTINUED

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
201													
202													
203													
204													
205													
206													
207													
208													
209													
210													
211													
212													
213													
214													
215													
216													
217													
218													
219													
220	Speaker 1-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-1	511-1135-00
221	Speaker 1-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-0	511-1135-00
222	Speaker 1-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-2	511-1135-00
223	Speaker 2-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-4	511-1135-00
224	Speaker 2-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-3	511-1135-00
225	Speaker 2-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-5	511-1135-00
226	Speaker 3-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-7	511-1135-00
227	Speaker 3-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-6	511-1135-00
228	Speaker 3-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-8	511-1135-00
229	Speaker 4-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-10	511-1135-00
230	Speaker 4-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-9	511-1135-00
231	Speaker 4-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-11	511-1135-00
232	Speaker 5-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-13	511-1135-00
233	Speaker 5-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-12	511-1135-00
234	Speaker 5-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-14	511-1135-00
235	Speaker 6-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-16	511-1135-00
236	Speaker 6-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-15	511-1135-00
237	Speaker 6-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-17	511-1135-00
238	Speaker 7-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-19	511-1135-00
239	Speaker 7-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-18	511-1135-00
240	Speaker 7-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-20	511-1135-00
241	Speaker 8-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-22	511-1135-00
242	Speaker 8-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-21	511-1135-00
243	Speaker 8-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-23	511-1135-00
244	Speaker 9-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-25	511-1135-00
245	Speaker 9-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-24	511-1135-00
246	Speaker 9-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-26	511-1135-00
247	Speaker 10-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-28	511-1135-00
248	Speaker 10-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-27	511-1135-00
249	Speaker 10-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-29	511-1135-00
250	Speaker 11-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-31	511-1135-00
251	Speaker 11-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-30	511-1135-00

LIGHT REFERENCE CONTINUED

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
252	Speaker 11-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-32	511-1135-00
253	Speaker 12-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-34	511-1135-00
254	Speaker 12-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-33	511-1135-00
255	Speaker 12-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-35	511-1135-00
256	Speaker 13-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-37	511-1135-00
257	Speaker 13-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-36	511-1135-00
258	Speaker 13-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-38	511-1135-00
259	Speaker 14-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-40	511-1135-00
260	Speaker 14-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-39	511-1135-00
261	Speaker 14-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-41	511-1135-00
262	Speaker 15-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-43	511-1135-00
263	Speaker 15-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-42	511-1135-00
264	Speaker 15-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-44	511-1135-00
265	Speaker 16-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-46	511-1135-00
266	Speaker 16-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-45	511-1135-00
267	Speaker 16-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-47	511-1135-00
268	Speaker 17-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-49	511-1135-00
269	Speaker 17-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-48	511-1135-00
270	Speaker 17-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-50	511-1135-00
271	Speaker 18-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-52	511-1135-00
272	Speaker 18-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-51	511-1135-00
273	Speaker 18-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-53	511-1135-00
274	Speaker 19-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-55	511-1135-00
275	Speaker 19-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-54	511-1135-00
276	Speaker 19-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-56	511-1135-00
277	Speaker 20-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-58	511-1135-00
278	Speaker 20-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-57	511-1135-00
279	Speaker 20-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-59	511-1135-00
280	Speaker 21-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-61	511-1135-00
281	Speaker 21-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-60	511-1135-00
282	Speaker 21-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-62	511-1135-00
283	Speaker 22-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-64	511-1135-00
284	Speaker 22-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-63	511-1135-00
285	Speaker 22-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-65	511-1135-00
286	Speaker 23-R	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-67	511-1135-00
287	Speaker 23-G	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-66	511-1135-00
288	Speaker 23-B	7	-	CN1	-	-	-	-	Cabinet	Feature	RGB	7-LP-68	511-1135-00
289													
290													
291													
292													
293													
294													
295													
296													
297													
298													

LIGHT REFERENCE CONTINUED

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
299													
300 - 441	Expressive Lighting L 1-R - 48-R	2	a	CN1	-	-	-	-	Cabinet	Feature	RGB	2-LP-1	515-2413-00
301 - 442	Expressive Lighting L 1-G - 48G	2	a	CN1	-	-	-	-	Cabinet	Feature	RGB	2-LP-0	515-2413-00
302 - 443	Expressive Lighting L 1-B - 48-B	2	a	CN1	-	-	-	-	Cabinet	Feature	RGB	2-LP-2	515-2413-00
444 - 585	Expressive Lighting R 49-R - 96-R	2	a	CN1	-	-	-	-	Cabinet	Feature	RGB	2-LP-145	515-2413-00
445 - 586	Expressive Lighting R 49-G - 96-G	2	a	CN1	-	-	-	-	Cabinet	Feature	RGB	2-LP-144	515-2413-00
446 - 587	Expressive Lighting R 49-B - 96-B	2	a	CN1	-	-	-	-	Cabinet	Feature	RGB	2-LP-146	515-2413-00

LIGHT REFERENCE CONTINUED

Figure 3.4.1. Playfield light locations (top view).

4. ELECTRONIC PINOUTS AND SCHEMATICS

4.1 SPIKE-2 CPU NODE 0

509-1003-01
DIRECT SWITCH MAPPING (CN25)

The coin-door diagnostic switches are connected directly to the CPU node via the Cabinet Node. Note that both the CPU and Cabinet nodes are required for diagnostic switch operation.

ID	Name	Conn.	Input Pin	Input Wire	GND Pin	Ground Wire	Location	Type	Address	Part Number
C1	DIP 1	-	-	-	-	-	CPU Node		0-SW-0	-
C2	DIP 2	-	-	-	-	-	CPU Node		0-SW-1	-
C3	DIP 3	-	-	-	-	-	CPU Node		0-SW-2	-
C4	DIP 4	-	-	-	-	-	CPU Node		0-SW-3	-
C5	DIP 5	-	-	-	-	-	CPU Node		0-SW-4	-
C6	DIP 6	-	-	-	-	-	CPU Node		0-SW-5	-
C7	DIP 7	-	-	-	-	-	CPU Node		0-SW-6	-
C8	DIP 8	-	-	-	-	-	CPU Node		0-SW-7	-
C9	Service Select	CN25	1	LGN-GRY	11	BLK-WHT	Coin Door		0-SW-9	180-5192-04
C10	Service Plus	CN25	2	LGN-VIO	11	BLK-WHT	Coin Door		0-SW-10	180-5192-02
C11	Service Minus	CN25	3	LGN-BLU	11	BLK-WHT	Coin Door		0-SW-11	180-5192-02
C12	Service Back	CN25	4	LGN-BLK	11	BLK-WHT	Coin Door		0-SW-12	180-5192-00

CONNECTORS

ID	Connector Type	Description
CN1	5-Pin .156" Header	Backbox 2-channel amplified speaker out
CN2	3-Pin .100" Header	Console Port
CN3	7-Pin .100" Header	Headphone connector
CN4	2-Pin .156"	Cabinet 1-channel amplified speaker out
CN5	7-Pin .100" Header	Line In/Out
CN6	34 Pin 2.00mm Header	LCD display connector
CN7	5-Pin .156" Header	48V supply from main power supply
CN8	6-Pin .100" Header	SPI Serial
CN9	USB	USB connector - for software updates, audit dumps, and expansion modules
CN9	USB	USB connector - for software updates, audit dumps, and expansion modules
CN10	HDMI	HDMI Out
CN11	RJ45	SPIKE node bus - to cabinet node N1
CN12	RJ45	SPIKE node bus - To Topper accessory kit
CN13	SD CARD	SD Card connector
CN14	5-Pin .100" Header	LCD Backlight
CN15	3-Pin .100" Header	Backbox Light
CN16	4-Pin .100" Header	3.3v / 5v / 12v
CN17	ETHERNET	ETHERNET connector
CN21	SATA Header	SATA connector
CN22	RJ45	SPIKE node bus - to playfield node
CN25	12-Pin .100" Header	Dedicated switch inputs - service, volume switches

COMPONENTS

ID	Name
S1	DIP Switches
S2	Reset Switch
SD CARD (CN13)	For system SD card. Note: only to be removed if instructed to by Stern Service.
BT1	BR1225 3V Lithium battery for game clock between power cycles

STATUS LEDS

| LED ID	Name	Color	Description
48V	+48V Supply In	Red	ON: Main system power is connected. OFF: No 48V system power. Check power supply connections, cables, and fuses.
3.3V	+3.3V Logic	Red	ON: Logic power supply is good. OFF: Logic power supply bad, call tech support.
5V	+5V Logic	Red	ON: Logic power supply is good. OFF: Logic power supply bad, call tech support.
12V	+12V Backbox Illumination	Red	ON: Back box LED power good. OFF: Backbox LED power bad, call tech support.
VA	+30V Audio	Red	ON: Audio power supply is good. OFF: Audio power supply off, call tech support.
VNB	+9V Node Bus	Red	Power for the Node bus. ON: Power for node bus good. OFF: Power to node bus not detected, call tech support.
5V (CPU)	+5V Logic	Red	ON: Logic power supply is good. OFF: Logic power supply bad, call tech support.
SDIO ACT	Not Used	Red	Should remain unlit as it is not currently used.
STATUS	CPU Heartbeat, System Status	Red	Double blink ~1/2 second: Good, Processor running. OFF: Processor not running, call tech support.
µSD ACT	Activity indicator for micro SD Card	Red	Should blink rapidly when reading or writing to micro SD card.
D23	Netbridge Status	Red	Should blink once every ~1/2 second.

SPIKE-2 CPU NODE 0 CONTINUED

AUDIO PINOUTS

ID	Type	Pin	Description	Minimum Impedance	Max Power (RMS)	Wire Color
CN1	.156" 5-pin Header	1	Speaker Right Ground (-)	4 Ohms	-	BLK-WHT
		2	Speaker Right (+)	4 Ohms	20W	RED-WHT
		3	n/c	-	-	
		4	Speaker Left Ground (-)	4 Ohms	-	BLK-RED
		5	Speaker Left (+)	4 Ohms	20W	RED-BLK
CN3	.100" 7-pin Header	1	n/c	-	-	
		2	L-HP	16 Ohms	15 mW	
		3	R-HP	16 Ohms	15 mW	
		4	n/c	-	-	
		5	Headphone Detect	-	-	
		6	Headphone vol +	-	-	
		7	Headphone vol -	-	-	
CN4	.156" 2-pin Header	1	Woofer Ground (-)	8 Ohms	-	YEL-BLK
		2	Woofer Out (+)	8 Ohms	40W	YEL-WHT
CN5	.100" 7-pin Header	1	n/c	-	-	
		2	L-IN	30K Ohms	0.6VRMS	
		3	R-IN	30K Ohms	0.6VRMS	
		4	n/c	-	-	
		5	L-OUT	10K Ohms	1.5V	
		6	R-OUT	10K Ohms	1.5V	
		7	Woofer Line Out	10K Ohms	1.5V	

COUNTRY CODES (DIP S2)

Country	DIP S2							
	1	2	3	4	5	6	7	8
USA	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Austria	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Australia	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
Belgium	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
Canada 1	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
Canada 2	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
China	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
Croatia	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
Denmark	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
Finland	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
France	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
Germany	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
Greece	ON	ON	ON	ON	OFF	OFF	OFF	OFF
Italy	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
Japan	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
Middle East	ON	ON	ON	OFF	ON	OFF	OFF	OFF
Netherlands	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
New Zealand	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
Norway	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
Portugal	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
Russia	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
S. Africa	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
Spain	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
Sweden	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
Switzerland	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
Taiwan	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
United Kingdom	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
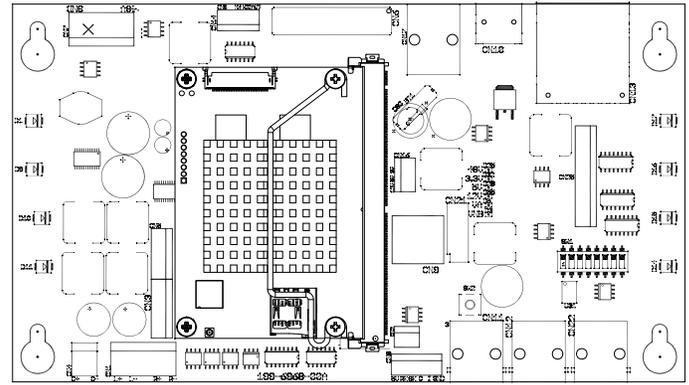
Figure 4.1.1. SPIKE 2 CPU Node connector detail.

COIN DOOR SERVICE SWITCH WIRING
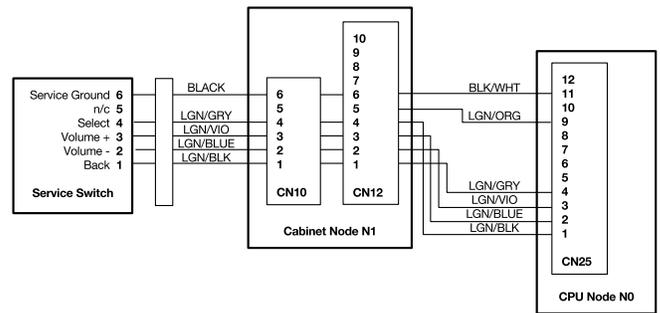
Figure 4.1.2. Service switch wiring. Note that the Cabinet Node must be present and CN10 and CN12 connected for the Coin Door Service Switches to function correctly.

USA & INTERNATIONAL (NON-EURO) STANDARD PRICING SELECT TABLE

CPU/SOUND PCB DIP SWITCH SW1 SETTING	COUNTRY SETTING OPTION(S)	COIN MECHANISMS (SWITCHES) COINS THRU ... SLOT:				PRICING SCHEME Number of Plays (Credits) for Price Amount Shown See "Appendix J" for Coin Cards Examples & Info!				Requires SPI Coin Card(s) Part Number
		LEFT	CENTER	RIGHT	4TH					

HIGHLIGHTED = Factory Default

HIGHLIGHTED = Not Shown on Coin Card

USA (Default Highlighted)

DIP positions 1-8, ON/OFF rows

Country options: USA 1, USA 2, USA 3, USA 4, USA 5, USA 6, USA 7, USA 8, USA 9, USA 10, USA 11, USA 12, USA 13

Coin mechanisms: LEFT 0.25, CENTER 1.00, RIGHT 0.25

USD // UNITED STATES DOLLAR // [$]

LEFT	CENTER	RIGHT	4TH	Part Number
1/0.25				755-5400-01-Y
1/0.50	2/0.75	3/1.00		755-5400-02-Y
1/0.50	For USA 6 and USA 7 use: 755-5400-02-Y			755-5400-02-Y
1/0.50	USA 6 Note: If player uses X4 25¢ quarters = 2 plays. However, $1 bill = 3 plays!			755-5400-02-Y
1/0.50 2/1.00	3/1.50	5/2.00		755-5400-00-Y
1/0.50	2 /'4 X 25¢'	3 /$ 1.00 Bill		◄ Used to promote the Bill Validator.
1/0.50 2/1.00	4/1.50	6/2.00		
1/0.50	3/1.00			755-5400-00-Y
1/1.00				755-5400-07-Y
1/0.75	2/1.50	3/2.00		755-5400-11-Y
1/1.00	3/2.00			
1/0.25	2/0.50	3/0.75	5/1.00	
1/1.00	2/2.00	3/3.00	4/4.00 7/5.00	

AUSTRALIA (Default Highlighted)

Country options: AUSTRALIA 1, AUSTRALIA 2, AUSTRALIA 3, AUSTRALIA 4, AUSTRALIA 5, AUSTRALIA 6

Coin mechanisms: LEFT 0.20, CENTER 1.00, RIGHT 2.00

AUD // AUSTRALIAN DOLLARS // [$AUS]

LEFT	CENTER	RIGHT	4TH	Part Number
1/1.00	3/2.00			755-5406-00-Y (1 Side)
1/1.00				
1/2.00				
1/2.00	2/4.00	3/5.00		
1/3.00	2/5.00	3/8.00	5/10.00	
1/2.00	2/3.00			

CANADA (Default Highlighted)

Country options: CANADA 1 [25¢ door], CANADA 2 [dollar door]

Coin mechanisms CANADA 1: 0.25, 0.25, 1.00, 2.00
Coin mechanisms CANADA 2: 1.00, , 2.00,

CAD // CANADIAN DOLLARS // [$CAN]

LEFT	CENTER	RIGHT	Part Number
1/0.50	2/0.75	3/1.00	755-5400-00-Y -01-Y or -02-Y
1/1.00	3/2.00		755-5400-10-Y

CROATIA (Default Highlighted)

Coin mechanisms: 1, 2, 5

HRK // CROATIAN KUNA // [kuna]

LEFT	CENTER	Part Number
1/3	2/5	755-5410-00-Y (2-Sided)

DENMARK (Default Highlighted)

Country options: DENMARK 1, DENMARK 2

Coin mechanisms: 1, 5, 10, 20

DKK // DANISH KRONER // [Kr]

						Part Number
1/3	2/5					755-5402-00-Y (2-Sided)
1/2	2/4	3/5	4/7	5/9	7/10	

JAPAN (Default Highlighted)

Country options: JAPAN 1, JAPAN 2

Coin mechanisms: 100, , 100

JPY // JAPANESE YEN // [¥]

LEFT	CENTER	Part Number
1/100		755-5408-01-Y (2-Sided)
1/100	3/200	

MIDDLE EAST (Default Highlighted)

Coin mechanisms: token, , token

TOKEN // Middle East currency used to buy token // [TOKEN]

LEFT	Part Number
1/1	755-5400-06-Y (use Side 1)

NEW ZEALAND (Default Highlighted)

Country options: NEW ZEALAND 1, NEW ZEALAND 2

Coin mechanisms: 1, , 2

NZD // NEW ZEALAND DOLLAR // [$NZD]

LEFT	CENTER	Part Number
1/1		755-5406-00-Y (Side 2)
1/1	3/2	

NORWAY (Default Highlighted)

Country options: NORWAY 1, NORWAY 2, NORWAY 3, NORWAY 4, NORWAY 5, NORWAY 6, NORWAY 7, NORWAY 8

6 7 8 5 1 4 2/3.00

Coin mechanisms: 10, 5, 20

NOK // NORWEGIAN KRONE // [Kr]

LEFT	CENTER	Part Number
1/10		755-5403-01-Y or -02-Y / (2-Sided)
1/10	3/20	
1/20		755-5403-03-Y (2-Sided)
1/20	3/40	
1/10		
1/10	3/20	
1/20		
1/20	3/40	

RUSSIA (Default Highlighted)

▼ LEFT SWITCH CAN BE WIRED TO BILL ACCEPTOR ▼

Coin mechanisms: 10, 5, 1

RUB // RUSSIAN RUBLE // [Ruble]

LEFT	Part Number
1/5	755-5411-00-Y (2-Sided)

SO. AFRICA (Default Highlighted)

Country options: SO. AFRICA 1, SO. AFRICA 2

Coin mechanisms: 0.50, 1.00, 1.00, 1.00

ZAR // SOUTH AFRICAN RAND // [R]

LEFT	CENTER	Part Number
1/2.00		755-5409-01-Y (2-Sided)
1/3.00	2/5.00	

SWEDEN (Default Highlighted)

Country options: SWEDEN 1, SWEDEN 2

Coin mechanisms: 1, 5, 10

SEK // SWEDISH KRONOR // [kr]

LEFT	CENTER	RIGHT	Part Number
1/10	2/15	3/20	755-5404-00-Y (2-Sided)
1/5			

SWITZERLAND (Default Highlighted)

Country options: SWITZERLAND 1, SWITZERLAND 2

Coin mechanisms: 1, 2, 5

CHF // SWISS FRANCS // [Sƒ]

					Part Number
1/1	2/2	3/3	4/4	6/5	755-5405-00-Y (2-Sided)
1/1	3/2	5/3	7/4	9/5	

TAIWAN (Default Highlighted)

Coin mechanisms: 10, , 10

TWD // TAIWANESE DOLLAR // [TWD]

LEFT	Part Number
1/10	755-5412-00-Y (use Side 1)

UK (Default Highlighted)

Country options: UK 1, UK 2, UK 3, UK 4, UK 5, UK 6

▼ 5TH COIN SLOT NOT AVAILABLE WITH CUSTOM PRICING ▼

LEFT	CENTER	RIGHT	4TH	5TH
0.10	0.50	1.00	0.20	2£ ▲ Coin Only

GBP // UNITED KINGDOM POUNDS // [£]

LEFT	CENTER	RIGHT	Part Number
3/1.00	7/2.00		755-5407-00-Y
4/1.00			755-5407-01-Y*
1/0.50 2/1.00	3/1.50	5/2.00	755-5407-01
1/0.30 2/0.60	3/0.90	4/1.00	755-5407-01-Y*
1/1.00	3/2.00		755-5407-01
3/2.00	3/2.00		755-5407-01-Y*

* use blank side

HIGHLIGHTED = Factory Default   **HIGHLIGHTED** = Not Shown on Coin Card

EURO SUMMARY & INTERNATIONAL (EURO) STANDARD PRICING SELECT TABLE

Top Summary Table

CPU/SOUND PCB DIP SWITCH SW1 SETTING	COUNTRY SETTING OPTION(S)	COIN MECHANISMS (SWITCHES) COINS THRU ... SLOT:				PRICING SCHEME Number of Plays (Credits) for Price Amount Shown See "Appendix J" for Coin Cards Examples & Info!				Requires SPI Coin Card(s) Part Number
		LEFT	CENTER	RIGHT	4TH					

Pos. 1 2 3 4 5 6 7 8
ON: S E E B E L O W
OFF: S E T T I N G S

Euro 1-12 are alternate settings for countries using the Euro.

HIGHLIGHTED = Factory Default
HIGHLIGHTED = Not Shown on Coin Card

Country Setting	LEFT	CENTER	RIGHT	4TH	EUR // EUROPEAN UNION EUROS // [€]			Part Number
Euro 1 (Default Highlighted)	0.50	1.00	2.00	optional 0.20 / optional	1/0.50			755-5401-01-Y
Euro 2					1/0.50 2/1.00	3/1.50	5/2.00	755-5401-02-Y
Euro 3					1/0.50	3/1.00		755-5401-03-Y
Euro 4					1/0.50 2/1.00	3/1.50	6/2.00	755-5401-04-Y
Euro 5					1/0.50 3/1.00	4/1.50	7/2.00	755-5401-05-Y
Euro 6					2/0.50			755-5401-06-Y
Euro 7					1/1.00 2/2.00	3/3.00	5/4.00	755-5401-07-Y
Euro 8					1/1.00	3/2.00		755-5401-08-Y
Euro 9					1/1.00	2/1.50	3/2.00	755-5401-09-Y
Euro 10					1/1.00	3/2.00	7/3.00	755-5401-10-Y
Euro 11					1/1.00	4/2.00		755-5401-11-Y
Euro 12					2/1.00 4/2.00	6/3.00	9/4.00	755-5401-12-Y

*For a different **Euro Pricing Scheme** (other than Factory Default listed below), scroll through **Standard Adjustment 18**: Euro 1-12 or CUSTOM* for new setting (reference above Euro 1-12 Summary). Keep the Country Dip Switch Setting the same as listed below.*

Country Settings Detail

EUR // EUROPEAN UNION EUROS // [€]

AUSTRIA — Euro 9
Pos. 1 2 3 4 5 6 7 8 — ON: ▲ / OFF: ▼▼▼▼▼▼▼

LEFT	CENTER	RIGHT	4TH	PRICING			Part Number
0.50	1.00	2.00		1/1.00	2/1.50	3/2.00	755-5401-09-Y

BELGIUM — Euro 1
Pos. 1 2 3 4 5 6 7 8 — ON: ▲ / OFF: ▼ ▼▼▼▼▼▼

0.50	1.00	2.00		1/0.50			755-5401-01-Y

FINLAND — Euro 8
Pos. 1 2 3 4 5 6 7 8 — ON: ▲ ▲ / OFF: ▼ ▼▼▼▼▼

0.50	1.00	2.00		1/1.00	3/2.00		755-5401-08-Y

FRANCE — Euro 10
Pos. 1 2 3 4 5 6 7 8 — ON: ▲▲ / OFF: ▼ ▼▼▼▼▼

0.50	1.00	2.00		1/1.00	3/2.00	7/3.00	755-5401-10-Y

GERMANY 1 / GERMANY 2 / GERMANY 3
Pos. 1 2 3 4 5 6 7 8 — ON: ▲▲▲▲ / OFF: ▼▼▼▼

LEFT	CENTER	RIGHT	4TH	PRICING			Part Number
0.50	1.00	2.00		1/0.50			755-5401-01-Y
				1/0.50 2/1.00	3/1.50	5/2.00	755-5401-02-Y
				1/0.50 2/1.00	3/1.50	6/2.00	755-5401-04-Y

GREECE — Euro 8
Pos. 1 2 3 4 5 6 7 8 — ON: ▲▲▲▲▲ / OFF: ▼▼▼

0.50	1.00	2.00		1/1.00	3/2.00		755-5401-08-Y

ITALY 1 / ITALY 2
Pos. 1 2 3 4 5 6 7 8 — ON: ▲ / OFF: ▼▼▼ ▼▼▼▼

LEFT	CENTER	RIGHT	4TH	PRICING			Part Number
0.50		0.50		1/0.50			755-5401-01-Y
				1/1.00	3/2.00		755-5401-08-Y

NETHERLANDS — Euro 3
Pos. 1 2 3 4 5 6 7 8 — ON: ▲ / OFF: ▼▼ ▼▼▼▼▼

0.50	1.00	2.00		1/0.50	3/1.00		755-5401-03-Y

PORTUGAL
Pos. 1 2 3 4 5 6 7 8 — ON: ▲ ▲ / OFF: ▼▼▼ ▼▼▼

0.50		0.50		1/0.50			755-5401-01-Y

SPAIN — Euro 8
Pos. 1 2 3 4 5 6 7 8 — ON: ▲ ▲ / OFF: ▼ ▼▼ ▼▼▼

0.50	1.00	2.00		1/1.00	3/2.00		755-5401-08-Y

HIGHLIGHTED = Factory Default   HIGHLIGHTED = Not Shown on Coin Card

4.2 CABINET NODE 1

520-6967-72

ID	Type	Pin	Description	Wire Color
CN1	.100" 8-Pin Header Universal Card Link	1	12V	-
		2	Coin 1	-
		3	Meter 1	-
		4	N/C	-
		5	Notch	-
		6	Coin Enable	-
		7	Ticket Enable	-
		8	Ground	-
CN2	.100" 5-Pin Header Low Ticket	1	Ground	-
		2	Ticket Low sw.	-
		3	Key	-
		4	Ticket Low	-
		5	5V Out	-
CN3	.100" 3-Pin Header Meter 1	1	Meter 12V (+)	RED
		2	Meter (-)	BLK
		3	N/C	-
CN4	.100" 3-Pin Header Meter 2	1	Meter 12V (+)	RED
		2	Meter (-)	BLK
		3	N/C	-
CN5	.100" 9-Pin Header	1	5V Out	YEL/WHT
		2	Coin LED Out	YEL
		3	Ground	BLK
		4	Slam Tilt In	LGN/RED
		5	Coin 5	PNK/GRN*
		6	Coin 4	PNK/YEL*
		7	Coin 3	PNK/ORN*
		8	Coin 2	PNK/RED*
		9	Coin 1	PNK/BRN*
CN6	.100" 14-Pin Header Cabinet Left	1	5V LED Power	RED
		2	Start 2 LED	YEL-RED
		3	Start 1 LED	YEL-BRN
		4	Spare LED	-
		5	Ground	BLK-WHT
		6	Spare Left	-
		7	Tilt Input	WHT
		8	Door Open	-
		9	Start 2 Switch	GRY-WHT
		10	Start 1 Switch	GRY
		11	N/C	-
		12	N/C	-
		13	N/C	-
		14	N/C	-
CN7	.100" 12-Pin Header Cabinet Right	1	5V LED Power	RED
		2	Plunge 2 LED	RED-WHT
		3	Plunge 1 LED	GRN-WHT
		4	Spare LED 2	BLU-WHT
		5	Ground	BLK-WHT
		6	Spare Right In	-
		7	Plunge 2 Switch	-
		8	Plunge 1 Switch	-
		9	N/C	-
		10	N/C	-
		11	N/C	-
		12	N/C	-
CN8	.100" 10-Pin Header Dual Row Electronic Coin Mech	1	Ground	-
		2	12V	-
		3	Coin 5	-
		4	Coin 6	-
		5	N/C	-
		6	Coin Enable/Inhibit (+)	-
		7	Coin 1	-
		8	Coin 2	-
		9	Coin 3	-
		10	Coin 4	-
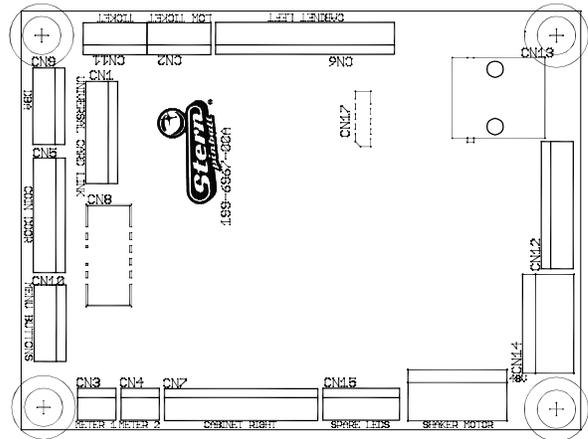
ID	Type	Pin	Description	Wire Color
CN9	.100" 6-Pin Header Dollar Bill Acceptor	1	Coin Enable/DBA Inhibit (-)	BLK
		2	Coin Enable/DBA Inhibit (+)	-
		3	Key	Key
		4	DBA 12V	ORG
		5	Coin 6 / DBA Credit	-
		6	Ground	BLK-ORG
CN10	.100" 6-Pin Header Service Switch In	1	Service Back (To Coindoor)	LGN-BLK
		2	Service Down (To Coindoor)	LGN-BLU
		3	Service Up (To Coindoor)	LGN-VIO
		4	Service Select (To Coindoor)	LGN-GRY
		5	Key	Key
		6	Service Ground (To Coindoor)	BLK
CN11	.100" 5-Pin Header Ticket Dispenser	1	12V	RED
		2	N/C	-
		3	Ticket Dispenser Enable	WHT
		4	Ground	BLK
		5	Ticket Dispenser Notch	BLU
CN12	.100" 10-Pin Header CPU Direct Switches	1	Service Back (To CPU)	LGN-BLK
		2	Service Down (To CPU)	LGN-BLU
		3	Service Up (To CPU)	LGN-VIO
		4	Service Select (To CPU)	LGN-GRY
		5	Power Present	LGN-ORG
		6	Service Ground (To CPU)	BLK-WHT
		7	N/C	-
		8	N/C	-
		9	N/C	-
		10	N/C	-
CN14	.156" 5-Pin Header Power Input	1	Ground	BLK
		2	Key	Key
		3	N/C	-
		4	N/C	-
		5	48VDC In	GRY-YEL
CN15	.100" 6-Pin Header Spare LED's	1	5V LED Power	-
		2	Key	Key
		3	Spare LED 3	-
		4	Spare LED 4	-
		5	Spare LED 5	-
		6	Spare LED 6	-
CN16	.156" 5-Pin Header Shaker Motor	1	Shaker Motor (-)	BLU
		2	Shaker Motor (-)	-
		3	Shaker Motor (+)	-
		4	Key	Key
		5	Shaker Motor (+)	RED
			*Varies by country model	

4.3 LOWER PLAYFIELD 48V DRIVER PINOUT NODE 8

520-1070-00 / 520-1057-00
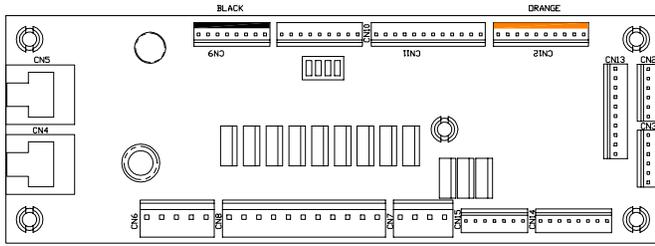
ID	Type	Pin	Description	Wire Color
SW1	Address DIP	-	Node 8 - OFF-OFF-OFF-OFF	-
CN4	RJ45	-	SPIKE Node Bus	Multi
CN5	RJ45	-	SPIKE Node Bus	Multi
CN6	.156" 5-Pin Header Node Power	1	Ground	BLK
		2	Key	Key
		3	N/C	-
		4	N/C	-
		5	48VDC In	GRY
CN7	.156" 4-Pin Header (White)	1	48V Driver Power	GRY-ORG
		2	8-DR-8 Driver Return	YEL-RED
		3	8-DR-6 Driver Return	-
		4	8-DR-7 Driver Return	-
CN8	.156 11-Pin Header (White)	1	48V Driver Power	GRY-ORG
		2	48V Driver Power	GRY-ORG
		3	48V Driver Power	GRY-ORG
		4	48V Driver Power	GRY-ORG
		5	8-DR-0 Driver Return	ORG-GRN
		6	8-DR-5 Driver Return	ORG-YEL
		7	8-DR-1 Driver Return	ORG-GRY
		8	8-DR-8 Driver Return	-
		9	8-DR-4 Driver Return	ORG-WHT
		10	8-DR-2 Driver Return	ORG-VIO
		11	8-DR-3 Driver Return	ORG-BLU
CN9	.100" 8-Pin Header (Black)	1	V+	-
		2	V+	-
		3	8-SW-24 Switch	GRY-RED
		4	8-SW-25 Switch	GRY-BRN
		5	8-SW-26 Switch	-
		6	8-SW-27 Switch	-
		7	Ground	BLK-GRN
		8	Ground	-
CN10	.100" 9-Pin Header	1	V+	-
		2	8-SW-28 Switch	GRY-WHT
		3	8-SW-29 Switch	GRY-VIO
		4	8-SW-30 Switch	GRY-BLU
		5	8-SW-31 Switch	GRY-GRN
		6	8-SW-16 Switch	GRY-YEL
		7	Ground	BLK-GRN
		8	Ground	BLK-GRN
		9	Ground	BLK-GRN

ID	Type	Pin	Description	Wire Color
CN11	.100" 12-Pin Header	1	V+	-
		2	8-SW-26 Switch	-
		3	8-SW-27 Switch	-
		4	8-SW-17 Switch	LGN-RED
		5	8-SW-18 Switch	LGN-ORG
		6	8-SW-19 Switch	LGN-YEL
		7	8-SW-20 Switch	LGN-BLU
		8	8-SW-21 Switch	-
		9	8-SW-22 Switch	LGN-GRY
		10	8-SW-23 Switch	-
		11	Ground	BLK-ORG
		12	Ground	BLK-ORG
CN12	.100" 10-Pin Header (Orange)	1	V+	-
		2	8-SW-8 Switch	WHT-BRN
		3	8-SW-9 Switch	WHT-RED
		4	8-SW-10 Switch	-
		5	8-SW-11 Switch	WHT-YEL
		6	8-SW-12 Switch	WHT-GRN
		7	8-SW-13 Switch	WHT-BLU
		8	8-SW-14 Switch	-
		9	8-SW-15 Switch	-
		10	Ground	BLK-RED
CN13	.100" 10-Pin Header	1	V+	RED
		2	8-SW-0 Switch	PNK-RED
		3	8-SW-1 Switch	PNK-ORG
		4	8-SW-2 Switch	PNK-YEL
		5	8-SW-3 Switch	PNK-GRN
		6	8-SW-4 Switch	PNK-BLU
		7	8-SW-5 Switch	PNK-VIO
		8	8-SW-6 Switch	PNK-GRY
		9	8-SW-7 Switch	-
		10	Ground	BLK-BRN
CN14	.100" 8-Pin Header	1	Ground	-
		2	8-LP-7 Driver Return	-
		3	8-LP-6 Driver Return	-
		4	8-LP-5 Driver Return	-
		5	8-LP-4 Driver Return	-
		6	8-LP-3 Driver Return	-
		7	LED V+	-
		8	LED V+	-
CN15	.100" 7-Pin Header	1	LED V+	YEL-BLK
		2	LED V+	YEL-RED
		3	LED V+	YEL-BLU
		4	-	-
		5	8-LP-0 GI Return	WHT-BLK
		6	8-LP-1 GI Return	RED-BLK
		7	8-LP-2 GI Return	BLU-BLK
CN2	.100" 6-Pin Header, Node Extension Bus	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	VIO-BRN
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED
CN3	.100" 6-Pin Header, Node Extension Bus	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	VIO-BRN
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED

4.4 MID UPPER PLAYFIELD 48V DRIVER PINOUT NODE 9

520-1070-00 / 520-1057-00
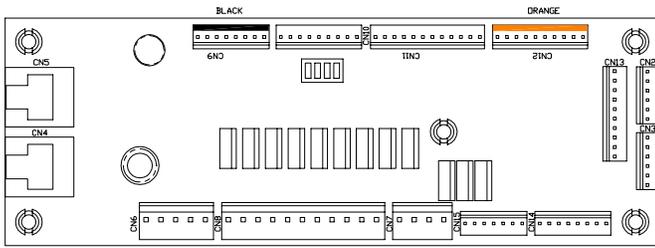
ID	Type	Pin	Description	Wire Color
SW1	Address DIP	-	Node 9 - OFF-OFF-ON-OFF	-
CN4	RJ45	-	SPIKE Node Bus	Multi
CN5	RJ45	-	SPIKE Node Bus	Multi
CN6	.156" 5-Pin Header Node Power	1	Ground	BLK
		2	Key	Key
		3	N/C	-
		4	N/C	-
		5	48VDC In	GRY
CN7	.156" 4-Pin Header (White)	1	48V Driver Power	-
		2	9-DR-8 Driver Return	-
		3	9-DR-6 Driver Return	-
		4	9-DR-7 Driver Return	-
CN8	.156 11-Pin Header (White)	1	48V Driver Power	GRY-BRN
		2	48V Driver Power	GRY-BRN
		3	48V Driver Power	GRY-BRN
		4	48V Driver Power	GRY-BRN
		5	9-DR-0 Driver Return	-
		6	9-DR-5 Driver Return	YEL-VIO
		7	9-DR-1 Driver Return	YEL-WHT
		8	9-DR-8 Driver Return	-
		9	9-DR-4 Driver Return	ORG-RED
		10	9-DR-2 Driver Return	ORG-BLK
		11	9-DR-3 Driver Return	-
CN9	.100" 8-Pin Header (Black)	1	V+	-
		2	V+	-
		3	9-SW-24 Switch	-
		4	9-SW-25 Switch	-
		5	9-SW-26 Switch	-
		6	9-SW-27 Switch	-
		7	Ground	-
		8	Ground	-
CN10	.100" 9-Pin Header	1	V+	-
		2	9-SW-28 Switch	GRY-BLK
		3	9-SW-29 Switch	GRY-BRN
		4	9-SW-30 Switch	-
		5	9-SW-31 Switch	-
		6	9-SW-16 Switch	-
		7	Ground	-
		8	Ground	BLK-BLU
		9	Ground	BLK-BLU

ID	Type	Pin	Description	Wire Color
CN11	.100" 12-Pin Header	1	V+	RED
		2	9-SW-26 Switch	TAN-BLK
		3	9-SW-27 Switch	TAN-RED
		4	9-SW-17 Switch	TAN-ORG
		5	9-SW-18 Switch	TAN-YEL
		6	9-SW-19 Switch	TAN-GRN
		7	9-SW-20 Switch	TAN-BLU
		8	9-SW-21 Switch	TAN-VIO
		9	9-SW-22 Switch	TAN-WHT
		10	9-SW-23 Switch	TAN
		11	Ground	BLK-GRY
		12	Ground	BLK-GRY
CN12	.100" 10-Pin Header (Orange)	1	V+	RED
		2	9-SW-8 Switch	WHT-BRN
		3	9-SW-9 Switch	-
		4	9-SW-10 Switch	WHT-ORG
		5	9-SW-11 Switch	WHT-YEL
		6	9-SW-12 Switch	-
		7	9-SW-13 Switch	WHT-BLU
		8	9-SW-14 Switch	WHT-VIO
		9	9-SW-15 Switch	WHT-GRY
		10	Ground	BLK-WHT
CN13	.100" 10-Pin Header	1	V+	RED
		2	9-SW-0 Switch	-
		3	9-SW-1 Switch	-
		4	9-SW-2 Switch	PNK-YEL
		5	9-SW-3 Switch	-
		6	9-SW-4 Switch	-
		7	9-SW-5 Switch	-
		8	9-SW-6 Switch	-
		9	9-SW-7 Switch	-
		10	Ground	BLK-BRN
CN14	.100" 8-Pin Header	1	Ground	-
		2	9-LP-7 Driver Return	-
		3	9-LP-6 Driver Return	-
		4	9-LP-5 Driver Return	-
		5	9-LP-4 Driver Return	-
		6	9-LP-3 Driver Return	-
		7	LED V+	-
		8	LED V+	-
CN15	.100" 7-Pin Header	1	LED V+	YEL
		2	LED V+	-
		3	LED V+	-
		4	-	-
		5	9-LP-0 GI Return	RED-BLK
		6	9-LP-1 GI Return	GRN-BLK
		7	9-LP-2 GI Return	BLU-BLK
CN2	.100" 6-Pin Header, Node Extension Bus	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	VIO-BRN
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED
CN3	.100" 6-Pin Header, Node Extension Bus	1	Ground	-
		2	DIN	-
		3	DOUT	-
		4	SCK	-
		5	RCK	-
		6	V+	-

4.5   CENTER BOTTOM LED BOARD 8B

520-8608-00
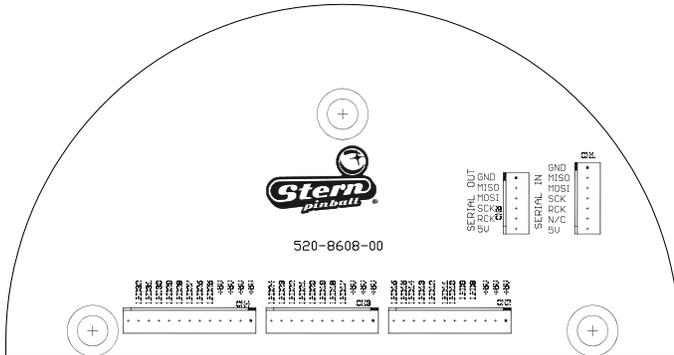
ID	Type	Pin	Description	Wire Color
CN1	.100" 7-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	NC	-
		7	+5 VDC IN	RED
CN2	.100" 12-Pin Header	1	+5 VDC	RED
		2	+5 VDC	RED
		3	+5 VDC	-
		4	LED 8	BRN-YEL
		5	LED 9	BRN-VIO
		6	LED 10	BRN-BLU
		7	LED 11	BRN-GRN
		8	LED 12	ORG-BRN
		9	LED 13	ORG-RED
		10	LED 14	-
		11	LED 15	-
		12	LED 16	-
CN3	.100" 11-Pin Header	1	+5 VDC	RED
		2	+5 VDC	RED
		3	+5 VDC	RED
		4	LED 17	BLU-BRN
		5	LED 18	BLU-RED
		6	LED 19	BLU-ORG
		7	LED 20	BLU-YEL
		8	LED 21	BLU
		9	LED 22	BLU-GRN
		10	LED 23	BLU-VIO
		11	LED 24	BLU-GRY

ID	Type	Pin	Description	Wire Color
CN4	.100" 13-Pin Header	1	+5 VDC	RED
		2	+5 VDC	RED
		3	+5 VDC	RED
		4	+5 VDC	RED
		5	LED 25	BRN-RED
		6	LED 26	BRN-WHT
		7	LED 27	BRN-ORG
		8	LED 28	BRN-BLK
		9	LED 29	ORG-YEL
		10	LED 30	ORG-GRN
		11	LED 31	-
		12	LED 32	ORG-VIO
		13	GND	-
CN5	.100" 6-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	V+	RED

4.6   3-FLASH CENTER BOTTOM LED BOARD 8B1
520-8602-00
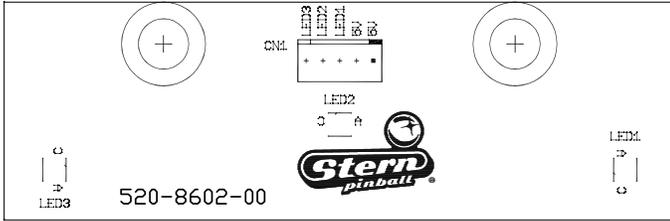
ID	Type	Pin	Description	Wire Color
CN1	.100" 5-Pin Header	1	5V	RED
		2	5V	-
		3	LP-1 Light Return	BLU GRN
		4	LP-2 Light Return	BLU VIO
		5	LP-3 Light Return	BLU GRY

4.7   3-WHITE CENTER BOTTOM LED BOARD 8B2
520-8603-00
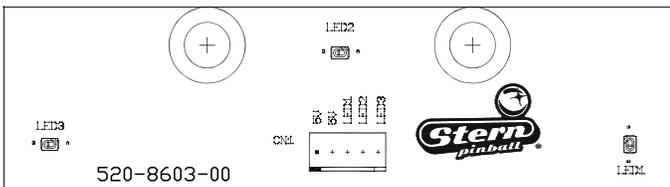
ID	Type	Pin	Description	Wire Color
CN1	.100" 5-Pin Header	1	5V	RED
		2	5V	-
		3	LP-1 Light Return	BLU RED
		4	LP-2 Light Return	BLU ORG
		5	LP-3 Light Return	BLU YEL

4.8   8-WHITE 1-RED RIGHT BOTTOM LED BOARD 8C
520-8607-00
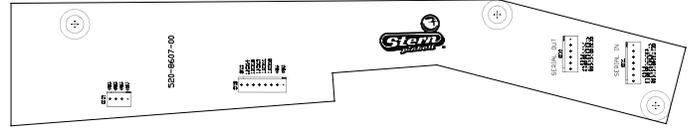
ID	Type	Pin	Description	Wire Color
CN1	.100" 7-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	NC	-
		7	+5 VDC IN	RED
CN2	.100" 4-Pin Header	1	+5 VDC	-
		2	+5 VDC	-
		3	+5 VDC	-
		4	+5 VDC	-
CN3	.100" 8-Pin Header	1	+5 VDC	RED
		2	+5 VDC	RED
		3	LED 10	BLU-ORG
		4	LED 11	BLU-VIO
		5	LED 12	BLU-WHT
		6	LED 13	ORG
		7	LED 14	ORG-BLK
		8	GND	-
CN4	.100" 6-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	V+	RED

4.9 6-WHITE 1-RED LEFT BOTTOM LED BOARD 8D

520-8605-00

4.10 10-WHITE 1-RED RIGHT TOP LED BOARD 9A

520-8604-00
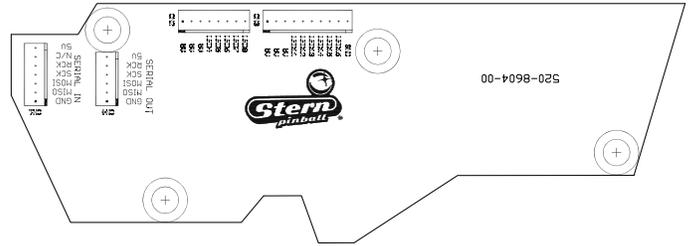
ID	Type	Pin	Description	Wire Color
CN1	.100" 7-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	NC	-
		7	+5 VDC IN	RED
CN2	.100" 8-Pin Header	1	+5 VDC	RED
		2	+5 VDC	-
		3	+5 VDC	-
		4	LED 4	GRN-BRN
		5	LED 5	GRN-RED
		6	LED 6	GRN-ORG
		7	LED 7	GRN-YEL
		8	LED 8	GRN-BLU
CN3	.100" 10-Pin Header	1	+5 VDC	RED
		2	+5 VDC	RED
		3	+5 VDC	-
		4	LED 11	GRN-VIO
		5	LED 12	GRN-GRY
		6	LED 13	GRN-WHT
		7	LED 14	GRN
		8	LED 15	ORG-WHT
		9	LED 16	-
		10	GND	-
CN4	.100" 6-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	V+	RED

ID	Type	Pin	Description	Wire Color
CN1	.100" 4-Pin Header	1	+5 VDC	RED
		2	+5 VDC	-
		3	LED 7	RED-VIO
		4	LED 8	RED-GRY
CN2	.100" 7-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	NC	-
		7	+5 VDC IN	RED
CN3	.100" 8-Pin Header	1	+5 VDC	RED
		2	+5 VDC	RED
		3	LED 10	ORG-BRN
		4	LED 11	ORG-RED
		5	LED 12	RED-ORG
		6	LED 13	RED-BLU
		7	LED 14	ORG-GRN
		8	GND	-
CN4	.100" 6-Pin Header	1	Ground	-
		2	MISO Output Data	-
		3	MOSI Input Data	-
		4	SCK Serial Clock	-
		5	RCK Register Clock	-
		6	V+	-

4.11 4-WHITE CENTER LED BOARD 9A1
520-8601-00
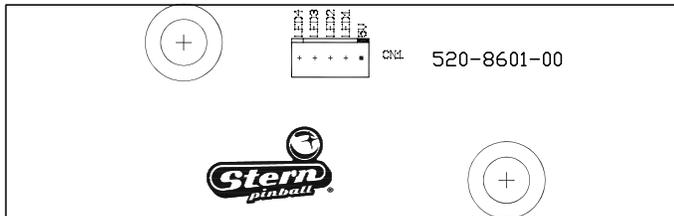
ID	Type	Pin	Description	Wire Color
CN1	.100" 5-Pin Header	1	5V	RED
		2	LP-1 Light Return	GRN VIO
		3	LP-2 Light Return	GRN GRY
		4	LP-3 Light Return	GRN WHT
		5	LP-4 Light Return	GRN

4.12 5-WHITE LEFT TOP LED BOARD 9A2
520-8600-00

ID	Type	Pin	Description	Wire Color
CN1	.100" 6-Pin Header	1	5V	RED
		2	LP-1 Light Return	GRN BLU
		3	LP-2 Light Return	GRN YEL
		4	LP-3 Light Return	GRN ORG
		5	LP-4 Light Return	GRN RED
		6	LP-5 Light Return	GRN BRN

4.13 17-WHITE 4-RED LEFT CENTER LED BOARD 9B
520-8606-00
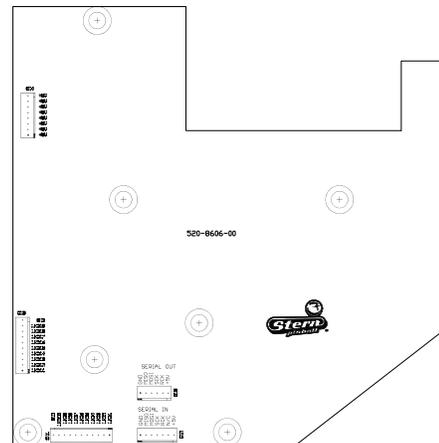
ID	Type	Pin	Description	Wire Color
CN1	.100" 11-Pin Header	1	LED 1	RED-BRN
		2	LED 2	GRN-BRN
		3	LED 3	BLU-BRN
		4	LED 4	YEL-BRN
		5	LED 5	YEL-RED
		6	LED 6	YEL-ORG
		7	LED 7	YEL-GRN
		8	LED 8	YEL-BLU
		9	LED 9	YEL-VIO
		10	LED 10	YEL-GRY
		11	GND	-
CN2	.100" 7-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	NC	-
		7	+5 VDC IN	RED
CN3	.100" 10-Pin Header	1	LED 11	ORG-GRN
		2	LED 12	ORG-BLU
		3	LED 13	ORG-VIO
		4	LED 14	-
		5	LED 15	-
		6	LED 16	-
		7	LED 17	-
		8	LED 18	-
		9	LED 19	-
		10	GND	-
CN4	.100" 8-Pin Header	1	+5 VDC	RED
		2	+5 VDC	RED
		3	+5 VDC	RED
		4	+5 VDC	RED
		5	+5 VDC	RED
		6	+5 VDC	RED
		7	+5 VDC	-
		8	+5 VDC	-
CN5	.100" 6-Pin Header	1	Ground	-
		2	MISO Output Data	-
		3	MOSI Input Data	-
		4	SCK Serial Clock	-
		5	RCK Register Clock	-
		6	V+	-

4.14 TROUGH SERIAL OPTO RECEIVER 8A
520-8516-00
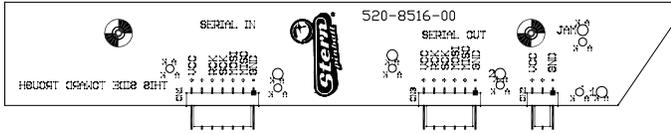
ID	Type	Pin	Description	Wire Color
CN1	.100" 7-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	VIO-BRN
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	N/C	-
		7	+5 VDC IN	RED
CN2	.100" 3-Pin Header	1	Ground	BLK
		2	N/C	-
		3	+5 VDC IN	RED
CN3	.100" 6-Pin Header	1	Ground	-
		2	MISO Output Data	-
		3	MOSI Input Data	-
		4	SCK Serial Clock	-
		5	RCK Register Clock	-
		6	V+	-

4.15 TROUGH SERIAL OPTO TRANSMITTER
520-5344-00
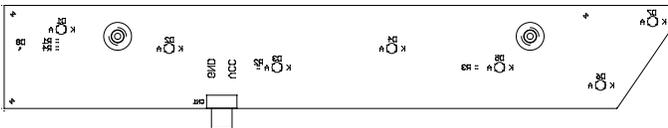
ID	Type	Pin	Description	Wire Color
CN1	.100" 3-Pin Header	1	Ground	BLK
		2	N/C	-
		3	+5 VDC IN	RED

4.16 MAIN POWER SUPPLY
011-5003-00

ID	Type	Pin	Description	Wire Color
CN1	Screw Terminal	1	AC Line Hot In	BLK
		2	AC Line Neutral In	WHT
		3	Earth Ground In	GRN
		4	DC Ground	BLK
		5	DC Ground	BLK
		6	DC Ground	BLK
		7	+48 V System Power	GRY
		8	+48 V System Power	GRY
		9	+48 V System Power	GRY

4.17 POWER DISTRIBUTION BOARD
520-8096-00
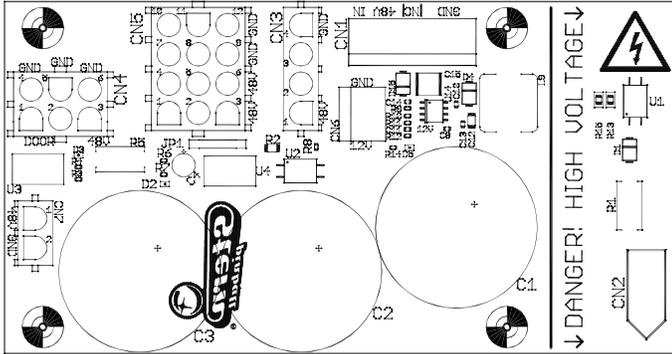
ID	Type	Pin	Description	Wire Color
CN1	.156 in 7-Pin Housing Plug: 045-5259-07 Pin: 055-5331-00 Key: 060-5013-00	1	+48 VDC IN	GRY
		2	+48 VDC IN	GRY
		3	+48 VDC IN	GRY
		4	Key (n/c)	-
		5	Ground	BLK
		6	Ground	BLK
		7	Ground	BLK
CN2	.093 in 3-Pos Plug Plug: 045-5003-03 Pin: 055-5013-09	1	Line In (100-240 VAC)	BLK
		2	Neutral	WHT
		3	Earth Ground	GRN
CN3	0.084 in 4-Pos Plug Plug: 045-5200-04 Pin: 055-5033-08	1	+48 VDC to CPU Node	GRY
		2	Door Interlock Switch Status	GRY/RED
		3	Line Voltage Status	VIO
		4	Ground	BLK
CN4	0.084 in 6-Pos Plug Plug: 045-5200-06 Pin: 055-5033-08	1	Door Interlock Switch +48V	GRY
		2	Door Interlock Switch +48V	-
		3	Switched 48V Out (to Node 1)	GRY/YEL
		4	Door Interlock Return Ground	GRY/RED
		5	Door Interlock Return Ground	-
		6	Ground (to Node 1)	BLK
CN5	0.084 in 12-Pos Plug Plug: 045-5200-12 Pin: 055-5033-08	1	Switched 48V Node Power	GRY
		2	Switched 48V Node Power	GRY
		3	Switched 48V Node Power	GRY
		4	Switched 48V Node Power	GRY
		5	Switched 48V Node Power	GRY
		6	Switched 48V Node Power	GRY
		7	Node Ground	BLK
		8	Node Ground	BLK
		9	Node Ground	BLK
		10	Node Ground	BLK
		11	Node Ground	BLK
		12	Node Ground	BLK
CN6	.156 in 3-Pos Plug: 045-5259-03 Pin:055-5331-00 (18awg)	1	Ground	-
		2	Ground	-
		3	+12VDC	-
CN7	.084 2-Pos Plug: 045-5200-02 Pin:055-5033-08	1	+48 VDC to Topper Node	GRY
		2	Ground	BLK

4.18 POWER PLUG WIRING

NORTH AMERICA
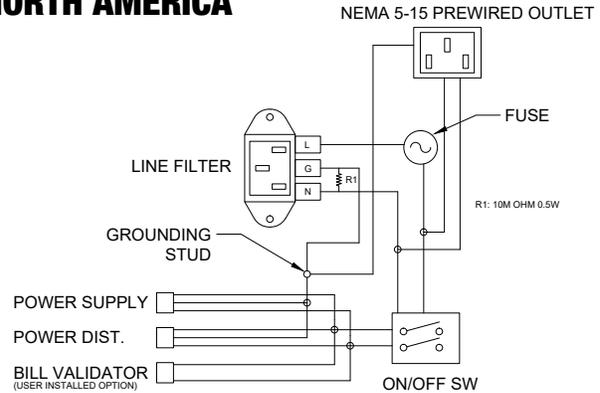
INTERNATIONAL
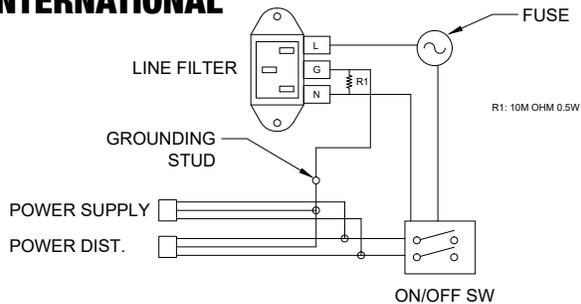
LINE CORDS

Part Number	Description
034-6012-00	Line Cord, 3m, 5-15P USA
034-6012-01	Line Cord, 3m, CEE77P EUROPE
034-6012-02	Line Cord, 3m, BS1363P United Kingdom
034-6012-03	Line Cord, 3m, AS-NZS4417P Australia
034-6012-04	Line Cord, 3m, CEI23-16P Italy
034-6012-05	Line Cord, 3m, SEV1011P Switzerland
034-6012-06	Line Cord, 3m, JIS8303P Japan
034-6012-07	Line Cord, 3m, SI32P Israel
034-6012-08	Line Cord, 3m, BS546P S Africa, India
034-6012-09	Line Cord, 3m, IS6538P S. India

LINE FUSES

Line Voltage (Region)	Fuse Current	Type	Part Number
120V (North America)	8 A	Slow Blow 30G	200-5000-05
220/240v (Europe, Australia, UK)	5 A	Slow Blow 5 x 20mm	200-5003-00

5. PARTS REFERENCE
5.1 PLAYFIELD RUBBER PARTS
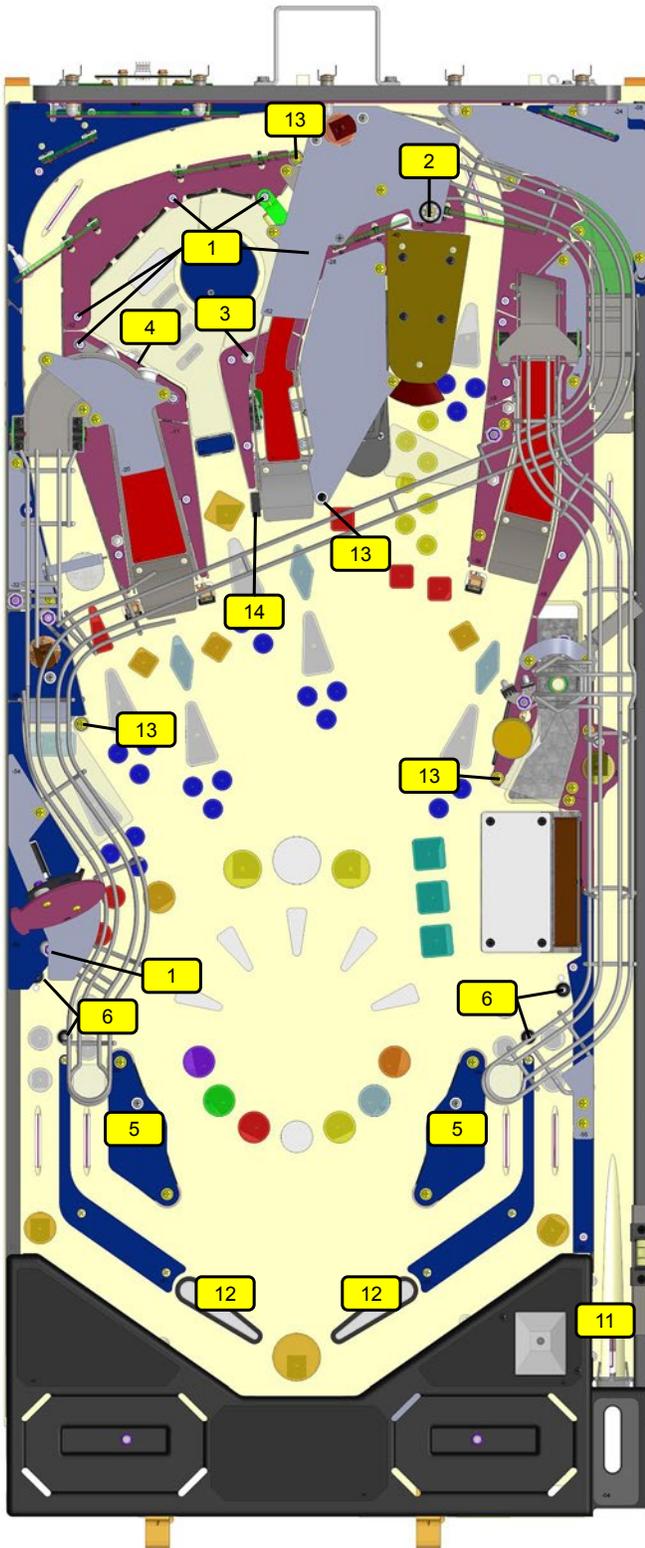
Figure 5.1.1. Rubber o-ring part locations

RUBBER O-RINGS

ID	Qty	Size (ID)	Size (OD)	Durometer	Color	Part Number
1	8	3/16"		50	Black	545-5348-01
2	1	5/16"		50	Black	545-5348-02
3	1	1-1/4"		50	Black	545-5348-05
4	1	2"		50	Black	545-5348-08
5	2	2-1/2"		50	Black	545-5348-09
6	4		7/16"	50	Black	545-5348-17

Figure 5.1.2. Rubber o-ring part numbers and usage. ID: Inner Diameter, OD: Outer Diameter, Durometer: Higher number is firmer, less bounce, and more durable.

ID	Qty	Description	Color	Part Number
11	1	Plunger Tip	Black	545-5276-00
12	2	Flipper Rubber	Black	545-5277-00
13	4	Post Sleeve	Black	545-5308-00
14	1	Bumper Pad	Black	626-5057-01
15	5	Bumper Pad (Sub assemblies)	Black	545-5105-00
16	2	Bumper Pad (Flippers)	Black	545-5428-00
17	8	Viton Rubber Rings (Sub Assemblies)	Brown	545-9991-01

Figure 5.1.3. Other rubber part numbers and usage

5.2 RUBBER SIZE CHART
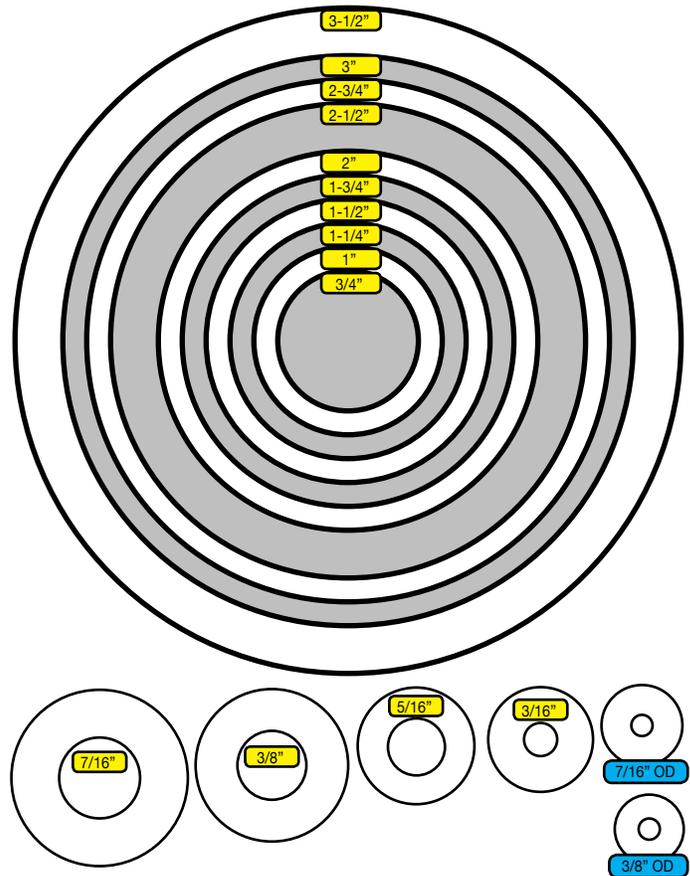
Figure 5.2.1. Rubber ring inner diameter sizing tool. Hold ring up to chart and read largest size on inside of ring. Dimensions are Inner Diameter (ID) unless otherwise noted as Outer Diameter (OD).

5.3 PLAYFIELD ASSEMBLIES, TOP

Figure 5.3.1. Major playfield assemblies, Top locations.
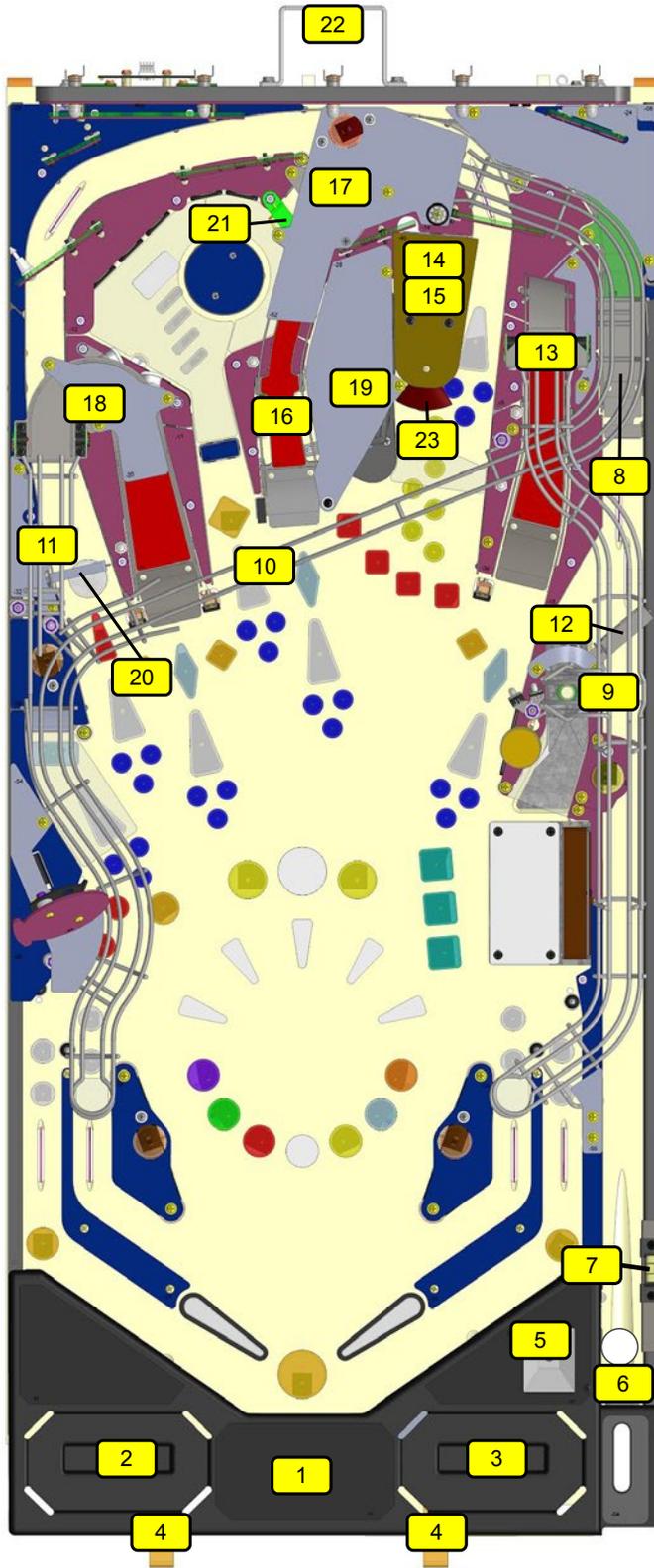
ID	Part Number	Description	Qty
1	500-2512-W5	Bottom Arch Assembly	1
2	755-51W6-XX	Instructions Card	1
3	755-7669-00	SPI Card	1
4	535-8385-00	Welded Hanger Bracket	1
5	509-2020-00	QR Reader	1
6	260-5000-00	Pinballs	7
7	500-6815-00	Bubble Level Assembly	1
8	511-9995-01	Shooter Ramp & Cover Assembly	1
9	515-2856-00	Wire Ramp, Right	1
10	515-2855-00	Wire Ramp, Crossover	1
11	515-2854-00	Wire Ramp, Left	1
12	511-3210-00	Shooter One-Way Gate Assembly	1
13	500-2665-00	Right Ramp Assembly	1
14	511-5386-01	Hotel Roof Assembly	1
	237-5500-01P	Screw, 6-32 X 1/4" PPH MS Black	4
15	511-3221-01	Hotel Front & Side Assembly	1
16	500-2666-01	Center Ramp Assembly	1
	237-6378-00P	Screw, 6-32 X 3/8" PPH w/ Double SEMS, Patch	2
17	511-8564-52	Center Ramp Cover Assembly	1
	237-6378-00P	Screw, 6-32 X 3/8" PPH w/ Double SEMS, Patch	2
18	500-2664-00	Left Ramp Assembly	1
19	500-2639-01	Car Mech Assembly	1
20	511-3044-00-W6	Reflective Opto Assembly W/ Decals	1
21	511-2989-01	One-Way Gate Assembly	1
22	535-2288-00	Backpanel Handle	1
23	515-1935-00	Newton Ball	1

5.4 PLAYFIELD ASSEMBLIES, BOTTOM

ID	Part Number	Description	Qty
1	520-1070-00 520-1057-00	Core Node Driver Board	2
2	520-8608-00	LED Board - 8b	1
3	520-8602-00	LED Board - 8b1	1
4	520-8603-00	LED Board - 8b2	1
5	520-8607-00	LED Board - 8c	1
6	520-8605-00	LED Board - 8d	1
7	520-8604-00	LED Board - 9a	1
8	520-8601-00	LED Board - 9a1	1
9	520-8600-00	LED Board - 9a2	1
10	520-8606-00	LED Board - 9b	1
11	500-2683-00	Dual Entrance VUK Assembly	1
	535-5190-00	VUK Deflector Bracket	1
12	500-2682-01	Crate Assembly	1
13	500-1050-00	Eject VUK	1
14	511-3208-01	Dual Opto Thru-PF Assembly	1
15	511-7621-00	Support Rail Assembly	2
16	500-5329-03	Pivot Bracket Assembly	2
17	535-5988-01	Edge Slide Bracket	2

Figure 5.4.1. Major playfield assemblies, Bottom locations.

5.5 BACKBOX PARTS
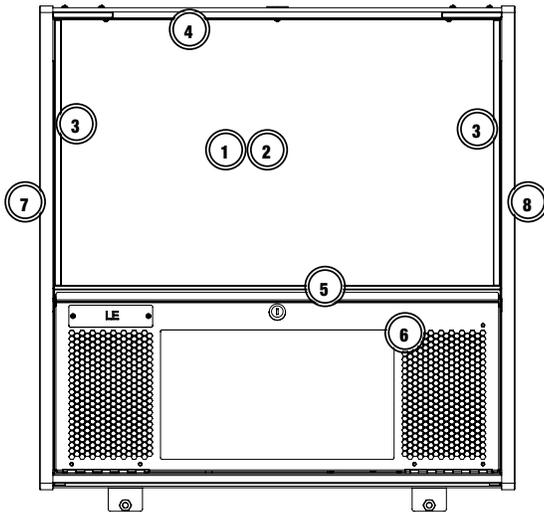
Figure 5.5.1. Backbox external assemblies and components
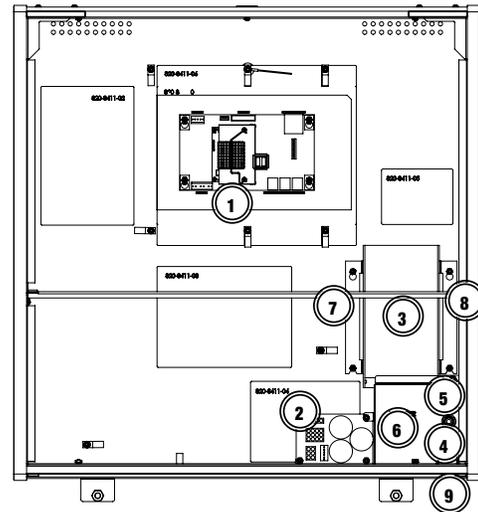
Figure 5.5.2. Backbox internal assemblies and components

EXTERNAL

ID	Part Number	Description	Qty
1	660-5052-00	Backglass	1
2	830-8427-W5	Translite Art	1
3	545-5018-17	Plastic Extrusion 15-.450"	2
4	545-5018-15	Glass Channel 26"	1
5	545-6313-01	Glass Lift Channel 26"	1
6	500-9996-00	LCD Speaker Panel Assembly	1
7	820-76W5-01	Left Backbox Decal	1
8	820-76W5-02	Right Backbox Decal	1
	515-9866-00	Backbox Bottom Bracket	1

INTERNAL

ID	Part Number	Description	Qty
1	509-1003-01	CPU Node Board	1
2	520-8096-00	Power Distribution Board	1
3	011-5003-00	Power Supply 48V/500W	1
4	515-9769-00	Utility Outlet (USA)	1
5	205-5001-00	Fuse Holder - Screw In	1
	200-5000-05	8A SB Fuse	1
6	535-1130-00	Cover AC	1
7	535-1129-00	Power Supply Bracket	1
8	535-1129-01	Power Supply Bracket	1
9	180-5001-03	Power Switch	1

5.6 SPEAKER PANEL PARTS

500-9996-00

ID	Part Number	Description	Qty
1	031-5004-02	Speaker	2
2	116-0023-00	1366 x 768 Display LCD Panel	1
	037-1116-00	LCD LVDS Cable	1
	037-1115-00	LCD Back Light Cable [Innolux]	1
	037-1119-00	LCD Back Light Cable [Sharp]	1
3	237-6188-01	Screw, M3x0.5 X 6MM PPH Sems Zinc	4
4	237-6307-06	6-32 X 3/8" Torx Stainless Steel Screw	2
5	240-5005-00	6-32 Nylon Stop Nut	12
6	242-5001-00	#6 Washer	16
7	355-5168-00-00	Nut: Lock w/ Cam	1
8	515-9842-00	Speaker Panel - LCD	1
9	515-9843-00	Speaker Plate	2
10	515-9845-00	Hinge, Speaker Panel, LCD	2
11	545-9877-00	LCD Window	1
12	545-9877-01	Spacer, Small - LCD Speaker Panel	4
13	626-5109-00	Speaker Foam - LCD Panel	2
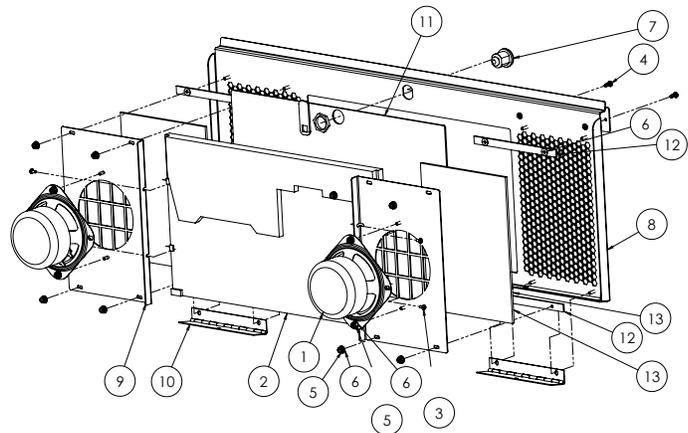
5.7   CABINET PARTS
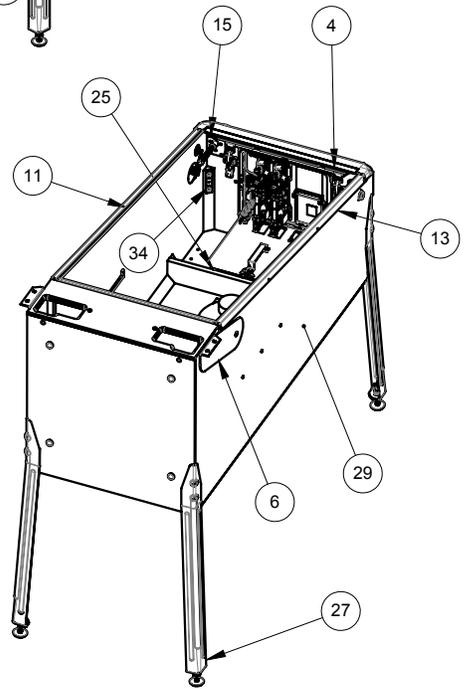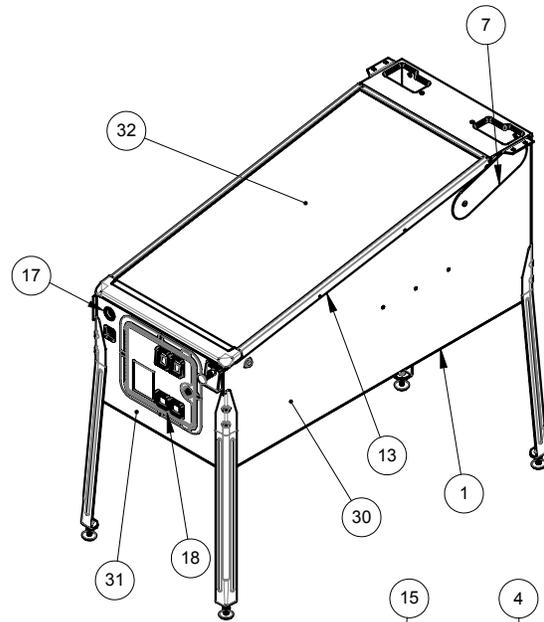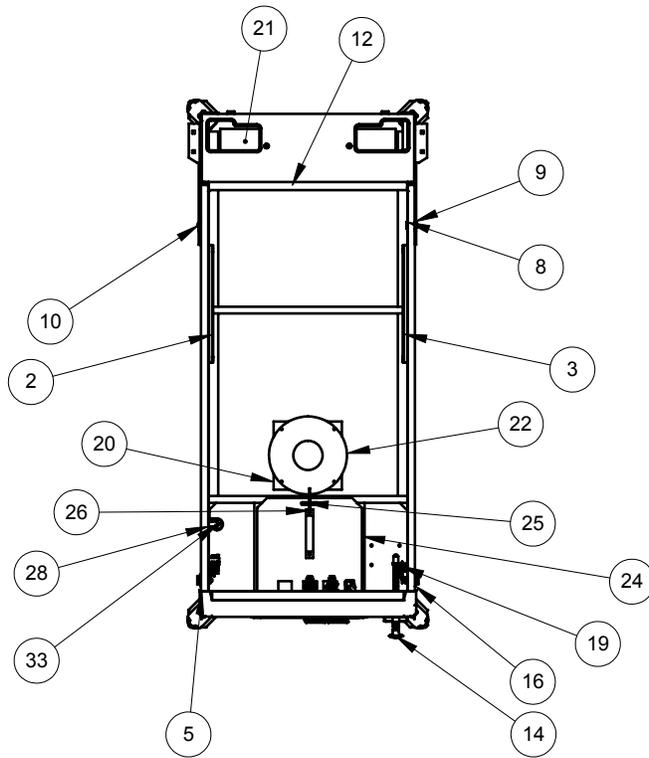
ID	Part Number	Description	Qty
1	525-6026-01	Cabinet Assembly, Single Button	1
2	535-5989-00	Slide & Pivot Bracket - Left Side	1
3	535-5990-00	Slide & Pivot Bracket - Right Side	1
4	535-2051-00	Cabinet Playfield Support Bracket	1
5	500-2440-00	Front Molding Assembly - Wrinkle Black	1
6	535-7999-00	Pivot Hinge, Left - Wrinkle Black	1
7	535-7999-01	Pivot Hinge, Right - Wrinkle Black	1
8	254-5042-00	Spacer Nut, Hex, 1/2"OD, 1/4-20	2
9	242-5084-00	Washer, 1/2" I.D., 3/16" THK	2
10	231-5072-00	1/4-20 X 1/2" Carriage Bolt	2
11	545-5017-00	Plastic Channel	2
12	545-5038-00	Glass Rear Extrusion	1
13	535-7297-02	Side Armor - Wrinkle Black	2
14	500-2604-04	Ball Shooter Assembly - Green Spring	1
15	535-5027-01	Plunger Support Plate, Notched	1
16	500-1169-38	Flipper Button Assembly (White)	2
17	500-1060-44-LED	Start Button	1
18	501-5018-173	Coin Door 2-Chute No Emboss	1
19	180-5160-01	Flipper Switch, Single	2
20	545-5072-03	Grill - Speaker / Vent	1
21	545-5072-02	Grill - Speaker / Vent	1
22	031-5007-01	Speaker, Cabinet 8" Round, 4 ohm	1
23	545-5090-00	Cash Box - Plastic	1
24	535-5013-03	Cash Box Cover	1

ID	Part Number	Description	Qty
25	535-7562-00	Cash Box Lock Bracket Wire	1
26	535-7772-00	Hair Pin Clip	1
27	500-5921-50	Leg Assembly - Wrinkle Black	4
28	516-0007-00	Tilt Assembly	1
	535-5029-00	Tilt Plumb Bob	1
29	820-76W5-03	Decal, Cabinet Left, John Wick Pro	1
30	820-76W5-04	Decal, Cabinet Right, John Wick Pro	1
31	820-76W5-05	Decal, Cabinet Front, John Wick Pro	1
32	660-5001-00	Playfield Glass	1
33	520-6967-72	Cabinet Node Board	1
34	535-2049-00	Corner Brackets For Cabinet Legs	4
	234-5102-00	Screw, 8 X 5/8" SLT HWH AB Zinc	24
	820-76W5-XX	Cabinet Decal Replacement Set, Speaker Panel Decal Not Included	

5.8 BALL SHOOTER ASSEMBLY
500-2604-04
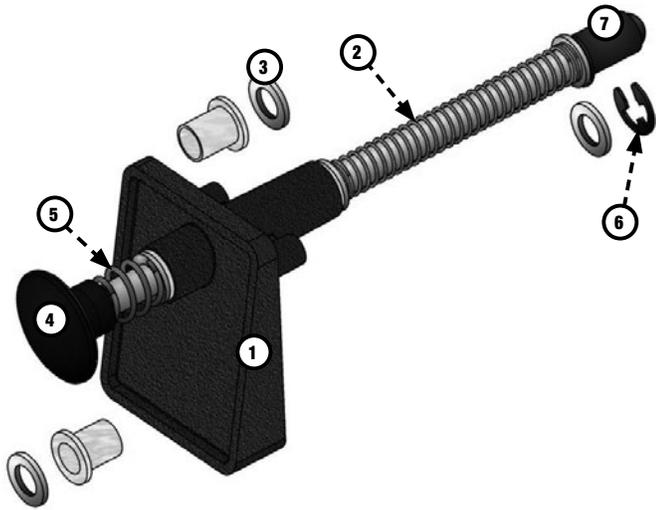
ID	Part Number	Description	Qty
1	535-5067-02	HOUSING ASSEMBLY	1
2	266-5001-04	COMPRESSED SPRING (LONG) - GREEN	1
3	242-5014-00	WASHER 3/8 ID X 5/8 OD X 1/16"	3
4	515-6557-00	ROD ASSEMBLY	1
5	266-5010-00	COMPRESSED SPRING (SHORT)	1
6	270-5012-00	RETAINING RING, 3/8"	1
7	545-5276-00	RUBBER TIP	1

5.9 AUTO LAUNCH ASSEMBLY
500-9818-02
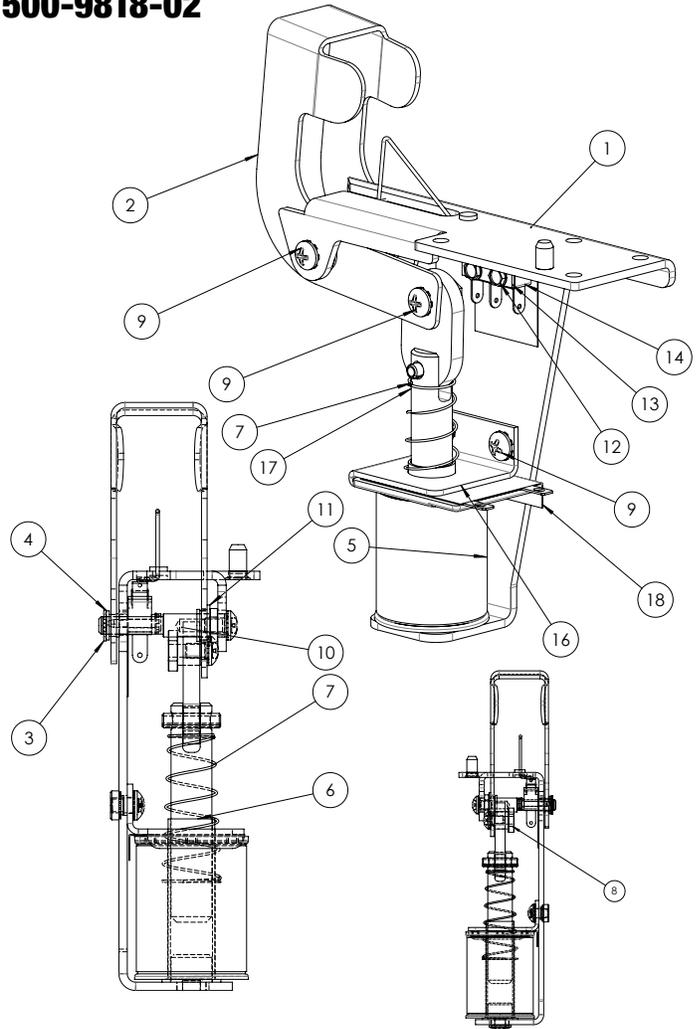
ID	Part Number	Description	Qty
1	515-9689-01	MAIN BRKT: AUTO-PLUNGER	1
2	535-0728-00	KICKER ARM, AUTO-PLUNGER	1
3	270-5001-00	RETAINING E-RING, 3/16" SHAFT OD	1
4	545-5352-00	NYLINER, 3/16" SHAFT	1
5	090-5001-ND	COIL - 23-800, NO DIODE	1
6	545-5411-00	COIL SLEEVE	1
7	266-5020-00	COMPRESSION SPRING-CONICAL	1
8	530-7834-00	PIN: KICKER ARM, AUTO-PLUNGER	1
9	232-5300-00	SCREW, 8-32 X 1/4" PPH SEMS	4
10	530-7835-00	PIVOT, AUTO-PLUNGER	1
11	545-5423-00	NYLINER, 1/4" SHAFT, 4L1-FF	1
12	237-5937-02	SCREW, 2-56 X 1/2" HWH MS	2
13	535-6539-00	SWITCH BODY PROTECT PLATE	1
14	180-5157-01	SHOOTER SWITCH - SHORT ARM	1
15	545-6268-00	FISCHE PAPER	1
16	535-0762-00	COIL BRACKET-AUTOPLUNGER	1
17	515-6304-03	PLUNGER / LINK ASSEMBLY	1
18	545-0762-00	FISCHE PAPER: AUTO-LAUNCHER	1

5.10 BALL TROUGH ASSEMBLY
500-9820-01

5.11 SLINGSHOT ASSEMBLY
500-9920-01
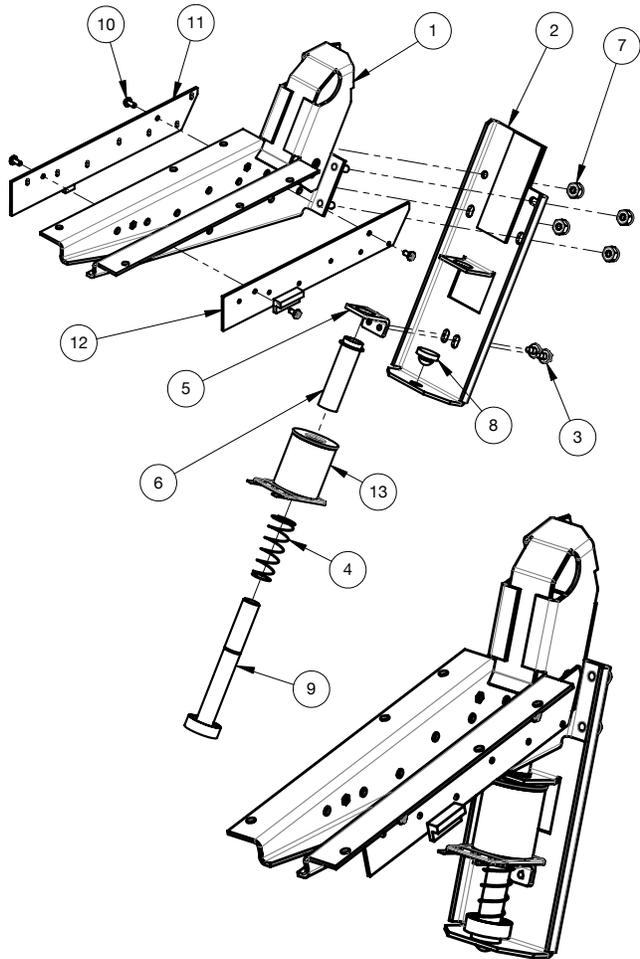
ID	Part Number	Description	Qty
1	515-7811-00	MAIN BRKT. BALL TROUGH	1
2	515-7812-00	COIL BRACKET, BALL TROUGH	1
3	237-5975-04	SCREW, 8-32 X 1/4" HWH SWAGE SERR	2
4	266-5020-00	COMPRESSION SPRING-CONICAL	1
5	535-5203-03	COIL RETAINING BRACKET	1
6	545-5076-01	COIL SLEEVE	1
7	240-5102-00	8-32 NYLON LOCK NUT	4
8	545-5105-00	RUBBER BUMPER	1
9	515-7309-01	PLUNGER ASSEMBLY	1
10	237-5909-00	SCREW, 4-40 X 1/4" PPH SEMS	4
11	520-5344-00	TROUGH BOARD #1 - ILED TRANSMITTER	1
12	520-8516-00	TROUGH BOARD #2 - RECEIVER	1
13	090-5004-ND	COIL 27-1500 - NO DIODE	1
98*	605-5006-00	SHRINK TUBING 1/8"	.42 FT.
99*	036-5611-11-F5	CABLE TROUGH OPTOS	1

ID	Part Number	Description	Qty
1	515-5339-01	SLINGSHOT BRACKET ASSEMBLY	1
2	090-5044-ND	COIL 26-1200 - NO DIODE	1
3	545-5031-00	COIL SLEEVE	1
4	535-5203-03	COIL RETAINER BRACKET	1
5	232-5301-00	8-32 X 3/8 PPH MS EXT SEMS ZC	2
6	180-5231-00	SWITCH SLING SHOT 2 LUG CENTER	2
7	535-5045-00	SWITCH PLATE	2
8	237-5976-04	6-32 X 5/8 SLOT SER HWH SW	4
9	515-5340-01	ARM & TIP ASSEMBLY	1
10	270-5002-00	RETAINING RING - 1/4 DIA	2
11	515-5338-00	PLUNGER & LINK ASSEMBLY	1
12	266-5020-00	COMP SPRING CONICAL	1
13	036-5604-00	4" GENERIC JUMPER	2

5.12 FLIPPER ASSEMBLY, LEFT
500-6543-12-ND
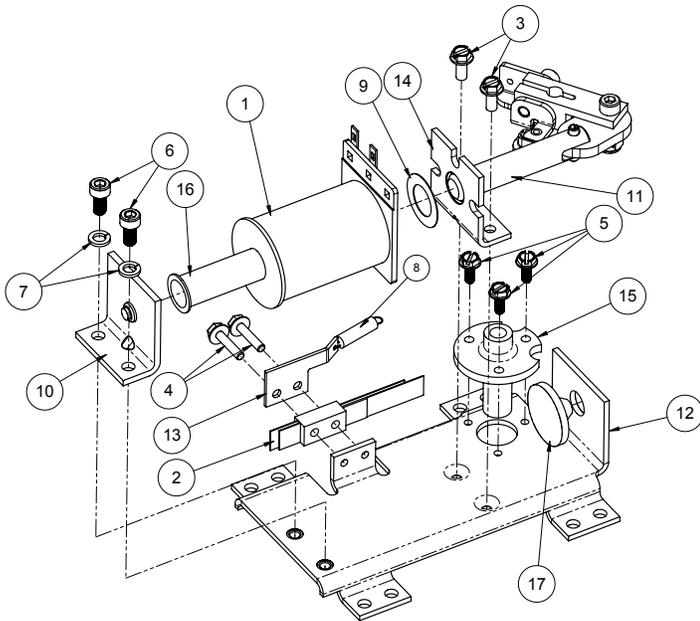
5.13 FLIPPER ASSEMBLY, RIGHT
500-6543-02-ND

ID	Part Number	Description	Qty
1	090-5032-ND	FLIPPER COIL	1
2	180-5149-00	SWITCH, END-OF-STROKE	1
3	237-5975-00	SCREW, 8-32 X 3/8" HWH SWAGE ZN	2
4	237-5976-04	SCREW, 6-32 X 5/8" HWH SWAGE	2
5	237-6388-00	SCREW, 6-32 X 3/8", SLOTTED HWH, TYPE F	3
6	237-6389-00	SCREW, 10-32 X 3/8", SHC	2
7	244-5003-00	#10 LOCK WASHER, SPLIT	2
8	265-5035-00	EXTENSION SPRING	1
9	269-5002-00	SPRING WASHER	1
10	515-6308-01	COIL STOP ASSEMBLY	1
11	515-7203-01	PLUNGER / CRANK ASSEMBLY	1
12	535-7275-01	FLIPPER BASE PLATE, LEFT	1
13	535-7354-01	SWITCH PLATE / SPRING RTN BRKT	1
14	535-7356-00	COIL BRACKET	1
15	545-5070-00	FLIPPER BUSHING	1
16	545-5388-00	COIL SLEEVE	1
17	545-5428-00	RUBBER BUMPER	1

ID	Part Number	Description	Qty
1	090-5032-ND	FLIPPER COIL	1
2	180-5149-00	SWITCH, END-OF-STROKE	1
3	237-5975-00	SCREW, 8-32 X 3/8" HWH SWAGE ZN	2
4	237-5976-04	SCREW, 6-32 X 5/8" HWH SWAGE	2
5	237-6388-00	SCREW, 6-32 X 3/8", SLOTTED HWH, TYPE F	3
6	237-6389-00	SCREW, 10-32 X 3/8", SHC	2
7	244-5003-00	#10 LOCK WASHER, SPLIT	2
8	265-5035-00	EXTENSION SPRING	1
9	269-5002-00	SPRING WASHER	1
10	515-6308-01	COIL STOP ASSEMBLY	1
11	515-7203-00	PLUNGER / CRANK ASSEMBLY	1
12	535-7275-00	FLIPPER BASE PLATE, RIGHT	1
13	535-7354-00	SWITCH PLATE / SPRING RTN BRKT	1
14	535-7356-00	COIL BRACKET	1
15	545-5070-00	FLIPPER BUSHING	1
16	545-5388-00	COIL SLEEVE	1
17	545-5428-00	RUBBER BUMPER	1

5.14 POP BUMPER ASSEMBLY

516-6784-XX

ID	Part Number	Description	Qty
1	520-5307-03	POP BUMPER LED MODULE	1
2	545-5197-00	BUMPER BODY	1
3	515-5085-00	RING AND ROD ASSY	1
4	545-5607-00	BUMPER SKIRT	1
5	266-5048-00	BUMPER SKIRT COMP SPRING	1
6	545-5195-00	BUMPER BASE	1
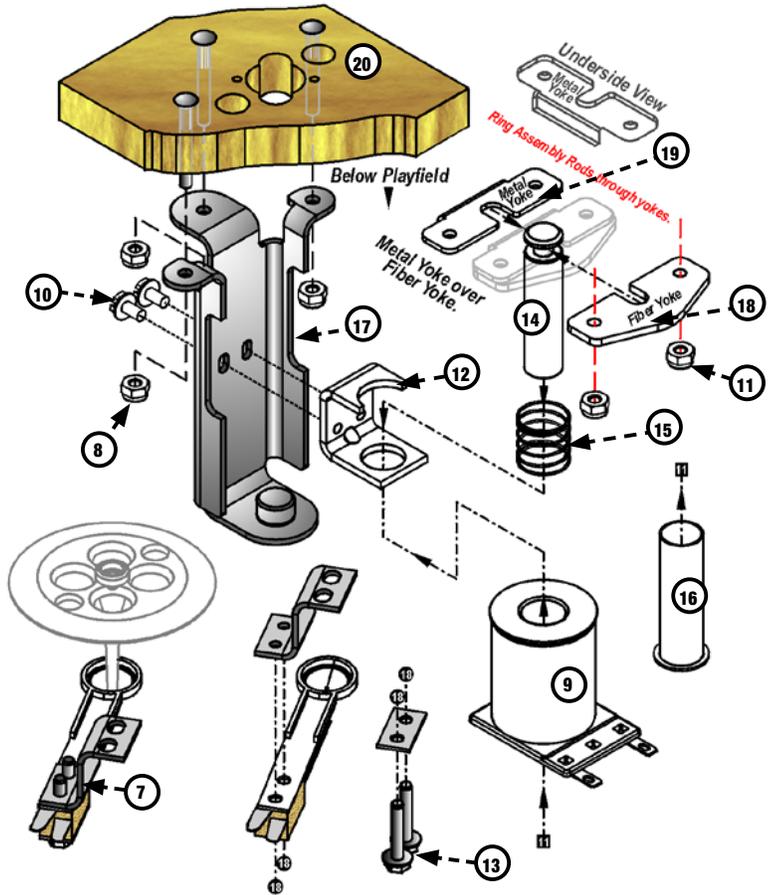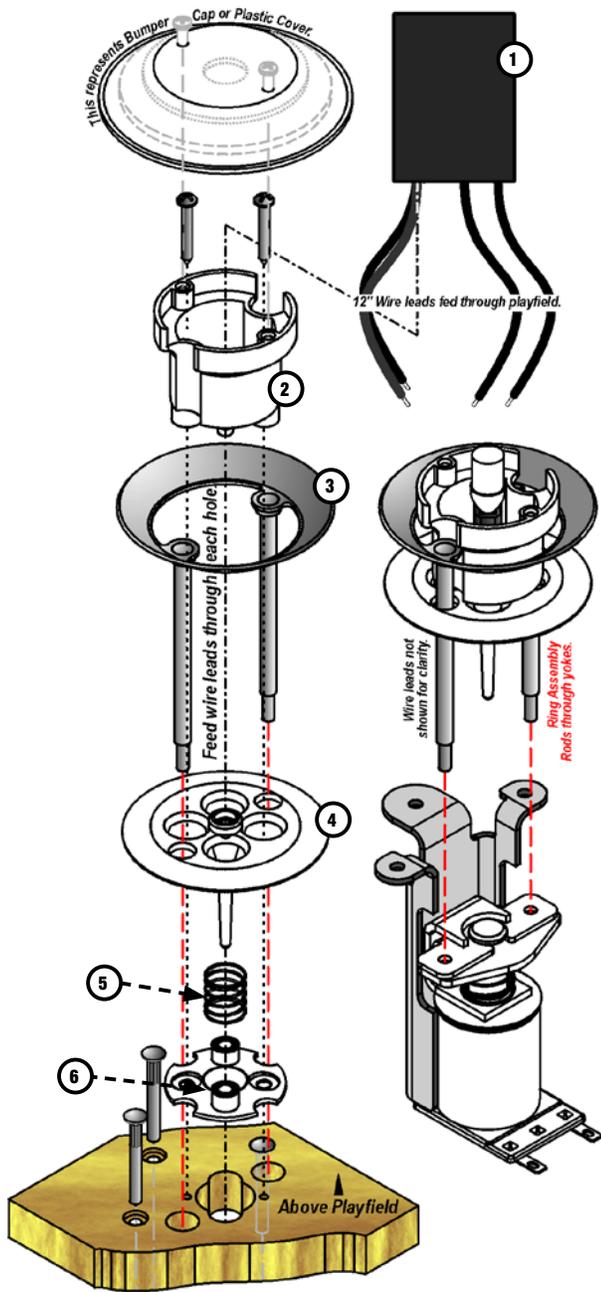
Part Number	Description	Qty
515-6459-01L	BUMPER/RING TOP ASSY, W/ LED 1	1
515-6459-04-ND	BUMPER BOTTOM ASSY, NO DIODE	1

ID	Part Number	Description	Qty
7	500-9934-01	POP BUMPER SWITCH ASSY-2 - LUG-LEFT	1
8	240-5005-00	6-32 NYLON STOP NUT	3
9	090-5044-ND	COIL - 26-1200	1
10	237-5976-01	#6-32 X 1/4" SHWH SWAGE ZN	2
11	240-5005-00	#6-32 NYLON STOP NUT	2
12	535-7347-00	METAL YOKE STOP	1
13	234-5101-00	* 8 X 1/2 SLT	6
14	530-5348-00	PLUNGER, POP BUMPER	1
15	266-5047-00	COMPRESSION SPRING, POP BUMPER	1
16	545-5031-00	COIL SLEEVE	1
17	515-5939-00	COIL BRACKET POP BUMPER ASSY	1
18	545-5609-00	FIBER YOKE	1
19	535-7346-00	METAL YOKE	1
20	237-5957-00	#6-32 x 1-3/16" SPIRAL FIN SHANK SCREW	3

5.15 BOTTOM ARCH ASSEMBLY
500-2512-XX

5.16 SHOOTER RAMP & COVER ASSEMBLY
511-9995-01
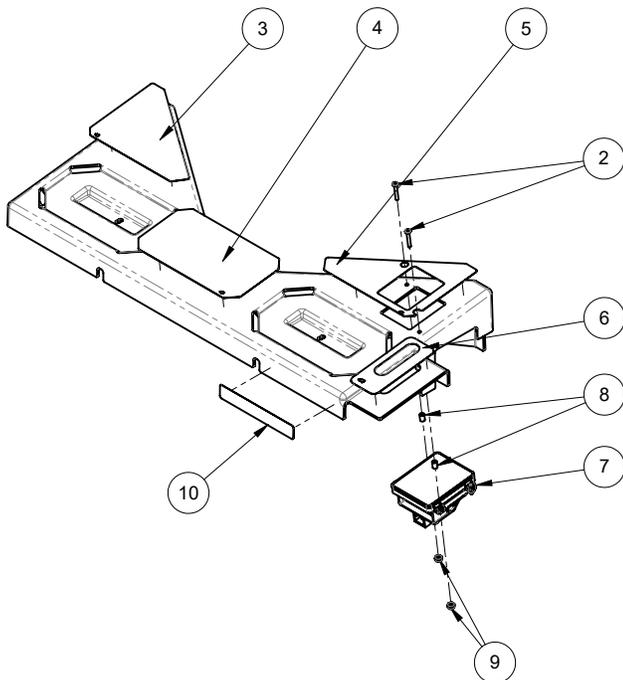
ID	Part Number	Description	Qty
1	545-1238-00	BOTTOM ARCH, PLASTIC, QR READY, W/ FLASHER HOLES	1
2	237-5887-01	SCREW, 4-40 X 3/4" PPH MS BLACK	2
3	820-96XX-01	PLASTIC ARCH DECAL SET -01	1
4	820-96XX-02	PLASTIC ARCH DECAL SET -02	1
5	820-96XX-03	PLASTIC ARCH DECAL SET -03	1
6	820-96XX-04	PLASTIC ARCH DECAL SET -04	1
7	509-2020-00	QR SCANNER M306 ASSEMBLY	1
8	254-5090-04	PLASTIC SPACER #4 SCREW, 3/16" OD - 9/32" LENGTH	2
9	240-5303-00	4-40 NYLON LOCK NUT	2
10	820-5422-00	WARNING DECAL, BOTTOM ARCH, QR READER	1

ID	Part Number	Description	Qty
1	510-1096-00	RIVETED ASSY, SHOOTER LANE RAMP, JOHN WICK	1
2	254-5008-09	HEX SPACER - 1 1/2 "	2
3	510-7970-21	RIVETED ASSY, PLASTIC #21, JOHN WICK	1
4	237-6378-00	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS	2
5	254-5008-05	HEX SPACER - 7/8 "	3
6	242-5001-00	#6 WASHER	6
7	237-5910-01	# 6-32 X 3/8" HWH M.S. SERR.	5
8	830-8564-38	PLASTIC #38, JOHN WICK PRO	1
9	830-7694-68	PLASTIC #68, BACKER FOR -38, JOHN WICK	1
10	237-5997-00P	SCREW, 4-40 X 3/8" PPH MS BLACK, PATCH	2

5.17 EJECT VUK ASSEMBLY
500-1050-00
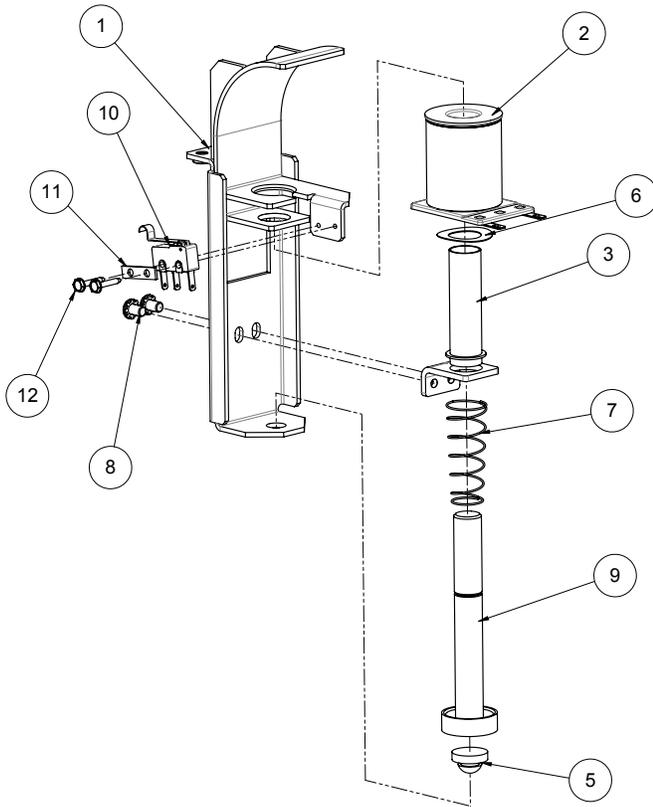
ID	Part Number	Description	Qty
1	515-9984-00	BRACKET - EJECT - 2 FIN	1
2	090-5044-ND	COIL 26-1200 - NO DIODE	1
3	545-5076-01	COIL SLEEVE	1
4	535-5203-03	COIL RETAINING BRACKET	1
5	545-5105-00	RUBBER BUMPER	1
6	269-5002-00	SPRING WASHER	1
7	266-5020-00	COMPRESSION SPRING-CONICAL	1
8	232-5300-00	SCREW, 8-32 X 1/4" PPH SEMS	2
9	515-7309-00	PLUNGER ASSEMBLY	1
10	180-5209-00	SUB MINIATURE SWITCH - SIM. ROLLER	1
11	535-6539-00	SWITCH BODY PROTECT PLATE	1
12	237-5937-02	SCREW, 2-56 X 1/2" HWH MS	2

5.18 DUAL ENTRANCE VUK ASSEMBLY
500-2683-00
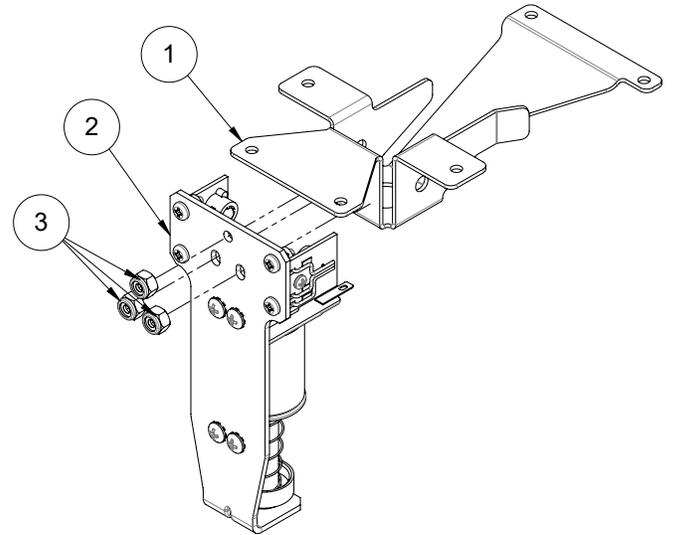
ID	Part Number	Description	Qty
1	535-4057-00	TROUGH, DUAL ENTRANCE VUK, JOHN WICK	1
2	511-3211-00	ASSEMBLY, VUK TROUGH COIL & OPTOS, JOHN WICK	1
3	240-5102-00	8-32 NYLON LOCK NUT	3

5.19 DUAL OPTO THRU-PF ASSEMBLY
511-3208-01
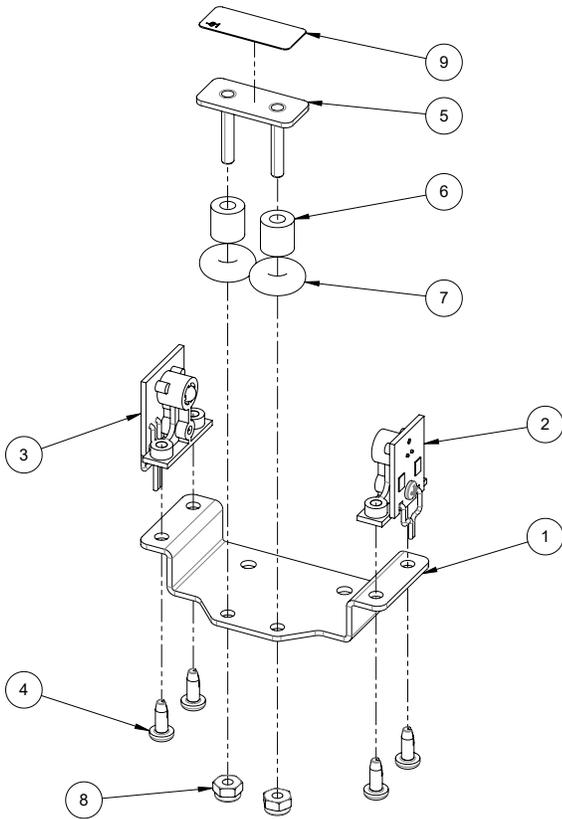
ID	Part Number	Description	Qty
1	535-7547-01	BRACKET, DUAL-OPTO MOUNT, JOHN WICK PRO	1
2	515-0215-00	LONG RANGE OPTO EMITTER ASSEMBLY	1
3	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	1
4	237-5880-00	SCREW, #6 X 3/8 PPH T-25	4
5	515-7856-00	BRACKET, DT HOLE COVER, JOHN WICK PRO	1
6	254-5000-12	NYLON SPACER - BLACK - 3/8 OD X .175 ID X 3/8"	2
7	545-5348-01	RUBBER RING, 3/16 ID, BLACK	2
8	240-5005-00	6-32 NYLON STOP NUT	2
9	820-7948-61	DECAL #61, DT HOLE COVER, JOHN WICK PRO	1

5.20 REFLECTIVE OPTO SPINNER ASSEMBLY
511-3044-00
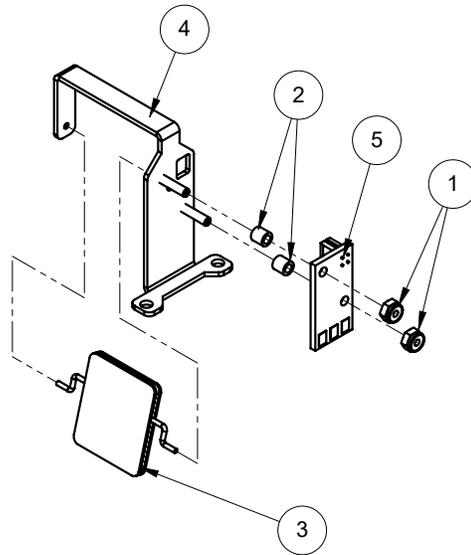
ID	Part Number	Description	Qty
1	240-5303-00	4-40 NYLON LOCK NUT	2
2	254-5090-01	PLASTIC SPACER #4 SCREW, 3/16" OD - 3/16" LENGTH	2
3	515-2326-00	SPINNER TARGET, REFLECTIVE OPTO	1
	820-7948-11	DECAL 11 SPINNER FRONT, JOHN WICK	1
	820-7948-12	DECAL 12 SPINNER BACK, JOHN WICK	1
4	515-2456-00	BRACKET, SPINNER, REFLECTIVE OPTO	1
5	520-8541-00	PCA SPINNER REFLECTIVE OPTIC	1

5.21 ONE WAY GATE ASSEMBLY
511-2989-01
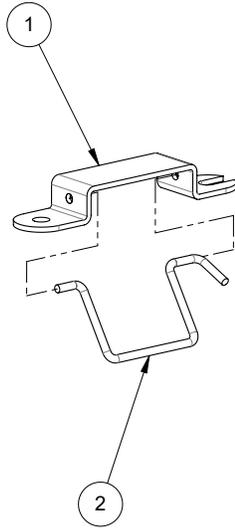
ID	Part Number	Description	Qty
1	535-5269-03	ONE WAY GATE BRACKET	1
2	535-5307-03	ONE-WAY WIRE GATE	1

5.22 SHOOTER LANE ONE WAY GATE ASSEMBLY
511-3210-00
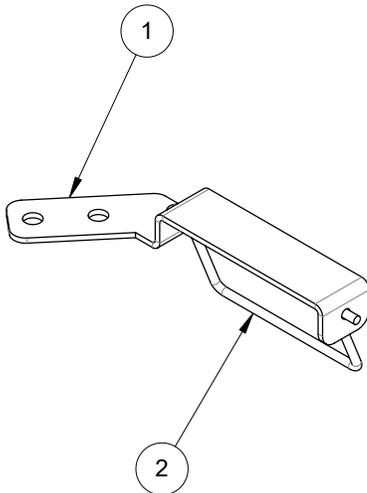
ID	Part Number	Description	Qty
1	535-4055-00	BRACKET, SHOOTER LANE ONE-WAY GATE, JOHN WICK	1
2	535-4056-00	WIRE, SHOOTER ONE-WAY GATE, JOHN WICK	1

5.23 VUK TROUGH COIL & OPTOS ASSEMBLY
511-3211-00
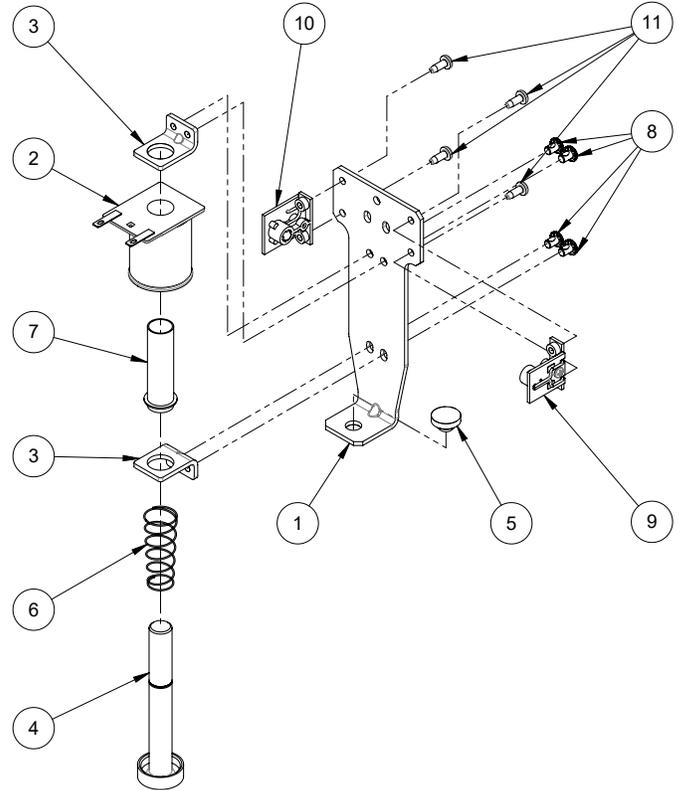
ID	Part Number	Description	Qty
1	535-4058-00	BRACKET, COIL AND OPTOS, DUAL EN-TRANCE VUK	1
2	090-5001-ND	090-5001-ND	1
3	535-5203-03	COIL RETAINING BRACKET	2
4	515-7309-00	PLUNGER ASSEMBLY	1
5	545-5105-00	RUBBER BUMPER	1
6	266-5020-00	COMPRESSION SPRING-CONICAL	1
7	545-5076-01	COIL SLEEVE	1
8	232-5300-00P	SCREW, 8-32 X 1/4" PPH SEMS, PATCH	4
9	515-0215-00	LONG RANGE OPTO EMITTER ASSEMBLY	1
10	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	1
11	237-5880-00	SCREW, #6 X 3/8 PPH T-25	4

5.24 CRATE ASSEMBLY
500-2682-01
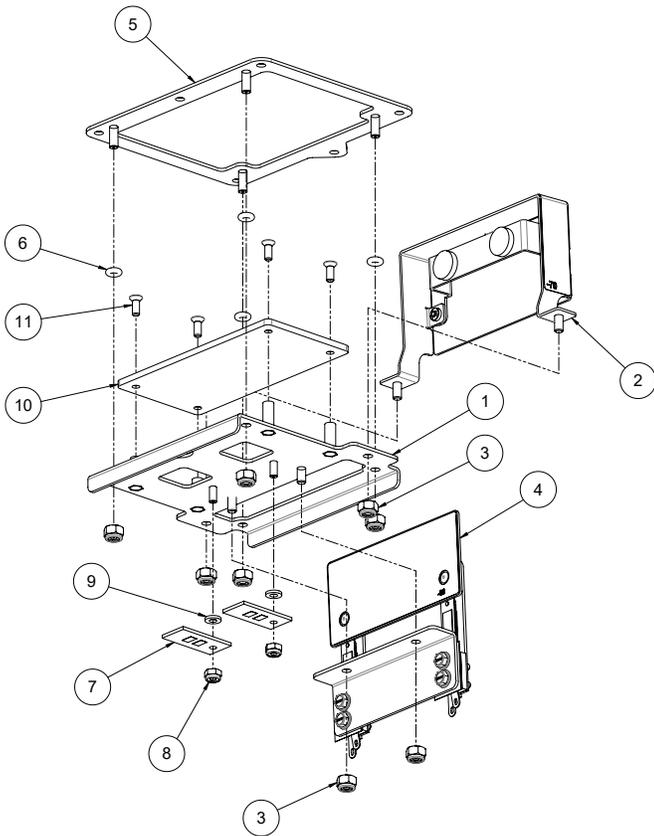
ID	Part Number	Description	Qty
1	515-6994-01	PLATE, CRATE MOUNT, JOHN WICK PRO	1
2	511-5384-00	ASSEMBLY, CRATE LID, JOHN WICK PRO	1
3	240-5102-00	8-32 NYLON LOCK NUT	8
4	511-5406-00	ASSEMBLY, CRATE DUAL-TARGET, JOHN WICK PRO	1
5	515-6995-00	BRACKET, CRATE LEVELING, JOHN WICK	1
6	545-9991-01	RUBBER RING-VITON, 75A DUROMETER	4
7	520-7000-00	SINGLE FLASH LED BOARD	2
8	240-5005-00	6-32 NYLON STOP NUT	2
9	242-5079-00	WASHER, .150 I.D. X .312 O.D. X .050 THICK	2
10	546-5016-00	PLATE, CRATE WINDOW, JOHN WICK	1
11	237-5850-01	SCREW, 6-32 x 3/8 PFH BLACK	4

5.25 CRATE DUAL-TARGET ASSEMBLY
511-5406-00
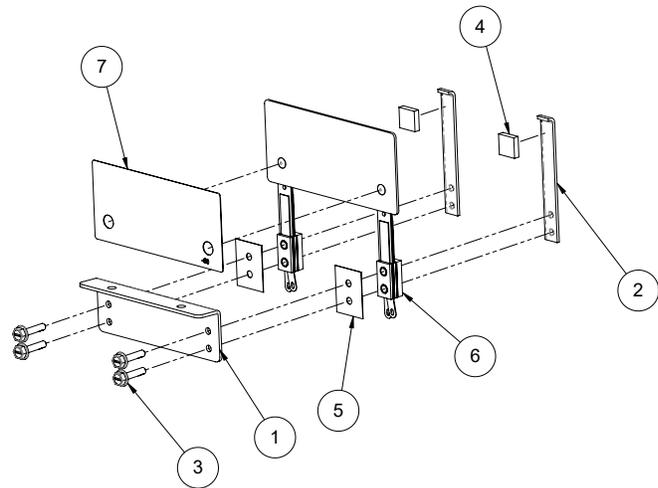
ID	Part Number	Description	Qty
1	535-3043-00	BRACKET, CRATE TARGET, JOHN WICK PRO	1
2	535-9823-01	SWITCH BACK PLATE	2
3	237-5976-04P	SCREW, 6-32 X 5/8" HWH SWAGE, SERRATED, PATCH	4
4	626-5029-00	FOAM PAD	2
5	545-9782-00	FISCHE PAPER-SYMMETRICAL	2
6	510-5820-01	RIVETED ASSY, CRATE TARGET, JOHN WICK PRO	1
7	820-7948-60	DECAL #60, DUAL-TARGET, JOHN WICK	1

5.26 CRATE LID ASSEMBLY
511-5384-00
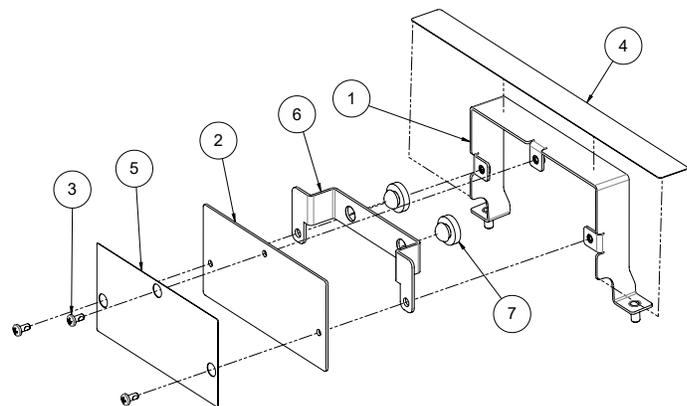
ID	Part Number	Description	Qty
1	515-7854-00	BRACKET, CRATE FRONT, JOHN WICK PRO	1
2	535-3049-00	BRACKET, CRATE TOP, JOHN WICK PRO	1
3	237-6331-00P	SCREW, 4-40 X 1/4" PPH MS BLACK, PATCH	3
4	820-7966-70	DECAL #70, CRATE SIDES, JOHN WICK PRO	1
5	820-7966-71	DECAL #71, CRATE LID TOP, JOHN WICK PRO	1
6	535-5559-00	MOUNTING BRACKET, BUMPER, CRATE	1
7	545-5105-00	RUBBER BUMPER	2

5.27 CAR MECH ASSEMBLY
500-2639-01
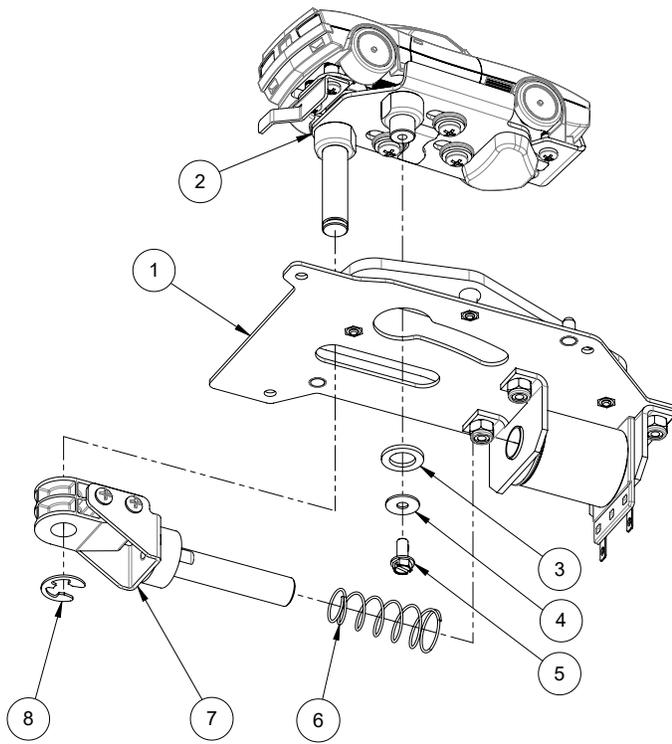
ID	Part Number	Description	Qty
1	511-5371-01	ASSEMBLY, CAR GUIDE PLATE, JOHN WICK PRO	1
2	500-2688-01	ASSEMBLY, CAR BASH TOY, JOHN WICK PRO	1
3	242-5623-01	NYLON WASHER, 5/8" OD X .39" ID	1
4	242-5015-00	#8 WASHER - .170 ID X 1/2 OD X .042	1
5	237-5975-00P	SCREW, 8-32 X 3/8" HWH SWAGE ZN, PATCH	1
6	266-5020-02	COMPRESSION SPRING-CONICAL	1
7	511-5414-00	ASSEMBLY, CAR PLUNGER, JOHN WICK PRO	1
8	270-5012-00	RETAINING RING, 3/8 DIA. SHAFT	1

5.28 CAR BASH TOY ASSEMBLY
500-2688-01
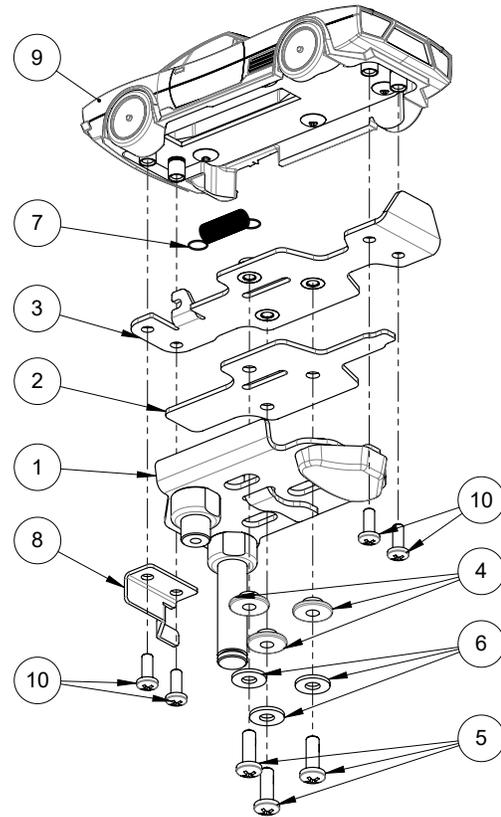
ID	Part Number	Description	Qty
1	511-5372-01	ASSEMBLY, CAR BASE MOUNT, JOHN WICK PRO	1
2	546-5020-00	GLIDE PLATE, CAR BODY, JOHN WICK	1
3	515-2862-00	BRACKET, CAR UPPER FRAME, JOHN WICK	1
4	546-5021-00	FLANGED WASHER, #8 SCREW, JOHN WICK	3
5	237-5602-00P	SCREW, 8-32 X 1/2" PPH MS ZINC, PATCH	3
6	242-5005-00	#8 WASHER	3
7	265-5002-00	TRIP SPRING - TARGET	1
8	535-4097-00	BRACKET, CAR OPTO DEFLECTOR, JOHN WICK	1
9	515-7870-00	JOHN WICK CAR	1
10	237-5501-00P	SCREW, 6-32 X 3/8" PPH MS ZINC, PATCH	4

5.29 CAR FRONT OPTO ASSEMBLY
511-5357-00
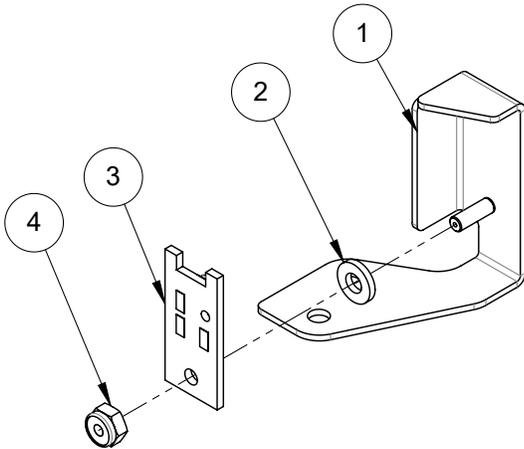
ID	Part Number	Description	Qty
1	515-7839-00	BRACKET, CAR FRONT OPTO RECEIVER, JOHN WICK	1
2	242-5079-00	WASHER, .150 I.D. X .312 O.D. X .050 THICK	1
3	520-8116-00	PCB, IR OPTO RECEIVER, ANTI-ROTATION	1
4	240-5303-00	4-40 NYLON LOCK NUT	1

5.30 CAR HOLD OPTO ASSEMBLY
511-5358-00
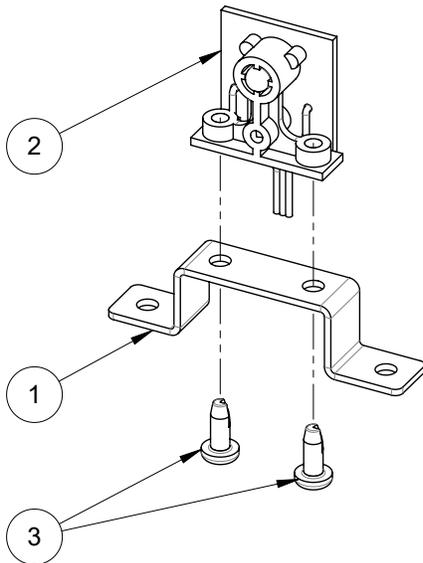
ID	Part Number	Description	Qty
1	535-4090-00	BRACKET, CAR HOLD OPTO RECEIVER, JOHN WICK	1
2	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	1
3	237-5880-00	SCREW, #6 X 3/8 PPH T-25	2

5.31 CAR REAR OPTO ASSEMBLY
511-5368-00
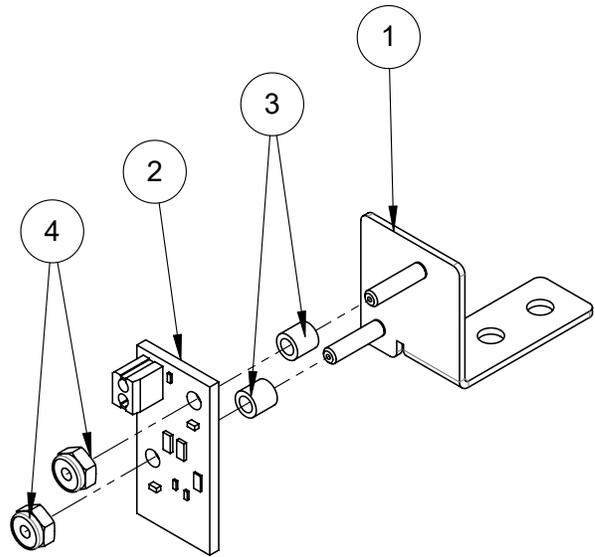
ID	Part Number	Description	Qty
1	535-3019-00	BRACKET, CAR REAR OPTO MOUNT, JOHN WICK	1
2	520-8541-00	PCA SPINNER REFLECTIVE OPTIC	1
3	254-5090-01	PLASTIC SPACER #4 SCREW, 3/16" OD - 3/16" LENGTH	2
4	240-5303-00	4-40 NYLON LOCK NUT	2

5.32 CAR SPOTLIGHT ASSEMBLY
511-5382-00
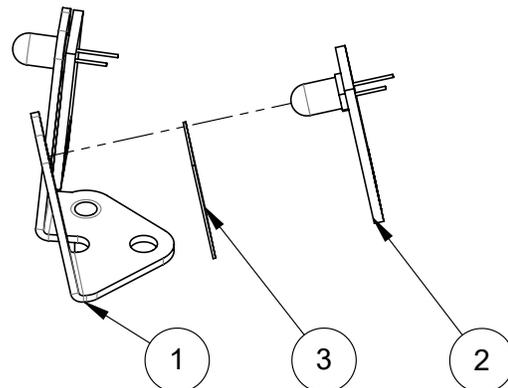
ID	Part Number	Description	Qty
1	535-3037-00	BRACKET, SPOT LIGHT, CAR	1
2	520-8625-00	PCA, SPOTLIGHT 1W HIGH INTENSITY	2
3	626-5136-00	ADHESIVE, SPOTLIGHT BOARD	2

5.33 CAR BASE MOUNT ASSEMBLY
511-5372-01
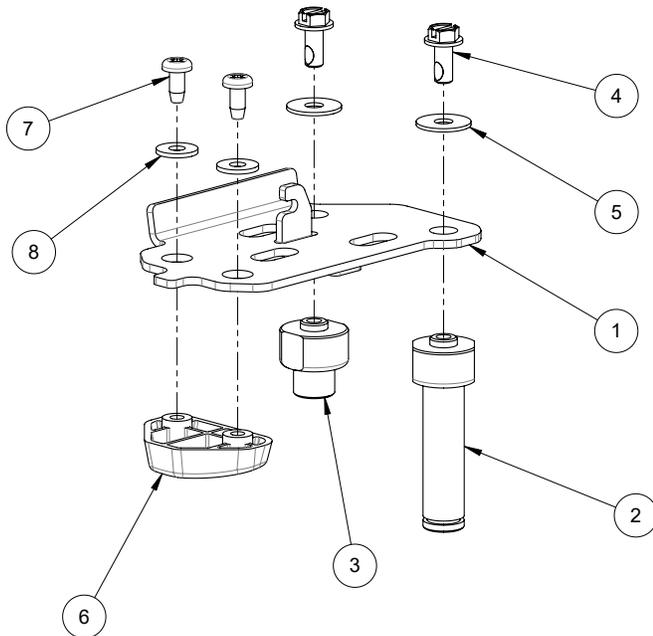
ID	Part Number	Description	Qty
1	515-7853-00	WELDMENT, CAR LOWER FRAME, JOHN WICK	1
2	530-8072-01	PIN, CAR GUIDE DRIVE PRO, JOHN WICK	1
3	530-8073-00	PIN, CAR GUIDE FOLLOWER, JOHN WICK	1
4	237-5975-00P	SCREW, 8-32 X 3/8" HWH SWAGE ZN, PATCH	2
5	242-5015-00	#8 WASHER - .170 ID X 1/2 OD X .042	2
6	544-7916-00	BUMPER, MOLDED, CAR UNDERSIDE, JOHN WICK	1
7	237-5880-01	SCREW, #6 X 5/16 PPH T-25	2
8	242-5001-00	#6 WASHER	2

5.34 CAR GUIDE PLATE ASSEMBLY
511-5371-01
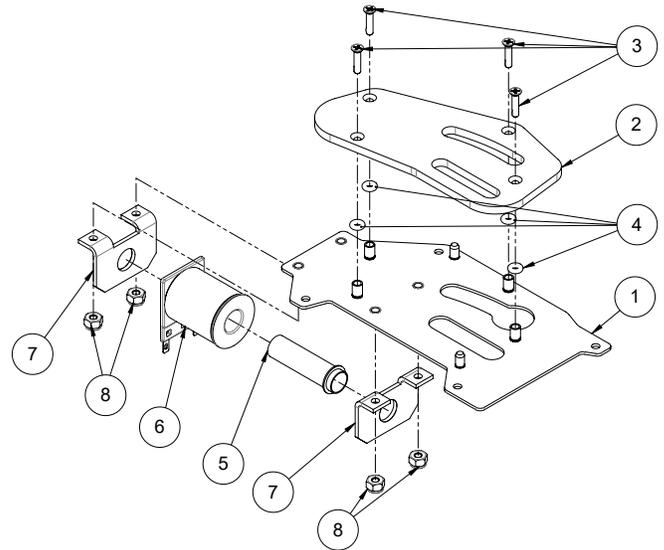
ID	Part Number	Description	Qty
1	515-2860-01	PLATE, CAR GUIDE MOUNT, JOHN WICK PRO	1
2	546-5013-01	PLATE, CAR PIN GUIDE, JOHN WICK PRO	1
3	237-6172-00P	SCREW, 6-32 X 5/8" PFH ZINC, PATCH	4
4	545-9991-01	RUBBER RING-VITON, 75A DUROMETER	4
5	545-5076-01	COIL SLEEVE	1
6	090-5001-ND	090-5001-ND	1
7	535-9777-01	COIL BRACKET-DT-OD	2
8	240-5102-00	8-32 NYLON LOCK NUT	4

5.35 CAR PLUNGER ASSEMBLY
511-5414-00
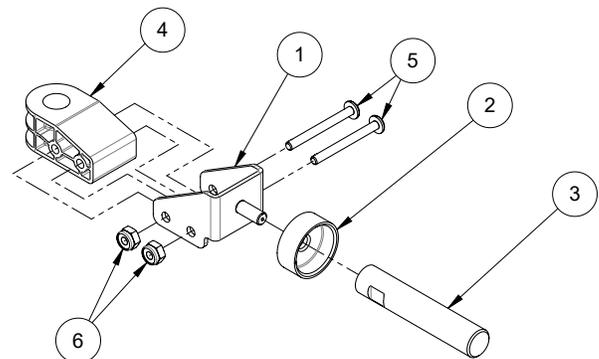
ID	Part Number	Description	Qty
1	515-7855-00	BRACKET, GLIDE BLOCK, PLUNGER, CAR, PRO	1
2	530-5511-00	PLUNGER HEAD	1
3	530-8078-00	PLUNGER, CAR, PRO	1
4	544-7917-00	GLIDE BLOCK, MOLDED, CAR PLUNGER, JOHN WICK PRO	1
5	237-5508-00P	SCREW, 6-32 X 1-1/4 PPH MS, PATCH	2
6	240-5005-00	6-32 NYLON STOP NUT	2

5.36 SPOTLIGHT ASSEMBLY
511-5381-00
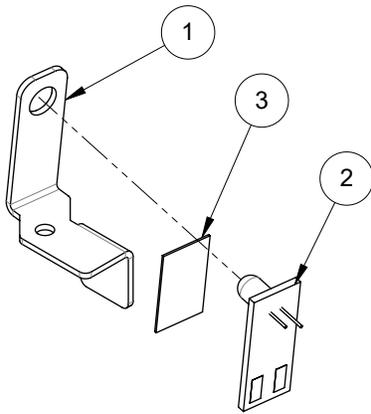
ID	Part Number	Description	Qty
1	535-3036-00	BRACKET, SPOT LIGHT, MARKER	1
2	520-8625-00	PCA, SPOTLIGHT 1W HIGH INTENSITY	1
3	626-5136-00	ADHESIVE, SPOTLIGHT BOARD	1

5.37 DANCE CLUB SPOTLIGHT ASSEMBLY
511-5380-00
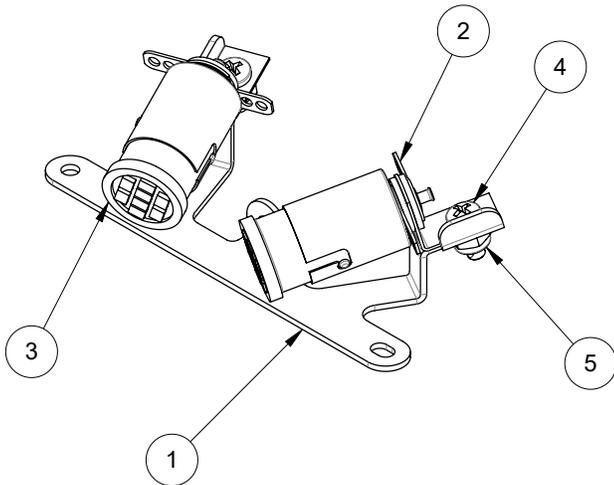
ID	Part Number	Description	Qty
1	535-3035-00	BRACKET, DANCE CLUB SPOT LIGHT	1
2	077-5100-00	LAYDOWN STANDARD SOCKET	2
3	113-5045-08	MULTI-LED FLASHER, 5 VDC - WHITE	2
4	237-5501-00P	SCREW, 6-32 X 3/8" PPH MS ZINC, PATCH	2
5	240-5005-00	6-32 NYLON STOP NUT	2

5.38 HOTEL INTERIOR LIGHTS ASSEMBLY
511-5383-00
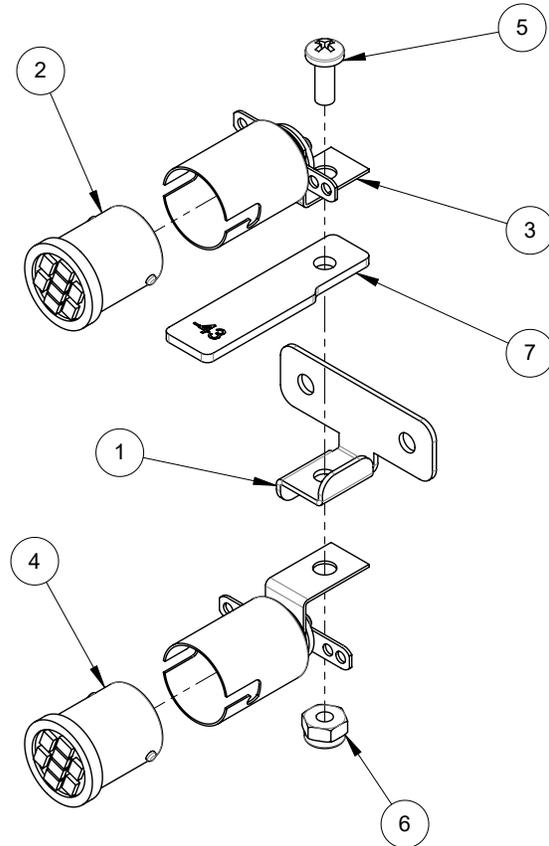
ID	Part Number	Description	Qty
1	535-3038-00	BRACKET, HOTEL INTERIOR LIGHTS, JOHN WICK	1
2	113-5045-02	MULTI-LED FLASHER, 5 VDC - RED	1
3	077-5100-00	LAYDOWN STANDARD SOCKET	2
4	113-5045-08	MULTI-LED FLASHER, 5 VDC - WHITE	1
5	237-5501-00	SCREW, 6-32 X 3/8" PPH MS ZINC	1
6	240-5005-00	6-32 NYLON STOP NUT	1
7	830-8550-43	PLASTIC #43, HOTEL SOCKET SPACER, JOHN WICK	1

5.39 HOTEL FRONT & SIDES ASSEMBLY

511-3221-01
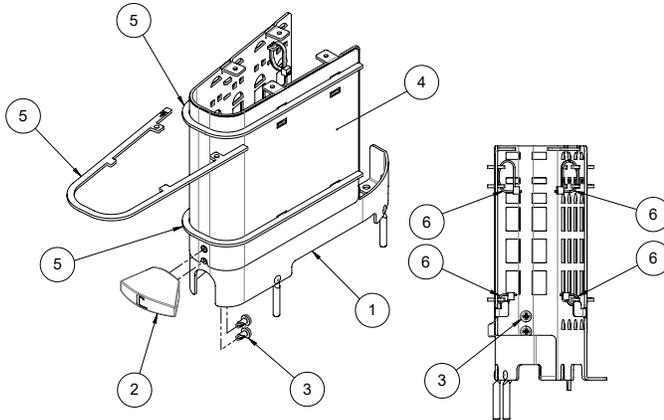
ID	Part Number	Description	Qty
1	535-3017-02	BALL GUIDE 02, JOHN WICK	1
2	545-7685-00	MODIFIED / DECORATED AWNING	1
3	237-5880-01	SCREW, #6 X 5/16 PPH T-25	2
4	820-7957-00	DECAL, HOTEL, JOHN WICK	1
5	830-8564-41	PLASTIC #41, HOTEL LEDGE, JOHN WICK PRO	3
6	040-5001-00B	CABLE TIE, BLACK	4

5.40 HOTEL ROOF ASSEMBLY

511-5386-01
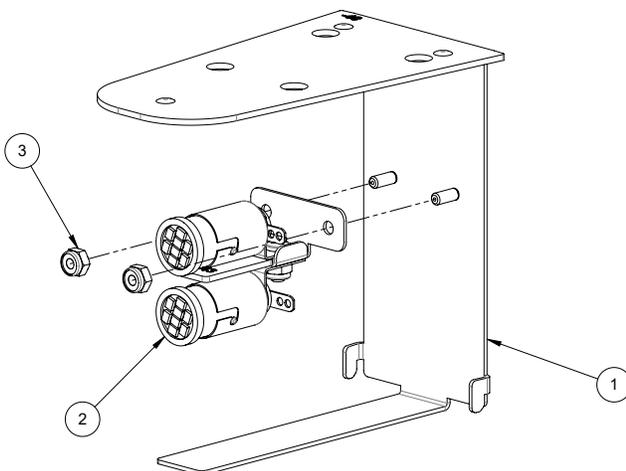
ID	Part Number	Description	Qty
1	510-7951-01	RIVETED ASSEMBLY, HOTEL ROOF, JOHN WICK PRO	1
2	511-5383-00	ASSEMBLY, INTERIOR LIGHTS, HOTEL	1
3	240-5005-00	6-32 NYLON STOP NUT	2

5.41 MARKER ASSEMBLY

500-2693-01

ID	Part Number	Description	Qty
1	535-4042-01	BRACKET, MARKER MOUNT, JOHN WICK PRO	1
2	520-8624-00	PCA - MARKER LED, JOHN WICK	1
3	530-8080-00	SPACER, MARKER, PRO	2
4	830-8564-53	PLASTIC #53, MARKER, JOHN WICK PRO	1
5	237-5504-00P	SCREW, 6-32 X 3/4" PPH MS, PATCH	2
6	240-5005-00	6-32 NYLON STOP NUT	2

5.42 PLASTIC 05 ASSEMBLY

511-5434-05
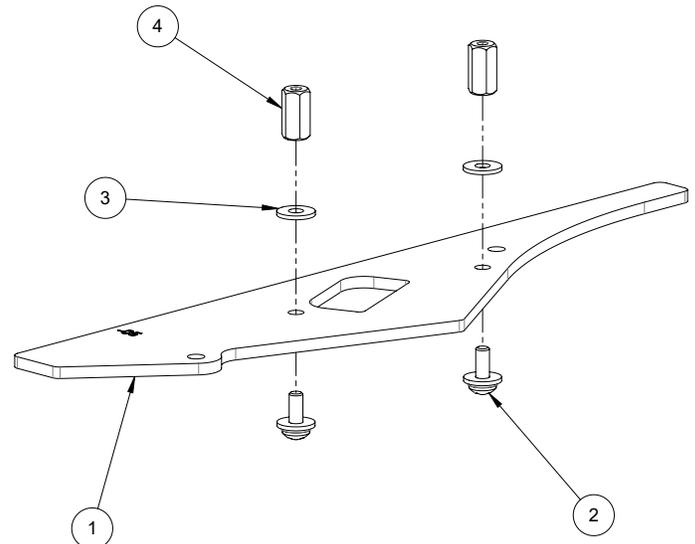
ID	Part Number	Description	Qty
1	830-7694-05	PLASTIC #5, JOHN WICK	1
2	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	2
3	242-5001-00	#6 WASHER	2
4	254-5008-03	HEX SPACER - 1/2 "	2

5.43 PLASTIC 06 ASSEMBLY
511-5434-06
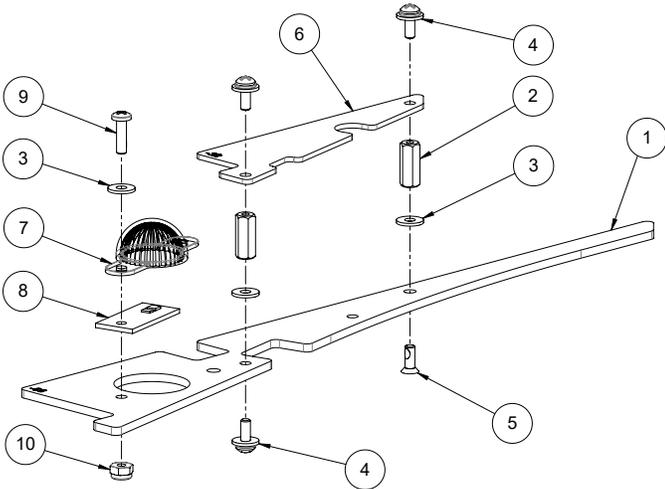
ID	Part Number	Description	Qty
1	830-7694-06	PLASTIC #6, JOHN WICK	1
2	254-5008-02	HEX SPACER - 5/8 "	2
3	242-5001-00	#6 WASHER	3
4	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	3
5	237-5871-00P	SCREW, 6-32 X 3/8" PFH 82° U/C ZINC, PATCH	1
6	830-8550-32	PLASTIC #32, JOHN WICK	1
7	550-5032-07	HAT - ORANGE SB	1
8	520-7000-00	SINGLE FLASH LED BOARD	1
9	237-5502-00P	SCREW, 6-32 X 1/2" PPH MS ZINC, PATCH	1
10	240-5005-00	6-32 NYLON STOP NUT	1

5.44 PLASTIC 07 ASSEMBLY
511-8564-07
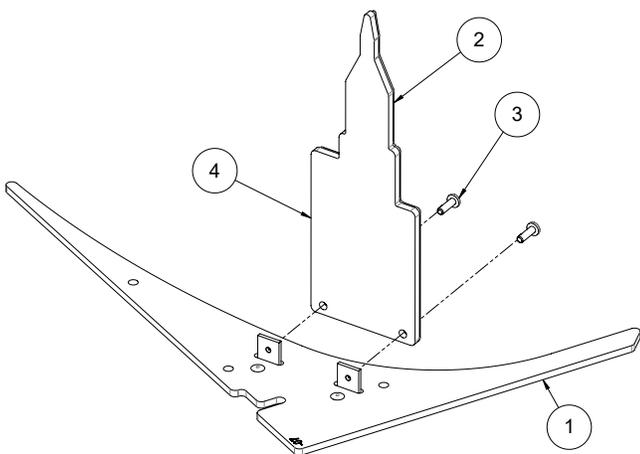
ID	Part Number	Description	Qty
1	510-7970-07	RIVETED ASSY, PLASTIC #7, JOHN WICK	1
2	830-8564-31	PLASTIC #31, JOHN WICK PRO	1
3	237-5997-00P	SCREW, 4-40 X 3/8" PPH MS BLACK, PATCH	2
4	830-7694-61	PLASTIC #61, BACKER FOR -31, JOHN WICK	1

5.45 PLASTIC 09 ASSEMBLY
511-8564-09
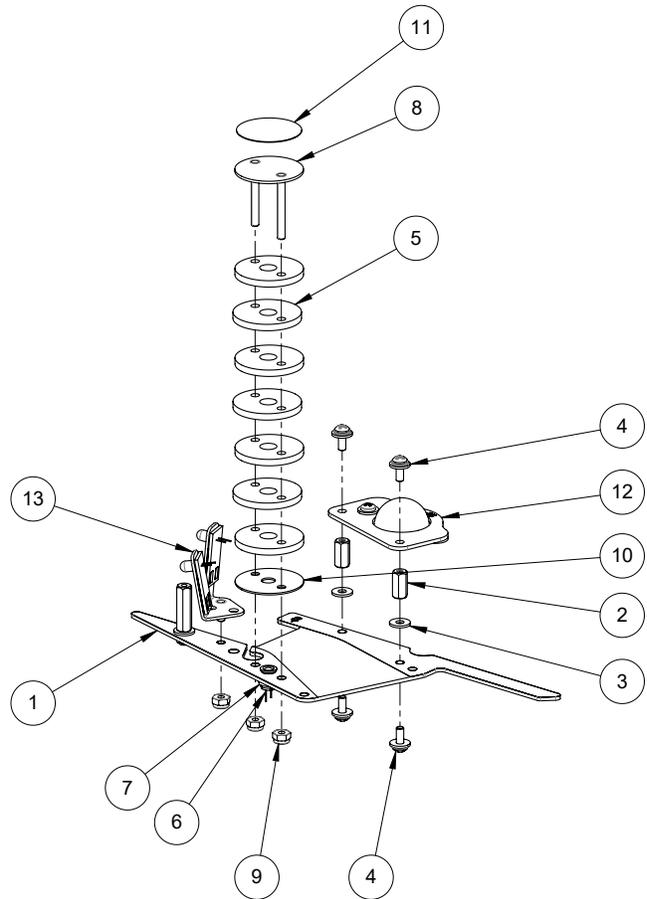
ID	Part Number	Description	Qty
1	830-8564-09	PLASTIC #9, JOHN WICK PRO	1
2	254-5008-03	HEX SPACER - 1/2 "	2
3	242-5001-00	#6 WASHER	3
4	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	5
5	546-5023-00	PLASTIC, COIN, COIN STACK	7
6	113-5070-00	LED, HIGH INTENSITY	1
7	254-5104-00	ASSEMBLY, LED MOUNT, CLIP/RING CR-174L	1
8	515-7850-00	BRACKET, TOP, COIN STACK	1
9	240-5005-00	6-32 NYLON STOP NUT	3
10	535-3040-00	BRACKET, BOTTOM, COIN STACK	1
11	820-7948-54	DECAL #54, COIN STACK, JOHN WICK	1
12	511-8564-35	ASSEMBLY, PLASTIC #35, JOHN WICK PRO	1
13	511-5382-00	ASSEMBLY, SPOT LIGHT, CAR	1
14	254-5008-05	HEX SPACER - 7/8 "	1

5.46 PLASTIC 11 ASSEMBLY
511-8564-11
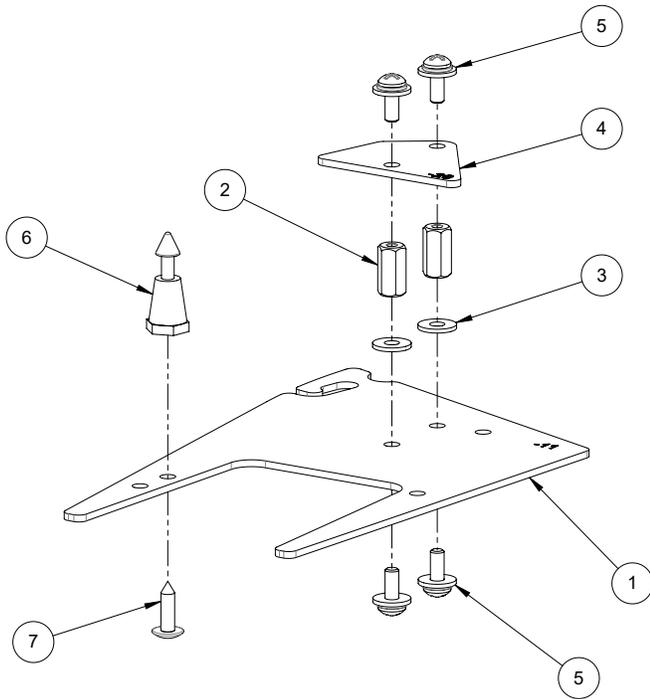
ID	Part Number	Description	Qty
1	830-8564-11	PLASTIC #11, JOHN WICK PRO	1
2	254-5008-03	HEX SPACER - 1/2 "	2
3	242-5001-00	#6 WASHER	2
4	830-8550-29	PLASTIC #29, JOHN WICK	1
5	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	4
6	550-5052-01	MINI POST - CLEAR	1
7	237-5809-00	SCREW, #6 X 1/2" PTH A	1

5.47 PLASTIC 12 ASSEMBLY
511-8564-12
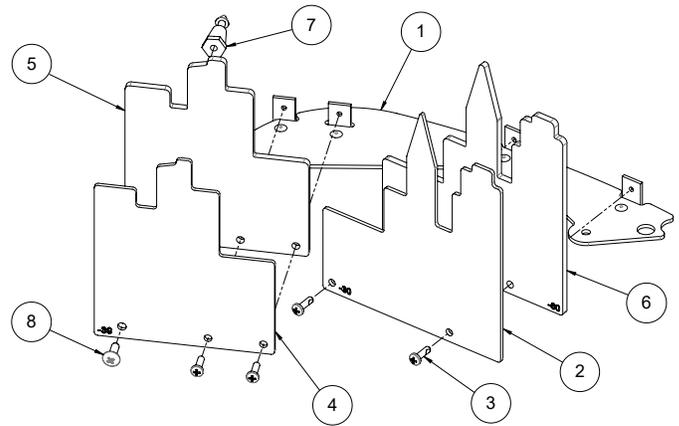
ID	Part Number	Description	Qty
1	510-5173-12	RIVETED ASSY, PLASTIC #12, JOHN WICK PRO	1
2	830-8564-30	PLASTIC #30, JOHN WICK PRO	1
3	237-5997-00P	SCREW, 4-40 X 3/8" PPH MS BLACK, PATCH	4
4	830-8564-39	PLASTIC #39, JOHN WICK PRO	1
5	830-7694-69	PLASTIC #69, BACKER FOR -39, JOHN WICK	1
6	830-7694-60	PLASTIC #60, BACKER FOR -30, JOHN WICK	1
7	550-5052-01	MINI POST - CLEAR	1
8	237-5809-00	SCREW, #6 X 1/2" PTH A	1

5.48 PLASTIC 13 ASSEMBLY
511-8564-13
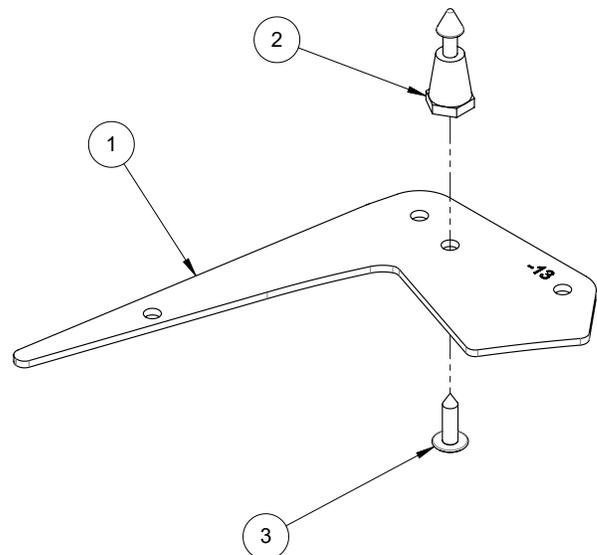
ID	Part Number	Description	Qty
1	830-8564-13	PLASTIC #13, JOHN WICK PRO	1
2	550-5052-01	MINI POST - CLEAR	1
3	237-5809-00	SCREW, #6 X 1/2" PTH A	1

5.49 PLASTIC 14 ASSEMBLY
511-8564-14
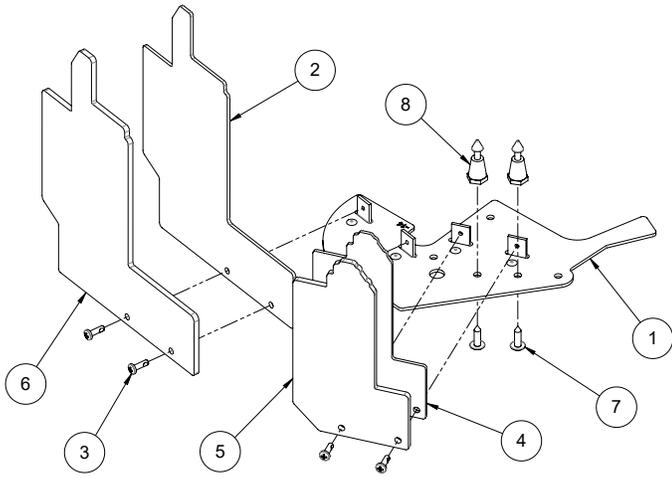
ID	Part Number	Description	Qty
1	510-5173-14	RIVETED ASSY, PLASTIC #14, JOHN WICK PRO	1
2	830-8564-27	PLASTIC #27, JOHN WICK PRO	1
3	237-5997-00P	SCREW, 4-40 X 3/8" PPH MS BLACK, PATCH	4
4	830-8564-42	PLASTIC #42, JOHN WICK PRO	1
5	830-7694-62	PLASTIC #62, BACKER FOR -42, JOHN WICK	1
6	830-7694-67	PLASTIC #67, BACKER FOR -27, JOHN WICK	1
7	237-5809-00	SCREW, #6 X 1/2" PTH A	2
8	550-5052-01	MINI POST - CLEAR	2

5.50 PLASTIC 17 ASSEMBLY
511-8564-17
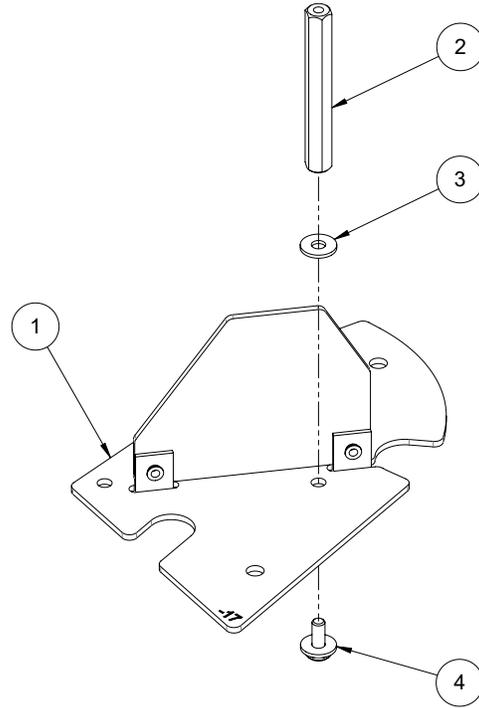
ID	Part Number	Description	Qty
1	510-5173-17	RIVETED ASSY, PLASTIC #17, JOHN WICK PRO	1
2	254-5008-07	HEX SPACER - 2"	1
3	242-5001-00	#6 WASHER	1
4	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	1

5.51 PLASTIC 18 ASSEMBLY
511-8564-18
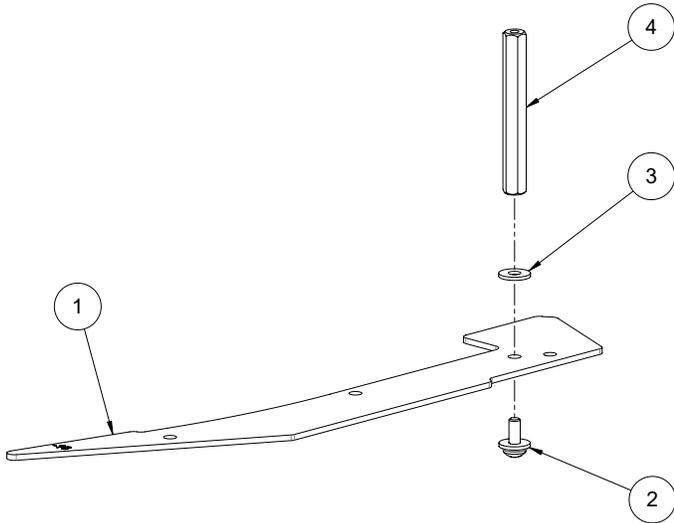
ID	Part Number	Description	Qty
1	830-8564-18	PLASTIC #18, JOHN WICK PRO	1
2	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	1
3	242-5001-00	#6 WASHER	1
4	254-5008-07	HEX SPACER - 2"	1

5.52 PLASTIC 22 ASSEMBLY
511-5434-22
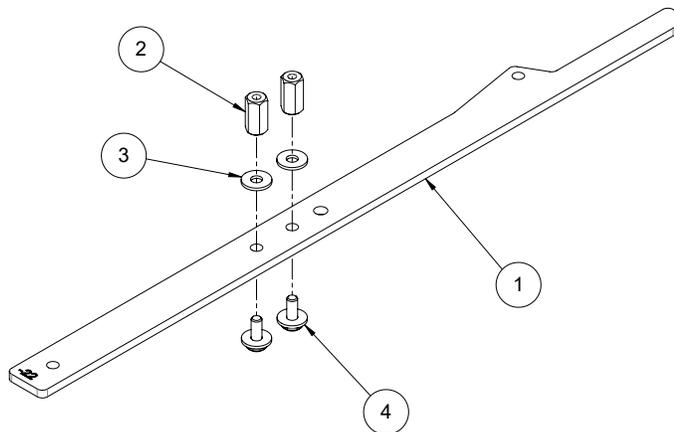
ID	Part Number	Description	Qty
1	830-7694-22	PLASTIC #22, JOHN WICK	1
2	254-5008-03	HEX SPACER - 1/2 "	2
3	242-5001-00	#6 WASHER	2
4	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	2

5.53 PLASTIC 33 ASSEMBLY
511-5434-33

ID	Part Number	Description	Qty
1	830-7694-33	PLASTIC # 33, JOHN WICK	1
2	550-5032-07	HAT - ORANGE SB	1
3	520-7000-00	SINGLE FLASH LED BOARD	1
4	237-5502-00P	SCREW, 6-32 X 1/2" PPH MS ZINC, PATCH	1
5	242-5001-00	#6 WASHER	1
6	240-5005-00	6-32 NYLON STOP NUT	1

5.54 PLASTIC 34 ASSEMBLY
511-5434-34
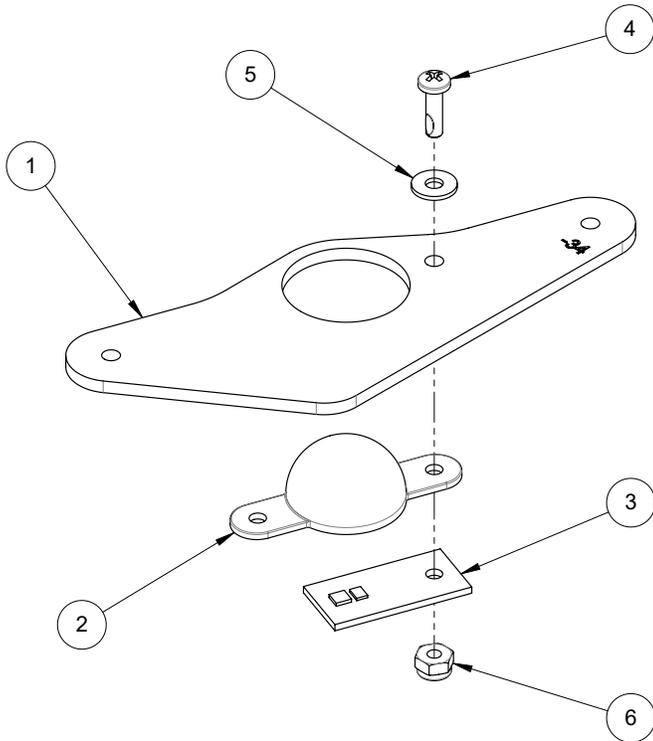
ID	Part Number	Description	Qty
1	830-7694-34	PLASTIC # 34, JOHN WICK	1
2	550-5032-07	HAT - ORANGE SB	1
3	520-7000-00	SINGLE FLASH LED BOARD	1
4	237-5502-00P	SCREW, 6-32 X 1/2" PPH MS ZINC, PATCH	1
5	242-5001-00	#6 WASHER	1
6	240-5005-00	6-32 NYLON STOP NUT	1

5.55 PLASTIC 35 ASSEMBLY
511-8564-35
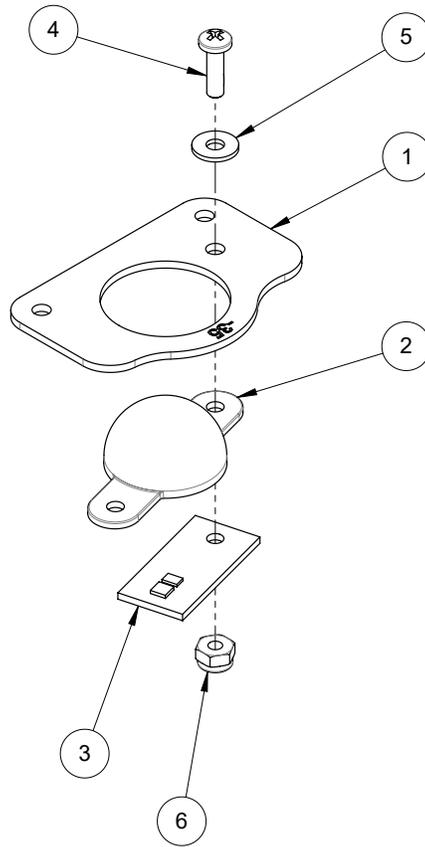
ID	Part Number	Description	Qty
1	830-8564-35	PLASTIC # 35, JOHN WICK	1
2	550-5032-06	HAT - YELLOW SB	1
3	520-7000-00	SINGLE FLASH LED BOARD	1
4	237-5502-00P	SCREW, 6-32 X 1/2" PPH MS ZINC, PATCH	1
5	242-5001-00	#6 WASHER	1
6	240-5005-00	6-32 NYLON STOP NUT	1

5.56 PLASTIC 36 ASSEMBLY
511-8564-36
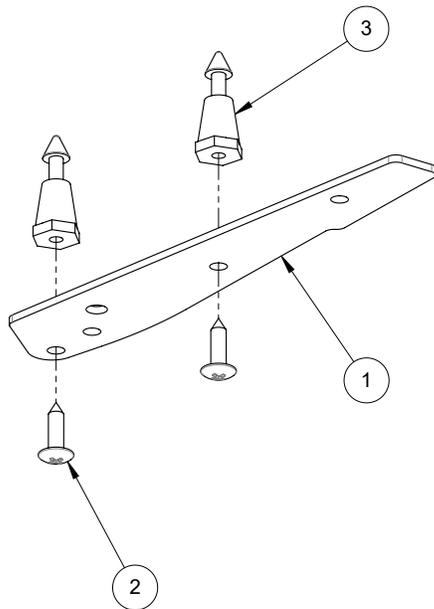
ID	Part Number	Description	Qty
1	830-8564-36	PLASTIC #36, JOHN WICK PRO	1
2	237-5809-00	SCREW, #6 X 1/2" PTH A	2
3	550-5052-01	MINI POST - CLEAR	2

5.57 PLASTIC 52 ASSEMBLY, CENTER RAMP COVER
511-8564-52
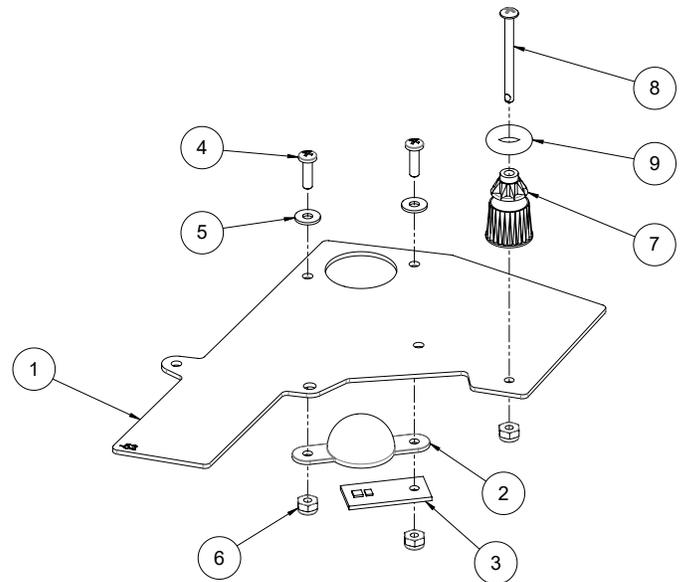
ID	Part Number	Description	Qty
1	830-8550-52	PLASTIC #52, CENTER RAMP COVER, JOHN WICK PRO	1
2	550-5032-02	HAT - RED SB	1
3	520-7000-00	SINGLE FLASH LED BOARD	1
4	237-5502-00P	SCREW, 6-32 X 1/2" PPH MS ZINC, PATCH	2
5	242-5001-00	#6 WASHER	2
6	240-5005-00	6-32 NYLON STOP NUT	3
7	550-5034-01	GROOVED JEWEL PLASTIC POST, CLEAR	1
8	237-5510-00P	SCREW, 6-32 X 1-1/2" PPH MS, PATCH	1
9	545-5348-02	RUBBER RING, 5/16 ID, BLACK	1

5.58 LEFT RAMP ASSEMBLY
500-2664-00

5.59 RIGHT RAMP ASSEMBLY
500-2665-00
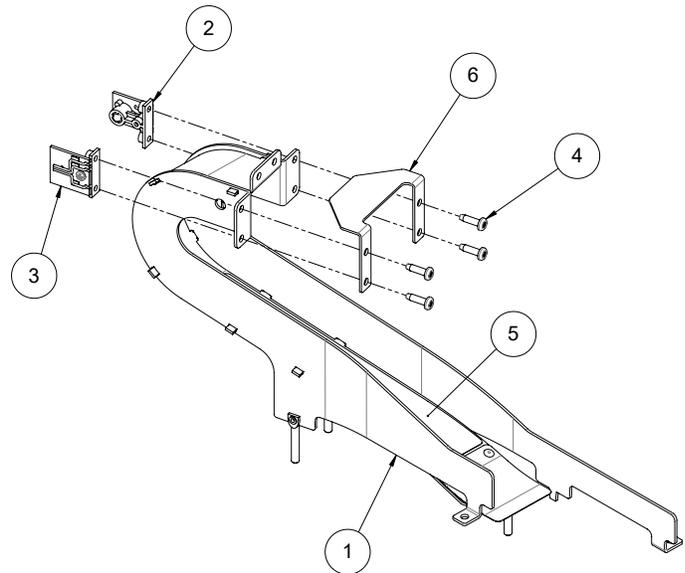
ID	Part Number	Description	Qty
1	510-1091-00	RIVETED ASSY, RIGHT RAMP & FLAP, JOHN WICK	1
2	515-0215-00	LONG RANGE OPTO EMITTER ASSEMBLY	1
3	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	1
4	237-5880-02	SCREW, #6 X 1/2 PPH T-25	4
5	820-7948-52	DECAL #52, RIGHT RAMP, JOHN WICK	1
6	535-7311-00	BRACKET, RIGHT RAMP COVER, JOHN WICK	1

ID	Part Number	Description	Qty
1	510-1090-00	RIVETED ASSY, LEFT METAL RAMP, JOHN WICK	1
2	515-0215-00	LONG RANGE OPTO EMITTER ASSEMBLY	1
3	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	1
4	237-5997-00P	SCREW, 4-40 X 3/8" PPH MS BLACK, PATCH	4
5	254-5008-33	HEX SPACER - 1 3/8 "	3
6	232-5201-00P	SCREW, 6-32 X 3/8" PPH MS SEMS, PATCH	3
7	830-8550-20	PLASTIC # 20, JOHN WICK	1
8	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	3
9	820-7948-50	DECAL #50, LEFT RAMP, JOHN WICK	1

5.60 CENTER RAMP ASSEMBLY
500-2666-01
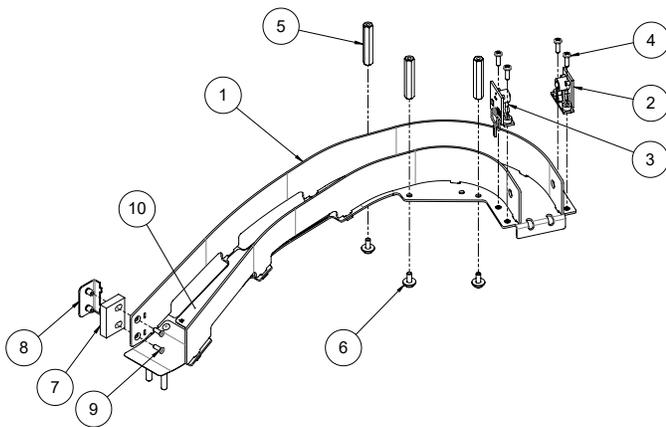
ID	Part Number	Description	Qty
1	510-1093-01	RIVETED ASSY, CENTER METAL RAMP, JOHN WICK PRO	1
2	515-0215-00	LONG RANGE OPTO EMITTER ASSEMBLY	1
3	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	1
4	237-5997-00	SCREW, 4-40 X 3/8" PPH MS BLACK	4
5	254-5008-33	HEX SPACER - 1 3/8 "	3
6	237-6378-00P	#6-32 X 3/8 PAN PHILLIPS w/DOUBLE SEMS, PATCH	3
7	626-5057-01	GUIDE BUMPER	1
8	535-1355-00	RIGHT RAMP EDGE PROTECTOR	1
9	237-6151-00	SCREW, 4-40 X 5/16" PFH U/C MS	2
10	820-7948-51	DECAL #51, CENTER RAMP, JOHN WICK	1

5.61 BACK PANEL ASSEMBLY
500-2663-01
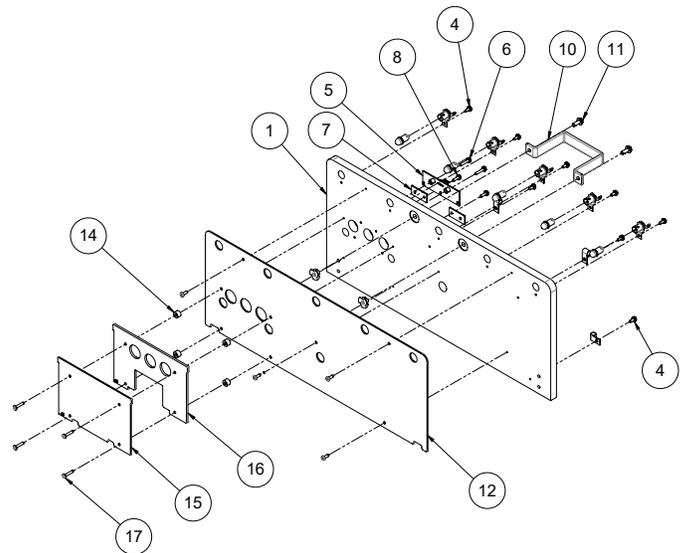
ID	Part Number	Description	Qty
1	525-9769-01	BACK PANEL, JOHN WICK PRO	1
2	077-5223-00	SOCKET, 2-LUG VERTICAL, SHORT	5
3	112-5034-08F	DOUBLE LED, BAYONET BASE - WHITE FROSTED	5
4	234-5000-00	SCREW, #6 X 3/8" HWH	8
5	520-7011-00	LAMP PCB, 3-LED	1
6	234-5003-00	SCREW, #6 X 3/4" HWH	2
7	520-5307-00	SINGLE LED PCB	2
8	234-5001-02	SCREW, #6 X 1/2" HWH	2
9	240-5204-00	#10-32 T-NUT	2
10	535-2288-00	HANDLE, BACKPANEL	1
11	237-5995-00P	SCREW, 10-32 X 1/2" HWH SERR MS ZI, PATCH	2
12	830-8564-15	PLASTIC #15, BACK PANEL, JOHN WICK PRO	1
13	237-5805-00	SCREW, #6 X 1/2" PPH AB BLACK	4
14	254-5000-09	NYLON SPACER - BLACK - 3/8 OD X .175 ID X 1/4"	4
15	830-8564-44	PLASTIC #44, BACK PANEL FACADE, JOHN WICK PRO	1
16	830-7694-64	PLASTIC #64, BACKER FOR -44, JOHN WICK	1
17	232-5003-00	SCREW, #6 X 3/4" PPH	4
18	040-5000-03	1/4" CABLE CLAMP	3

6. SPECIFICATIONS

500-55W5-01

SPECIFICATIONS, MECHANICAL, GAME SETUP

Specification	Imperial	Metric
Weight	210 lbs	96 kg
Max dimensions, leg levelers extended (h, w, d)	78 x 27.75 x 57 in	198 x 70.5 x 145 cm
Minimum game dimensions (h, w, d)	76 x 27.75 x 57 in	193 x 70.5 x 145 cm
Minimum room dimensions per game (h, w, d)	80 x 36 x 84 in	203 x 91 cm x 214 cm

- (h, w, d) = height, width, depth.

SPECIFICATIONS, MECHANICAL, BOXED

Specification	Imperial	Metric
Weight, boxed (without pallet)	230 lbs	105 kg
Box dimensions (h, w, d)	56.5 x 31 x 31 in	144 x 79 x 79 cm
Minimum dimensions (h, w, d)	76 x 26 x 57 in	193 x 66 x 145 cm

- (h, w, d) = height, width, depth.

SPECIFICATIONS, ELECTRICAL

Specification	North America - 120VAC	International - 240VAC
Line Voltage, Nominal	120 VAC	240 VAC
Line Voltage Range	90 VAC - 250 VAC	90 VAC - 250 VAC
Line Frequency *	60 Hz	50 Hz, 60 Hz
Line Power, Current - attract mode	70 W, 0.6 A @ 120 VAC	70 W, 0.3 A @ 240 VAC
Line Power, Current - nominal	360 W, 3 A @ 120 VAC	360 W, 1.5 A @ 240 VAC
Line Power, Current - peak, <100 ms	540 W, 4.5 A @ 120 VAC	540 W, 2.25 A @ 240 VAC

* NOTE: Games designed for 60hz operation (e.g. North America games) will not function correctly on 50hz power and vice versa.

WARNING: Overloading electrical supply circuits is dangerous. Do not overload circuits. To calculate the maximum number of games for a circuit, check circuit amperage rating and divide by the game Nominal Line Power Current rating for your line voltage. For example, a 15A 120V household circuit, 15/3 A (nominal current) = 5 games maximum.

SPECIFICATIONS, ENVIRONMENT

	Minimum	Maximum
Temperature, Operating	32 °F / 0 °C	104 °F / 40 °C
Temperature, Storage	32 °F / 0 °C	104 °F / 40 °C
Relative Humidity, Operating	5%	95% non-condensing
Relative Humidity, Storage	5%	95% non-condensing

- (a) "The appliance has to be placed in a horizontal position."
- (b) If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid hazard.

6.1 GAME DIMENSIONS
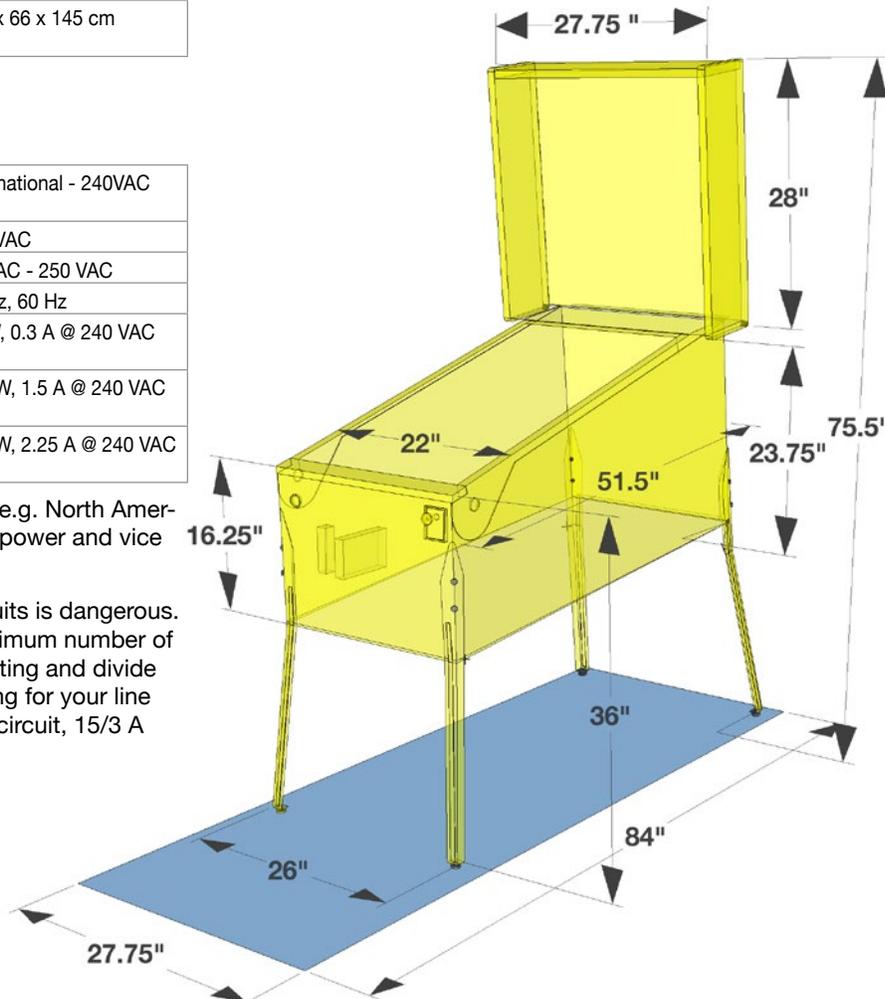
6.2   WARRANTY

500-55W5-01

Stern Pinball machines are assembled in Elk Grove Village, Illinois, USA; each pinball machine has unique characteristics that make it a one-of-a-kind American-made product. Each machine will have variations in appearance resulting from differences in the machine's particular wood parts, individual silk screened art and mechanical assemblies. Stern Pinball has inspected each game element to ensure it meets stringent quality and playability standards.

STERN PINBALL INC LIMITED WARRANTY

Stern Pinball Inc ('SELLER') warrants only to the initial purchaser of its products that the items listed below are free from defects in material and workmanship under normal use and service for the warranty period specified:

- Printed circuit boards (game logic): 2 months
- Dot Matrix / LCD Display: 9 months

No other parts of seller's product are warranted.

Warranty periods are effective from the initial date of shipment from seller to its authorized distributors.

Seller's sole liability shall be, at its option, to repair or replace products which are returned to seller during the warranty periods specified, provided:

1.   Seller is notified promptly upon discovery by purchaser that stated products are defective.
2.   Such products are properly packaged and then returned freight prepaid, to seller's plant.

This warranty does not apply to any parts damaged during shipment and/or due to improper handling, or due to improper installation or usage, or alteration. In no event shall the seller be liable for any anticipated profits, loss of profits, loss of use, accidental or consequential damages, or any other losses incurred by the customer in connection with the purchase of a Stern Pinball Inc Product.

WARRANTY DISCLAIMER

Except as specifically provided in a written contract between seller and purchaser, there are no other warranties, express or implied, including any implied warranties of merchantability or fitness for a particular purpose.

This Game Service Manual and all other documents relating to this product, playfield components, features, rules, programming, and operation are subject to change without notice (Service Bulletins, if applicable, available through official Stern Pinball website).

ATTENTION!
IMPORTANT WARRANTY INFORMATION

The electronics system, node network architecture, mechanical devices and associated software control systems in this pinball machine are designed to work with genuine Stern Pinball accessories and devices.

Installation of non-authorized accessories, lamps, LED's, motors or other devices or modification of electro-mechanical devices may damage the system and will void your warranty.

6.3   WARNINGS, COMPLIANCE, AND LEGAL NOTICES

PHOTOSENSITIVE SEIZURES HEALTH WARNING

A very small percentage of people may experience a seizure when exposed to certain visual images, including flashing lights or patterns. Even people with no history of seizures of epilepsy may have an undiagnosed condition that can cause "photosensitive epileptic seizures" due to certain visual images, flashing lights or patterns. Symptoms can include lightheadedness, altered vision, eye or face twitching, jerking or shaking of arms or legs, disorientation, confusion, momentary loss of awareness, and loss of consciousness or convulsions that can lead to injury from falling down or striking nearby objects.

IMMEDIATELY STOP PLAYING AND CONSULT A DOCTOR IF YOU EXPERIENCE ANY OF THESE SYMPTOMS.

PARTS SUBSTITUTIONS

For safety and reliability, substitute parts and equipment modifications are not recommended and may void any and all warranties. Use of Non-Stern Pinball Inc Parts or Modifications of game circuitry may adversely affect game play or game safety. Transport pinball machines with hinged backbox in the down position only! Always take great care when servicing any game. Always ready the service manual before replacing or servicing components. Substitutions of parts or equipment modifications may void FCC type acceptance.

Always disconnect the line voltage before servicing. Some parts may remain energized when unplugged. Take great caution when servicing any electrical components.

PERCHLORATE MATERIAL - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate

FCC CLASS A SUBPART J COMPLIANCE

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

RF INTERFERENCE NOTICE

The cable harness placements, ground strap routing, and other shielding have been designed to keep RF radiation and conduction within levels accepted by FCC rules. To maintain these levels, factory harness position, shielding, and ground straps must be installed in their factory locations should they become disconnected during maintenance.

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