

GAME OF THRONES

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 or epilepsy may have an undiagnosed condition that can cause "photosensitive epileptic seizures" due to certain visual images, flashing lights or patterns. Symptoms can include light-headedness, 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.

Stern Pinball machines are assembled in Melrose Park, 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 insure it meets our quality standards.

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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).



MANUAL #780-50G4-00
GAME OF THRONES PRO #500-55G4-01

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www.sternpinball.com - facebook.com/sternpinball

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SETUP AND MOVING

1. SETUP AND MOVING

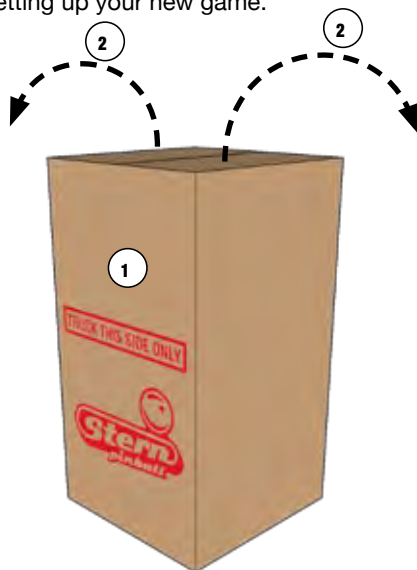
1.1 FIRST-TIME SETUP INSTRUCTIONS

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

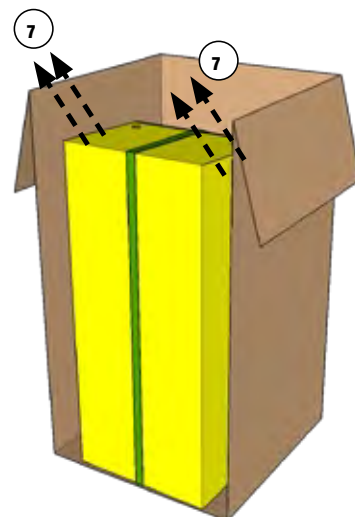
CAUTION: AT LEAST TWO (2) PEOPLE ARE REQUIRED TO MOVE AND MANEUVER THE GAME. USE PROPER MOVING EQUIPMENT AND EXTREME CARE WHILE HANDLING. STERN PINBALL MACHINES WEIGH OVER 250LBS BOXED.



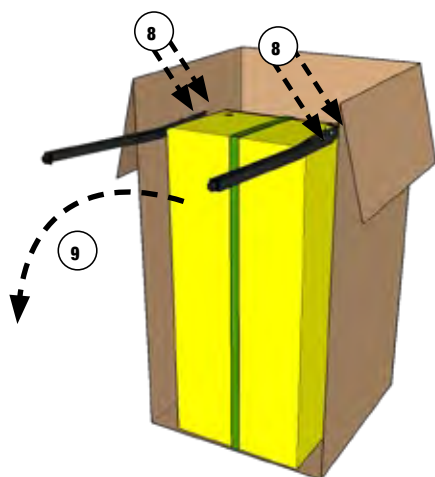
1. Locate the side labeled "TRUCK THIS SIDE ONLY". The bottom of the game faces this side.
2. Open the top box flaps by pulling hard in an upward motion on each flap. If the flaps are taped, cut the tape first, taking care to avoid the box staples.



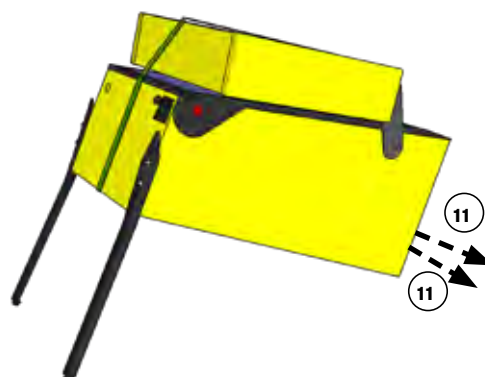
3. Remove the four (4) foam pieces and two (2) narrow box tubes which contain the four (4) identical legs with levelers.
4. DO NOT CUT STRAPPING YET. Keep backbox secured in the down position.
5. With the utility knife, carefully cut down the left and right corners of the box.



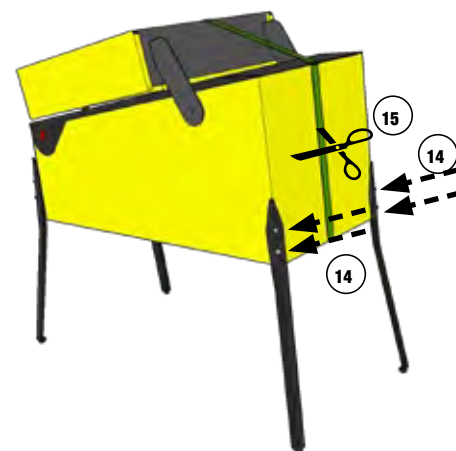
6. Let the face fall forward and remove the entire side by carefully cutting the bottom.
7. With the game still in its folded position, use a 5/8" wrench to loosen and remove the 2 leg bolts on each side of the front cabinet. Ensure the leg levelers are screwed all the way in to the legs.



8. Install front legs using the bolts removed from Step 5. Secure tightly.
9. Have someone help you carefully set the game down on the front legs.



10. Set aside the open box.
11. With the 5/8" 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.

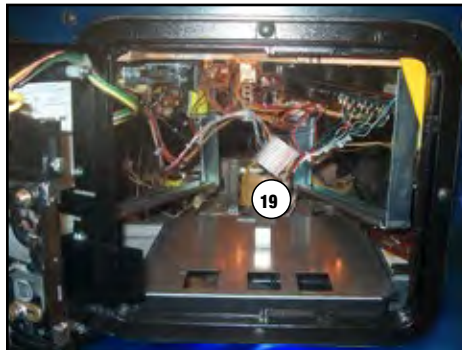


SETUP AND MOVING

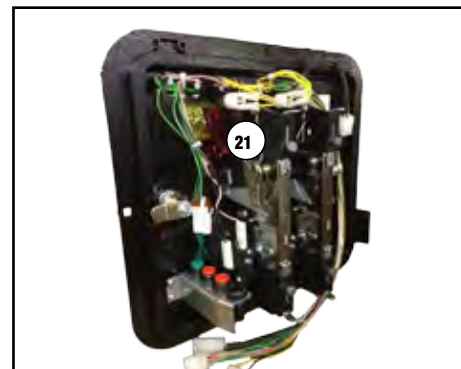
FIRST-TIME SETUP CONTINUED



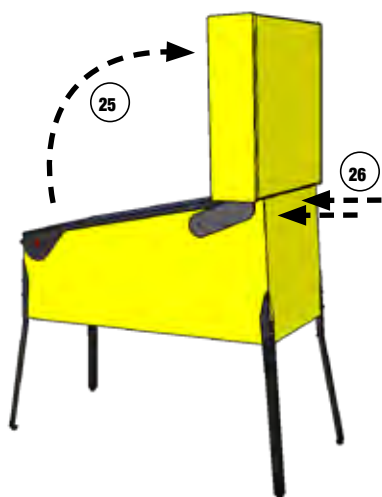
15. Cut nylon strapping and remove protective strap corner guards.
16. Locate the factory keys, either on the shooter rod or taped to the playfield glass.
17. Using snips, cut the tie-wrap securing the keys if required. One set of keys is for the front coin door, the other set of keys is for accessing components in the backbox.



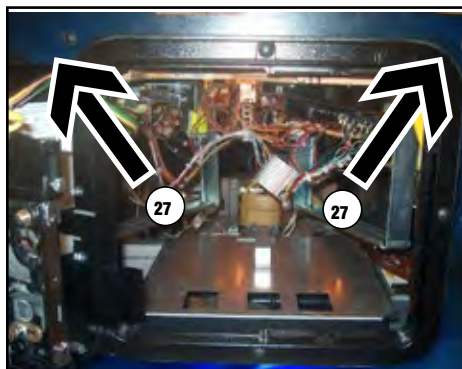
18. Open the front coin door.
19. Reach into the game and remove the retaining clip at the rear of the cash box.
20. Remove the cash box lid by sliding it toward you.



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 5/8" 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 CATASTROPHICALLY. 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.

SETUP AND MOVING

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. 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	20,000,000
6	DYNAMIC REPLAY START	60,000,000
7	REPLAY LEVEL #1	15,000,000
8	REPLAY LEVEL #2	30,000,000
9	REPLAY LEVEL #3	45,000,000
10	REPLAY LEVEL #4	60,000,000
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 11
19	MATCH PERCENTAGE	9%
20	MATCH AWARD	CREDIT
21	BALLS PER GAME	3
22	TILT WARNINGS	2
23	CREDIT LIMIT	30
24	ALLOW HIGH SCORES	YES
25	HIGH SCORE AWARD	CREDIT
26	GRAND CHAMPION AWARDS	1
27	HIGH SCORE #1 AWARDS	1
28	HIGH SCORE #2 AWARDS	0
29	HIGH SCORE #3 AWARDS	0
30	HIGH SCORE #4 AWARDS	0
31	GRAND CHAMPION SCORE	75,000,000
32	HIGH SCORE #1	55,000,000
33	HIGH SCORE #2	40,000,000

ID	Adjustment Name	Default Setting
34	HIGH SCORE #3	30,000,000
35	HIGH SCORE #4	25,000,000
36	HSTD INITIALS	3 INITIALS
37	HSTD RESET COUNT	2000
38	FREE PLAY	NO
39	LANGUAGE	ENGLISH
40	PLAYER LANGUAGE SELECT	YES
41	CUSTOM MESSAGE	ON
42	FLASH LAMP POWER	NORMAL
43	COIL PUSLE POWER	NORMAL
44	KNOCKER VOLUME	NORMAL
45	GAME RESTART	YES
46	BILL VALIDATOR	NO
47	MUSIC VOLUME	1
48	BALL SAVE TIME	0:05
49	TIMED PLUNGER	OFF
50	FLIPPER BALL LAUNCH	OFF
51	COINDOOR BALL SAVER	NO
52	COMPETITION MODE	NO
53	CONSOLATION BALL	YES
54	FAST BOOT	YES
55	Q24 OPTION	COIN METER
56	TICKET DISPENSER	NO
57	PLAYER COMPETITION	YES
58	TEAM SCORES	NO
59	LOCATION ID	0
60	GAME ID	0
61	TIME FORMAT	12-HOUR
62	COIN INPUT DELAY	30
63	LOST BALL RECOVERY	YES
64	COIN DOOR DISABLE TILT	NO
65	BACKBOX BRIGHTNESS	100%
66	COIN DOOR OPEN B.BOX BRIGHTNESS	10%

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.



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.

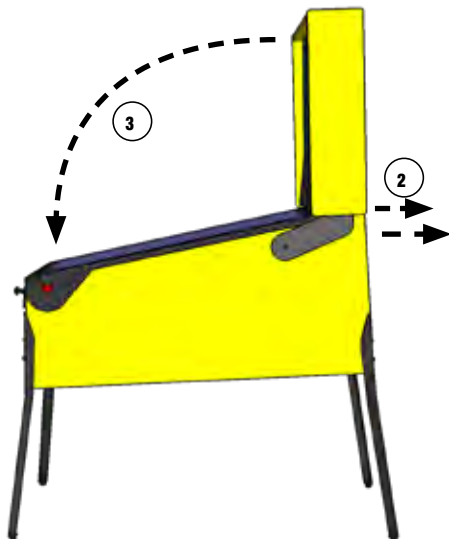
SETUP AND MOVING

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

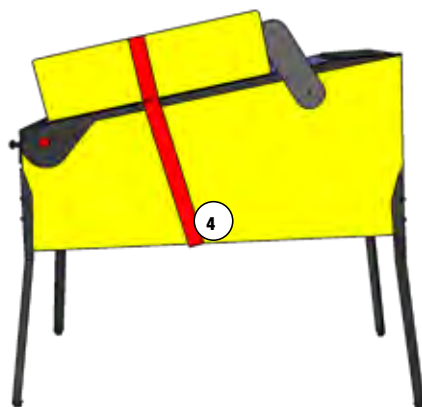
1. Ensure that the pinballs are removed from the playfield, and secure any free-moving mechanisms that may get damaged in transport



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.

TOOLS REQUIRED

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

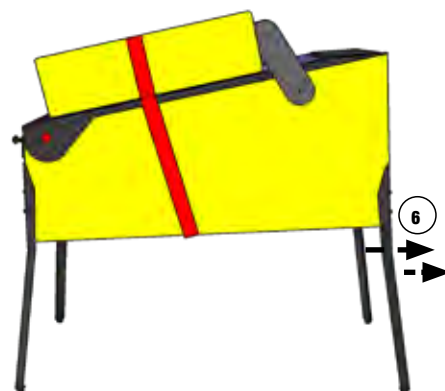


4. Securely strap the back box to the game
5. The game may be transported with the legs on. If the legs must be removed, follow the remaining steps.

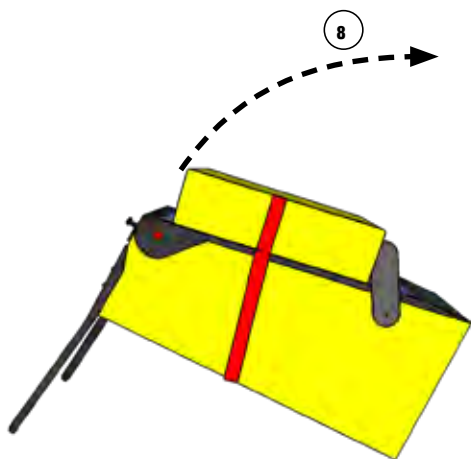
CAUTION

NEVER TRANSPORT THE GAME IN A MOVING VEHICLE WITH THE BACKBOX RAISED! TWO PEOPLE ARE REQUIRED TO REMOVE THE LEGS!

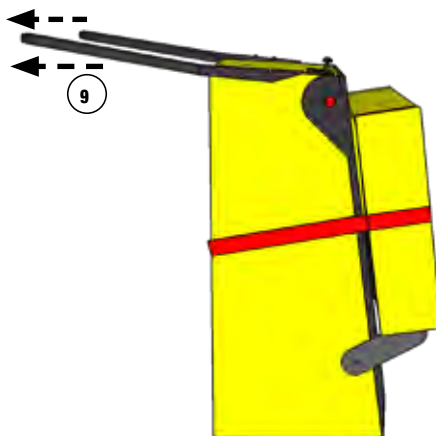
2. REMOVE THE LEGS AND STAND UP



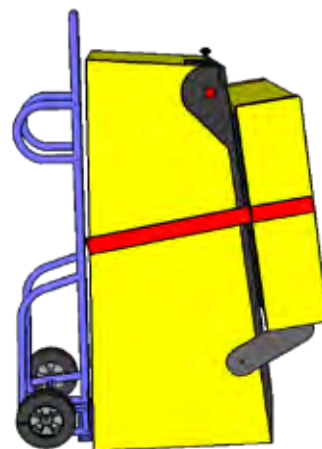
6. Remove the legs, rear legs first. Use a stool or a friend to support the rear of the game.
7. Rest the rear of the game on the ground.



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 (1/4", 5/16", 11/32", 3/8")
- Phillips screw driver
- Standard Allen wrench/Hex key set
- 5/8" 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
Game of Thrones Pro Maintenance Kit • 8 oz pinball playfield wax (Novus # 2) (675-0003-01) • Standard Pinball (260-5000-00) • Cleaning Cloth • All Playfield Rubber Rings • Spare Fuses	502-6002-G4
Game of Thrones Pro Deluxe Maintenance Kit • All standard kit items, plus: • Flipper rebuild kits, Left and Right (500-6307-10,-00)	502-6003-G4
Game of Thrones Playfield Plastics Kit	803-5000-G4
Game of Thrones Playfield Decals Kit	802-5000-G4
Game of Thrones Pro Backbox Decal Left	820-66G4-01
Game of Thrones Pro Backbox Decal Right	820-66G4-02
Game of Thrones Pro Cabinet Decal Left	820-66G4-03
Game of Thrones Pro Cabinet Decal Right	820-66G4-04
Game of Thrones Pro Cabinet Decal Front	820-66G4-05
Game of Thrones Pro Playfield, Bare	830-5000-G4
Game of Thrones Pro Translite	830-52G4-01

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

SPIKE SYSTEM AND NODE GUIDE

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 as 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.

COIN-DOOR SAFETY INTERLOCK

To protect the system and for user safety, power to the playfield is disabled when the front coin door is opened. 48V system power and 9V node bus power is disabled to all playfield components until the switch is closed.

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

Figure 2.4.1. 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

Figure 2.4.2. SPIKE node addresses for nodes with 4-position DIP switches. Addresses 0-7 are reserved for fixed-function nodes and do not require configuration.

2.5 SPIKE NODE PROGRAMMING

The SPIKE nodes are smart nodes that have on-board processors and run embedded code. The nodes are programmed

SPIKE SYSTEM AND NODE GUIDE CONTINUED

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.

System Protections

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.

FUSES

Nodes that have 48 V power are fused individually. Fuse voltage ratings are a safety rating and always must be higher than the circuit the fuse is protecting. Never replace a fuse with a lower voltage-rated fuse. Fuse current ratings must be replaced with the same current value. A higher current value fuse could cause catastrophic failures, and a lower-value fuse will cause premature fuse failures.

Common fuses

Fuse Rating (Amps)	Type	Part Number
3 A	Slow Blow MDL	200-5000-08
4 A	Slow Blow MDL	200-5000-06
5 A	Slow Blow MDL	200-5000-01
7 A	Slow Blow MDL	200-5000-03
8 A	Slow Blow MDL	200-5000-05

CAUTION: Always replace fuses with the exact current specifications.

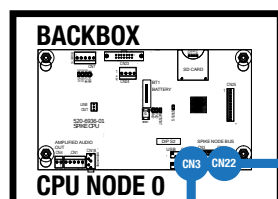
2.7 COMMON SPIKE NODE BOARDS

Description	Type	Part Number
SPIKE CPU Node	Node	520-6936-01
SPIKE CPU Node w/ Video Out Support (Backward compatible with -00)	Node	520-6936-10
Cabinet Node	Node	520-6967-00
48V 8-Driver Node	Node	520-6935-10
48V 4-Driver Node	Node	520-5329-10
SPIKE 32 Light and Switch Node	Node	520-5322-10
Through Serial Opto Receiver Extension	Extension	520-5345-01

LIGHT, SWITCH, AND DRIVER REFERENCE

3. LIGHT, SWITCH, AND DRIVER REFERENCE

GAME OF THRONES[™] PRO

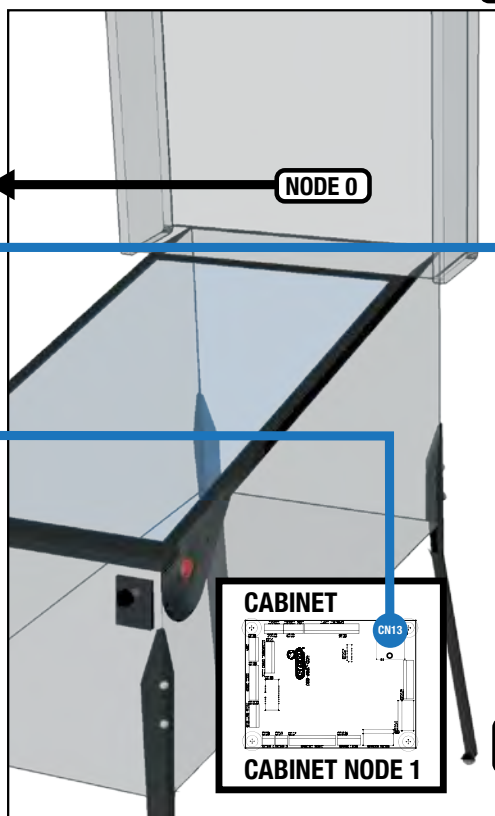


NODE 0

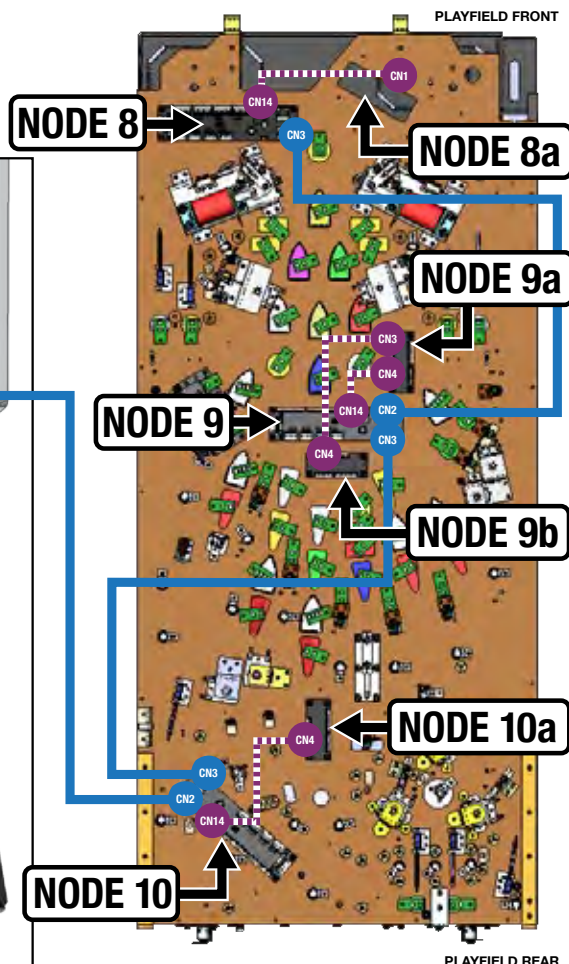
Node Bus Cable (RJ45)

Serial Data Cable

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



CABINET
CABINET NODE 1



3.1 SPIKE NODE BOARDS

ID	DIP Address	Description	Location	Part Number
Node 0	n/a	SPIKE CPU Node	Backbox	520-6936-01
Node 1	n/a	Cabinet Node	Cabinet	520-6967-00
Node 8	OFF-OFF-OFF-OFF	Lower Playfield 48V 8-Driver Node	Lower playfield	520-6935-10
8a	n/a	Trough Serial Opto Receiver Extension	Lower playfield ball trough	520-5345-01
Node 9	OFF-OFF-ON	Playfield 48V 4-Driver Node	playfield	520-5329-10
9a	n/a	Serial 16 LED board	playfield	520-6831-01
9b	n/a	Serial 16 LED board	playfield	520-6831-01
Node 10	OFF-ON-OFF	Playfield 48V 4-Driver Node	playfield	520-5329-10
10a	n/a	Serial 16 LED board	playfield	520-6831-01
	n/a	Power Supply	Backbox	011-5001-00
	n/a	Power Distribution Board	Backbox	520-5343-01
	n/a			
	n/a			

3.2 DRIVER REFERENCE

ID	Name	Node	Connector	Ret. Pin	Ret. Wire	Voltage	V+ Pin	V+ Color	Location	Type	Address	Part Number
1	Trough	9	CN9	3	ORG GRY	48V	4	GRY RED	Playfield	Coil - 27-1500	9-DR-2	090-5004-ND
2	Auto Plunger	9	CN7	3	ORG WHT	48V	4	GRY RED	Playfield	Coil - 23-800	9-DR-1	090-5001-ND

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LIGHT, SWITCH, AND DRIVER REFERENCE

DRIVER REFERENCE

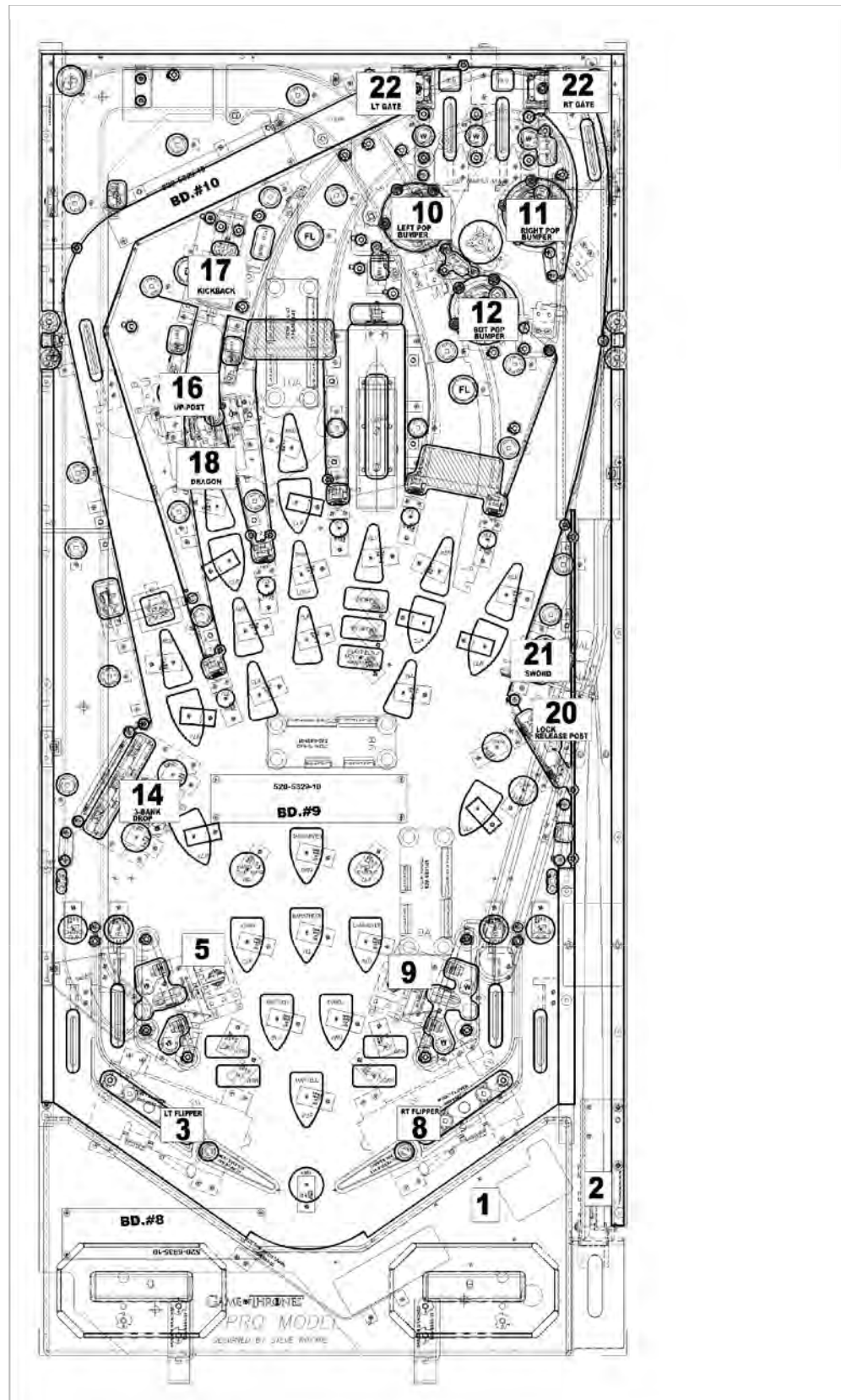


Figure 3.2.1. Playfield driver locations (top view).

LIGHT, SWITCH, AND DRIVER REFERENCE**DRIVER REFERENCE CONTINUED**

ID	Name	Node	Connector	Ret. Pin	Ret. Wire	Voltage	V+ Pin	V+ Color	Location	Type	Address	Part Number
3	Left Flipper Power	8	CN5	3	ORG YEL	48V	4	GRY ORG	Playfield	Coil - 22-1080	8-DR-0	090-5032-ND
4												
5	Left Slingshot	8	CN7	3	ORG BLU	48V	4	GRY ORG	Playfield	Coil - 26-1200	8-DR-1	090-5044-ND
6												
7	Shaker Motor	1	CN2	1	BLU	48V	5	RED	Cabinet	Motor	1-DR-0	041-5029-04
8	Right Flipper Power	8	CN8	5	ORG GRN	48V	6	GRY ORG	Playfield	Coil - 22-1080	8-DR-5	090-5032-ND
9	Right Slingshot	8	CN6	5	ORG VIO	48V	6	GRY ORG	Playfield	Coil - 26-1200	8-DR-4	090-5044-ND
10	Left Pop Bumper	10	CN7	3	ORG BLK	48V	4	GRY BRN	Playfield	Coil - 26-1200	10-DR-1	090-5044-ND
11	Right Pop Bumper	10	CN9	3	ORG BRN	48V	4	GRY BRN	Playfield	Coil - 26-1200	10-DR-2	090-5044-ND
12	Bottom Pop Bumper	10	CN11	3	ORG RED	48V	4	GRY BRN	Playfield	Coil - 26-1200	10-DR-3	090-5044-ND
13												
14	3-Bank Drop Reset	8	CN9	3	BLU BLK	48V	4	GRY ORG	Playfield	Coil - 25-1240	8-DR-2	090-5034-ND
15												
16	Up-Post	8	CN12	5	YEL BRN	48V	6	GRY ORG	Playfield	Coil - 26-1200	8-DR-7	090-5044-ND
17	Kickback	8	CN11	3	BLU BRN	48V	4	GRY ORG	Playfield	Coil - 23-800	8-DR-3	090-5001-ND
18	Dragon	8	CN10	5	YEL BLK	48V	6	GRY ORG	Playfield	Coil - 23-800	8-DR-6	090-5001-ND
19												
20	Lock Release Post	9	CN11	3	BLU GRN	48V	4	GRY RED	Playfield	Coil - 26-1200	9-DR-3	090-5044-ND
21	Sword	9	CN5	3	BLU YEL	48V	4	GRY RED	Playfield	Coil - 26-1200	9-DR-0	090-5044-ND
22	L/R Control Gates	10	CN5	3	BLU RED	48V	4	GRY BRN	Back Panel	Coil - 32-1250	10-DR-0	090-5060-01-ND
23												
24												
25												
26												
27												
28												
29												
30	Ticket Meter	1	CN3	2	BLK	12V	1	RED	Cabinet	Digital Out	1-DR-2	500-9946-00
31	Coin Meter	1	CN4	2	BLK	12V	1	RED	Cabinet	Digital Out	1-DR-3	500-9946-00
32	Ticket Enable	1	CN11	3		12V	1		Cabinet	Digital Out	1-DR-4	

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 Return Lane	9	-	CN15	3	PNK BRN	14	BLK VIO	Playfield	Rollover	9-SW-5	500-9935-03
2	Right Return Lane	8	-	CN10	4	PNK RED	3	BLK GRN	Playfield	Rollover	8-SW-6	500-9935-04
3	Left Outlane	9	-	CN15	2	PNK BLK	14	BLK VIO	Playfield	Rollover	9-SW-4	500-9935-04
4	Right Outlane	8	-	CN12	4	PNK ORG	3	BLK GRN	Playfield	Rollover	8-SW-7	500-9935-04
5	Left Slingshot	8	-	CN7	2	GRY BLU	1	BLK GRN	Playfield	Leaf	8-SW-1	180-5231-00
6	Right Slingshot	8	-	CN6	4	GRY VIO	3	BLK GRN	Playfield	Leaf	8-SW-4	180-5231-00
7	3-Bank Drop Tgt Top	9	-	CN15	11	WHT BRN	14	BLK VIO	Playfield	Opto	9-SW-13	520-5252-13
8	3-Bank Drop Tgt Mid	9	-	CN15	12	WHT RED	14	BLK VIO	Playfield	Opto	9-SW-14	520-5252-13
9	3-Bank Drop Tgt Btm	9	-	CN15	13	WHT ORG	14	BLK VIO	Playfield	Opto	9-SW-15	520-5252-13
10	L Flipper Button	8	-	CN9	2	GRY BRN	1	BLK GRN	Cabinet	Leaf	8-SW-2	180-5164-01
11	R Flipper Button	8	-	CN11	2	GRY RED	1	BLK GRN	Cabinet	Leaf	8-SW-3	180-5164-01
12												
13												
14												
15												
16	Left Flipper EOS	8	-	CN5	2	GRY YEL	1	BLK GRN	Playfield	Leaf	8-SW-0	180-5149-00

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LIGHT, SWITCH, AND DRIVER REFERENCE**SWITCH REFERENCE CONTINUED**

ID	Name	Node	Node Ext	Conn.	Input Pin	Input Wire	GND Pin	Ground Wire	Location	Type	Address	Part Number
17	Right Flipper EOS	8	-	CN8	4	GRY GRN	3	BLK GRN	Playfield	Leaf	8-SW-5	180-5149-00
18												
19												
20	Trough 6	8	8a	CN14	-	-	-	-	Playfield	Opto	8a-SW-9	520-5344-00 tx 520-5345-01 rx
21	Trough 5	8	8a	CN14	-	-	-	-	Playfield	Opto	8a-SW-10	520-5344-00 tx 520-5345-01 rx
22	Trough 4	8	8a	CN14	-	-	-	-	Playfield	Opto	8a-SW-11	520-5344-00 tx 520-5345-01 rx
23	Trough 3	8	8a	CN14	-	-	-	-	Playfield	Opto	8a-SW-12	520-5344-00 tx 520-5345-01 rx
24	Trough 2	8	8a	CN14	-	-	-	-	Playfield	Opto	8a-SW-13	520-5344-00 tx 520-5345-01 rx
25	Trough 1	8	8a	CN14	-	-	-	-	Playfield	Opto	8a-SW-14	520-5344-00 tx 520-5345-01 rx
26	Trough Jam	8	8a	CN14	-	-	-	-	Playfield	Opto	8a-SW-15	520-5344-00 tx 520-5345-01 rx
27	Shooter Lane	9	-	CN7	2	LGN YEL	1	BLK VIO	Playfield	Rollover	9-SW-1	180-5157-01
28												
29	Left Spinner	10	-	CN15	5	WHT YEL	14	BLK BRN	Playfield	Micro	10-SW-7	180-5010-02
30	Left Loop	10	-	CN15	8	WHT VIO	14	BLK BRN	Playfield	Rollover	10-SW-10	500-9935-03
31	Right Loop	10	-	CN15	9	WHT GRY	14	BLK BRN	Playfield	Rollover	10-SW-11	500-9935-03
32	Target 1	10	-	CN15	6	WHT GRN	14	BLK BRN	Playfield	Leaf, Target	10-SW-8	515-9785-00-00
33	Target 2	10	-	CN15	7	WHT BLU	14	BLK BRN	Playfield	Leaf, Target	10-SW-9	515-9785-00-00
34	Target 3	10	-	CN5	2	PNK YEL	1	BLK BRN	Playfield	Leaf, Target	10-SW-0	515-9785-00-00
35	Target 4	9	-	CN15	6	PNK GRN	14	BLK VIO	Playfield	Leaf, Target	9-SW-8	515-9785-00-00
36	Target 5	9	-	CN15	7	PNK BLU	14	BLK VIO	Playfield	Leaf, Target	9-SW-9	515-9785-00-00
37	Kickback	10	-	CN15	12	LGN BRN	14	BLK BRN	Playfield	Opto	10-SW-14	515-0215-00 tx 515-0215-01 rx
38	Left Ramp Entrance	10	-	CN15	3	TAN YEL	14	BLK BRN	Playfield	Opto	10-SW-5	515-0215-00 tx 515-0215-01 rx
39	Left Ramp Exit	10	-	CN15	4	TAN GRN	14	BLK BRN	Playfield	Opto	10-SW-6	515-0215-00 tx 515-0215-01 rx
40	Battering Ram	10	-	CN15	2	TAN ORG	14	BLK BRN	Playfield	Rollover	10-SW-4	515-9836-00
41	Right Ramp Entrance	9	-	CN15	5	TAN BLU	14	BLK VIO	Playfield	Opto	9-SW-7	515-0215-00 tx 515-0215-01 rx
42	Right Ramp Exit	10	-	CN15	13	LGN RED	14	BLK BRN	Playfield	Opto	10-SW-15	515-0215-00 tx 515-0215-01 rx
43	Right 2-Bank Top	9	-	CN15	8	PNK VIO	14	BLK VIO	Playfield	Leaf, Target	9-SW-10	515-9784-00-00
44	Right 2-Bank Bottom	9	-	CN15	9	PNK GRY	14	BLK VIO	Playfield	Leaf, Target	9-SW-11	515-9784-00-00
45	10 Points	9	-	CN15	10	PNK WHT	14	BLK VIO	Playfield	Leaf, Target	9-SW-12	180-5231-00
46	Lock 1	9	-	CN5	2	LGN ORG	1	BLK VIO	Playfield	Rollover	9-SW-0	180-5119-02
47	Lock 2	9	-	CN9	2	LGN BLU	1	BLK VIO	Playfield	Rollover	9-SW-2	180-5119-02
48	Lock 3	9	-	CN11	2	LGN VIO	1	BLK VIO	Playfield	Rollover	9-SW-3	180-5119-02
49												
50	Left Pop Bumper	10	-	CN7	2	TAN BLK	1	BLK BRN	Playfield	Leaf	10-SW-1	180-5232-00
51	Right Pop Bumper	10	-	CN9	2	TAN	1	BLK BRN	Playfield	Leaf	10-SW-2	180-5232-00
52	Bottom Pop Bumper	10	-	CN11	2	TAN RED	1	BLK BRN	Playfield	Leaf	10-SW-3	180-5232-00

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LIGHT, SWITCH, AND DRIVER REFERENCE**SWITCH REFERENCE CONTINUED**

ID	Name	Node	Node Ext	Conn.	Input Pin	Input Wire	GND Pin	Ground Wire	Location	Type	Address	Part Number
53	Left Top Lane	10	-	CN15	10	WHT	14	BLK BRN	Playfield	Rollover	10-SW-12	500-9935-03
54	Right Top Lane	10	-	CN15	11	LGN BLK	14	BLK BRN	Playfield	Rollover	10-SW-13	500-9935-03
55												
56												
57												
58												
59												
60	Lockdown	1	-	CN7	8	TAN WHT	5	BLK WHT	Cabinet	Leaf	1-SW-2	
61												
62												
63	Start Button	1	-	CN6	10	GRY	5	BLK WHT	Cabinet	Micro	1-SW-11	180-5174-00
64	Tournament Start	1	-	CN6	9	GRY WHT	5	BLK WHT	Cabinet	Micro	1-SW-12	180-5174-00
65												
66	Left Coin	1	-	CN5	9	PNK BRN	3	BLK	Cabinet	Micro	1-SW-16	
67	Right Coin	1	-	CN5	8	PNK RED	3	BLK	Cabinet	Micro	1-SW-18	
68	Center Coin	1	-	CN5	7	PNK ORG	3	BLK	Cabinet	Micro	1-SW-17	
69	Fourth Coin	1	-	CN5	6		-		Cabinet	-	1-SW-19	
70	Fifth Coin	1	-	CN5	5		-		Cabinet	-	1-SW-20	
71	Tilt Pendulum	1	-	CN6	7	WHT	5	BLK WHT	Cabinet	Plumb Bob	1-SW-14	
72			-									
74	Ticket Notch	1	-	CN11	5		-		Cabinet	-	1-SW-8	
75	Slam Tilt	1	-	CN5	4	LGN RED	3	BLK	Cabinet	-	1-SW-21	
76												
77												
C1	DIP 1	0	-	-	-		-		CPU Node		0-SW-0	-
C10	Service Plus	0	-	CN25	3	LGN VIO	6	BLK	Coin Door		0-SW-10	180-5192-02
C11	Service Minus	0	-	CN25	2	LGN BLU	6	BLK	Coin Door		0-SW-11	180-5192-02
C12	Service Back	0	-	CN25	1	LGN BLK	6	BLK	Coin Door		0-SW-12	180-5192-00
C16	DC Sense	0	-	CN7	4	GRY RED	1	BLK	Cabinet	-	0-SW-16	-
C2	DIP 2	0	-	-	-		-		CPU Node		0-SW-2	-
C3	DIP 3	0	-	-	-		-		CPU Node		0-SW-3	-
C4	DIP 4	0	-	-	-		-		CPU Node		0-SW-4	-
C5	DIP 5	0	-	-	-		-		CPU Node		0-SW-5	-
C6	DIP 6	0	-	-	-		-		CPU Node		0-SW-6	-
C7	DIP 7	0	-	-	-		-		CPU Node		0-SW-7	-
C8	DIP 8	0	-	-	-		-		CPU Node		0-SW-8	-
C9	Service Select	0	-	CN25	4	LGN GRY	6	BLK	Coin Door		0-SW-9	180-5192-04

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	112-5033-08
3	Tournament Start	1	-	CN6	2	YEL RED	1	RED	Cabinet	Feature	White	1-LP-3	112-5033-08
4	Lockdown-R	1	-	CN7	2	RED WHT	1	RED	Cabinet	Feature	RGB	1-LP-5	520-5333-00
5	Lockdown-G	1	-	CN7	3	GRN WHT	1	RED	Cabinet	Feature	RGB	1-LP-4	520-5333-00
6	Lockdown-B	1	-	CN7	4	BLU WHT	1	RED	Cabinet	Feature	RGB	1-LP-7	520-5333-00
7													
8													
9													

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LIGHT, SWITCH, AND DRIVER REFERENCE**LIGHT REFERENCE CONTINUED**

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
10													
11	Left Outlane	9	9b	CN2	7	ORG BLK	8/9	RED	Playfield	Feature	White	9-LP-32	520-5307-00
12	Left Return Lane	9	9b	CN2	6	ORG BRN	8/9	RED	Playfield	Feature	White	9-LP-33	520-5307-00
13	Left 3-Bank (Bot.)	9	9b	CN2	5	ORG RED	8/9	RED	Playfield	Feature	White	9-LP-34	520-5307-00
14	Left 3-Bank (Mid.)	9	9b	CN2	4	ORG YEL	8/9	RED	Playfield	Feature	White	9-LP-35	520-5307-00
15	Left 3-Bank (Top)	9	9b	CN2	3	ORG GRN	8/9	RED	Playfield	Feature	White	9-LP-36	520-5307-00
16	Left 3-Bank Sigil-R	9	9b	CN1	6	RED BRN	11	RED	Playfield	Feature	RGB	9-LP-42	520-5333-00
17	Left 3-Bank Sigil-G	9	9b	CN1	5	GRN BRN	11	RED	Playfield	Feature	RGB	9-LP-43	520-5333-00
18	Left 3-Bank Sigil-B	9	9b	CN1	4	BLU BRN	11	RED	Playfield	Feature	RGB	9-LP-44	520-5333-00
19	Hand of the King	9	-	CN16	2	BRN BLK	1	YEL	Playfield	Feature	White	9-LP-1	520-5307-00
20	Targaryen Sigil	9	-	CN16	3	BRN	1	YEL	Playfield	Feature	White	9-LP-2	520-5307-00
21	Iron Throne	9	-	CN16	4	BRN RED	1	YEL	Playfield	Feature	White	9-LP-3	520-5307-00
22	Stark Sigil	9	-	CN16	5	BRN VIO	1	YEL	Playfield	Feature	White	9-LP-4	520-5307-00
23	Baratheon Sigil	9	-	CN16	6	BRN GRY	1	YEL	Playfield	Feature	White	9-LP-5	520-5307-00
24	Lannister Sigil	9	-	CN16	7	BRN WHT	1	YEL	Playfield	Feature	White	9-LP-6	520-5307-00
25	Greyjoy Sigil	9	-	CN16	8	YEL BLK	1	YEL	Playfield	Feature	White	9-LP-7	520-5307-00
26	Tyrell Sigil	9	-	CN16	9	YEL BRN	1	YEL	Playfield	Feature	White	9-LP-8	520-5307-00
27	Martell Sigil	9	-	CN16	10	YEL RED	1	YEL	Playfield	Feature	White	9-LP-9	520-5307-00
28	2x	9	-	CN16	11	YEL ORG	1	YEL	Playfield	Feature	White	9-LP-10	520-5307-00
29	3x	9	-	CN16	12	YEL GRN	1	YEL	Playfield	Feature	White	9-LP-11	520-5307-00
30	4x	9	-	CN16	13	YEL BLU	1	YEL	Playfield	Feature	White	9-LP-12	520-5307-00
31	5x	9	-	CN16	14	YEL VIO	1	YEL	Playfield	Feature	White	9-LP-13	520-5307-00
32	Shoot Again	8	-	CN12	1	YEL GRY	2	YEL	Playfield	Feature	White	8-LP-3	520-5307-00
33	Right Return Lane	8	-	CN6	1	BRN ORG	2	YEL	Playfield	Feature	White	8-LP-0	520-5307-00
34	Right Outlane	8	-	CN8	1	BRN YEL	2	YEL	Playfield	Feature	White	8-LP-1	520-5307-00
35	Right 2-Bank Sigil-R	9	9a	CN1	3	RED GRY	10	RED	Playfield	Feature	RGB	9-LP-29	520-5333-00
36	Right 2-Bank Sigil-G	9	9a	CN1	2	GRN GRY	10	RED	Playfield	Feature	RGB	9-LP-30	520-5333-00
37	Right 2-Bank Sigil-B	9	9a	CN1	1	BLU GRY	10	RED	Playfield	Feature	RGB	9-LP-31	520-5333-00
38	Right 2-Bank (Top)	9	9a	CN2	2	ORG BLU	8	RED	Playfield	Feature	White	9-LP-21	520-5307-00
39	Right 2-Bank (Bot.)	9	9a	CN2	1	ORG VIO	8	RED	Playfield	Feature	White	9-LP-22	520-5307-00
40	Left Loop Sigil-R	10	-	CN16	10	RED ORG	1	YEL	Playfield	Feature	RGB	10-LP-9	520-5333-00
41	Left Loop Sigil-G	10	-	CN16	11	GRN ORG	1	YEL	Playfield	Feature	RGB	10-LP-10	520-5333-00
42	Left Loop Sigil-B	10	-	CN16	12	BLU ORG	1	YEL	Playfield	Feature	RGB	10-LP-11	520-5333-00
43	Left Loop Arrow	10	-	CN16	13	ORG BLU	1	YEL	Playfield	Feature	White	10-LP-12	520-5307-00
44	Standup Target #1 (L)	9	9b	CN2	2	ORG BLU	8/9	RED	Playfield	Feature	White	9-LP-37	520-5307-00
45	Kickback Lane Arrow-Clr	9	9b	CN1	9	YEL BLK	12	RED	Playfield	Feature	White	9-LP-39	520-5307-00
46	Kickback Lane Arrow-Amb	9	9b	CN1	8	YEL BRN	12	RED	Playfield	Feature	White	9-LP-40	520-5307-00
47	Kickback Lane Sigil-R	9	9b	CN1	3	RED YEL	10	RED	Playfield	Feature	RGB	9-LP-45	520-5333-00
48	Kickback Lane Sigil-G	9	9b	CN1	2	GRN YEL	10	RED	Playfield	Feature	RGB	9-LP-46	520-5333-00
49	Kickback Lane Sigil-B	9	9b	CN1	1	BLU YEL	10	RED	Playfield	Feature	RGB	9-LP-47	520-5333-00
50	Kickback Lane Arrow-Red	9	9b	CN1	7	YEL RED	12	RED	Playfield	Feature	White	9-LP-41	520-5307-00
51	Dragon Fire	10	10a	CN1	3	BRN	10	RED	Playfield	Feature	Red	10-LP-29	112-5049-02
52	Standup Target #2	9	9b	CN2	1	ORG WHT	8/9	RED	Playfield	Feature	White	9-LP-38	520-5307-00
53	Left Ramp Arrow-Clr	10	10a	CN2	7	BRN BLK	8/9	RED	Playfield	Feature	White	10-LP-16	520-5307-00
54	Left Ramp Lock-Grn	10	10a	CN2	6	BRN	8/9	RED	Playfield	Feature	White	10-LP-17	520-5307-00
55	Left Ramp Sigil-R	10	10a	CN1	9	RED GRN	12	RED	Playfield	Feature	RGB	10-LP-23	520-5333-00
56	Left Ramp Sigil-G	10	10a	CN1	8	GRN	12	RED	Playfield	Feature	RGB	10-LP-24	520-5333-00
57	Left Ramp Sigil-B	10	10a	CN1	7	BLU GRN	12	RED	Playfield	Feature	RGB	10-LP-25	520-5333-00

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LIGHT, SWITCH, AND DRIVER REFERENCE

LIGHT REFERENCE CONTINUED

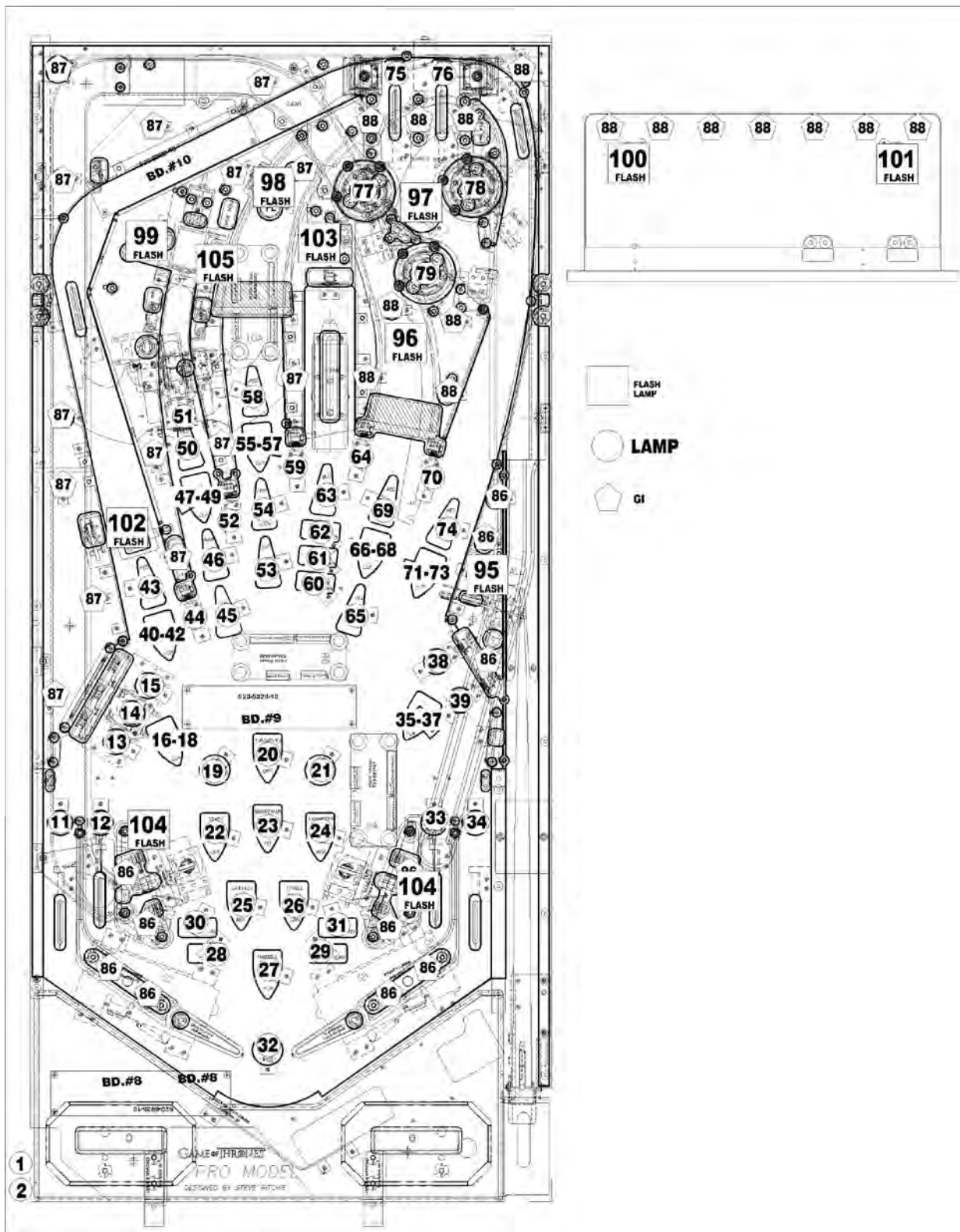


Figure 3.4.1. Playfield light locations (top view).

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LIGHT, SWITCH, AND DRIVER REFERENCE**LIGHT REFERENCE CONTINUED**

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
58	Left Ramp Arrow-Red	10	10a	CN2	5	BRN RED	8/9	RED	Playfield	Feature	White	10-LP-18	520-5307-00
59	Standup Target #3	10	10a	CN1	4	BRN WHT	11	RED	Playfield	Feature	White	10-LP-28	520-5307-00
60	Battering Ram 3-Bot	10	10a	CN2	4	BRN ORG	8/9	RED	Playfield	Feature	White	10-LP-19	520-5307-00
61	Battering Ram 2-Mid	10	10a	CN2	3	BRN YEL	8/9	RED	Playfield	Feature	White	10-LP-20	520-5307-00
62	Battering Ram 1-Top	10	10a	CN2	2	BRN GRN	8/9	RED	Playfield	Feature	White	10-LP-21	520-5307-00
63	Battering Ram Arrow	10	10a	CN2	1	BRN BLU	8/9	RED	Playfield	Feature	White	10-LP-22	520-5307-00
64	Standup Target #4	9	9a	CN2	7	ORG BLK	9	RED	Playfield	Feature	White	9-LP-16	520-5307-00
65	Right Ramp Arrow-Yel	9	9a	CN2	6	ORG BRN	9	RED	Playfield	Feature	White	9-LP-17	520-5307-00
66	Right Ramp Sigil-R	9	9a	CN1	9	RED BLU	12	RED	Playfield	Feature	RGB	9-LP-23	520-5333-00
67	Right Ramp Sigil-G	9	9a	CN1	8	GRN BLU	12	RED	Playfield	Feature	RGB	9-LP-24	520-5333-00
68	Right Ramp Sigil-B	9	9a	CN1	7	BLU	12	RED	Playfield	Feature	RGB	9-LP-25	520-5333-00
69	Right Ramp Arrow-Red	9	9a	CN2	5	ORG RED	9	RED	Playfield	Feature	White	9-LP-18	520-5307-00
70	Standup Target #5 (R)	9	9a	CN2	4	ORG YEL	8	RED	Playfield	Feature	White	9-LP-19	520-5307-00
71	Right Loop Sigil-R	9	9a	CN1	6	RED VIO	11	RED	Playfield	Feature	RGB	9-LP-26	520-5333-00
72	Right Loop Sigil-G	9	9a	CN1	5	GRN VIO	11	RED	Playfield	Feature	RGB	9-LP-27	520-5333-00
73	Right Loop Sigil-B	9	9a	CN1	4	BLU VIO	11	RED	Playfield	Feature	RGB	9-LP-28	520-5333-00
74	Right Loop Arrow	9	9a	CN2	3	ORG GRN	8	RED	Playfield	Feature	White	9-LP-20	520-5307-00
75	Left Top Lane	10	-	CN16	15	ORG GRY	1	YEL	Playfield	Feature	White	10-LP-14	520-5307-00
76	Right Top Lane	10	-	CN16	16	ORG WHT	1	YEL	Playfield	Feature	White	10-LP-15	520-5307-00
77	Left Pop Bumper	10	-	CN16	2	BRN BLK	1	YEL	Playfield	Feature	White	10-LP-1	520-6971-01
78	Right Pop Bumper	10	-	CN16	3	BRN	1	YEL	Playfield	Feature	White	10-LP-2	520-6971-01
79	Bottom Pop Bumper	10	-	CN16	4	BRN RED	1	YEL	Playfield	Feature	White	10-LP-3	520-6971-01
80													
81													
82													
83													
84													
85	Coin Door Gl	1	-	CN5	2	YEL	1	YEL-WHT	Coin Door	G.I.	White	1-LP-1	112-5033-08
86	Lower Playfield Gl	8	-	CN13	1	WHT BLK	3	YEL BLK	Playfield	G.I.	White	8-LP-4	112-5034-08
87	Left Playfield Gl	9	-	CN13	1	RED BLK	3	YEL RED	Playfield	G.I.	White	9-LP-0	112-5034-08
88	Upper Gl	10	-	CN13	1	BLU BLK	3	YEL BLU	Playfield/Back Panel	G.I.	-	10-LP-0	112-5034-xx
89													
90													
91													
92													
93													
94													
95	Sword Lock	9	-	CN16	15	ORG BLK	1	YEL	Playfield	Flash	White	9-LP-14	113-5045-08
96	Right Ramp	10	-	CN16	5	YEL BLK	1	YEL	Playfield	Flash	White	10-LP-4	113-5045-08
97	Pop Bumpers	10	-	CN16	6	YEL BRN	1	YEL	Playfield	Flash	White	10-LP-5	113-5045-08
98	Left Ramp	10	10a	CN1	5	BRN GRY	11	RED	Playfield	Flash	White	10-LP-27	113-5045-08
99	Kickback Lane	10	10a	CN1	6	BRN VIO	11	RED	Playfield	Flash	White	10-LP-26	113-5045-08
100	Back Panel (L)	10	-	CN16	8	YEL GRN	1	YEL	Back Panel	Flash	White	10-LP-7	113-5045-08

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LIGHT, SWITCH, AND DRIVER REFERENCE**LIGHT REFERENCE CONTINUED**

ID	Name	Node	Node Ext.	Conn.	Ret. Pin	Ret. Wire	Src. Pin	Src. Wire	Location	Type	Light Color	Address	Part Number
101	Back Panel (R)	10	-	CN16	9	YEL BLU	1	YEL	Back Panel	Flash	White	10-LP-8	113-5045-08
102	Left Loop	10	-	CN16	14	ORG VIO	1	YEL	Playfield	Flash	White	10-LP-13	113-5045-08
103	Battering Ram	10	-	CN16	7	YEL ORG	1	YEL	Playfield	Flash	Red	10-LP-6	113-5045-02
104	Left/Right Sling	8	-	CN10	1	BRN GRN	2	YEL	Playfield	Flash	White	8-LP-2	113-5032-08
105	Throne	10	10a	CN1	2	YEL BLK	2	RED	Playfield	Flash	White	10-LP-30	113-5032-08
106													
107													
108													
109													
110													
111													
112													

ELECTRONIC PINOUTS AND SCHEMATICS

4. ELECTRONIC PINOUTS AND SCHEMATICS

4.1 SPIKE CPU NODE 0

520-6936-01

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-2	-
C3	DIP 3	-	-	-	-	-	CPU Node		0-SW-3	-
C4	DIP 4	-	-	-	-	-	CPU Node		0-SW-4	-
C5	DIP 5	-	-	-	-	-	CPU Node		0-SW-5	-
C6	DIP 6	-	-	-	-	-	CPU Node		0-SW-6	-
C7	DIP 7	-	-	-	-	-	CPU Node		0-SW-7	-
C8	DIP 8	-	-	-	-	-	CPU Node		0-SW-8	-
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
C16	Playfield Power Interlock	CN7	4	GRY	5	GRY-RED	Cabinet	Interlock	0-SW-16	180-5136-00

CONNECTORS

ID	Connector Type	Description
CN1	5-Pin .156" Header	Backbox 2-channel amplified speaker out
CN3	RJ45	SPIKE node bus - to cabinet node N1
CN4	2-Pin .156"	Cabinet 1-channel amplified speaker out
CN7	5-Pin .156" Header	48V supply from main power supply
CN18	3.5mm Stereo TRS jack	Headphone Jack
CN20	USB	USB connector - for software updates, audit dumps, and expansion modules
CN21	USB	USB connector - for software updates, audit dumps, and expansion modules
CN22	RJ45	SPIKE node bus - to playfield node, N8
CN23	14-Pin .100" Header	Dot matrix display connector
CN24	4-Pin .156" Header	5V DC and ground out to the LED display
CN25	12-Pin .100" Header	Dedicated switch inputs - service, volume switches

COMPONENTS

ID	Name
S1	Reset Switch
S2	DIP Switches
SD CARD	For system SD card. Note: only to be removed if instructed to by Stern Service.
BT1	CR232 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.
24V	+24V Audio Power	Red	ON: Audio power supply is good, OFF: Audio power supply off, call tech support.
9V	+9V Node Bus Power	Red	ON: Node bus power supply is good, OFF: Node bus power supply bad, call tech support.
5V		Red	ON: Logic power supply is good. OFF: Logic power supply bad, call tech support.
TxD	Node bus transmit	Red	Node bus transmit activity
RxD	Node bus receive	Red	Node bus receive activity
Status	System status	Red	Constant double blink - game software running
Netstat	Network status	Red	Communication bridge activity

ELECTRONIC PINOUTS AND SCHEMATICS**SPIKE CPU NODE 0 CONTINUED****AUDIO PINOUTS**

ID	Type	Pin	Description	Minimum Impedance	Max Power (RMS)
CN18	TRS 3.5mm Headphone Jack	Tip	Headphone Left	8 Ohms	200mW
		Ring	Headphone Right	8 Ohms	200mW
		Sleeve	Audio Ground	-	-
CN1	.156" 5-pin Header	1	Speaker Right Ground (-)	4 Ohms	-
		2	Speaker Right (+)	4 Ohms	20W
		3	n/c	-	-
		4	Speaker Left Ground (-)	4 Ohms	-
		5	Speaker Left (+)	4 Ohms	20W
CN4	.156" 2-pin Header	1	Woofer Ground (-)	8 Ohms	-
		2	Woofer Out (+)	8 Ohms	40W
CN27	.100" 3-pin header	1	Line Out Left (+)	600 Ohms	-
		2	Line Out Ground	-	-
		3	Line Out Right (-)	600 Ohms	-

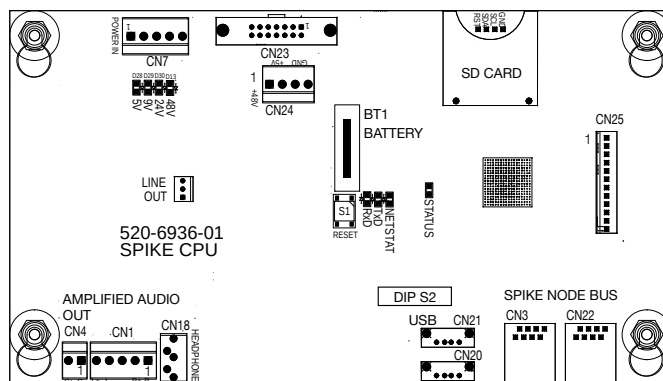


Figure 4.1.1. SPIKE CPU Node connector detail.

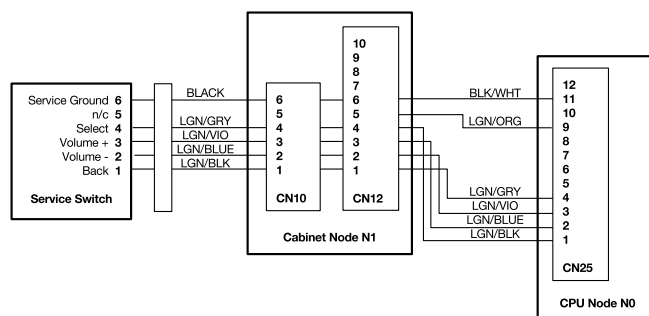
COIN DOOR SERVICE SWITCH WIRING

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.

COUNTRY CODES (DIP S2)

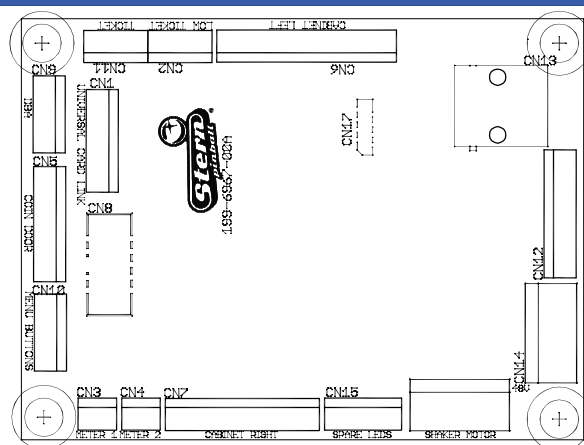
	DIP S2							
Country	1	2	3	4	5	6	7	8
USA	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Austria	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Australia	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
Belgium	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
Canada 1	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
Canada 2	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
Croatia	OFF	ON	ON	OFF	ON	OFF	OFF	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

ELECTRONIC PINOUTS AND SCHEMATICS

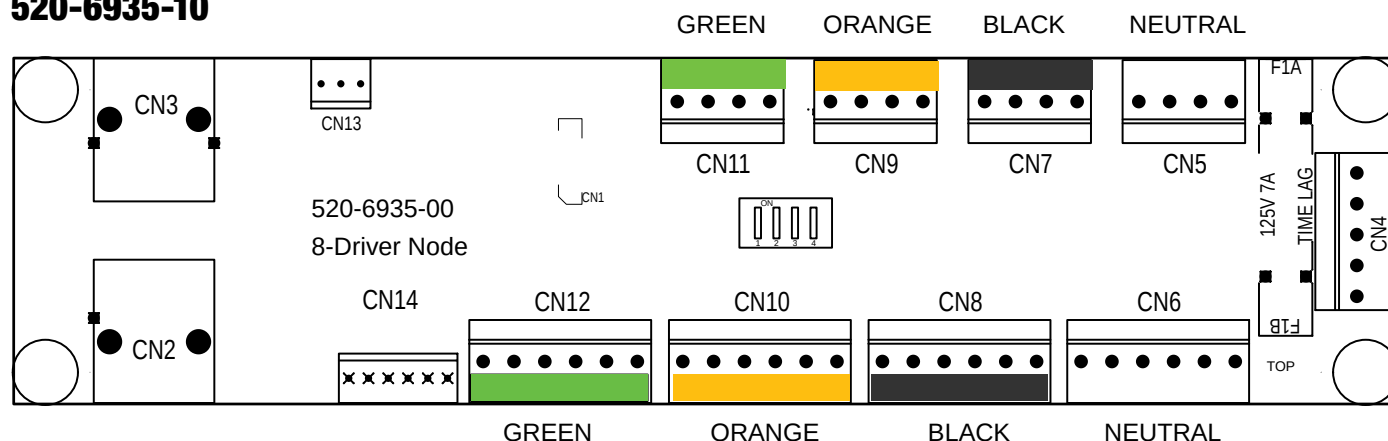
4.2 NODE 1 CABINET

520-6967-00

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	TAN-WHT
		9	N/C	-
		10	N/C	-
		11	N/C	-
		12	N/C	-

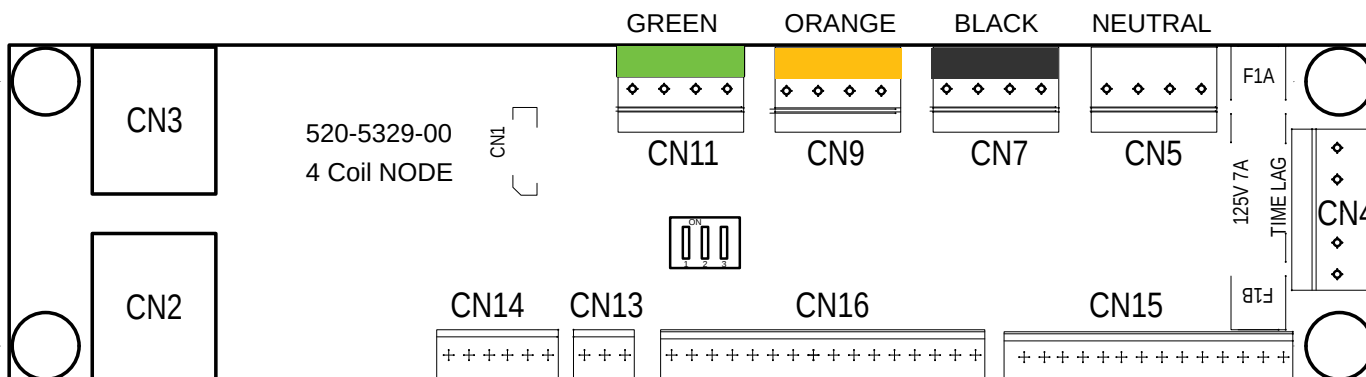


ID	Type	Pin	Description	Wire Color
CN9	.100" 6-Pin Header Dollar Bill Acceptor	1	Coin Enable/DBA Inhibit (-)	-
		2	Coin Enable/DBA Inhibit (+)	-
		3	Key	Key
		4	DBA 12V	-
		5	Coin 6 / DBA Credit	-
		6	Ground	-
CN10	.100" 6-Pin Header Service Switch In	1	Service Back (To Coindoor)	LGN-BLK
		2	Service 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	

ELECTRONIC PINOUTS AND SCHEMATICS**4.3 LOWER PLAYFIELD 48V 8-DRIVER PINOUT NODE 8****520-6935-10**

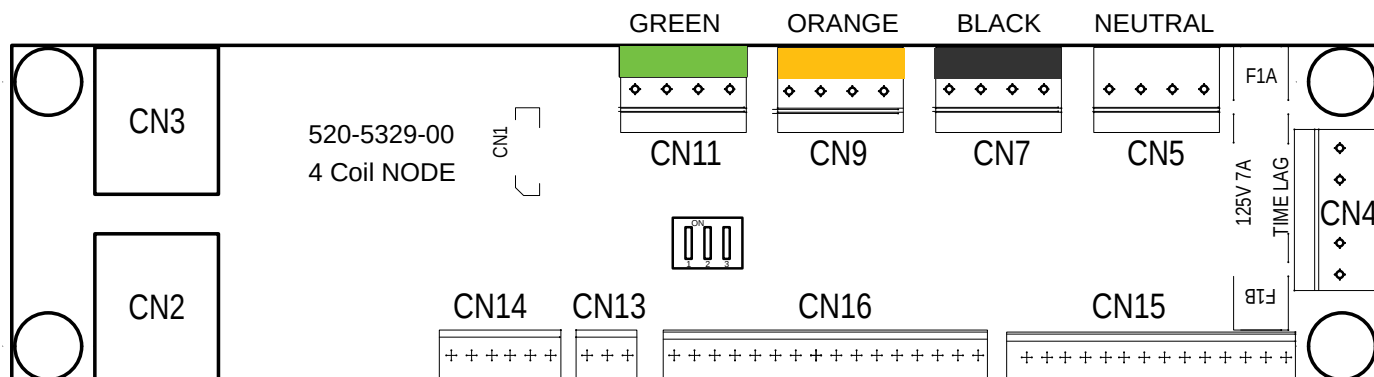
ID	Type	Pin	Description	Wire Color
SW1	Address DIP	-	Node 8 - OFF-OFF-OFF-OFF	-
CN2	RJ45	-	SPIKE Node Bus	n/a
CN3	RJ45	-	SPIKE Node Bus	Multi
CN4	.156" 5-Pin Header Node Power	1	Ground	BLK
		2	Key	Key
		3	N/C	-
		4	N/C	-
		5	48VDC In	GRY
CN5	.156" 4-Pin Header (White)	1	Switch Ground	BLK-GRN
		2	8-SW-0 Switch Return	GRY-YEL
		3	8-DR-0 Driver Return	ORG-YEL
		4	48V Driver Power	GRY-ORG
CN6	.156 6-Pin Header (White)	1	8-LP-0 Light Return	BRN-ORG
		2	LED V+	YEL
		3	Switch Ground	BLK-GRN
		4	8-SW-4 Switch Return	GRY-VIO
		5	8-DR-4 Driver Return	ORG-VIO
		6	48V Driver Power	GRY-ORG
CN7	.156" 4-Pin Header (Black)	1	Switch Ground	BLK-GRN
		2	8-SW-1 Switch	GRY-BLU
		3	8-DR-1 Driver Return	ORG-BLU
		4	48V Driver Power	GRY-ORG
CN8	.156 6-Pin Header (Black)	1	8-LP-1 Light Return	BRN-YEL
		2	LED V+	YEL
		3	Switch Ground	BLK-GRN
		4	8-SW-5	GRY-GRN
		5	8-DR-5 Driver Return	ORG-GRN
		6	48V Driver Power	GRY-ORG
CN9	.156" 4-Pin Header (Orange)	1	Switch Ground	BLK-GRN
		2	8-SW-2 Switch	GRY-BRN
		3	8-DR-2 Driver Return	BLU-BLK
		4	48V Driver Power	GRY-ORG

ID	Type	Pin	Description	Wire Color
CN10	.156" 6-Pin Header (Orange)	1	8-LP-2 Light Return	BRN-BLU
		2	LED V+	YEL
		3	Switch Ground	BLK-GRN
		4	8-SW-6 Switch Return	PNK-RED
		5	8-DR-6 Driver Return	YEL-BLK
		6	48V Driver Power	GRY-ORG
CN11	.156" 4-Pin Header (Green)	1	Switch Ground	BLK-GRN
		2	8-SW-3 Switch	GRY-RED
		3	8-DR-3 Driver Return	BLU-BRN
		4	48V Driver Power	GRY-ORG
CN12	.156" 6-Pin Header (Green)	1	8-LP-3 Light Return	YEL-GRY
		2	LED V+	YEL
		3	Switch Ground	BLK-GRN
		4	8-SW-7 Switch Return	PNK-ORG
		5	8-DR-7 Driver Return	YEL-BRN
		6	48V Driver Power	GRY-ORG
CN13	.100" 3-Pin Header	1	8-LP-4 GI Return (1A Max)	WHT-BLK
		2	GI Ground	-
		3	LED V+	YEL-BLK
CN14	.100" 6-Pin Header, Node Extension Bus	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	-
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED
F1	Fuse	-	7A SB, 125V	n/a

ELECTRONIC PINOUTS AND SCHEMATICS**4.4 MID PLAYFIELD 48V 4-DRIVER PINOUT NODE 9****520-5329-10**

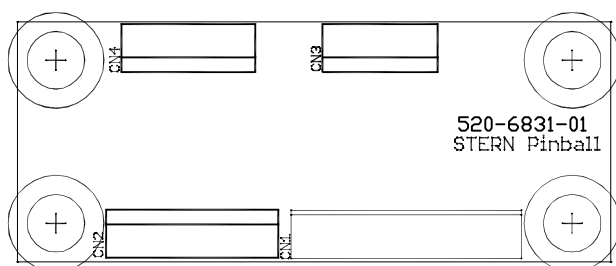
ID	Type	Pin	Description	Wire Color
SW1	Address DIP	-	Node 9 - OFF-OFF-ON	
CN1	-	-	N/C	-
CN2	RJ45	-	SPIKE Node Bus	Multi
CN3	RJ45	-	SPIKE Node Bus	Multi
CN4	.156" 5-Pin Header Node Power	1	Ground	BLK
		2	Key	KEY
		3	N/C	-
		4	N/C	-
		5	48VDC In	GRY
CN5	.156" 4-Pin Header (White)	1	Switch Ground	BLK-VIO
		2	9-SW-0 Switch Return	LGN-ORG
		3	9-DR-0 Driver Return	BLU-YEL
		4	48V Driver Power	GRY-RED
CN7	.156" 4-Pin Header (Black)	1	Switch Ground	BLK-VIO
		2	9-SW-1 Switch Return	LGN-YEL
		3	9-DR-1 Driver Return	ORG-WHT
		4	48V Driver Power	GRY-RED
CN9	.156" 4-Pin Header (Orange)	1	Switch Ground	BLK-VIO
		2	9-SW-2 Switch Return	LGN-BLU
		3	9-DR-2 Driver Return	ORG-GRY
		4	48V Driver Power	GRY-RED
CN11	.156" 4-Pin Header (Green)	1	Switch Ground	BLK-VIO
		2	9-SW-3 Switch Return	LGN-VIO
		3	9-DR-3 Driver Return	BLU-GRN
		4	48V Driver Power	GRY-RED
CN13	.100" 3-Pin Header	1	9-LP-0 GI Return (1A Max)	RED-BLK
		2	GI Ground	-
		3	LED V+	YEL-RED
CN14	.100" 6-Pin Header	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	VIO-BRN
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED

ID	Type	Pin	Description	Wire Color
CN15	.100" 14-Pin Header	1	+5V	RED
		2	9-SW-4 Switch Return	PNK-BLK
		3	9-SW-5 Switch Return	PNK-BRN
		4	9-SW-6 Switch Return	-
		5	9-SW-7 Switch Return	TAN-BLU
		6	9-SW-8 Switch Return	PNK-GRN
		7	9-SW-9 Switch Return	PNK-BLU
		8	9-SW-10 Switch Return	PNK-VIO
		9	9-SW-11 Switch Return	PNK-GRY
		10	9-SW-12 Switch Return	PNK-WHT
		11	9-SW-13 Switch Return	WHT-BRN
		12	9-SW-14 Switch Return	WHT-RED
		13	9-SW-15 Switch Return	WHT-ORG
		14	Switch Ground	BLK-VIO
CN16	.100" 16-Pin Header	1	+6V	YEL
		2	9-LP-1 Light Return	BRN-BLK
		3	9-LP-2 Light Return	BRN
		4	9-LP-3 Light Return	BRN-RED
		5	9-LP-4 Light Return	BRN-VIO
		6	9-LP-5 Light Return	BRN-GRY
		7	9-LP-6 Light Return	BRN-WHT
		8	9-LP-7 Light Return	YEL-BLK
		9	9-LP-8 Light Return	YEL-BRN
		10	9-LP-9 Light Return	YEL-RED
		11	9-LP-10 Light Return	YEL-ORG
		12	9-LP-11 Light Return	YEL-GRN
		13	9-LP-12 Light Return	YEL-BLU
		14	9-LP-13 Light Return	YEL-VIO
		15	9-LP-14 Light Return	ORG-BLK
		16	9-LP-15 Light Return	-
F1	Fuse	7A SB, 125V		n/a

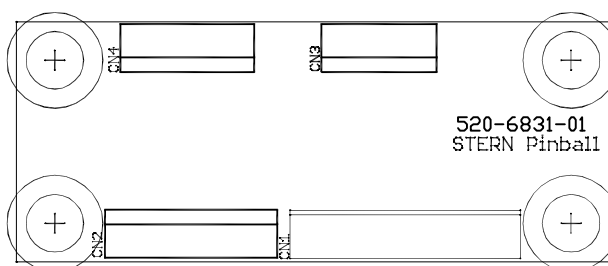
ELECTRONIC PINOUTS AND SCHEMATICS**4.5 UPPER PLAYFIELD 48V 4-DRIVER PINOUT NODE 10****520-5329-10**

ID	Type	Pin	Description	Wire Color
SW1	Address DIP	-	Node 10 - OFF-ON-OFF	
CN1	-	-	Not Used	-
CN2	RJ45	-	SPIKE Node Bus	Multi
CN3	RJ45	-	SPIKE Node Bus	Multi
CN4	.156" 5-Pin Header Node Power	1	Ground	BLK
		2	Key	KEY
		3	N/C	-
		4	N/C	-
		5	48VDC In	GRY
CN5	.156" 4-Pin Header (White)	1	Switch Ground	BLK-BRN
		2	9-SW-0 Switch Return	PNK-YEL
		3	9-DR-0 Driver Return	BLU-RED
		4	48V Driver Power	GRY-BRN
CN7	.156" 4-Pin Header (Black)	1	Switch Ground	BLK-BRN
		2	9-SW-1 Switch Return	TAN-BLK
		3	9-DR-1 Driver Return	ORG-BLK
		4	48V Driver Power	GRY-BRN
CN9	.156" 4-Pin Header (Orange)	1	Switch Ground	BLK-BRN
		2	9-SW-2 Switch Return	TAN
		3	9-DR-2 Driver Return	ORG-BRN
		4	48V Driver Power	GRY-BRN
CN11	.156" 4-Pin Header (Green)	1	Switch Ground	BLK-BRN
		2	9-SW-3 Switch Return	TAN-RED
		3	9-DR-3 Driver Return	ORG-RED
		4	48V Driver Power	GRY-BRN
CN13	.100" 3-Pin Header	1	9-LP-0 GI Return (1A Max)	BLU-BLK
		2	GI Ground	-
		3	LED V+	YEL-BLU
CN14	.100" 6-Pin Header	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	VIO-BRN
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED

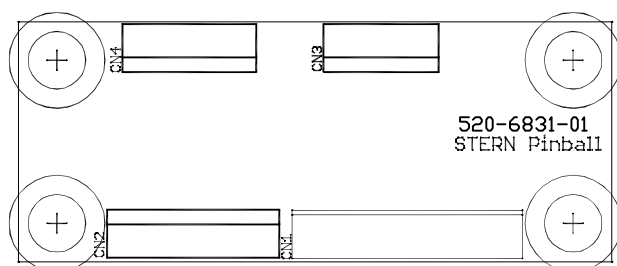
ID	Type	Pin	Description	Wire Color
CN15	.100" 14-Pin Header	1	+5V	RED
		2	9-SW-4 Switch Return	TAN-ORG
		3	9-SW-5 Switch Return	TAN-YEL
		4	9-SW-6 Switch Return	TAN-GRN
		5	9-SW-7 Switch Return	WHT-YEL
		6	9-SW-8 Switch Return	WHT-GRN
		7	9-SW-9 Switch Return	WHT-BLU
		8	9-SW-10 Switch Return	WHT-VIO
		9	9-SW-11 Switch Return	WHT-GRY
		10	9-SW-12 Switch Return	WHT
		11	9-SW-13 Switch Return	LGN-BLK
		12	9-SW-14 Switch Return	LGN-BRN
		13	9-SW-15 Switch Return	LGN-RED
		14	Switch Ground	BLK-BRN
CN16	.100" 16-Pin Header	1	+6V	YEL
		2	9-LP-1 Light Return	BRN-BLK
		3	9-LP-2 Light Return	BRN
		4	9-LP-3 Light Return	BRN-RED
		5	9-LP-4 Light Return	YEL-BLK
		6	9-LP-5 Light Return	YEL-BRN
		7	9-LP-6 Light Return	YEL-ORG
		8	9-LP-7 Light Return	YEL-GRN
		9	9-LP-8 Light Return	YEL-BLU
		10	9-LP-9 Light Return	RED-ORG
		11	9-LP-10 Light Return	GRN-ORG
		12	9-LP-11 Light Return	BLU-ORG
		13	9-LP-12 Light Return	ORG-BLU
		14	9-LP-13 Light Return	ORG-VIO
		15	9-LP-14 Light Return	ORG-GRY
		16	9-LP-15 Light Return	ORG-WHT
F1	Fuse		7A SB, 125V	n/a

ELECTRONIC PINOUTS AND SCHEMATICS**4.6 SERIAL 16 LED BOARD 9A****520-6831-01**

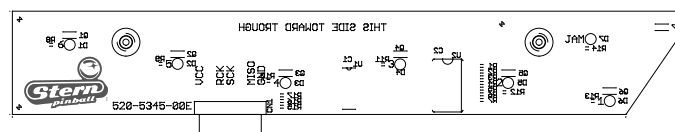
ID	Type	Pin	Description	Wire Color
CN1	.100 in 12-Pin Housing	1	LED15	BLU-GRY
		2	LED14	GRN-GRY
		3	LED13	RED-GRY
		4	LED12	BLU-VIO
		5	LED11	GRN-VIO
		6	LED10	RED-VIO
		7	LED9	BLU
		8	LED8	GRN-BLU
		9	LED7	RED-BLU
		10	+5 VDC LED Supply	RED
		11	+5 VDC LED Supply	RED
		12	+5 VDC LED Supply	RED
CN2	.100 in 9-Pin Housing	1	LED6	ORG-VIO
		2	LED5	ORG-BLU
		3	LED4	ORG-GRN
		4	LED3	ORG-YEL
		5	LED2	ORG-RED
		6	LED1	ORG-BRN
		7	LED0	ORG-BLK
		8	+5 VDC LED Supply	RED
		9	+5 VDC LED Supply	RED
CN3	.100" 6-Pin Header	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	VIO-BRN
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED
CN4	.100 in 7-Pin Housing	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

4.7 SERIAL 16 LED BOARD 9B**520-6831-01**

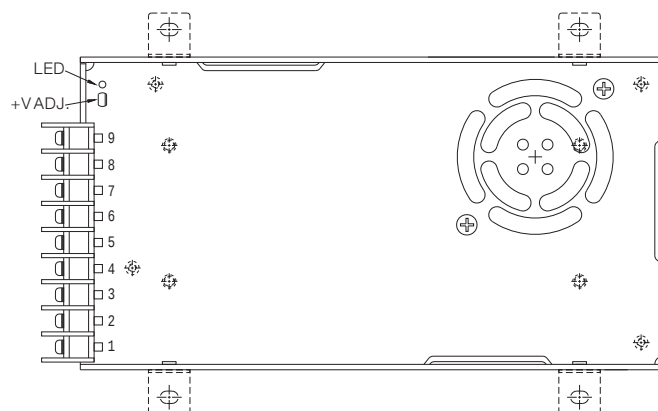
ID	Type	Pin	Description	Wire Color
CN1	.100 in 12-Pin Housing	1	LED15	BLU-YEL
		2	LED14	GRN-YEL
		3	LED13	RED-YEL
		4	LED12	BLU-BRN
		5	LED11	GRN-BRN
		6	LED10	RED-BRN
		7	LED9	YEL-RED
		8	LED8	YEL-BRN
		9	LED7	YEL-BLK
		10	+5 VDC LED Supply	RED
		11	+5 VDC LED Supply	RED
		12	+5 VDC LED Supply	RED
CN2	.100 in 9-Pin Housing	1	LED6	ORG-WHT
		2	LED5	ORG-BLU
		3	LED4	ORG-GRN
		4	LED3	ORG-YEL
		5	LED2	ORG-RED
		6	LED1	ORG-BRN
		7	LED0	ORG-BLK
		8	+5 VDC LED Supply	RED
		9	+5 VDC LED Supply	RED
CN3	.100" 6-Pin Header	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	VIO-BRN
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED
CN4	.100 in 7-Pin Housing	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

ELECTRONIC PINOUTS AND SCHEMATICS**4.8 SERIAL 16 LED BOARD 10A****520-6831-01**

ID	Type	Pin	Description	Wire Color
CN1	.100 in 12-Pin Housing	1	LED15	-
		2	LED14	YEL-BLK
		3	LED13	BRN
		4	LED12	BRN-WHT
		5	LED11	BRN-GRY
		6	LED10	BRN-VIO
		7	LED9	BLU-GRN
		8	LED8	GRN
		9	LED7	RED-GRN
		10	+5 VDC LED Supply	RED
		11	+5 VDC LED Supply	RED
		12	+5 VDC LED Supply	RED
CN2	.100 in 9-Pin Housing	1	LED6	BRN-BLU
		2	LED5	BRN-GRN
		3	LED4	BRN-YEL
		4	LED3	BRN-ORG
		5	LED2	BRN-RED
		6	LED1	BRN
		7	LED0	BRN-BLK
		8	+5 VDC LED Supply	RED
		9	+5 VDC LED Supply	RED
CN3	.100" 6-Pin Header	1	Ground	BLK
		2	DIN	VIO-BLK
		3	DOUT	VIO-BRN
		4	SCK	VIO-RED
		5	RCK	VIO-ORG
		6	V+	RED
CN4	.100 in 7-Pin Housing	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

4.9 THROUGH OPTO RECIEVER**520-5345-01**

ID	Type	Pin	Description	Wire Color
CN1	.100" 7-Pin Header	1	Ground	BLK
		2	MISO Output Data	VIO-BLK
		3	MOSI Input Data	-
		4	SCK Serial Clock	VIO-RED
		5	RCK Register Clock	VIO-ORG
		6	N/C	-
		7	+5 VDC IN	RED

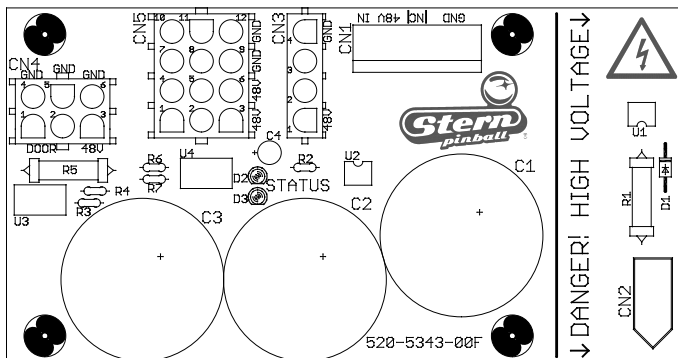
4.10 MAIN POWER SUPPLY**011-5001-00**

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

ELECTRONIC PINOUTS AND SCHEMATICS

4.11 POWER DISTRIBUTION BOARD

520-5343-01



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	-
		2	Door Interlock Switch +48V	-
		3	Switched 48V Out (to Node 1)	GRY/YEL
		4	Door Interlock Return Ground	-
		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

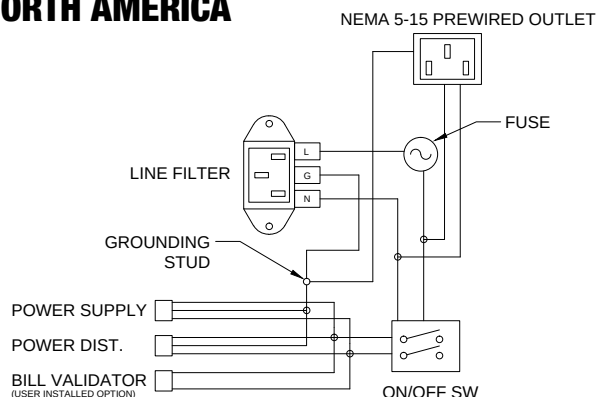
4.12 POWER PLUG WIRING

CAUTION

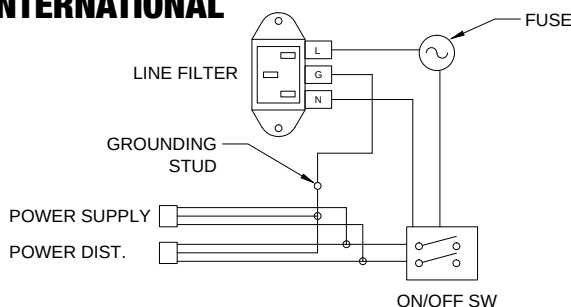
TO MAINTAIN SAFETY, GROUND WIRE FROM LINE FILTER IS TO BE MOUNTED FIRST ON GROUNDING STUD AND SECURED WITH NUT. ALL OTHER GROUNDS MAY THEN BE ATTACHED TO GROUNDING STUD.

REPLACE ALL FUSES WITH CORRECT CURRENT RATINGS!

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 MDL	200-5000-05
220/240v (Europe, Australia, UK)	5 A	Slow Blow MDL	200-5000-01

5. PARTS REFERENCE

5.1 PLAYFIELD RUBBER PARTS

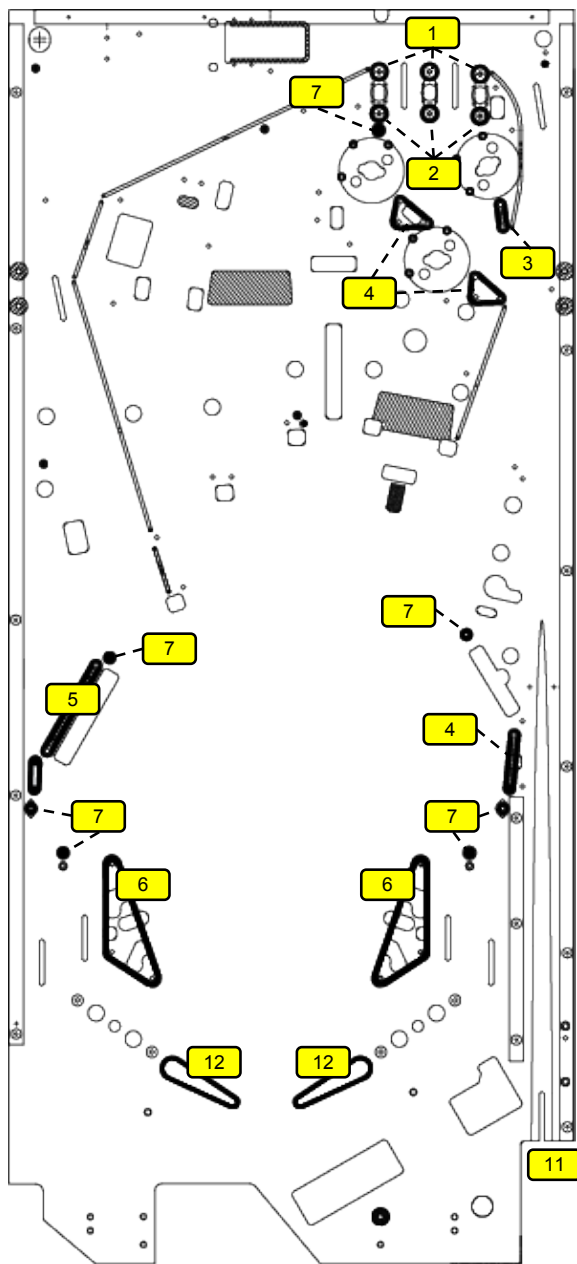


Figure 5.1.1. Rubber o-ring part locations

RUBBER O-RINGS

ID	Qty	Size (ID)	Size (OD)	Durometer	Color	Part Number
1	3	3/16"		50	Black	545-5348-01
2	3	5/16"		50	Black	545-5348-02
3	1	7/16"		50	Black	545-5348-18
4	3	3/4"		50	Black	545-5348-04
5	1	1-1/2"		50	Black	545-5348-21
6	2	2-1/2"		50	Black	545-5348-09
7	7		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	Bumper Pad (Sub assemblies)	Black	545-5105-00
14	4	Bumper Pad (Flippers)	Black	545-5428-00

Figure 5.1.3. Other rubber part numbers and usage

5.2 RUBBER SIZE CHART

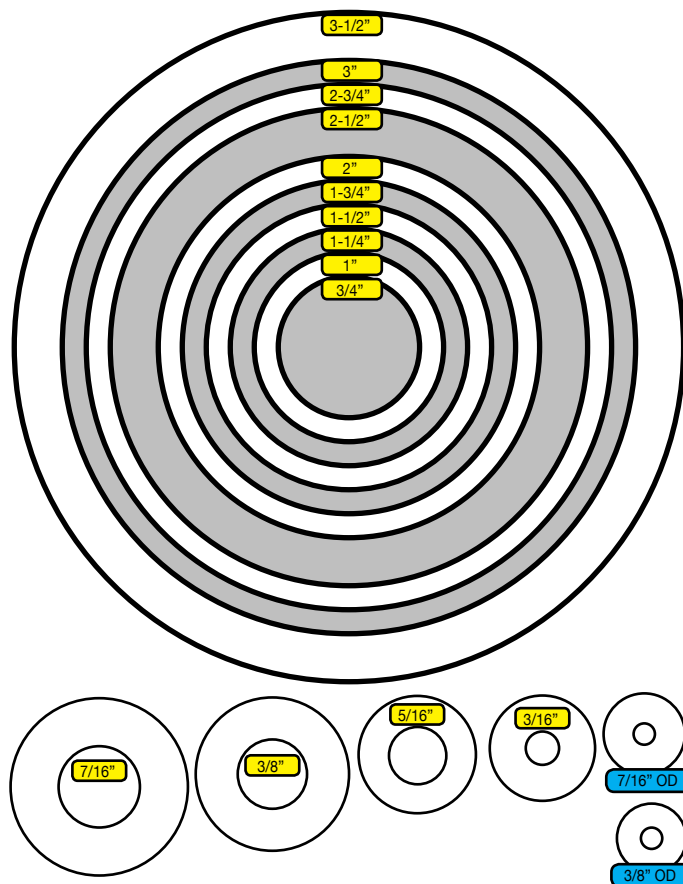
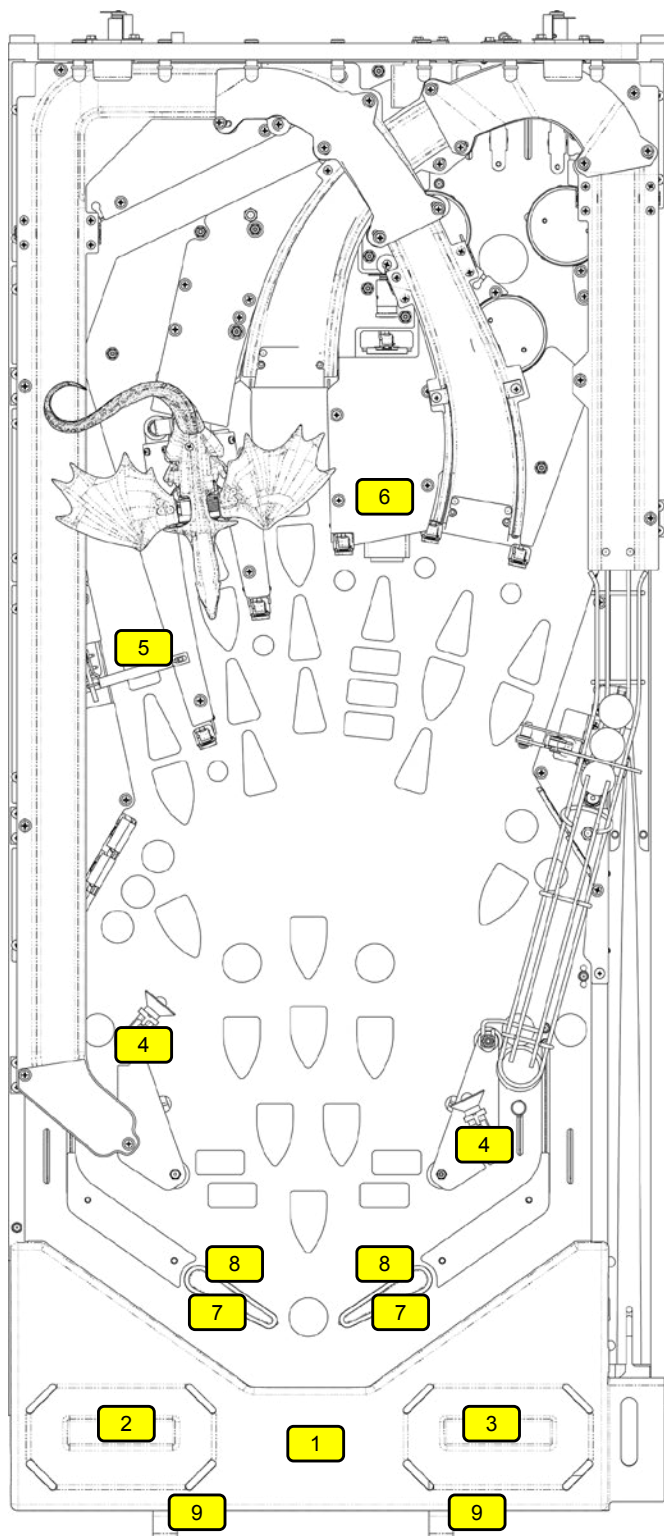


Figure 5.2.1. Rubber ring inner diameter sizing tool. Hold ring up to chart and read largest size on inside of ring. Dimensions are Inner Diameter (ID) unless otherwise noted as Outer Diameter (OD).

PARTS REFERENCE

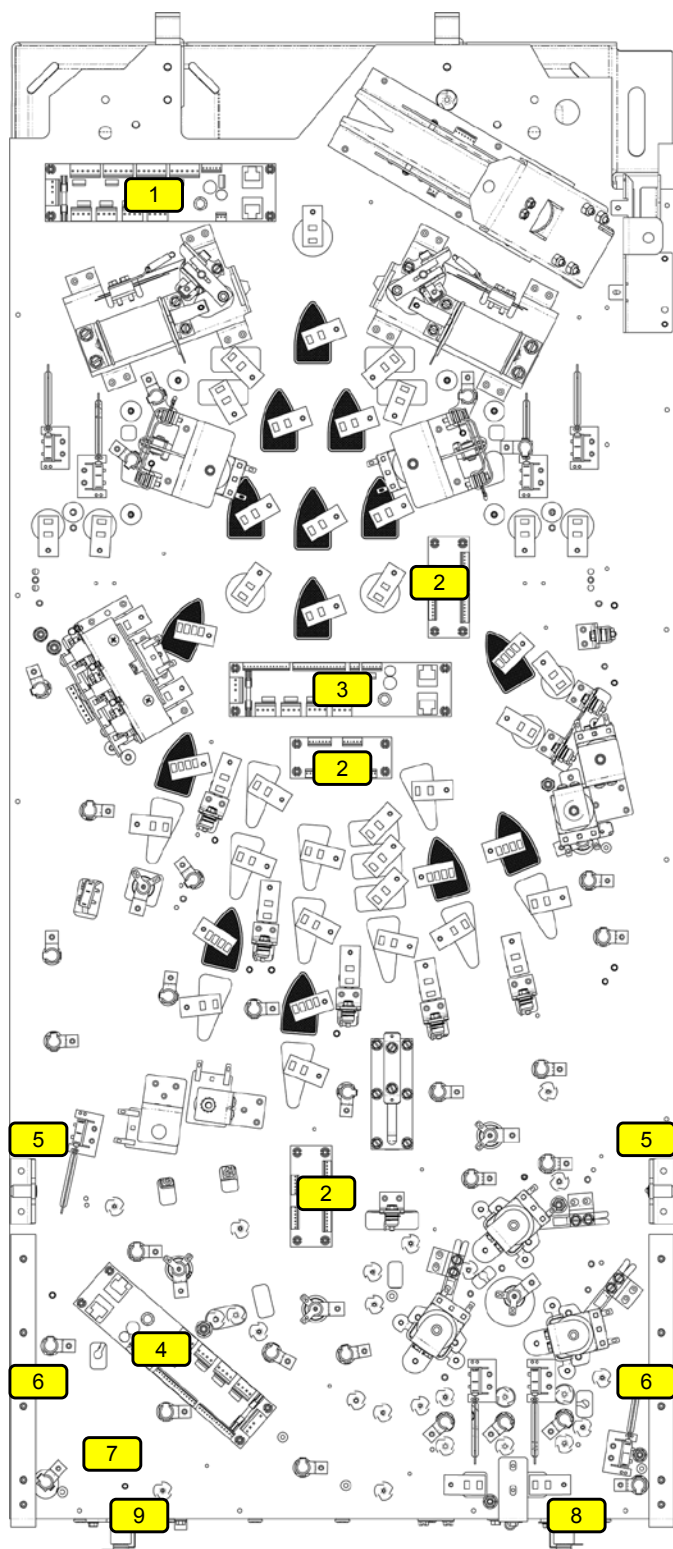
5.3 PLAYFIELD ASSEMBLIES, TOP



ID	Part Number	Description	Qty
1	545-5995-02	Bottom Arch Assembly	1
2	755-51G4-12-Y	Instruction Card	1
3	755-5400-02-Y	Coin Card (USA)	1
4	545-5409-01	Light Reflector	2
5	500-9957-00-GE	Spinner Assembly -Left Hand	1
6	500-6697-02-ND	Kicker Assembly -Left Lugs	1
7	515-5133-08-06	Flipper Bat -White	2
8	545-5277-00	Flipper Rubber -Black	2
9	535-8385-00	Welded Hanger Bracket	2

Figure 5.3.1. Major playfield assemblies, Top locations.

5.4 PLAYFIELD ASSEMBLIES, BOTTOM



ID	Part Number	Description	Qty
1	520-6935-72A	8-Driver Node Board	1
2	520-6831-01	16-Output LED Board	3
3	520-5322-72A	32 Switch/LED Node Board	1
4	520-5329-72A	4-Driver Node Board	1
5	500-5329-03	Bracket Pivot Pin	2
6	535-5988-01	Edge Slide Bracket	2
7	055-5203-00	2 Pos Terminal Strip	1
8	535-8964-01	Back Panel Support Bracket	1
9	535-0587-00	Back Panel Brace	1

Figure 5.4.1. Major playfield assemblies, Bottom locations.

PARTS REFERENCE

5.5 BACKBOX PARTS

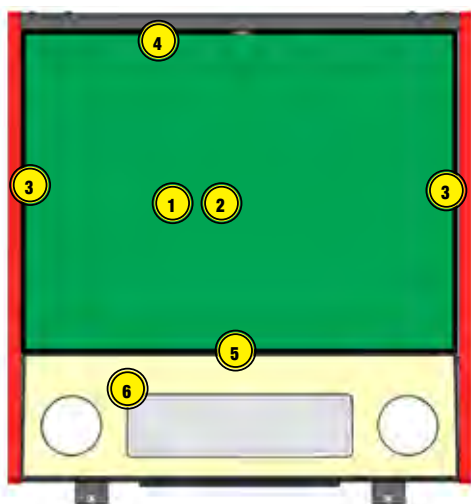


Figure 5.5.1. Backbox external assemblies and components

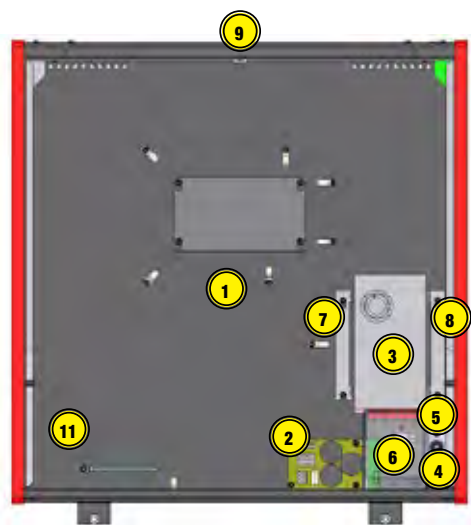


Figure 5.5.2. Backbox internal assemblies and components

EXTERNAL

ID	Part Number	Description	Qty
1	830-52G4-00	Translite Art	1
2	660-5038-02	Back Glass	1
3	545-5018-14	Plastic Extrusion 18-1/8"	2
4	545-5018-15	Glass Channel 26"	1
5	545-6313-01	Glass lift Channel 26"	1
6	500-9854-G4	Speaker Panel Assembly	1

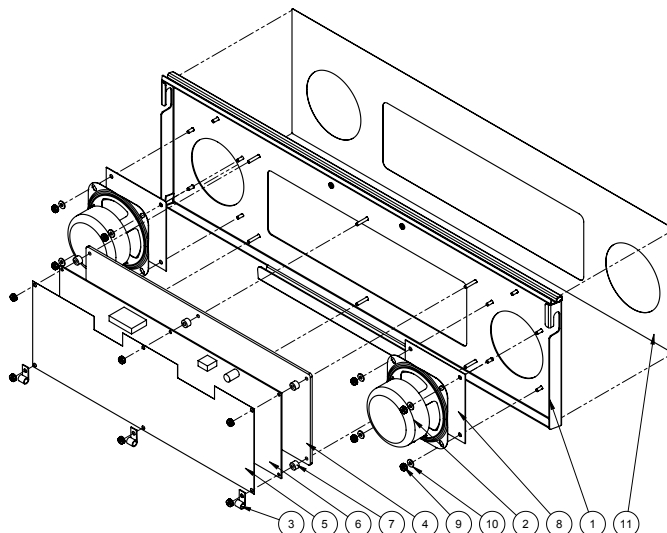
INTERNAL

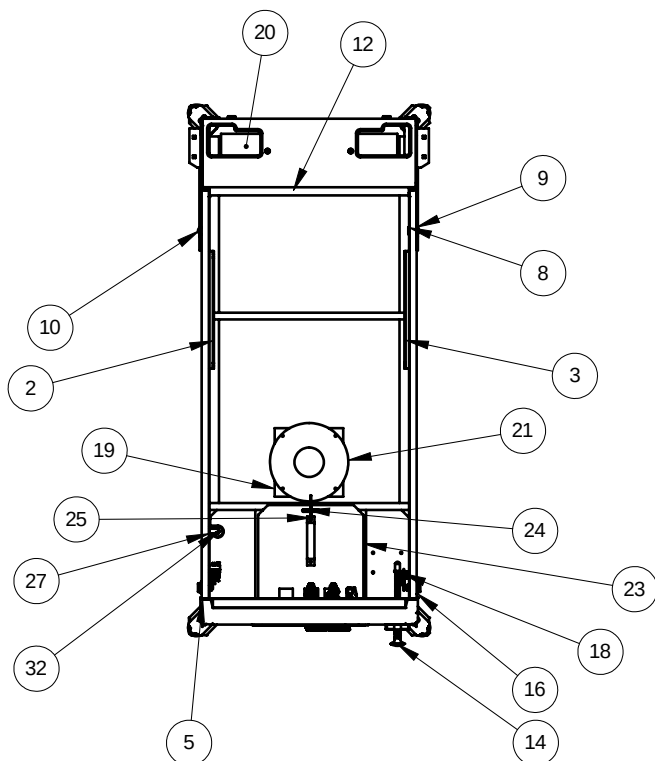
ID	Part Number	Description	Qty
1	520-6936-01	CPU Node Board -10 w/ LCD Adapter	1
2	520-5343-00	Power Distribution Board	1
3	011-5003-00	Power Supply 48V/500W	1
4	515-9769-00	Utility Outlet (USA)	1
5	205-5001-00	Fuse Holder-Screw in	1
6	535-1130-00	Cover AC	1
7	535-1129-00	Power supply bracket	1
8	535-1129-01	Power supply bracket	1
9	355-5168-00	Backbox Lock, 5/8 in	1
10	180-5001-03	Power Switch	1
11	511-7666-00	High Pass Filter Assembly	1
	034-6012-00	Line Cord-3M 5-15P/C13RA*	1

5.6 SPEAKER PANEL PARTS

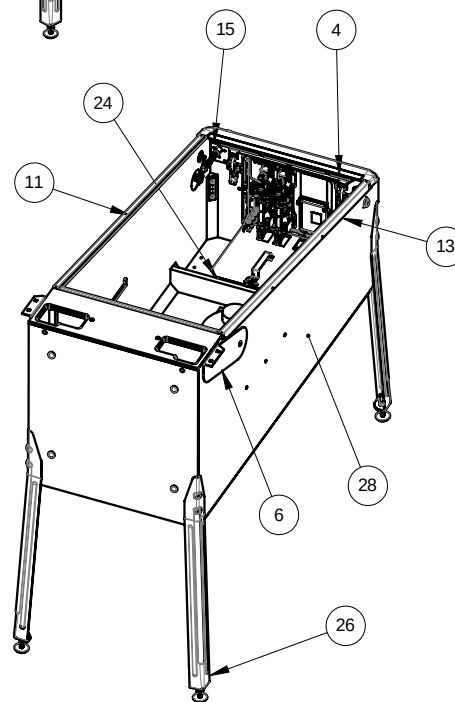
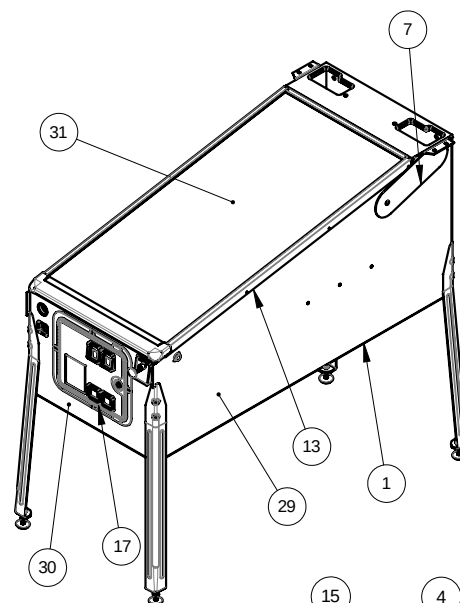
500-9854-G4

ID	Part Number	Description	Qty
1	515-9763-01	Speaker Panel	1
2	031-5004-02	Speaker	2
3	040-5000-03	1/4" Cable Clamp	3
4	545-7849-00	Display Lens	1
5	545-7856-00	Fische Paper LED Display	1
6	520-5052-15	LED Display	1
7	254-5000-09	Nylon Spacer	6
8	535-8081-01	Speaker Grill	2
9	240-5008-00	6-32 KEPS Nuts	14
10	242-5001-00	# 6 Washer	8
11	820-8369-G4	Decal: Speaker Panel, Game of Thrones	1



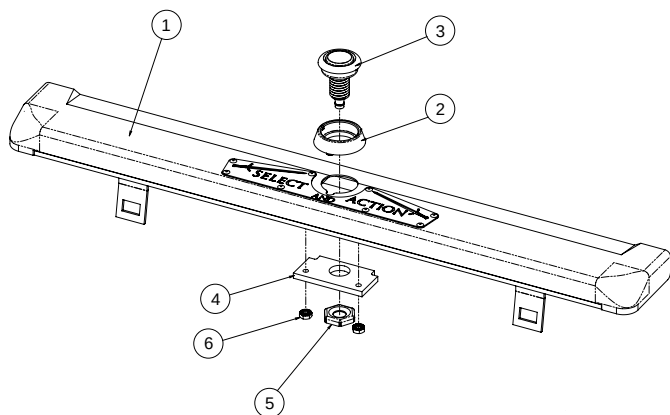
PARTS REFERENCE**5.7 CABINET PARTS**

ID	Part Number	Description	Qty
1	525-5844-00	CABINET, GoT (PLUNGER & TWO BUTTONS)	1
2	535-5989-00	SLIDE & PIVOT BRACKET - LEFT SIDE	1
3	535-5990-00	SLIDE & PIVOT BRACKET - RIGHT SIDE	1
4	500-6881-00	LOCK DOWN NU STYLE ASSEMBLY	1
5	500-6882-03-00	FRONT MOLDING ASSMEMBLY - NO HOLE - 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	231-5014-00	1/4-20 X 7/8" CARRIAGE BOLT	2
11	545-5017-00	PLASTIC CHANNEL	2
12	545-9802-00	GLASS REAR EXTRUSION	1
13	535-7297-02	SIDE ARMOR - WRINKLE BLACK	2
14	500-6146-00-07	BALL SHOOTER ASSEMBLY	1
15	535-5027-01	PLUNGER SUPPORT PLATE, NOTCHED	1
16	500-5026-32	FLIPPER BUTTON ASSY (Red)	2
17	501-5018-173	COIN DOOR 2-CHUTE NO EMBOSS	1
18	180-5160-01	FLIPPER SWITCH, Single	2
19	545-5072-03	GRILL - SPEAKER / VENT	1
20	545-5072-02	GRILL - SPEAKER / VENT	1
21	031-5007-01	SPEAKER, CABINET 8" ROUND, 4 OHM	1
22	545-5090-00	CASH BOX - PLASTIC	1
23	535-5013-03	CASH BOX COVER	1
24	535-7562-00	CASH BOX LOCK BRACKET	1

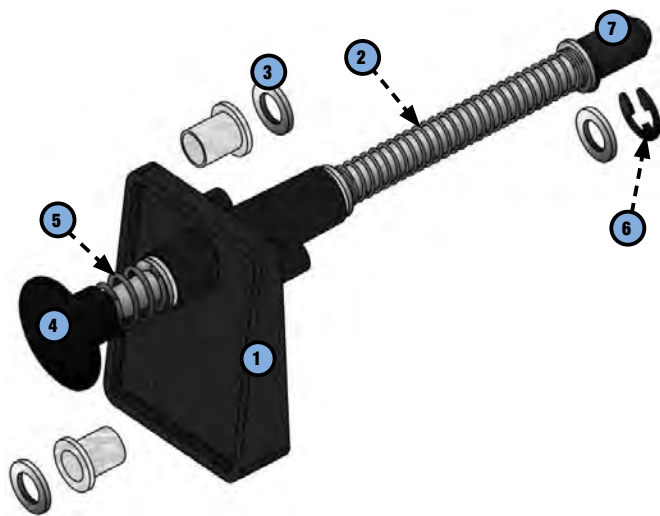


ID	Part Number	Description	Qty
25	535-7772-00	HAIR PIN CLIP	1
26	500-5921-XX	LEG ASSEMBLY - BLACK	4
27	516-0007-00	TILT ASSEMBLY	1
28	820-66G4-03	DECAL, CABINET LEFT, GoT	1
29	820-66G4-04	DECAL, CABINET RIGHT, GoT	1
30	820-66G4-05	DECAL, CABINET FRONT, GoT	1
31	660-5001-00	PLAYFIELD GLASS	1
32	520-5319-00	CABINET NODE BOARD	1
	820-66G4-XX	Cabinet Decal Replacement Set, Speaker Panel Decal Not Included	

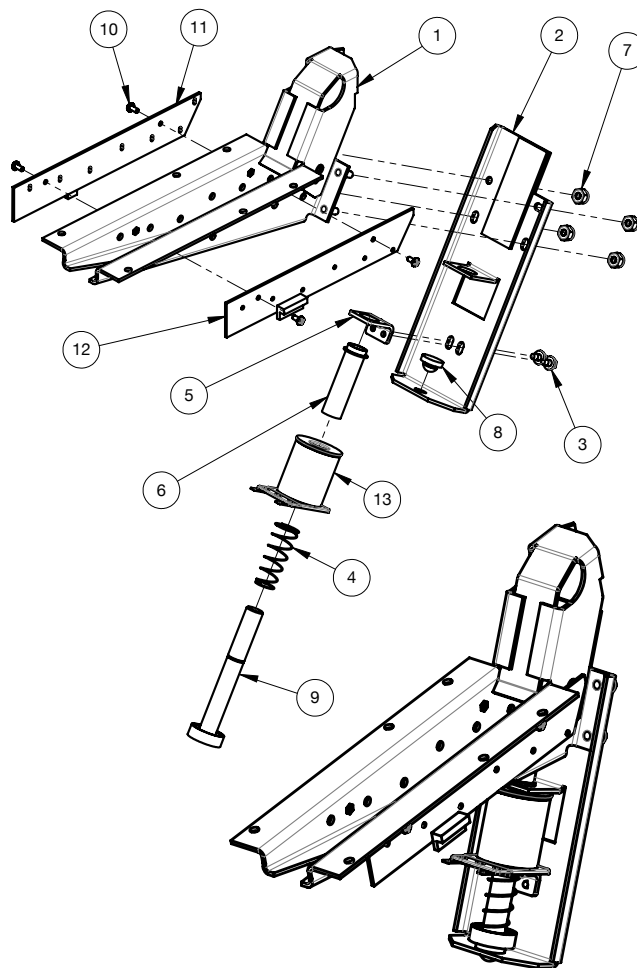
PARTS REFERENCE

5.8 FRONT MOLDING ASSEMBLY**500-7238-00-G4**

ID	Part Number	Description	Qty
1	500-7235-03-G4	FRONT MOLD ASSEMBLY - LATCHED	1
2	545-7292-10	TOP BUTTON SPACER-MOLDED	1
3	515-7791-00	BUTTON ASSY - CLEAR	1
4	545-7291-00	TOP BUTTON BAR	1
5	240-5003-01	PAL NUT	1
6	240-5104-00	8-32 KEPS NUT	2

5.9 BALL SHOOTER ASSEMBLY**500-6146-00-07**

ID	Part Number	Description	Qty
1	535-5067-02	Housing Assembly	1
2	266-5001-07	Compressed Spring (Long) - Orange	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

5.10 BALL TROUGH ASSEMBLY**500-9820-00**

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	520-5345-00	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

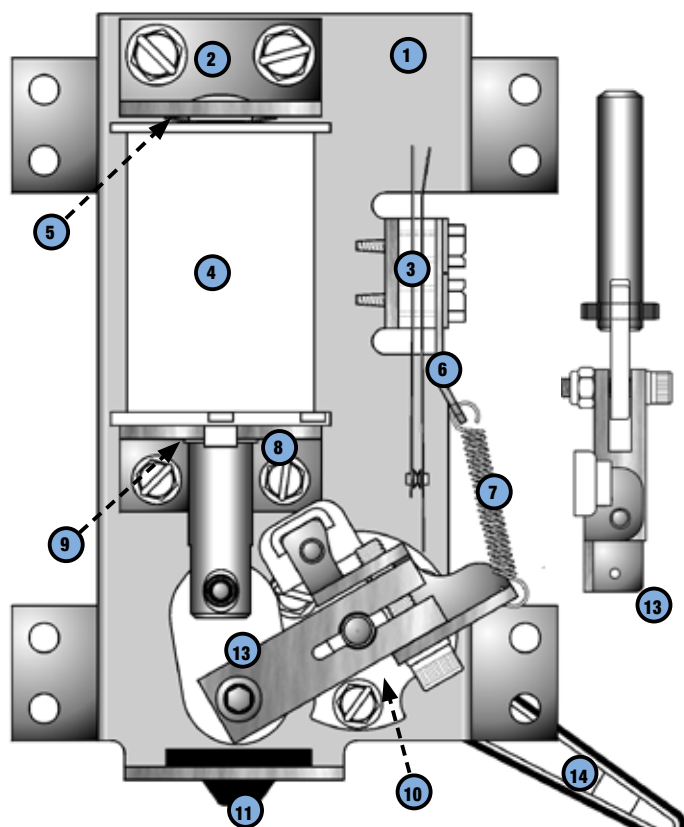
PARTS REFERENCE**5.11 FLIPPER ASSEMBLY, LEFT****500-6543-83-ND**

Figure 5.11.1. Left flipper assembly 500-6543-02-ND bottom view.

ID	Part Number	Description	Qty
1	515-6617-01	FLIPPER BASE PLATE LEFT KIT W/ BRACKET MOUNT HARDWARE	1
2	515-6308-01	COIL STOP BRACKET	1
3	180-5149-00	SWITCH - END OF STROKE N/C	1
4*	090-5032-ND	COIL	1
5	269-5002-00	SPRING WASHER	1
6	535-7354-00	SWITCH RETURN SPRING BRACKET	1
7	265-5035-00	SPRING FLIPPER RETURN	1
8	535-7356-00	COIL SUPPORT BRACKET	1
9	545-5388-00	COIL SLEEVE, FLIPPER	1
10	545-5070-00	FLIPPER BAT BUSHING	1
11	545-5428-00	FLIPPER BUMPER PAD	1
12	237-6144-00	SET SCREW #10-32 x 3/4" SOCKET	1
13	515-7203-01	PLUNGER/CRANK ASSEMBLY, LEFT	1
14	515-5133-06	FLIPPER BAT AND SHAFT (500-6553-83-ND)*	1
14	515-6275-08-01	FLIPPER BAT AND SHAFT RED MINI (500-6543-15-ND Assy)*	1
	500-6307-10	FLIPPER REBUILD KIT, LEFT	
		* Refer to game rubber chart for flipper rubber color and part number.	

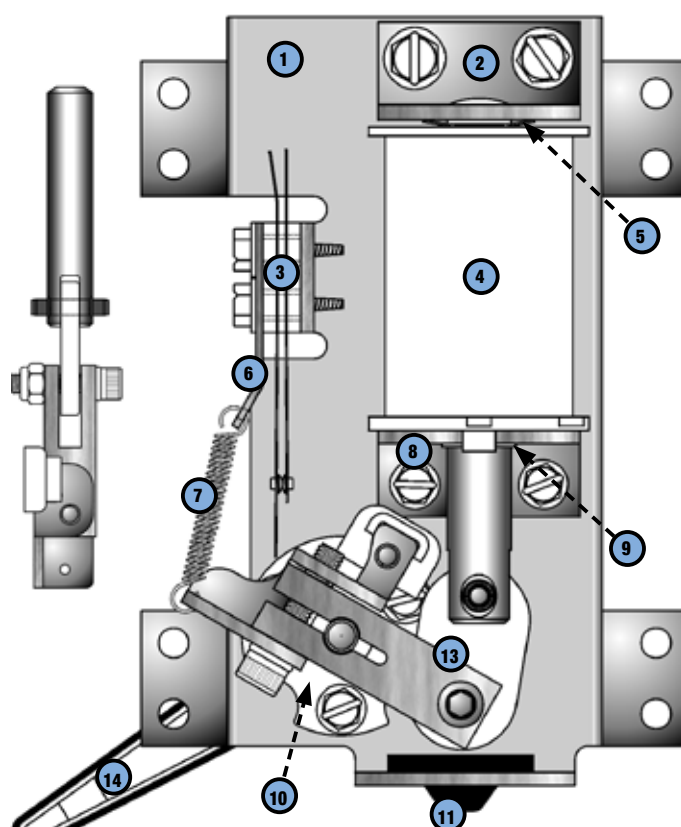
5.12 FLIPPER ASSEMBLY, RIGHT**500-6543-82-ND**

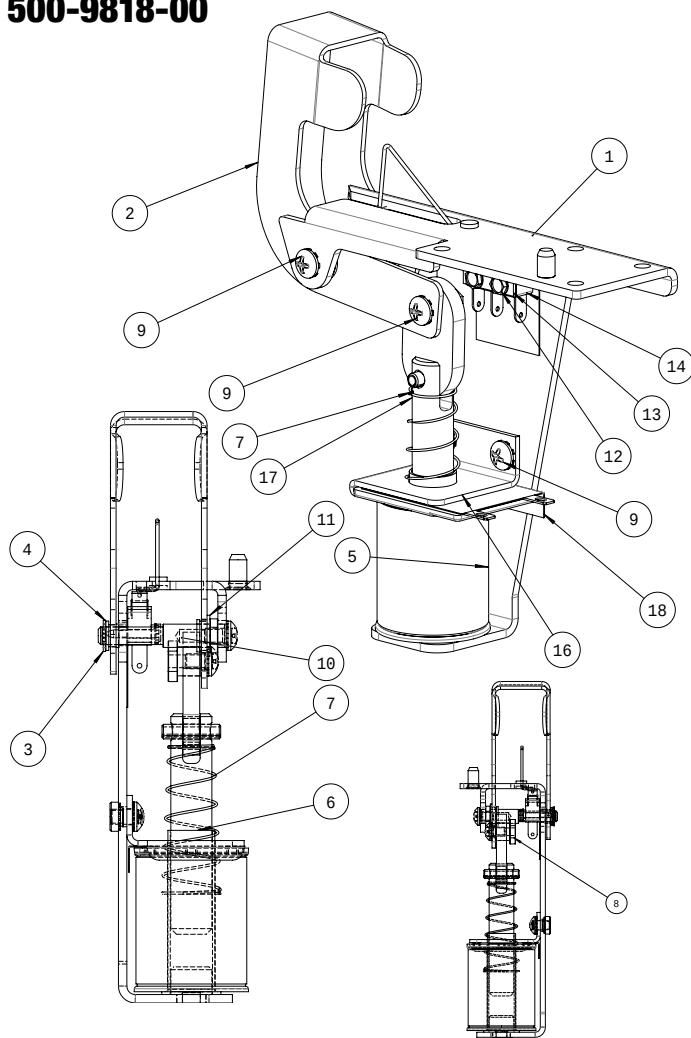
Figure 5.12.1. Right flipper assembly 500-6543-12-ND bottom view.

ID	Part Number	Description	Qty
1	515-6617-00	FLIPPER BASE PLATE RIGHT KIT W/ BRACKET MOUNTING HARDWARE	1
2	515-6308-01	COIL STOP BRACKET	1
3	180-5149-00	SWITCH - END OF STROKE N/C	1
4	090-5032-ND	COIL	1
5	269-5002-00	SPRING WASHER	1
6	535-7354-00	SWITCH RETURN SPRING BRACKET	1
7	265-5035-00	SPRING FLIPPER RETURN	1
8	535-7356-00	COIL SUPPORT BRACKET	1
9	545-5388-00	COIL SLEEVE, FLIPPER	1
10	545-5070-00	FLIPPER BAT BUSHING	1
11	545-5428-00	FLIPPER BUMPER PAD	1
12	237-6144-00	SET SCREW #10-32 x 3/4" SOCKET	1
13	515-7203-00	PLUNGER/CRANK ASSEMBLY	1
14	515-5133-06	FLIPPER BAT AND SHAFT*	1
	500-6307-00	FLIPPER REBUILD KIT, RIGHT	
		* Refer to game rubber chart for flipper rubber color and part number.	

PARTS REFERENCE

5.13 AUTO LAUNCH ASSEMBLY

500-9818-00

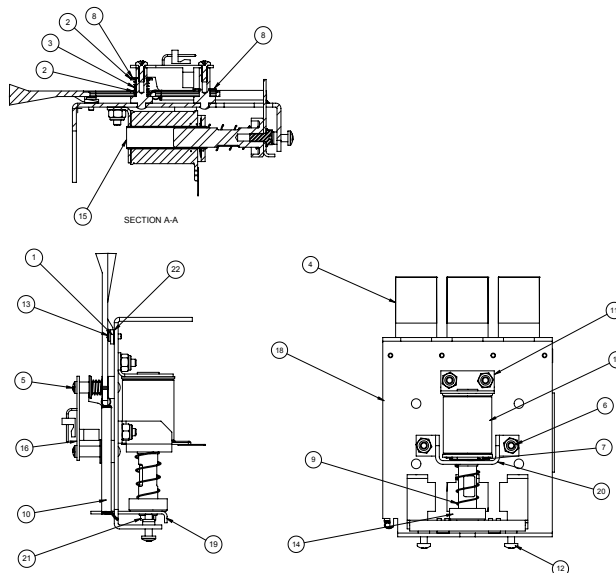


ID	Part Number	Description	Qty
1	515-9689-00	MAIN BRKT: AUTO-PLUNGER	1
2	535-0728-00	KICKER ARM, AUTO-PLUNGER	1
3	270-5001-00	RETAINING E-RING, 3/16" SHAFT OD	1
4	545-5352-00	NYLINER, 3/16" SHAFT	1
5	090-5001-ND	COIL - 23-800, NO DIODE	1
6	545-5411-00	COIL SLEEVE	1
7	266-5020-00	COMPRESSION SPRING-CONICAL	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

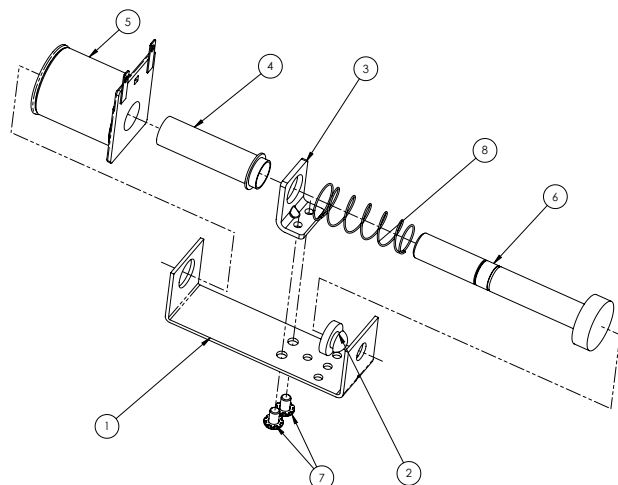
5.14 3-BANK DROP TARGET ASSM

W/ RIGHT ANGLE CONN

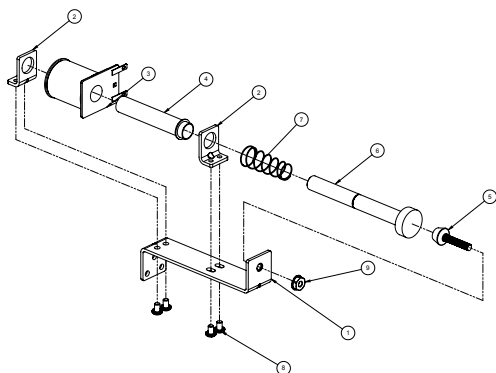
500-7216-13



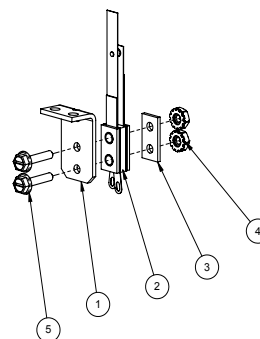
ID	Part Number	Description	Qty
1	545-6163-03	LEDGE, 3-BANK DROP TARGET	1
2	242-5091-00	WASHER, 1/2 X 17/64 X .03 - DT	9
3	266-5089-00	SPRING COMPRESSION - DT	3
4	545-6305-00	TARGET - ROLLOVER - BLACK	3
5	237-5501-00	SCREW, 6-32 X 3/8" PPH MS ZINC	6
6	240-5102-00	8-32 NYLON LOCK NUT	4
7	269-5002-00	SPRING WASHER	1
8	270-5002-00	RETAINING RING - 1/4"	6
9	266-5020-00	COMPRESSION SPRING-CONICAL	1
10	265-5003-02	TARGET RESET SPRING	3
11	535-9959-00	STOP BRKT	1
12	237-5602-00	SCREW, 8-32 X 1/2" PPH MS ZINC	2
13	237-6169-00	SCREW, 4-40 X 1/4 PPH MS	4
14	530-5757-00	PLUNGER - D.T. ASSY.	1
15	545-5076-01	COIL SLEEVE	1
16	520-5252-13	3 BANK DROP TARGET PCB-OPTO, W/ RIGHT ANGLE CONN	1
17	090-5036-ND	COIL - 24-940, NO DIODE	1
18	515-7784-03	DROP TARGET FRAME ASSY -3-BANK	1
19	535-9996-03	LIFT BRACKET - 3 BANK	1
20	535-9995-01	COIL BRACKET	1
21	237-5985-00	SCREW, 10-32 X 3/8" HWH SWAGE	1
22	545-6798-00	SHIM - FICHE PAPER - D.T. SINGLE	2

PARTS REFERENCE**5.15 KICKER ASSEMBLY****500-6697-02-ND**

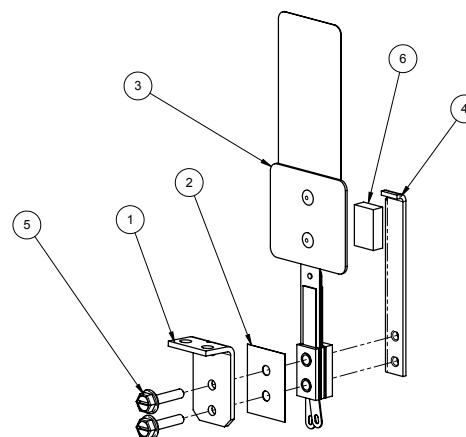
ID	Part Number	Description	Qty
1	535-6730-00	FRAME - KICK BIG BRACKET	1
2	545-5105-00	RUBBER BUMPER	1
3	535-5203-03	COIL RETAINING BRACKET	1
4	545-5076-01	COIL SLEEVE	1
5	090-5001-ND	COIL - 23-800, NO DIODE	1
6	515-7318-00	PLUNGER ASSEMBLY	1
7	232-5300-00	SCREW, 8-32 X 1/4" PPH SEMS	2
8	266-5020-00	COMPRESSION SPRING-CONICAL	1
NOT SHN	036-5542-00	CABLE - GENERIC - COIL	1

5.16 BALL DEFLECTOR ASSEMBLY**500-7081-01**

ID	Part Number	Description	Qty
1	535-9248-00	BRACKET	1
2	535-5203-03	COIL RETAINING BRACKET	2
3	090-5044-ND	COIL 26-1200 - NO DIODE	1
4	545-5847-00	COIL SLEEVE	1
5	280-5014-00	ADJUSTABLE BUMPER/STOP	1
6	515-7653-00	PLUNGER ASSEMBLY	1
7	266-5020-00	COMPRESSION SPRING-CONICAL	1
8	232-5300-00	SCREW, 8-32 X 1/4" PPH SEMS	4
9	240-5208-00	10-32 KEPS NUT	1

5.17 10PT SWITCH ASSEMBLY**511-7580-XX**

ID	Part Number	Description	Qty
1	535-6896-00	TARGET BRACKET	1
2	180-5231-XX	SWITCH - SLING SHOT - 2 LUG	1
3	535-5045-00	SWITCH PLATE	1
4	240-5008-00	6-32 KEPS NUT	2
5	237-5976-04	SCREW, 6-32 X 5/8" HWH SWAGE	2

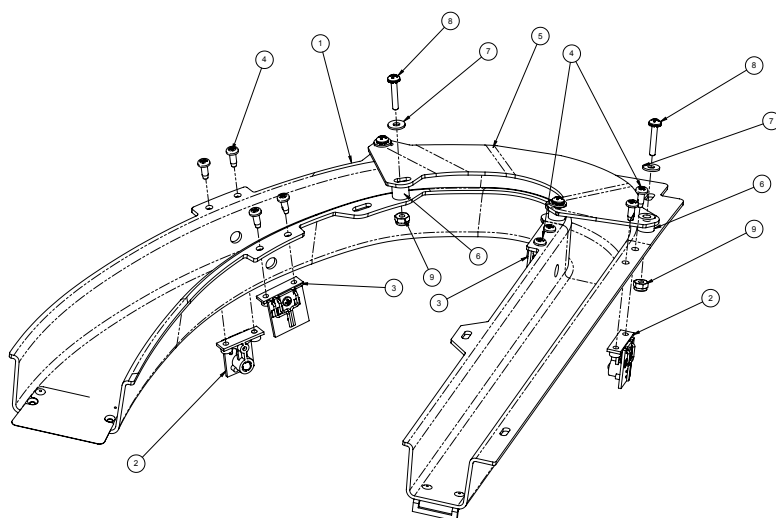
5.18 S/U TARGET ASSEMBLY**500-9966-00**

ID	Part Number	Description	Qty
1	535-6896-00	TARGET BRACKET	1
2	545-9782-00	FISCHE PAPER-SYMMETRICAL	1
3	515-9836-00	TARGET SWITCH ASSEMBLY - RAM	1
4	535-9823-01	SWITCH BACK PLATE	1
5	237-5976-04	SCREW, 6-32 X 5/8" HWH SWAGE	2
6	626-5078-00	3/16" FOAM PAD	1

PARTS REFERENCE

5.19 RIGHT RAMP ASSEMBLY

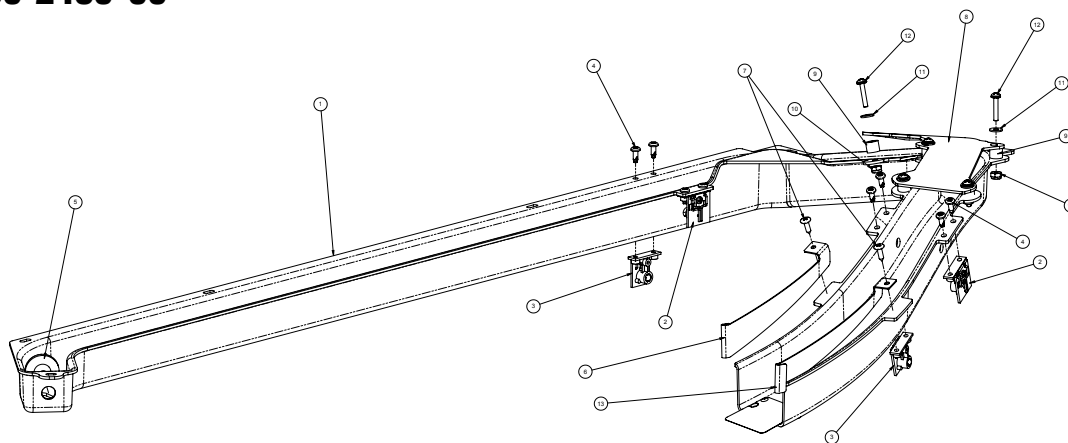
500-2459-00



ID	Part Number	Description	Qty
1	510-7503-00	RIVETED ASSEMBLY - RIGHT RAMP - POLITICO	1
2	515-0215-00	LONG RANGE OPTO EMITTER ASSEMBLY	2
3	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	2
4	237-5880-00	SCREW, #6 X 3/8 PPH T-25	8
5	830-7021-32	BUTY # 32 - RAMP COVER - RIGHT - G O T PRO	1
6	254-5000-20	NYLON SPACER - BLACK - 3/8 OD X .175 ID X 5/16"	4
7	242-5001-00	#6 WASHER	4
8	232-5204-00	SCREW, 6-32 X 3/4" PPH SEMS	4
9	240-5005-00	6-32 NYLON STOP NUT	4

5.20 LEFT RAMP ASSEMBLY

500-2460-00



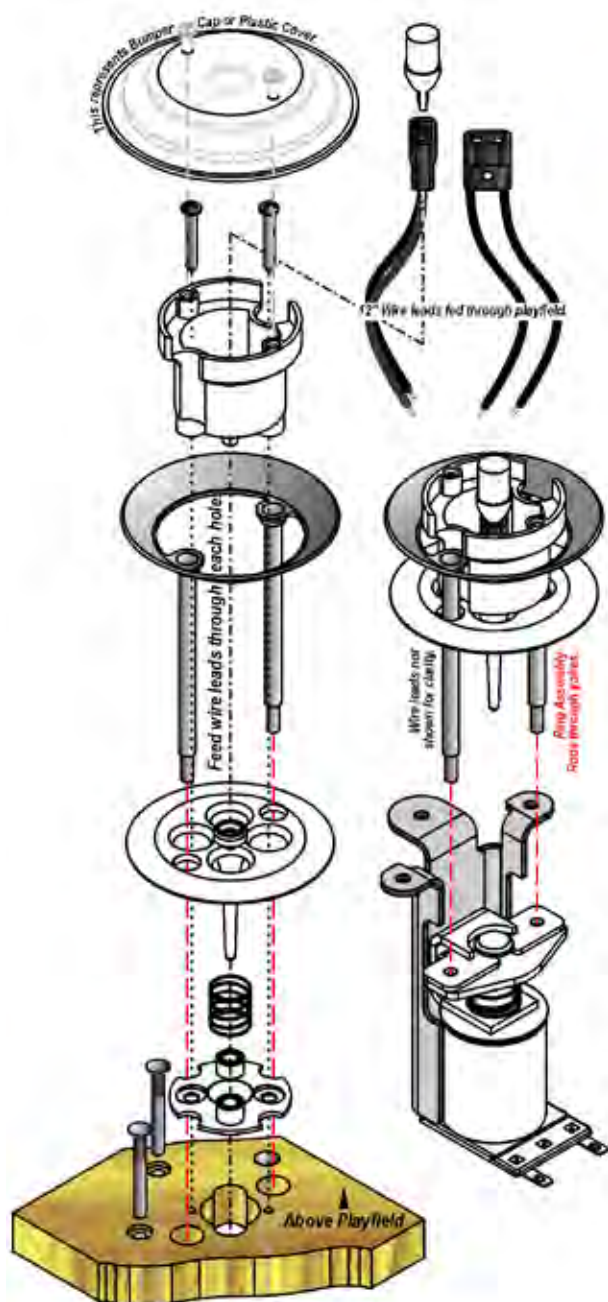
ID	Part Number	Description	Qty
1	510-7504-00	RIVETED ASSEMBLY - LEFT RAMP - G O T PRO	1
2	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	2
3	515-0215-00	LONG RANGE OPTO EMITTER ASSEMBLY	2
4	237-5880-00	SCREW, #6 X 3/8 PPH T-25	8
5	545-5428-00	RUBBER BUMPER	1
6	535-1099-00	RAMP PROTECTOR - LEFT - LEFT RAMP - POLITICO PRO	1
7	237-5809-00	SCREW, #6 X 1/2" PTH A	2
8	830-7021-31	BUTY # 31 - RAMP COVER - LEFT RAMP - G O T PRO	1
9	254-5000-20	NYLON SPACER - BLACK - 3/8 OD X .175 ID X 5/16"	5

ID	Part Number	Description	Qty
10	240-5005-00	6-32 NYLON STOP NUT	5
11	242-5001-00	#6 WASHER	5
12	232-5204-00	SCREW, 6-32 X 3/4" PPH SEMS	5
13	535-1099-01	LEFT RAMP PROTECTOR, RIGHT WALL, POLITICO PRO	1

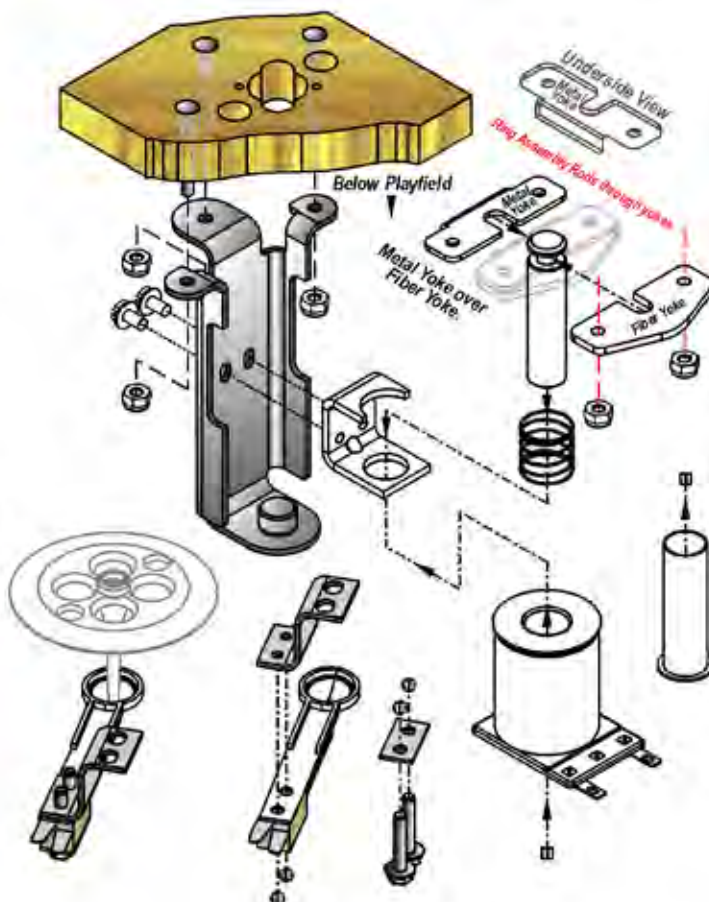
PARTS REFERENCE

5.21 POP BUMPER ASSEMBLY

516-6784-XX



ID	Part Number	Description	Qty
1	520-5307-03	POP BUMPER LED MODULE	1
3	545-5197-00	BUMPER BODY	1
4	515-5085-00	RING AND ROD ASSY	1
5	266-5048-00	BUMPER SKIRT COMP SPRING	1
6	545-5195-00	BUMPER BASE	1
7	545-5607-00	BUMPER SKIRT	1



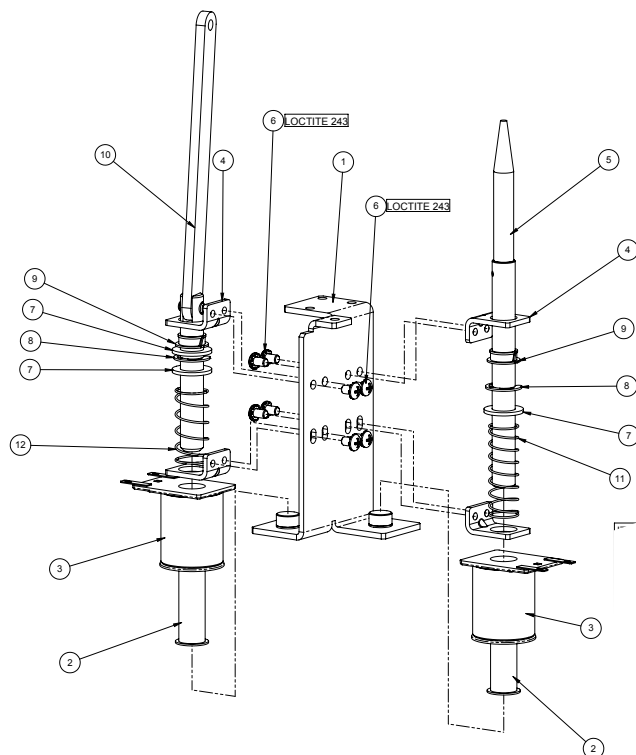
Part Number	Description	Qty
515-6459-01L	BUMPER/RING TOP ASSY, W/ LED 1	1
515-6459-04-ND	BUMPER BOTTOM ASSY, NO DIODE	1

ID	Part Number	Description	Qty
8	500-9934-01	POP BUMPER SWITCH ASSY-2 - LUG-LEFT	1
9	240-5005-00	6-32 NYLON STOP NUT	1
10	090-5044-ND	COIL - 26-1200	1
11	237-5976-01	#6-32 X 1/4" SHWH SWAGE ZN	2
12	240-5005-00	#6-32 NYLON STOP NUT	9
13	535-7347-00	METAL YOKE STOP	1
14	234-5101-00	* 8 X 1/2 SLT	6
15	530-5348-00	PLUNGER, POP BUMPER	1
16	266-5047-00	COMPRESSION SPRING, POP BUMPER	1
17	545-5031-00	COIL SLEEVE	1
18	515-5939-00	COIL BRACKET POP BUMPER ASSY	1
19	545-5609-00	FIBER YOKE	1
20	535-7346-00	METAL YOKE	1
21	237-5957-00	#6-32 x 1-3/16" SPIRAL FIN SHANK SCREW	3

PARTS REFERENCE

5.22 DOWN POST ACTUATOR

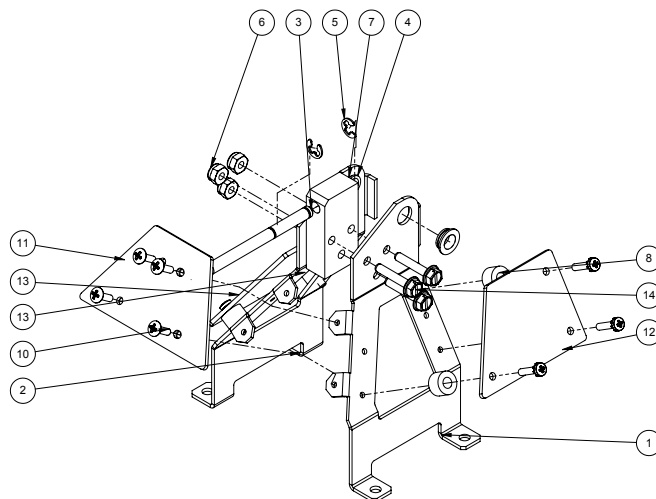
500-9933-00



ID	Part Number	Description	Qty
1	515-9805-00	BRACKET ASSEMBLY - SWORD/DOWN POST ASSEMBLY	1
2	545-5411-00	COIL SLEEVE	2
3	090-5044-ND	COIL 26-1200 - NO DIODE	2
4	535-5203-03	COIL RETAINING BRACKET	4
5	515-9806-00	PLUNGER ASSEMBLY - SWORD DOWN POST	1
6	232-5300-00	SCREW, 8-32 X 1/4" PPH SEMS	8
7	242-5081-00	WASHER - NYLON .75 OD x .44 ID	3
8	270-5005-00	RETAINING E-RING, 7/16" SHAFT OD	2
9	545-5418-01	NYLINER - PLASTIC, 7/16"	2
10	511-7612-00	PLUNGER ASSEMBLY - SWORD ACTUATOR	1
11	266-5081-00	COMPRESSION SPRING	1
12	266-5076-02	SPRING, COMPRESSION	1

5.23 ACTUATOR & FULCRUM ASSY

511-7551-00

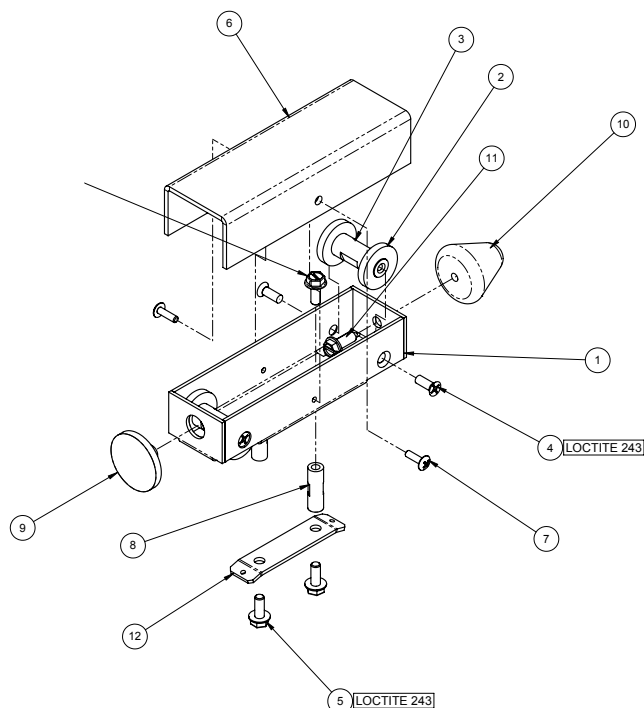


ID	Part Number	Description	Qty
1	535-1096-00	RAPTOR FULCRUM AND ACTUATOR BRACKET	1
2	535-1096-01	RAPTOR FULCRUM AND ACTUATOR BRACKET	1
3	530-7890-00	RAPTOR PIN	1
4	545-5423-00	NYLINER, 1/4" SHAFT, 4L1-FF	2
5	270-5001-00	RETAINING E-RING, 3/16" SHAFT OD	2
6	240-5005-00	6-32 NYLON STOP NUT	3
7	545-9796-00	ACTUATOR BLOCK	1
8	254-5000-09	NYLON SPACER - BLACK - 3/8 OD X .175 ID X 1/4"	6
9	237-5813-01	SCREW, 4-40 X 1/2" PPH SEMS, BLACK	6
10	237-6154-01	SCREW, 4-40 X 3/8" PTH MS - BLACK	4
11	830-7021-27	PYRAMID-FRONT PANEL	1
12	830-7021-28	PYRAMID-SIDE PANELS	1
13	830-7021-29	PYRAMID-SIDE PANELS	1
14	237-5976-05	SCREW, 6-32 x 3/4 HWH SWAGE ZINC	3

PARTS REFERENCE

5.24 RAM ASSEMBLY

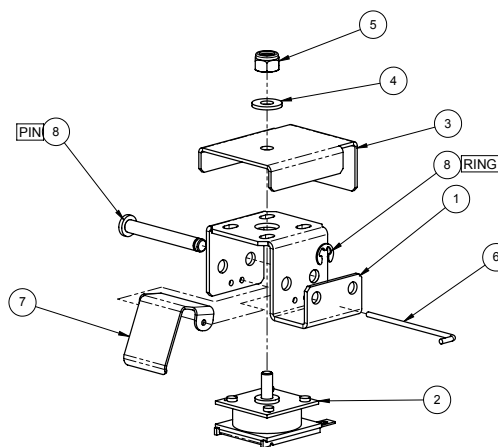
500-9963-00



ID	Part Number	Description	Qty
1	535-1189-00	RAM BODY	1
2	242-5078-00	WASHER, NYLON, .75 X .32 X .13	4
3	530-7908-00	WHEEL AXLE	2
4	237-5871-00	SCREW, 6-32 X 3/8" PFH 82° U/C ZINC	4
5	237-5903-00	SCREW, 8-32 X 3/8" HWH	4
6	545-9812-00	TIMBER COVER	1
7	237-6154-01	SCREW, 4-40 X 3/8" PTH MS - BLACK	2
8	530-7909-00	GUIDE PIN	2
9	545-5428-00	RUBBER BUMPER	1
10	545-9817-00	RAM HEAD - POLITICO	1
11	234-5101-00	SCREW, #8 X 1/2" SLT HWH AB ZINC	1
12	535-1190-00	GLIDE PLATE	1

5.25 ASSEMBLY, ELEC GAT, B.P. MT

511-7656-XX

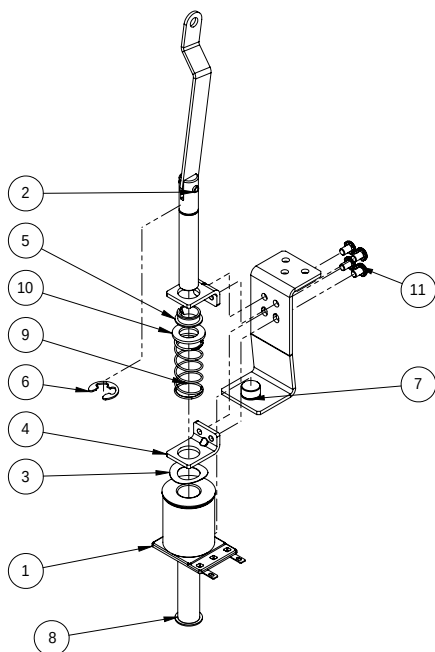


ID	Part Number	Description	Qty
1	535-0134-01	BRACKET, ELEC GATE, BK. PANEL MNT	1
2	090-5060-01-ND	MINI-COIL W/CORE, ND - 32-1250, YELLOW	1
3	535-9577-00	COVER, ELECTRIC GATE	1
4	242-5005-00	#8 WASHER	1
5	240-5102-00	8-32 NYLON LOCK NUT	1
6	535-5372-00	REBOUND HINGE PIN	1
7	535-9682-00	GATE - ELECTRIC (MAGNET)	1
8	530-5702-01	CLEVIS PIN W/ RING, 3/16"D X 1-1/2"	1

PARTS REFERENCE

5.26 DRAGON SOLENOID ASSEM.

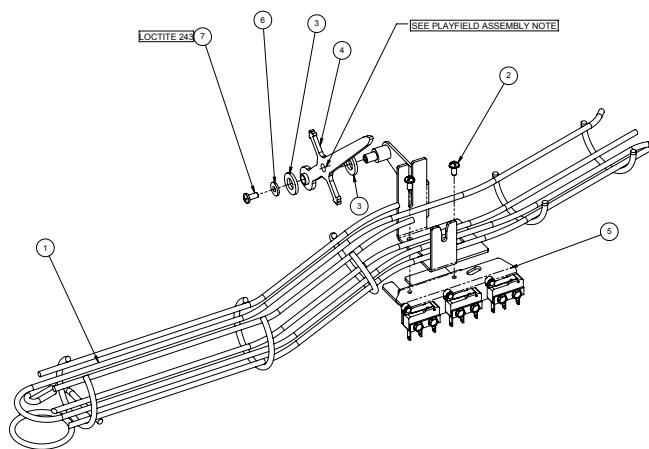
511-7548-01



ID	Part Number	Description	Qty
1	090-5001-ND	COIL - 23-800, NO DIODE	1
2	515-9770-02	PLUNGER ASSEMBLY-PULL DOWN	1
3	269-5002-00	SPRING WASHER	1
4	535-5203-03	COIL RETAINING BRACKET	2
5	545-5418-01	NYLINER - PLASTIC, 7/16"	1
6	270-5005-00	RETAINING E-RING, 7/16" SHAFT OD	1
7	515-9807-00	PULL DOWN PLUNGER BRACKET	1
8	545-5031-00	COIL SLEEVE	1
9	266-5076-04	SPRING, COMPRESSION	1
10	242-5081-00	WASHER - NYLON .75 OD x .44 ID	1
11	232-5300-00	SCREW, 8-32 X 1/4" PPH SEMS	4

5.27 RIGHT WIREFORM ASSEMBLY

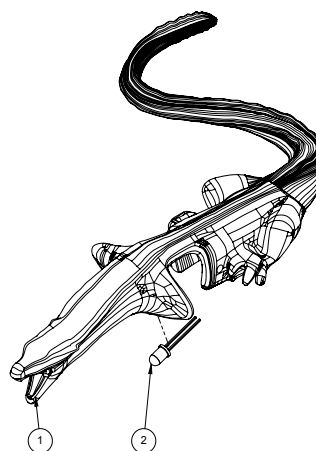
500-9927-00



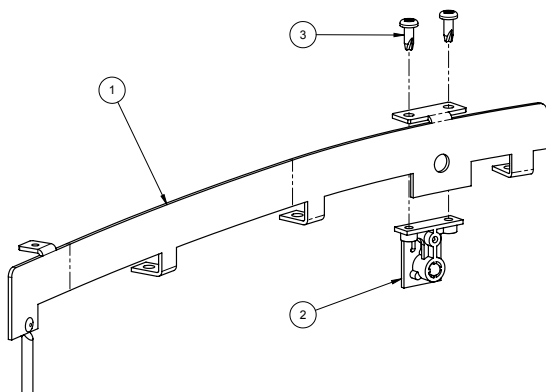
ID	Part Number	Description	Qty
1	515-9801-00	WIRE RAMP - RIGHT - POLITICO	1
2	237-5909-00	SCREW, 4-40 X 1/4" PPH SEMS	2
3	242-5008-00	WASHER, 1/4" ID X 1/2" OD X 1/16" THICK	2
4	535-1081-00	SWORD	1
5	511-7605-00	SWITCH BRACKET ASSEMBLY	1
6	242-5002-00	#4 FLAT WASHER - 5/16" O.D.	1
7	237-6169-00	SCREW, 4-40 X 1/4" PPH MS	1

5.28 RAPTOR TOY ASSEMBLY

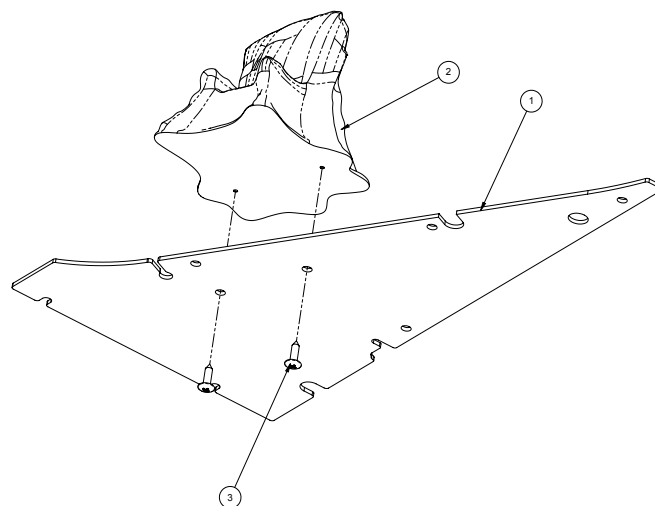
511-7696-00



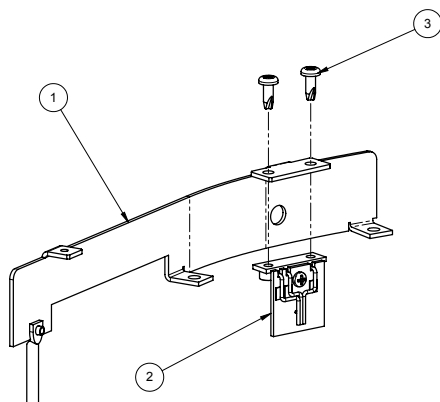
ID	Part Number	Description	Qty
1	515-9851-00	RAPTOR TOY ASSEMBLY	1
2	112-5049-02	T1 3/4 /5mm ROUND LED W/RESISTOR-RED	1
3	*036-6259-25-G4	DRAGON LED CABLE	
4	*605-5002-00	SHRINK TUBING - 1/8 ID BLACKB3	

PARTS REFERENCE**5.29 BALL GUIDE ASSEMBLY #2****511-7592-02**

ID	Part Number	Description	Qty
1	535-1041-02	BALL GUIDE # 02 - POLITICO	1
2	515-0215-00	LONG RANGE OPTO EMITTER ASSEMBLY	1
3	237-5880-00	SCREW, #6 X 3/8 PPH T-25	2

5.31 THRONE ASSEMBLY**511-7593-15**

ID	Part Number	Description	Qty
1	830-7021-15	BUTY # 15 - G O T PRO	1
2	880-6176-01	THRONE - TRIMMED - POLITICO PRO	1
3	237-5809-00	SCREW, #6 X 1/2" PTH A	2

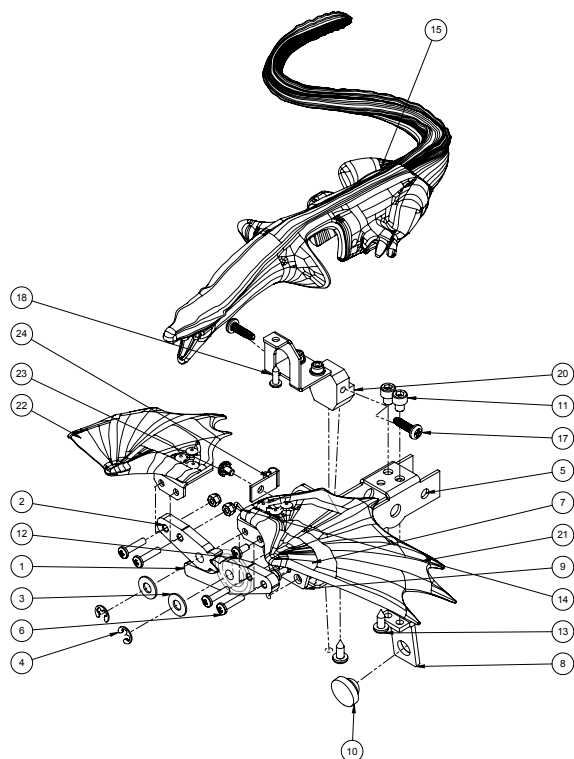
5.30 BALL GUIDE ASSEMBLY #3**511-7592-03**

ID	Part Number	Description	Qty
1	535-1041-03	BALL GUIDE #03 - POLITICO	1
2	515-0215-01	LONG RANGE OPTO RECEIVER ASSEMBLY	1
3	237-5880-00	SCREW, #6 X 3/8 PPH T-25	2

PARTS REFERENCE

5.32 RAPTOR WING ASSEMBLY

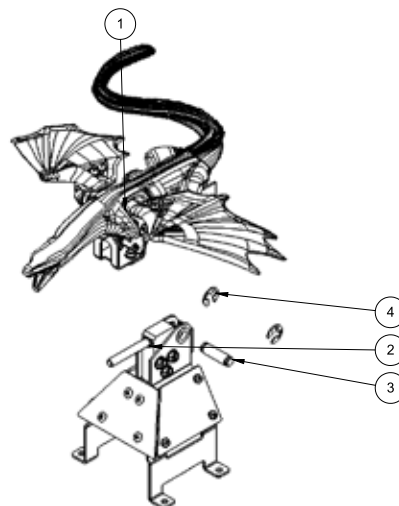
511-7569-01



ID	Part Number	Description	Qty
1	550-7367-00	RAPTOR GEAR SEGMENT-DRIVER	1
2	550-7368-00	RAPTOR GEAR SEGMENT-DRIVEN	1
3	242-5088-00	NYLON WASHER .195" X .437" X .031"	2
4	270-5001-00	RETAINING E-RING, 3/16" SHAFT OD	2
5	515-9797-01	WING CHASSIS WELDMENT	1
6	237-5997-01	4-40 X 1/2 PPH BLACK OXIDE	4
7	240-5303-00	4-40 NYLON LOCK NUT	4
8	535-1193-00	STOP BRACKET-RAPTOR	1
9	545-9816-00	BEARING PLATE-RAPTOR	1
10	545-5105-02	RUBBER BUMPER	1
11	237-6319-00	8-32 X 3/16 LG. SOC HD CAP SCREW	2
12	237-6169-00	SCREW, 4-40 X 1/4 PPH MS	2
13	232-5000-00	SCREW, #6 X 3/8 PPH AB ZINC	3
14	265-5079-00-00	TORSION SPRING-LEFT HAND	1
15	511-7696-00	RAPTOR TOY ASSEMBLY	1
16	237-5815-00	SCREW, #4 X 3/8" PPH AB	1
17	237-5842-00	6-32 x 1/2 PHILLIPS PAN HEAD TF ZINC	2
18	535-1256-00	RAPTOR SUPPORT BRACKET	1
19	237-5983-04	SCREW, 4-40 X 1/4 PFH - BLACK - 82° UC	2
20	545-1011-00	RAPTOR MOUNTING BLOCK	1
21	510-7541-00	RAPTOR WING RIVET ASSEMBLY	1
22	510-7541-01	RAPTOR WING RIVET ASSEMBLY	1
23	232-5209-00	SCREW, 6-32 X 3/16" PPH SEMS	1
24	040-5000-01	1/8" CABLE CLAMP	1
25	237-5997-00	SCREW, 4-40 X 3/8" PPH SEMS	2

5.33 DRAGON ASSEMBLY

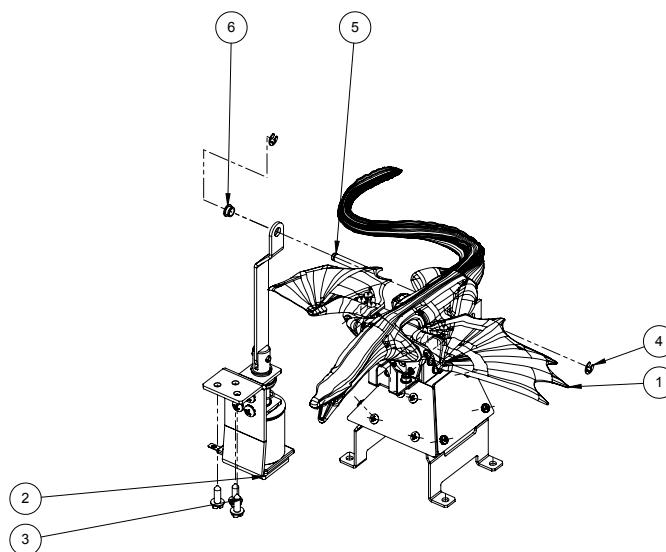
500-9873-01



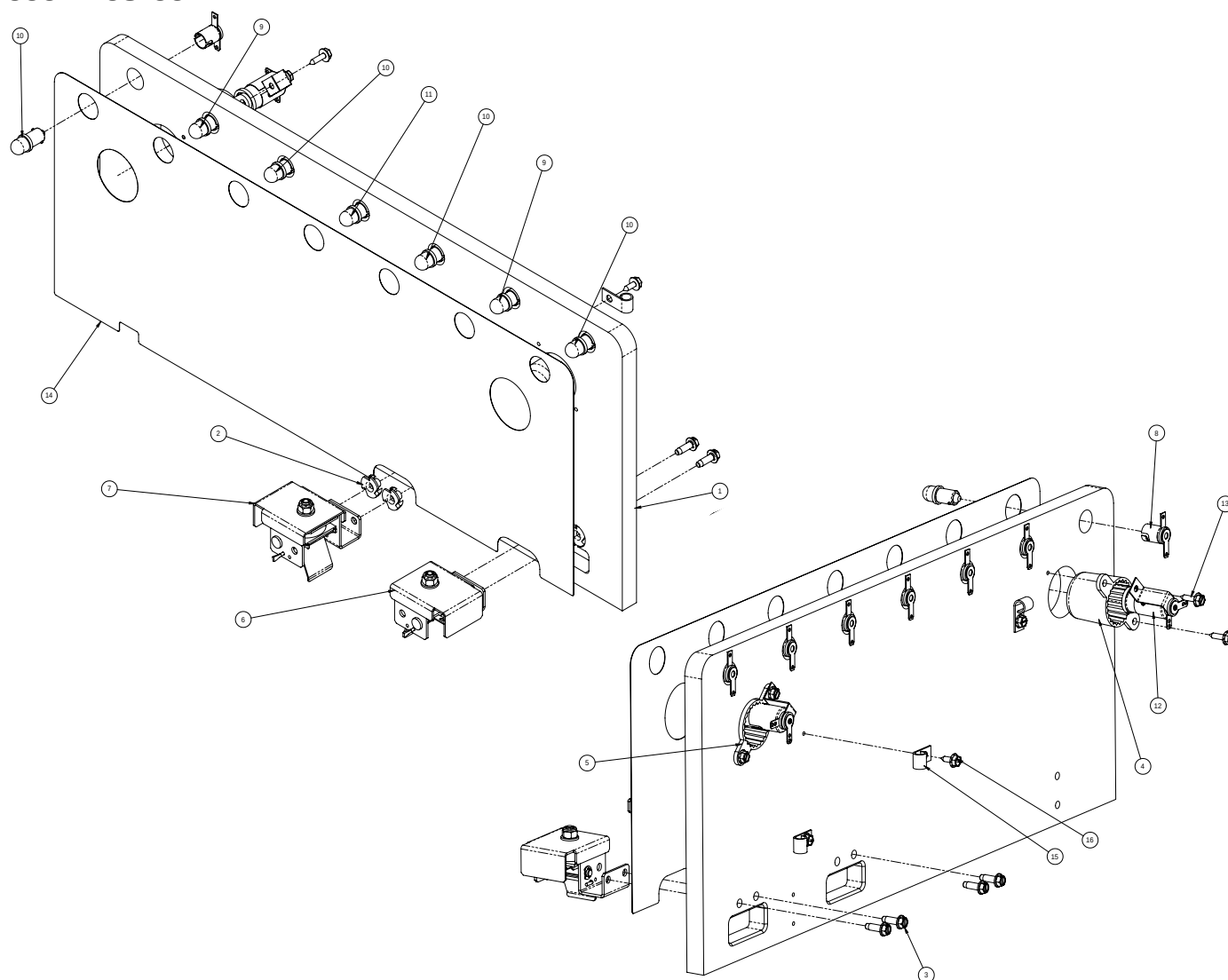
ID	Part Number	Description	Qty
1	511-7569-01	RAPTOR WING ASSEMBLY-PRO	1
2	511-7551-00	ACTUATOR AND FULCRUM ASSEMBLY	1
3	530-7865-02	PIVOT PIN-.250" DIA.	1
4	270-5002-00	RETAINING RING - 1/4"	2

5.34 DRAGON PRO ASSEMBLY

516-6783-00



ID	Part Number	Description	Qty
1	500-9873-01	DRAGON ASSEMBLY-PRO	1
2	511-7548-01	DRAGON SOLENOID ASSEMBLY-PRO	1
3	234-5101-00	SCREW, #8 X 1/2" SLT HWH AB ZINC	3
4	270-5001-00	RETAINING E-RING, 3/16" SHAFT OD	2
5	530-7812-10	PIVOT PIN-.188 DIA.	1
6	545-5352-00	NYLINER, 3/16" SHAFT	1

PARTS REFERENCE**5.35 BACK PANEL ASSEMBLY****500-2458-00**

ID	Part Number	Description	Qty
1	525-5843-00	BACK PANEL - POLITICO PRO	1
2	240-5101-00	8-32 T-NUT	4
3	237-5975-01	SCREW, 8-32 x 1/2 HWH SLOT SERR SW ZINC	4
4	550-5031-02	MINI MARS W/ EARS - RED SB	1
5	550-5031-06	MINI MARS W/ EARS - YELLOW SB	1
6	511-7656-01	ASSY, ELEC GATE RIGHT, B.P. MT - UP	1
7	511-7656-00	ASSY, ELEC GATE LEFT, B.P. MT - UP	1
8	077-5000-00	SOCKET - STAPLED - 2 LUGS	7
9	112-5034-05	DOUBLE LED, BAYONET BASE - BLUE	2

ID	Part Number	Description	Qty
10	112-5034-08	DOUBLE LED, BAYONET BASE - WHITE	4
11	112-5034-02	DOUBLE LED, BAYONET BASE - RED	1
12	518-5101-88-LED	SOCKET/LED FLASH ASSEMBLY - WHITE	2
13	234-5001-02	SCREW, #6 X 1/2" HWH	4
14	820-8039-10	DECAL # 10 - BACK PANEL - POLITICO PRO	1
15	040-5000-03	1/4" CABLE CLAMP	3
16	234-5000-00	SCREW, #6 X 3/8" HWH	3

SPECIFICATIONS

6. SPECIFICATIONS

500-55G4-01

SPECIFICATIONS, MECHANICAL, GAME SETUP

Specification	Imperial	Metric
Weight	210 lbs	96 kg
Max dimensions, leg levers 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.

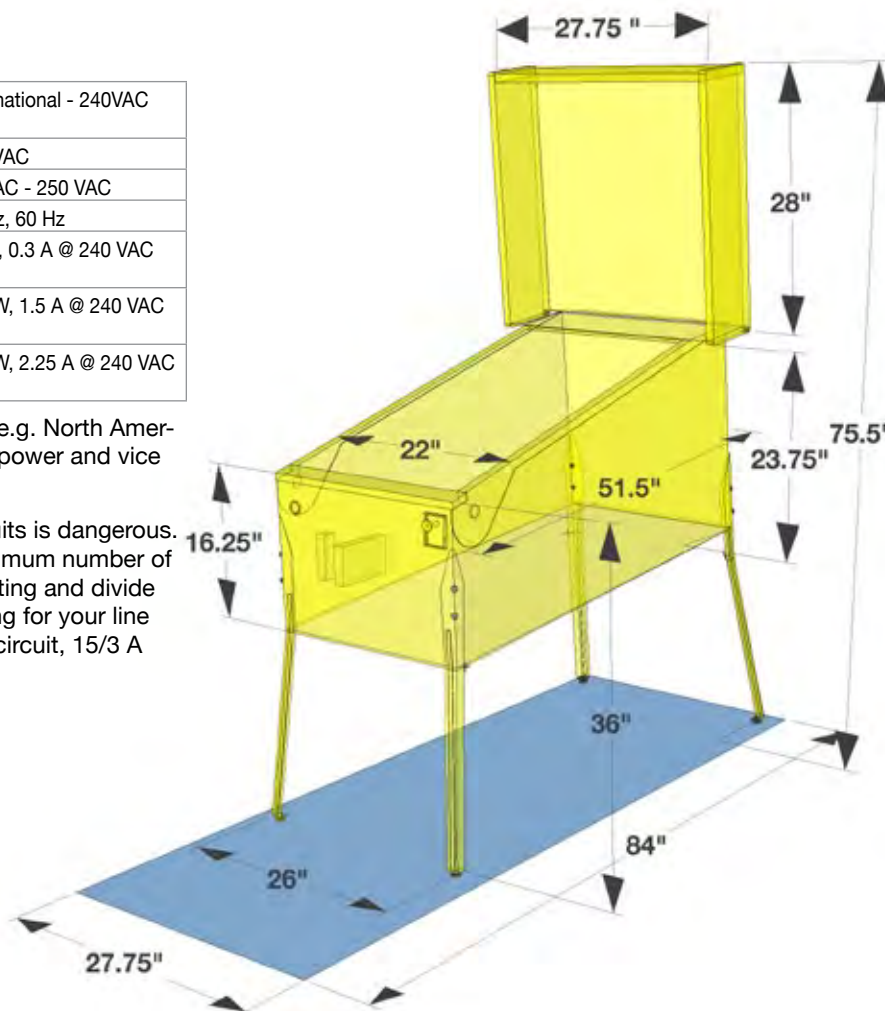
WARNING: Overloading electrical supply circuits is dangerous. Do not overload circuits. To calculate the maximum number of games for a circuit, check circuit amperage rating and divide by the game Nominal Line Power Current rating for your line voltage. For example, a 15A 120V household circuit, $15/3 \text{ A}$ (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) "This appliance is not to be cleaned by a Water Jet."
- (i) "Do not locate this appliance in an area where a Water Jet is used."
- (ii) "Do not clean this appliance with a Water Jet."
- (b) If the supply cord is damaged, it must be replaced in order to avoid a hazard.

6.1 GAME DIMENSIONS



6.2 WARRANTY

500-55G4-01

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 insure 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 Display boards: 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 re-turned 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.

6.3 WARNINGS, COMPLIANCE, AND LEGAL NOTICES

500-55G4-01

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 light-headedness, 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 serving any electrical components.

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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GAME OF THRONES PRO MODEL 500-55G4-01

MANUAL PART 780-50G4-00

09/22/15 EDITION

