



# Tethered Gun – Four Player

## Setup and Operation Service Manual

Revision Halo-1.0.2-4.12



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Halo: Fireteam Raven Game Software Copyright 2018 Play Mechanix™ Inc.

This software is based in part on the work of the Independent JPEG Group.

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)

This product includes cryptographic software written by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com))

This product includes audio software developed by FMOD Studio. (<https://www.fmod.com/>)

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## Safety

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### OPERATION

Before operating game, read this manual. Failure to properly install and operate this game could result in malfunction or accident. Operate the game in accordance with the manual.

### TRANSPORTING

Cabinet is very heavy and contains fragile components. Use appropriate care when moving or transporting cabinet. Avoid rough handling.

### HANDLING COMPONENTS

Many components are extremely sensitive to handling, environmental and Electrostatic Discharge (ESD) events—especially the computer. Do not handle it roughly. Before servicing, call your distributor and inquire about the PC warranty. Use proper ESD procedures when servicing. Protect components from harmful environmental conditions, such as extreme temperatures, excessive moisture or other damaging effects.

### DISCONNECT POWER

Always turn off power and unplug the units before servicing or making adjustments, unless otherwise instructed. Installing or repairing components while power is on can damage the components and void the warranty.

### GROUNDING

Avoid electrical shock. Do not plug in AC power until you have inspected and properly grounded the unit. Only plug into a grounded, three-wire outlet. Do not use a “cheater” plug or cut off the ground pin on the line cord.

### ELECTRICAL SHOCKS

There is no isolation transformer in the cabinet. Disconnect AC power before servicing. However, be aware that lethal voltages can remain in the electronic components even when AC power is disconnected. Use extreme caution when servicing. Verify that there is a working ground connection. If the unit sustains water damage, cease using it immediately and unplug AC power.

### MONITOR

The monitor contains no user serviceable parts. Do not attempt to service the monitor.

### POWER CORD

If the power cord is damaged or lost, replace it with an identical cord as supplied by the manufacturer or an authorized service agent.

### SURGE SUPPRESSOR

It is recommended that you plug your game’s power cord into a surge suppressor to help protect from power surges that may damage sensitive electronic components.

### WATER AND OTHER LIQUID

Do not install game near sprinkler or other water jet sources. Do not use water jet to clean game. Keep minimum clearance behind game and wall for proper ventilation but also prevent access of liquid from spills and sprays from entering ventilation holes.

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### **CONNECTORS**

Ensure all connectors mate properly. If connectors do not slip in easily, do not force them. Connectors are often keyed and only connect one way. Check for correct orientation.

### **COMPUTER**

The computer contains sensitive components, including a hard drive. Do not handle it roughly. Call your distributor before servicing its internal components. Ask about warranty information as it relates to the PC.

Cycle AC power on or off with the cabinet power switch.

A dongle has been inserted into one of the USB ports. This is required for game play.

Do not remove the dongle except for troubleshooting purposes.

### **TEMPERED GLASS WARNING**

When handling the LCD display glass cover take special care and set the glass down softly on a flat surface free of debris. The edge of the glass is sensitive to hard impact. Shattered glass from the monitor can travel long distances and cause bodily injury. Use proper procedures when handling broken materials.

### **HAZARD TO EPILEPTICS**

A small portion of the population has an epileptic condition that may cause seizures. Affected persons experience seizure while watching some television pictures or playing certain video games. People who have not had seizures may still have an undetected epileptic condition. If anyone in your family has experienced epilepsy symptoms (seizures or loss of awareness), consult your physical before using video games. While children play video games, a parent should observe. Be alert to the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation or convulsions. If you or your child experiences these symptoms, discontinue use immediately and consult your physician.

### **MANUAL**

Keep this manual available and ready for use. If the game fails to function properly, turn off the machine and unplug the AC line cord. Contact your local distributor. You may not reproduce this document or any of its contents without written authorization from Raw Thrills™, Inc. or PlayMechanix™ Inc.

### **SPECIFICATIONS**

For reasons such as performance, this product's specifications may change without notice. Federal patent, copyright and other intellectual property laws protect the content, devices and design of the game and its equipment.



## Product Specifications

### Electrical Power

United States, Canada (ETL)  
 Voltage: 120VAC, 60 Hz  
 Operating AC Current: 5 Amps

International (CE)  
 Voltage: 230VAC, 50/60 Hz  
 Operating AC Current: 2.5 Amps

### Temperature

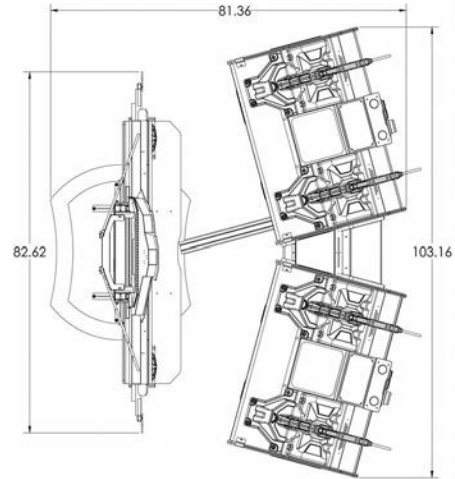
50° to 104° Fahrenheit (10° to 40° Celsius)

### Humidity

Must not exceed 95% relative humidity

### Cabinet Dimensions

Height	Width	Depth
117.38" (298.1452 cm)	103.16" (262.0264 cm)	81.36" (206.6544 cm)



## Fuse Replacement Guide

NOTE: FOR CONTINUED PROTECTION AGAINST FIRE AND ELECTRICAL DAMAGE,  
 USE ONLY SPECIFIED FUSE TYPE AND VALUE.

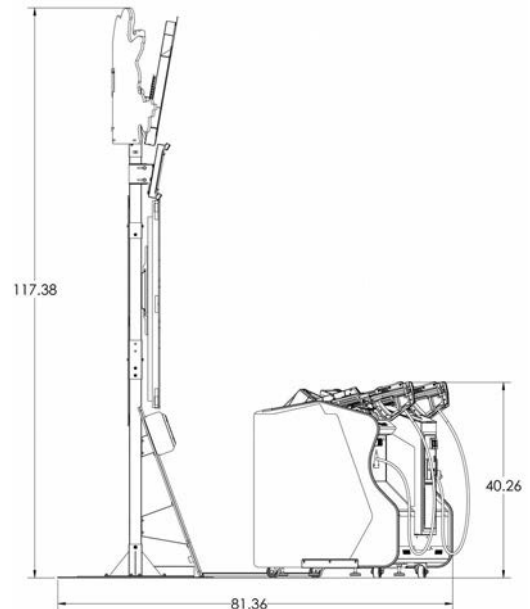
Please see unit for specified fuse labeling. Abbreviations:

5A 250V	5A, 250VAC Fast Acting 3AG Fuse	Littlefuse 0312005.MXP (or equivalent)
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## Setup

### Unpack Cartons

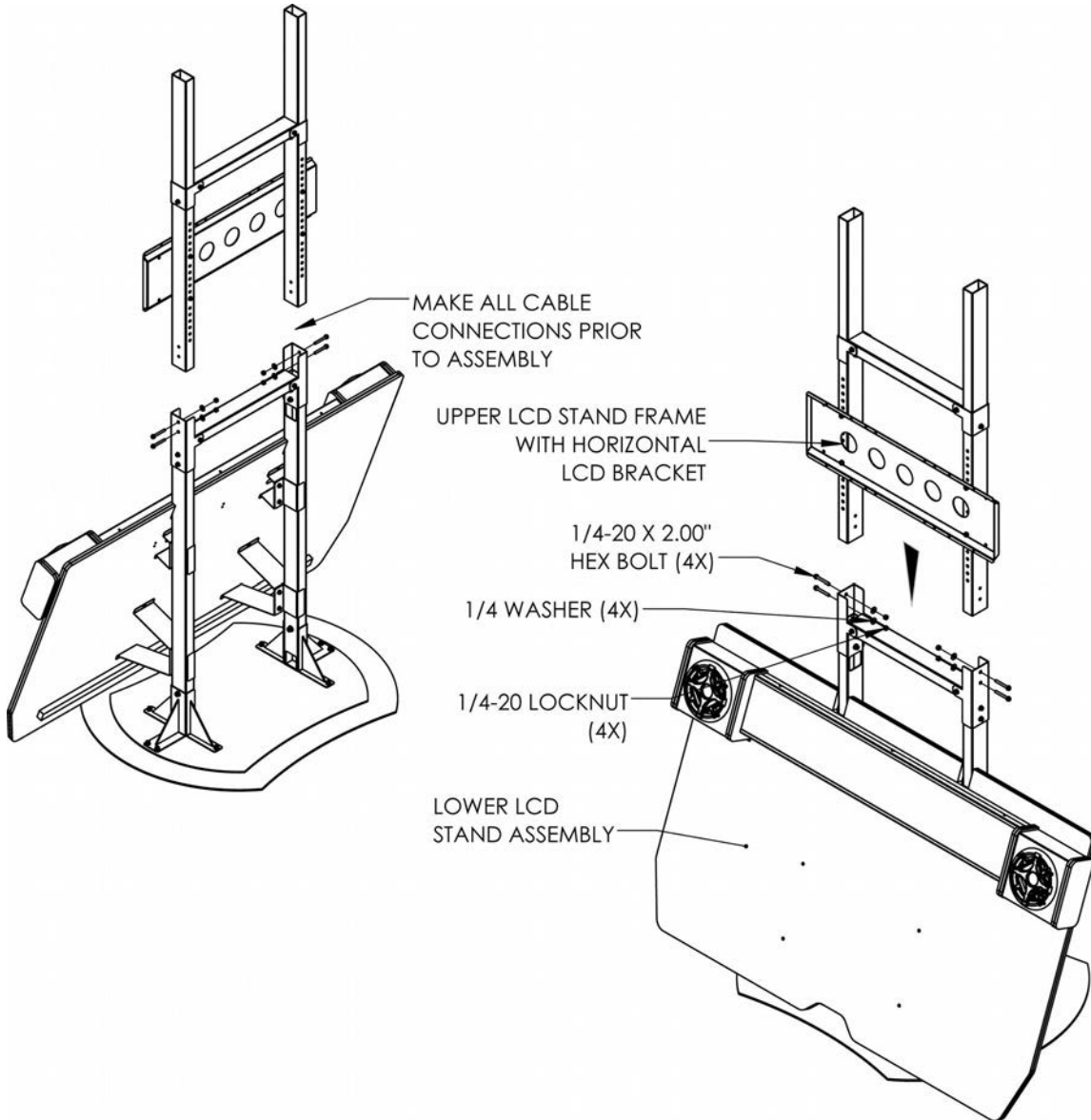
- Unpack all cartons and locate cabinet components
  - LCD
  - LCD Stand Assembly
  - Marquee Assembly
  - Center Console Assembly
  - Left Console Assembly
  - Right Console Assembly
  - Master Chief Light Box Assembly
  - Foam Board Assembly



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### Attach Upper LCD Stand to Lower Stand Assembly

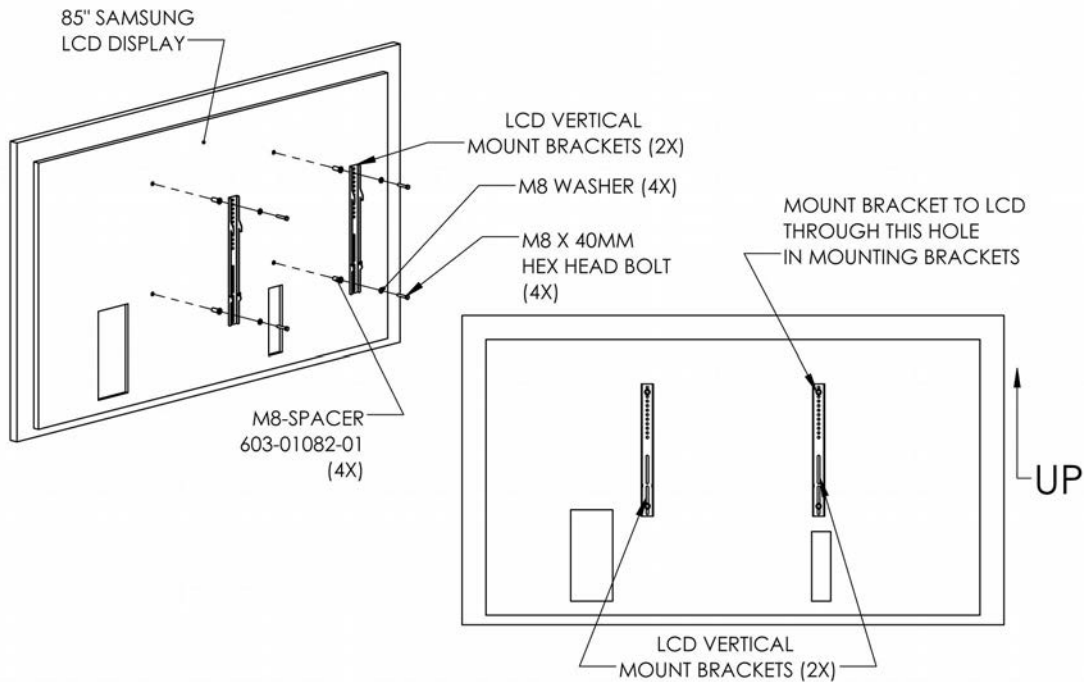
1. Position lower LCD stand assembly in desired location.
2. Make all cable connection.
3. Secure upper LCD stand frame to lower LCD stand assembly using four 1/4-20 x 2" hex bolts with 1/4 washers and 1/4-20 lock nuts.





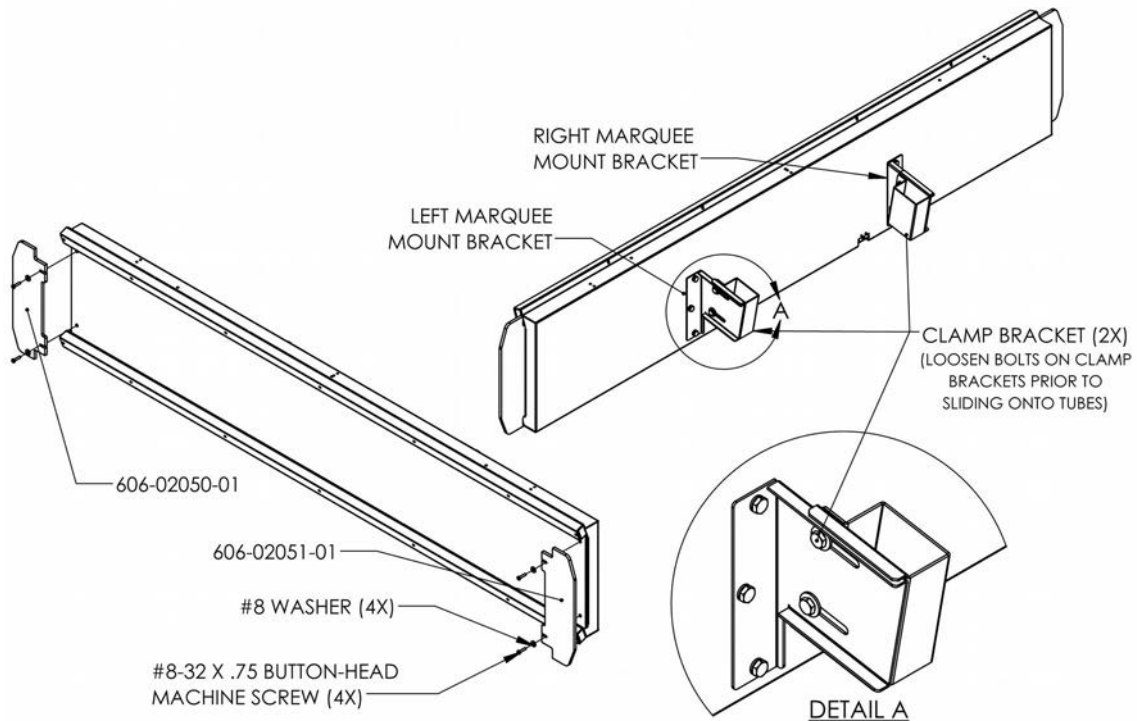
## Install LCD Vertical Mounting Brackets to LCD

1. Attach both LCD vertical mounting brackets to the LCD using four M8 x 40mm hex head bolts with M8 spacers and M8 washers.



## Install Marquee Graphic Panels

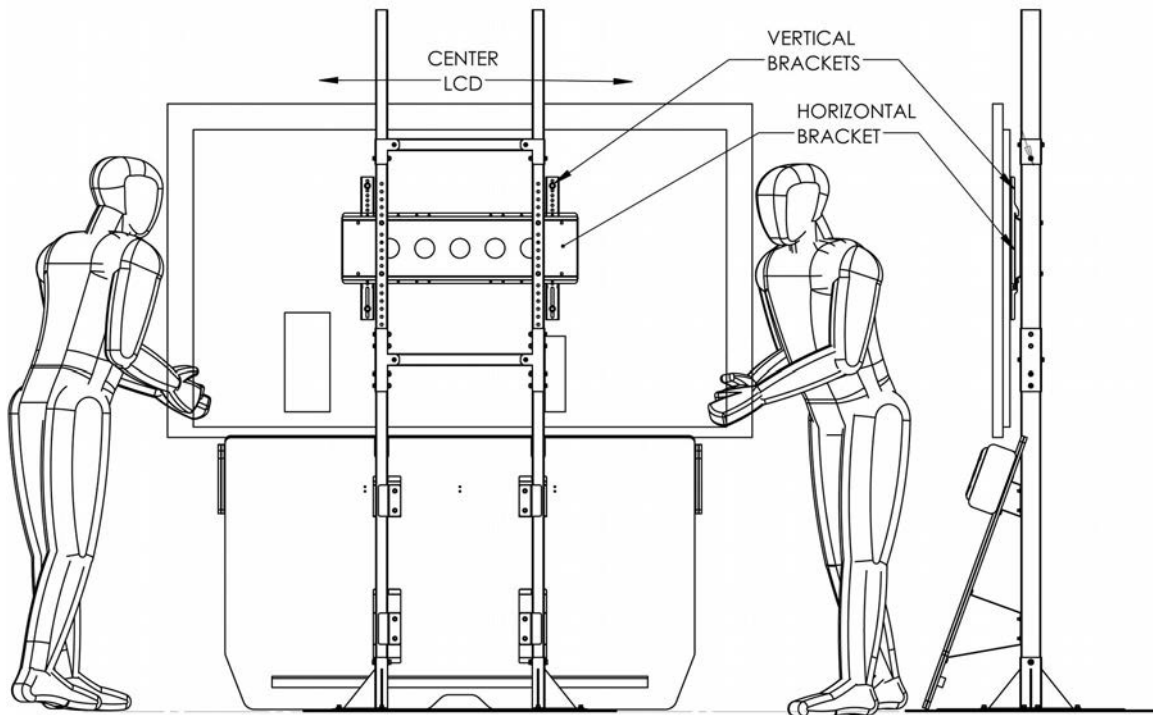
1. Attach Graphic Panels to the left and right end of the Marquee Assembly using four #8-32 x .75 button head machine screws with #8 washers.
2. Check Marquee Assembly clamp brackets and loosen bolts on clamp.



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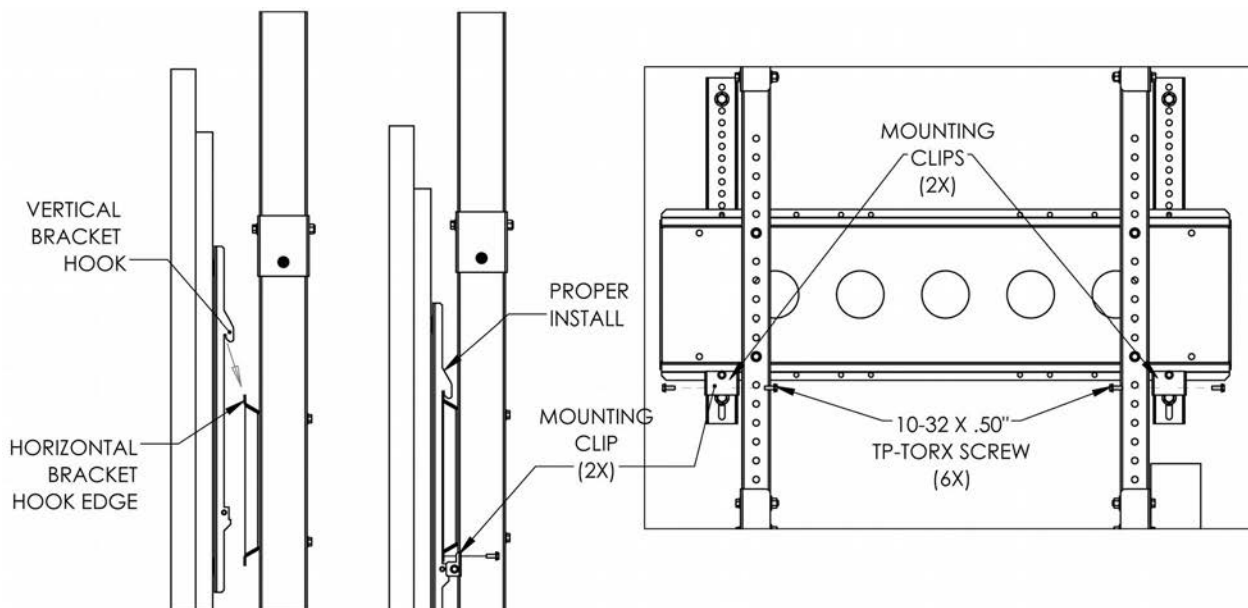
### Attach LCD Display Assembly to LCD Stand Assembly

1. Using two people, lift and hang the LCD display assembly by hooking the LCD vertical brackets onto the horizontal bracket edge.
2. Center the LCD left to right on the bracket.



### Secure LCD Display Assembly to LCD Stand Assembly

1. Install two lower mounting clips using six 10-32 x .50" tamper proof torx screws.

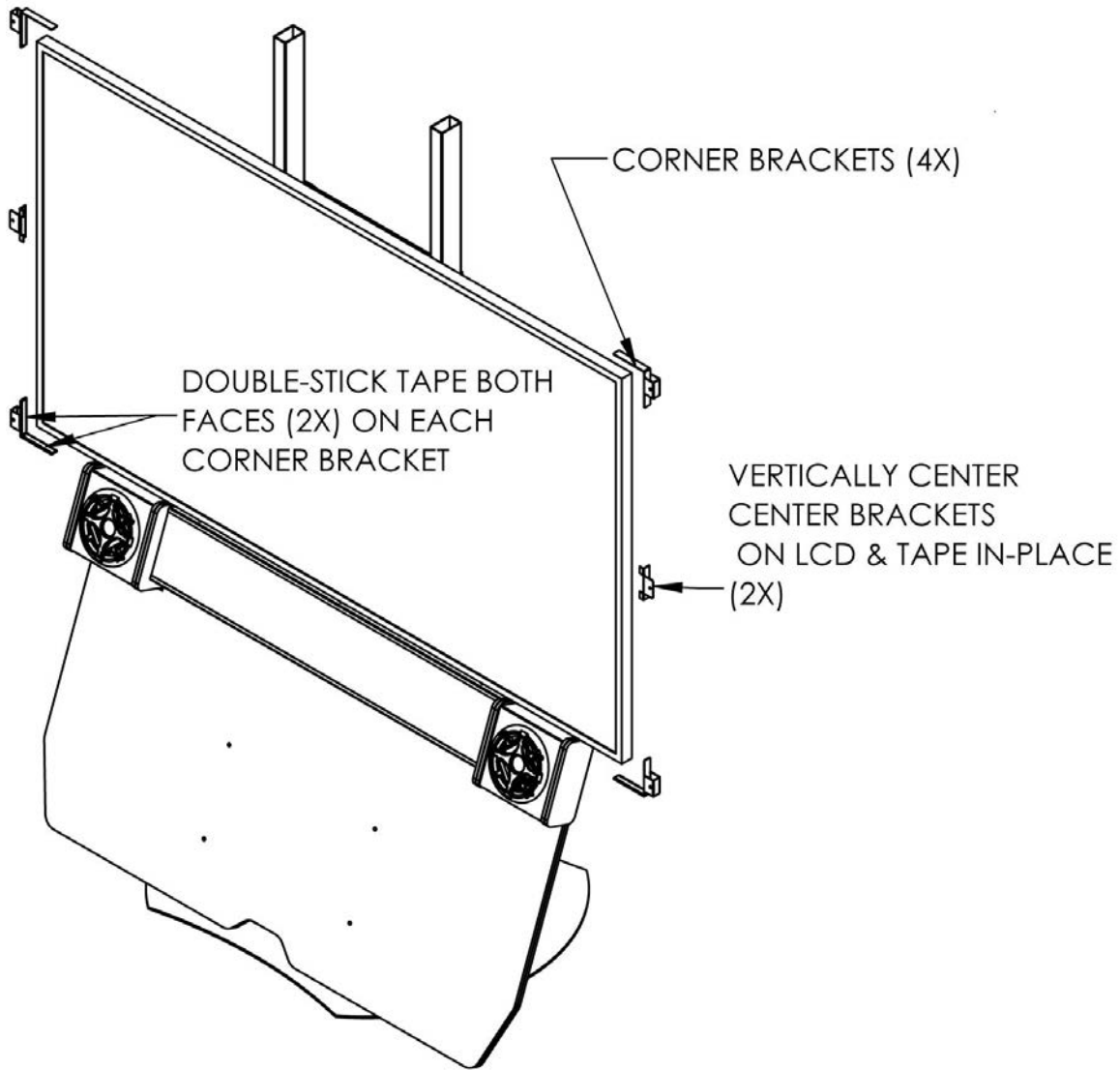






## Attach Center and Corner Brackets to LCD Display Assembly

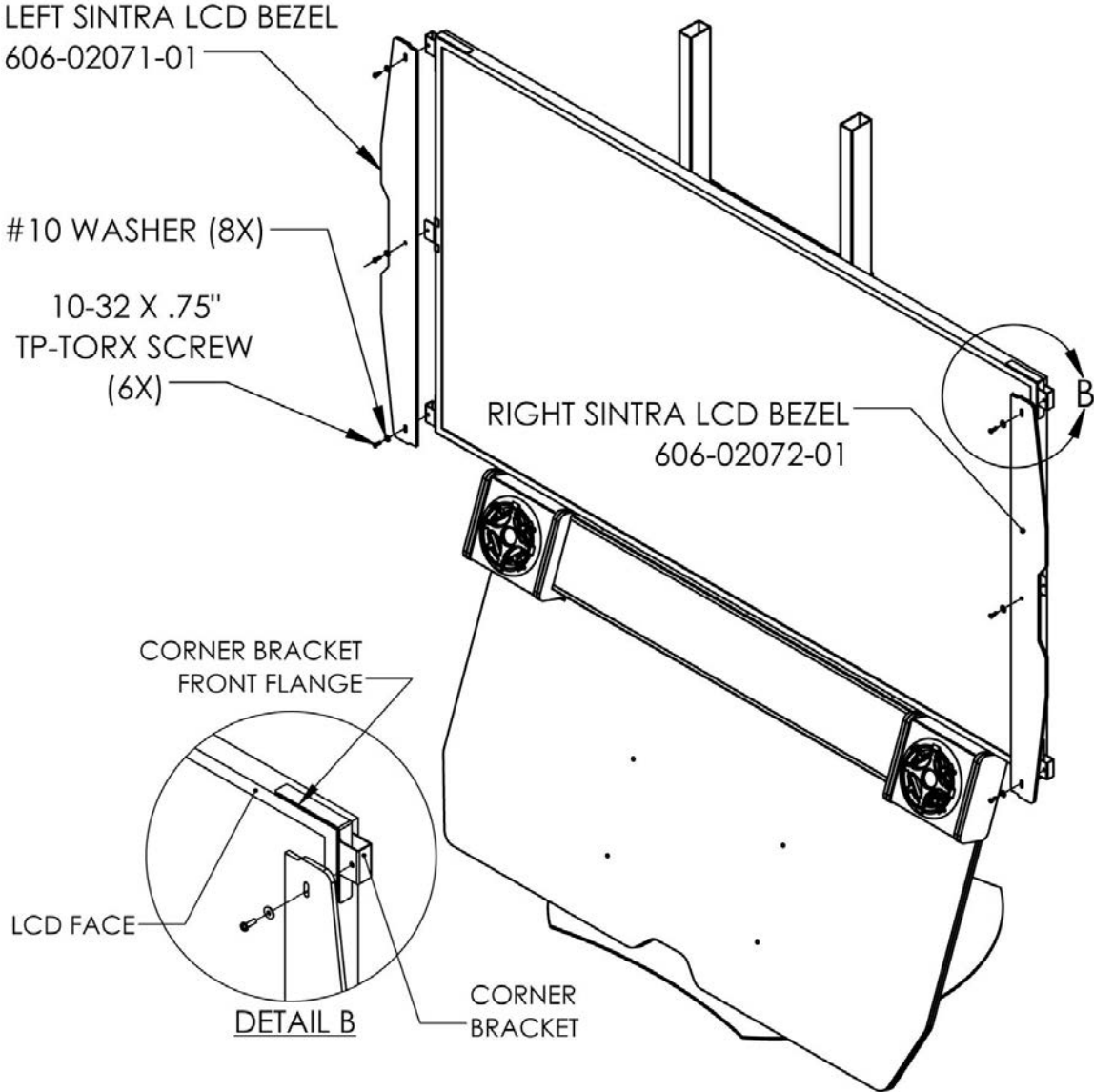
1. Attach four corner brackets to LCD using double stick tape and both faces.
2. Tape two center brackets to LCD making sure they are vertically centered.



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#### Attach LCD Bezel Panels

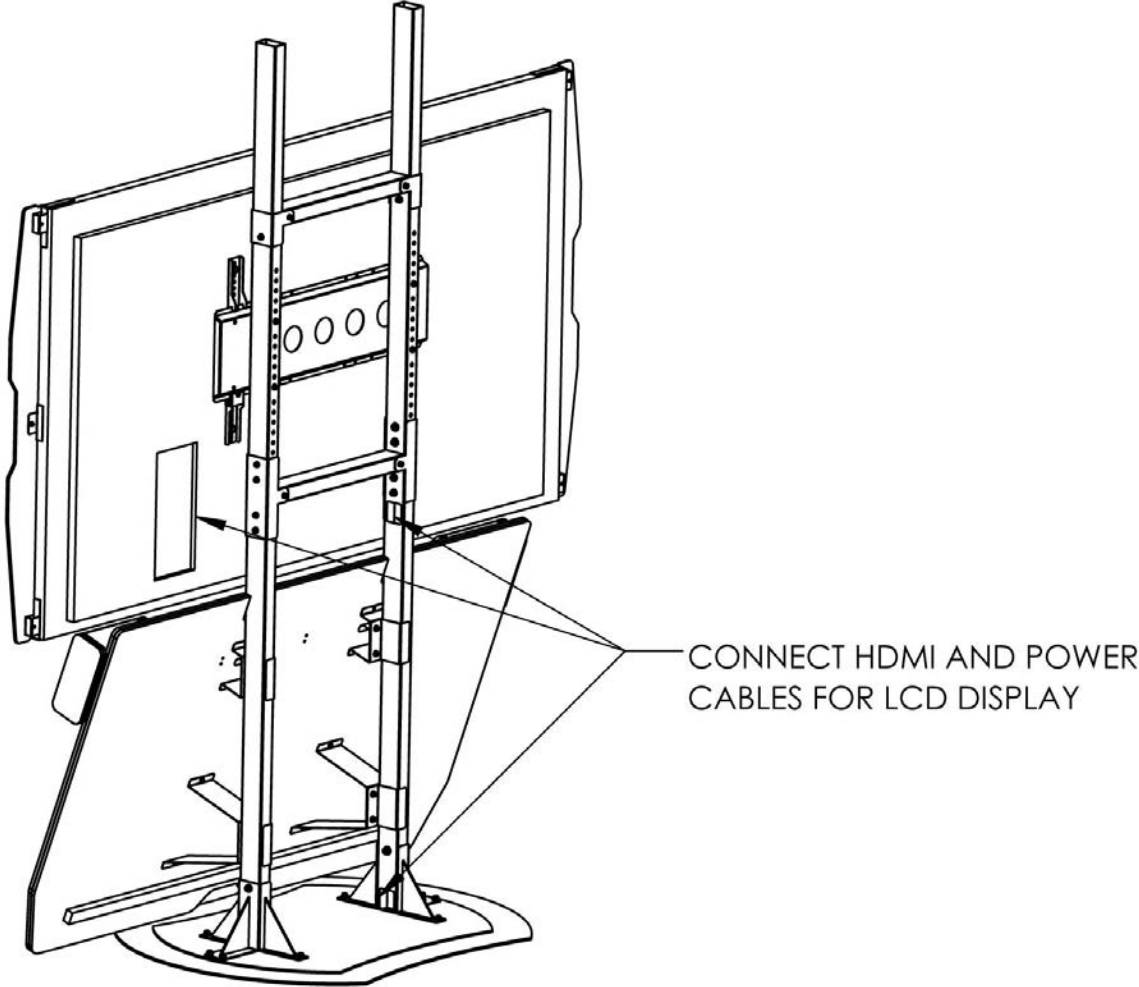
1. Attach left and right sintra LCD bezel panels using six 10-32 x .75" tamper proof torx screws with #10 washers.





### Connect LCD Display Cables

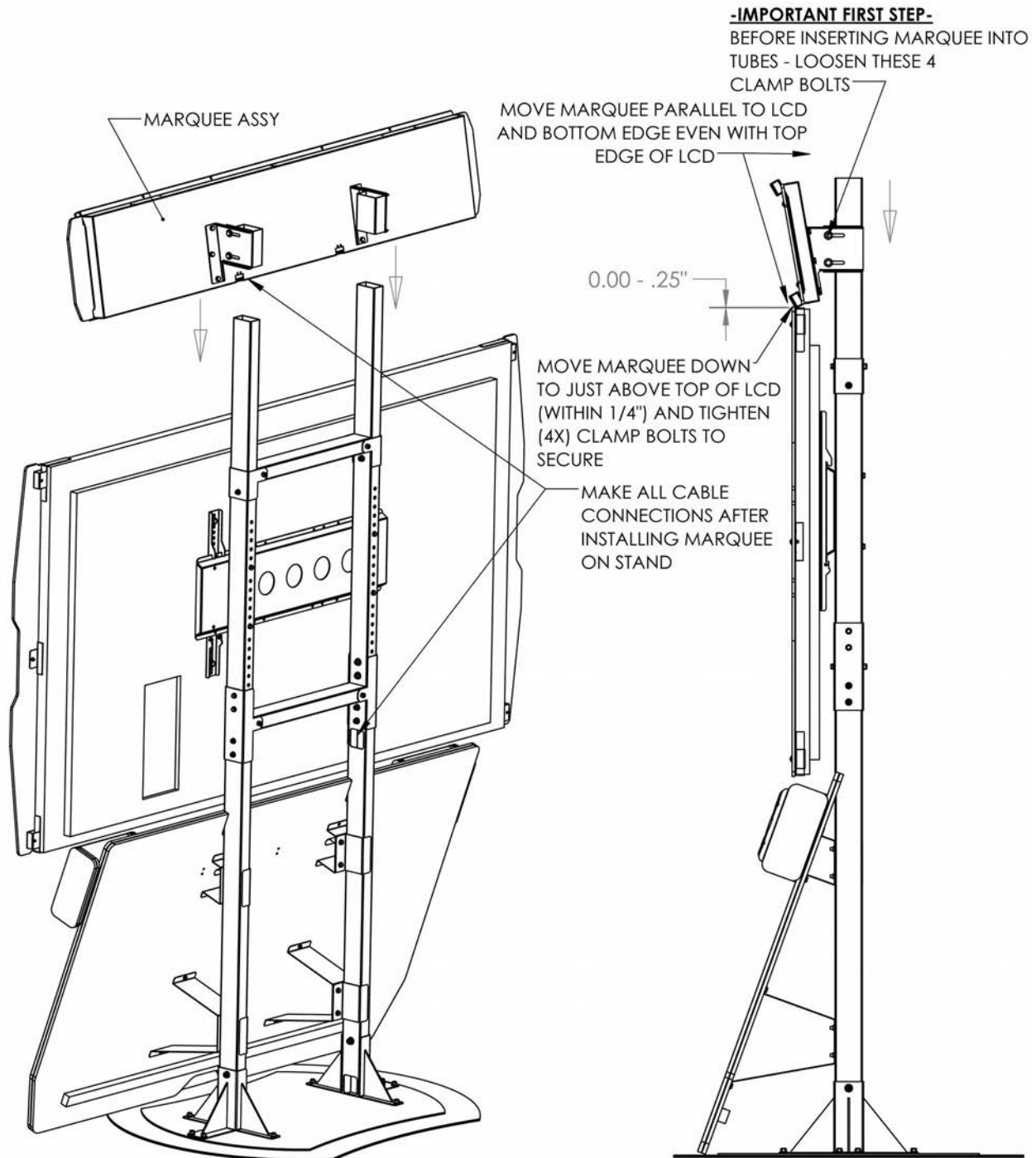
- 1. Connect HDMI and power cables for LCD display.



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### Attach Marquee Assembly to LCD Stand

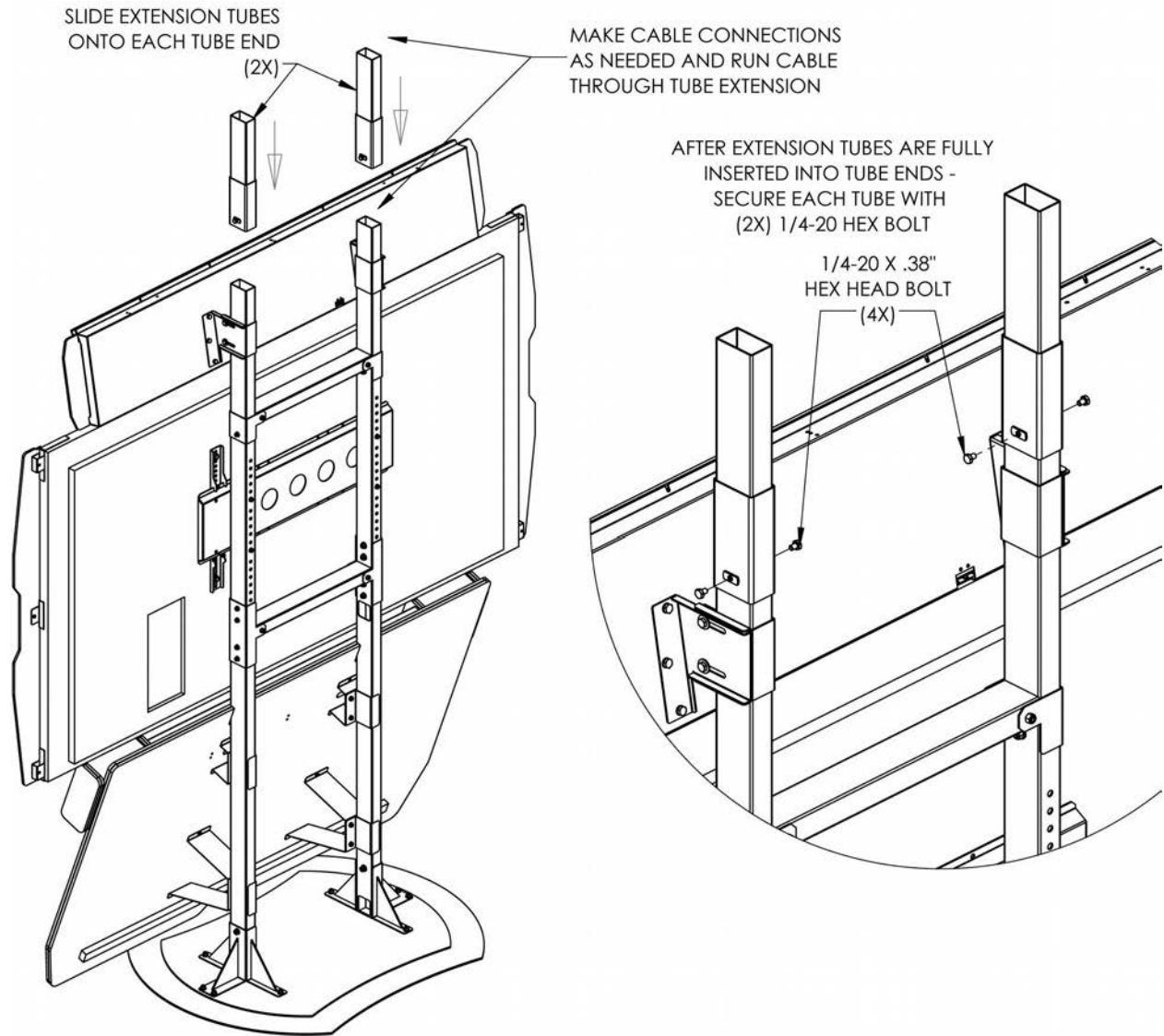
1. Loosen four clamp bolts on marquee assembly.
2. Using two people, lift and hang the marquee assembly onto top of LCD stand square tubes.
3. Make cable connections.
4. Position marquee assembly parallel to LCD with bottom edge even with top edge of LCD.
5. Tighten the four clamp bolts to secure the marquee assembly.





## Attach Tube Extensions to LCD Stand

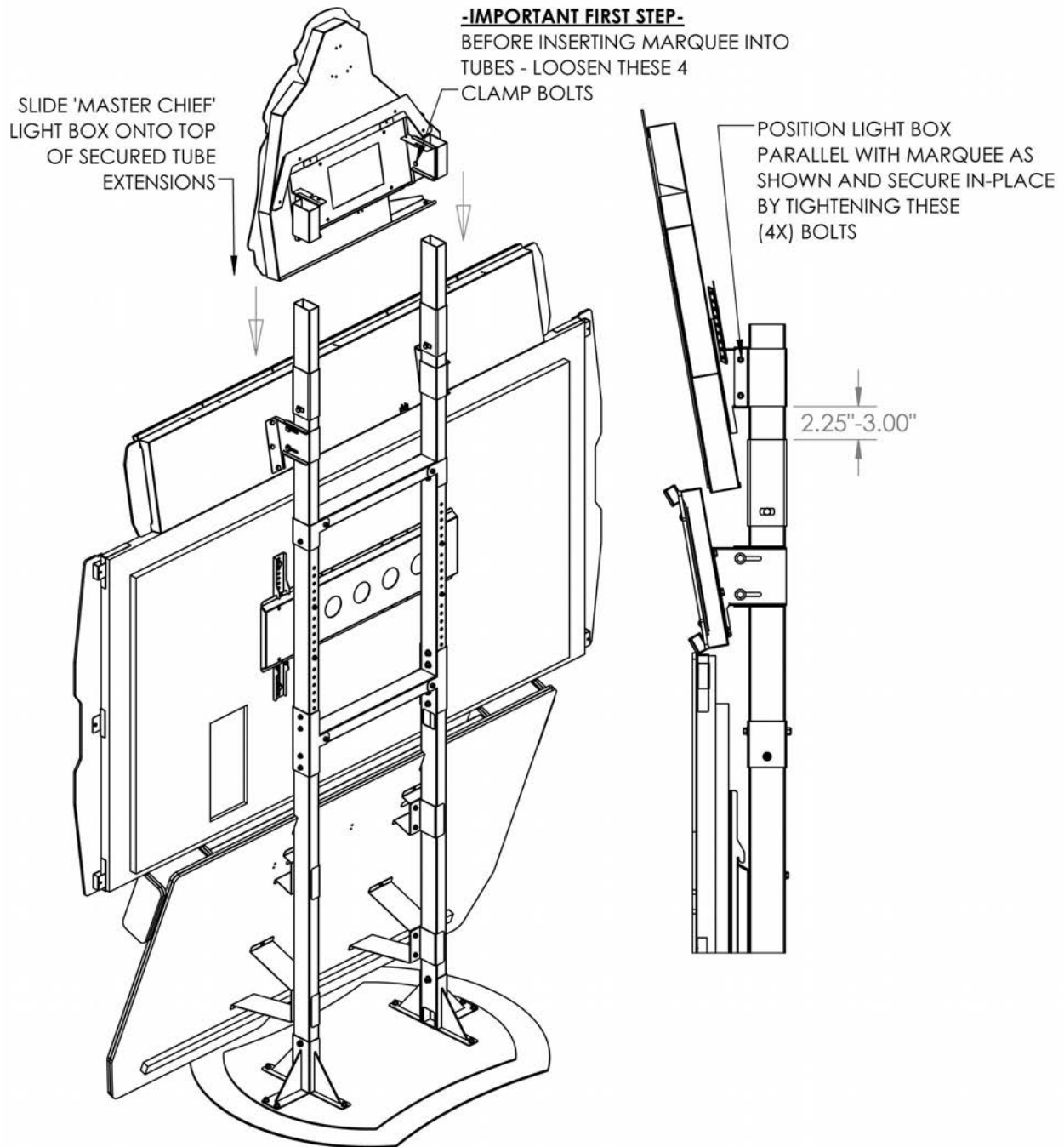
1. Slide extension tubes onto each tube end making cable connections as needed.
2. Secure tube extensions using two 1/4-20 x .38" hex head bolts.



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### Attach Master Chief Light Box Assembly to Tube Extensions

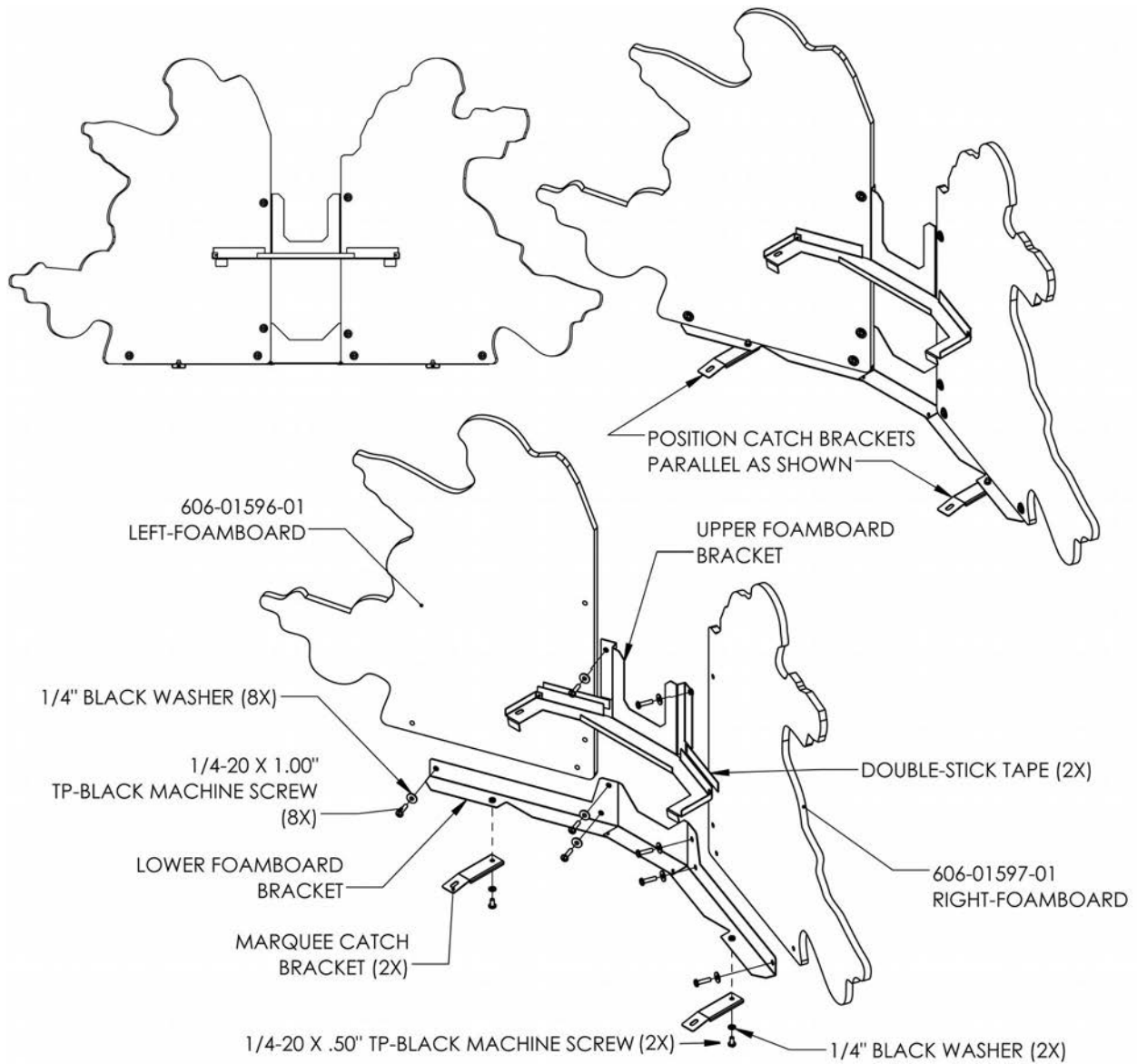
1. Loosen four clamp bolts on Master Chief light box assembly.
2. Lift Master Chief light box assembly above tube extensions and make cable connections.
3. Slide Master Chief light box assembly onto tube extensions.
4. Secure by tightening the four clamp bolts.





## Attach Foam Boards to Brackets

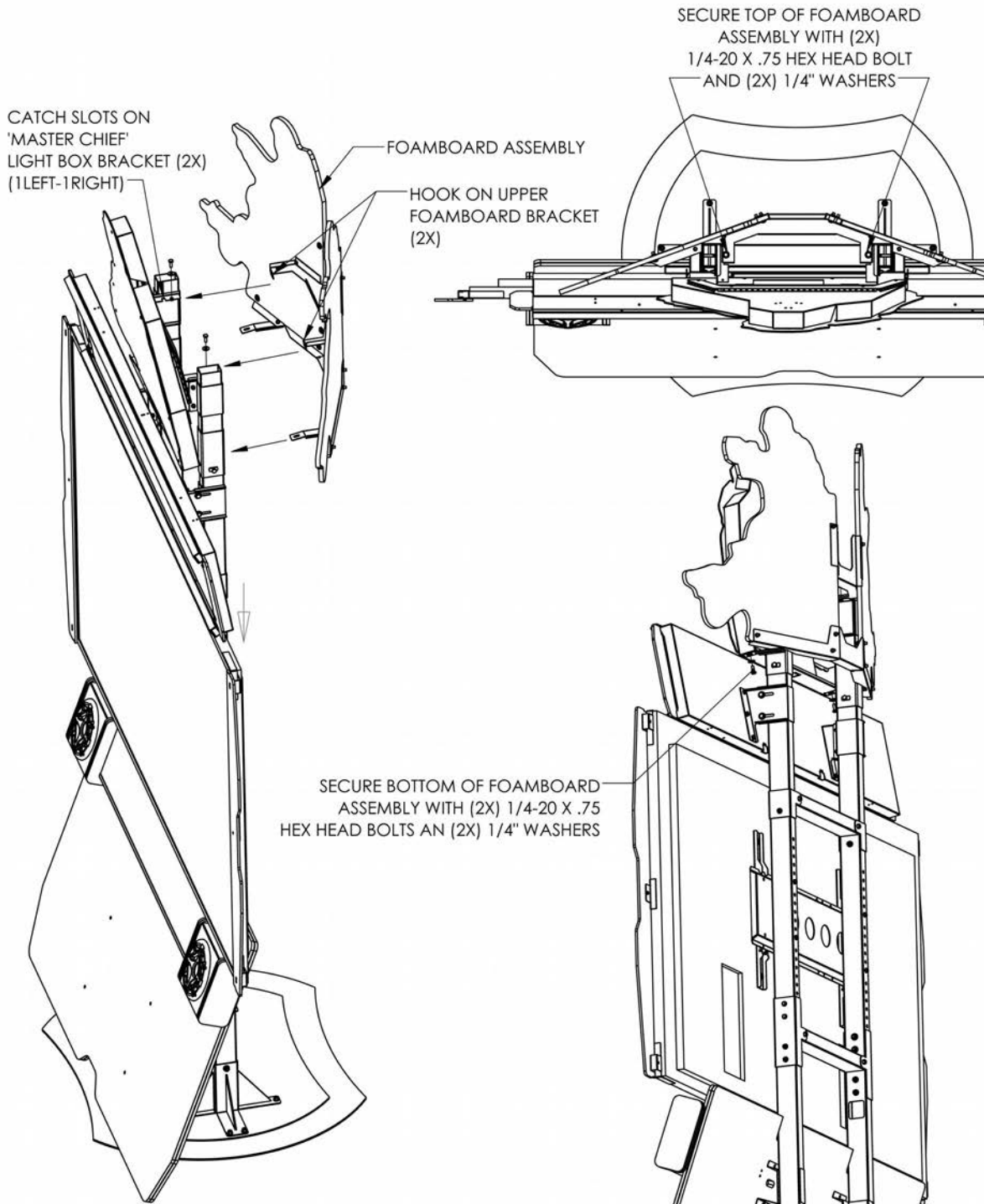
1. Attach catch brackets to lower foam board bracket using two 1/4-20 x .5" black tamper proof machine screws with 1/4" black washers.
2. Bolt left foam board to lower foam board bracket using three 1/4-20 x 1" tamper proof machine screws and 1/4" washers.
3. Remove double stick tape release sheets.
4. Position upper foam board bracket to left foam board lining up the bracket with the upper hole.
5. Secure upper foam board bracket to left foam board using one 1/4-20 x 1" tamper proof machine screws and 1/4" washers.
6. Repeat steps 2-5 for right foam board.



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### Attach Foam Board Assembly to Tube Extensions

1. Lift foam board assembly and hook upper foam board bracket to catch slots on Master Chief light box brackets.
2. Secure upper foam board bracket to Master Chief light box brackets using two 1/4-20 x .75" hex head bolts with washers.
3. Secure foam board bottom batch brackets to base of Master chief light box assembly using two 1/4-20 x .75" hex head bolts with 1/4" washers.

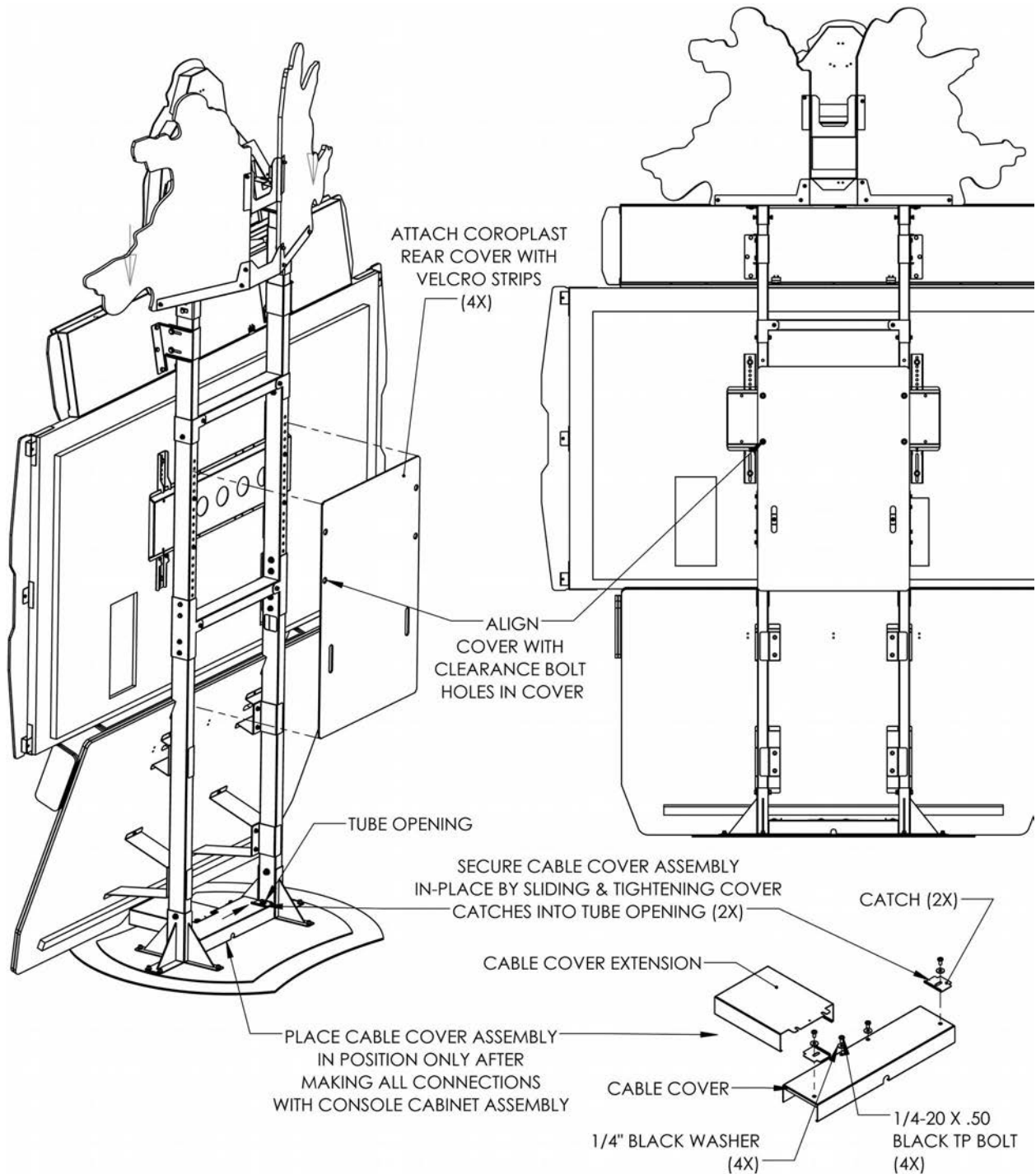






## Attach Coroplast and Cable Covers

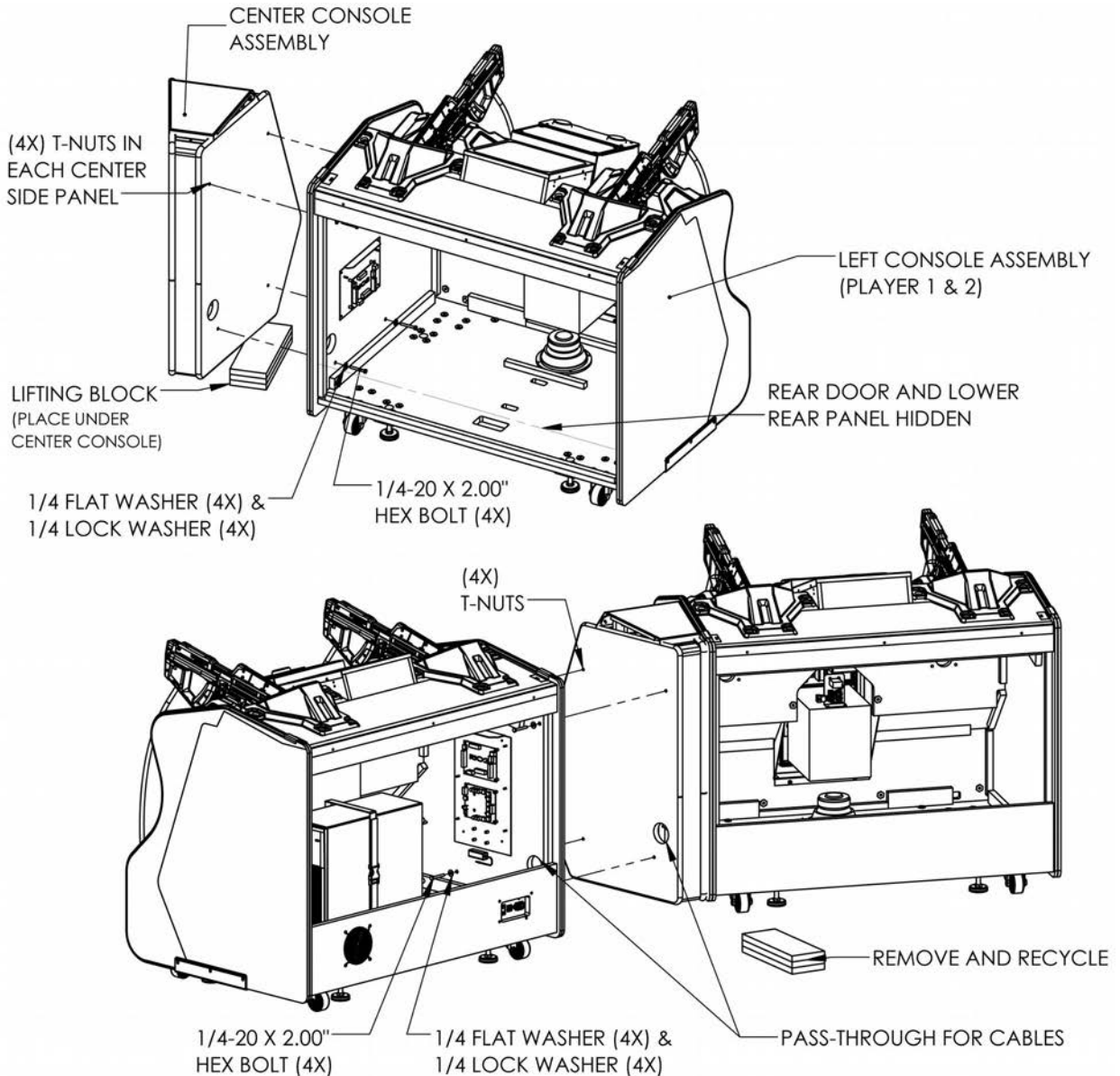
1. Secure Coroplast rear cover with Velcro strips.
2. Route and complete cable connections at base of LCD stand.
3. Place cable cover assembly in position making sure not to pinch any cables.
4. Secure cable cover assembly by sliding and tightening cover catches into tube opening using four 1/4-20 x .5" black tamper proof bolts with 1/4" black washers.



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### Attach Left/Right Consoles to Center Console

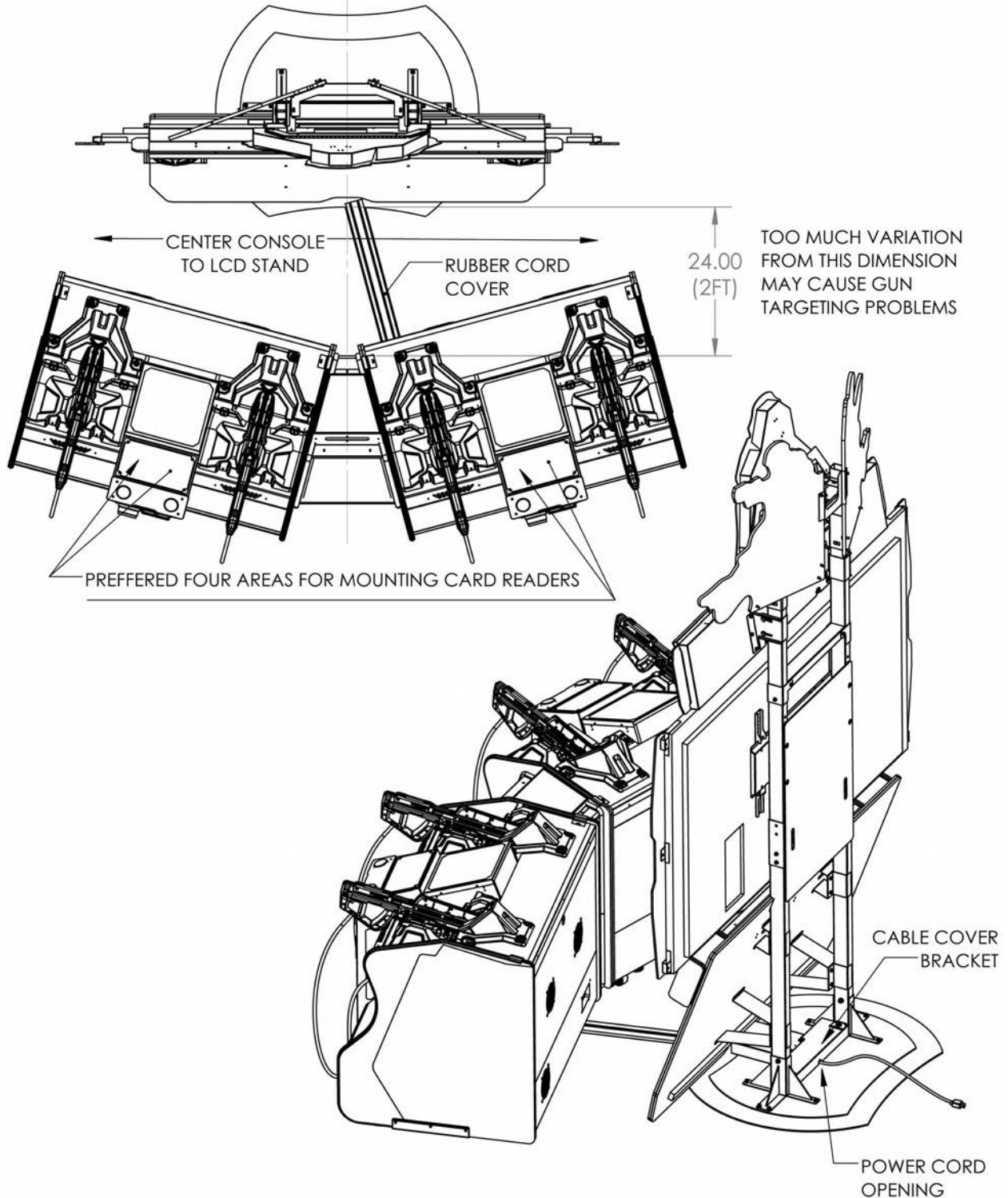
1. Place lifter block under center console.
2. Position left console assembly next to center console.
3. Secure left console assembly to center console using four 1/4-20 x 2" hex bolts with 1/4 flat washers and 1/4 lock washers.
4. Repeat steps 2 and 3 for right console assembly.
5. Remove and recycle lifter block.
6. Connect all pass through cables between left and right consoles.





## Position Console Assembly and Make Final Connections

1. Position the console assembly in front of the LCD stand.  
The center console should be two feet in front of the LCD stand
2. Run cables from console to stand through the rubber cord cover making all connections.
3. Clean up any loose cabling and make sure cable cover bracket is secure with power cord exiting.



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### Verify Cabinet Functionality

1. Verify the voltage in the nearest AC outlet.
2. Verify the AC outlet ground connection is present and working.
3. Verify that the specified operating current will not overload the supply circuits.
4. Plug the line cords into AC outlet.
5. Turn the main cabinet power switch to ON.
6. Verify that the cooling fans on the cabinet are working.  
*If not, turn off AC power and disconnect line cord. Contact Betson service*
7. Check that no component is excessively hot or emitting foul odors.  
*If so, turn off AC power and disconnect line cord. Contact Betson service.*
8. Once software loads, follow prompts to setup the cabinet software.

### Verify Input and Output Functionality

1. Enter the Diagnostic menu
2. Enter the INPUT TESTS menu and verify all switches and inputs function.
3. Enter the VIDEO TESTS menu and verify that video is acceptable.
4. Enter the COIN METER TEST and verify the operation of the coin meter.
5. Enter the LAMP TESTS menu and verify that the lamps of the buttons work correctly.
6. Enter the SOUND TEST menu and verify the audio works and is not distorted.
7. Enter the WATCHDOG TEST menu, which re-boots the game.
8. Upon a successful re-boot, you are ready to make adjustments to pricing, volume and other functions found in the Diagnostic menu.



## PC USB Connection Guide



## Maintenance

### Hard Drive Recovery

Symptoms requiring hard drive recovery include:

- File Test reports bad or missing files
- Game fails to finish loading during startup
- After resetting the AC power, an error is reported
- You are prompted to insert a boot DVD
- Erratic Game or Attract Mode
- A screen indicating Data Files Corrupted

## Halo – Tethered Gun – Four Player – Service Manual

### COMPUTER

The computer contains sensitive components, including a hard drive. Do not handle roughly. Call your distributor before servicing its internal components. Ask about warranty information as it relates to the PC.

Do **not** use the PC on/off switch. Turn AC power on or off with the main cabinet power switches.

### Flash Drive Restore

1. Turn both cabinet AC power switches to OFF.
2. Connect USB flash drive to an open USB port found inside the coin door.
3. Turn both cabinet AC power switches to ON.
4. Initial software loading may take several minutes. Check progress periodically.  
***Do not interrupt power or reset the game during recovery.***
5. When software has finished loading, a message indicates that restore is complete.
6. Turn both cabinet power switches to OFF and disconnect USB flash drive.
7. After 30 seconds, turn both cabinet power switches to ON.
8. After game restarts, the game will proceed through the Setup wizard with factory defaults.

### Regular Gun Maintenance Procedure

In order to maximize income potential, keep the cabinet in optimal working order by performing the following procedure every time you empty the cash box.

1. **Verify trigger and button functionality**  
Press the Test button on the service panel, select Tests, select Input Tests, and then select Switch Test (described earlier in this manual) to ensure inputs are functioning properly.
2. **Verify reload functionality**  
Verify reload mechanisms are functional on all guns.
3. **Calibrate, calibrate, calibrate**  
Return to the Main Menu screen and select Gun Calibration. Follow the instructions earlier in this manual or on screen to calibrate all guns.

Calibrate the guns any time the game is moved or the guns are repaired, replaced or swapped.

Note: It is not advisable to replace or swap devices while power is on. Shut AC power off before connecting or disconnecting any components. If, for some reason, guns are changed while power is on, shut off AC power and reboot, after the guns are connected again. Failure to do so may result in incorrect functionality.

**Following these procedures is critical to maintaining your guns and maximizing revenue. Perform regular maintenance to keep your game in top working order.**



# Troubleshooting

**Warning: Review safety chapter before making any adjustments to game.**

## General Troubleshooting

Problem	Possible Cause	Solution
Game will not power up	Game not plugged in.	Plug game into outlet.
	Game not turned on.	Turn on main power switch.
	Game fuse is blown.	Check and replace fuse.
	Game power line circuit breaker tripped.	Check and reset game power line circuit breaker.
	No power to receptacle.	Test outlet and plug game into powered outlet.
	PC not turned on.	Ensure IEC cable tightly plugged in. Trace cable back to source to ensure continuity.
	PC BIOS set incorrectly.	Set PC BIOS to boot on power.

NO VIDEO message	Video cables not plugged in properly	Reattach and/or tighten video cable to monitor. Reattach and/or tighten video cable to PC.
	Faulty video cable	Replace video cable

No sound	Bad Connection	Check connection to speakers and amplifier board.
	USB Sound adapter Disconnected	Check USB cable and connection

Game does not load	Hard drive failure	Recover hard drive.  See procedure on pg 21.
Hard drive test reports "bad" or "missing" files.		
Game fails to finish loading.		
After resetting, game still reports an error.		
Game suggests inserting a boot DVD.		
Erratic game mode or attract mode.		
<p style="text-align: center;"><b>WARNING!</b> Data Files Corrupted. (Game Operation May Become Unstable.) Use "Test" Switch to Enter Test Mode and Run "File Test." Press Start To Continue.</p>		

Game resets	Bad file.	Run File Test. Restore hard drive.
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Problem	Possible Cause	Solution
Coin meter does not click	No pulse to meter	Check all wiring from meter to I/O board
	Faulty meter	Replace coin meter
Exits Test Mode every 3 seconds	Test button stuck in ON position	Slide or toggle button off after Test Menu appears
<i>Dongle Not Present</i>	Dongle missing or disconnected	Find dongle usb connection and reseal in USB port
	Faulty USB port	Connect dongle to another USB port
<i>Connect I/O Board or I/O Board Missing</i>	USB cable disconnected	Check USB connection from PC to I/O board Try connecting to a different USB port
	Blown fuse	Check and replace fuse.
	No power to RIO2 board	Check for proper voltage (+12V) at RIO2 P1 connector
	Bad RIO2 Board	Replace RIO2 board with known functional board
<i>Gun Recoil not functional</i>	Cable Disconnected	Verify all cables are connected
	Blown fuse	Check and replace fuse.





## Online Troubleshooting

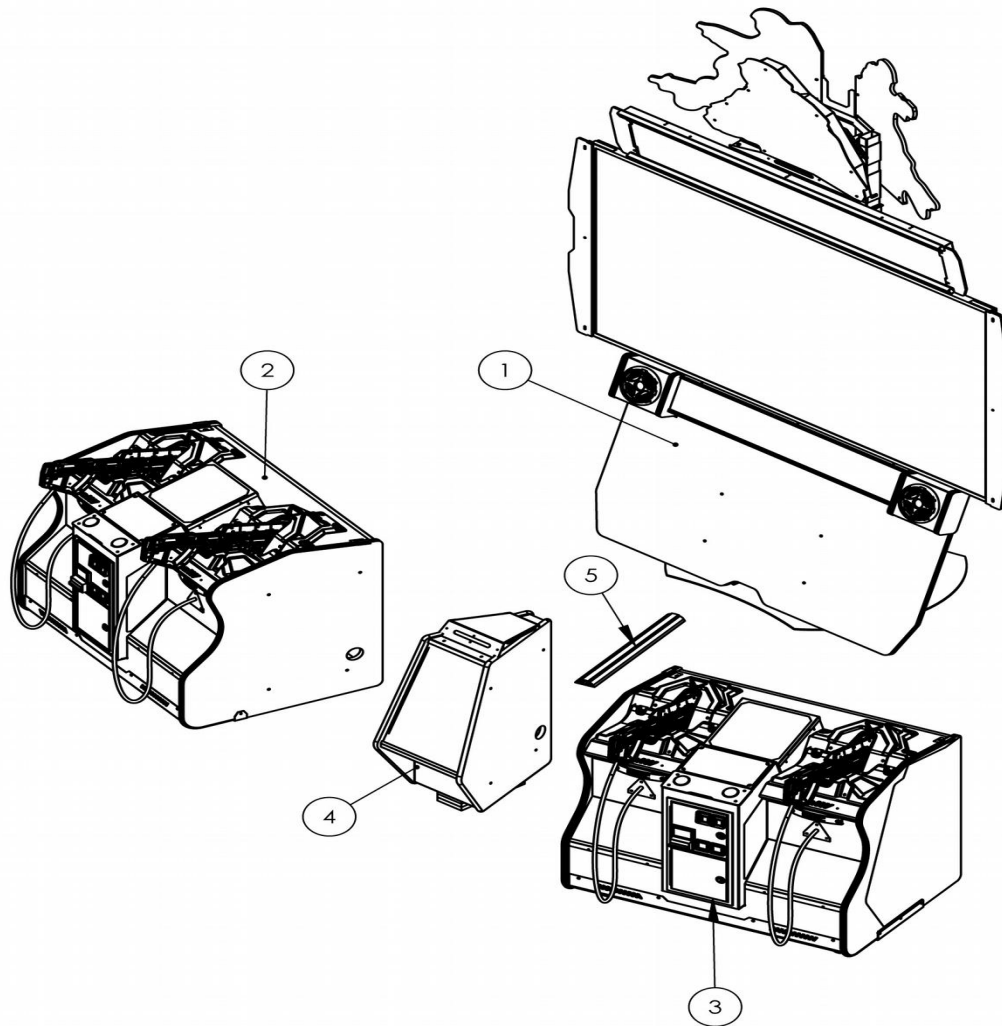
Problem	Possible Cause	Solution
Game cannot connect to CoinUp® server. No IP address appears under Test Connections menu	No broadband internet service	Contact a local ISP to setup either cable modem or DSL service.
	Wrong router configuration	Configure router for DHCP (Dynamic Host Configuration Protocol).
	Disconnected Ethernet cable	Check that Ethernet cables are tightly connected at both ends. An audible click confirms tightness. Reboot game. In Diagnostic mode, select Online, then Test Connection. Confirm that IP address appears. The phrase eth0 must follow IP address.
	Faulty Ethernet cable	Test cable by connecting it from another PC into router or wall jack. Replace cable if faulty.
	Faulty Ethernet wall jack.	Plug Ethernet cable into a different jack.
	Broadband service is down.	Contact ISP.
	Faulty router	Plug Ethernet cable into different jacks in router. Plug Ethernet cable directly into DSL or cable modem instead of router. Replace router if faulty.
	Faulty network card	Call CoinUp® service

Problem	Possible Cause	Solution
Game has IP address and screen says <i>Server Ping Success</i> but Test Connection screen reports Database Ping failure or File Server Ping failure.	Firewall is blocking communication with server.	Read firewall documentation. Ensure configuration allows ICMP Echo. If router has built-in firewall, check router configuration. Enable communication on ports 80, 443, 7786, and 7787.
	Database or File Server is down	Wait 30 minutes and revisit Test Connection screen. If still reporting failure, call CoinUp® service.

## Halo – Tethered Gun – Four Player – Service Manual

### Parts

#### Halo – Tethered Gun – Four Player – Cabinet Assembly

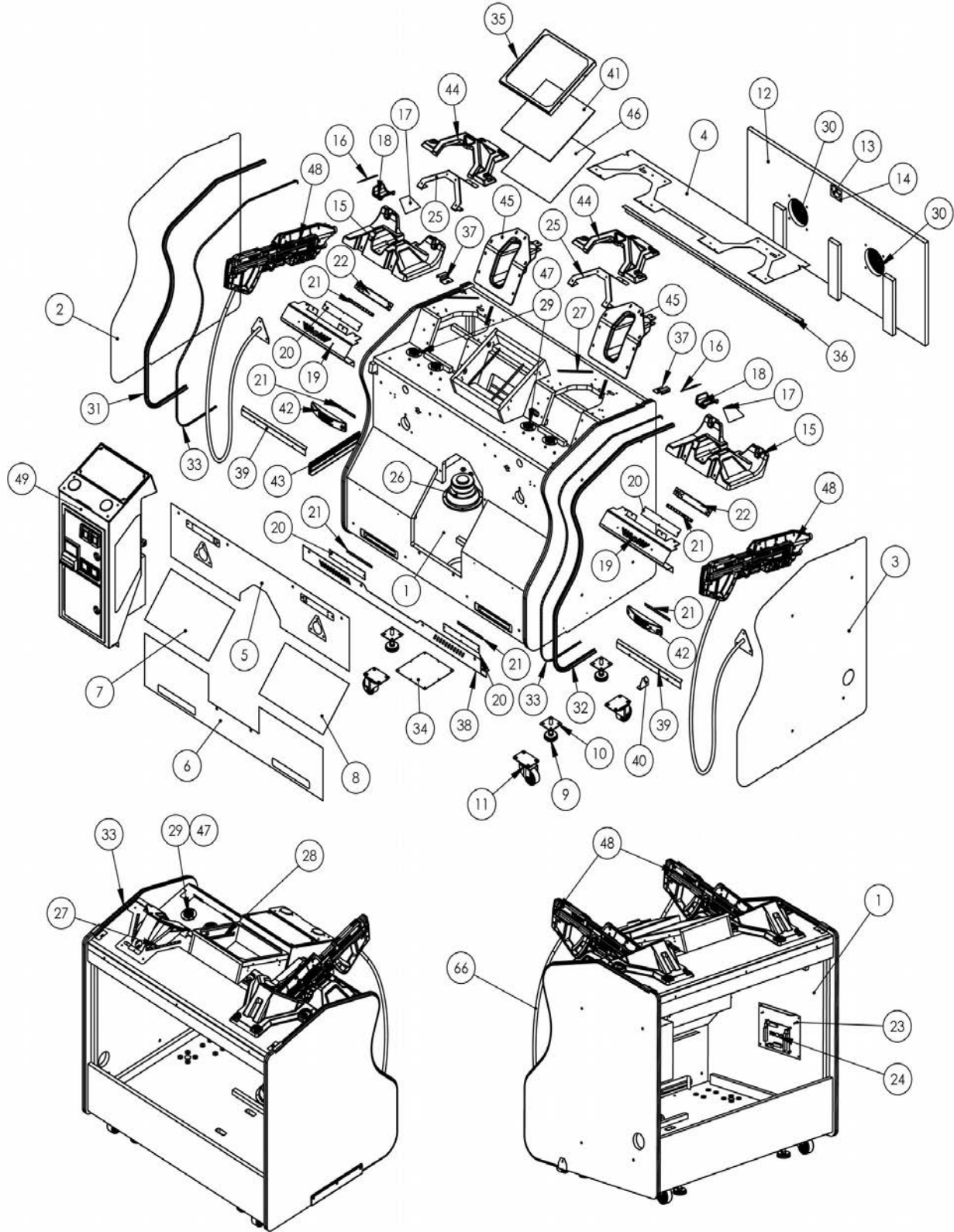


#### Halo – Tethered Gun – Four Player – Cabinet Assembly Part Numbers

Item	Part No.	Description	QTY
1	HALO-TGUN-4P-LCD-STAND-ASSY	Halo Tethered Gun Four Player Monitor Stand Assembly	1
2	HALO-TGUN-4P-CONSOLE-ASSY-1P-2P	Halo Tethered Gun Four Player Left Console Assembly	1
3	HALO-TGUN-4P-CONSOLE-ASSY-3P-4P	Halo Tethered Gun Four Player Right Console Assembly	1
4	HALO-TGUN-4P-CENTER-CAB-ASSY	Halo Tethered Gun Four Player Center Console Assembly	1
5	7-258	Black Rubber Cord Cover, split, 3ft long	1



## Halo - Tethered Gun - Four Player - Left Console Assembly

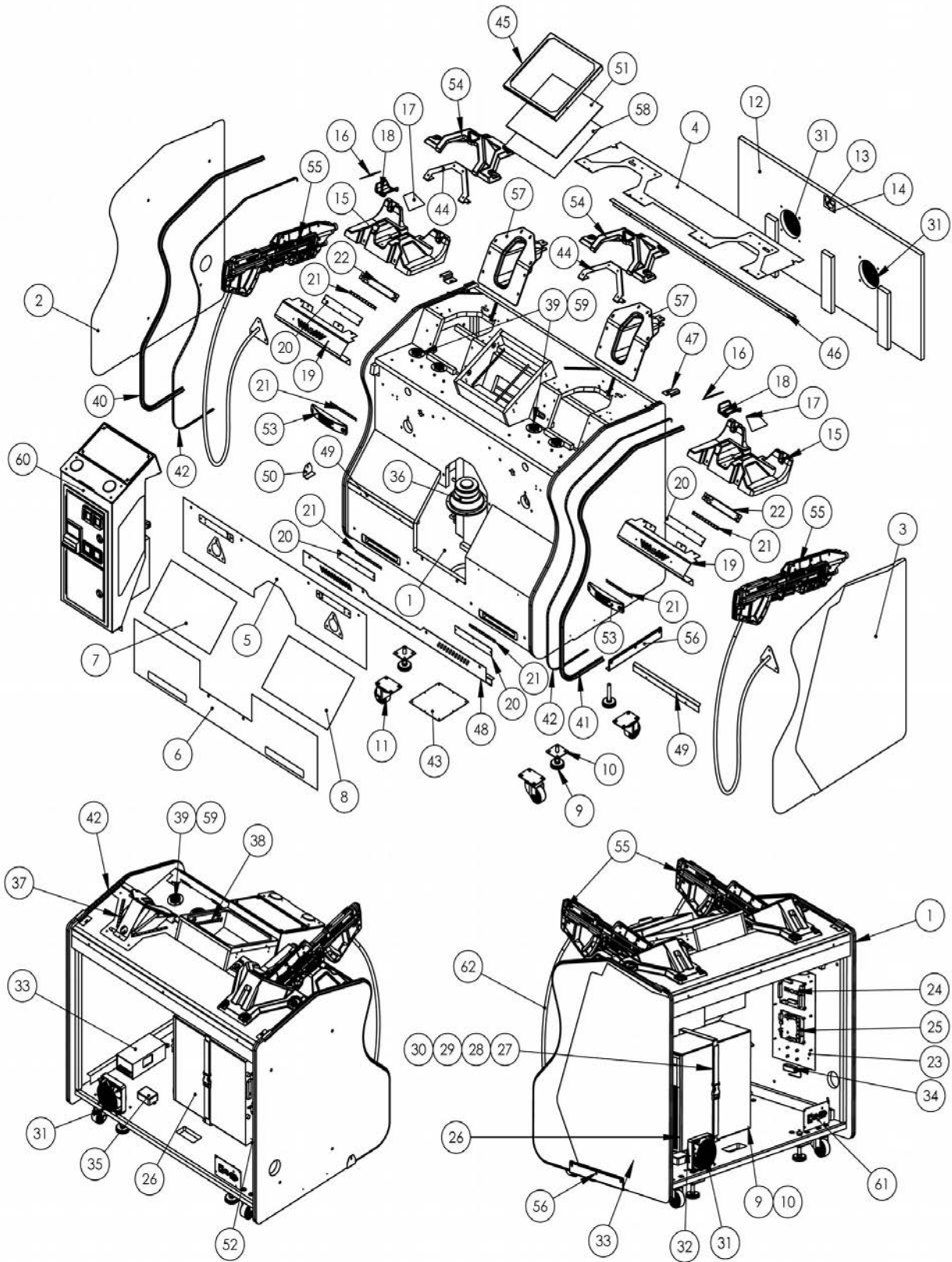


**Halo – Tethered Gun – Four Player – Service Manual****Halo – Tethered Gun – Four Player – Left Console Assembly Part Numbers**

Item	Part No.	Description	QTY
1	601-00982-01-LEFT-PART	Halo Tethered Gun – 4 player – left wood console	1
2	606-02028-01	Left console decal	1
3	606-02029-01	Right console decal	1
4	606-02030-01	Top console decal	1
5	606-02031-01	Front console decal	1
6	606-02032-01	Lower front console decal	1
7	606-02033-01	Left angled console decal	1
8	606-02034-01	Right angled console decal	1
9	Leg Leveler	1/2-13 x 4" length	4
10	Leg leveler plate	2.50 x 2.50 x 1/2-13 leveler plate	4
11	JULANG – 2.5 Inch Caster Assy	JULANG – 2.5 inch caster assembly	4
12	601-00983-01	Halo Tethered Gun – door panel	1
13	Lock	Standard lock	1
14	LOCK RETAINER	Lock retainer N202-130	1
15	603-01062-01B(BLUE) 603-01062-01O(ORANGE)	Halo Tethered Gun – gun tray	2
16	606-02041-01	Left tray decal	2
17	606-02042-01	Right tray decal	2
18	603-01105-01	Molded gun glide	2
19	600-03020-01B(BLUE) 600-03020-01O(ORANGE)	Control Panel retainer	2
20	600-03038-01	Polypropylene shield	4
21	15CM LED STRIP	15cm RGB LED strip	6
22	600-03018-01	LED bracket	2
23	600-02381-01	RIO2 mounting plate	1
24	500-00199-05	RIO2 PCB assembly	1
25	600-03016-01	Gun cover bracket	2
26	2-1-11-00-00-000	Speaker woofer 6.5" 4 ohm	1
27	15CM LED STRIP (WHITE)	15cm white LED strip	4
28	20CM LED STRIP (WHITE)	20cm white flexible LED strip	2
29	500-00205-01	White LED super puck PCB – 36 LEDs	4
30	800-00001-00	120mm wire fan guard	2
31	603-00718-01	Control panel LED Tmold (40cm)	1
32	603-00718-01	Control panel LED Tmold (40cm)	1
33	500-00131-155	160cm RGB LED strip	2
34	600-00616-01	Grill woofer	1
35	600-03019-01	Control panel marquee bracket	1
36	600-03022-01	Console top retainer	1
37	600-03023-01	Tmolding clip	2
38	600-03149-01	Base retainer	1
39	600-03150-01	Angled retainer	2
40	600-03151-01	Tmold bracket	1
41	600-03033-01	Control panel PETG marquee	1
42	603-00896-01	Molded cover	2
43	603-01002-01	Clear Tmolding clip 12"	1
44	603-01063-01B(BLUE) 603-01063-01O(ORANGE)	Gun cover	2
45	603-01104-01	Molded holster	2
46	606-02045-01	Translite console	1
47	#8X.188-SPACER	#8 x .375LG spacer	8
48	820-00027-01	Halo Tethered Gun – gun assembly	2
49	VAULT-ASSY-HALO-TGUN-4P	Halo Tethered Gun – 4 player – vault assembly	1



## Halo - Tethered Gun - Four Player - Right Console Assembly



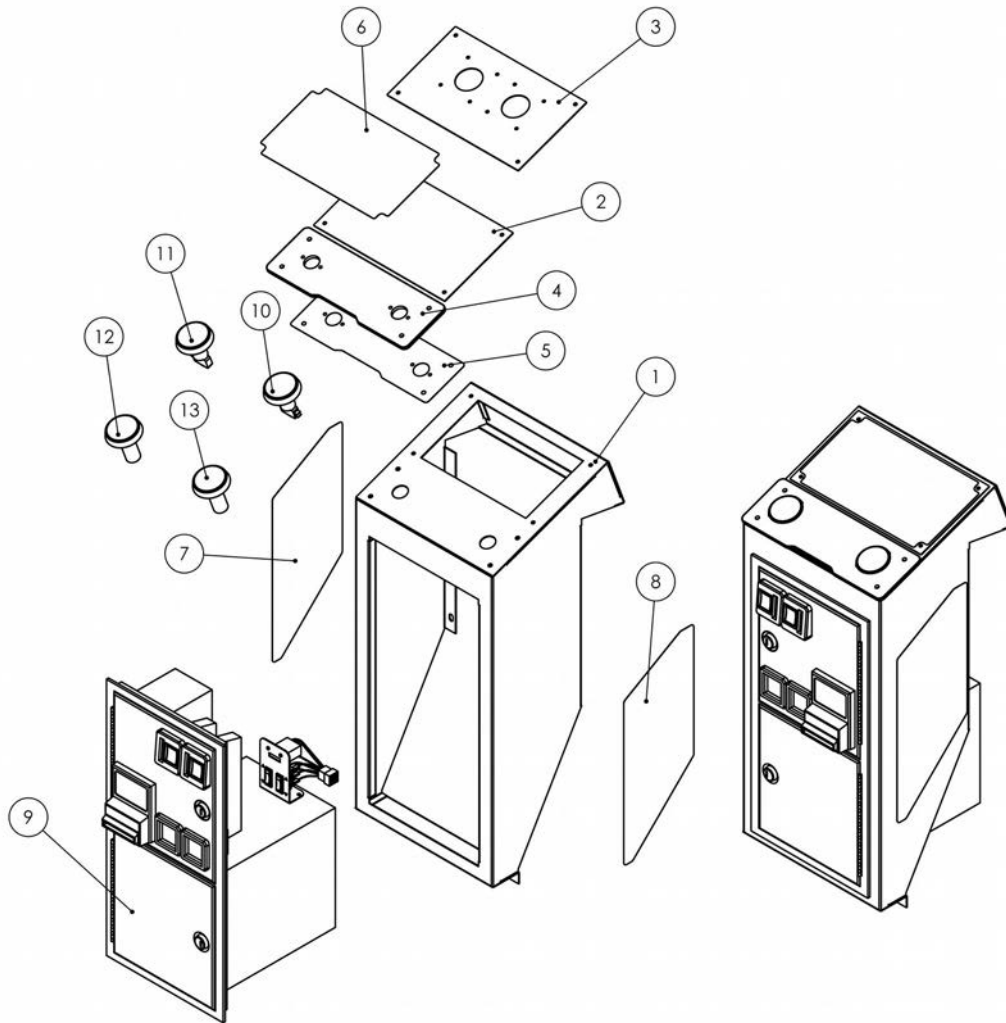
## Halo – Tethered Gun – Four Player – Service Manual

## Halo – Tethered Gun – Four Player – Right Console Assembly Part Numbers

Item	Part No.	Description	QTY
1	601-00982-01-RIGHT-PART	Halo Tethered Gun – 4 player – right wood console	1
2	606-02028-01	Left console decal	1
3	606-02029-01	Right console decal	1
4	606-02030-01	Top console decal	1
5	606-02031-01	Front console decal	1
6	606-02032-01	Lower front console decal	1
7	606-02033-01	Left angled console decal	1
8	606-02034-01	Right angled console decal	1
9	Leg Leveler	1/2-13 x 4" length	4
10	Leg leveler plate	2.50 x 2.50 x 1/2-13 leveler plate	4
11	JULANG – 2.5 Inch Caster Assy	JULANG – 2.5 inch caster assembly	4
12	601-00983-01	Halo Tethered Gun – door panel	1
13	Lock	Standard lock	1
14	LOCK RETAINER	Lock retainer N202-130	1
15	603-01062-01G(GREEN) 603-01062-01P(PURPLE)	Halo Tethered Gun – gun tray	2
16	606-02041-01	Left tray decal	2
17	606-02042-01	Right tray decal	2
18	603-01105-01	Molded gun glide	2
19	600-03020-01G(GREEN) 600-03020-01P(PURPLE)	Control Panel retainer	2
20	600-03038-01	Polypropylene shield	4
21	15CM LED STRIP	15cm RGB LED strip	6
22	600-03018-01	LED bracket	2
23	600-02049-01	RIO mount plate w/ Motion Control PCB	1
24	500-00199-05	RIO2 PCB assembly	1
25	500-00212-03	RIO2 audio amplifier PCBa	1
26	850-00036-01	Desktop M70t PC	1
27	87425K76 (56 length)	Black nylon strip 0.075" thick, 1" width, 56" length	1
28	29705T86 (male)	Plastic Buckle for 1" wide web (male)	1
29	29705T86 (female)	Plastic Buckle for 1" wide web (female)	1
30	600-00891-01	Securing nylon strap plate	1
31	800-00001-00	120mm wire fan guard	4
32	820-00001-00	120 VAC fan 19/15W	1
33	330-00003-01	600W-12V meanwell power supply	1
34	380-00009-01	Ground loop isolator	1
35	442-00001-01	Line filter corcom 6MV1	1
36	2-1-11-00-00-000	Speaker woofer 6." 4 ohm	1
37	15CM LED STRIP (WHITE)	15cm white LED strip	4
38	20CM LED STRIP (WHITE)	20cm white flexible LED strip	2
39	500-00205-01	White LED super puck PCB – 36 LEDS	4
40	603-00718-01	LED tmold (162cm)	1
41	603-00718-01	LED tmold (162cm)	1
42	500-00131-155	160cm RGB LED strip	2
43	600-00616-01	Grill woofer	1
44	600-03016-01	Gun cover bracket	2
45	600-03019-01	Control panel marquee bracket	1
46	600-03022-01	Console top retainer	1
47	600-03023-01	Tmolding clip	2
48	600-03149-01	Base retainer	1
49	600-03150-01	Angled retainer	2
50	600-03151-01	Tmold bracket	1
51	600-03033-01	Control panel PETG marquee	1
52	601-00580-01	PC wood cleat	2
53	603-00896-01	Molded cover	2
54	603-01063-01B(BLUE) 603-01063-01O(ORANGE)	Gun cover	2
55	820-00027-01	Halo Tethered Gun – gun assembly	2
56	603-01002-01	Clear Tmolding clip 12"	1
57	603-01104-01	Molded holster	2
58	606-02045-01	Translite console	1
59	#8X.188-SPACER	#8 x .375LG spacer	8
60	VAULT-ASSY-HALO-TGUN-4P	Halo Tethered Gun – 4 player – vault assembly	1
61	POWER-PLATE-ASSEMBLY	Power plate assembly	1



## Halo – Tethered Gun – Four Player – Vault Assembly

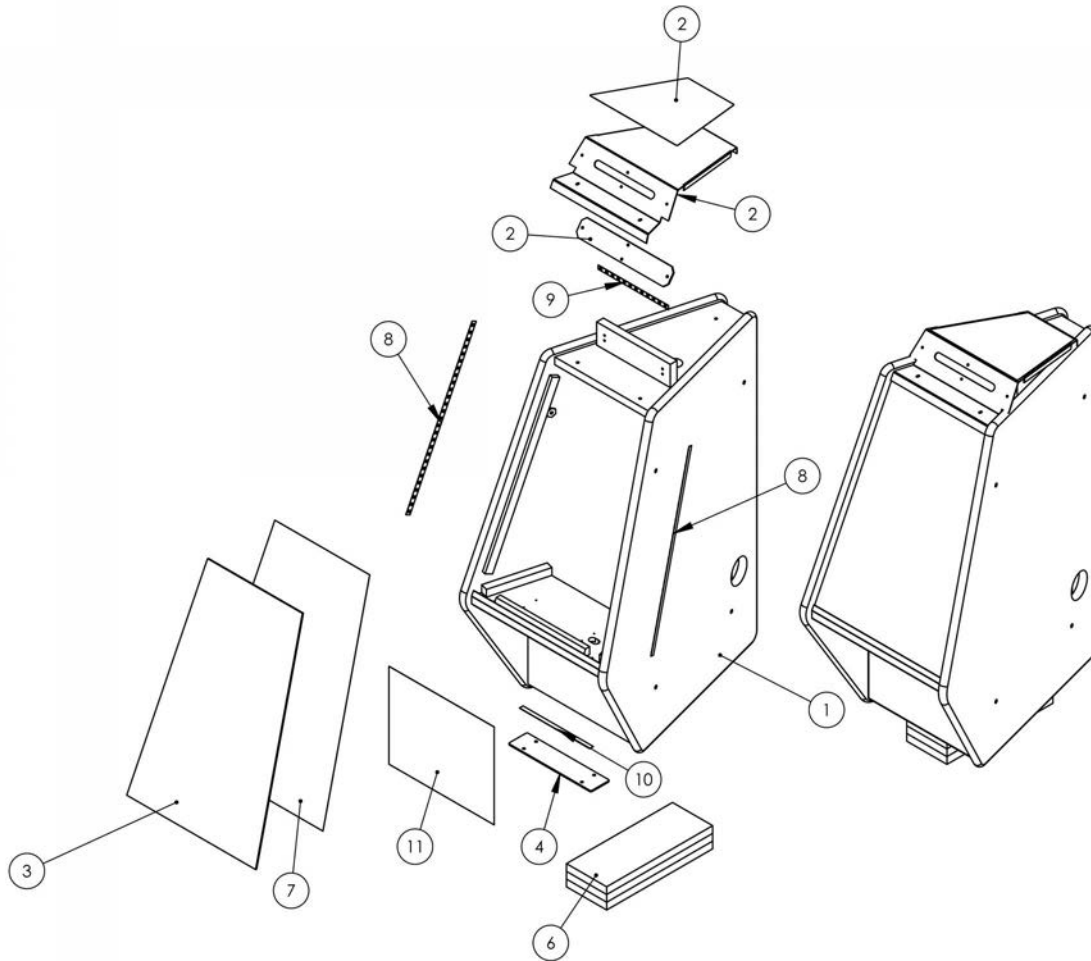


### Halo – Tethered Gun – Four Player – Vault Assembly Part Numbers

Item	Part No.	Description	QTY
1	600-03013-01	Halo Tethered Gun - Vault coin door	1
2	600-03014-01	Halo Tethered Gun – control panel plate	1
3	600-03015-01	Halo Tethered Gun – card reader plate	1
4	600-03035-01	Halo Tethered Gun – acrylic control panel	1
5	606-02037-01	Halo Tethered Gun – acrylic control panel decal 10mm	1
6	606-02038-01	Halo Tethered Gun – control panel decal plate 10mm	1
7	606-02039-01	Halo Tethered Gun – vault decal left 10mm	1
8	606-02040-01	Halo Tethered Gun – vault decal right 10mm	1
9	800-00005-01	BBHD mid width coin door	1
10	702-00092-01	Halo large round start button - Orange	1
11	702-00093-01	Halo large round start button - Blue	1
12	702-00094-01	Halo large round start button - Green	1
13	702-00095-01	Halo large round start button - Purple	1

## Halo – Tethered Gun – Four Player – Service Manual

### Halo – Tethered Gun – Four Player – Center Console Assembly



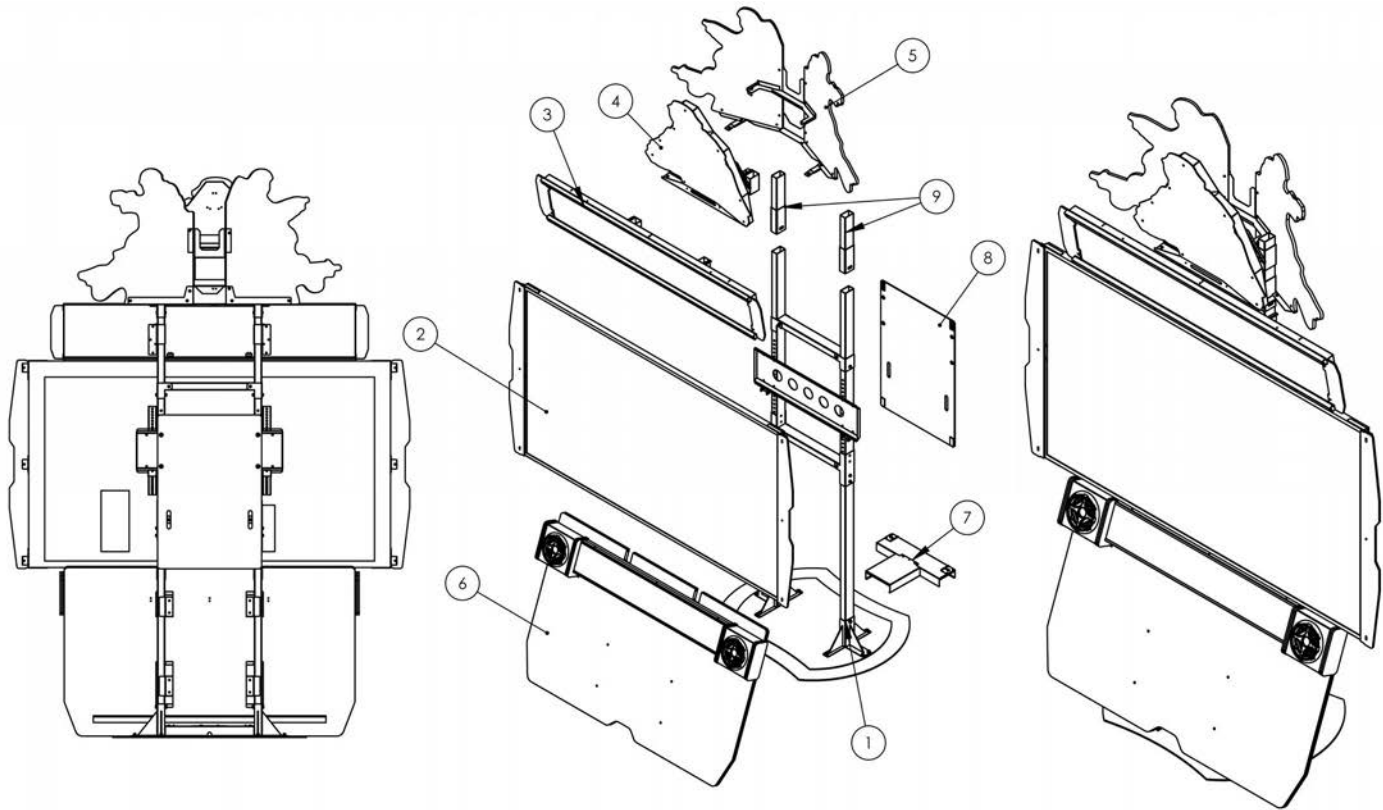
### Halo – Tethered Gun – Four Player – Center Console Assembly Part Numbers

Item	Part No.	Description	QTY
1	601-00990-01	Halo Tethered Gun – 4 player – center console assembly	1
2	HALO-TGUN-4P-CENTER-TOP-ASSY	Halo Tethered Gun – 4 player – center console top assembly	1
3	600-03071-01	Halo Tethered Gun – 4 player – center PETG translite	1
4	600-03072-01	Halo Tethered Gun – 4 player – center PETG LED	1
5	600-03061-01	Halo Tethered Gun – 4 player – center retainer	1
6	601-00999-01	Halo Tethered Gun – 4 player – center spacer block	1
7	606-02067-01	Halo Tethered Gun – 4 player – center translite	1
8	45cm LED strip (white)	45cm white LED strip	2
9	20cm LED strip (RGB)	20cm RGB LED strip	1
10	20cm LED strip (white)	20cm white LED strip	1
11	606-02065-01	Halo Tethered Gun – 4 player – center console decal	1





## Halo – Tethered Gun – Four Player – LCD Stand Assembly

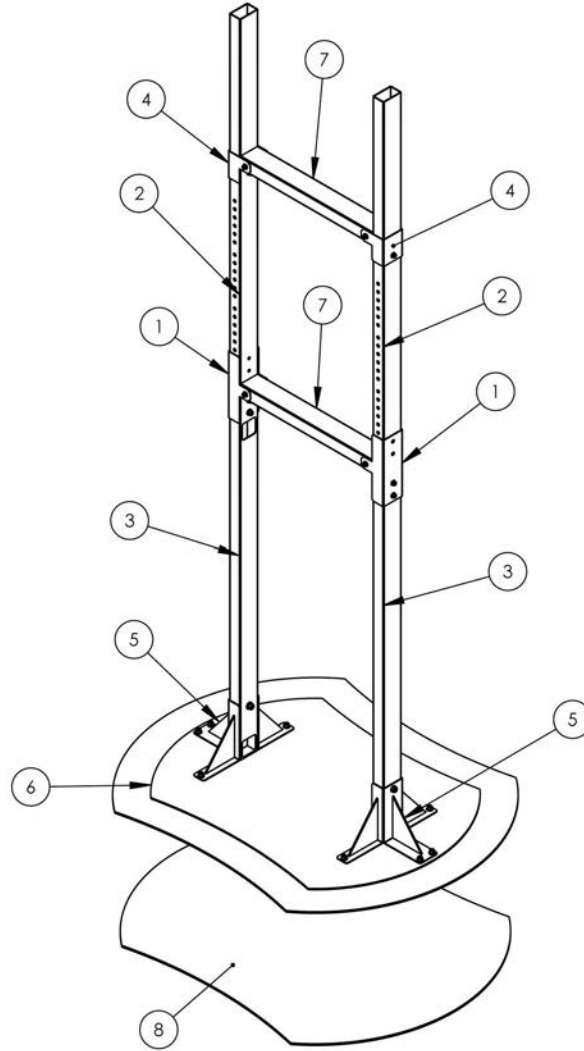


### Halo – Tethered Gun – Four Player – LCD Stand Assembly Part Numbers

Item	Part No.	Description	QTY
1	RT-LCD-STAND-ASSY-HALO-4P	Halo Tethered Gun – 4 player – LCD stand assembly	1
2	HALO-85-LCD-ASSY	Halo 85" LCD assembly	1
3	HALO-TGUN-85-MARQ-ASSY	Halo Tethered Gun – 85" Marquee assembly	1
4	HALO-TGUN-RP-MC-LIGHTBOX-ASSY	Halo Tethered Gun – Lightbox assembly	1
5	HALO-TGUN-RP-FOAMBOARD-ASSY	Halo Tethered Gun – foam board assembly	1
6	HALO-TGUN-4P-GRAPHIC-PANEL-ASSY	Halo Tethered Gun – 4 player – graphic panel assembly	1
7	HALO-TGUN-4P-CABLE-COVER-ASSY	Halo Tethered Gun – 4 player – cable cover assembly	1
8	HALO-TGUN-4P-COROPLAST-COVER-ASSY	Halo Tethered Gun – 4 player – coroplast cover assembly	1
9	600-03069-01	11" Welded Tube Extension	2

## Halo – Tethered Gun – Four Player – Service Manual

### Halo – Tethered Gun – Four Player – LCD Stand Assembly

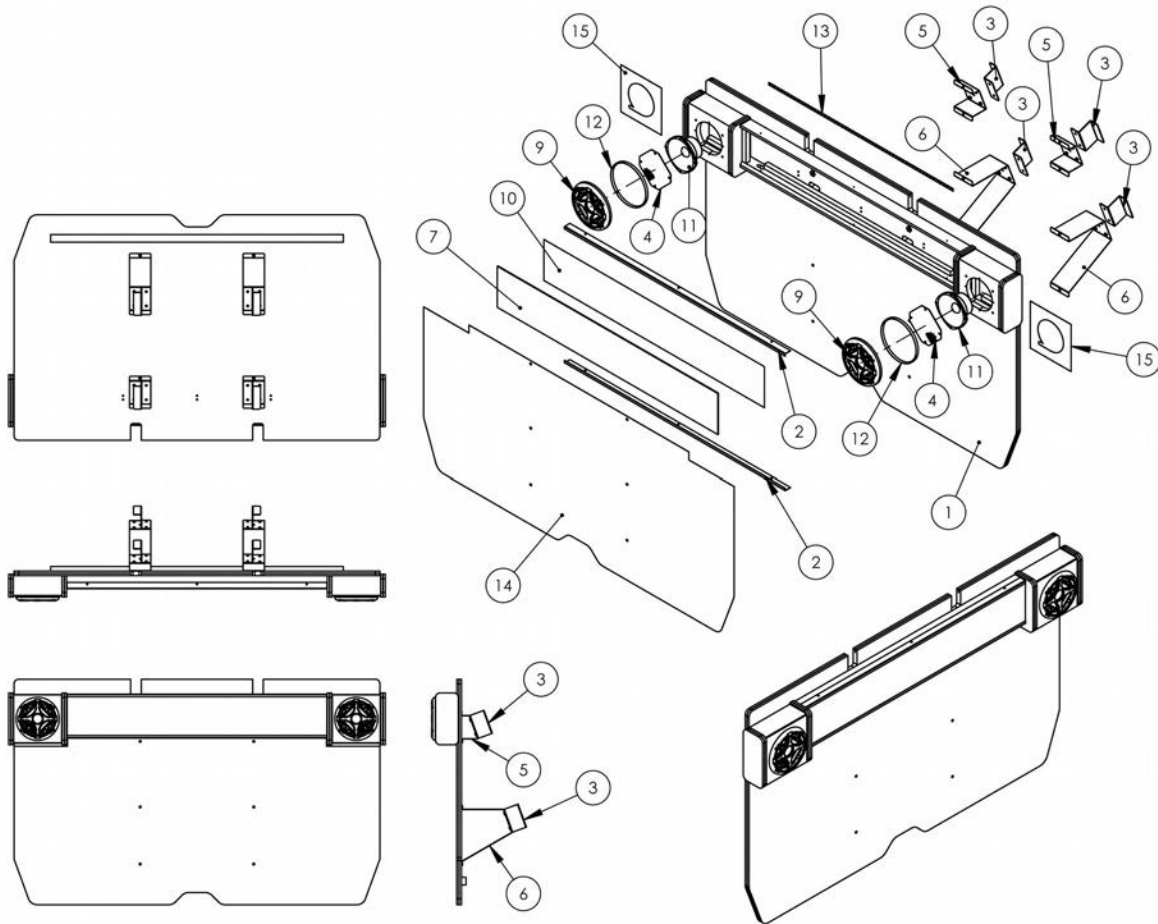


#### Halo – Tethered Gun – Four Player – LCD Stand Assembly Part Numbers

Item	Part No.	Description	QTY
1	600-00985-01	Tube Joiner	2
2	600-00986-01	Upper Tube	2
3	600-00987-01	Lower Tube	2
4	600-00988-01	Upper Bracket	2
5	600-00989-01	Welded tube support	2
6	600-00990-01	Stand base	1
7	600-00991-01	Cross tube	2
8	600-00994-01	Rubber base pad	1



## Halo – Tethered Gun – Four Player – Graphic Panel Assembly

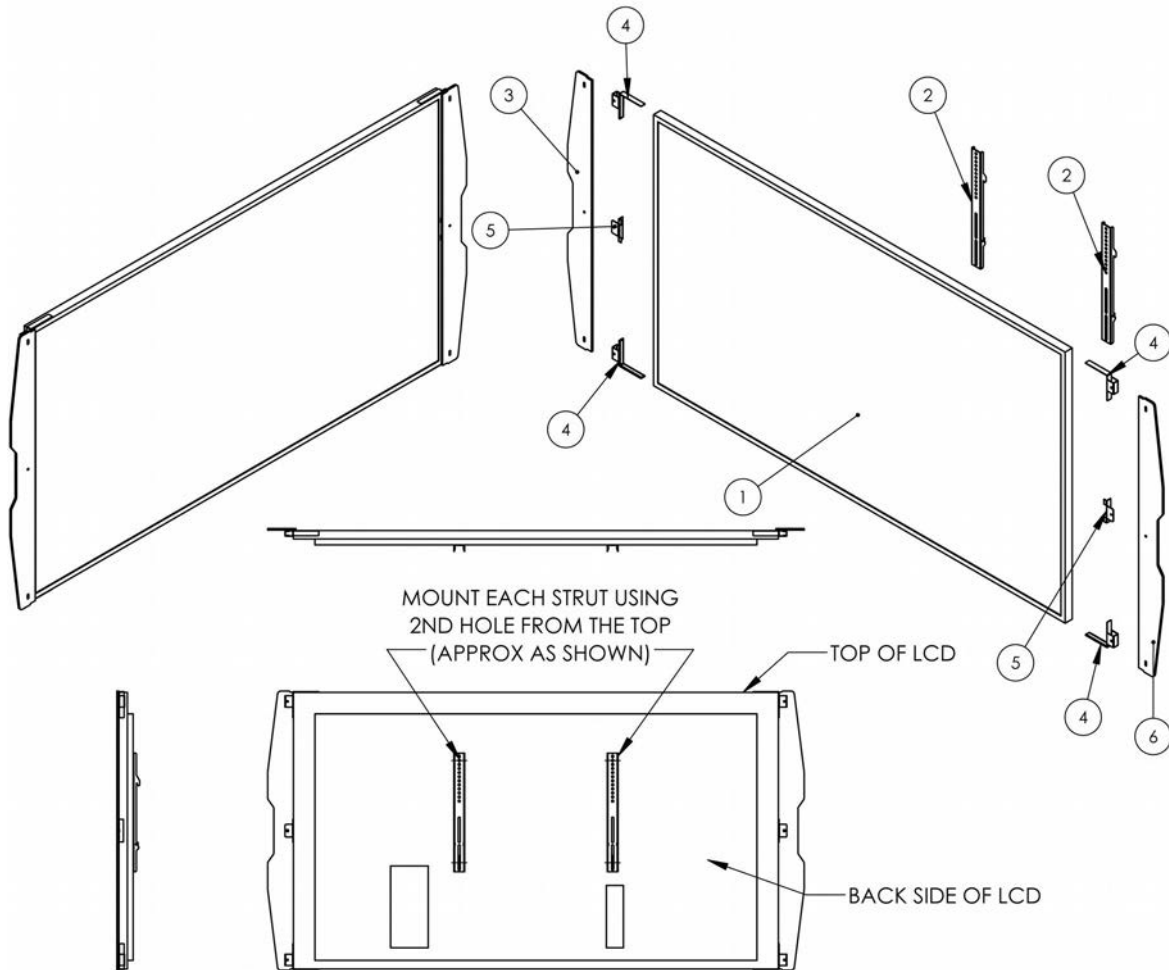


### Halo – Tethered Gun – Four Player – Graphic Panel Assembly Part Numbers

Item	Part No.	Description	QTY
1	601-00991-01	Halo Tethered Gun – 4 player - Graphic Panel Assembly	1
2	600-03063-01	Marquee speaker retainer	2
3	600-02420-01	Marquee cinch bracket	4
4	600-02568-01	Speaker Grill	2
5	600-03064-01	Bracket – upper angle	2
6	600-03065-01	Bracket – lower angle	2
7	600-03073-01	PETG marquee speaker	1
8	600-03074-01	PETG LED speaker	1
9	603-00890-01	SB3 Speaker Cover – 1m (plated)	2
10	606-02069-01	Translite lower marquee	1
11	2-1-10-00-00-000	5.25 full range speaker	2
12	500-00245-55	55cm-RGB clear encased LED strip	2
13	90 cm LED strip (white)	90 cm LED stripe (white)	2
14	606-02068-01	Graphic Panel Decal	1
15	606-02035-01	Speaker Panel Decal	2

## Halo – Tethered Gun – Four Player – Service Manual

### Halo – Tethered Gun – Four Player – LCD Assembly

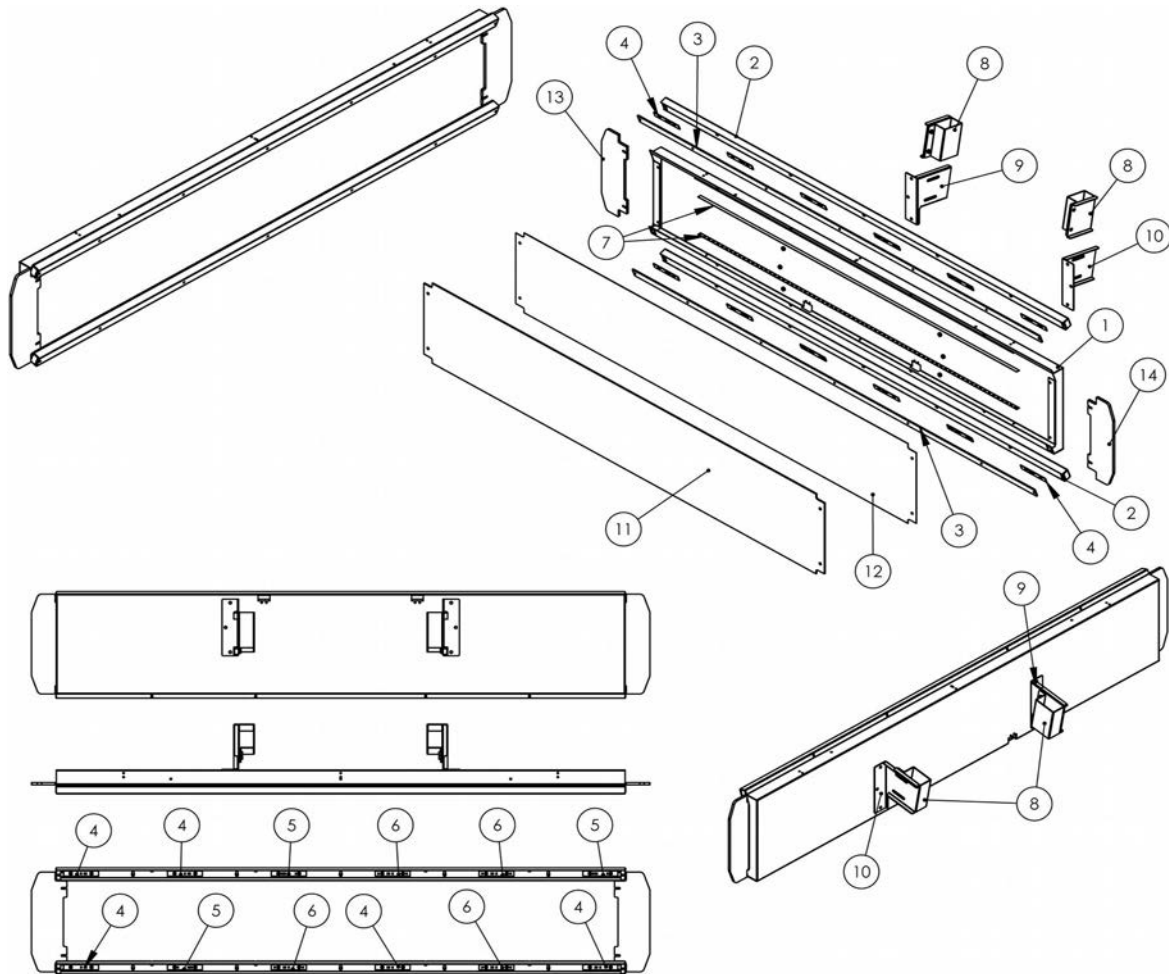


### Halo – Tethered Gun – Four Player – LCD Assembly Part Numbers

Item	Part No.	Description	QTY
1	809-00023-01	Samsung 85" LCD (QB85R-B)	1
2	600-00751-01	Universal Bracket Vertical LCD mount	2
3	606-02071-01	Sintra left LCD	1
4	600-03001-01	Corner Bezel Bracket	4
5	600-02428-01	Center LED Bracket	2
6	606-02072-01	Sintra right LCD	1



## Halo – Tethered Gun – Four Player – Marquee Assembly

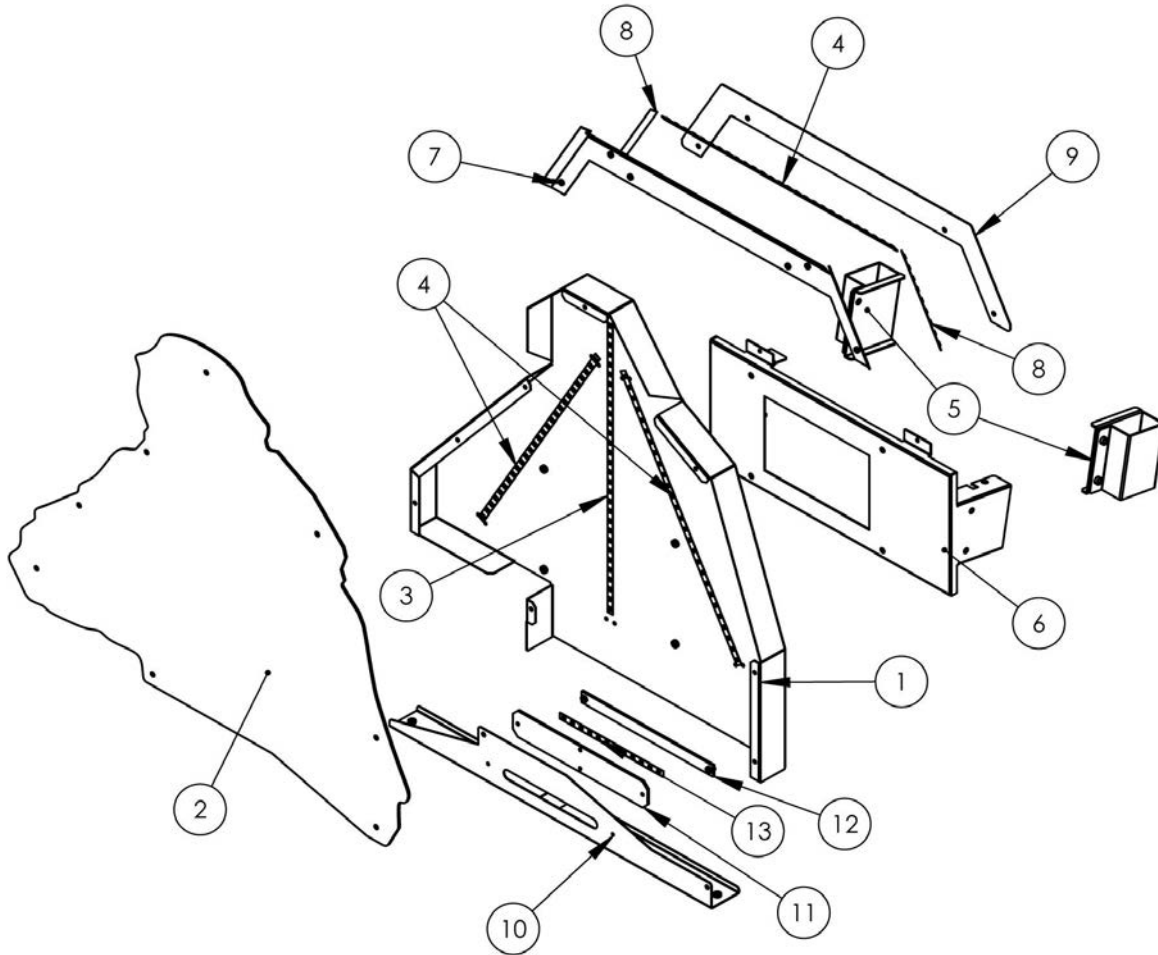


### Halo – Tethered Gun – Four Player – Marquee Assembly Part Numbers

Item	Part No.	Description	QTY
1	600-03067-01	Halo Tethered Gun – 4 player – light box	1
2	600-03068-01	Halo Tethered Gun – 4 player – light box channel	2
3	600-03076-01	Halo Tethered Gun – 4 player – acrylic LED lens	2
4	500-00145-01	IR Board #1	5
5	500-00145-02	IR Board #2	3
6	500-00145-03	IR Board #3	4
7	120cm LED strip (white)	120cm Flexible LED Stripe (White)	2
8	600-00770-01	Marquee Bracket Clamp	2
9	600-02999-01	Halo Tethered Gun – light box – left bracket	1
10	600-03000-01	Halo Tethered Gun – light box – right bracket	1
11	600-03075-01	Halo Tethered Gun – 4 player – PETG light box	1
12	606-02070-01	Halo Tethered Gun – 4 player – translite marquee	1
13	606-02050-01	Halo Tethered Gun – 4 player – left marquee sintra	1
14	606-02051-01	Halo Tethered Gun – 4 player – right marquee sintra	1

## Halo – Tethered Gun – Four Player – Service Manual

### Halo – Tethered Gun – Four Player – Master Chief Assembly

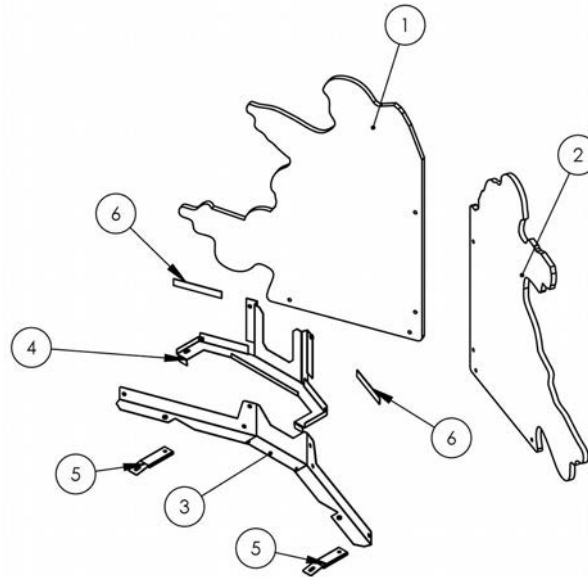


### Halo – Tethered Gun – Four Player – Master Chief Assembly Part Numbers

Item	Part No.	Description	QTY
1	600-03185-01	Halo Tethered Gun – 4 player – Master Chief light box	1
2	606-01499-01	PETG Screened Master Chief Topper	1
3	55cm LED strip (white)	55cm LED strip (white)	1
4	45cm LED strip (white)	45cm LED strip (white)	3
5	600-00770-01	Marquee bracket clamp	2
6	600-03003-01	Halo Tethered Gun – 4 player – Master Chief mounting bracket	1
7	600-03004-01	Halo Tethered Gun – 4 player – Master Chief LED plate	1
8	15cm LED strip (white)	15cm LED strip (white)	2
9	600-03030-01	Halo Tethered Gun – 4 player – PETG LED cover	1
10	600-03002-01	Halo Tethered Gun – 4 player – Master Chief bracket base	1
11	600-03037-01	Halo Tethered Gun – 4 player – Master Chief acrylic base	1
12	600-03039-01	Halo Tethered Gun – 4 player – sintra LED plate	1
13	20cm LED strip (RGB)	20cm Flexible LED strip (RGB)	1



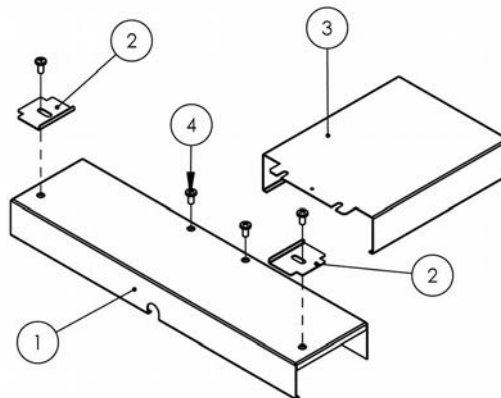
## Halo – Tethered Gun – Four Player – Foam board Assembly



### Halo – Tethered Gun – Four Player – Foam board Assembly Part Numbers

Item	Part No.	Description	QTY
1	606-01596-01	Halo 55" Left ultra-board panel	1
2	606-01597-01	Halo 55" Right ultra-board panel	1
3	600-03005-01	Halo Tethered Gun – foam board bracket base	1
4	600-03006-01	Halo Tethered Gun – foam board upper bracket	1
5	600-03007-01	Halo Tethered Gun – foam board catch assembly	2
6	DOUBLE-STICK-TAPE-.75-WIDE-4.00LG	Double stick tape	2

## Halo – Tethered Gun – Four Player – Cable Cover Assembly

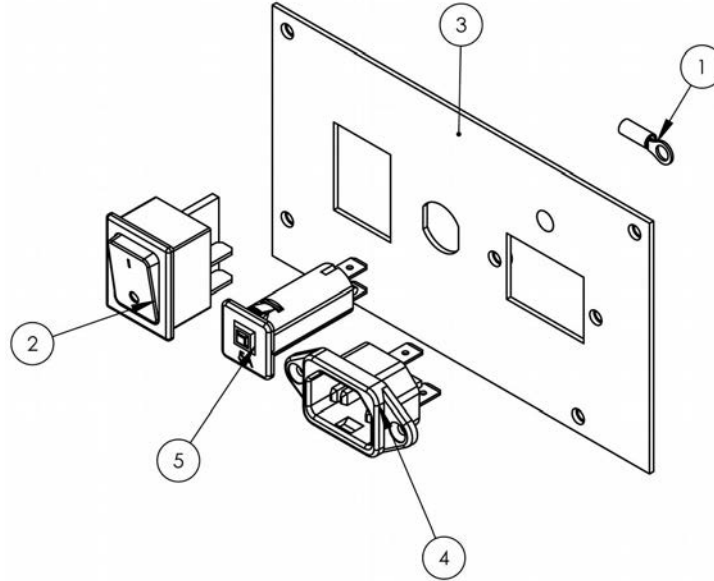


### Halo – Tethered Gun – Four Player – Cable Cover Assembly Part Numbers

Item	Part No.	Description	QTY
1	600-03011-01	Halo Tethered Gun – cover cables	1
2	600-03012-01	Halo Tethered Gun – cover catch	2
3	600-03066-01	Halo Tethered Gun – 4 player – cable cover extension	1
4	CR-PHMS 0.25-20x0.5x0.5-N	1/4-20 x .50LG tamper proof screw	4

## Halo – Tethered Gun – Four Player – Service Manual

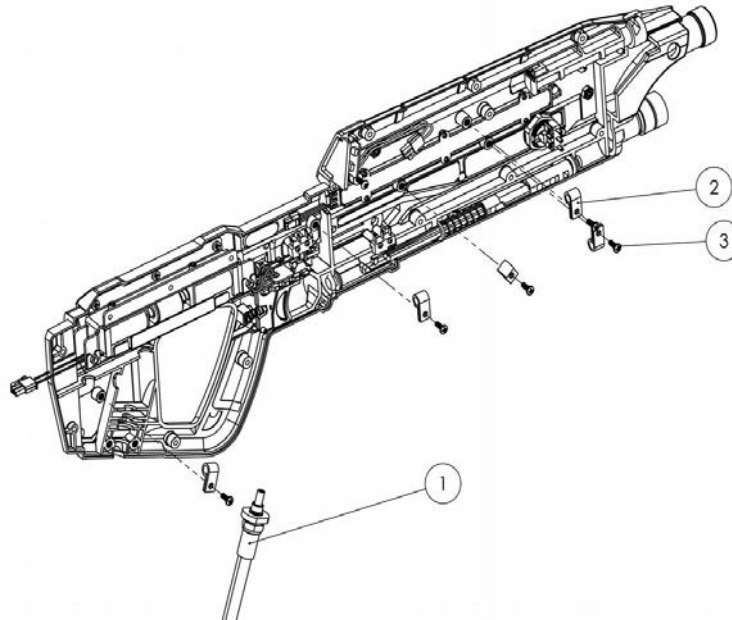
### Halo – Tethered Gun – Four Player – Power Plate Assembly



#### Halo – Tethered Gun – Four Player – Power Plate Assembly Part Numbers

Item	Part No.	Description	QTY
1	Ring and Spade Tongue Terminal	Ring and Spade Tongue Terminal (#8 Screw)	1
2	1832-33-12	AC switch 15amp 125V heiland electric	1
3	600-01681-01	Plate AC – Line filter circuit breaker, on/off switch	1
4	Power Inlet Receptacle	IEC Appliance Inlet, Screw-on mounting, Front Side, quick-connect 10A	1
5	T9-611-5A	5A circuit breaker, fuseholder style, 1 pole (schurter #4404.007)	1

### Halo – Tethered Gun



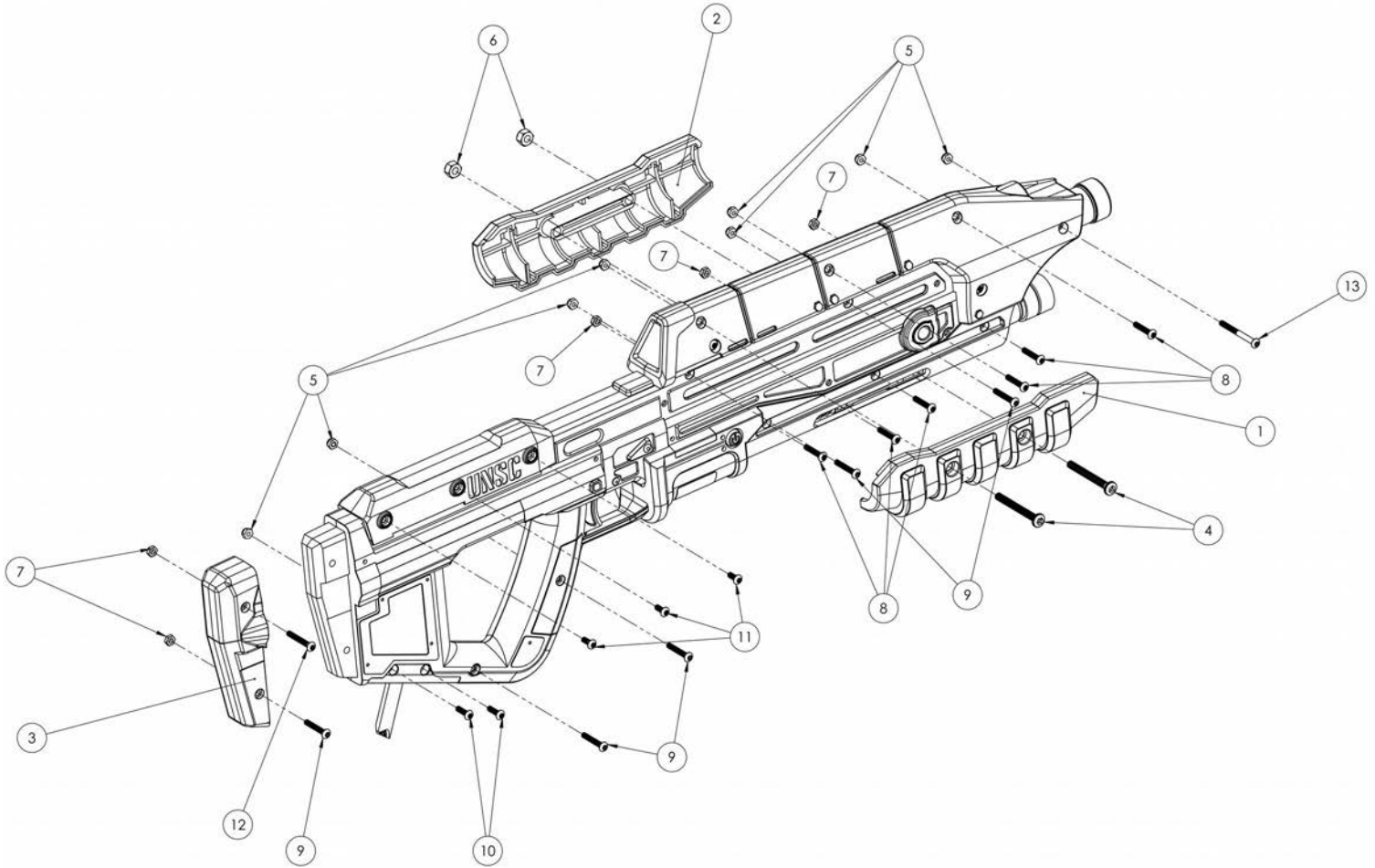
#### Halo – Tethered Gun Part Numbers

Item	Part No.	Description	QTY
1	810-00486-01	Hose Harness	1
2	MMC 8876T13	Nylon Loop Clamp 1/4" ID	5
3	MMC 91772A146	6-32 x 3/8" Phillips screw	5





## Halo - Tethered Gun

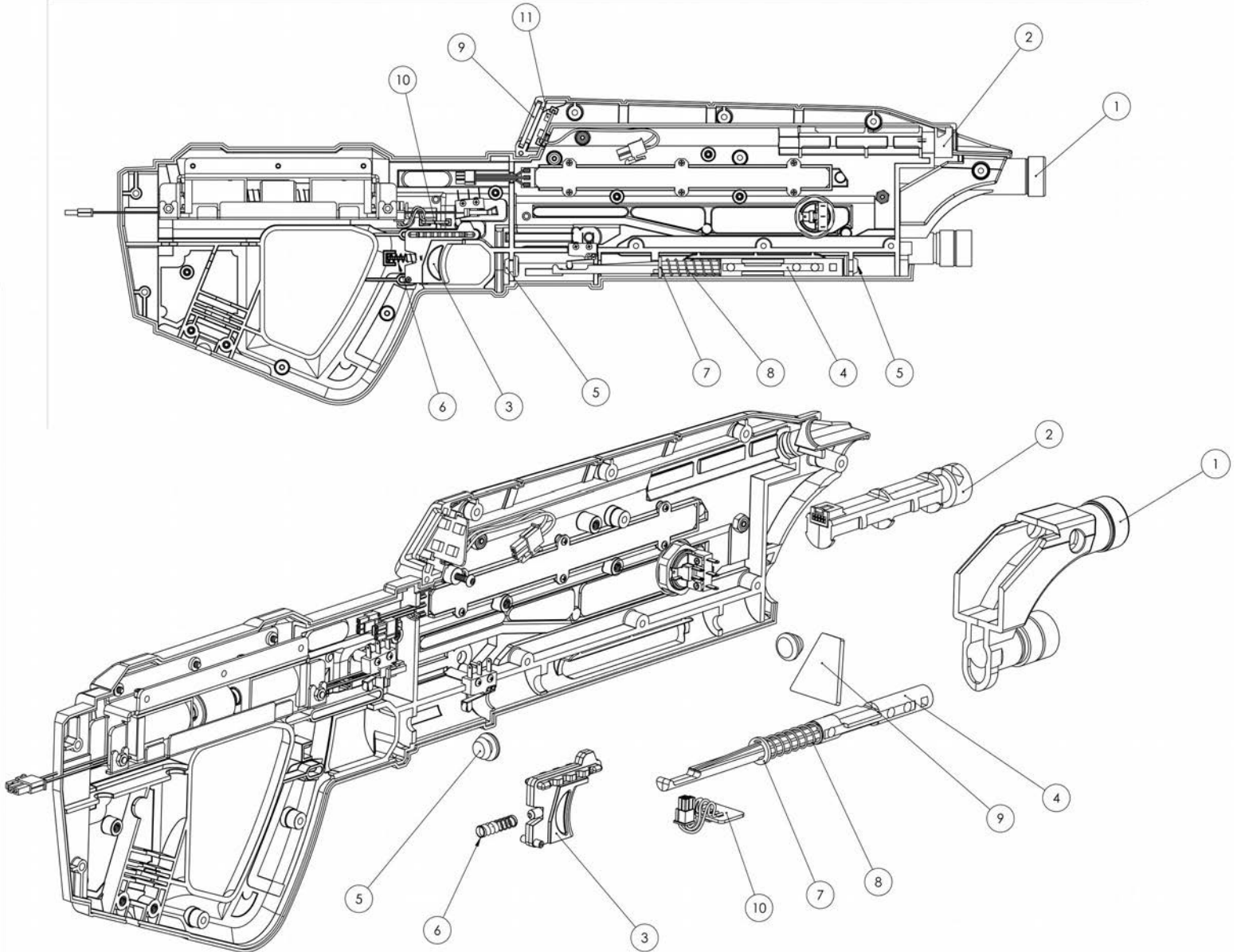


### Halo - Tethered Gun Part Numbers

Item	Part No.	Description	QTY
1	600-02935-01	Pump Right Half	1
2	600-02936-01	Pump Left Half	1
3	600-02940-01	Gun Butt	1
4		10-32 x 1 3/4" Long Black tamper proof screw	2
5		6-32 Black Nylok Nuts	8
6	MMC 90631A411	10-32 Black Nylok Nuts	2
7	MMC 90760A170	6-32 Black Thin Hex Huts	5
8	MMC 96075A118	6-32 x 3/4" Black tamper proof screw	6
9		6-32 x 7/8" Black tamper proof screw	5
10	MMC 96075A115	6-32 x 1/2" Black tamper proof screw	2
11	MMC 96075A111	6-32 x 3/8" Black tamper proof screw	3
12	MMC 96075A123	6-32 x 1" Black tamper proof screw	1
13		6-32 x 1.5" Black tamper proof screw	1

## Halo – Tethered Gun – Four Player – Service Manual

### Halo – Tethered Gun

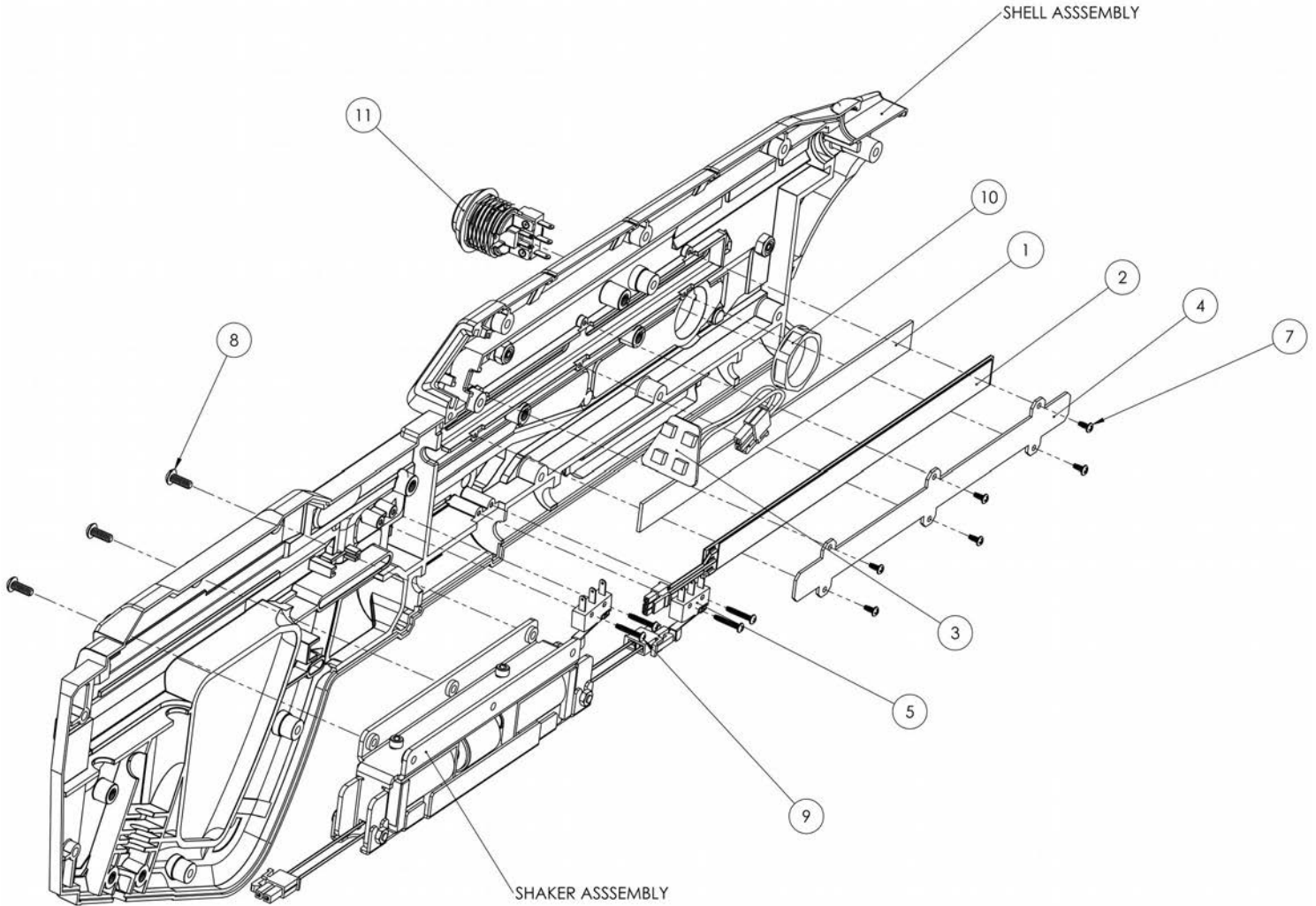


### Halo – Tethered Gun Part Numbers

Item	Part No.	Description	QTY
1	600-02939-01	Gun Barrel	1
2	820-00010-01	Camera Holder Assembly	1
3	600-02937-01	Trigger	1
4	600-02938-01	Pump Rod	1
5	600-00853-01	Pump Stop	2
6	600-03083-01	Trigger Spring	1
7	600-03077-01	Pump Spring Retainer	1
8	600-00858-01	Pump Spring	1
9	600-02941-01	Lighted Insert	1
10	500-00312-01	Trigger PCB	1



## Halo - Tethered Gun

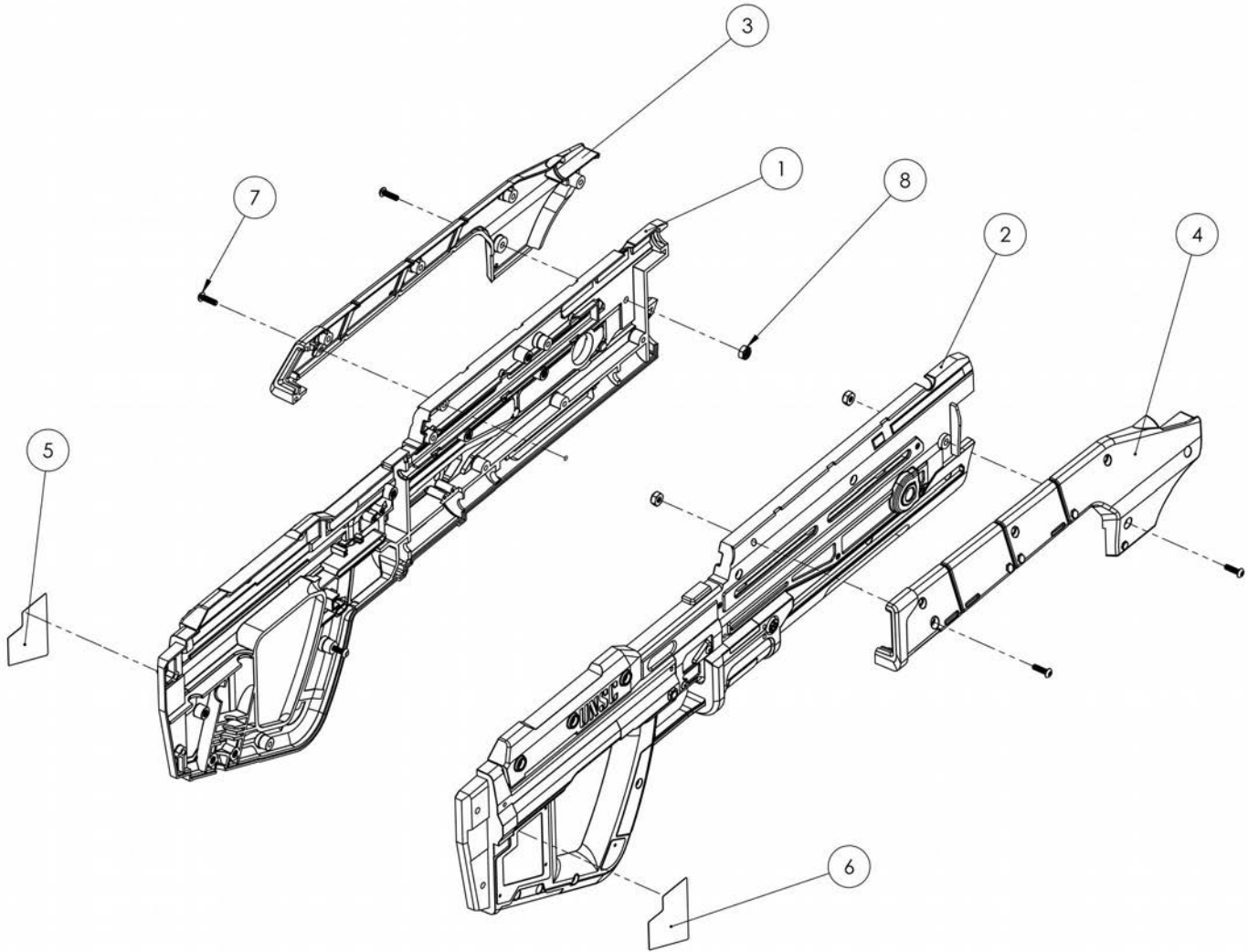


### Halo - Tethered Gun Part Numbers

Item	Part No.	Description	QTY
1	600-02954-01	Side LED lens	2
2	500-00310-01	Long LED PCB	2
3	500-00311-01	4 LED PCB	1
4	600-02951-01	LED Bracket	2
5	HAPP 95-4142-30	Cherry Switch and Actuator	2
7	MMC 99461A710	#2 x 3/16" thread forming screw	12
8	MMC 96075A111	6-32 x 3/8" black tamper proof screw	3
9	MMC 99461A735	#2 x 1/2" thread forming screw	4
10	HAPP 77-2014-00	Button nut (included with 77-2L12-30)	1
11	HAPP 77-2L12-30	Red Button	1

## Halo – Tethered Gun – Four Player – Service Manual

### Halo – Tethered Gun – Shell Assembly

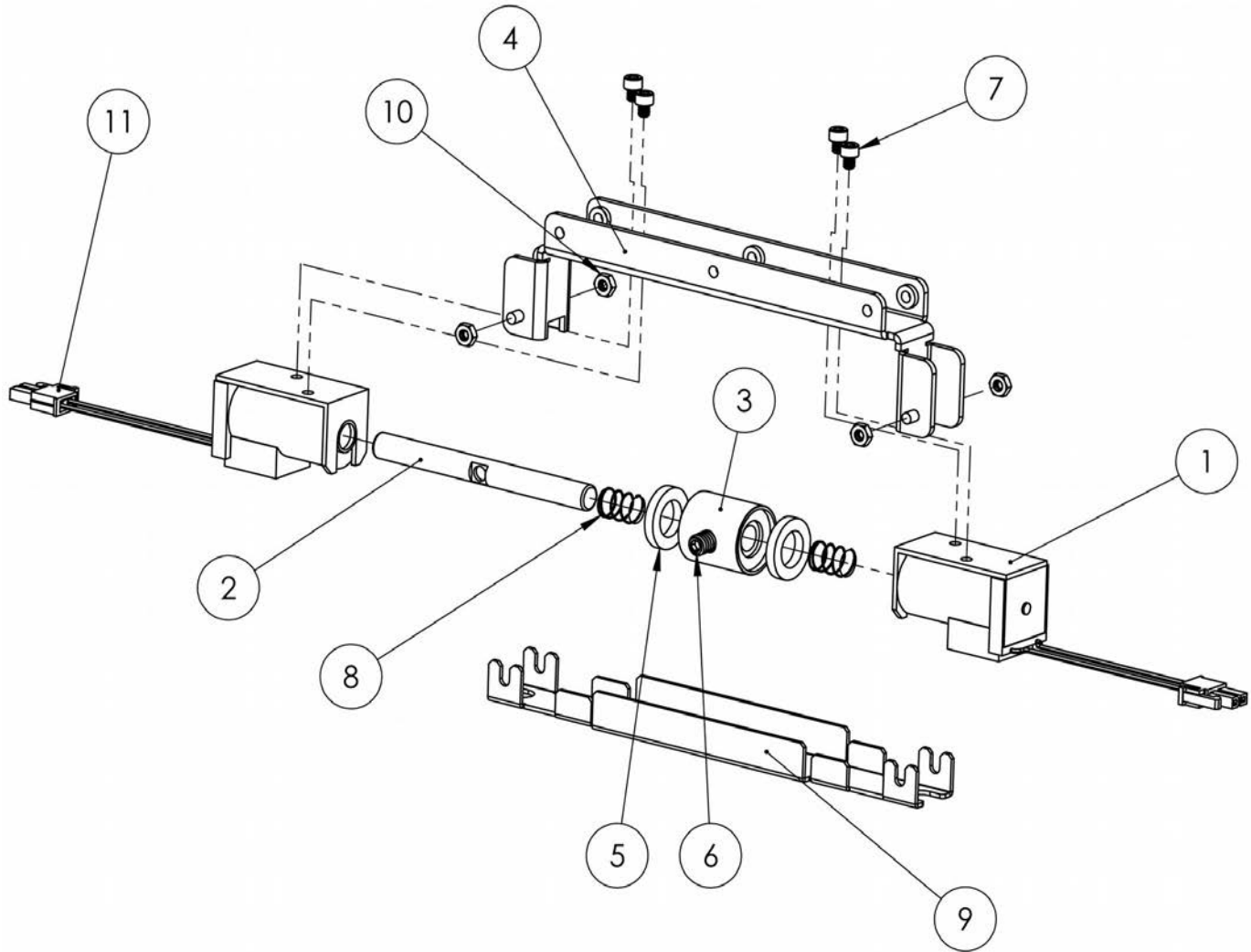


### Halo – Tethered Gun – Shell Assembly Part Numbers

Item	Part No.	Description	QTY
1	600-02931-01	Gun Body - Left	1
2	600-02932-01	Gun Body - Right	1
3	600-02933-01	Gun Cowl - Left	1
4	600-02934-01	Gun Cowl - Right	1
5	606-02043-01	Left Decal	1
6	606-02044-01	Right Decal	1
7	MMC 96075A115	8-32 x 1/2" black tamper proof screw	4
8	MMC 90101A009	8-32 thin lock nut	4



## Halo - Tethered Gun - Shaker Assembly



### Halo - Tethered Gun - Shaker Assembly Part Numbers

Item	Part No.	Description	QTY
1	604-00072-01	Solenoid	2
2	600-02943-01	Coil Shaft	1
3	600-02944-01	Coil Weight	1
4	600-02942-01	Coil Main Bracket	1
5	600-02945-01	Damper Pad	2
6	MMC 91385A534	1/4-20 x 5/16 cup point set screw	1
7	MMC 91251A269	6-32 x 5/32 socket head screw	4
8	600-02946-01	Coil Spring	2
9	600-03051-01	Heat Sink Bracket	1
10	MMC 90760A170	6-32 Nut	4
11	461-00012-02	Connector - molex 39-01-2020	2
12	403-00011-01	SBYV27-100-E3/54 Vishay Diode	2

## Halo – Tethered Gun – Four Player – Service Manual

### Contact Information

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For an authorized distributor near you, visit Raw Thrills at <http://www.rawthrills.com/sales-service>

For service, contact your local distributor or your local Betson office for sales, technical information, warranty or repair. Betson can be reached at (800) 524-2343 Fax (201) 438-4837 [www.betson.com](http://www.betson.com)

**Betson Enterprises Headquarters**

303 Paterson Plank Rd.

Carlstadt, NJ 07072

(800) 524-2343 or (201) 438-1300

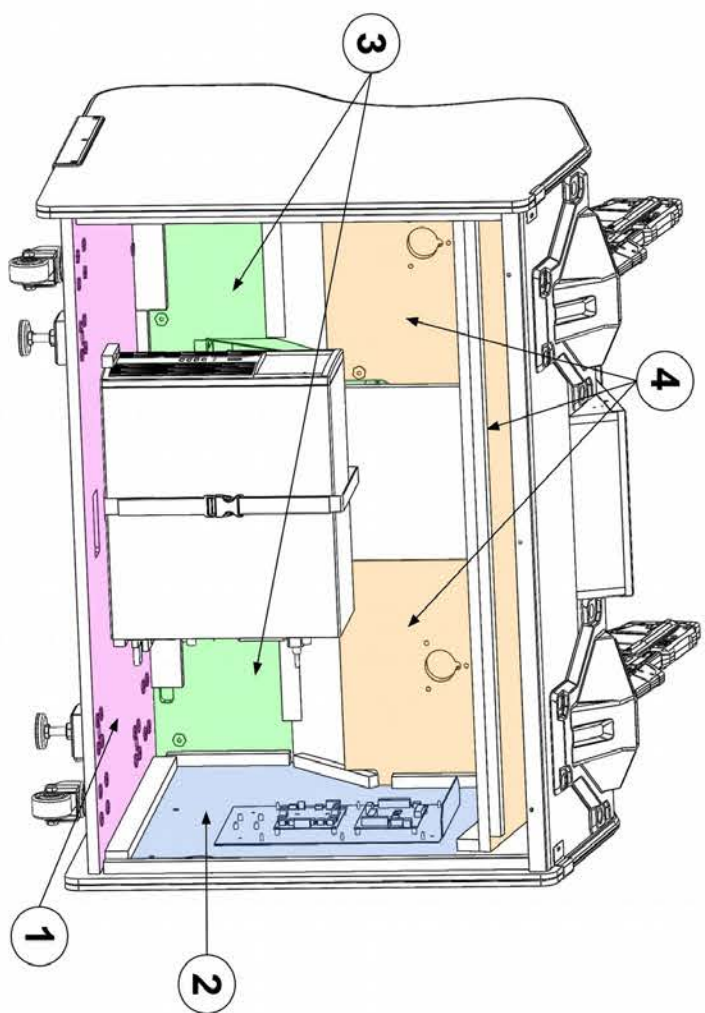
fax (201) 438-4837

## System Diagrams

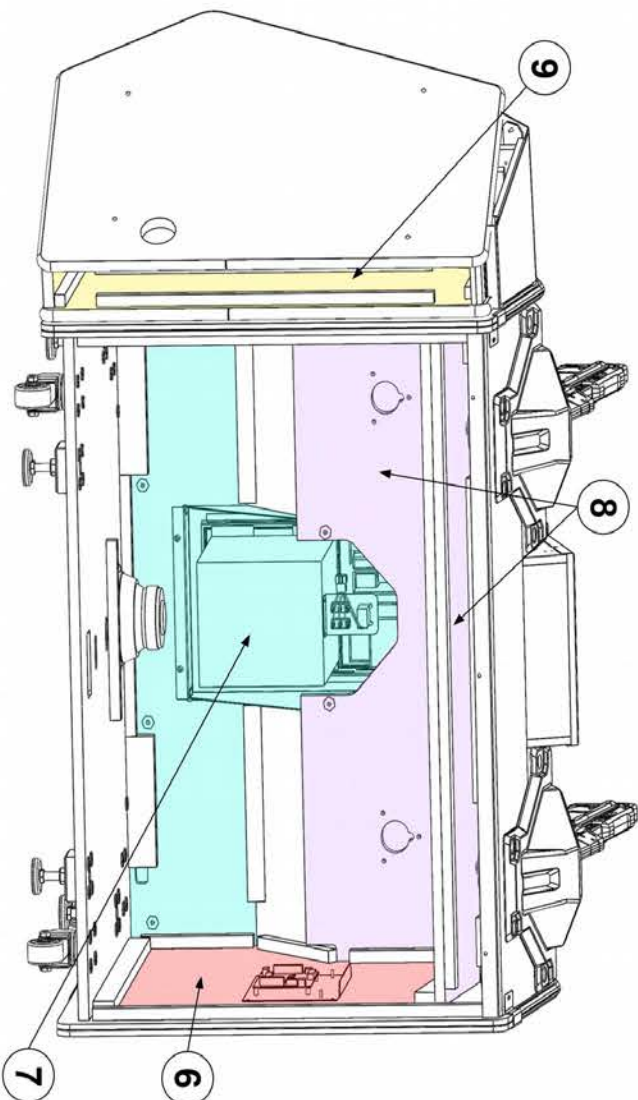
### HARNNESS LOCATION DIAGRAM (SPLIT BY SHEET) KEY

- SHEET 1: POWER + PC + MONITOR
- SHEET 2: MAIN HARNNESS (P3/P4)
- SHEET 3: LOWER PEDESTAL + CONTROL PANEL (P3/P4)
- SHEET 4: UPPER AND MIDDLE PEDESTAL (P3/P4)
- SHEET 5: MARQUEE + SPEAKER BOX
- SHEET 6: MAIN HARNNESS (P1/P2)
- SHEET 7: LOWER PEDESTAL + CONTROL PANEL (P1/P2)
- SHEET 8: UPPER AND MIDDLE PEDESTAL (P1/P2)
- SHEET 9: CENTER CONSOLE + TETHERED GUN

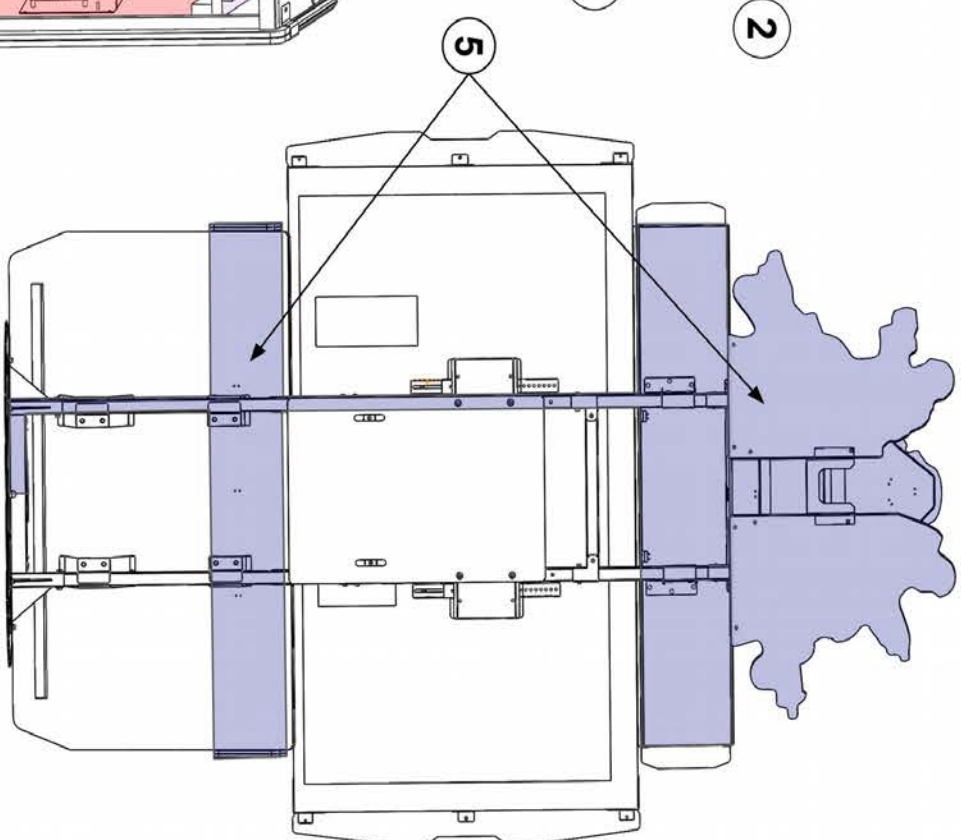
PLAYER 3/PLAYER 4  
PEDESTAL

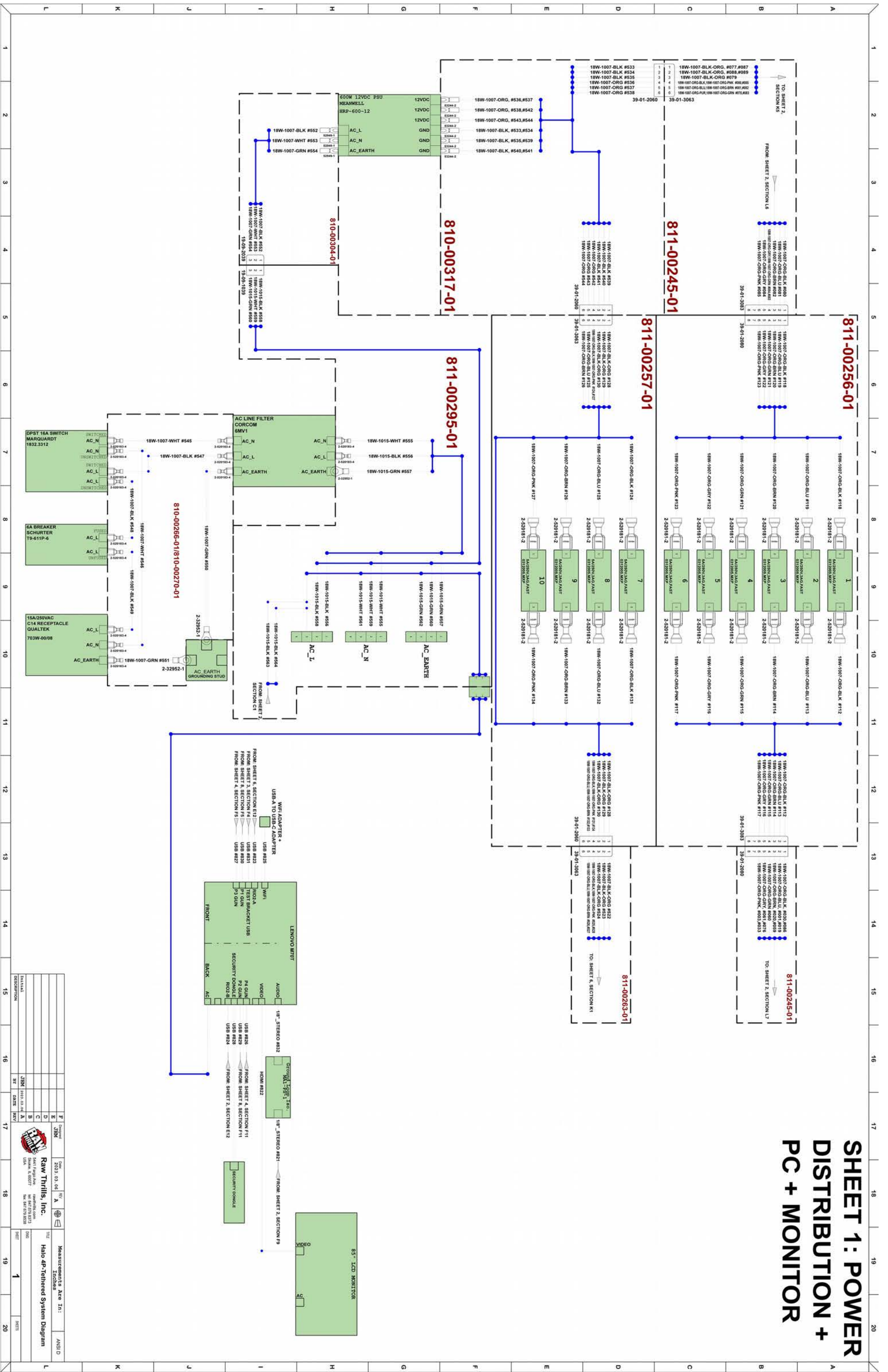


PLAYER 1/PLAYER 2  
PEDESTAL + CENTER CONSOLE



MONITOR STAND  
ASSEMBLY





# SHEET 1: POWER DISTRIBUTION + PC + MONITOR

DATE	2023.03.04	BY	JTB
DESIGNED	JTB	CHECKED	JTB
DRAWN	JTB	APPROVED	JTB
DATE	2023.03.04	BY	JTB
DESIGNED	JTB	CHECKED	JTB
DRAWN	JTB	APPROVED	JTB

Raw Thrills, Inc.  
 15000 S. 10th St.  
 Suite 1000  
 Phoenix, AZ 85047  
 Tel: 480.779.1313  
 Fax: 480.779.8538

Measurements Are In: **ANSI D**  
 Inches

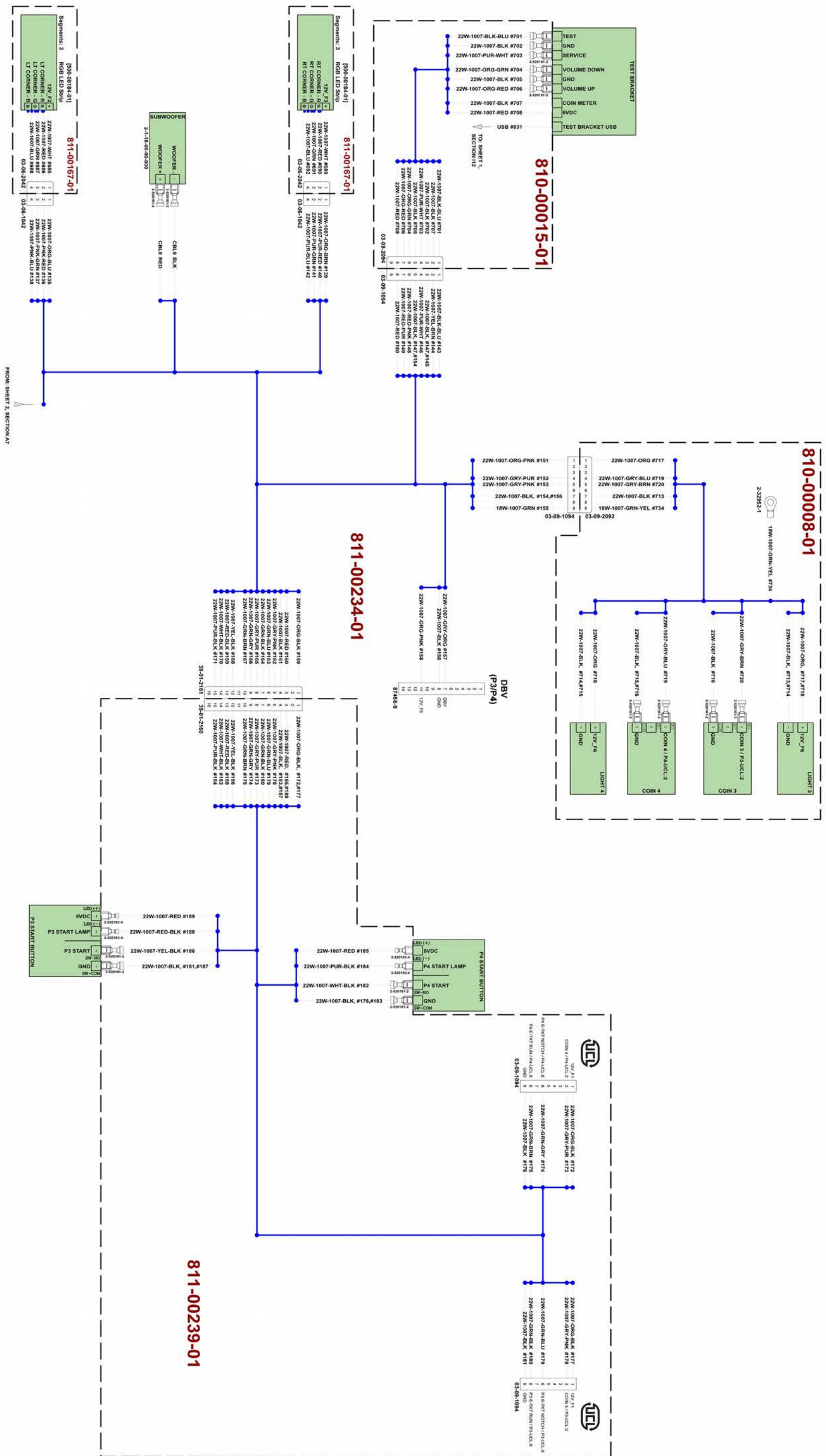
HALO 4P-Tethered System Diagram

SHEET 1 OF 1





# SHEET 3: LOWER PEDESTAL + CONTROL PANEL (P3/P4)

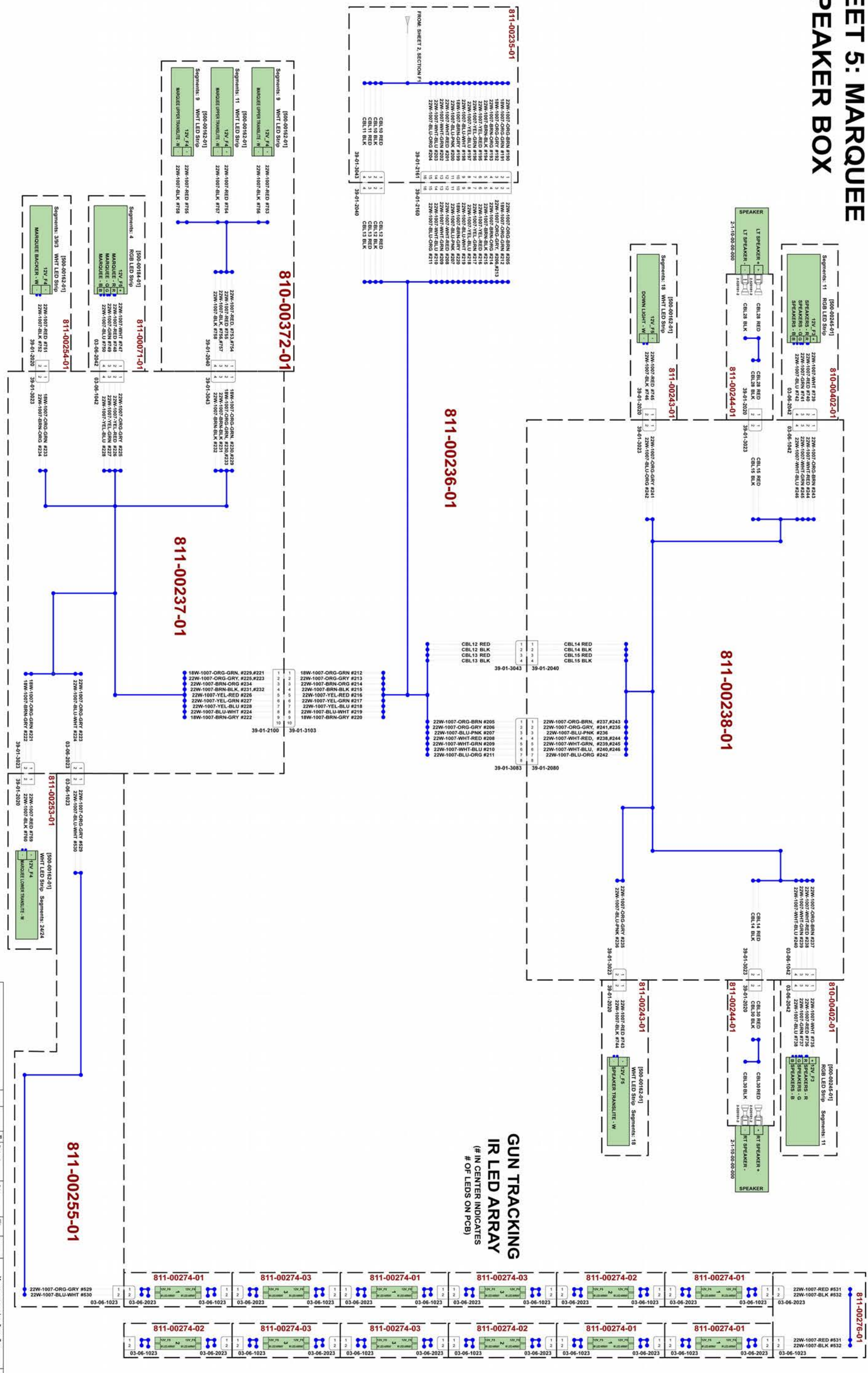


DATE	2023-03-04	REV	A
DESIGNED BY	JTB	INCHES	ANSI D
CHECKED BY			
DATE			
DESCRIPTION	Halo 4P-Tethered System Diagram		
MEASUREMENTS ARE IN: INCHES			
SHEET 3 OF 3			

**Raw Thrills, Inc.**  
 10000 Highway 101  
 Suite 1000  
 San Jose, CA 95138  
 Tel: 408.433.8888  
 Fax: 408.433.8888



# SHEET 5: MARQUEE + SPEAKER BOX



**GUN TRACKING  
IR LED ARRAY**  
# IN CENTER INDICATES  
(# OF LEDS ON PCB)

NO.	DESCRIPTION	QTY	DATE	REV
1	REVISION			
2				
3				
4				
5				

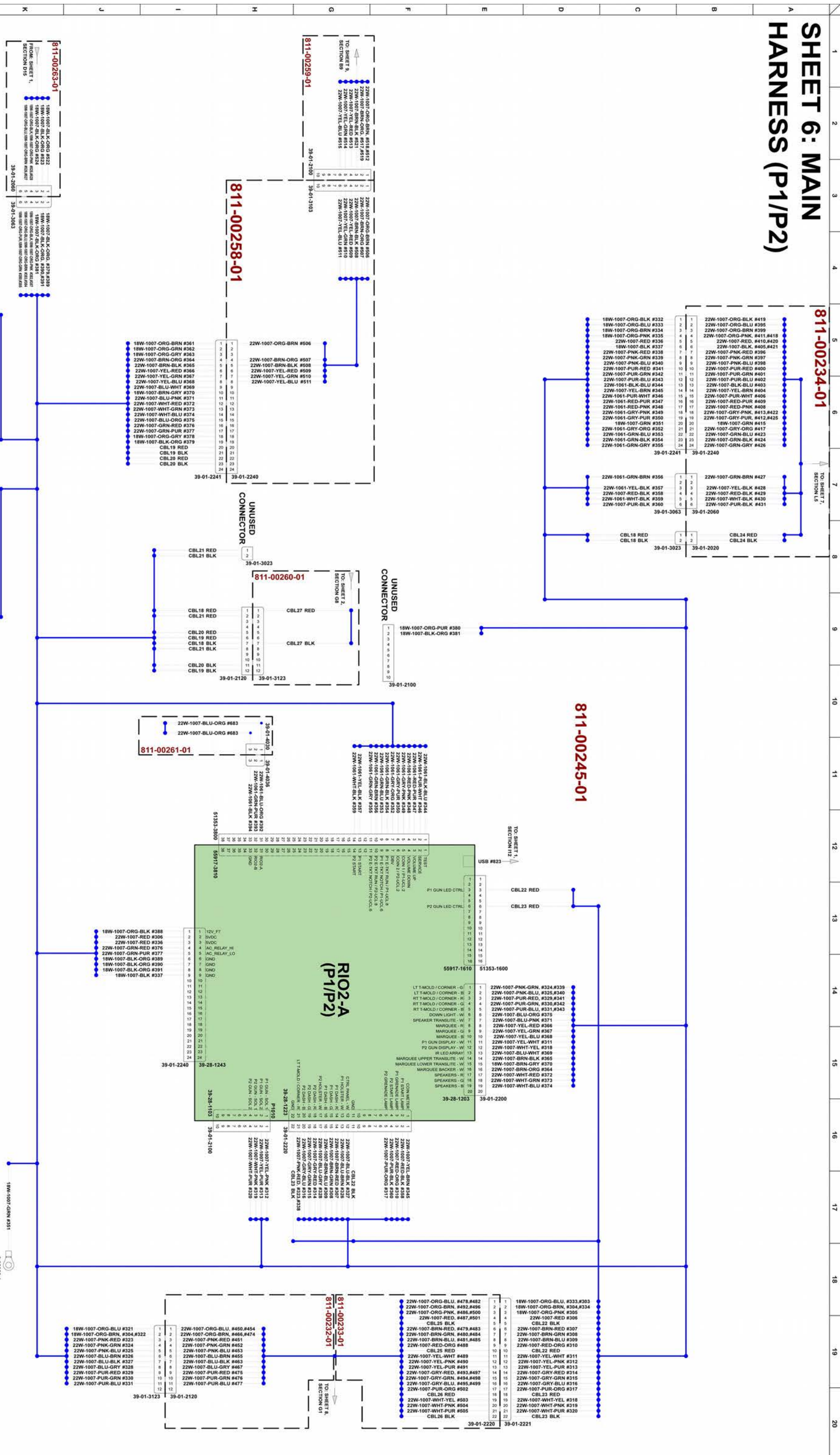
DATE	2023-03-04	BY	A
DESIGNED	JRM	CHECKED	JRM
DRAWN	JRM	APPROVED	JRM
DATE	2023-03-04	BY	A

**Raw Thrills, Inc.**  
 16677 27th St  
 Suite 200  
 Denver, CO 80231  
 USA

Measurements Are In: **INCHES**

**Halo 4P Tehered System Diagram**

# SHEET 6: MAIN HARNNESS (P1/P2)



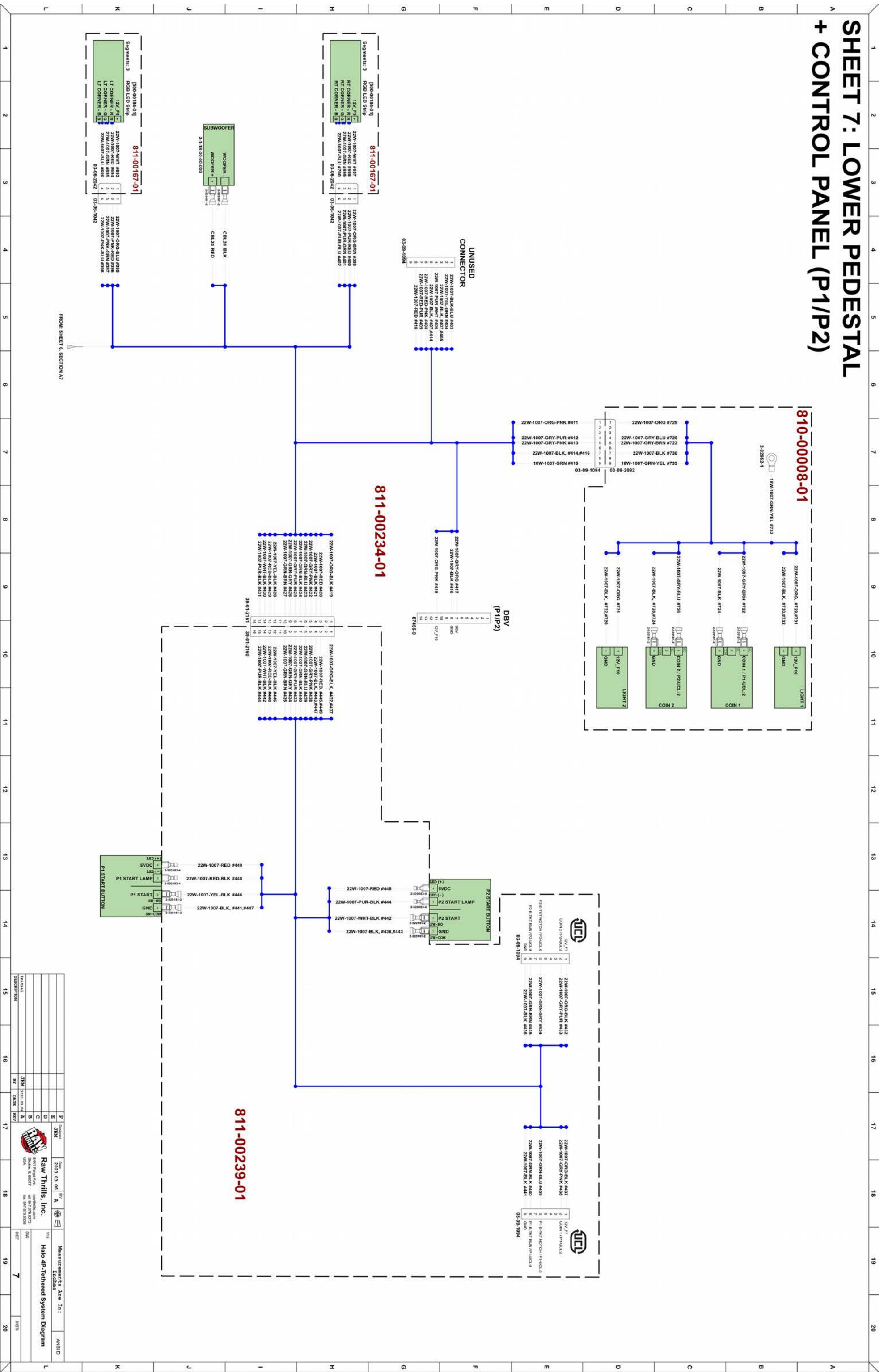
NO.	DESCRIPTION	QTY	UNIT	DATE	REV
1	RAW THIRILLS INC.				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

NO.	DESCRIPTION	QTY	UNIT	DATE	REV
1	RAW THIRILLS INC.				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

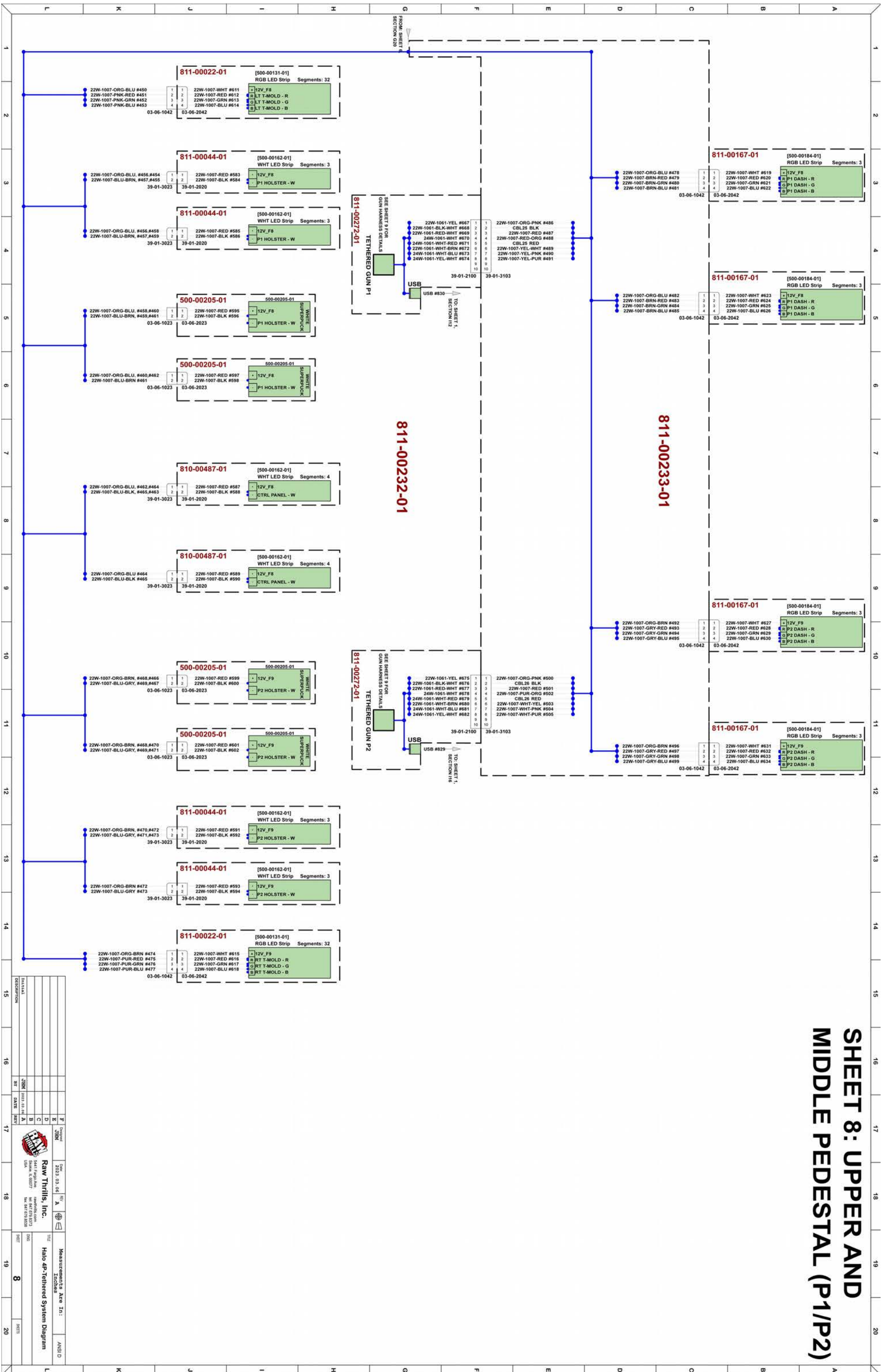
**Raw Thrills Inc.**  
 3033 03-04  
 2023 03-04  
 Holo 4P Teahed System Diagram  
 ANSD D  
 Measurements Are In: Inches

# SHEET 7: LOWER PEDESTAL + CONTROL PANEL (P1/P2)



DATE	BY	REV	DESCRIPTION
2023-03-08	JHW	1	INITIAL
2023-03-08	JHW	2	DATE
2023-03-08	JHW	3	REV
2023-03-08	JHW	4	DESCRIPTION
2023-03-08	JHW	5	
2023-03-08	JHW	6	
2023-03-08	JHW	7	

Raw Thrills, Inc.  
2023-03-08  
Halo 4P Tethered System Diagram  
ANSI D  
Inches  
7



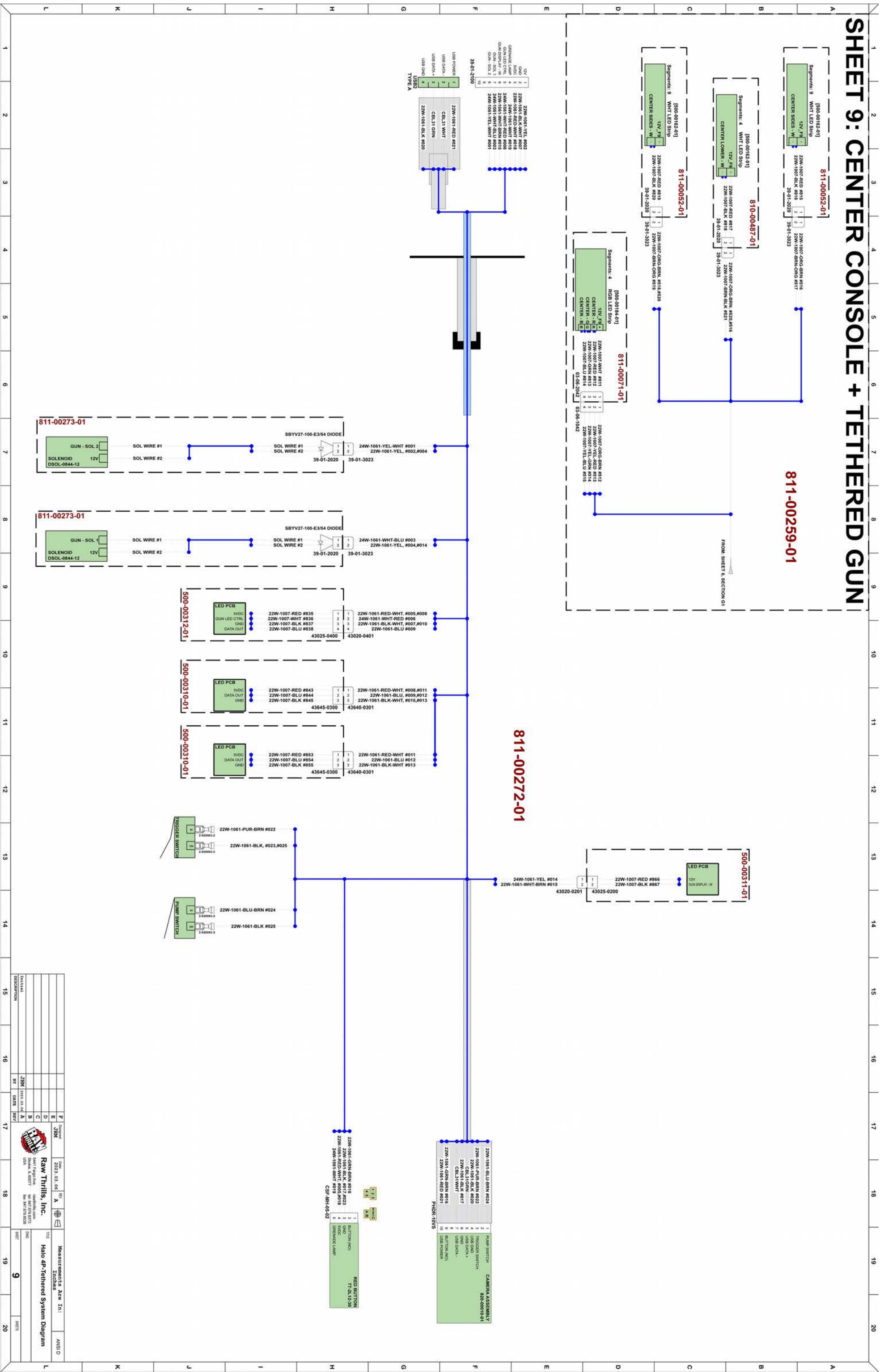
**SHEET 8: UPPER AND MIDDLE PEDESTAL (P1/P2)**

REVISION	DATE	BY	CHKD

**Raw Thrills, Inc.**  
 10000 W. 10th Street  
 Suite 200  
 Overland Park, KS 66207  
 Phone: 913.331.4141  
 Fax: 913.331.4141

Measurements Are In: **INCHES**  
 SHEET: **8**

# SHEET 9: CENTER CONSOLE + TETHERED GUN



REVISION	DATE	BY	CHKD	APP'D
1	2023-03-08	JTB		
2				
3				
4				
5				
6				
7				
8				
9				

Raw Thrills, Inc.  
 10000 S. 10th Street  
 Suite 100  
 Omaha, NE 68131  
 Phone: 402.426.8888  
 Fax: 402.426.8889  
 Email: sales@rawthrills.com

MeasUREMENTS ARE IN: **INCHES**  
 ANS D  
 TITLE: **Halo 4P Tethered System Diagram**  
 SHEET: **9**