Batman™ and all related characters and elements are trademarks of and copyright of DC Comics.

OPERATOR'S MANUAL

Safety

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
The cabinet is very heavy. Because the monitor is high, the cabinet is also very top-heavy. Use appropriate care when moving or transporting cabinet. It contains fragile glass and electronic components. 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 the power off and unplug the unit 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 SELECTOR
Before installing game, ensure the voltage on the PC is set properly. There is a 115/230 VAC selector switch that must be set for the correct voltage for your site. Verify the fluorescent lamp rating. The rating must match the line voltage at the installation site.

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 SUPRESSOR
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.

Batman™ and all related characters and elements are trademarks of and copyright of DC Comics.

Service Manual

CONNECTORS

When servicing machine, 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.
Do not turn the PC power switch on or off. It should remain permanently in the ON position.
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.

FLUORESCENT TUBES

A dropped fluorescent tube may break and implode. Shattered glass from the implosion can travel long distances and cause bodily injury. Use proper procedures when handling broken materials, as these items can contain hazardous material such as mercury or lead.

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. Your warranty, when applicable, lasts 60 days from your purchase date. You may not reproduce this document or any of its contents without written authorization from Raw Thrills, Inc. or Specular Interactive™ Inc.

SPECIFICATIONS

For reasons such as performance, this product's specifications may change without notice. Federal patent, copyright and other intellectual property laws protect

Product Specifications

Electrical Power

United States, international and Japan

Inrush AC Current: 7 Amps
Operating AC Current: 5 Amps
Voltage: 115 VAC

Temperature

50° F to 104° F

(10° C to 40° C)

Humidity

Must not exceed 95% relative humidity

Dimensions Container

Monitor Container: Height: 79" (2.00 meters), Width: 44" (1.12 meters), Depth: 42" (1.07 meters)

Seat: Container: Height: 62" (1.57 meters), Width: 25.5" (0.65 meters),   Depth: 34.5" (0.88 meters)

Container Weight

Monitor Container: 465 lbs. (211 kg)

Seat Container: 131 lbs. (59 kg)

Dimensions Assembled

Height: 94" (2.39 meters)

Width: 43" (1.09 meters)

Depth: 70" (1.78 meters)

Setup

Unpack Materials

1. Place the shipping crates on a flat, stable surface.
2. Cut the banding straps and remove the cardboard lids.
3. Lift off the large cardboard containers surrounding the front pedestal and monitor assemblies and remove any shipping cleats.
4. Remove the coin door key from the coin return slot.
5. Open the top coin door.
6. Locate the keys for the back door and the cash box door.
7. Open the cash box door and remove the cash box.
8. Check for shipping damage to the following:
   - Player accessible areas such as the seat, control panel and dash.
   - Marquee, Topper and monitor
   - Cabinet decals
9. Check the AC line cord for visible signs of damage.
   Pay particular attention to the plug and line cord insulation.

Check Electrical Settings

1. Verify the voltage in the nearest AC outlet.
2. Verify the AC outlet ground connection is present and working.
3. Open the back door of the monitor assembly.
4. Near the AC power transformer, verify the voltage selector switch is set to correct AC voltage.
5. Route the line cord so that the plug is near the AC outlet.
6. Replace the back door of the monitor assembly.

Game Power Up

1. Plug in line cord to AC outlet.
2. Turn the power switch to ON.
3. Check that no component is excessively hot or emitting foul odors.
   If not, turn off AC power and disconnect line cord. Refer to the diagnostic section of this manual.
4. Once software loads, you will be asked to calibrate the controls.
   If not, enter the service menu by pressing the TEST button located on the bracket inside the top coin door.

Assembly Instructions:

Note: Marquee assembly requires two individuals able to lift 70 pounds or more for safety. Please install in well lighted area with even and stable surface. Use only hardware and fasteners included with the unit. They are located inside the cashbox. This device is not intended for outdoor use.

Seat Pedestal Installation:

1. Remove the (8) hex bolts that secures the seat bracket (2) inside channel of the main cabinet and retract the brackets as seen on the figure below. Re-attach the seat bracket but do not tighten the bolts all the way. The bracket should move slightly so that it can be aligned with the seat pedestal on the next step.
2. Slide the seat bracket into the seat pedestal. Make all the electrical connections before mating the seat completely. Be careful not to get the wires caught between the two assemblies.
3. Secure the seat with the fasteners provided.

Marquee Topper Installation:

1. Carefully remove the topper from its packaging.
2. Inspect the marquee to make sure that it is not damaged from shipping.
3. Lift the topper over the monitor cabinet and let it rest on the top.
4. Run the topper harness into the wire access hole at the center of the cabinet.
5. Lower the topper and align all 4 corner mounting holes.
6. Install the fasteners provided but leave it loose until all the (8) of the fasteners have been installed.
7. Tighten all the fasteners.
8. Open the top back half of the monitor cabinet and locate the topper harness.
9. Make all the electrical connections and replace the back cover.
10. Visually inspect the game and AC connections before applying power to the game.
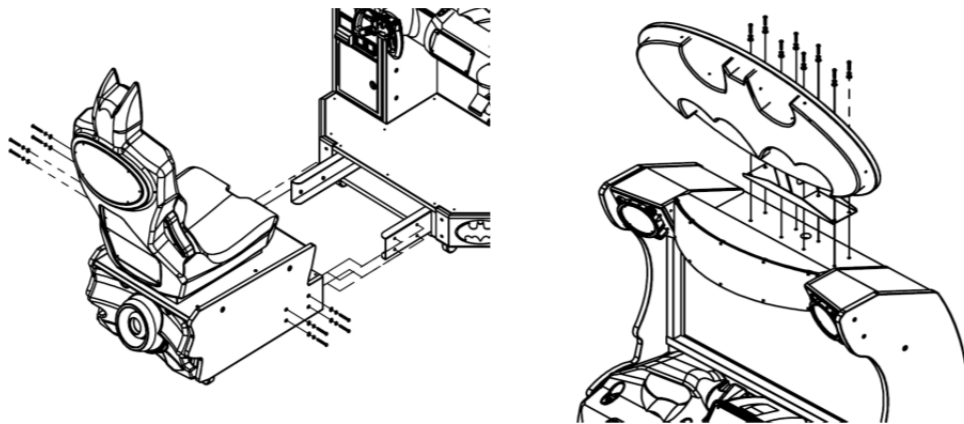
Diagnostics and Adjustments

The Service Button Panel has four buttons, three of which can navigate the menu system.

But it is easiest to navigate with a Start, View button
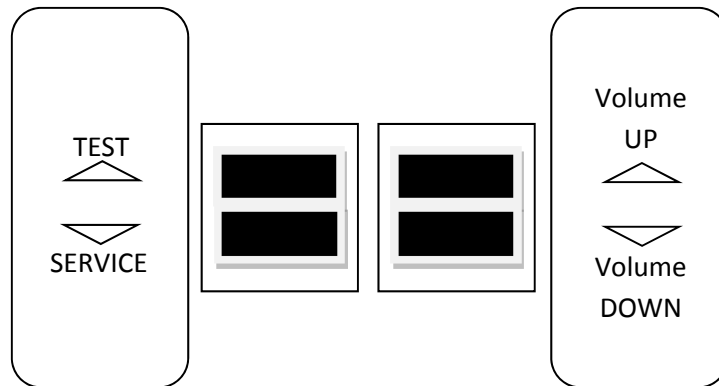
- Service Panel TEST   enters diagnostic system.

- Either Start button or
  TEST button   selects the highlighted option.

- Service Panel VOL DOWN button
                                                  moves down through menu or setting choices.

- Service Panel VOL UP button or
  pressing View   moves up through menu or setting choices.

- Highlight and select Exit to return to previous screen.

An on-screen message acknowledges changes or when you exit a selection without making a change.

At the bottom of each screen there is a brief description of the menu option's function. A complete description is available here for all menu functions.

Instructions for completing your first calibration start on the next page.

GAME CONTROLS CALIBRATION

1. If the calibration screen is not visible, press the TEST button to enter the Diagnostic System.
2. From the Main Menu, use Volume +/- to highlight Calibration.
3. Press a Enter button to enter calibration.

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:17 pm | Keypad

Calibration

Wheel |              |          |          49%

Gas   | |                      |           0%

To begin calibration, select one of the items below
_____
Calibrate steering wheel
Calibrate gas pedal
_____
Return




                                        Enter : TEST button
                                        Exit  : SERVICE button
                                        Up    : VOL UP button
                                        Down  : VOL DOWN button
```

4. Follow on-screen instructions. Re-try if calibration data is not valid.
5. Game will enter Attract Mode. All game settings will be default values if no changes are made at this time.

GAME CONTROLS AND INTERFACE INSPECTION

Other Tests

See the Diagnostic Section for further information.

1. Enter the Switch Test menu and verify all switches function.
2. Enter the Screen Test menu and verify that video is acceptable.
3. Enter the Sound Test menu and verify the audio works and is not distorted.
4. Enter the Coin Meter Test menu and verify the operation of the coin meter.
5. Enter the Cabinet Lamps Test menu and verify that all cabinet lights work correctly.
6. Enter the Watchdog Test menu, which reboots the game.
7. Upon a successful reboot, you are ready to make adjustments to pricing, volume and other functions found in the Adjustments, Audits and Diagnostics section.

Adjustments, Audits and Diagnostics

Main Menu

Access the test menu by pressing the "TEST "button. The "Main Menu" will be displayed. Follow the on-screen instruction to navigate the diagnostic and adjustment options.

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) |  9/19/2013 12:09 pm

Build   Release,(Not signed)
Program 9c1d-fb00
Data    0178-9f73

Main menu

Sound
Calibration
Adjustments
_____

Audits
Diagnostics
_____

Utilities
Advanced utilities
_____

Return to GAME




                                                       Enter : TEST button
                                                       Exit  : SERVICE button
                                                       Up    : VOL UP button
                                                       Down  : VOL DOWN button
```

Menu Option	Description
Sound	Adjust game sound and attract sound volume.
Calibration	Calibrate steering wheel, gas and brake pedal inputs.
Adjustments	Setting for coinage unit, denomination and game pricing. Settings for in-game features and multiplayer networking activation.
Audits	Comprehensive audit list includes collection information, playtime and various game features such as vehicles and courses which help determine customer preference in order to help set-up game for best earning potential.
Diagnostics	Test game input and outputs. This is a useful tool for troubleshooting and regular game maintenance.
Utilities	Perform "Clear Audit" functions here and restore Factory Settings
Advanced Utilities	Copy Audit information to external USB drive. Reset Calibration data and soft re-boot game.

Main Menu

Sound

Test sound and speaker functions. Game sounds are crucial to the quality enjoyment of the player and should be periodically checked for proper operation.

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) |  9/19/2013 12:16 pm | Keypad

Sound

Master mute              OFF
Master volume            O   [                              ]

Attract mute             OFF
Attract volume           O   [                              ]

Reset sound settings

Return



                                                    Enter : TEST button
                                                    Exit  : SERVICE button
                                                    Up    : VOL UP button
                                                    Down  : VOL DOWN button
```

Main Menu

Calibration

Properly functional game controls are crucial to the quality enjoyment of the player and should be periodically checked for proper operation. Maximize your game's earning potential. Calibrate the game controls periodically to compensate for normal wear and tear.

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) |  9/19/2013 12:17 pm | Keypad

Calibration

Wheel [                  |            ]    49%

Gas   [ |                    ]            0%

To begin calibration, select one of the items below

Calibrate steering wheel
Calibrate gas pedal

Return



                                                    Enter : TEST button
                                                    Exit  : SERVICE button
                                                    Up    : VOL UP button
                                                    Down  : VOL DOWN button
```

Main Menu

	Adjustments

		Pricing Adjustments

Reset pricing will set pricing adjustments to default settings.

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) |  9/19/2013 12:18 pm | Keypad

Pricing adjustments

Current coins     113
Current credits    28 1/4

Free play               OFF
Insert-money message    Insert coins
Coins per credit        4
Credits to start        1
Credits to continue     1
Max credits            30
Coins per bill pulse    1

Reset pricing

Return


                                                  Enter : TEST button
                                                  Exit  : SERVICE button
                                                  Up    : VOL UP button
                                                  Down  : VOL DOWN button
```

Main Menu

	Adjustments

		Game Adjustments

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) |  9/19/2013 12:19 pm | Keypad

Game adjustments

Plays since last score reset: 0

Wheel stiffness                   80
Cabinet lights in attract mode     ON
Lamp intensity in attract mode    70
Lamp intensity in game mode       70
Game time adjust                   0

Plays for score reset             10000

Reset game adjustments

Return


                                                  Enter : TEST button
                                                  Exit  : SERVICE button
                                                  Up    : VOL UP button
                                                  Down  : VOL DOWN button
```

BATMAN OPERATOR'S MANUAL

Main Menu
Adjustments
Multiplayer Adjustments

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:20 pm | Keypad

Multiplayer adjustments

Audit filename prefix        1
Multiplayer link             ENABLED
Port                         9000

DHCP:    O
IP:
Subnet:

Reset to factory default

Keep volume synced           ENABLED
Sync All Operator Settings

Return




                                                    Enter : TEST button
                                                    Exit  : SERVICE button
                                                    Up    : VOL UP button
                                                    Down  : VOL DOWN button
```

Set Multiplayer link to "ENABLE" when linking 2 or more units. The game comes with a cross over network cable for 2 player linked setup. Additional games may be linked using a network hub. This must be purchased separately.

Volume synched will allow all linked games to have identical levels by simply adjusting any one the linked game's volume setting.

Main Menu
Audits
Coin Audits
Boot Audits
Vehicle Audits
Playtime Audits
Stage Audits
Stage Details Audits
Objective Audits

BATMAN OPERATOR'S MANUAL

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:20 pm | Keypad

Coin audits -- page 1 of 13

o Press Up/Down for more audits

Current credits           28 1/4

Total service credits      0

Slot 1 coins              555
Slot 2 coins                0
Total slot coins          580

Bill validator coins       28

Game time per play        0:02:49   (buy-to-die average)

_____
Return

                                                        Enter : TEST button
                                                        Exit  : SERVICE button
                                                        Up    : VOL UP button
                                                        Down  : VOL DOWN button
```

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:20 pm | Keypad

Coin audits -- page 1 of 13

o Press Up/Down for more audits

Current credits           28 1/4

Total service credits      0

Slot 1 coins              555
Slot 2 coins                0
Total slot coins          580

Bill validator coins       28

Game time per play        0:02:49   (buy-to-die average)

_____
Return

                                                        Enter : TEST button
                                                        Exit  : SERVICE button
                                                        Up    : VOL UP button
                                                        Down  : VOL DOWN button
```

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:21 pm | Keypad

Game audits -- page 3 of 13

o Press Up/Down for more audits

Games started         245
Games continued       749
Total games played    994
Unfinished games       47

Time in attract mode          19:34:28
Time in game & continue        2 d, 4:40:45
Total time                     3 d, 0:15:13

Game time, interactive         1 d, 11:24:23
Game time, passive            17:16:22

Free play time                 0:00:00

_____
Return

                                                        Enter : TEST button
                                                        Exit  : SERVICE button
                                                        Up    : VOL UP button
                                                        Down  : VOL DOWN button
```

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
26 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/24/2013  3:35 pm | Keypad

Vehicle audits -- page 4 of 13

o Press Up/Down for more audits

   # Batmobile        Total
  -- --------------   ----------
   1 SixtySix              35    5%
   2 SixtySix Chrome       10    1%
   3 1989                  30    4%
   4 BTAS                  12    2%
   5 1995                  27   77%
   6 1997                   9    1%
   7 Tumbler               31    4%
   8 Bravebold             11    1%
   9 Arkham                24    3%
  10 Tumbler Camo          10    1%
  -- --------------   ----------
     Totals               199


  _____
 | Return |                                        Enter : TEST button
                                                   Exit  : SERVICE button
                                                   Up    : VOL UP button
                                                   Down  : VOL DOWN button
```

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:22 pm | Keypad

Game play time -- page 5 of 13

o Press Up/Down for more audits

Game time      Games    %
----------   -------  ----
0:00 - 1:29      30    3%
1:30 - 1:39      27    3%
1:40 - 1:49      34    4%
1:50 - 1:59      43    5%
2:00 - 2:09      56    6%
2:10 - 2:19      83    9%
2:20 - 2:29      91   10%
2:30 - 2:39     109   12%
2:40 - 2:49      86    9%
2:50 - 2:59      76    8%
3:00 - 3:09      66    7%
3:10 - 3:19      61    7%
3:20 - 3:29      41    4%
3:30 and up     128   14%

  _____                                           Enter : TEST button
 | Return |                                        Exit  : SERVICE button
                                                   Up    : VOL UP button
                                                   Down  : VOL DOWN button
```

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:22 pm | Keypad

Stage audits -- page 6 of 13

o Press Up/Down for more audits

   # Name           Started      Finished   Continues
  -- --------     --------------  --------   ---------
   1 Freeze easy  154   70%            13         497 =      651
   2 Bane easy      0    0%             0           0 =        0
   3 Joker easy    66   30%             0         252 =      318
   4 Freeze hard    0    0%             0           0 =        0
   5 Bane hard      0    0%             0           0 =        0
   6 Joker hard     0    0%             0           0 =        0
  -- --------     --------------  --------   ---------
     Totals       220                   +         749 =      969


  _____
 | Return |


                                                   Enter : TEST button
                                                   Exit  : SERVICE button
                                                   Up    : VOL UP button
                                                   Down  : VOL DOWN button
```

BATMAN OPERATOR'S MANUAL

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
27 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) |  9/19/2013  5:43 pm | Keypad

Stage audits 2 -- page 7 of 13

o Press Up/Down for more audits

Continues    Freeze easy   Bane easy   Joker easy Freeze hard   Bane hard   Joker hard      Totals
----------- ----------- ----------- ----------- ----------- ----------- ----------- -----------
0               2   3%     0   0%     0   0%     0   0%     0   0%     0   0%     2   1%
1               0   0%     0   0%     0   0%     0   0%     0   0%     0   0%     0   0%
2               0   0%     0   0%     0   0%     0   0%     0   0%     0   0%     0   0%
3               0   0%     0   0%     1   2%     0   0%     2   3%     0   0%     3   2%
4              63  97%     0   0%    62  98%     0   0%    59  97%     0   0%   184  97%
5               0   0%     0   0%     0   0%     0   0%     0   0%     0   0%     0   0%
6               0   0%     0   0%     0   0%     0   0%     0   0%     0   0%     0   0%
7+              0   0%     0   0%     0   0%     0   0%     0   0%     0   0%     0   0%
----------- ----------- ----------- ----------- ----------- ----------- ----------- -----------
Start boss     62  95%     0   0%    62  98%     0   0%    60  98%     0   0%   184  97%
Finish          1   2%     0   0%     0   0%     0   0%    12  20%     0   0%    13   7%
----------- ----------- ----------- ----------- ----------- ----------- ----------- -----------
                                                                                   189

_____
Return
                                                               Enter : TEST button
                                                               Exit  : SERVICE button
                                                               Up    : VOL UP button
                                                               Down  : VOL DOWN button
```

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) |  9/19/2013 12:22 pm | Keypad

Objective audits -- page 8 of 13

o Press Up/Down for more audits

Objectives for stage 1 (Freeze easy)

Code  #   Started Completed   Died Continued NotContinued
---- --  ------- --------- ------- --------- ------------
 1-1  1       95        65       5         1            2
 1-2  2       63        63      49        49            0
 1-3  3       63        63      58        58            0
 1-4  4       63        63      50        50            0
 1-5  5       63        62      62        61            1
 1-6  6       62         1      95        34           61
---- --  ------- --------- ------- --------- ------------
Totals        95               +     253           = 348

_____
Return

                                                               Enter : TEST button
                                                               Exit  : SERVICE button
                                                               Up    : VOL UP button
                                                               Down  : VOL DOWN button
```
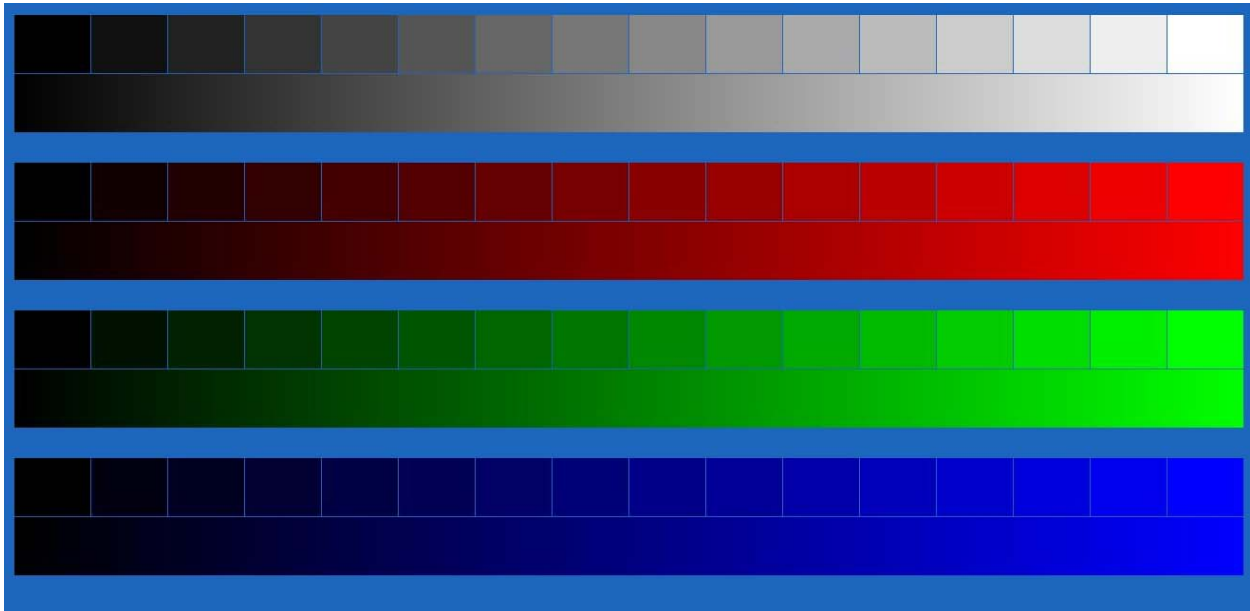
BATMAN OPERATOR'S MANUAL

Main Menu	
Diagnostics	
Switch Test	

Main Menu	
Diagnostics	
Lamp Test	

BATMAN OPERATOR'S MANUAL

Main Menu

Diagnostics

Wheel Test

For troubleshooting purposes, this menu allows the wheel force feedback to be activated in left and right direction.

NOTE: FOR SAFETY, KEEP HANDS OFF THE WHEEL WHILE TEST IS IN PROGRESS. THE WHEEL WILL MOVE AUTOMATICALLY.

Main Menu

Diagnostics

Sound Test

Main Menu
Diagnostics
Monitor Test

Main Menu

	Diagnostics

		Watchdog Test

This menu allows the activation of the watchdog/reset system. Press Start or Test to start test. The game's watchdog system allows the machine to recover automatically from a crash or a failure to boot. The watchdog system is always active.

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:26 pm | Keypad

Diagnostics

Switch test
Lamp test
Wheel test
Sound test
Monitor test
Watchdog test

Coin meter test          Watchdog test

Return                   Machine will cycle power in 5 seconds!
                         Are you sure?

                                  YES(Watchdog)
                                  NO(Cancel)




                                            Enter : TEST button
                                            Exit  : SERVICE button
                                            Up    : VOL UP button
                                            Down  : VOL DOWN button
```
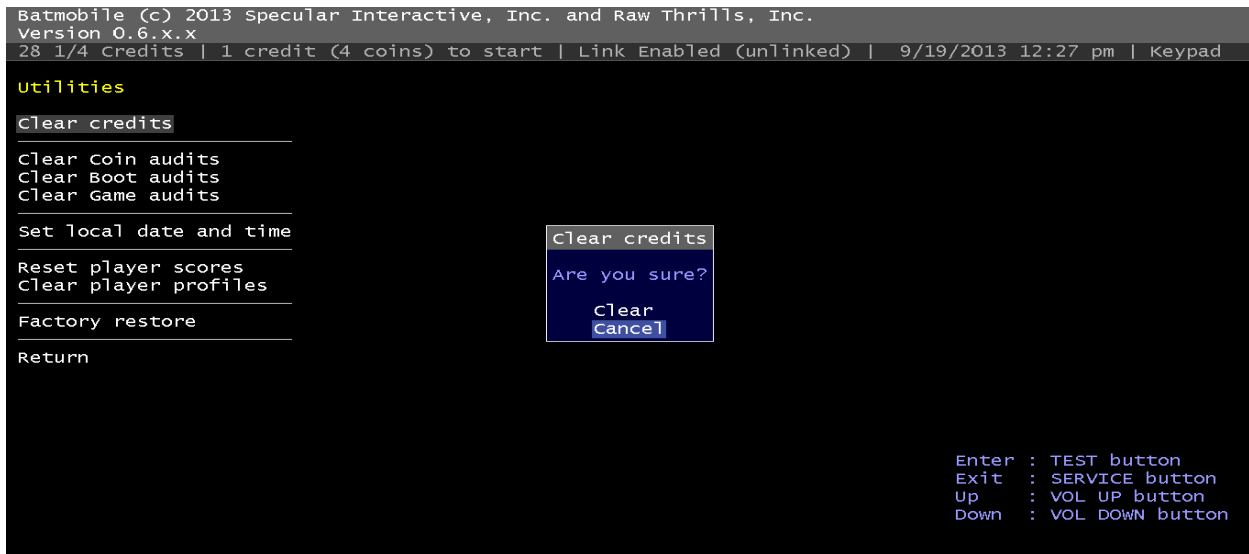
Main Menu

	Diagnostics

		Coin Meter Test

```
Coin meter test

    Press Volume Up to advance the coin meter

    Press Test to exit
Return




                                            Enter : TEST button
                                            Exit  : SERVICE button
                                            Up    : VOL UP button
                                            Down  : VOL DOWN button
```

Main Menu

Utilities

Clear Credits

Clear Coins

Clear Boot Audits

Clear Game Audits

Set Local Time and Date

Reset Player Scores

Clear Player Profiles

Factory Restore

Note: Factory Restore will restore all default settings and clear all audit information. The game will need to be calibrated.

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version 0.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:27 pm | Keypad

Utilities

Clear credits

Clear Coin audits
Clear Boot audits
Clear Game audits

Set local date and time

Reset player scores
Clear player profiles

Factory restore

Return

                              Clear credits

                              Are you sure?

                                 Clear
                                 Cancel


                                         Enter : TEST button
                                         Exit  : SERVICE button
                                         Up    : VOL UP button
                                         Down  : VOL DOWN button
```

Main Menu

Advanced Utilities

Copy Audits to Thumb Drive

Reset Calibration

Reboot Machine

Test Maintenance Reboot

End and Restart Program

Crash Program

Raw Switch Test

Burn-In Upon Boot : Use in testing electronics hardware reliability

Maintenance Reboot Hours : Set re-boot frequency.

This section is reserved for use in more in-depth troubleshooting, diagnostics or repair. It may be especially helpful in troubleshooting intermittent issues.

```
Batmobile (c) 2013 Specular Interactive, Inc. and Raw Thrills, Inc.
Version O.6.x.x
28 1/4 Credits | 1 credit (4 coins) to start | Link Enabled (unlinked) | 9/19/2013 12:29 pm | Keypad

Advanced utilities

Copy Audits to thumb drive

Reset calibration

Reboot machine
Test maintenance reboot
End and restart program
Crash program

Raw switch test
Burn-in upon boot            OFF
Maintenance reboot hours     24

Return


                                          Enter : TEST button
                                          Exit  : SERVICE button
                                          Up    : VOL UP button
                                          Down  : VOL DOWN button
```

Maintenance

Hard Drive Recovery NOTE: VISIT RAWTHRILLS.COM FOR THE LATEST TECHNICAL INFORMATION REGARDING ALL PRODUCTS.

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.
- Garbled characters
- Bad audit files

To identify corrupt files, press Test, choose System Test Menu and run the CRC Check.
The only way to repair corrupt files is to recover the hard drive, as detailed below.

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 cabinet power switch.

1. With game and PC on, verify that the RIO board has power. If not, see Troubleshooting.
2. Open the Coin door.
3. Open the PC DVD-ROM tray by reaching back to the PC and pressing the Open/Close button on the drive bay.
4. Insert the first of two restore DVDs (labeled *Disc 1*) into the tray.
5. Close the tray by pressing the Open/Close button again.
6. Turn cabinet power switch to OFF. Wait 30 seconds.
7. Turn cabinet power switch to ON.
8. Recovery begins automatically when PC boots up.
9. If recovery does not begin, check to ensure disc is inserted correctly and is not damaged.
10. Initial software loading may take several minutes. Check progress periodically.
    Do not interrupt power or reset the game during recovery.
11. At some point, the game will eject *Disc 1* and prompt you to insert *Disc 2*.
    Swap discs and close the tray.
12. When software has been loaded, a message indicates that restore is complete. When instructed to remove *Disc 2*, open DVD-ROM drive tray and remove *Disc 2*.
13. Turn cabinet power switch off.
14. After 30 seconds, turn cabinet power switch on.
15. Game will reboot and enter calibration mode.
16. Re-calibrate guns.

BIOS Settings/Power Management

The PC ships with correct BIOS settings. Making changes to the BIOS different from the description below may adversely affect game functions.

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

1. Turn cabinet power switch off.
2. Open rear of cabinet.
3. Connect a USB keyboard to the PC.
4. While holding the F10 key on the keyboard down, turn cabinet power switch on.
5. When the BIOS menu screen appears, make the following adjustments shown below. Note: Most settings use the default.
6. Follow instructions on screen to save and exit.
7. PC will reset and load the game.

```
8.  -General
9.         +System Information => n/a
10.        +Date/Time => n/a
11.        +Boot Sequence :
12.           -[1]CD/DVD/CD-RW Drive
13.               -[2]Onboard SATA
14.               -[disabled] USB Storage Device
15.               -[disabled] Diskette Drive
16.               -[disabled] Onboard NIC
17. -System Configuration
18.        +Integrated NIC : Enabled
19.          +Serial Port: DISABLED
20.          +SATA Operation: ATA
21.          +Drives: all enabled (all checked)
22.          +SMART Reporting: disabled (not checked)
23.          +USB Configuration: all enabled (all checked)
24.          +Miscellaneous Devices : n/a
25. -Video
26.        +Multi Display : Disabled
27. -Security: no changes
28. -Performance
29.        +Multi Core Support : All
30.        +Intel Speedstep    : Disabled
31.        +C States           : Enabled
32. -Power Management
33.        +AC Recovery         : Power ON
34.        +Auto ON Time        : Disabled
35.   +Deep Sleep Control    : Disabled
36.   +Fan Control Override : Disabled
37.   +Wake on LAN          : Disabled
38. -Post Behavior
39.        +Numlock LED      : Enabled
40.   +Keyboard Errors : Disabled
41.        +Post Hot Keys    : Enabled
42.   +Fastboot         : Thorough
43. -Virtualization Support
44.        +Virtualization       : Enabled
45.        +VT for Direction I/O : Disabled
46. -Maintenance => n/a
47. -ImageServer => n/a
48. -System logs => n/a
```

MECHANICAL ILLUSTRATIONS

AND

ELECTRICAL SYSTEM DIAGRAM

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	608-00163-01	Batman - Marquee Center Post	1
2	Batman_Marquee_Assy	Batman - Marquee Assembly	1
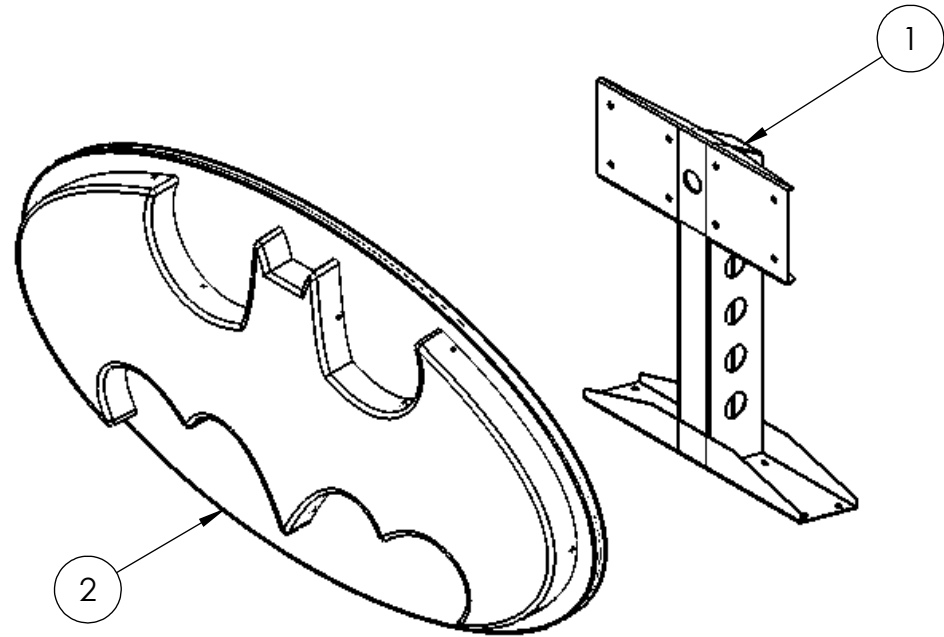
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	601-00611-01	Batman - Marquee Oval Panel	1
2	606-00857-01	Batman - Marquee Logo Template	1
3	500-00093-01 (45 CM)	White LED Strip - 45 CM	6
4	500-00093-01 (15 CM)	White LED Strip - 15 CM	7
5	500-00093-01 (10 CM)	White LED Strip - 10 CM	7
6	600-01052-01	Batman - Marquee/Bat Sign Mount Bracket	14
7	603-00615-01	Batman - Marquee Logo Plastic	1

Batman - Marquee Topper Assembly
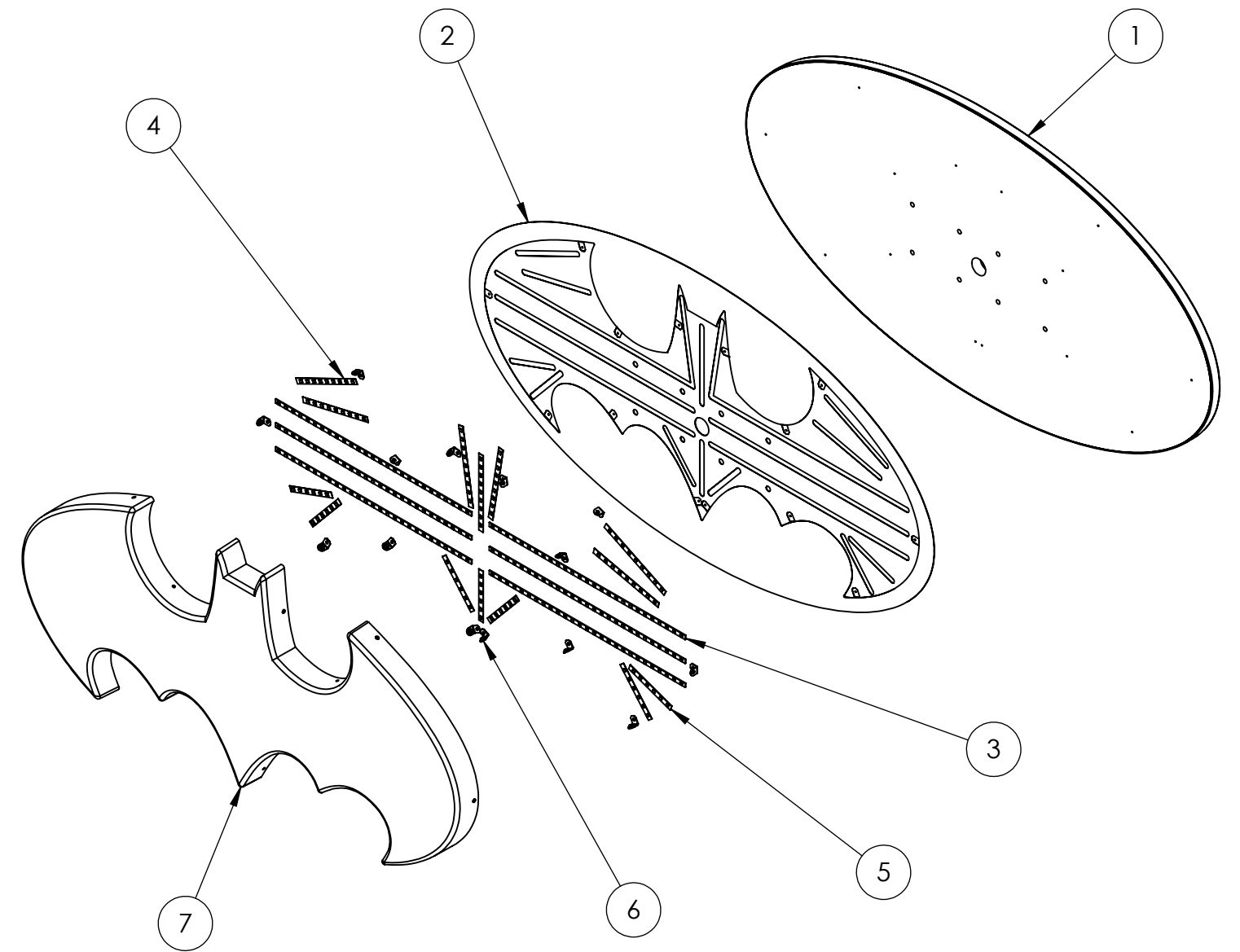
Batman - Marquee Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Batman_Front_Assy	Batman - Front Assembly	1
2	600-00030-01	Pedestal Mounting Channel	2
3	Batman_Pedestal_Assy	Batman - Pedestal Assembly	1
4	Batman_Marquee_Topper_Assy	Batman - Marquee Topper Assembly	1
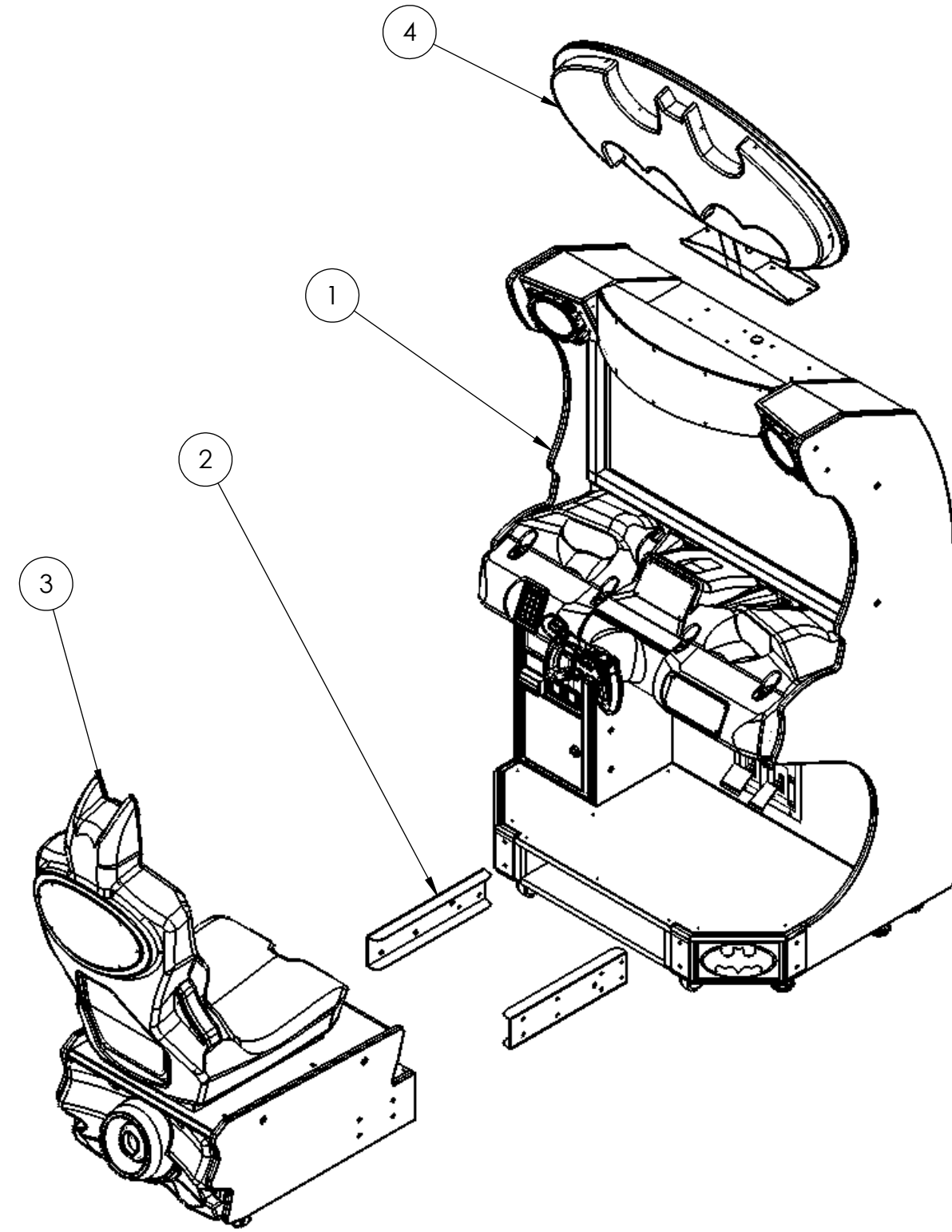
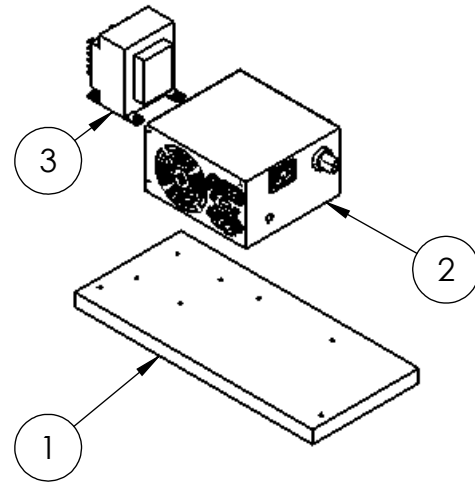Batman - 42" Final Assembly
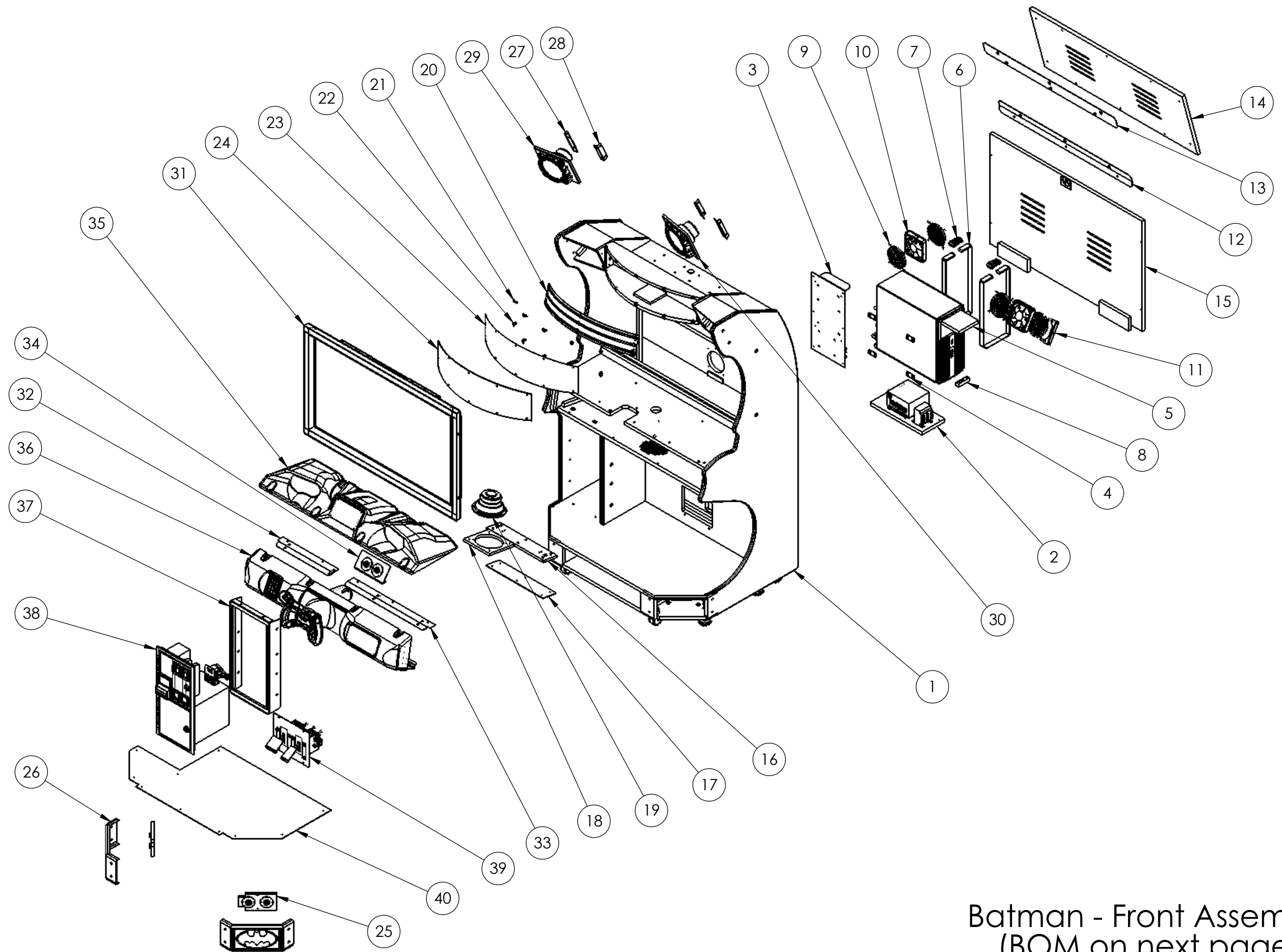
Batman - Front Assembly
(BOM on next page)

BOM: Batman Front Assembly

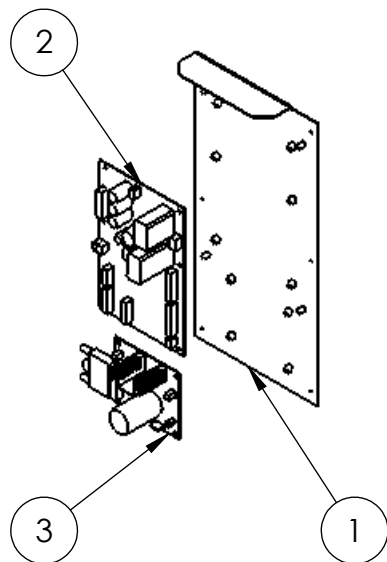| ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	601-00607-01	Batman - Main Cabinet	1
2	Batman_Power_Panel_Assy	Batman - Power Panel Assembly	1
3	RIO_Batman_Assy	Batman - RIO Assembly	1
4	600-00891-01	Securing Nylon Strap Plate	4
5	HP6005	(or approved equivalent PC)	1
6	87425K76 (52 Length)	McMaster-Carr: Nylon Strap 0.075" Thick, 1" Width, Black (52" Length)	2
7	29705T86	McMaster-Carr: Plastic Buckle for Webbing NO Sew Squeeze-Release for 1" Wide Webbing	2
8	601-00580-01	PC Wood Cleat	2
9	800-00001-00	120mm Wire Fan Guard	4
10	820-00012-00	Cooling Fan (standard size): 12VDC, 3W, 80CFM	2
11	600-01040-01	Rear LCD Fan Mounting Bracket	1
12	600-01042-01	Batman - Cabinet LCD Panel Bracket	1
13	600-01126-01	Batman - Cabinet Upper LCD Panel Bracket	1
14	601-00629-01	Batman - Cabinet LCD Access Door	1
15	601-00610-01	Batman - Cabinet Back Door	1
16	Batman_Pedal_Light_Assy	Batman - Pedal Light Assembly	1
17	600-00021-01	Pedal Light Lens	1
18	601-00527-01	Woofer Mounting Board	1
19	807-00003-00	Woofer Speaker: 6.5", 8 Ohms	1
20	Batman_Marquee_Light_Assy	Batman - Marquee Light Assembly	1
21	600-01111-01	Batman - Angle Top Marquee Mount Bracket	5
22	600-01052-01	Batman - Marquee/Bat Sign Mount Bracket	5
23	606-00805-01	Batman - Cabinet Marquee Translite	1
24	600-01190-01	Batman - Marquee PETG	1
25	Batman_Kick_Plate_Light_Assy	Batman - Kick Plate Light Assembly	2
26	Batman_Kick_Plate_Assy	Batman - Kick Plate Assembly	2
27	600-01090-01	Batman - Speaker Plate Mounting Bracket 1	2
28	600-01091-01	Batman - Speaker Plate Mounting Bracket 2	2
29	Batman_Speaker_Assy_L	Batman - Left Speaker Assembly	1
30	Batman_Speaker_Assy_R	Batman - Right Speaker Assembly	1
31	Batman_42_Monitor_Assy	Batman - 42" Monitor Assembly	1
32	600-01118-01	Batman - Control Panel Left Mounting Bracket	1
33	600-01009-01	Batman - Control Panel Right Mounting Bracket	1
34	Batman_Hood_Light_Assy	Batman - Hood Light Mount Bracket	1
35	Batman_Hood_Assy	Batman - Hood Assembly	1
36	Batman_Dash_Assy	Batman - Dash Assembly	1
37	608-00158-01	Batman - Coin Door Housing Bracket	1
38	800-00005-01	Happ: Mid-Width Coin Door Assembly	1
39	604-00012-01	Happ: Hall Effect Dual Foot Pedal Mech (Brake Switch)	1
40	600-01038-01	Batman - Cabinet Diamond Plate	1

RAW THRILLS

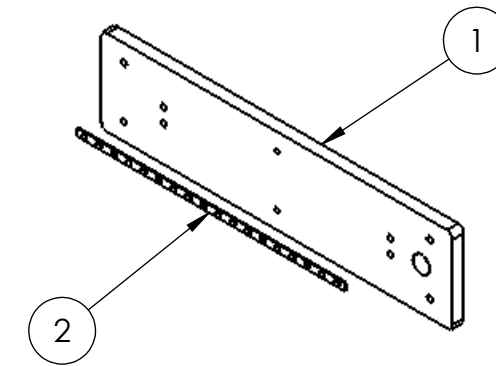| ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	601-00624-01	Batman - Power Supply Panel	1
2	2-1-02-00-00-017	APS Power Supply (Bracket #90-AP188)	1
3	2-1-02-00-00-016	Transformer: 36V, 5 Amps	1

Batman - Power Panel Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	601-00628-01	Batman - Pedal Light Backboard	1
2	500-00131-01 (30 CM)	RGB LED Strip - 30 CM	1

Batman - Pedal Light Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	600-00511-01	RIO - Mounting Plate Chassis	1
2	500-00040-01	RIO PCB	1
3	500-00037-01	RIO Wheel Driver PCB	1

Batman - RIO Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	603-00673-01	Batman - Marquee Light Panel	1
2	500-00093-01 (60 CM)	White LED Strip - 60 CM	3
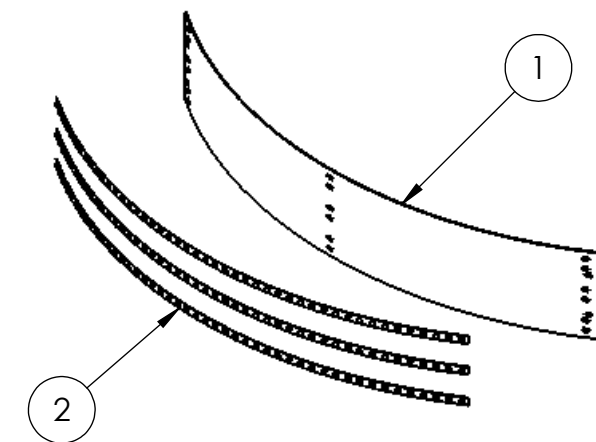
Batman - Marquee Light Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	603-00610-01	Batman - Seat	1
2	Batman_Seat_Edgeglow_Assy	Batman - Seat Edgeglow Assembly	2
3	Batman_Seat_Back_LED_Assy	Batman - Seat Back LED Assembly	1
4	606-00804-01	Batman - Seat Back Translite	1
5	600-01191-01	Batman - Seat Back PETG	1
6	807-00003-00	Woofer Speaker: 6.5", 8 Ohms	1
7	500-00127-01	96 CM RYO LED "Great Wall" Rope	1
8	600-00647-01	LED Side Clip	10
9	600-01033-01	Batman - Seat Back Grill	1
10	604-00032-01	Batman - Seat Slide Assembly	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	603-00617-01	Batman - Seat Edge Glow	1
2	500-00131-01 (25 CM)	RGB LED Strip - 25 CM	1
3	Tie Wrap	1/8" Wide	4
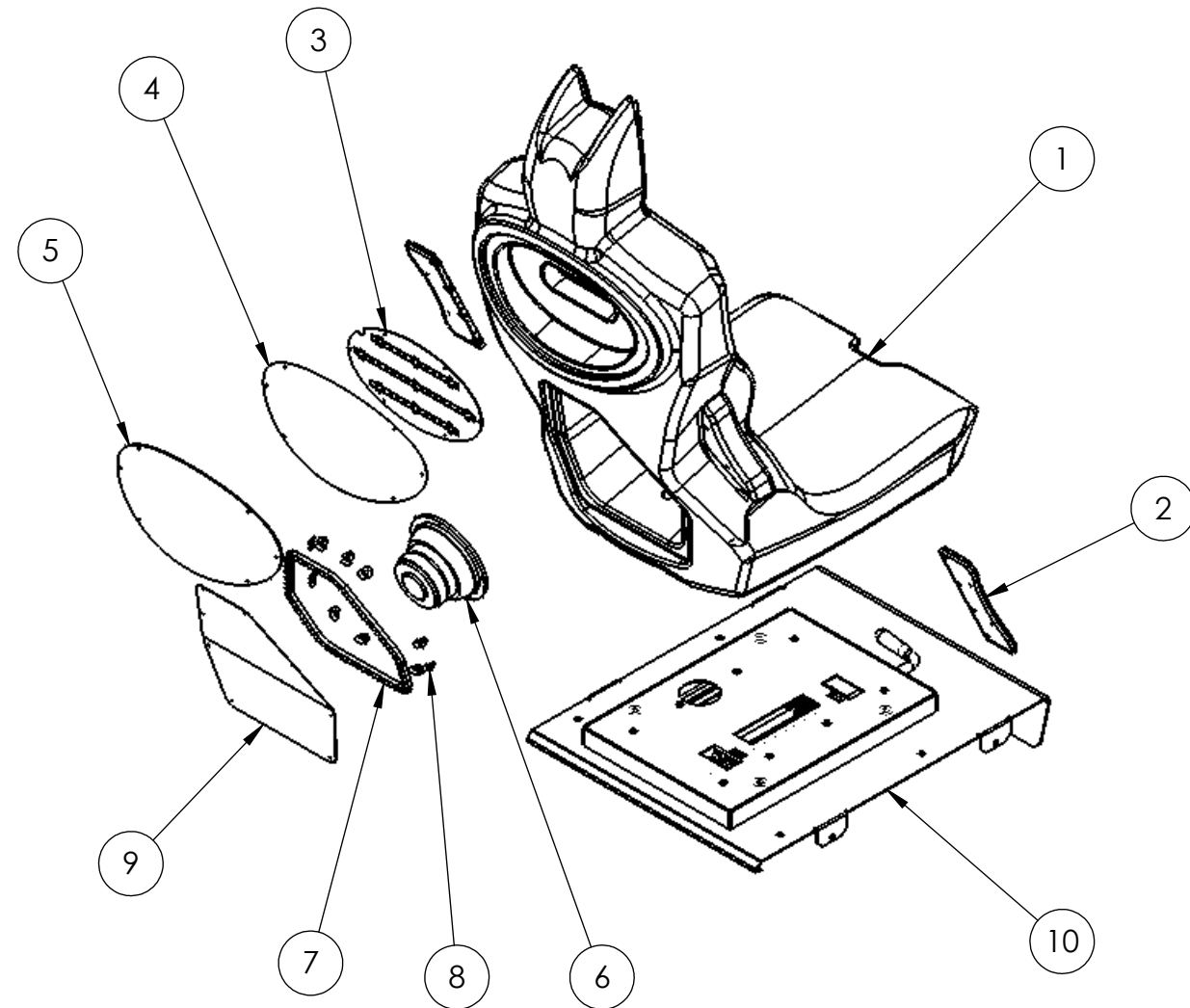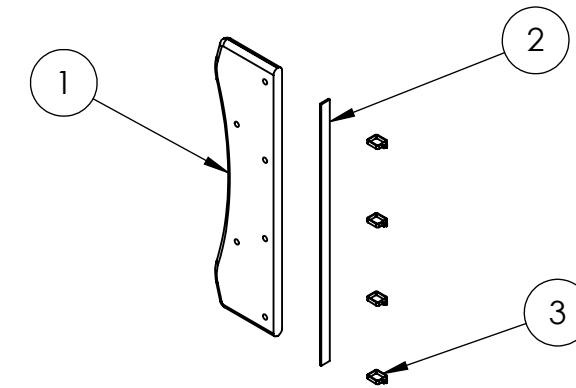
Batman - Seat Edgeglow Assembly

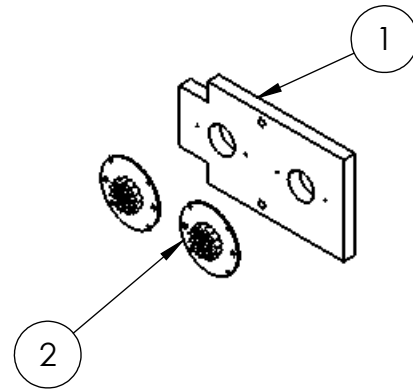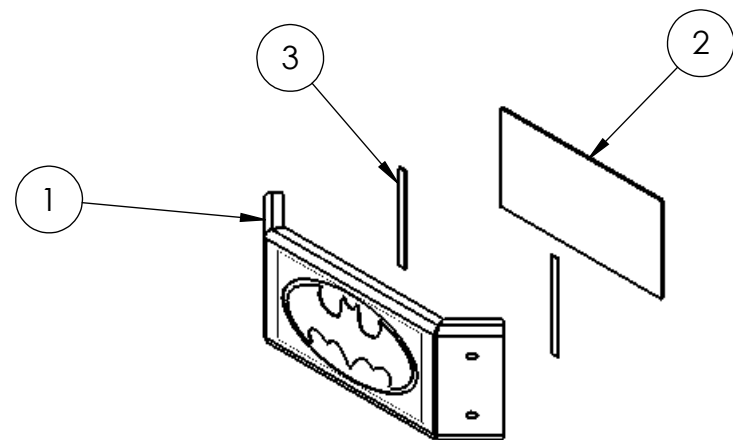| ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	603-00677-01	Batman - Seat Marquee Light Panel	1
2	500-00093-01 (20 CM)	White LED Strip - 20 CM	2
3	500-00093-01 (25 CM)	White LED Strip - 25 CM	1
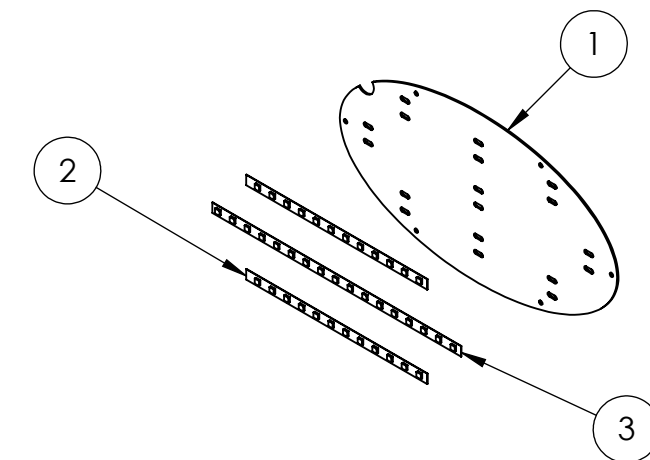
Batman - Seat Assembly

Batman - Seat Back LED Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	601-00650-01	Batman - Kick Plate Light Panel	1
2	500-00035-01	White LED Spotlight PCB	2

Batman - Kick Plate Light Assembly

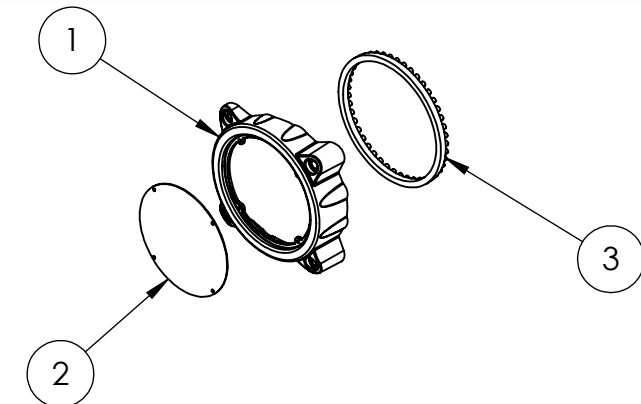| ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	600-01016-01	Batman - Kick Plate Bracket	1
2	603-00672-01	Batman - Kick Plate Yellow Light Diffuse Panel	1
3	Double Sided Foam Tape	Black: 3/8"W x 1/16"T x 5"L	2

Batman - Kick Plate Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1*	600-01201-01	Batman - Left Speaker Panel (Black Acrylic)	1
2	2-1-10-00-00-000	5.25" Full Range Speaker	1
3	606-00650-01	DD42 Speaker Bezel Mirror (Left & Right)	1
4	Speaker Bezel Sub-Assy	Speaker Bezel Sub-Assy	1
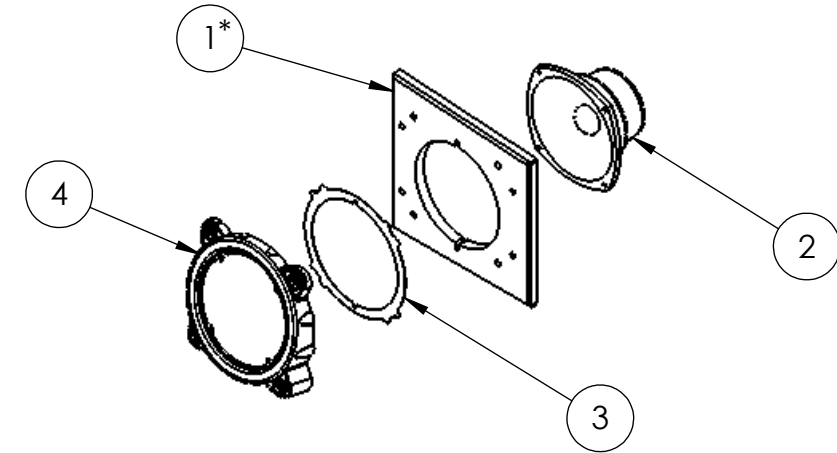
Batman - Left Speaker Assembly
(Item #1 is 600-01202-01 for Right Speaker Assembly)

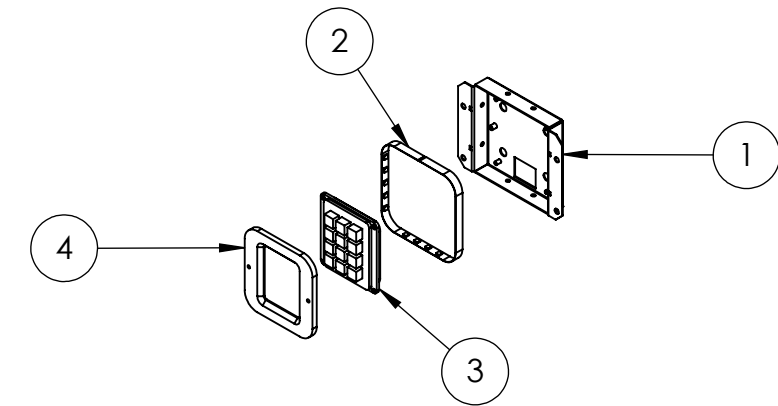| ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	603-00538-01	LED Speaker Bezel - Midrange (45 CM)	1
2	600-00673-01	Speaker Grill - 5.25"	1
3	500-00125-01	45 CM RYO LED "Great Wall" Rope	1

Speaker Bezel Sub-Assy

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	600-01008-01	Batman - Hinged Control Panel Bracket	1
2	600-01010-01	Batman - Dash Accessory Bracket	2
3	500-00035-01	White LED Spotlight PCB	2
4	604-00033-01	Happ: Steering Mech (18VDC, 180 DEGREE)	1
5	Batman_Keypad_Assy	Batman - Dash Keypad Assembly	1
6	603-00611-01	Batman - Dash Plastic	1
7	702-00045-01	Batman - Emblem Small Oval Button	1
8	606-00813-01	Batman - Dash Translite	1
9	600-01192-01	Batman - Dash PETG	1
10	604-00034-01	Batman - Steering Wheel Assembly	1
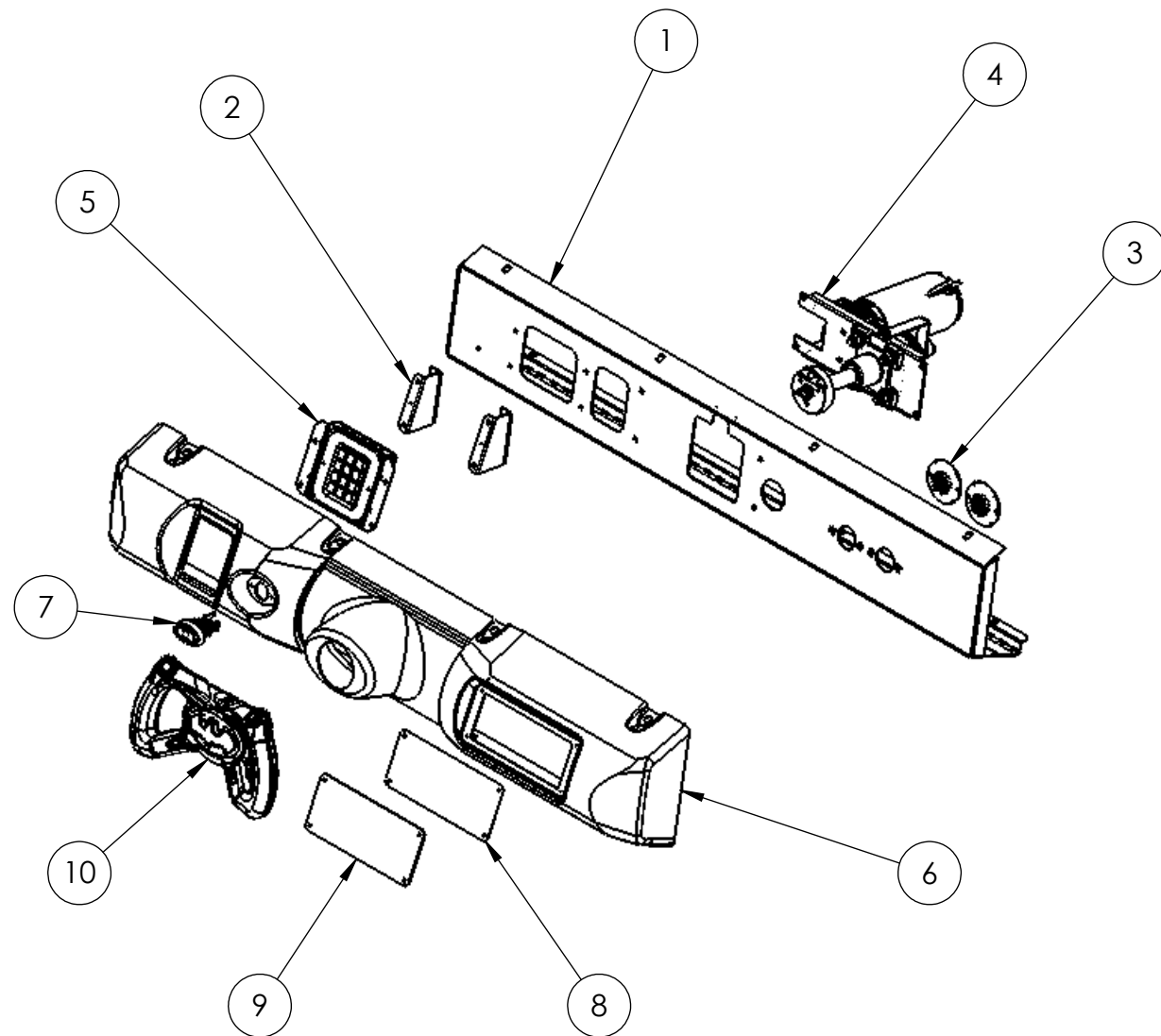
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	600-00948-01	Batman - Keypad Mounting Bracket	1
2	500-00074-01	RGB LED Weatherproof Strip Tape - 45 CM	1
3	2-1-14-00-00-000	Keypad (pay phone style)	1
4	603-00557-01	Keypad Glow	1

Batman - Dash Keypad Assembly

SEE DRAWING SUPPLIED BY SUZO-HAPP ON NEXT PAGE

Batman - Dash Assembly
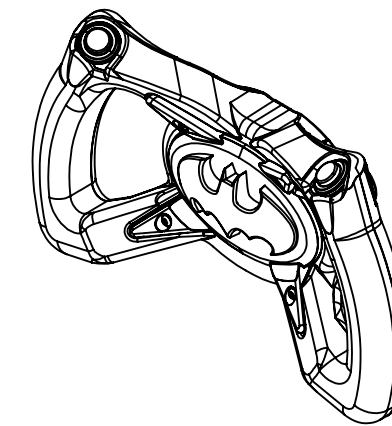
Batman - Steering Wheel Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	600-00073-01	42" LCD Display Glass (Tempered)	1
2	809-00004-01	42" HD Monitor	1
3	Foam Tape	Black: 1/4"W x 1/8" T x 2"L	2
4	608-00156-01	Batman - 42" Monitor Frame Weldment	1
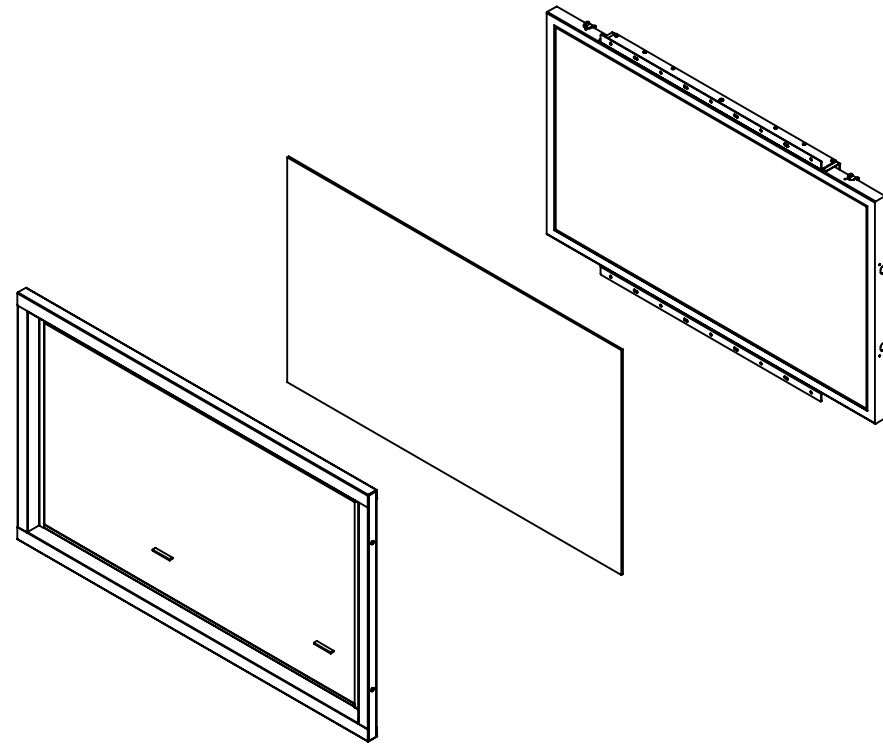
Batman - 42" Monitor Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	600-01018-01	Batman - Hood Light Mount Bracket	1
2	500-00035-01	White LED Spotlight PCB	2
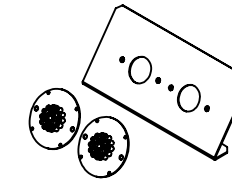
Batman - Hood Light Mount Bracket

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	603-00612-01	Batman - Hood Plastic	1
2	606-00807-01	Batman - Hood Translite	1
3	600-01193-01	Batman - Hood PETG	1
4	606-00839-01	Batman - Dash Vent Decal Left	1
5	606-00840-01	Batman - Dash Vent Decal Right	1
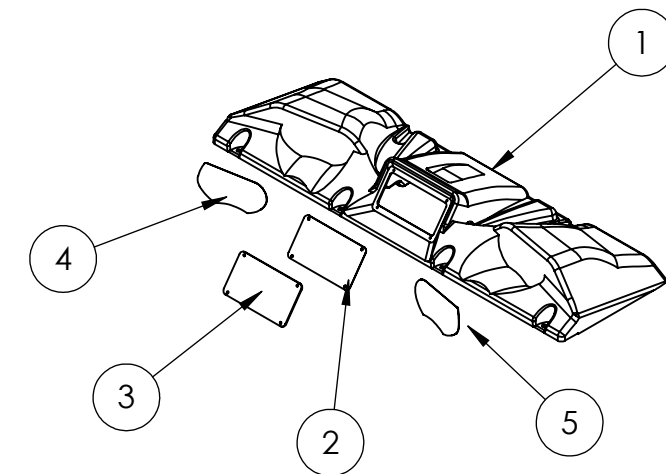
Batman - Hood Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	601-00609-01	Batman - Pedestal Cabinet	1
2	600-01039-01	Batmobile Ped Diamond Plate	1
3	500-00131-01 (50 CM)	RGB LED Strip - 50 CM	3
4	603-00671-01	Under Pedestal LED Strip Cover	3
5	Batman_Rear_Ped_Sub_Assy	Batman - Rear Pedestal Sub-Assembly	1
6	Batman_Seat_Assy	Batman - Seat Assembly	1
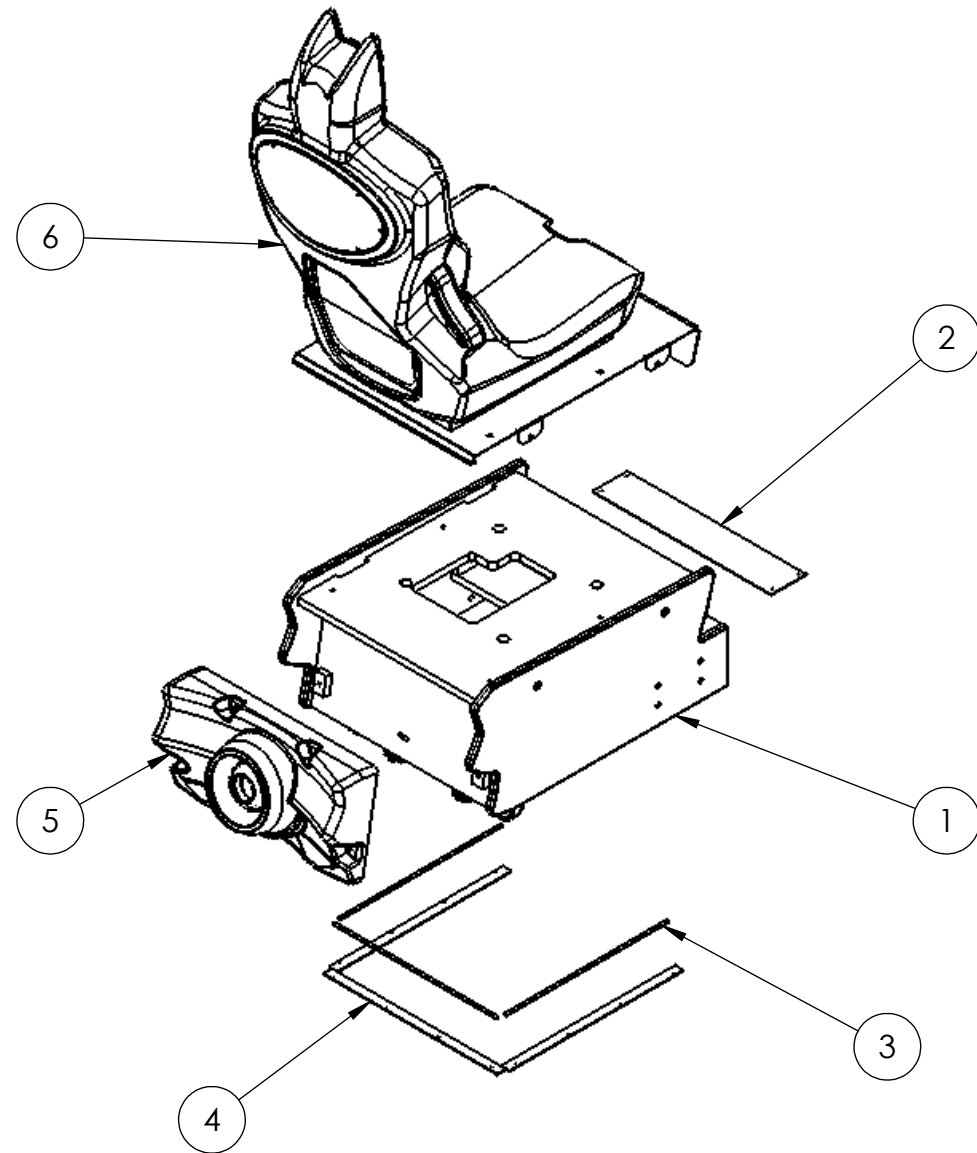
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Batman_Exhaust_Assy	Batman - Exhaust Assembly	1
2	603-00613-01	Batman - Rear Pedestal Plastic	1
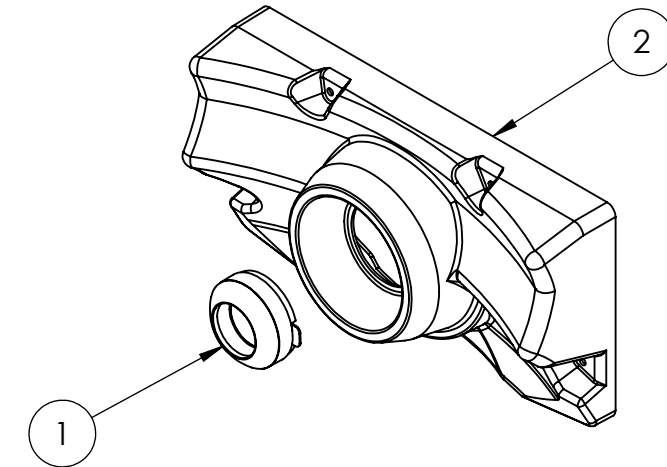
Batman - Rear Pedestal Sub-Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	603-00554-01	SX - Tail Cap	1
2	500-00126-01	27 CM RYO LED "Great Wall" Rope	1
3	600-00700-01	SX - Tail Cap Retainer Bracket	1
4	606-00743-01	SX - Tail Cap Decal	1

Batman - Pedestal Assembly
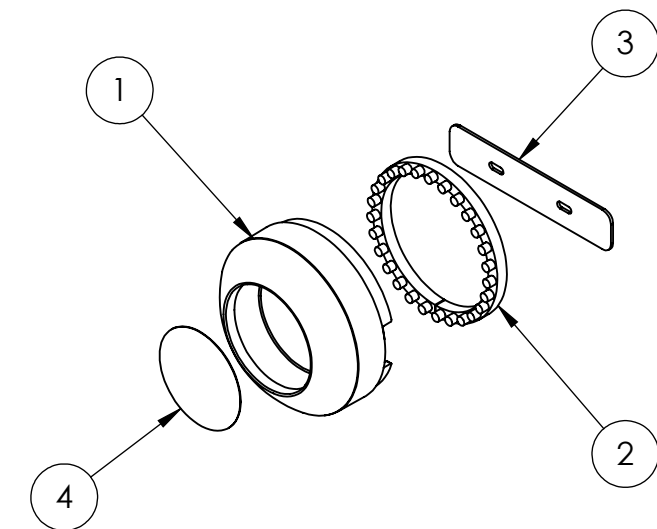
Batman - Exhaust Assembly

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	50-8593-180	STEERING MECH ASSEMBLY W/ POT, BATMAN GAME RAW THRILLS
2	1	50-1035-BAT	DUAL GRIP HOOP, SOFT W/2 BTNS, BTN COVERS, HAR "BATWHEEL"
3	1	96-1431-00	CENTER CAP, DUAL GRIP HOOP CHROME W/BLACK INLAY (BATMAN)
4	1	50-2525-40	SPLIT HUB FOR 5/8" SHAFT & 1/4-20 TAP HOLES & SLOT
5	3	43-0328-00	SCREW, 1/4-20 X .75" SOCKET HD CAP B.O.
6	4	43-0095-00	SCREW 6-32 x3/8 BHMS T-10 TORX

96-1430-00
CLIP

50-0134-00
BUTTON LOW PRO

96-1427-LEFT
BUTTON COVER,
DUAL GRIP SOFT HOOP,
LEFT SID

96-1429-00
DUAL GRIP HOOP

43-0095-00
SCREW 6-32 x3/8 BHMS T-10 TORX

96-1427-RIGHT
BUTTON COVER,
DUAL GRIP SOFT HOOP,
RIGHT SIDE

NOTE:
ITEM NOT SHOWN:
96-1435-00 - BUTTON HARNESS - QTY 2, ITEM PART OF SUS-ASSY 50-1035-BAT (ITEM 2)

BATMAN

SYSTEM DIAGRAM (1/2)

CABINET COOLING FAN

FAN 12V
BLK
ORG

DESKTOP P.C.

VIDEO OUT
DVI
USB-A
USB-A
USB-A
USB-A
AUDIO OUT
SERIAL PORT
DB25
TO STEER MTR DRIVE BRD

SECURE KEY

R I/O

PC WATCHDOG RELAY
MAGNECRAFT
PN 6210AXXSZS-DC3

POWER SUPPLY
INLET 120V/240V
HAPP P/N: 80-0074-00
BETSON P/N: UP-200PST-CE

PC AC POWER
~ ACV(L)
~ ACV(N)
FG
POWER SUPPLY

** 4 OHM/50W RESISTOR
** 5V LOAD

P6
1 STEER
2 GAS
3
4
5 AD GND
6 AD 5V

P8
23 MARQUEE BAT LOGO
22 MAP SCRN TOP
21 WEAPON SCRN
20 WEAPON/FIRE LED
19 START1 LMP
18
17
16 12V_PWM
15 12V_PWM
14
13
12
11 GND
10 START
9
8
7
6
5 BRAKE
4
3 WEAPON/FIRE BTN
2 5V
1

P11 USB-B

P2
20 PC PWR ON
19 5V STBY SW

P1
1 12V AUDIO IN
...
GND
GND AUDIO
GND DIG
12V IN
5V IN
5V STBY
GND DIG
GND PC
12V FUSED
5V FUSED
GND
12V FUSED
5V FUSED

P4
AUDIO IN
COIN 1
COIN 2
TEST
DBV
SERVICE
VOL +
VOL -

P5
ROW 4
ROW 3
ROW 1
COL 0
COL 1
COL 2

P9
1 L SPKR(+)
L SPKR(-)
R SPKR(+)
R SPKR(-)
WOOFER(+)
WOOFER(-)

P7
24 MARQUEE LED
12V PWM
12V PWM
12V PWM
MARQUEE LED
KEYPAD/SEAT/DASH YEL-LED
KEYPAD/SEAT/DASH GRN-LED
KEYPAD/SEAT/DASH BLU-LED
KEYPAD/SEAT/DASH RED-LED
SPKR/WOOFER/INF YEL-LED
SPKR/WOOFER/INF BLU-LED
SPKR/WOOFER/INF GRN-LED
SPKR/WOOFER/INF ORG-LED
SPKR/WOOFER/INF RED-LED

PARALLEL PORT
FROM PC
TO MARQUEE SEAT ASSEMBLY

STEER MTR DRIVE BD
+18V
0V
18VAC MAX
BLU BLK 18AWG
BLU 18AWG

MOTOR OUT
MOTOR GND
1 RED WHT 18AWG
2 BLK WHT 18 AWG

RIGHT
LEFT
+5vdc

FIRE LAMP
START LAMP

GND
FIRE
START
+12V PWM

KEYPAD
BETSON
RED LED
GREEN LED
BLUE LED
RGB LED:
KEYPAD
SEAT EDGE GLO
UNDER SEAT/DASH

COIN DOOR
FIELD GND
METER
COIN MTR
TEST
VOL +
VOL -
SERVICE
5V

DBV
COIN DOOR

COIN 1
COIN 2
GND
DBV
12V

BRAKE SWITCH

HALL EFFECT PCB
**USE AUX 5V AND GND. DONT
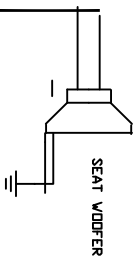CONNECT TO A/D POWER

STEERING
5V
GAS
GND
5V**

PEDESTAL
INTERFACE

SEAT WOOFER

YEL BLK
YEL GRN
YEL BLU
ORG YEL

LED RED
LED ORG
LED YEL
+12V PWM

WOOFER LIGHT

YEL BLK
YEL GRN
YEL BLU
ORG YEL

LED RED
LED ORG
LED YEL
+12V PWM

INFINITY LIGHT

YEL VIO
YEL GRY
YEL WHT
ORG YEL

LED RED
LED GRN
LED BLU
+12V PWM

SEAT EDGE GLOW

YEL VIO
YEL GRY
YEL WHT
ORG YEL

LED RED
LED GRN
LED BLU
+12V PWM

UNDER SEAT

PNK BLK
PNK BRN
ORG YEL

MARQUEE 'X' LOGO
MARQUEE 'O' LOGO
+12V PWM

MARQUEE

BATMAN

SYSTEM DIAGRAM (2/2)

NOTES:

Uses Telemetry. Copyright (C) 2009-2013 by RAD Game Tools, Inc.
Uses Bink Video. Copyright (C) 1997-2011 by RAD Game Tools, Inc." must appear somewhere in the credit screen of the Product.
Uses Iggy. Copyright (C) 2009-2011 by RAD Game Tools, Inc.
Portions of this software Copyright © 2013 Jenkins Software, LLC. All rights reserved. Used under license.
MPEG Layer-3 playback supplied with the Iggy SDK from RAD Game Tools, Inc. MPEG Layer-3 audio compression technology licensed by Fraunhofer IIS and THOMSON multimedia.
Uses the FMOD Ex Sound System. Copyright © by Firelight Technologies.
NVIDIA® and PhysX™ are trademarks of NVIDIA Corporation and are used under license
Uses Umbra Performance Optimization. (C)<2011> by Umbra Software Ltd.