



InJoy Motion Corp.

TOP GUNNER Service Manual

InJoy – TOP GUNNER

OPERATOR Service Manual

1.	INTRODUCTION	1
2.	SPECIFICATIONS	2
	2.1 <i>INJOY–TOP GUNNER SPECIFICATION</i>	2
3.	INSTALLATION	3
	3.1 SERVICE KIT	3
	3.2 INSTALLATION INSTRUCTIONS	3
	3.2.1 PRE-INSTALL PREREQUISITES/CAUTIONS	3
	3.2.3 INSTALL STEP	6
	3.2.4 INSTALL HEAD LAMP	8
	3.2.5 SET COIN ACCEPTOR	9
	3.2.7 INSTALL DEBIT CARD.....	11
	3.2.7 POWER INPUT	12
4.	GAME SETTING AND INTRODUCTION	13
	4.1 GAME SETTING (OPERATOR MENU)	13
	4.1.1 COIN OPTIONS	14
	4.1.2 GAME OPTIONS	15
	4.1.3 PEDAL SETTING	16
	4.1.4 LANGUAGE SETTING.....	18
	4.1.5 SYSTEM TIME SETTING	19
	4.1.6 VOLUME SETTING	19
	4.1.7 DEVICE TEST.....	20
	4.1.8 SOFTWARE UPGRADE.....	20
	4.1.9 STATISTIC	24
	4.1.10 SAVE & EXIT	25
	4.2 GAME INTRODUCTION	26
	4.2.1 GAME CONTROL	26
5.	MAINTENANCE	27
	5.1 ELECTRONIC COMPONENTS	27
6.	TROUBLE SHOOTING	31



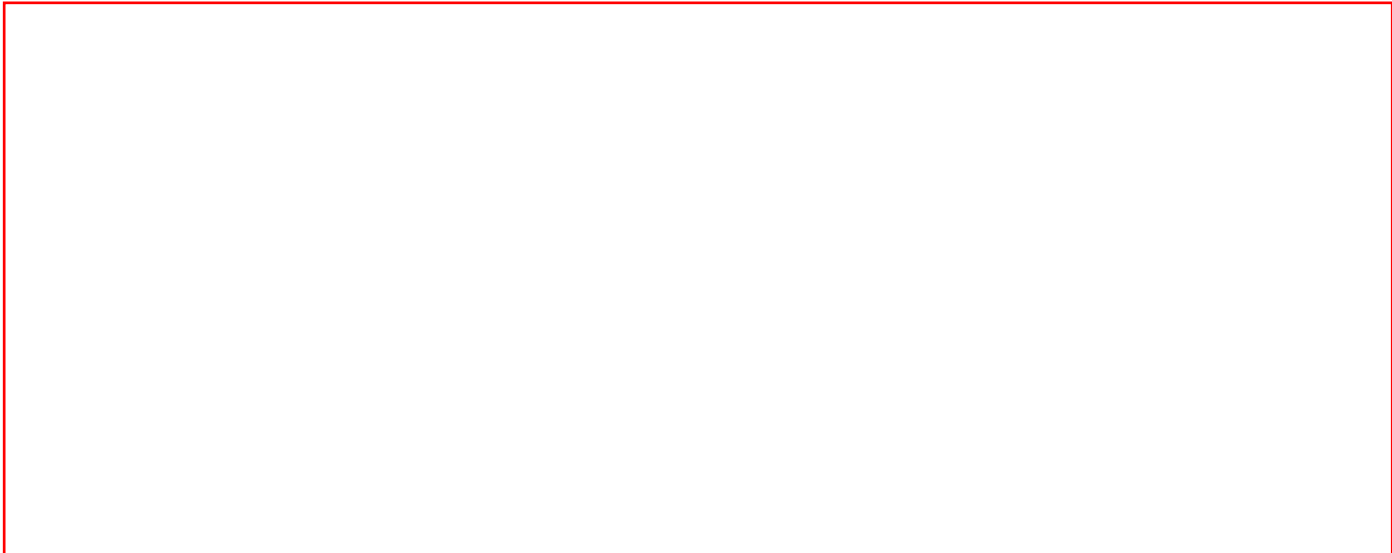
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TOP GUNNER Service Manual

1. INTRODUCTION

Thank you for purchasing the ***Injoy TOP GUNNER*** that is developed by ***Injoy*** and well distributed in many markets and territories. This manual will guide you through the set-up and operation of ***Injoy TOP GUNNER***, an ultimate shooting game system for arcade environments. This unit is different from any other machines of its kind you have ever owned. A fully interactive coin- and swipe card-operated shooting game, ***Injoy TOP GUNNER*** creates a virtual reality environment and provides a truly unique game experience for players. Equipped with two recoiling guns (featured with force feedback), this system enables realistic simulation needed for any software program. Players will experience realism to an extent that they can “feel” all the exciting actions in a synchronized way as they indulge in the game.

IMON/Injoy is devoted to offer you the most advanced cost-economical and rewarding motion arcade system available. You are welcome to contact us for any questions you may have or for any service we can be of.





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TOP GUNNER Service Manual

2. SPECIFICATIONS

The dimensions given below are *InJoy TOP GUNNER's* installed footprint.

Minimum Installed Footprint	US & GB: 86.61" x 78.74"
	Metric: 2.2 m x 2.0m

2.1 INJOY TOP GUNNER SPECIFICATIONS

<i>InJoy TOP GUNNER</i> shooting game system		
No	Item	Specification
1	Installed Dimensions / Weight (L x W x H)	<ul style="list-style-type: none"> ● 86.61" x 78.74" x 90.55" / 992.1 lbs ● 220.00 x 200.00 x 230 cm / 475 kgs
2	Shipping Dimensions (L x W x H) Wooden Case Packaging	<ul style="list-style-type: none"> ● 75.20" x 87.00" x 94.09" / 1653.5 lbs ● 191.00 x 221.00 x 239.00 cm / 750 kgs
3	Control inputs/feedback	<ul style="list-style-type: none"> ● Two Recoil Machine Guns ● One Start Button ● One Fire Button and Two Weapon Buttons for each Recoil Machine Gun
4	Power Requirements - Plugs located at the bottom of the motion base behind the monitor	<ul style="list-style-type: none"> ● Power requirements in USA: 110 VAC, 20 Amps, 50/60 Hz (Transformer needed) ● Power requirements in EURO: 220 VAC, 10 Amps, 50/60 Hz
5	Max Watt Consumed Rated Watt Consumed	<ul style="list-style-type: none"> ● 1400 W ● 1285 W
6	Audio	<ul style="list-style-type: none"> ● 2 Speakers ● 1 Sub-Woofer ● 2 Super Sub-Woofers under Base
7	Monitor	<ul style="list-style-type: none"> ● 52" LCD Monitor ● 15-pin DB Connection
8	Computer System	<ul style="list-style-type: none"> ● Windows Embedded Operating System ● High Resolution Graphics Accelerator Card.



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TOP GUNNER Service Manual

3. INSTALLATION

3.1 SERVICE KIT

The following items should be included with the shipment of your *InJoy TOP GUNNER*:

Service Kit	
<i>Description</i>	Qty
<i>InJoy TOP GUNNER</i> Service Manual	1
Maintenance Box Key	1
Coin Box Key	1

3.2 INSTALLATION INSTRUCTIONS

3.2.1 PRE-INSTALL PREREQUISITES/CAUTIONS

InJoy TOP GUNNER is designed for indoor use only. To ensure trouble-free and safe operation, the following conditions are recommended:

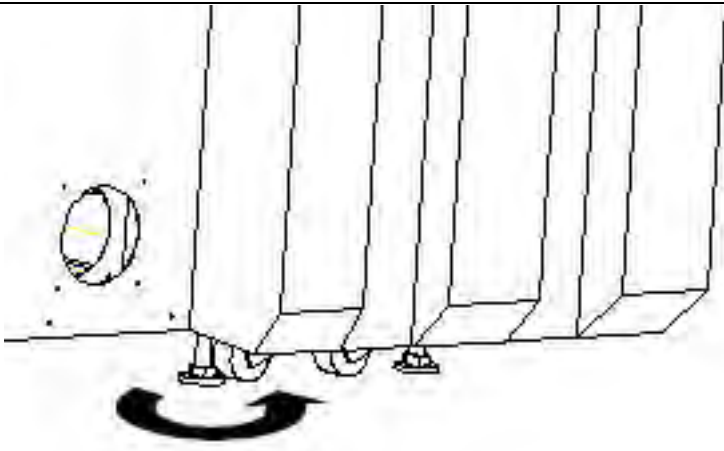
- 1. TOP GUNNER** must be located out of direct exposure to sunlight, high humidity, dust, salt mist, high heat, or extreme cold. If it is installed in an extremely hot location, allow additional clearance between ventilation slots in the game and any structure or object that would tend to restrict air circulation.
- Before placing *TOP GUNNER* on the ground, make sure the floor space is flat, and before operating the game, make sure the brackets are tightly installed. If you have questions regarding any installation requirements, contact our tech support (+886-2-2267-6317 Ext. 283 or E-mail: support@imon.com.tw) at *InJoy* before proceeding.



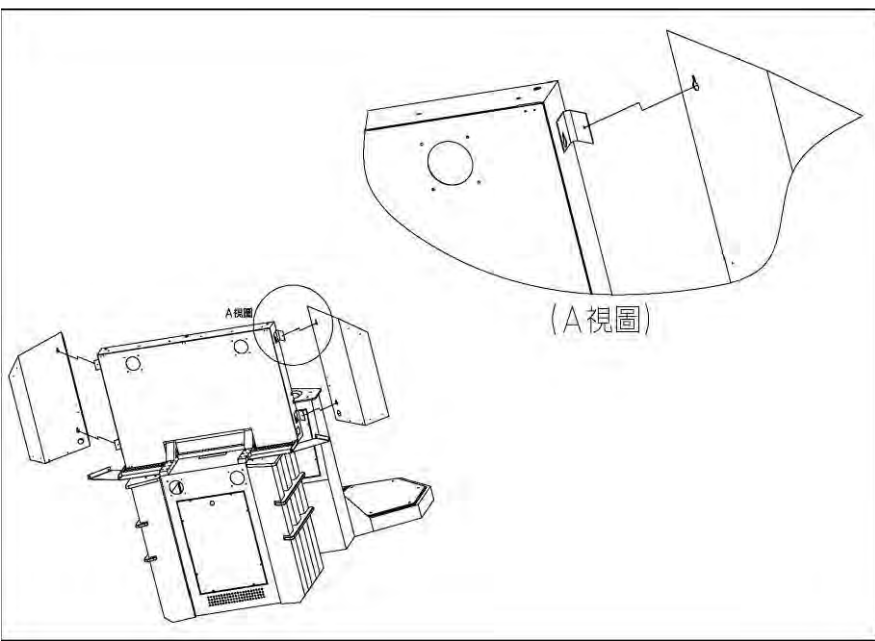
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3.2.2 ADJUST STANDS

Step	Description & Diagram
1	<p>Adjust unit stands by Hex wrench to make sure TOP GUNNER is placed flat on the ground.</p> 

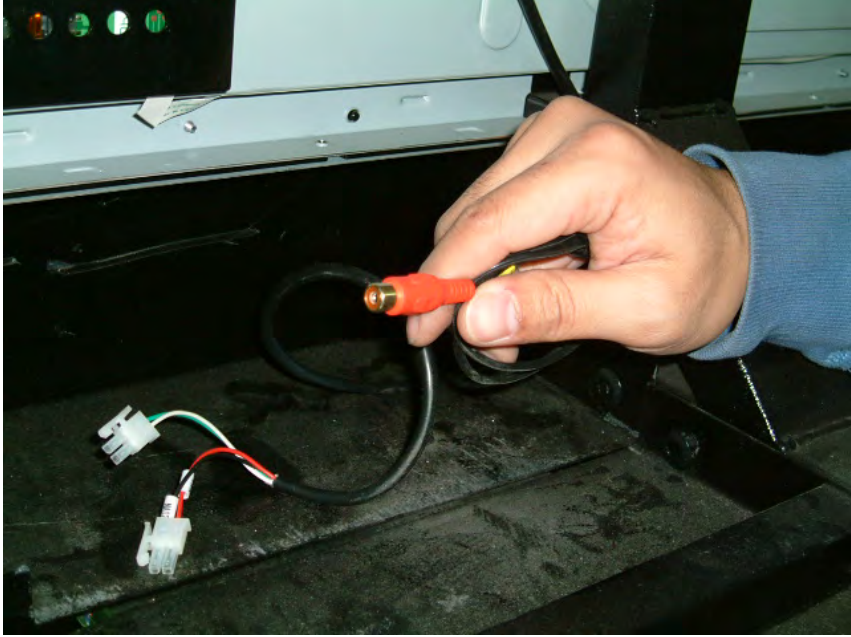

3.2.2 INSTALL SIDE SPEAKER

Step	Description & Diagram
1	<p>Screw the speaker L type mounting piece onto the monitor</p> 
2	<p>Find the speaker audio cables in the monitor base</p>



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	 A close-up photograph showing a person's hand holding a black audio cable with an orange RCA connector. The hand is positioned over the open back of a machine, where several other cables and connectors are visible on a dark surface.
3	Connect these audio cables into the speakers
	 A close-up photograph showing a person's hand connecting two white audio cables. One cable has a green wire and the other has a red wire. The background shows the interior of the machine's back panel.
4	Fix the LCD back cover.

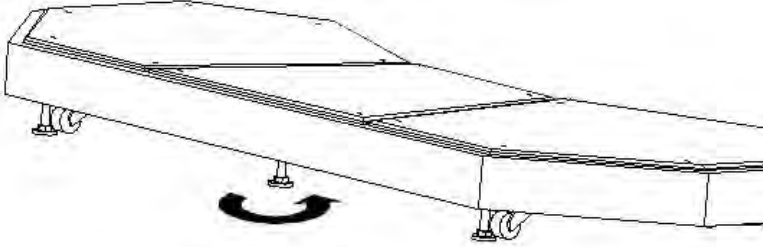




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TOP GUNNER Service Manual

3.2.3 INSTALL STEP

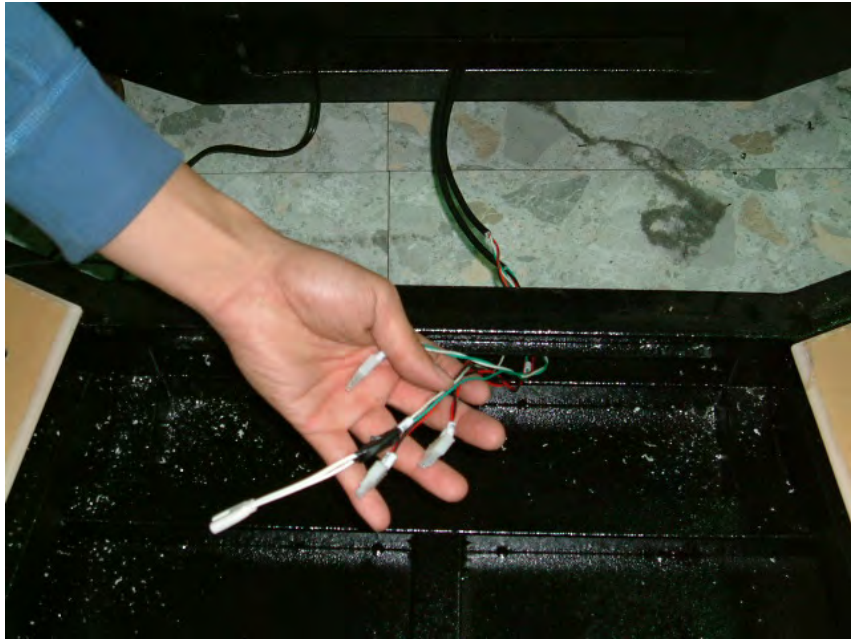
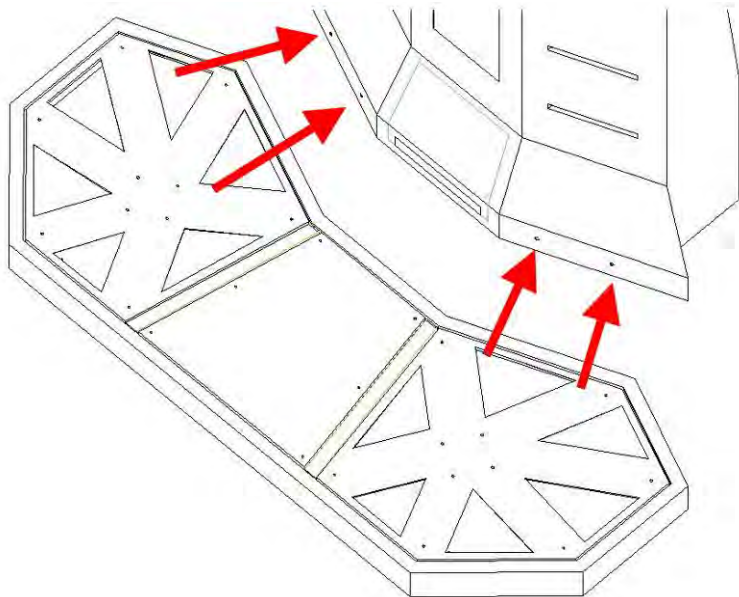
Please follow the steps below to install Side Step.

Step	Description & Diagram
1	<p>Adjust STEP stands by Hex wrench to make sure STEP is placed flat on the ground.</p> 
2	<p>Open the base plate middle cover.</p> 
3	<ul style="list-style-type: none"> ● Find the speaker connectors under the shooting base. ● Connect these connectors onto the base plate of both speakers. 



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4	<ul style="list-style-type: none">● Find the lamp power connectors under the shooting base.● Connect these connectors into the base plate of both lamps. 
5	<p>Move the Step closer to the TOP GUNNER Base. Fix the STEP with four screws.</p> 




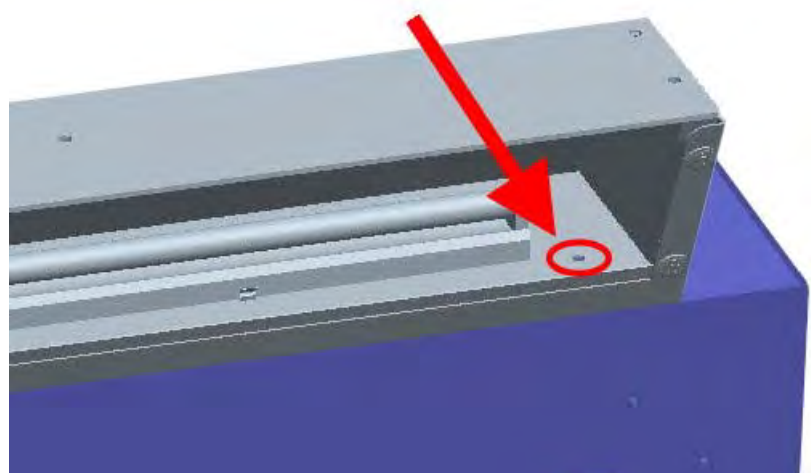
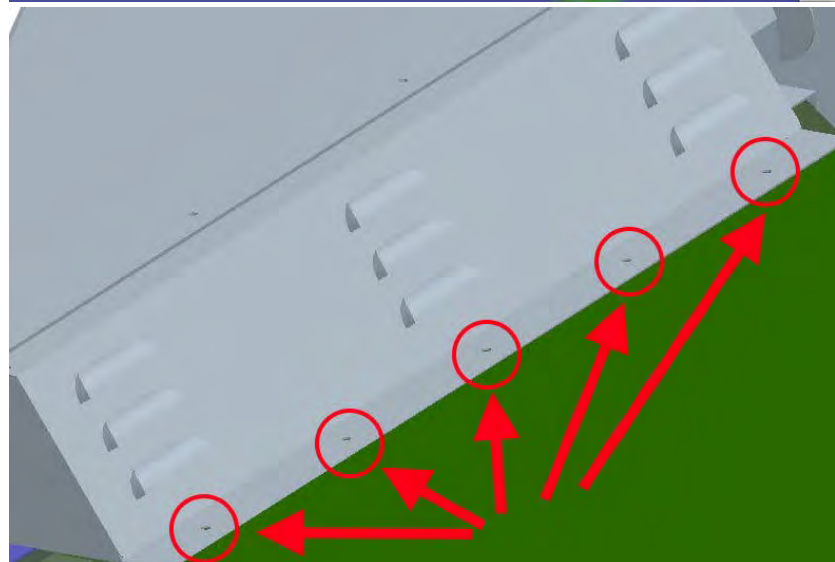
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3.2.4 INSTALL HEAD LAMP

Please install the Head Lamp by following the steps below.

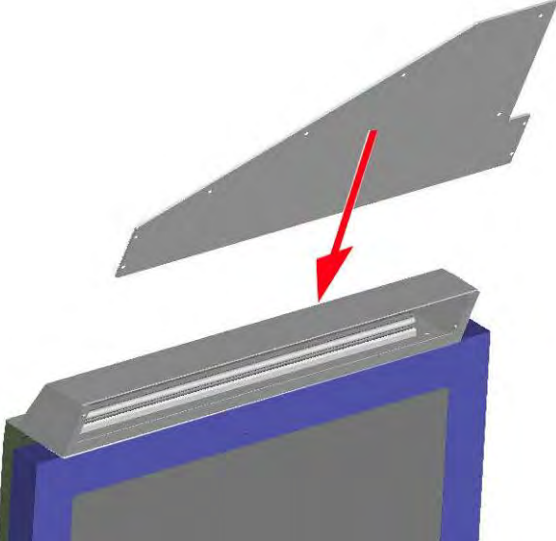
Note: When installing the Acrylic Sheet, be caution not to damage it.

Step	Description & Diagram
1	<p>Connect the power connectors of the Head Lamp as shown in Figure below.</p> 
2	<p>Put the Head Lamp on the top of the LCD screen, and then fasten it by fixing screws as shown in Figure A and Figure B</p>  <p style="text-align: right;">Figure A</p>  <p style="text-align: right;">Figure B</p>



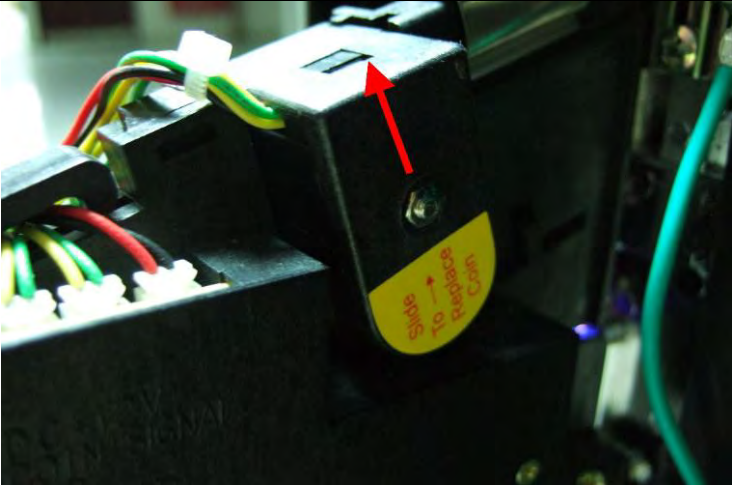
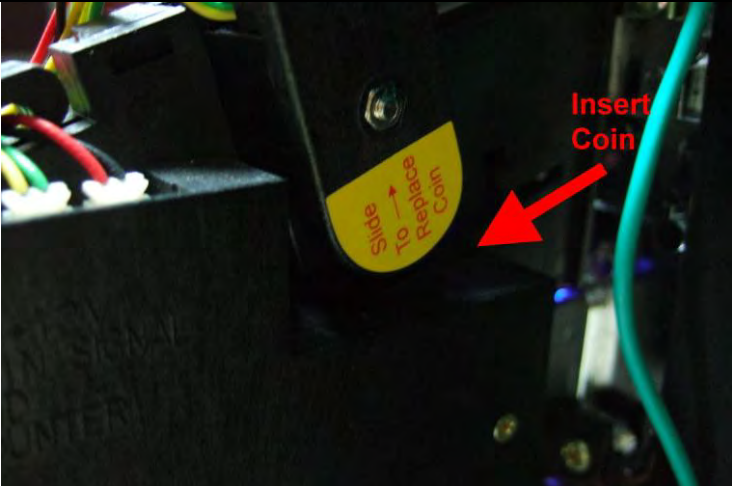
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TOP GUNNER Service Manual

3	<p>Plug in the Acrylic Sheet on the Light Box, and then fix it with four fixing screws.</p> 
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3.2.5 SET COIN ACCEPTOR


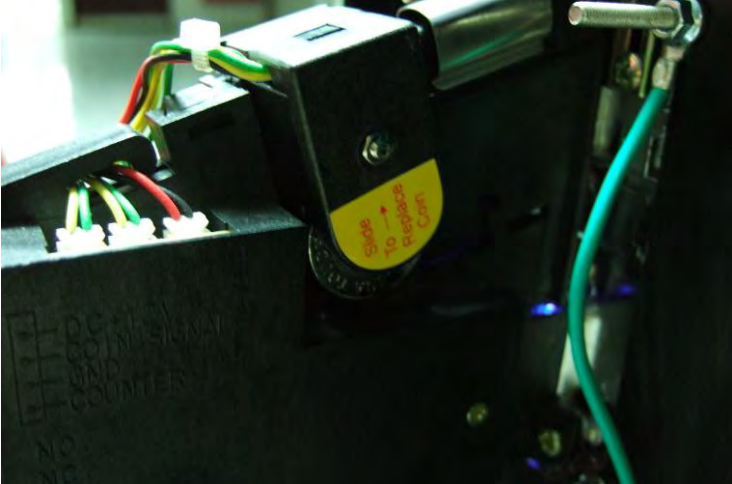
Please set up the coin acceptor by following the steps below.

Step	Description & Diagram
1	<p>Pull up the slider of the coin acceptor</p> 
2	<p>Insert the coin into the coin acceptor.</p> 



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TOP GUNNER Service Manual

3	<p>Push down the slider to fix the coin acceptor.</p> 
4	<p>The coin acceptor is installed then, and can take the coin you want.</p> 





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TOP GUNNER Service Manual

3.2.7 INSTALL DEBIT CARD

If the Top Gunner needs to install a debit card or other device, Figure 4 below illustrates the connection of the debit card reader.

Steps	Description & Diagram
1	<p data-bbox="373 405 742 439">Find the connector “Coin 1”</p> 
2	<p data-bbox="373 1171 1045 1205">Please install the signal connection as shown below.</p> 



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3.2.7 POWER INPUT

TOP GUNNER has a single power cord. The motion base requires one dedicated (25-Amp) circuit for (1 Φ 210~230VAC) power source.

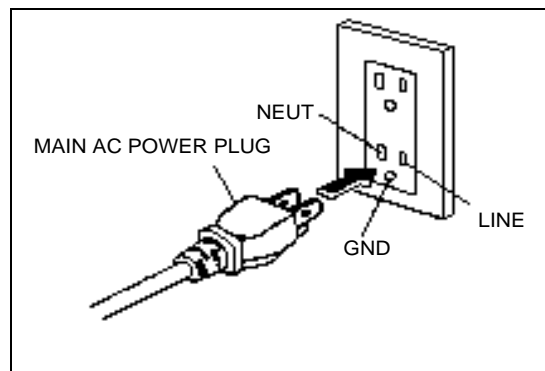
Measure the AC voltage line (LINE to GND and LINE to NEUT) and verify voltages in different countries:

America: 110~125VAC

Japan: 100VAC

Europe and West Asia: 210~240VAC

NEUT to GND voltage should be less than 1 VAC.



- Note: 1. The diameter of the AC power cord must be larger than 2.0 mm.**
- 2. No other appliance or game should share this power source on this circuit; otherwise, *TOP GUNNER* will break down.**



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TOP GUNNER Service Manual

4. GAME SETTING AND INTRODUCTION

4.1 GAME SETTING (OPERATOR MENU)

To access the OPERATOR MENU, after the Power is switched ON and the screen shows “insert coin”, find the OPERATOR SWITCH located inside the coin box door and move it to “ON” position (Figure 4-1), and continue in the OPERATOR MENU (Figure 4-2).

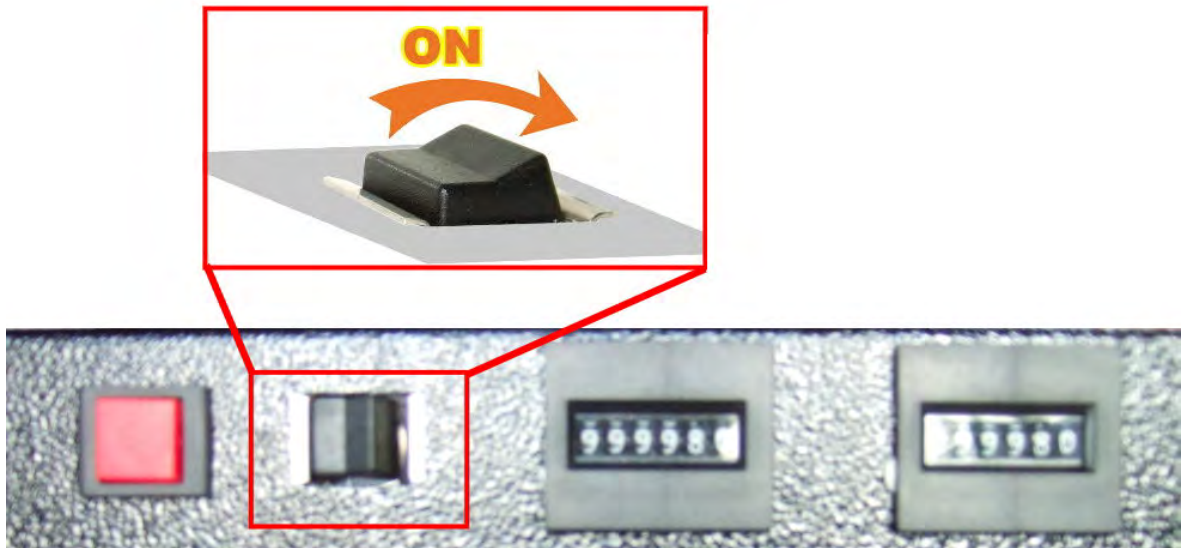


Figure 4-1 Operator Switch

From the OPERATOR MENU, you have direct access to game and operator settings. From sub-menus (listed below), you have access to general game control settings. The definitions of the Operator Menu and its sub-menu are detailed as below:



Figure 4-2 Operator Menu



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TOP GUNNER Service Manual

4.1.1 COIN OPTIONS

The “*Coin Options*” sub-menu allows you to set all coin options on your *InJoy TOP GUNNER* (Figure 4-3).

1. “*Coins per Play*” allows you to set how many coins it will take for a player to start a game. The factory default setting value is 4 coins per play.
2. “*Coins per Continue*” allows you to charge a different price for continue-play from the first game play. The factory default setting value is 4 coins per play.
3. “*Currency Type*” is not to select the currency of a country, but allows selection of the forms of currency i.e. coins or bills you wish your *InJoy- TOP GUNNER* accepts. The factory default setting is Coin (combined into one setting) and another setting is the Bill Acceptor or Debit Cards. The coin acceptor is an industrial standard product.
4. “*Coins per Pulse (Coin Acceptor 1)* (Figure 4-4)” allows you to adapt different currency acceptors that are pulse specific to your *InJoy TOP GUNNER*. The default value is 1.
5. “*Coins per Pulse (Coin Acceptor 2)* (Figure 4-4)” allows you to adapt different currency acceptors that are pulse specific to your *InJoy TOP GUNNER*. The default value is 1.

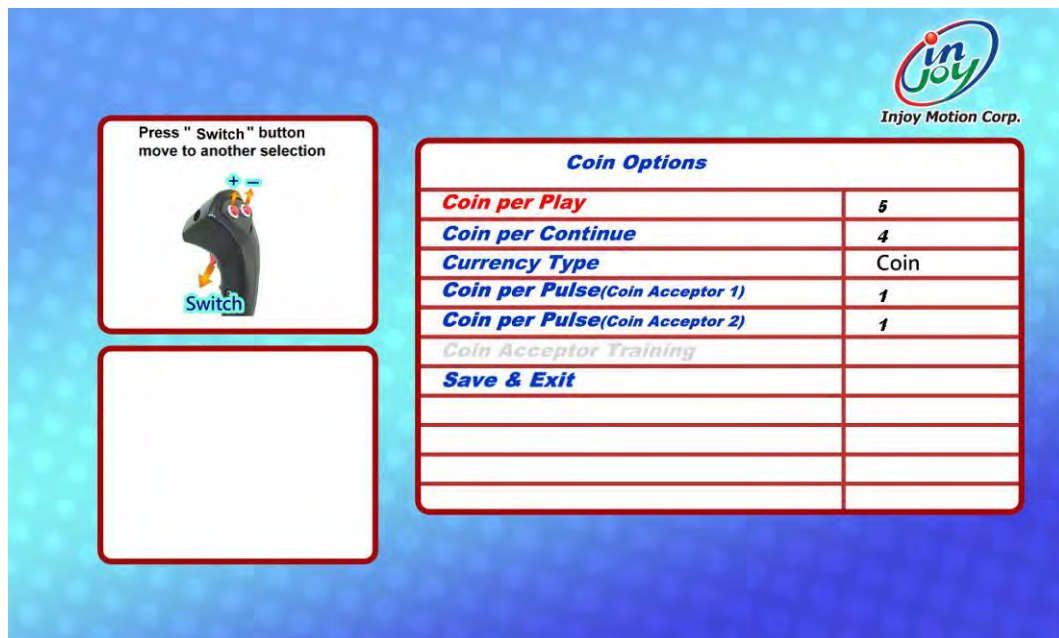


Figure 4-3 “*Coin Options*” sub-menu



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TOP GUNNER Service Manual



Figure 4-4 Coin Acceptor Number

4.1.2 GAME OPTIONS

The “*Game Options*” sub-menu offers settings that you can adjust for each individual software title installed on your *Injoy TOP GUNNER* (Figure 4-5).

1. “*Continue Timer Length*” adjusts the amount of time for the player to decide to continue playing after their game has ended. This can be adjusted by using the “+” or “-” buttons as shown in Figure 4-5.
2. “*Game Show Operation*” enables free game play by pressing the “Switch” button.
3. “*Clear High Scores*” deletes all high scores and returns to the default settings. (Figure 4-6)



Figure 4-5 “*Game Options*” sub-menu



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TOP GUNNER Service Manual

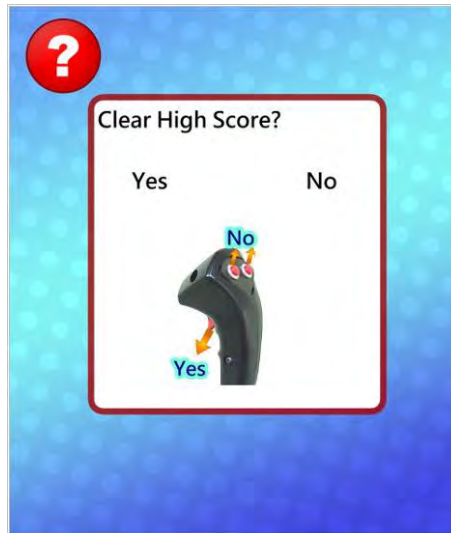


Figure 4-6 “Clear High Scores” Window

4.1.3 JOYSTICK SETTING

To calibrate the JOYSTICK, follow the directions on the screen and go through these steps (Figure 4-7 ~ Figure 4-10):

1. Hold the “Calibrate” button on the Panel to calibrate the JOYSTICK.
2. Release the JOYSTICK, then press “Next” button.
3. Press the JOYSTICK to limit and then press “Next” button.
4. After finishing the calibration, press “Exit” button to exit the Joystick setting.

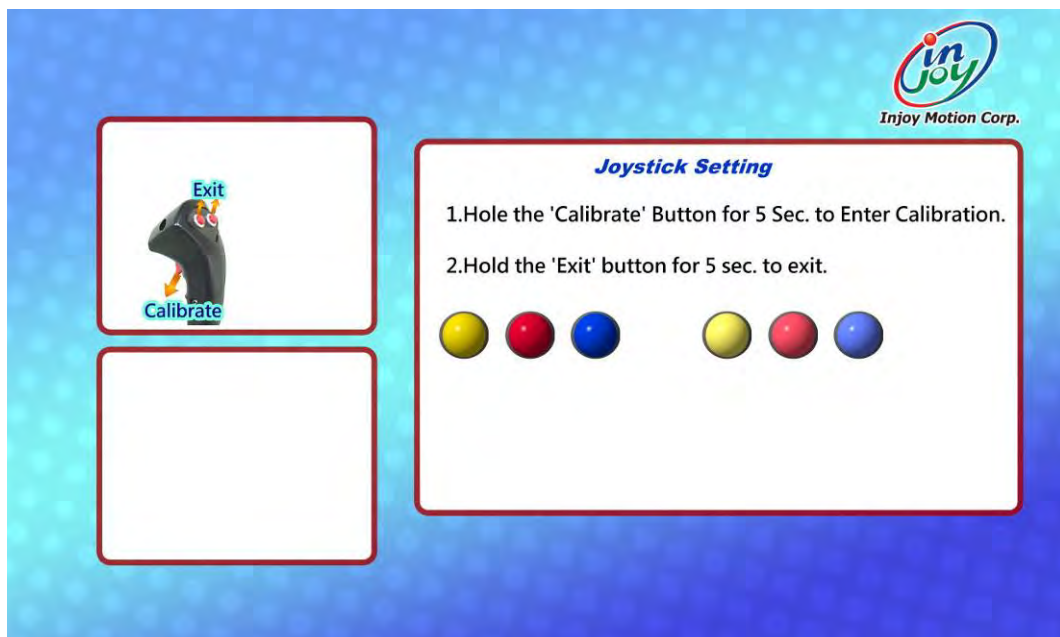


Figure 4-7 JOYSTICK Setting



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TOP GUNNER Service Manual

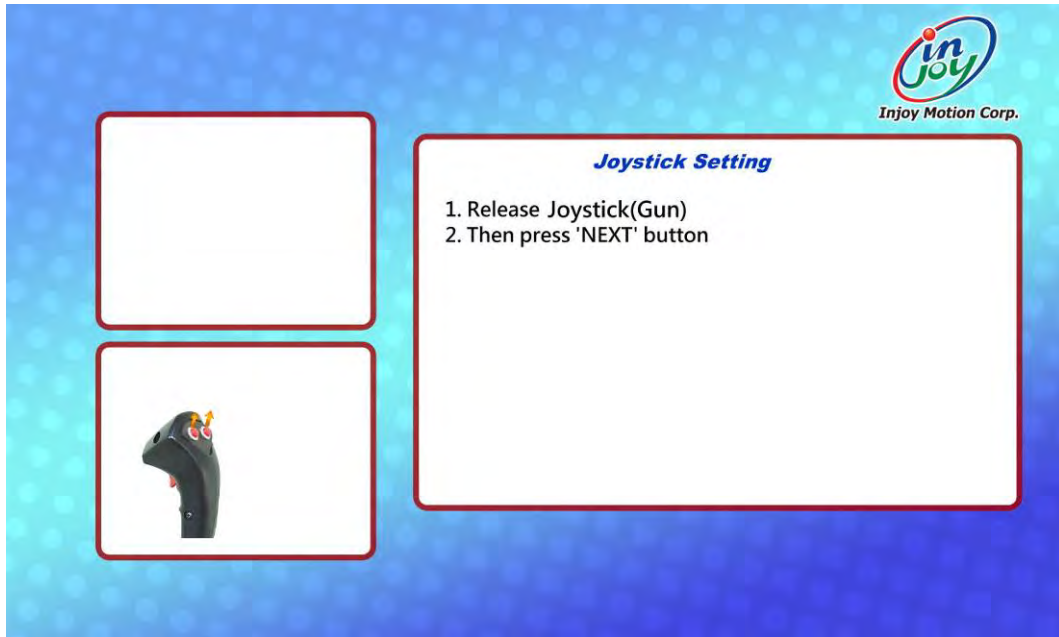


Figure 4-8 Calibrate JOYSTICK



Figure 4-9 Calibrate JOYSTICK



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TOP GUNNER Service Manual



Figure 4-10 Finish calibration

4.1.4 LANGUAGE SETTING

Language can be adjusted by using the “+” or “-” buttons (Figure 4-11) to change the game language. Currently, English and Chinese are available.

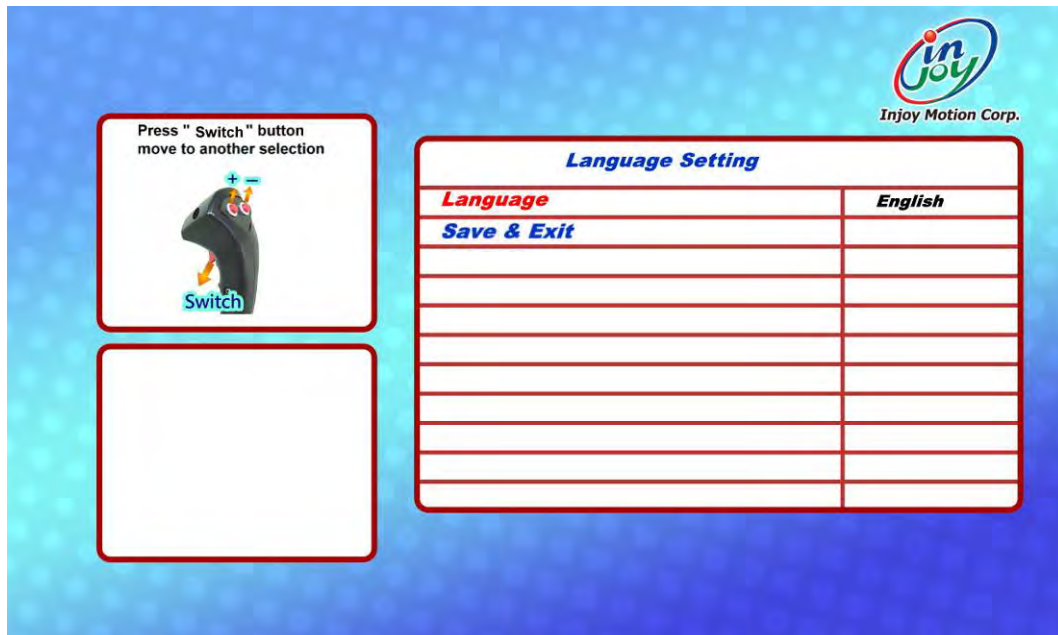


Figure 4-11 “Language Setting” sub-menu



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TOP GUNNER Service Manual

4.1.5 SYSTEM TIME SETTING

Setting the system time can be accomplished by using the “switch” button to choose ‘year’, ‘month’, ‘date’, ‘hour’, ‘minute’, and ‘second.’ The changes of the above figures can be made with “+” or “-” buttons (Figure 4-12). Time is displayed in 24 hour.

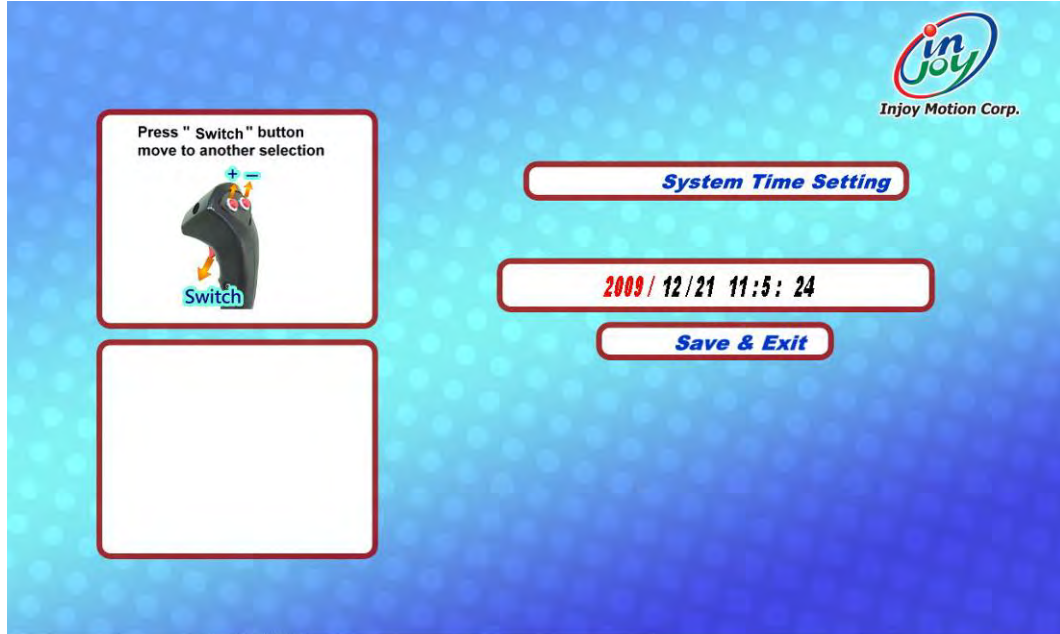


Figure 4-12 “System time Setting” sub-menu

4.1.6 VOLUME SETTING

“Volume setting” can adjust the system volume (Figure 4-13).



Figure 4-13 “Volume Setting” sub-menu



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TOP GUNNER Service Manual

4.1.7 DEVICE TEST

“Device Test” tests whether ‘Coin Acceptor’ and ‘Free Play button’ can work or not (Figure 4-14).

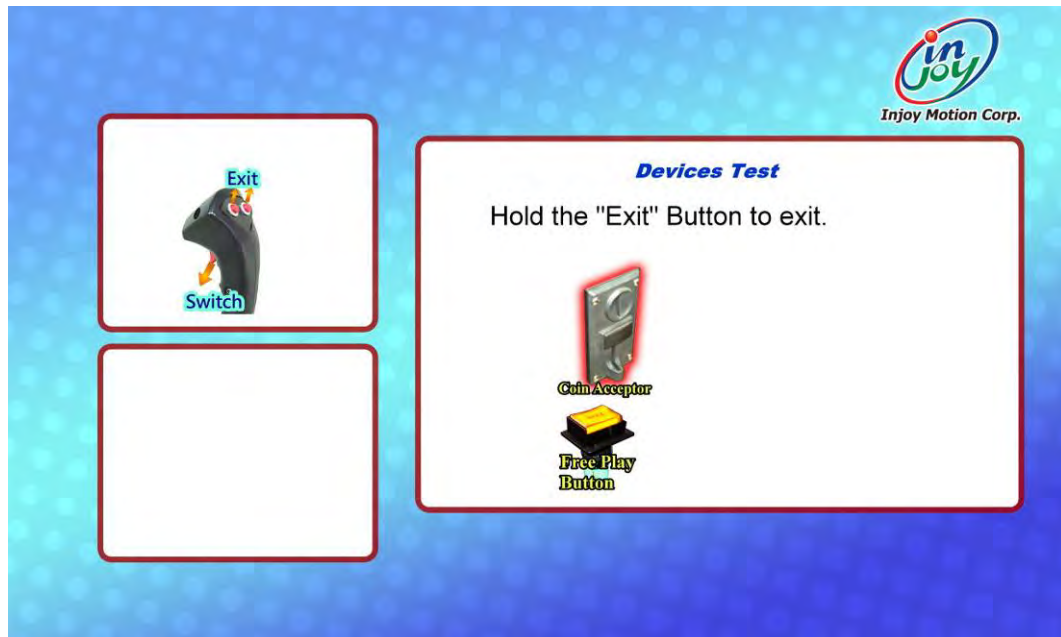


Figure 4-14 “Device Test” sub-menu

4.1.8 SOFTWARE UPGRADE

Software upgrades and new software game titles will be downloaded to your *InJoy TOP GUNNER* through the use of USB Flash Disk provided by *InJoy* or your distributor. Please follow the procedures below to upgrade software:

1. Unfasten the screws of the back cover as shown in the Figure 4-15 below, and then remove the back cover (Figure 4-16).

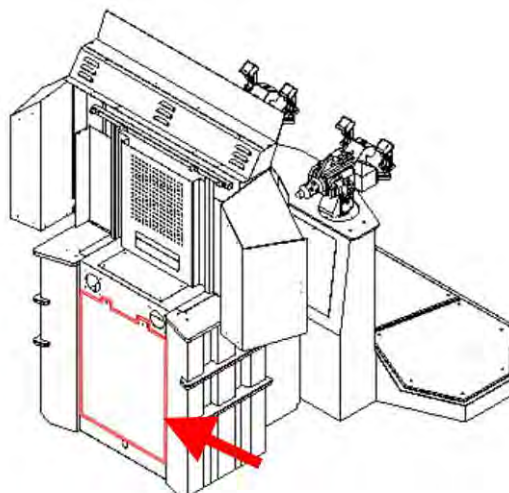


Figure 4-15 unfasten the screws



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TOP GUNNER Service Manual

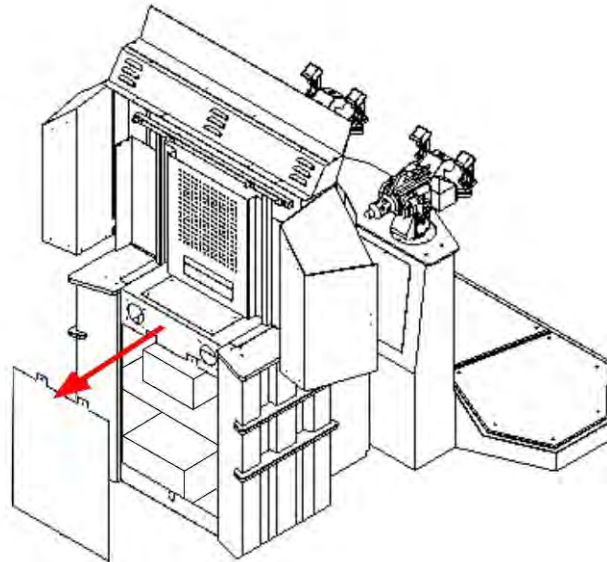


Figure 4-16 remove the back cover

2. Locate the system's PC (Industrial PC): Referring to Figure 4-17, open the front case of the chassis located at the bottom of the motion base. You can see the PC is installed at the left corner.

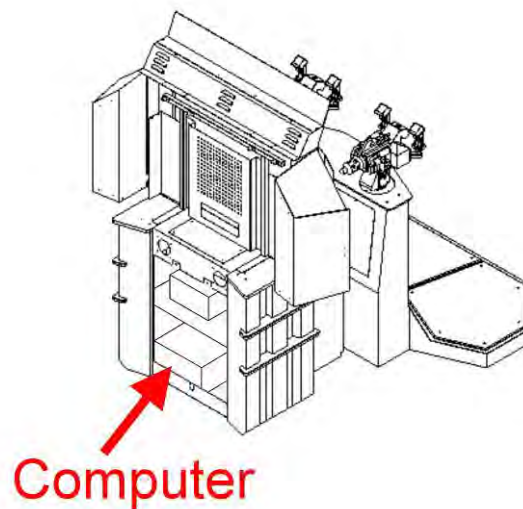


Figure 4-17 Locate the system's PC (Computer)

3. Plug in the USB Flash Disk. (Only use the USB Flash Disk provided by **InJoy** or your distributor to upgrade/download the software. The USB Flash Disk from unauthorized sources might seriously damage the system.)
4. On Operator Menu, press the “*select*” button on the panel (please refer to Figure 4-2) to select “*Software Upgrade*” sub-menu.
5. Press the “*upgrade*” button on the panel (Figure 4-18), and your software system will begin to upgrade/download the software automatically (Figure 4-19).



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TOP GUNNER Service Manual

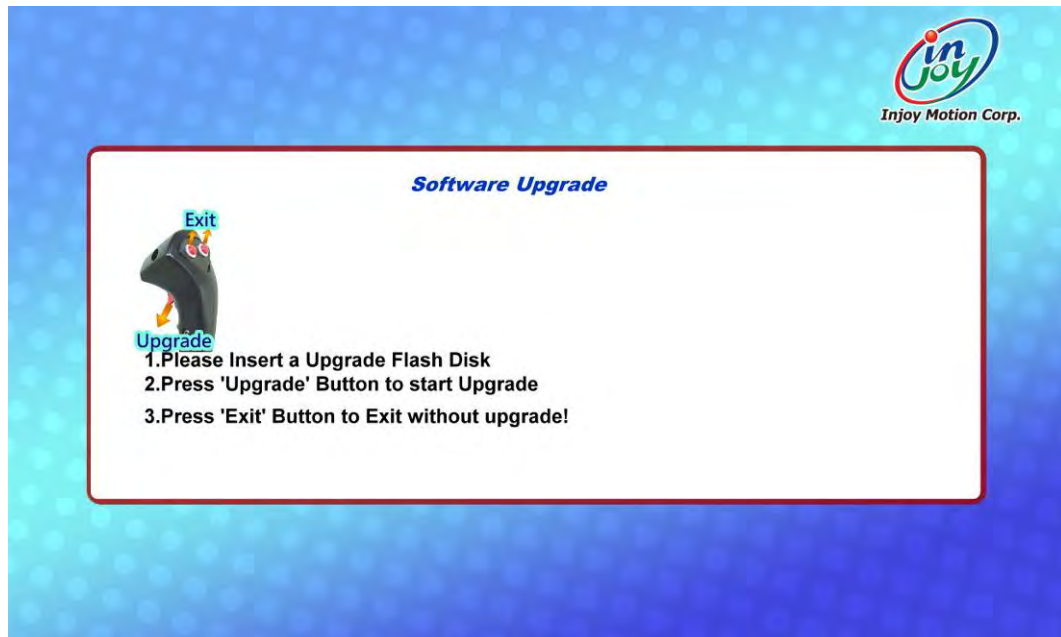


Figure 4-18 “Software Upgrade” sub-menu

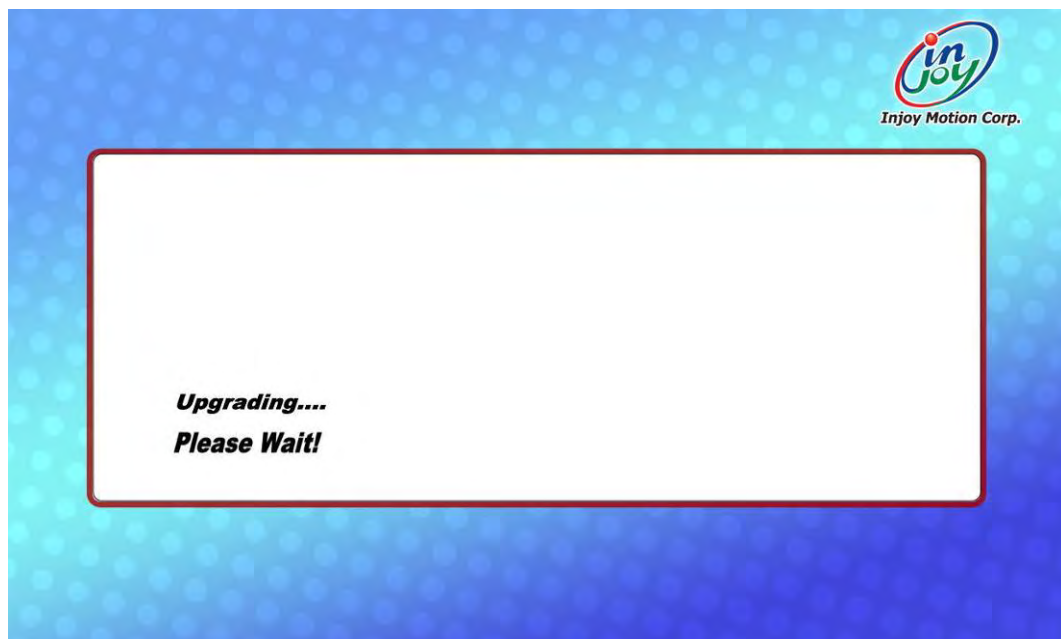


Figure 4-19 “Software Upgrading” Window

Progress will be indicated on screen and you will be notified when download is complete (Figure 4-20). (If you didn't plug the USB Flash Disk onto the PC, it will display an “*Upgrade fails*” window (Figure 4-21).



InJoy Motion Corp.

TOP GUNNER Service Manual

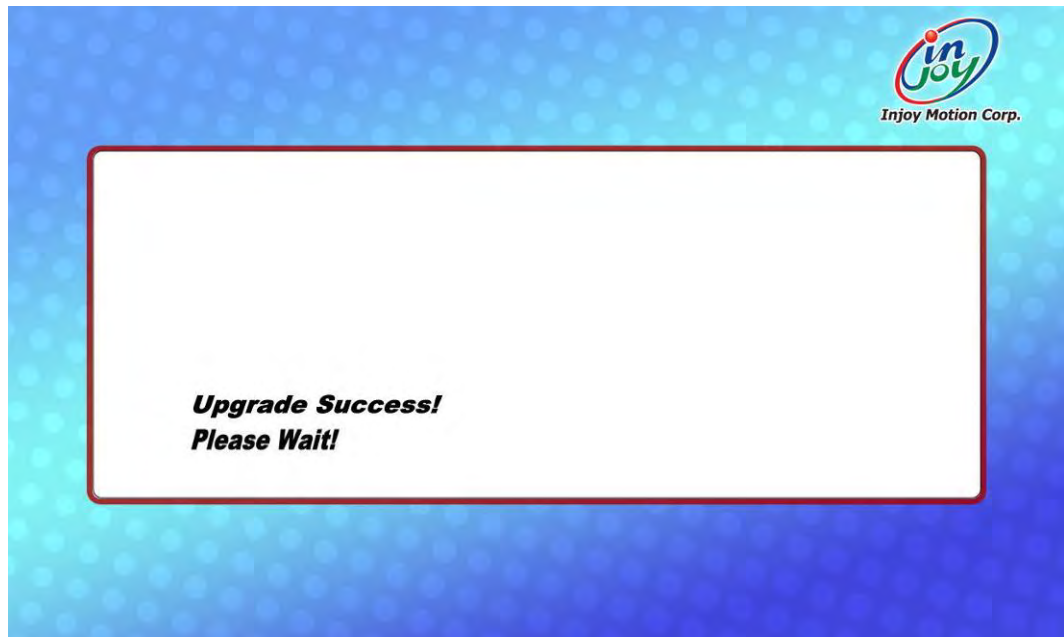


Figure 4-20 “Upgrade Success” Window

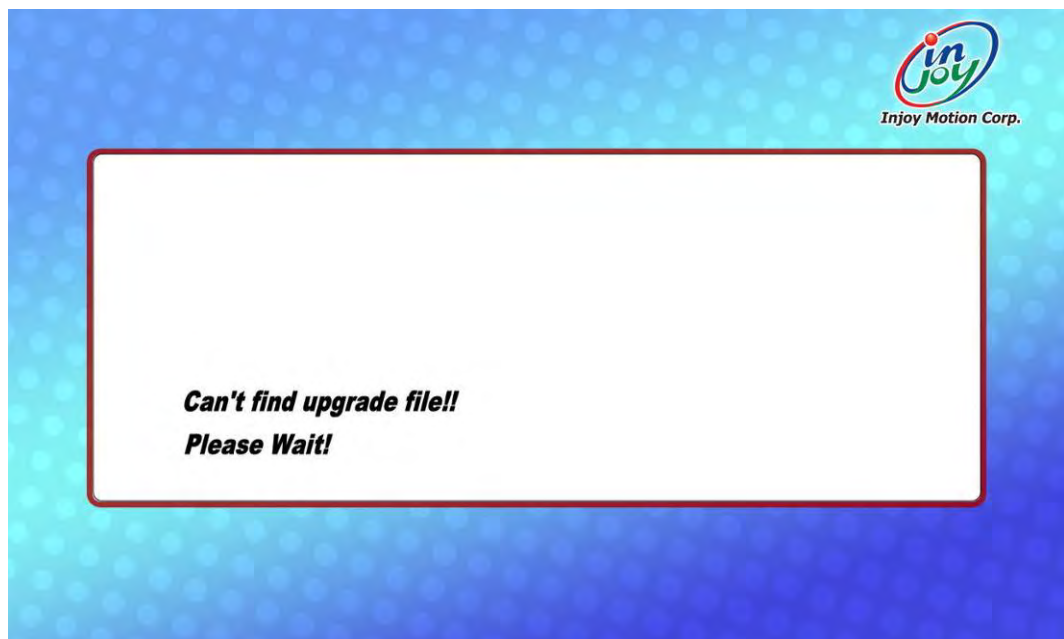


Figure 4-21 Upgrade fails

6. If you wish to cancel upgrade process, press the” Exit” button (Figure 4-18) to exit “Software Upgrade” sub-menu.

If the screen shows “Can’t find upgrade file” when you have upgraded the file, please pull out the motion card USB cable and the USB disk. Then plug in the USB disk and try software upgrade again.



InJoy Motion Corp.

TOP GUNNER Service Manual

4.1.9 STATISTIC

The information related to playing game is given (Figure 4-22) as follows:

1. “Coin Count” shows the amount of coins inserted.
2. “Free Play Count” shows the number of times the Free Play has been pressed.
3. “Total Play” shows the number of times the game has been played (Total Play = Starts + Continues).
4. “Starts” shows the number of time the game has started.
5. “Continues” shows the number of time the game has been continued.
6. “Average Time per Credit” shows the average time per one coin.
7. “Average Time per Player” shows the average time per one player.
8. “Clear Statistic” clears information in “Statistic”. (all value is zero after clearing.)



Figure 4-22 “Statistic” sub-menu



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TOP GUNNER Service Manual

4.1.10 SAVE & EXIT

After the setup is completed, the system needs to exit. Please select “Save & Exit”, and then the screen will prompt “Yes” or “NO”. If you press “YES” (Figure 4-23), the system will show “Shutdown.....!! Please turn the Operator switch to the OFF position.” (Figure 4-24)

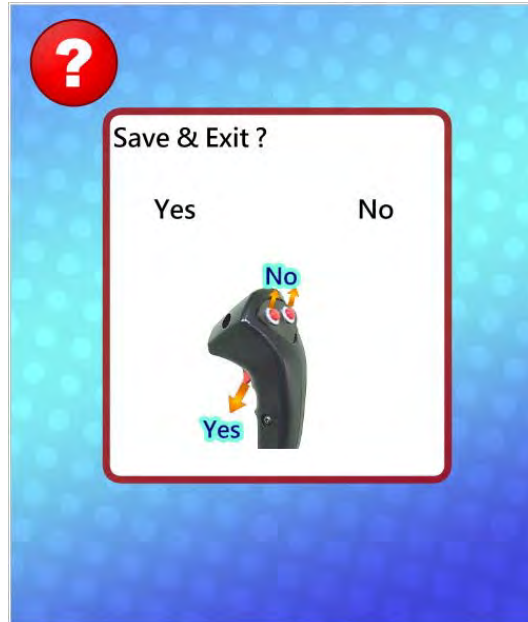


Figure 4-23 Save & Exit window

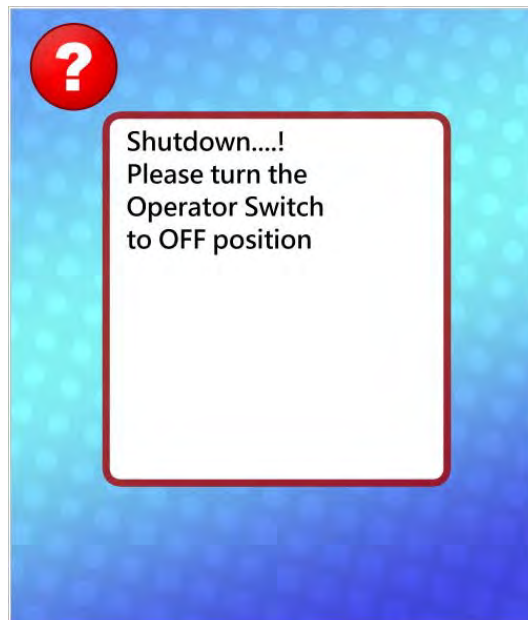


Figure 4-24 Shutdown prompt



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TOP GUNNER Service Manual

4.2 GAME INTRODUCTION

4.2.1 GAME CONTROL

The player uses the machine gun (Figure 4-25) to control the aiming point on the screen. Click the “Start” button to start the game. While playing, click the “Weapon change” button to change the weapon and click the “Fire” button to fire the selected weapon.

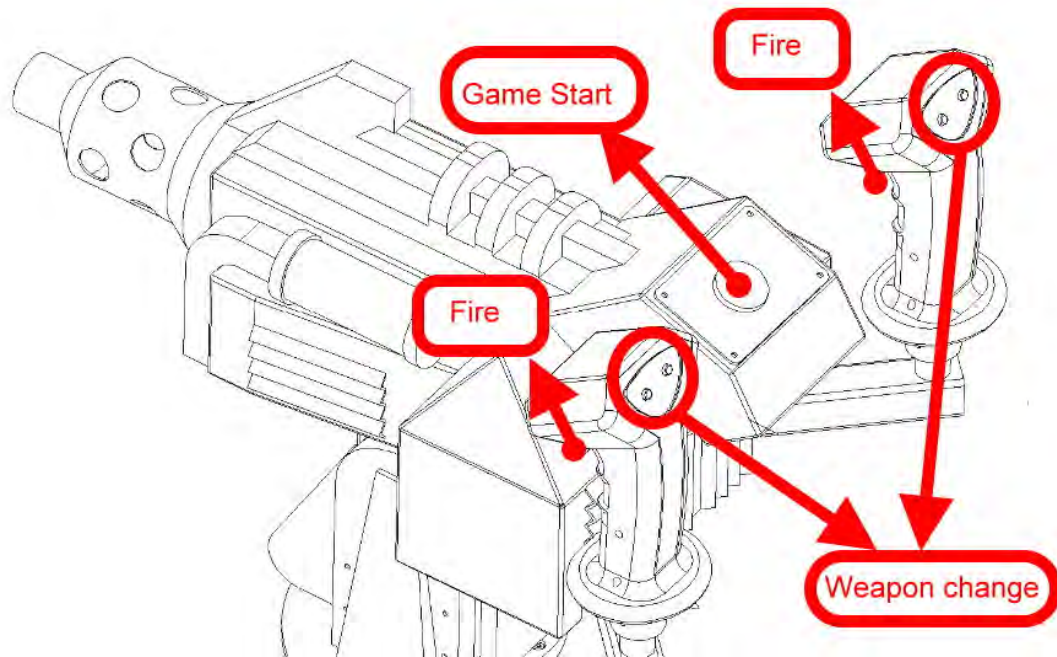


Figure 4-25 Game control interfaces



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TOP GUNNER Service Manual

5. MAINTENANCE

5.1 ELECTRONIC COMPONENTS

Figure 5-1 and Figure 5-2 show the main components of the TOP GUNNER.

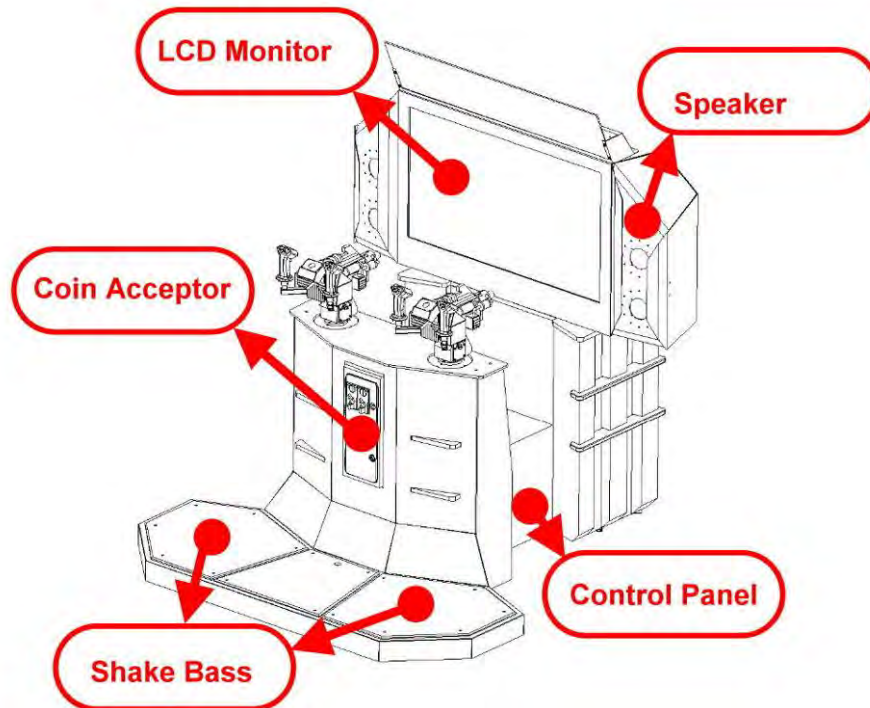


Figure 5-1 Main components-1

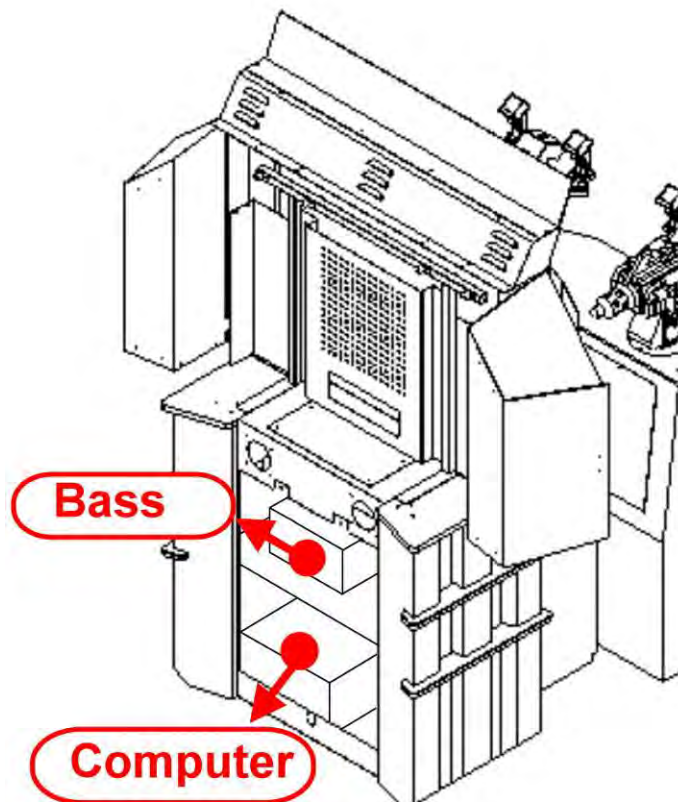


Figure 5-2 Main components-2



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TOP GUNNER Service Manual

Figure 5-3 shows electronic components of the machine gun.

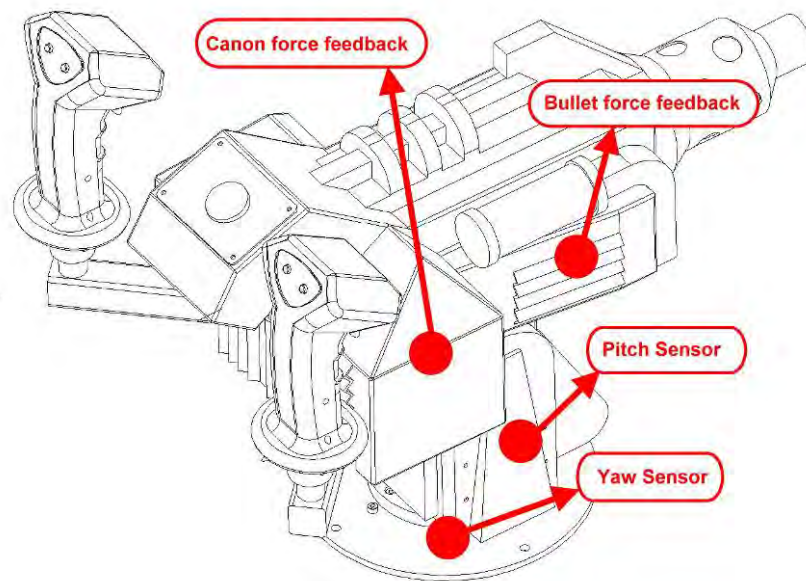


Figure 5-3 Electronic components of the machine gun

Figure 5-4 shows the LCD electronic components.

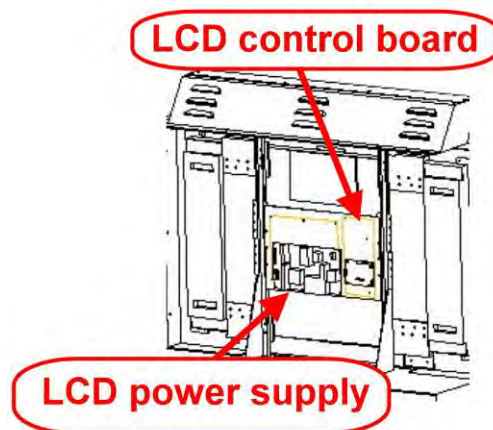


Figure 5-4 LCD electronic components

Figure 5-5 is the assembly drawing of the machine gun.

Figure 5-6 and Figure 5-7 are the assembly drawings of the Gun Pitch and Roll Sensors respectively.



Injoy Motion Corp.

TOP GUNNER Service Manual

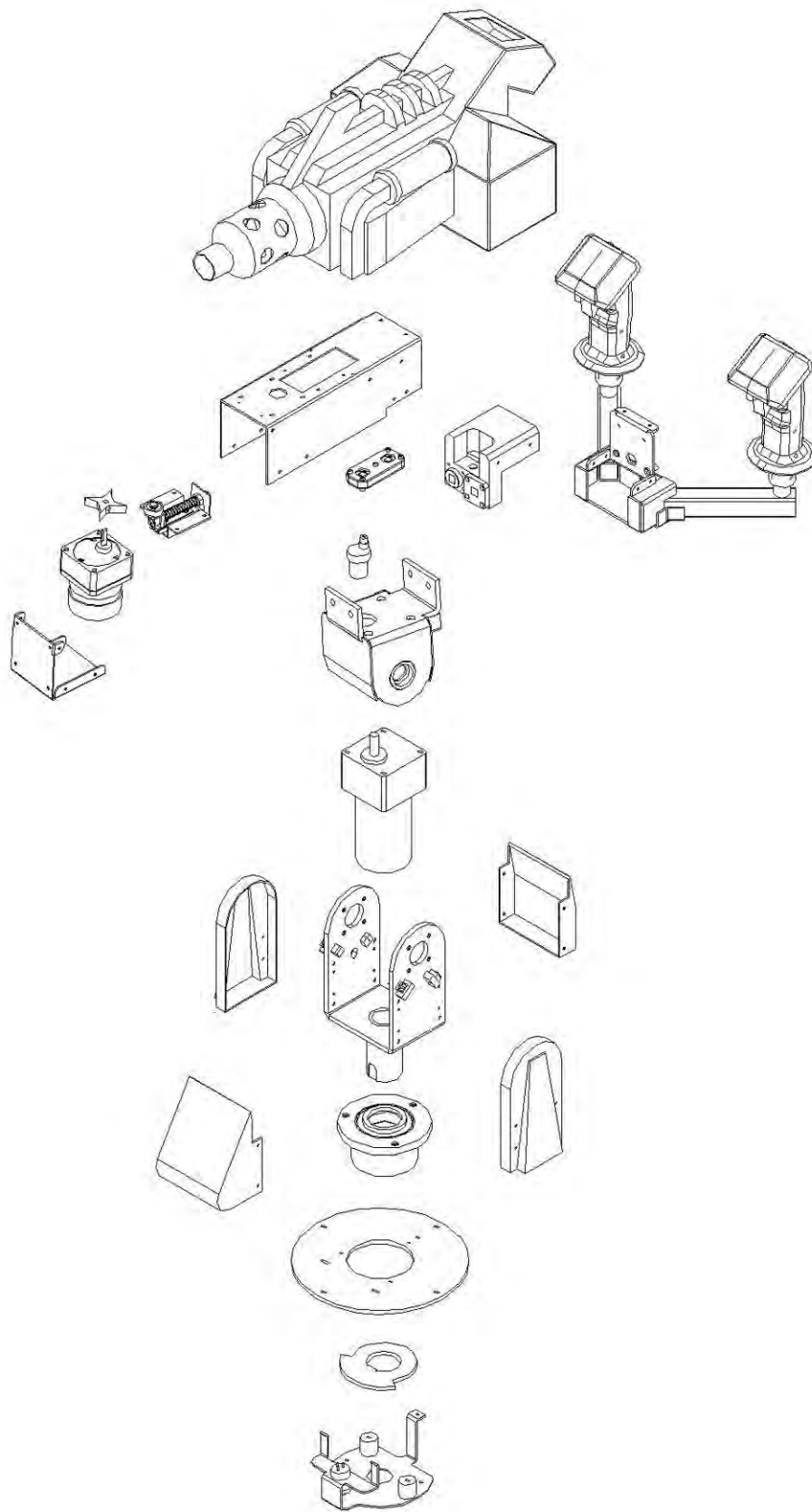


Figure 5-5 assembly drawing of the machine gun



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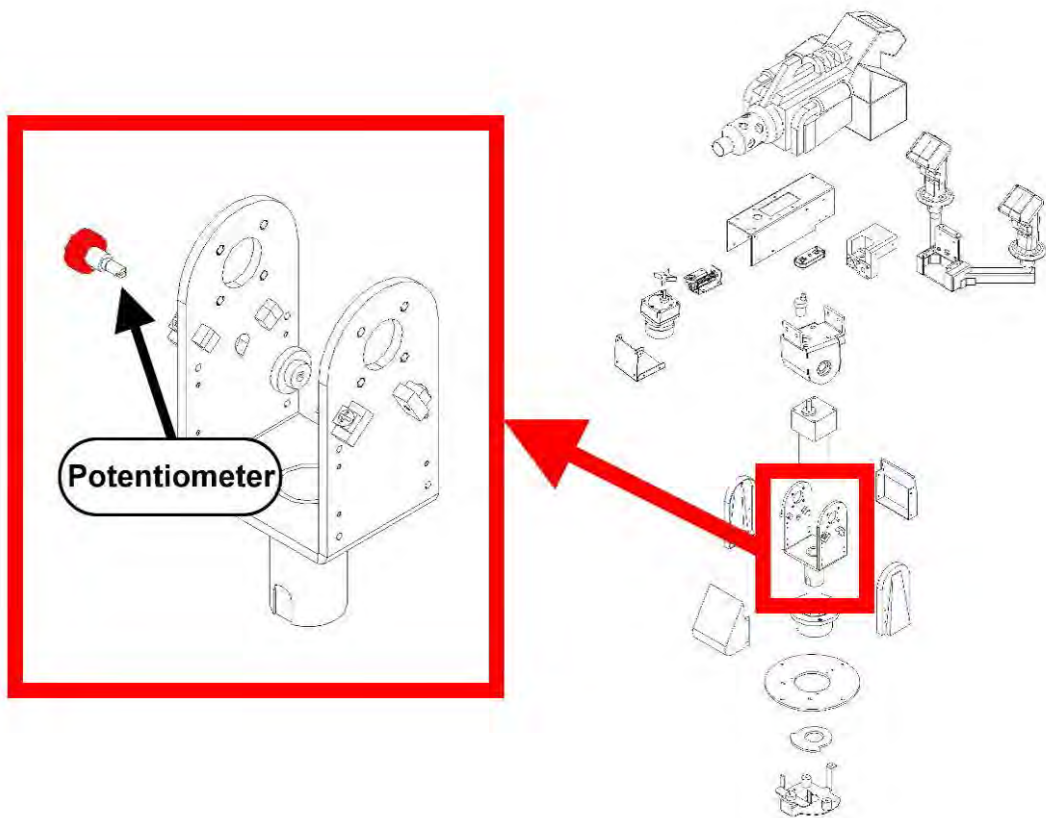


Figure 5-6 assembly drawing of the Gun Pitch Sensor

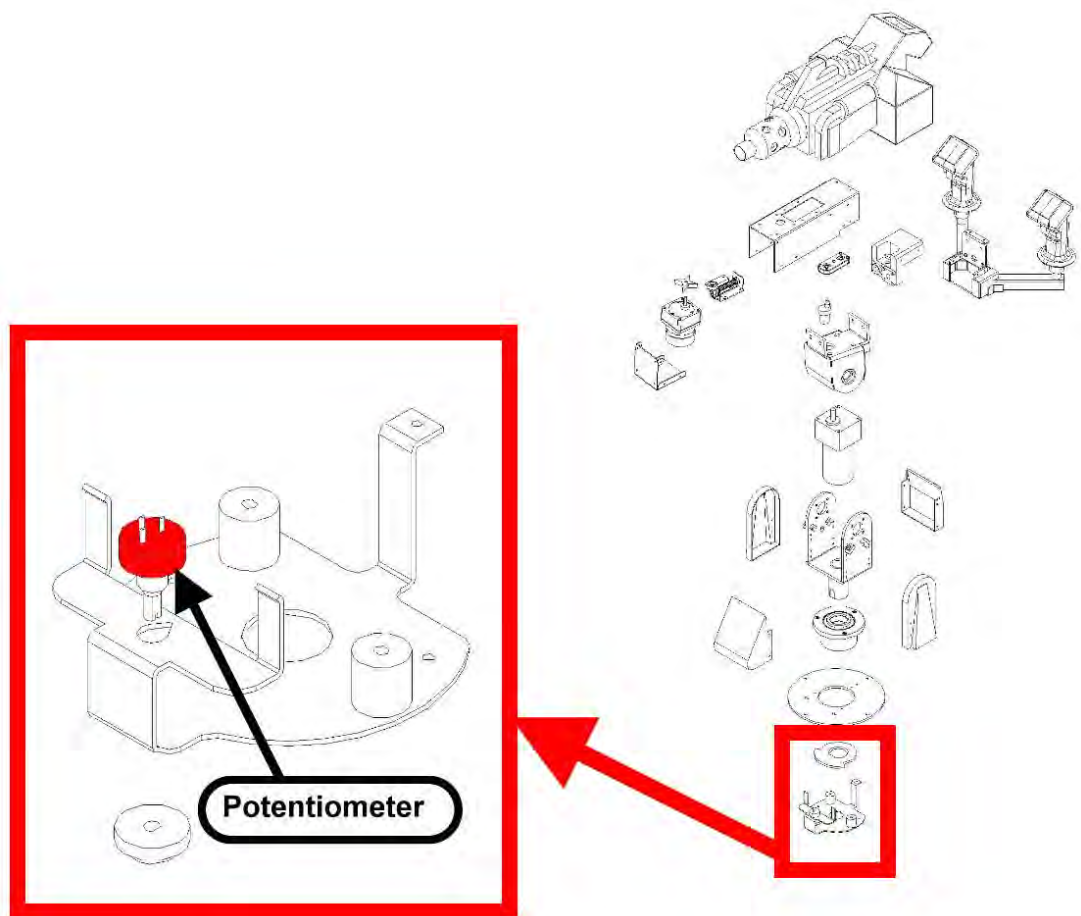


Figure 5-7 assembly drawing of the Gun Roll Sensor.



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TOP GUNNER Service Manual

6. TROUBLE SHOOTING

1. Boot-up fails

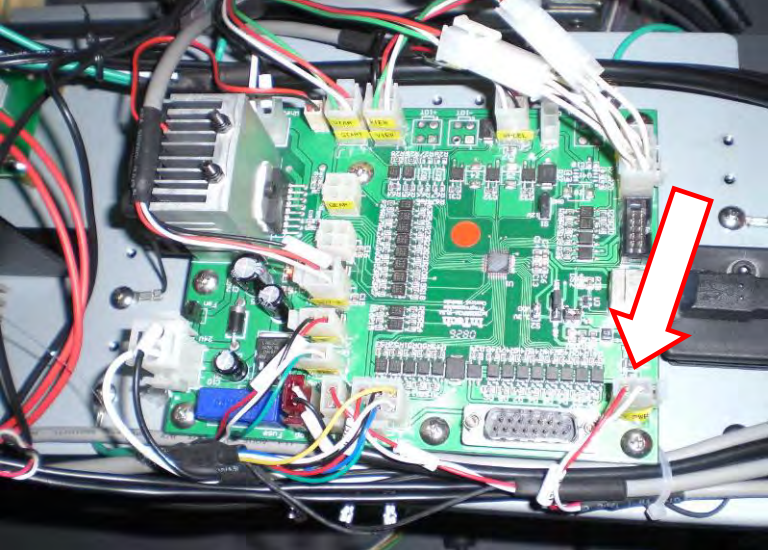
Step	Trouble Shooting Guide
1	Please check if the input power is 220V AC.
2	<p data-bbox="347 501 1362 584">Please remove the center cover of the chassis (Figure A), and check the power breaker.</p> <p data-bbox="347 595 1038 633">If the breaker is OFF, please turn it to ON (Figure B).</p> <div data-bbox="359 703 976 1133" data-label="Image"> </div> <p data-bbox="1011 1126 1129 1160">Figure A</p> <div data-bbox="359 1173 831 1693" data-label="Image"> </div> <div data-bbox="903 1223 1436 1722" data-label="Image"> </div> <p data-bbox="347 1744 464 1778">Figure B</p>
3	If the input power is 220V AC, the breaker is ON, and Top Gunner cannot boot up, please check if the power wire is broken.

2. Control interface does not respond



Injoy Motion Corp.

TOP GUNNER Service Manual

Step	Trouble shooting Guide	
1	<p data-bbox="347 237 927 271">Please check if the control board is 12V DC.</p>  A photograph of a green printed circuit board (PCB) with various electronic components, including a large silver heat sink on the left and several integrated circuits. A red arrow points to a specific component on the right side of the board. The board is populated with numerous wires of various colors (red, green, blue, yellow, white) connected to different points. <p data-bbox="347 835 1452 920">2 If the control board is 12V DC and the game interface does not respond, please make sure no other games share this power source.</p> <table border="1" data-bbox="352 925 1445 1115"><tr><td data-bbox="363 931 1437 1108"><ol style="list-style-type: none"><li data-bbox="363 931 1278 969">1. The diameter of the AC power wire must be larger than 2.0 mm.<li data-bbox="363 981 874 1019">2. The earth line has to be connected.<li data-bbox="363 1030 1417 1108">3. No other appliance or game should share this power source on this circuit; otherwise, <i>TOP GUNNER</i> will break down.</td></tr></table> <p data-bbox="280 1126 943 1160">3 Please contact us if the problem is not solved.</p>	<ol style="list-style-type: none"><li data-bbox="363 931 1278 969">1. The diameter of the AC power wire must be larger than 2.0 mm.<li data-bbox="363 981 874 1019">2. The earth line has to be connected.<li data-bbox="363 1030 1417 1108">3. No other appliance or game should share this power source on this circuit; otherwise, <i>TOP GUNNER</i> will break down.
<ol style="list-style-type: none"><li data-bbox="363 931 1278 969">1. The diameter of the AC power wire must be larger than 2.0 mm.<li data-bbox="363 981 874 1019">2. The earth line has to be connected.<li data-bbox="363 1030 1417 1108">3. No other appliance or game should share this power source on this circuit; otherwise, <i>TOP GUNNER</i> will break down.		



Injoy Motion Corp.

TOP GUNNER Service Manual

3. There is no force feedback of the machine gun during playing.

Step	Trouble Shooting Guide
1	<p data-bbox="347 282 1209 320">Please check the Solid State Relay on the control panel (Figure A).</p> <div data-bbox="477 329 1179 853" style="text-align: center;"> </div> <p data-bbox="1310 902 1430 936" style="text-align: right;">Figure A</p> <p data-bbox="347 952 1217 990">When Player clicks Fire, SSR (Solid State Relay) will be activated.</p> <p data-bbox="347 1001 1449 1084">Figure B is the connection diagram. The input side is connected to the control card, and the output side is connected to the motor.</p> <div data-bbox="477 1111 979 1568" style="text-align: center;"> </div> <p data-bbox="347 1592 624 1637">Control Card</p> <p data-bbox="979 1608 1094 1641" style="text-align: right;">Figure B</p>
2	<p data-bbox="347 1673 1158 1706">If the indicator of the SSR is lit and there is no force feedback,</p> <ol data-bbox="347 1720 1442 1848" style="list-style-type: none"> <li data-bbox="347 1720 1398 1756">1. Please check if the motor has 220VAC input by checking the connecting point. <li data-bbox="347 1767 1442 1848">2. If the motor has 220VAC input and there is no force feedback of the machine gun, please replace the motor.
3	<p data-bbox="347 1868 1238 1901">If the indicator of the SSR is not lit when the 'Fire' button is clicked,</p> <ol data-bbox="347 1912 1353 1993" style="list-style-type: none"> <li data-bbox="347 1912 1353 1948">1. Measure the input side of the SSR. If it has 12VDC input, replace the SSR. <li data-bbox="347 1960 1050 1993">2. If it has no 12VDC input, replace the control board.