



# Laser Guns User Manual

The contents of this document are believed to be accurate; however no responsibility will be accepted for errors or omissions. This document is subject to change.

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## 1 Introduction

This manual highlights many of the more important features of the laser guns and contains guidelines to ensure reliable service and important operating instructions.

### 1.1 Overview of Laser Guns

Whilst the laser guns are highly sophisticated, they are designed to be simple to use for both the operators and players alike. The Laser guns interact with the player during the game by giving verbal reports and continuously updating game information displayed on a LCD screen on the rear of the gun. They are fully programmable to support simple through to advanced game scenarios. Below is a list of the important features.

#### Key Gun Features (note: some features require options fitted):

Gun score is continuously updated during the game, no need for a computer.  
Speech synthesiser gives information to players on the following:-

- Starting.
- Good shot indication (for friend or foe).
- Game complete.

Full game information is displayed, on an illuminated 2 line x 16 character LCD

- Player's score and performance.
- Player's name (requires computer interface)
- Information about **who-hit-you** and **who-you-hit**.
- Game duration and time left.
- Battery status.

Guns have tri-coloured LEDS, giving:-

- Red or Green to support team games.
- Orange as visual indication they have received a hit.

Guns vibrate when a hit is received.

Simple starting using a Touchstarter.

Wide range of operational features (unlimited/limited lives and shots).

Built-in diagnostics.

Battery condition indication and automatic battery charge management.

Radio communications (optional).

**These features require a computer and interface unit.**

- Player's names.
- Flash program updates (optional).
- Download scores to computer.
- Fully programmable gun operation (i.e. Dead time, start score etc)

**These features require a computer and RF option**

- Start/stop and setup guns for game.
- Download scores during game (to display on monitors for spectators).

## 2 The Laser guns

### 2.1 Operation

Guns can be started either with a touch starter or, if the radio option is fitted, remotely using a computer. The guns will self time the game and shutdown automatically when the game is over, giving appropriate verbal instructions to the player. The guns can be started as red or green (usually for indicating the team), and fire a harmless laser beam. The basic idea of the game is to shoot at an opponent's gun to score points, whilst points are lost if shot by an opponent. The Laser guns are designed so players do not have to be too accurate, only needing to shoot in the general area of an opponent's gun to score.

When a player's gun is shot by an opponent's gun it will (for a short time), change colour to orange, vibrate, sound an explosion and inhibit the firing of the laser. The display will also give information about the player's gun which scored the hit (including their name if available) and adjust the score as appropriate. The vibration is necessary, otherwise (with the excitement of the game) a player is often unaware they have been hit! The gun lights turning to orange give a visual confirmation of the hit to the opponent. Further, if this is an accurate shot, their gun will verbally confirm the hit, adjust the score appropriately and display information about the gun they hit along with the player's name (if available).

General game parameters, the type of game, its length, number of lives, shots available and gun colour, are all contained in the touch starter. However, more detailed parameters dictating how the Laser guns operate (period the gun vibrates when hit, scoring etc), is fully programmable and can be changed using the computer interface and Laser Tools Software.

The Laser guns have a built-in scoring system which is updated continuously during the game and displayed to the player on an LCD display. Further, although the Laser guns can provide a sophisticated score card using the Arena2 software, because the players final score is displayed at the end of the game a computer is not necessary. If a computer is not available, a white board is recommended to detail player's scores.

## 2.2 How the scoring system operates

Points are scored for accurate hits on enemy guns; this is indicated by hearing a “**good-shot**” from the shooting gun. For solo games, guns can be red or green but hits are scored on shooting any gun. For team games guns are red or green to indicate the team. Players must shoot the opposing team to be awarded points, hitting their own team member loses points and a **double-ping** message is heard. Points are also deducted, when a player is hit and as each shot is fired. Each player is given a start score, so even a very poor player should end up with some points. Poor shooting can knock out a gun but not necessarily obtain a “**good-shot**” report. When a player is hit, their gun shuts down for a short time, before the gun fully reactivates the gun is allowed to shoot but not receive incoming shots (i.e. is invincible), giving the player time to recover. During this period the LEDs on the gun stop flashing, this indicates to the other players that this player is invincible. (Note: Laser guns with early software the LEDs were not illuminated during this period).

The default score settings are

- Start Score set to 200.
- Hit by another player (including your own team), 10 points deducted.
- Each time the laser gun is fired, 1 point deducted.
- Accurate shot on opponent’s gun, 50 points awarded.
- Shooting players own team (team games only), 50 points deducted.

These settings maybe changed using the computer interface and Laser Gun Tools software.

## 2.3 Options

Several options are available to enhance the operation of the Laser Guns, which are:-

- PGE units (HQ, Mines and Targets).
- Computer interface.
- Arena2 software.
- Laser Gun tools software.
- Flash updates.
- Radio control.
- Touch Starter Programming kit.
- Mobile arenas.
- Laser Mayhem.

Please contact the factory for more details on these options.

### 2.3.1 PGE units (HQ, Mine and Targets)

Programmable Game Enhancers (PGE) units are available which will interact with the players during the game. They are fully programmable to operate in the following modes.

- HQ (Red or Green).
- Mine.
- Target.

### 2.3.2 Computer interface

This unit allows the Laser guns to communicate with a computer. It is necessary hardware for the Arena2 and Laser Gun tools software.

### 2.3.3 Arena2 software

This software produces printed score cards for individual players; it also has many advanced features including *who-hit-who* report, game summary, league tables and membership.

### 2.3.4 Laser gun tools software

This software allows the parameters within the gun to be modified, which is sometimes necessary for running more sophisticated scenarios.

### 2.3.5 Flash updates

This option allows the Laser guns software to be updated to support new features.

### 2.3.6 Radio control

This option enables the Laser guns to be configured, started and downloaded to a computer remotely. It is ideal for situations where manual starting is impractical or for sites operating a large number of laser guns. It also provides an extension to the real time scoring by being able to provide the scores on a monitor, allowing spectators to follow a game as it progresses.

### 2.3.7 Touch Starter Programming kit

This is a complete set of hardware, along with software to enable a computer to change the touch starter's settings.

### 2.3.8 Mobile arenas

A range of inflatable mobile arenas of different sizes are available to suit the private garden through to a large event.

### 2.3.9 Laser Mayhem

This is a fun based indoor target system, combining skill and reaction in a fun packed game and living up to its name of Laser Mayhem. The system consists of mini targets which are placed around a room, which are shot at using the standard Hangar51 Laser Guns. The targets operate randomly, slowly at first and speeding up as the game progresses. Points are awarded for shooting the target when green or lost when OFF. Extra points are awarded for fast reactions to targets turning green and lost if players accidentally shoot the opposition.

### 3 Laser tag games

#### 3.1 Basic game operation

Whilst most operators implement the basic team or solo game with fixed time period, unlimited lives/shots and using the scoring system to determine the winners, other types of games are available. The Laser guns games are essentially based about the following types of operation:-

- Solo operation
- Team operation
- Lives available
- Shots available
- Gun colour

##### 3.1.1 Solo operation

This is a free for all type game where players score points by hitting another player's gun and lose points when hit. Although, the guns can be started either red or green this is only for visual effect.

##### 3.1.2 Team operation

In this type of game the guns are started red or green, but players score points when hitting the opposite colour guns (red hits green and vice-a-versa) but lose points when they hit guns of their own colour (red hits red, green hits green).

##### 3.1.3 Lives available

This sets the number of lives a player has during a game and can be set to a specific number or unlimited. The number of lives can be set for all types of games and can also be used in conjunction with limited/unlimited shots. The game ends for a player when all the allocated lives have been taken

##### 3.1.4 Shots available

This sets the number of shots available for a player during the game, it can be set to a specific number or unlimited. Again like lives available the number of shots can be set for all type of games. The game ends for a player when all the allocated shots have been fired.

##### 3.1.5 Programmable gun colour

The Laser gun can be set to illuminate either Red or Green during the game.

## **3.2 Basic games**

Using the above basic game operations, in various combinations, gives an almost unlimited number of games, a list of basic games is provided below as a guide. Please note: The success of certain games depends on such factors as the size of play area, age and experience of players; therefore operators are encouraged to experiment to find the games most suitable for their arena.

### **3.2.1 Solo game (unlimited lives and shots)**

This is the simplest and perhaps the most popular of all the games. Basically, the guns are set as solo, and players have unlimited lives and shots. The idea is simply try to achieve the highest score in a preset time. Players score points for shooting any opponents gun. Guns can be started as either red or green but this is used purely for effect or to identify teams. This game is often used to help players familiarise themselves with the Laser guns, before introducing more complex scenarios.

### **3.2.2 Solo game with limited lives and/or shots**

This is similar to the solo game above, but lives or shots (or both) are limited. When either is used up the gun automatically shuts down and the player's game is over. Again, the object of this game is to achieve the highest score in a predetermined time. Limiting the number of lives and/or shots, means that a poor player maybe eliminated early in a game. For this reason it is often only suitable for more experienced players.

### **3.2.3 Team game (unlimited lives and shots)**

This is a team version of the solo game above (with unlimited lives and shots), and again is one of the simpler game types. Here a player scores points when shooting the opposition's team but is penalised when shooting their own team. Whilst the penalisation increases the skill level, it is still a simple game and can be enjoyed by players of all ages.

### **3.2.4 Team game (limited lives and/or shots)**

This is a team version of the solo game with limited lives and/or shots. This game tends to encourage the use of team tactics and therefore is used for more experienced players.

### **3.2.5 Last man standing**

There are many versions of this type of game (by introducing limited shots and teams), but essentially it is a limited life game having no upper time limit. The idea is for one player to be the last standing, having eliminated all their opposition. Whilst the last player standing wins, followed by the last but one and so on, it is an interesting variation to position the players by points. Playing the game based on points is useful in large arenas where players hide throughout initial stages of the game, only taking an active part towards the end, (this tactic is called camping-out).

### **3.2.6 Respawn game**

This game is ideal when there are more players than guns and everybody wants to play together. Players are started either as solo or team, with limited lives and/or shots. Then as each player is knocked out of the game, a note is made of their score and the gun is handed to another player in their team and restarted. The game ends after a predetermined number of respawns, or against the clock. If played as a team game this game can be great fun and, because the players waiting to enter are spectators, can be very noisy.

### **3.2.7 Hunt the king**

This is a team game where one player on each team is the king and is given a limited number of lives. The other players have unlimited lives and/or shots. The idea behind the game is to hunt out the opposition's king, whilst protecting yours. The game concludes when one of the kings are eliminated. Again there are many variations of this game using the limited lives and/or shots and allowing the king to be identified with an armband or suchlike.

### **3.2.8 Capture the HQ**

This is a variation of the standard team game, where one laser gun is used as a HQ, and placed (or hidden) somewhere in the play area. It is then started with limited lives, and one team must defend the gun/HQ, whilst the other attacks. The game finishes when an HQ is knocked out. Again this game can have many variations for example, if two guns are used as HQ's, one for each team, and players are then involved with attack and defence at the same time.

### **3.2.9 Last starfighter**

There are many variations of this game but essentially one or a few players are the starfighters and have limited lives and unlimited shots, whilst the other players have limited lives (usually one) and shots (usually 10). Players take turns being the starfighter(s). The winner is either the starfighter with the highest score, or the longest length of time before they were eliminated from the game.

### **3.2.10 Medic game**

This is a cross between hunt the king and the respawn game, where all players have limited lives and/or shots. In this case one or more players on each team is the medic with only one life but able to respawn (restart) the other players with a touch starter. However, when the medic is knocked out, they cannot restart players and the game continues without them. The game ends when one team is totally eliminated.

### **3.2.11 Capture the flag**

This is based on the paintball game, of the same name, a flag is placed in the centre of the play area and the guns are setup as teams. The idea is for each of the teams to start at opposite ends of the play area and to attempt to capture the flag, bringing it back to their original start position. However, if a player is shot whilst carrying the flag it must be dropped immediately. Sometimes the players are allowed to re-enter the game by respawning.

### **3.2.12 Source of game types**

Paintball games provide a good source of game ideas for Laser Tag, however as Laser tag does not use projectiles and no pain is involved it is more popular with all ages.

## 4 Operation

### 4.1 Briefing

It is important to give the players a briefing about the safety aspects of Laser Tag and how to get the best out of the guns. It is very important to get the safety aspects across before players start, they are:-

- Do not run.
- Hold the gun in two hands.
- Shoot from the waist; never hold the gun up to their face.
- Do not lie down.

With regards to the way the guns operate and score, keep it simple and allow players to have a solo game to familiarise themselves with the equipment, then introduce the team game play and/or more complicated game rules as necessary.

#### 4.1.1 Advice to players on scoring

To ensure the players achieve good shots, give them the following instructions prior to entering the arena.

- Shoot at the gun not the player.
- Maximum points are scored for accurate hits and when a **Good Shot** is heard.
- Hold the gun steady, and shooting single shots helps to ensure accurate hits.
- Rapid fire or moving the gun can still knock out opponents but does not tend to achieve an accurate shot.
- Team games – don't shoot your own team.

### 4.2 Game setup

The laser guns are started either with a touch starter programmed with the appropriate settings, or if available using the radio option via a computer.

#### 4.2.1 Touchstarter

The touch starter contains the following information.

- Start up delay before guns start playing (default 20 seconds).
- Playing time (default 10 minutes or 5 minutes for mobile).
- Game type – Team or Solo
- Team or Gun Colour.
- Number of guns this touch starter has started.

Standard sets of touch starters are supplied with the equipment. However, additional starters can be purchased or starters re-programmed using the Touch Starter Programming kit, please contact the factory for more details.

#### 4.2.2 Players names

Programming players' names into the laser guns personalises the gun and is popular with many players. During the game the gun then displays the player's name ***you hit*** or ***hit you***. To use this option the computer interface is required along with Arena2 software and all the names need to be downloaded to all guns prior to starting the game or series of games. The players' names, once programmed are retained until the guns are switched off. Note: It is necessary to re-programme ALL the guns with new name information if ANY player's name changes.

#### 4.3 Starting Guns

Switch the gun on using the key switch by turning it to the left and always remove the key after use. Wait a few seconds for the gun to perform internal tests, (do not press the trigger during this time, otherwise the test programme maybe invoked). Next hold the touch starter against the receptacle at the rear of the gun until it has started (in about 2 seconds or less). Note: It is not necessary to switch gun off between games.

#### 4.4 During the game

There is little the operators can do during the game, except to ensure the safety rules are adhered to. It is sometimes useful to let the operators act as commanders to coach players during the game, often necessary for younger players.

#### 4.5 Ending game and taking scores

Normal timed games will end automatically, and the operators must then take the scores. For operators not using a computer, a whiteboard to write and keep track of the scores is very useful. In a simple game the players can shout out their scores to see who the winner is. If computer scoring is required the guns are downloaded to the computer using a hardware interface or if radio option is fitted, remotely. It is useful to note that pressing the trigger after the game completes will illuminate the display and enable the player to read the score in poor light.

**Never switch the gun off or restart it before the scores have been noted, or uploaded to a computer otherwise the score information is lost.**

## 5 Storage

Guns should always be returned to the gun case when not in use, this protects the guns and if connected to the charge adapter ensures they are well charged. A stand is provided with the case so it can be opened and the guns displayed. The guns are essentially robust; however the operators should handle the guns with care. The guns should always be operated undercover and not allowed to get wet. The guns should be stored in a dry place, ideally at room temperature.

The guns are held in place by foam, which after a period of storage does tend to compress, this is normal. If the guns become a loose fit, simply remove the guns and rotate the chrome crossbar through a few degrees to allow a fresh area of foam to push against the guns. The original compressed foam will expand and maybe reused later.

Always ensure keys are removed from the guns when they are returned to the carrying case and the lid is closed, otherwise the key-switch will damage the foam in the lid.

**For safety reasons, never use a gun with a broken case, missing nose cone or loose shoulder strap.**

## 6 Charging

The guns are charged by inserting them into the Laser gun case and plugging the mains adapter into the XLR connector on the side of the gun case. **Note: The guns must be switched on to charge!**

Normally charging is fully automatic, the guns will take a trickle charge when the battery level is high and full charge if it is very low. However, if the charge is known to be low and a busy event or party is expected then, it is possible to override the charge system and invoke a full charge. This is done by removing the Laser gun from the rack, then pressing and holding the trigger whilst re-inserting it back in the rack (obviously assuming the charge adapter is connected). Only release the trigger when the gun displays an **on full charge** message, which should be displayed within 5 seconds of re-inserting the gun, if it is not displayed simply remove the gun and repeat the process.

**Warning, over use of the manual override charge option can damage the batteries.**

Guns display the time left on charge and will automatically switch to trickle charge when complete (usually 7 hours). During the charge period it is still possible to use the gun and when returned to the gun rack it will automatically continue charging from the point it left off. To reset the charge period timer, switch off the gun with the key switch and back on again.

**Never fully charge guns with the gun rack lid closed as the batteries could be damaged by overheating.**

Charging the guns is best done with the gun case mounted on the gun stand; this tends to ensure that the charge points (on the underside of the gun) are always in contact with the charge terminal in the gun rack. If it is not possible to use the gun stand to angle the guns correctly, then turn the case in its side so guns rest on their charge terminals.

**If shoulder straps are fitted ensure they do not prevent the guns resting on their charge terminals.**

## 6.1 Mobile operators

In our experience for mobile operators, low battery problems do not occur during normal events if the following procedures are applied.

- Discharge guns prior to an event then fully charge them.
- If no charge power is available during an event ensure the guns are switched off when standing idle.
- Unless on trickle charge always switch off the guns during storage, or transportation.
- If the batteries are stored on trickle charge, to keep the batteries in good condition, the guns should be fully discharged after every 5 events then fully charged.

## 6.2 Fixed site operators

In our experience for fixed site operators, low battery problems do not occur during normal operation if the following procedures are applied.

- If the Laser guns are fitted with a battery indication, consider invoking a full charge if the display is showing 5 bars or less and certainly if only 3 bars are showing.
- If the Laser guns are NOT fitted with a battery indication, consider invoking a full charge after about 8 hours of play when new, reducing to about 5 hours when 2 years old.
- If the batteries are stored on trickle charge, to keep the batteries in good condition, the guns should be fully discharged after every month then fully charged.

## 7 Routine maintenance

It is important to introduce a routine of regular maintenance to ensure the Laser guns give top performance.

### 7.1 Checks prior to starting a gun.

- Check nose cone for damage.
- Check LCD display for low battery warning message.

### 7.2 Periodically during use

- Check for loose straps.
- Check for damaged plastics.
- Check charge condition (if battery indication fitted).

### 7.3 Checks prior to each event or days usage.

- If fitted, check shoulder straps are tight, (If they are loose remove the grey cap, screw, washer and spacer and apply Loctite to the screw and reassemble – ensure the shoulder strap screws are very tight)
- If fitted, check the shoulder straps for damage.
- Check plastics for damage.
- Check all screws are tight – *Important the charge screws on the underside of the gun must not be over tightened as this will damage the Laser gun.*
- Replace any missing screws. **Warning: Never attempt to use the long M4 x 10mm screws in the battery compartment.**
- Check key-switch operation.
- Check guns can be started with touchStarter.

### 7.4 Monthly checks.

- Check laser operation.
- Check LEDs operate red/green by starting with appropriate starter.
- Check LEDs go orange when shot by another gun.
- Check the backlight on the LCD display, usually this must be checked under low light conditions.
- Check LCD display is showing messages correctly.
- Check the sound level, adjust if necessary. *The volume control is accessed using a small watch maker's screwdriver inserted through a small hole at the top of the handle (where it meets the body of the gun). The volume control is rotated to adjust the volume as appropriate – Note: it will only rotate through about 270 degrees and great care should be taken not to damage the control or force it beyond its normal travel.*
- Check the front IR transmitter operates correctly by shooting another gun at a distance of about 10 metres.

- Check front and both side detectors by shooting with another gun from about 10 metres, exposing each detector in turn and covering the other sensors. This test only checks the radial IR transmitters by giving a “**good-shot**” report after each hit. (Tip: Prior to testing - always ensure the shooting is fully functional by testing against known working gun).
- Check the gun vibration operates when the gun is shot.

An operator’s tool kit is available for simple maintenance on the Laser guns, which contains necessary tools, Loctite and miscellaneous screws.

The guns can be cleaned with normal household cleaners, however ensure they are safe when used on ABS and polycarbonate materials. **Warning, never use spirit based cleaners, as they will cause damage to the gun cases.**

## 8 Appendix: Testing battery condition

Batteries are chemical devices and will deteriorate with use and age, so their lifetime cannot be accurately specified. However, after about 2½ years of standard usage, or less for heavy usage, batteries should be replaced to ensure top performance. If a Laser gun shuts down or reports warnings of low battery within a few hours of charging, then the batteries maybe suspect.

**If your batteries appear suspect, we strongly recommend contacting the factory before attempting to implement this test or change batteries.**

The Batteries maybe tested in the following manner.

1. Boost charge a set of guns twice to ensure they are fully charged.
2. Programme a touchStarter with the following settings.
  - Game duration = 99 minutes
  - Start delay = 5 seconds
  - Number of shots = 0 (This value invokes test mode)
  - Number of lives = 99
  - Game type = Solo
  - Gun colour = Red or Green.

These settings place the guns in test mode, where they simulate a game by firing automatically every few seconds and receiving hits.

3. Place the Laser guns in a circle, all pointing towards the centre.
4. Start all the gun with the touchStarter (programmed as above). The Laser guns will now run a simulated game for 99 minutes.
5. When the game is complete repeat stage 4, until all the Laser guns report low battery. Any guns reporting low battery should be switched off, and the number of games noted. It is ideal to ensure the games run consecutively, however it is important to switch off the guns if the test has to be interrupted.

In this test, a new set of batteries achieve between six and seven 99 minute games (i.e. 600 to 700 minutes of simulated game play). Older batteries are considered acceptable, if they give more than 400 minutes of simulated play.

## 9 Appendix: FAQ on Gun problems

Not all problems with guns mean they are faulty; here are some of the simple fixes.

Question: *My guns do not support all the latest features – can they be upgraded?*

- If your gun system has the flash processor option, they can be upgraded to the latest software using the computer interface (with programming adaptor) and Laser Gun Tools2 software.
- If they do not have the flash processor option fitted they must be returned to the factory for an upgrade.

Question: *A gun does not indicate on charge or trickle charge.*

- Always charge the guns on the stand, as this puts the guns at the correct angle to pick up the charge points.
- Ensure the shoulder straps are not preventing the gun resting on the charge points.
- Check all guns are switched ON – they must be ON to charge.
- Check that both charge screws are present in the underside of the gun.
- Check the gun in another charge position in the charge case.

Question: *Some guns have not fully charged or are flat.*

- Check the charging unit was not switched OFF, or disconnected during charging.
- Check all guns are picking up the charge points.

Question: *All my guns will not charge or are flat.*

- Check the mains charger is connected and switched ON (switch is illuminated).
- Check the fuse in the charger.
- Check the charge lead is plugged into the charge case.
- Check if the guns are switched ON – **they must be switched ON to charge.**

Question: *All my guns are flat because they were left switched ON overnight and need to start a party.*

- Try to put the guns on charge immediately, as a general rule the charge (on full charge) will go in twice as quick as it comes out. Therefore, if your are running an hours party, simply put the guns on charge and swap the party around by doing the food first and play laser second.

Question: *Why are all or most of the guns are coming out with a zero score?*

- Have you started the guns with a touchStarter set in team mode and playing a solo game – remember in team games players lose 50 points for shooting their own team so they can quickly lose all their points if they think they are playing a solo game. Listen for the “ping-ping” when players are shot, this indicates a team game is in operation.

Question: *Which is the ON position for the key-switch?*

- In the ON position, the key-switch is in the vertical position (or fully anti-clockwise) and in the 45 degree position (or fully clockwise) it is OFF.
- Unless the batteries are completely discharged, the LCD display is displaying information when the key-switch is in the ON position and blank in the OFF position.

Question: *Why am I having trouble starting some guns with the touch starter?*

- The touch starter or the receptacle on the rear of the gun may have become contaminated with grease or dirt – clean it with a methylated spirits.
- If the receptacle has become oxidised then it can be cleaned with T-cut.
- Only use an abrasive (i.e. wire wool) if directed by the factory.

## 10 Appendix Score printers

The score printer is delicate but treated with care it should give long service. It is best mounted on a table or other flat surface for operation. Ensure the printer and paper is used under cover and does not get damp.

To operate the score printer, connect the interface box and the printer (with the cable provided). Switch ON the printer (green triangular button) and switch on the interface box (Press and hold the red button on the side of the unit). A gun's score is then printed out automatically when the ¼" jack plug is inserted into the socket on the rear of the gun.

**Always ensure a good alkaline PP3 is fitted in the interface unit. Always switch off the interface unit when not in use (to conserve battery power).**

For printer operation see the printer user's manual. The printer requires about 15 hours of charge.

To test the printer/interface unit

1. Switch ON the printer and run the test printout – see printer user's manual.
2. Switch the printer OFF then ON again.
3. Switch ON the interface unit, the printer should feed about 2mm of paper.
4. The unit is then ready for use.

## 11 Appendix Laser Gun Specification

<b>Weight:</b>	<b>2.36kg</b>
<b>Internal:</b>	Metal chassis
<b>External:</b>	ABS and polycarbonate.
<b>Battery capacity:</b>	More than 10 Hours game use (when new).
<b>Typical battery life:</b>	More than 2 years.
<b>Range:</b>	Set at 17M in dark (can be adjusted at factory)
<b>Laser:</b>	High visibility safe red laser (Class II and 635nm/633nm)

Note: These specifications are subject to change, please consult the factory for latest specification on your model of Laser gun.