PLANET ECLIPSE PAINTBALL

GSL

USER MANUAL

⚠ WARNING ⚠

ADHERE STRICTLY TO THESE AND ALL OTHER SAFETY INSTRUCTIONS AND GUIDELINES!

- **Please read and understand all instruction manuals before use.**
- **The Eclipse GSL is not a toy. PAINTBALL SAFETY RULES MUST BE FOLLOWED AT ALL TIMES.**
- **Careless or improper use, including failure to follow instructions and warnings within this User Manual and attached to the GSL could cause death or serious injury.**
- **Do not remove or deface any warnings attached to the GSL.**
- **Paintball industry standard eye/face/ear and head protection designed specifically to stop paintballs and meeting ASTM standard F1776 (USA) or CE standard (Europe) must be worn by the user and any person within range. Proper protection must be worn during assembly, cleaning and maintenance.**
- **Hearing protection should be worn.**
- **Never shoot at a person who is not wearing proper protection.**
- **Never look directly into the barrel of the marker. Accidental discharge into the eyes may cause permanent injury or death. Never look into the barrel or breech area of the GSL whilst the marker is switched on and able to fire.**
- **Keep the GSL switched off until ready to shoot.**
- **Treat every marker as if it is loaded and ready to fire.**
- **The electronic on/off is the markers safety, always switch off the marker when not in use.**
- **Always fit a barrel-blocking device to the GSL when not in use.**
- **Always remove all paintballs from the GSL when not in use on the field of play.**
- **Never point the GSL at anything you do not intend to shoot.**
- **Do not shoot at persons within close range.**
- **Do not field strip or remove any parts while the marker is pressurised.**
- **Do not pressurise the GSL without all the components of the marker correctly installed, as high-pressure gas may be emitted.**
- **Do not fire the GSL without the bolt correctly installed.**
- **Never put your finger or any foreign objects into the paintball feed tube of the GSL.**
- **Never allow pressurised gas to come into contact with any part of your body.**
- **Always remove the first stage regulator and relieve all residual gas pressure from the GSL before disassembly.**
- **Always remove the first stage regulator and relieve all residual gas pressure from the GSL for transport and storage.**
- **Always follow guidelines given with your first stage regulator for safe transportation and storage.**
- **Always store the GSL in a secure place.**
- **Persons under 18 years of age must have adult supervision when using or handling the GSL.**
- **Observe all local and national laws, regulations and guidelines.**

⚠ WARNING ⚠

ADHERE STRICTLY TO THESE AND ALL OTHER SAFETY INSTRUCTIONS AND GUIDELINES!

- **Use only professional paintball fields where codes of safety are strictly enforced.**
- **Use compressed air/nitrogen only. Do not use any other compressed gas or pressurised liquid including CO^2.**
- **Always follow instructions, warnings and guidelines given with any first stage regulator you use with the GSL.**
- **Use 0.68 inch calibre paintballs only.**
- **Always measure your marker's velocity before playing paintball, using a suitable chronograph.**
- **Never shoot at velocities in excess of 300 feet (91.44 meters) per second, or at velocities greater than local or national laws allow.**
- **Any installations, modifications or repairs should be carried out by a qualified individual at a licensed and insured paintball facility.**

THIS USER MANUAL MUST ACCOMPANY THE PRODUCT IN THE EVENT OF RESALE OR NEW OWNERSHIP. SHOULD YOU BE UNSURE AT ANY STAGE YOU MUST SEEK EXPERT ADVICE (SEE SERVICE CENTRES PAGE 66).

This Users Manual is in English.
It contains important safety guidelines and instructions. Should you be unsure at any stage, or unable to understand the contents of this manual you must seek expert advice.

Le mode d'emploi est en Anglais.
Il contient des instructions et mesures de sécurité importantes. En cas de doute, ou s'il vous est impossible de comprendre le contenu du monde d'emploi, demandez conseil à un expert.

ESTE MANUAL DE USUARIOS (oPERARIOS) usarios está en Inglés.
Contiene importantes normas de seguridad e instrucciones. Si no está seguro de algùn punto o no entiende los contenidos de este manual debe consultar con un experto.

Diese Bedienungs - und Benutzeranleitung ist in Englisch.
Sie enthält wichtige Sicherheitsrichtlinen und - bestimmungen. Solten Sie sich in irgendeiner Weise unsicher sein, oder den Inhalte dies Heftes nicht verstehen, lassen Sie sich bitte von einen Experten beraten.

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Details on setting up the GSL and information on the user interface. This section is essential reading for everyone.

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WARRANTY CARD

Tear-out product registration card to be completed and returned. Alternatively register online at www.planeteclipse.com

FACTORY SET-UP GUIDE

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

Before using the GSL it is important to make sure the SL4 inline regulator, solenoid flow restrictor (SFR) and all electronically controlled parameters are set correctly. All of these can have a negative effect on the performance of the marker if set incorrectly.

The steps below will restore the GSL settings to the factory settings. These settings will give the GSL a more balanced performance, ideal for the average user.

INLINE REGULATOR OUTPUT PRESSURE

Check the inline regulator adjuster screw is set to $4^{1/2}$ turns clockwise from its maximum out position *(SEE FIGURE 1A)*. This will ensure the SL4 inline regulator is set to an output pressure that will not damage the GSL when supplied with compressed air/nitrogen (see page 18 for more information on SL4 inline regulator adjustment).

SOLENOID FLOW RESTRICTOR SETTINGS

Check that the solenoid flow restrictor *(SEE FIGURE 1B)* is set as pictured. See page 19 for more information on the solenoid flow restrictor.

ELECTRONICALLY CONTROLLED PARAMETERS

Load the FACTORY preset *(SEE FIGURE 1C)* stored on the GSL circuit board. This preset will restore all the electronic parameters to their default settings. See page 29 on loading the FACTORY preset.

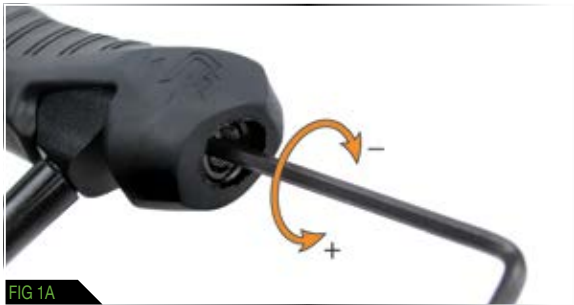


FIG 1A

FIG 1B


FIG 1C

INSTALLING A 9V BATTERY

Ensure that the GSL is switched off. Lay the marker on a flat surface in front of you with the feed tube furthest away and with the barrel pointing to the right.

Use a 5/64" (2mm) hex key to remove the two countersunk screws that hold the rubber grip onto the frame *(SEE FIGURE 2A)*. Peel the grip to the right to expose the circuit board within the frame.

Remove the fitted battery by sliding your thumb or finger into the recess below the battery and levering the battery out of the frame *(SEE FIGURE 2B)*.

DO NOT pull on the top of the battery to remove it as this can cause the battery terminals to bend and will result in a poor electrical connection.

Fit a 9-volt alkaline battery (type PP3, 6LR61 or MN1604) into the recess with the battery terminals away from you. The positive terminal should be on the right hand side, nearest to the front side of the frame *(SEE FIGURE 2C)*.

Planet Eclipse recommends using a branded high quality alkaline 9V battery. Budget and rechargeable batteries may cause performance issues.

Ensure that all of the wires are within the recess of the frame and away from the trigger, micro-switch and OPTO sensors so as not to interfere with their operation. Replace the rubber grip and screw in the two countersunk screws.

DO NOT OVER-TIGHTEN THE GRIP SCREWS.


FIG 2A

FIG 2B

FIG 2C

SWITCHING ON THE GSL

To switch on the GSL press the button twice in quick succession, referred to elsewhere in this manual as 'double-clicking'. The GSL can also be switched on by pushing and holding the button *(SEE FIGURE 3A)*.[1]

SWITCHING OFF THE GSL

Press and hold the button *(SEE FIGURE 3A)* until the display shows "TURN OFF". Release the button and re-press it to turn off the GSL. Alternatively double click the button to enter the menu tree then press to turn off the GSL.[1]

FIRING THE GSL

⚠ WARNING ⚠

PLANET ECLIPSE ADVISES NOT TO DRY FIRE/SHOOT THE MARKER WITHOUT PAINTBALLS.

PROLONGED DRY FIRING MAY LEAD TO DAMAGE/WEAR OF THE INTERNAL COMPONENTS OF THE MARKER.

Pull the trigger *(LABELLED Ⓐ IN FIGURE 3B)* to fire the GSL. The entire firing sequence is controlled electronically by the GSL circuit board, enabling any user to easily achieve high rates of fire.

FIG 3A

FIG 3B

[1]*The double clicking feature is user selectable, factory default is set to on. It can be turned off using the Double Click parameter in the Hardware menu (see page 39).*

USING THE BREAK BEAM SENSOR SYSTEM

The Break Beam Sensor System, referred to elsewhere in this manual as 'BBSS' is used to detect when a paintball is ready to be fired from the GSL. If no paintball is ready then the BBSS will inhibit the GSL from firing. This prevents the GSL from "chopping" paintballs that are not fully loaded into the marker.[1]

To switch off the BBSS, press and hold the button for 0.5 seconds *(SEE FIGURE 4A)*. The BBSS indicator on the top right of the LCD will change from (enabled) to (disabled).

To switch the BBSS back on, press and hold the button for 0.5 second. The indicator will change back to .

When the BBSS is enabled, the indicator will change depending upon whether the system has detected a ball or not. When no ball has been detected the indicator will look like this . When a ball has been detected the icon changes to look like this .

Additional features of the GSL's Break Beam Sensor System are covered in full on page 23 of this operators manual.

FIG 4A

[1]*When the GSL is turned on, the BBSS is automatically enabled.*

THE GSL NAVIGATION CONSOLE

At the rear of the GSL grip frame you will find the navigation console *(SEE FIGURE 5A)* which is used for:

- Turning the GSL on and off using the button.
- Scrolling through menus with the and buttons.
- Selecting parameters to edit using the button.
- Editing parameters using the and buttons.
- Turning the GSL BBSS on and off using the button (push and hold).
- Resetting recorded values using the button (push and hold).
- Controlling the game timer with the button (quick push and release).
- Scrolling through the various run screens using the button (quick push and release).

FIG 5A

⚠ WARNING ⚠

THE BACKLIGHT ON THE LCD DISPLAY TURNS OFF AFTER A PERIOD OF TIME. WHEN THIS HAPPENS THE MARKER IS STILL ON AND ABLE TO FIRE. TO ADJUST THE LCD BACKLIGHT SEE PAGE 38.

INSTALLING A BARREL

⚠ WARNING ⚠

MAKE SURE THE MARKER IS TURNED OFF AND THAT NO PAINTBALLS ARE IN THE MARKER OR LOADER BEFORE INSTALLING A BARREL.

Every GSL comes complete with an Eclipse SL3 Shaft barrel (see page 70). The bore size of the SL3 Shaft barrel back is engraved on the barrel back just in front of the body threads.

To install the SL3 Shaft barrel, firstly screw the barrel tip and barrel back sections together. The threads on the SL3 Shaft barrel tip are reverse threaded. To screw the two sections together, with the barrel pointing away from you, turn the barrel tip in a clockwise direction *(SEE FIGURE 6A)*.

While pointing the GSL marker in a safe direction, insert the assembled SL3 Shaft barrel into the front of the GSL body and screw the SL3 Shaft barrel into the GSL (in a counter-clockwise direction). Continue to screw the SL3 Shaft barrel into the GSL body until the barrel becomes snug in the body *(SEE FIGURE 6B)*. DO NOT over tighten the barrel.

Install a barrel blocking device over the barrel such as the Eclipse barrel sock[1] supplied with the GSL *(SEE FIGURE 6C)*.[2] You have now installed the barrel.


FIG 6A


FIG 6B


FIG 6C

[1]*The Eclipse Barrel Sock that comes with the GSL may differ from that pictured in this manual.*
[2]*Instruction on using the Eclipse Barrel Sock can be found on the Eclipse Barrel Sock warning label.*

TRIGGER ADJUSTMENT

The GSL provides the user with the option to use either a micro-switch or an OPTO sensor (default OPTO) as the means for detecting trigger pulls. Before you begin to adjust and set your trigger, you must first select the method of trigger detection that you wish to use by entering the main menu and making your selection from the hardware menu (see page 37).

There are five adjustment points on the trigger – the front stop screw, the rear stop screw, the magnet return strength screw, the micro-switch activation screw and the spring return strength screw.

Figure 7A Key

Ⓐ - Trigger leaf spring
Ⓑ - Spring return strength screw
Ⓒ - Trigger pin retaining screw
Ⓓ - Front stop screw
Ⓔ - Magnet return strength screw
Ⓕ - Micro-switch activation screw
Ⓖ - Rear stop screw
Ⓗ - OPTO sensor activation prong

The front stop screw is used to set the amount of trigger travel prior to the marker firing. Turn this screw clockwise to reduce the amount of travel. Do not turn the screw too far or the trigger will be pushed past the firing point and the marker will not fire. Turn this screw counter-clockwise to increase the amount of trigger travel *(SEE FIGURE 7B)*.

The rear stop screw is used to set the amount of travel after the marker has fired. Turn this screw clockwise to reduce the amount of travel. Do not turn the screw too far or the trigger will be prevented from reaching its firing point and the marker will not work. Turn this screw counter-clockwise to increase the amount of travel *(SEE FIGURE 7C)*.

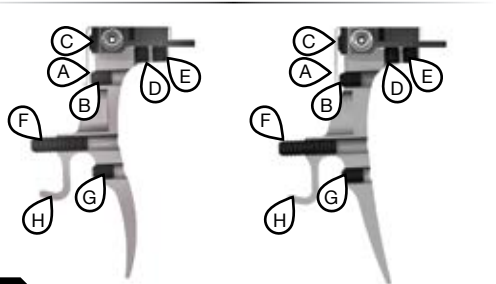


FIG 7A

FIG 7B

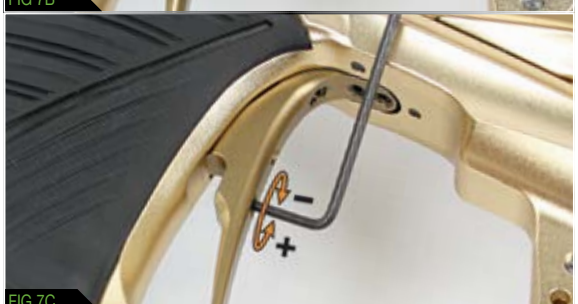


FIG 7C

CONTINUED

The magnet return strength screw is used to adjust the amount of force with which the trigger is returned to its rest position by the magnet. Turn the screw clockwise to increase the amount of force. Do not turn the screw too far or it will negate the position of the front stop screw. Turn the screw counter-clockwise to reduce the amount of force. Do not turn the screw too far or there may not be enough force to return the trigger *(SEE FIGURE 7D)*.

The micro-switch activation screw is used to adjust the point in the trigger pull at which the micro-switch is activated (only if the Trigger parameter on page 37 is set to 'SWITCH'). Turn the screw clockwise to decrease the amount of trigger travel to the activation point. Turn the screw counter-clockwise to increase the amount of trigger travel to the activation point *(SEE FIGURE 7E)*. Do not set the micro-switch activation screw too far out when using the OPTO sensors, as the screw can stop against the micro-switch before the trigger prong enters the OPTO sensors.

The spring return strength screw is used to adjust the spring strength that returns the trigger to its resting position. Turn the screw clockwise to increase the amount of spring return strength in the trigger pull. Turn this screw counter-clockwise to reduce the amount of spring return strength in the trigger pull. Do not turn the screw too far counter-clockwise or there will not be enough force to return the trigger consistently *(SEE FIGURE 7F)*.

When setting the trigger it is important to ensure that the electronic trigger detection is working correctly. When the trigger is fully depressed the Trigger Detection Indicator (TDI) should point upwards . When the trigger is fully released the TDI should point downwards .

For more information, see understanding the Trigger Detection Indicator (TDI) on page 24 and the Filter menu on pages 34-36.

FIG 7D

FIG 7E

FIG 7F

ATTACHING A LOADER

⚠ WARNING ⚠
DO NOT OVER TIGHTEN THE CLAMPING FEED TUBE AS THIS MAY DAMAGE THE LOADER OR FEED TUBE ITSELF.

Using a 5/32" hex key or your fingers, turn the sprocket screw of the clamping feed tube counter-clockwise *(SEE FIGURE 8A)*.

Release the clamping lever on the feed tube *(SEE FIGURE 8B)* and test to see if your loader can easily be pushed into the top of the feed tube. If the loader cannot easily be pushed into the feed tube, loosen the sprocket screw of the clamping feed tube a little more by turning it counter-clockwise using a 5/32" hex key or your fingers *(SEE FIGURE 8A)*.

When you have managed to push your loader into the clamping feed tube, close the clamp to secure it firmly in place *(SEE FIGURE 8C)*. If the loader is loose then you will need to release the clamp, tighten the sprocket screw slightly by turning it clockwise with a 5/32" hex key or your fingers and close the clamp. Repeat this process as necessary to secure your loader in place.

You have now attached a loader to your GSL. Once you have filled your loader and air tank you will then be ready to begin using your GSL.


FIG 8A


FIG 8B


FIG 8C

THE GAS THROUGH PIPE

⚠ WARNING ⚠

IF THE GAS PIPE ASSEMBLY IS NOT CORRECTLY INSTALLED HIGH PRESSURE GAS WILL BE EMITTED.

DO NOT REMOVE THE GAS THROUGH PIPE WHEN THE MARKER IS PRESSURISED.

THERE IS NO NEED TO UNSCREW OR REMOVE THE GAS PIPE ASSEMBLY DURING DAY TO DAY USAGE OF THE MARKER.

Compressed gas is transferred from the frame to the inline regulator via gas pipe assembly *(SEE FIGURE 9A)*, comprising of a gas pipe section[1] Ⓐ and pipe nut section Ⓑ. It is essential that this gas pipe assembly is correctly installed before the marker is supplied with compressed gas.

Before installing the gas pipe assembly, firstly inspect the o-rings on the pipe for any debris or damage *(LABELLED Ⓒ FIGURE 9A)*. Cleaning or replacing as necessary. Also inspect the receiver holes in the frame *(SEE FIGURE 9B)* and SL4 inline regulator *(SEE FIGURE 9C)* for any debris or dirt, cleaning as necessary.

Screw the pipe section into the nut section fully before attempting to install the gas pipe assembly in the marker *(SEE FIGURE 9D)*. Insert the o-ring end of the pipe nut section into the SL4 regulator swivel *(SEE FIGURE 9E)*. Rotate the swivel and gas pipe assembly to align the gas pipe section with the gas port in the frame.

Holding the pipe nut section in place inside the SL4 regulator swivel, screw the gas pipe section clockwise to extend it into the frame *(SEE FIGURE 9F)*. If the gas pipe assembly can slide backwards and forwards, then the pipe is not fully installed and needs to be extended further.

The gas pipe only needs to be removed for maintenance procedures that require removal of the SL4 inline regulator or the frame assembly.

[1]*The GSL and EGO GSL gas pipe sections are not interchangable.*

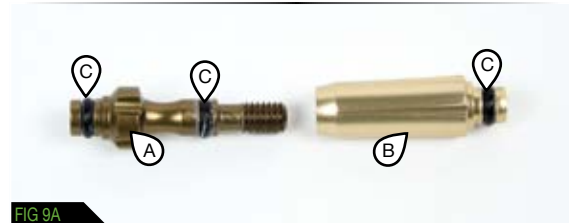


FIG 9A


FIG 9B


FIG 9C


FIG 9D


FIG 9E


FIG 9F

⚠ WARNING ⚠

MAKE SURE THE MARKER IS TURNED OFF WITH A BARREL BLOCKING DEVICE INSTALLED AND THAT NO PAINTBALLS ARE IN THE MARKER OR LOADER BEFORE INSTALLING AN AIR SYSTEM.

COMPRESSED AIR AND NITROGEN SYSTEMS CAN BE EXTREMELY DANGEROUS IF HANDLED OR USED INCORRECTLY.

ONLY USE AN AIR SYSTEM CERTIFIED FOR USE WITHIN THE TERRITORY OF INTENDED USE.

THE GSL CANNOT BE USED WITH CO2. ONLY USE COMPRESSED AIR OR NITROGEN.

NEVER ADD ANY LUBRICANTS OR GREASES INTO THE FILL ADAPTER OF THE AIR SYSTEM REGULATOR

ENSURE THAT ALL SCREWS ARE TIGHTENED AND NO PARTS ARE LOOSE BEFORE INSTALLING AN AIR SYSTEM.

DO NOT PRESSURISE THE GSL WITHOUT THE BOLT SYSTEM CORRECTLY INSTALLED, AS HIGH PRESSURE GAS WILL BE EMITTED.

DO NOT INSTALL A COMPRESSED AIR SYSTEM OR LOAD PAINTBALLS INTO THE GSL UNTIL YOU FEEL COMPLETELY CONFIDENT WITH YOUR ABILITY TO HANDLE THE MARKER SAFELY AND RESPONSIBLY.

ALWAYS RELIEVE ALL RESIDUAL GAS PRESSURE FROM THE GSL BEFORE UNSCREWING THE PRESET AIR SYSTEM.

CHECK THAT THE GAS THROUGH PIPE ASSEMBLY IS CORRECTLY INSTALLED BEFORE INSTALLING A PRESET AIR SYSTEM.

SEE PAGE 15 FOR INSTRUCTION ON INSTALLING THE GAS THROUGH PIPE ASSEMBLY.

IF YOU ARE AT ALL UNSURE ABOUT INSTALLATION OF THE GAS THROUGH PIPE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE

CONTINUED

Every GSL comes complete with an Eclipse push on purge system (POPS) which provides a direct connection for a preset air system. Before screwing an air system into the POPS ensure that the bonnet is disengaged in its forward position *(SEE FIGURE 10A)*. If the bonnet is engaged, depress the latch button and slide the bonnet forward.

Check that the POPS retaining screws are tight. If the POPS can be moved on the frame the screws are too lose. Use a 5/32" hex key to tighten the screws.

Screw the preset air system into the POPS *(SEE FIGURE 10B)* so that the bottle screws in all the way and is tight.

Pull the bonnet backwards allowing the POPS pin to depress the valve pin in the preset air system causing the GSL to become pressurised (providing that there is sufficient air in your tank) *(SEE FIGURE 10C)*. When the bonnet has been pulled back far enough it engages with the POPS body.[1,2]

You have now installed a preset air system onto your GSL.

FIG 10A

FIG 10B

FIG 10C

[1]High, mid and low pressure output preset air systems can be used with the GSL, providing the GSL has the SL4 inline regulator originally supplied with the marker.
[2]The force needed to engage the bonnet may vary depending on the output pressure and internal design of the air system being used.

VELOCITY ADJUSTMENT

When using your GSL, you may wish to change the velocity at which your GSL is firing. This is done by inserting a 1/8" hex key into the adjuster screw at the bottom of your GSL inline regulator and adjusting it accordingly *(SEE FIGURE 11A)*. By turning this adjuster screw clockwise you decrease the output pressure of the inline regulator and consequently the velocity; by turning the adjuster screw counter-clockwise you increase the output pressure of the inline regulator and consequently the velocity. On the bottom of the inline regulator sleeve there are arrows to illustrate which direction to turn the hex key to make the relevant adjustment.[1,2,3]

FIG 11A

[1] *After each adjustment fire two clearing shots to gain an accurate velocity reading. Never exceed 300fps.*
[2] *High, mid and low pressure output preset air systems can be used with the GSL, providing the GSL has the SL4 inline regulator originally supplied with the marker.*
[3] *Turning the SL4 adjuster screw in too far will prevent the GSL from firing.*

SOLENOID FLOW RESTRICTOR

⚠WARNING⚠
SETTING THE RESTRICTOR TOO LOW (ESPECIALLY IN EXTREME WEATHER CONDITIONS) MAY RESULT IN; LOW VELOCITY, INCONSISTENT VELOCITY OR PREVENTING THE BOLT FROM CYCLING.
IF THIS OCCURS INCREASE THE SFR FLOW SETTING.

The following section covers direct adjustment of the solenoid valve which should only be used by users with a sound knowledge of the GSL firing cycle.

Built into the left side of the fame is the solenoid flow restrictor “SFR” *(SEE FIGURE 12A)*, which controls the exhaust flow from the bolt system through the solenoid valve. By controlling the exhaust flow from the bolt system, the speed of the bolt during the forward stroke can be sped up or slowed down. The SFR can be adjusted using a 5/64” hex key.

The restrictor has a 90° range of adjustment from minimum to maximum flow.

By setting the restrictor to different levels of flow the user can control how the gun performs and feels when firing the marker

Setting the restrictor to a higher level of flow will allow for higher cycles per second (dependent on the ROF Cap, see page 30). However these higher settings will also reduce the smoothness of the firing cycle compared to setting the restrictor at a lower level of flow.[1]

Setting the restrictor to a lower level of flow will increase the smoothness of the firing cycle, however reducing the flow also lowers the cycling rate of the GSL.[1]

[1]*The restrictor controls the forward stroke of the bolt. As such it has the ability to directly control the velocity of the paintball. It is strongly recommended to chronograph the GSL after adjusting the restrictor.*

The SFR has a minimum and maximum exhaust flow setting.

The maximum exhaust flow setting can be achieved by turning the SFR dial counter-clockwise so it is pointed vertical. This will allow the bolt to move forwards at its fastest possible speed.

The minimum exhaust flow setting can be achieve by turning the SFR dial clockwise so it is pointed horizontal. This setting will apply the greatest restriction on gas exiting the marker, slowing down the bolt forward stroke.

The SFR can be set anywhere in between the minimum and maximum

In the event that you do not want this adjustablilty available on the marker, a blanking plug is provided. This plug has the same effect as having the SFR set to maximum flow.

To install the blanking plug. Push the SFR out of the right side of the frame using a small hex key or pick *(SEE FIGURE 12B)*, then simply push in the blanking plug making sure it is flush with the frame.

FIG 12A


FIG 12B

UNLOADING THE GSL

⚠ WARNING ⚠

ALWAYS KEEP THE ECLIPSE GSL POINTED IN A SAFE DIRECTION AND ENSURE ALL PERSONS WITHIN RANGE CONTINUE TO WEAR FACE PROTECTION, UNTIL MARKER IS COMPLETELY UNLOADED AND SAFE.

Securely attach a barrel blocking device such as the Eclipse Barrel Sock[1] (supplied with the GSL) to the marker as shown in *FIGURE 13A*.

Turn off the GSL electronics by holding down the ⏻ button on the back of the frame. When the screen turns off and the marker speaker emits the 'off' tone (if the Sound parameter is enabled), the marker has been turned off *(SEE FIGURE 13B)*.

With the GSL pointing away from you. De-gas the marker by depressing the POPS latch button allowing the bonnet to slide forward and vent air. Only when the POPS has fully degassed the GSL marker, unscrew and remove the air system *(SEE FIGURE 13C)*.

Open the clamping lever on the feed tube and slacken off the sprocket screw if necessary on the feed tube. Carefully pull the loader out of the feed tube *(SEE FIGURE 13D)*.

Looking down the feed tube, check to see if there are any paintballs still in the breech, if there are, turn the marker upside down while still keeping the barrel facing away from any persons within firing range then tip out any paintballs within the breech *(SEE FIGURE 13E & 13F)*.

Next remove the barrel blocking device, and unscrew the barrel *(SEE FIGURE 13G)*. Remove any paintballs within the barrel. The Eclipse GSL has now been unloaded and is ready for storage.


FIG 13A


FIG 13B


FIG 13C

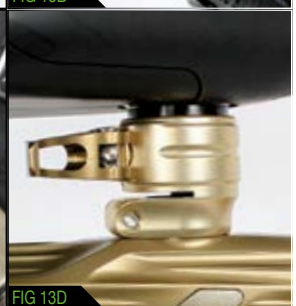


FIG 13D


FIG 13E

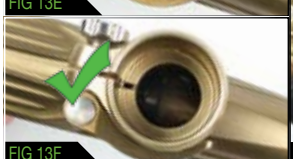


FIG 13F


FIG 13G

[1] *Instruction on using the Eclipse Barrel Sock can be found on the Eclipse Barrel Sock warning label.*

STORAGE AND TRANSPORTATION

CAUTION: NEVER CARRY YOUR ECLIPSE GSL UN-CASED WHEN NOT ON A PLAYING FIELD. THE NON-PLAYING PUBLIC AND LAW ENFORCEMENT PERSONNEL MAY NOT BE ABLE TO DISTINGUISH BETWEEN A PAINTBALL MARKER AND A REAL FIREARM. FOR YOUR OWN SAFETY AND TO PROTECT THE IMAGE OF PAINTBALL, ALWAYS CARRY THE ECLIPSE GSL (OR ANY OTHER PAINTBALL MARKER) IN A SUITABLE MARKER CASE SUCH AS THE ONE IN WHICH IT WAS SUPPLIED.

Your Eclipse GSL must be clear of all paint and propellant during transportation or storage.

Make sure the Eclipse GSL marker is off.

Remove the barrel from the marker.

Make sure the marker is clean of any paint residue, dirt and moisture.

Store your Eclipse GSL in a clean, cool, dry place.

Keep your Eclipse GSL away from any unauthorized and unsafe users.

It may be a good idea to remove the battery when storing your Eclipse GSL to prevent unauthorized use.

Protect your Eclipse GSL from excessive heat during transportation.

When transporting a paintball marker by air, check with the airline regarding their policies on transporting paintball equipment as hold luggage before arriving at the airport.

Observe and obey all local and national laws concerning the transportation of paintball markers. For information concerning any of the laws in your area, contact your nearby law enforcement agency.

When shipping the Eclipse GSL for any reason, Planet Eclipse recommends using the case in which the marker was originally supplied to protect the marker against rough handling during transport.

THE USER INTERFACE

The GSL has a simple user interface through which all aspects of its electronic control system can be monitored and adjusted by means of the three push buttons and graphical LCD which comprise the navigation console.

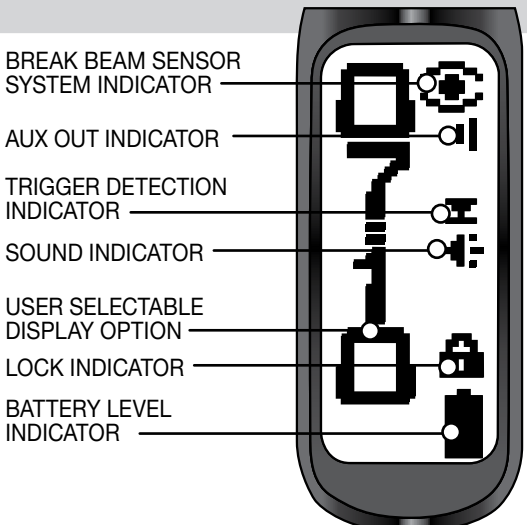
THE RUN SCREEN LAYOUT

The root of the user interface is the run screen which is the screen that is displayed most often when the GSL is on. The run screen has five display functions and the user can scroll through these functions by repeatedly pressing the ⌂ button on the navigation console.

> Game Timer
> Shot Counter
> Peak Rate of Fire Indicator
> Actual Rate of Fire Indicator
> Splash (marker logo[2])

With the exception of the Splash, the run screen is vertically divided with the screen function displayed on the left and a series of status icons displayed on the right.

The SPLASH run screen will display the marker logo with a flashing / alternating backlight. The marker is still able to fire when this screen is displayed.



[1]*The layout of the run screen is correct at time of printing. However newer versions of the GSL software may have a different layout of the run screen from what is printed in this manual. You may find some icons have been added or removed entirely. If you are unsure about any icons which do not feature in the manual contact your local dealer/service centre or Planet Eclipse directly.*

[2]*The splash graphic can be modified to display custom graphics with the Eclipse E-portal software sold separately (see page 83 for more information on Eclipse E-portal).*

THE BBSS INDICATOR

The BBSS is able to switch itself off in the event of a blockage or contamination preventing it from functioning correctly. In this instance, the BBSS will switch itself back on once the blockage is cleared and the correct operation can be resumed.

The BBSS indicator on the main screen is used to indicate the eight possible states of the BBSS as follows:

BBSS enabled and ball detected
The GSL can be fired at the maximum rate of fire determined by the chosen firing mode.

BBSS Fault Has Been Cleared and Ball Detected
The system has been re-enabled. A ball is detected and the GSL can be fired at the maximum rate of fire determined by the chosen firing mode.

BBSS Disabled
The GSL can be fired at a maximum rate of fire as set by the BS OFF ROF parameter (see page 30).

BBSS ENABLED In Training Mode
The BBSS has been over-ridden as the user has selected training mode. As the user has chosen to leave the BBSS on, the achievable rate of fire is limited by the firing mode.

BBSS Enabled No Ball Detected
The GSL cannot be fired.

BBSS Fault Has Been Cleared and no ball detected
The system has been re-enabled. No ball is detected so the GSL cannot be fired. To reset the BBSS icon, use the button to switch off the BBSS and then back on again.

BBSS Fault Detected
The system is disabled. The GSL can only be fired at a maximum rate of 2bps less than the maximum rate of fire, up to a maximum of 10 bps.

BBSS DISABLED In Training Mode
The BBSS has been over-ridden as the user has selected training mode. As the user has chosen to turn the BBSS off, the achievable rate of fire is limited by the BS OFF ROF parameter (see page 30).

THE AUX OUT INDICATOR

The auxiliary socket on the GSL circuit board allows third party products such as loaders or RF transmitters to be interfaced to the GSL.

The AUX out indicator is turned on and off via the AUX OUT parameter (see page 39).

There are two possible conditions that can be indicated:

AUX OUT ENABLED
The AUX out is enabled. Each time the circuit board detects a valid trigger pull a signal will be sent to the AUX connector on the circuit board.

AUX OUT DISABLED
The AUX out is disabled. No signal will be sent to the AUX connector on the circuit board.

THE SOUND INDICATOR

The sound indicator on the run screen is used to convey if the Sound parameter in the Hardware menu (page 37) is switched on or off.

There are two possible conditions that can be indicated:

SOUND ENABLED
The sound parameter is enabled. The GSL will make sounds when switched on and off and when the game timer alarms or times out.

SOUND DISABLED
The sound parameter is disabled. The GSL will not make any sounds.

THE TRIGGER DETECTION INDICATOR

In order for the trigger to be successfully operated it must first be released and then pulled. The trigger detection indicator (TDI) is used to indicate each of the possible trigger states.

OPTO SENSOR SELECTED, READING 0%
The GSL is configured to use the OPTO sensor to detect trigger pulls. The OPTO sensor is currently reading 0%, i.e. the trigger is fully released.

OPTO SENSOR SELECTED, READING BELOW RELEASE POINT
The GSL is configured to use the OPTO sensor to detect trigger pulls. The OPTO sensor is currently reading below the OPTO release point, i.e. the trigger is considered 'released'.

OPTO SENSOR SELECTED, READING 100%
The GSL is configured to use the OPTO sensor to detect trigger pulls. The OPTO sensor is currently reading 100%, i.e. the trigger is fully depressed.

OPTO SENSOR SELECTED, READING ABOVE PULL POINT
The GSL is configured to use the OPTO sensor to detect trigger pulls. The OPTO sensor is currently reading above the OPTO pull point, i.e. the trigger is considered 'pulled'.

OPTO SENSOR SELECTED, READING MID-RANGE
The GSL is configured to use the OPTO sensor to detect trigger pulls. The OPTO sensor is currently reading somewhere between the OPTO release point and the OPTO pull point, i.e. the trigger is half depressed.

MICRO-SWITCH Selected, ACTUATED
The GSL is configured to use the micro-switch to detect trigger pulls. The micro-switch is currently actuated, i.e. the trigger is pulled.

MICRO-SWITCH SELECTED, NOT ACTUATED
The GSL is configured to use the micro-switch to detect trigger pulls. The micro-switch is not currently actuated, i.e. the trigger is released.

From the factory the GSL will have the OPTO sensor enabled. The micro-switch can be enabled from the Hardware menu (see page 37).

THE LOCK INDICATOR

The GSL has a tournament lock which prevents the user from making changes to any parameter that affects the way in which the GSL shoots, without the need for tools. This feature is necessary in order to make the GSL legal for tournament play. To enable or disable the tournament lock see Accessing the Menu System on page 27.

When the lock is enabled the lock indictor will show a closed padlock .
When the lock is disabled the lock indictor will show an open padlock .

THE BATTERY LEVEL INDICATOR

The battery level indicator is used to show the state of the battery within the GSL. When the battery is fresh the indicator will show a 'full' battery and as the battery is drained, so will the indicator show the battery emptying. When the battery reaches a point at which the GSL will no longer function reliably, the indicator will start to flash. At this point the battery must be changed immediately.
As well as displaying the voltage level of the battery, the indicator also warns if the battery being used has an incorrect voltage to operate the electronics reliably. The icon for a battery with an incorrect voltage output is . If this icon is shown the battery must be replaced immediately.

THE GAME TIMER

When the game timer is shown on the run screen then it can be started by pressing the button and the timer will start to count down. The game timer can also be configured to start on a trigger press with the start parameter (see page 41).

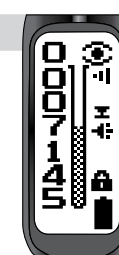
When the game timer reaches the alarm time the gamer timer will start to flash and the audible alarm will sound every second, provided that the sound parameter is on.

When the game timer reaches 00:00, GAME OVER will be displayed and the audible alarm will sound continually, provided that the sound parameter is set to 'on'.

To stop the game timer at any time press and hold the button for 0.5 seconds.

To reset the game timer to it's preset start time, push and hold the button for 0.5 second. The game timer will also be reset whenever the GSL is switched off.

THE SHOT COUNTER



The shot counter will increment every time that the circuit board registers a trigger pull, regardless of whether the shot counter is displayed or not. When the shot counter is displayed on the run screen it can be reset to 0 by pressing and holding the button for 0.5 seconds.

There is also an optional shot gauge that can be displayed on this run screen. The gauge counts down from a user adjustable number. To alter the gauge settings see page 40. The gauge is reset whenever the GSL is switched off or the button is pressed.

The shot counter does not function when the GSL is in Training Mode (see page 40).

THE ACTUAL RATE OF FIRE

When the actual ROF is selected for display the run screen will look something like the screen to the right. The value displayed in the top left of the screen represents the number of full cycles completed in a second - the actual rate of fire over that second. The value below it is the maximum actual rate of fire that has been achieved. The graph below this number shows the actual rates of fire achieved over time where each bar represents the amount of pulls in that second. To reset the maximum, press and hold the ▼ button for 0.5 second.

THE PEAK RATE OF FIRE

When the peak ROF is selected for display the run screen will look something like the screen to the right, which differs from the display of the actual ROF by the inclusion of the indicator 'PK'. The value displayed in the top left of the screen represents the maximum rate of fire that has been recorded over the last second. The value below it is the maximum peak rate of fire that has been achieved. The graph below this number shows the peak rates of fire achieved over time. To reset this maximum, press and hold the ▼ button for 0.5 seconds.

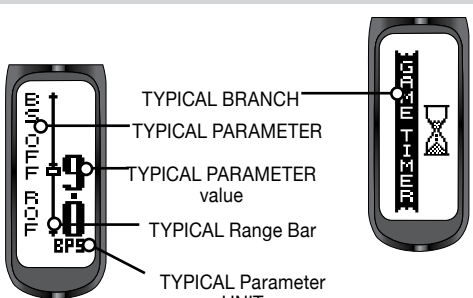
The peak ROF is typically higher than the actual ROF as it is much easier to fire two shots in quick succession than it is to maintain a string over a longer period of time.

THE MENU SYSTEM

Behind the run screen is a structured menu system comprised of two layers of menus. Each menu contains a number of menu items and each menu item can either be a parameter or a branch to another menu. Branches have an animated graphic on the right of the display, whereas parameters have their current value.

On parameter screens a range bar will be displayed where there is a large scale of adjustability in that parameter. The current parameter value is displayed as a box on the range bar which is used to indicate the range of adjustability in the parameter value.

At the bottom of the parameter screen the unit for that parameter will be displayed. Some parameters will not have units, such as on or off parameters.



ACCESSING THE MENU SYSTEM

To access the Main menu from the run screen double-click the ▪ button and the first item on the Main menu will be displayed. Alternatively, push and hold the ▪ button for 2 seconds.

Some of the parameters in the menu system can have a tournament lock applied to them. This lock can be toggled on and off by pressing the tournament lock button on the circuit board *(SEE Ⓐ IN FIGURE 14A)*.

When trying to select a parameter that is locked, the a 'LOCKED' message will be briefly displayed.

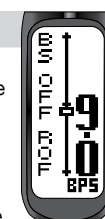
FIG 14A

MOVING AROUND THE MENUS

⚠ WARNING ⚠
THE MARKER CAN BE FIRED WHILE NAVIGATING ALL MENUS AND PARAMETERS.

Press and release the ▼ button to display the next item on the menu. When the last menu item is displayed, pressing the ▼ button will display the first item.
Press and release the ▲ button to display the previous item on the menu. When the first menu item is displayed, pressing the ▲ button will display the last item.
When the displayed item is a branch, as indicated by an animation on the right of the screen, press the ▪ button to move to another menu.

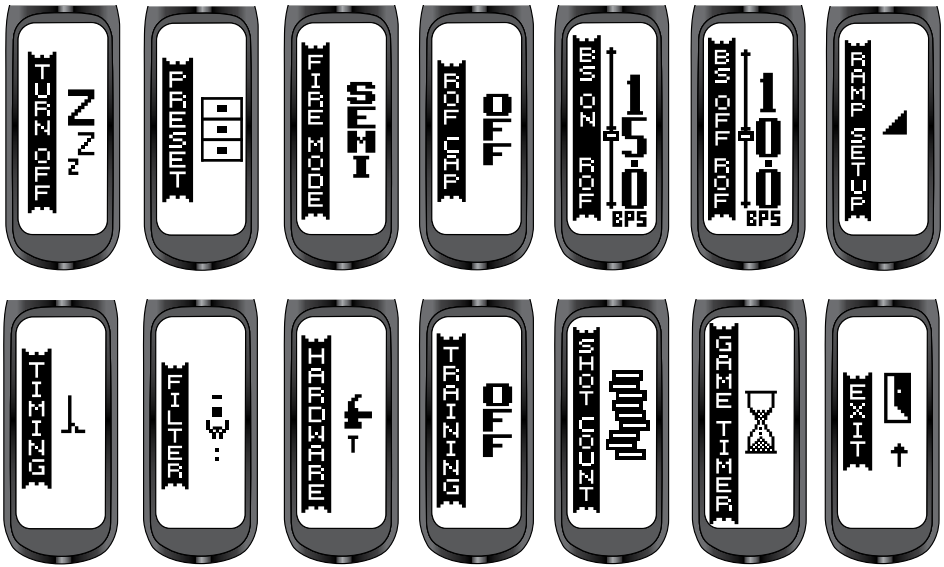
ALTERING PARAMETERS



When the displayed item is a parameter, as indicated by a parameter value on the right of the screen, pressing the ▪ button will activate the EDIT mode which allows the parameter value to be altered. When EDIT mode is active, the black box surrounding the parameter name disappears. There are two types of parameter, numeric parameters and choice parameters.

A numeric parameter has a numeric value whereas a choice parameter is one that has a small number of distinct choices. Altering parameter values is essentially the same for both types of parameter. To alter a numeric parameter, first activate the EDIT mode. Press the ▲ button to increase the parameter value one step at a time. Press and hold the ▲ button to increase the parameter value rapidly. When the value reaches it's maximum it will revert to its minimum value. Press the ▼ button to decrease the parameter value one step at a time. Press and hold the ▼ button to decrease the parameter value rapidly. When the value reaches its minimum it will revert to it's maximum value. When the required parameter value is displayed press the ▪ button to accept the value and end the EDIT mode.

To alter a choice parameter, first activate the EDIT mode. Press the ▼ button to display the next choice in the list. When the last choice is displayed, pressing ▼ will display the first choice in the list. Press the ▲ button to display the previous choice in the list. When the first choice is displayed, pressing the ▲ button will display the last choice in the list. When the required choice is displayed press the ▪ button to accept the choice and end the EDIT mode. If the displayed choice is cancel then pressing the ▪ button will end the EDIT mode and restore the parameter to the value that is was prior to editing.



The Main menu contains both editable parameters and sub-menus which contain editable parameters. Some of these parameters affect the way the GSL shoots and are tournament locked as standard from the factory.1

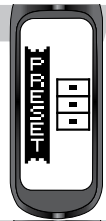
The Main menu also contains the TURN OFF option. Selecting this option will immediately turn off the GSL, preventing it from firing.

Parameters followed by a * are part of the Smart Menu System and will only be displayed depending on your chosen settings. (e.g. The BS ON ROF parameter will only become available if the ROF CAP parameter is set to on).

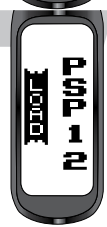
1The layout of the Main menu is correct at time of printing. However newer versions of the GSL software may have a different layout of the Main menu, sub-menus and parameters from what is printed in this manual. You may find some parameters have been added or removed entirely. If you are unsure about any parameters which do not feature in the manual contact your local dealer/service centre or Planet Eclipse directly.

PRESET MENU

In order to simplify the set up of the GSL a number of preset configurations are available for selection. Choosing one of these presets will cause all of the necessary parameters to be set in such a way as to make the GSL comply with the rules governing a particular paintball league1. It is also possible for the user to save up to two preset configurations of their own.



LOAD PARAMETER



This parameter is used to load the required preset configuration and has the following choices:

> USER 1: Load a set of custom firing mode parameters that have been previously saved by the user.

> USER 2: Load a set of custom firing mode parameters that have been previously saved by the user.

> FACTORY: Reset every parameter to the factory set default. The GSL leaves the factory set in this way.

> NPPL: Load a set of parameters that configures the GSL to comply with the NPPL rules governing firing modes.[1,2]

> PSP 10: Load a set of parameters that configures the GSL to comply with the PSP rules governing firing modes in lower divisions (10bps).[1,2]

> PSP 12: Load a set of parameters that configures the GSL to comply with the PSP rules governing firing modes in higher divisions (12bps).[1,2]

> MS10: Load a set of parameters that configures the GSL to comply with the 2010 Millennium Series rules governing firing modes.[1,2]

> Cancel: Editing is cancelled and the parameter remains unchanged.

SAVE PARAMETER

This parameter is used to save the current set of parameters as a user defined custom preset configuration.

This parameter has the following choices:

> USER 1: Save the current parameters as the preset ‘USER 1’.

> USER 2: Save the current parameters as the preset ‘USER 2’.

> CANCEL: Editing is cancelled and the parameter remains unchanged.

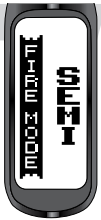
[1]*Some presets and fire modes may only be available in certain countries and on some models of the GSL.*
[2]*All presets are correct at time of printing. It is the users responsibility to ensure that the loaded preset complies with the event rules the marker is intended to be used in.*

FIRE MODE PARAMETER

This parameter is used to select the firing mode of the GSL and has the following choices:

> Semi: This is the default and in this firing mode the GSL will fire one shot for every trigger pull.
> RAMP: In this firing mode, the rate of fire is increased above the rate at which the trigger is pulled once certain criteria have been met. These criteria are set by the parameters on the Ramp Setup menu.[1]
> CANCEL: Editing is cancelled and the parameter is unchanged.

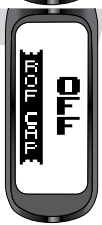
[1]*Some presets and fire modes may only be available in certain countries and on some models of the GSL.*



ROF CAP PARAMETER

The ROF CAP parameter is used to specify whether or not the GSL should have a limited / capped rate of fire. When the ROF CAP is enabled (and the BBSS is enabled), the maximum achievable rate of fire is set by the BS ON ROF parameter. Choices for the ROF CAP parameter are:

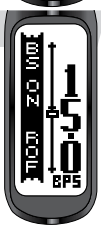
> OFF: Rate of fire only limited by the loader.
> ON: Rate of fire limited to the BS ON ROF parameter value.
> CANCEL: Cancel editing and leave the parameter unchanged.



BS ON ROF PARAMETER*

The BS ON ROF parameter is used to set the maximum achievable rate of fire from the GSL. The value of this parameter can be adjusted between 4.0 and 30.0 balls per second in 0.1bps increments.[1]

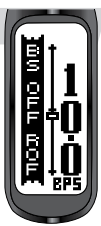
The BS ON ROF parameter will only be displayed if you have set the ROF CAP parameter to 'ON'.



[1]*Always calibrate your GSL ROF CAP parameters to the local field BPS meter as readings may vary from meter to meter.*

BS OFF ROF PARAMETER

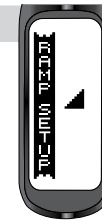
The BS OFF ROF parameter is used to control how fast the GSL cycles when the Break Beam Sensor System is disabled. This parameter can be set between 4.0 and 15.0 balls per second and should always be set to the slowest speed of the loading system in use.[1]



[1]*Always calibrate your GSL ROF CAP parameters to the local field BPS meter as readings may vary from meter to meter.*

RAMP SETUP MENU

This menu is only available when ramping has been selected with the FIRE Mode parameter and comprises a list of parameters that control the way in which the GSL ramps, as shown below.



TYPE PARAMETER

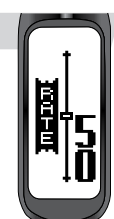
This parameter is used to select the ramping style and has the following choices:

> STEP: Step ramping will cause the GSL to shoot in semi-automatic until a number of trigger pulls, set by SEMI SHOTS, have been made at a minimum pull rate, set by KICK IN. At this point the rate of fire will step up to the maximum rate of fire as set by BS ON ROF (or the maximum loader speed if the ROF CAP parameter is set to off).Ramping is maintained as long as the user continues to pull the trigger at a required rate set by SUSTAIN.

> LINEAR: Linear ramping will cause the GSL to shoot in semi-automatic until a number of trigger pulls, set by SEMI SHOTS, have been made at a minimum pull rate, set by KICK IN. At this point the rate of fire will equal the rate of trigger pulls increased by the percentage specified by RATE up to a maximum rate of fire as set by BS ON ROF, if the ROF CAP is on. Ramping is maintained as long as the user continues to pull the trigger at a required rate set by SUSTAIN.

> CANCEL: Editing is cancelled and no changes are made to the parameter.

RATE PARAMETER*



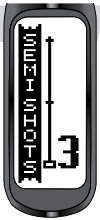
The parameter is only available when LINEAR ramping is selected and is used to set the percentage increase in rate of fire over rate of trigger pulls.

For example, if the user is pulling the trigger at a rate of 10 pulls per second and the RATE parameter is set to 50% then the rate of fire is 10 plus 50% extra which is 15 balls per second.

This parameter can be set between 0 and 100% in 10% increments.

SEMI SHOTS PARAMETER

The parameter sets the number of shots in semi-automatic that are required at the KICK IN rate before ramping will start. The parameter can be set between 3 and 9 pulls in 1 pull increments.



KICK IN PARAMETER

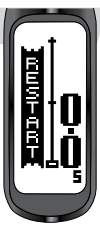
This parameter sets the minimum rate at which the user has to pull the trigger in order to start ramping. This parameter can be set between 3.3 and 10.0 pulls per second in 0.1 pulls per second increments.

SUSTAIN PARAMETER

Once the GSL is ramping the user has to continue to pull the trigger at a minimum rate in order to maintain the ramping. This parameter sets this rate and can be between 3.3 and 10.0 pulls per second in 0.1 pulls per second increments.

RESTART PARAMETER

The RESTART parameter defines the amount of time after the last trigger pull during which the ramp can be restarted with a single trigger pull. If a trigger pull occurs after the RESTART time has expired, then the other ramp start conditions have to be met before ramping will restart. This parameter can be set between 0.0 and 1.0 seconds in 0.1 second increments.

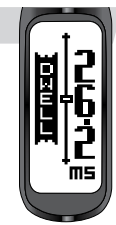


TIMING MENU

These parameters all relate to the control of the solenoid valve.

DWELL PARAMETER

The DWELL parameter sets the amount of time that the solenoid is energized and therefore the amount of gas that is released with each shot of the GSL. Setting this parameter too low will result in low velocity shots and/or excessive shot to shot velocity fluctuations. Setting the parameter too high will simply waste gas and make the GSL louder. The DWELL can be set between 0.0 and 30.0 milliseconds. The factory default setting can normally be reduced after a few thousand shots as the GSL 'beds-in'.

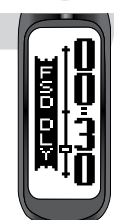


FSD COMP PARAMETER

"First shot drop off" is a reduction in velocity of the first shot fired after an extended period of not firing and is caused by the stiction between dynamic o-rings and the surfaces that they are in contact with. In order to compensate for first shot drop-off this parameter can be set to add extra time to the DWELL parameter for the first shot. This parameter can be set between 0.0 and 5.0 milliseconds.

FSD DLY PARAMETER

The time that has to elapse before the FSD COMP is applied to a shot following a previous shot. This parameter can be set between 00:00 and 04:00 minutes.



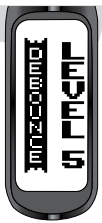
FILTER MENU

The parameters on the Filter menu are all used to tune the GSL's software filters which prevent the GSL from firing unless all of the necessary conditions are met. The factory default settings will be suitable for most set-ups, however certain loader and trigger set-ups may require modification of one or more of these parameters.

DEBOUNCE PARAMETER

The DEBOUNCE parameter is used to combat any trigger bounce that might occur in the GSL and can be set between level 1 and level 9 in one level increments.

> LEVEL 9: Level 9 providing the most filtering (least 'bouncy').
> LEVEL 1: Level 1 providing the least filtering (most 'bouncy').
> CANCEL: Cancel editing and leave the parameter unchanged.

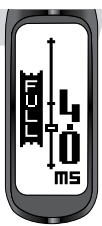


EMPTY PARAMETER

In order for the BBSS to function correctly it must first detect that the bolt is fully retracted and the breech is empty, and then detect that a paintball is loaded into the breech before the GSL is allowed to fire. The parameter can be set between 1.0 and 20.0ms in 0.1ms increments.

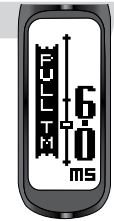
FULL PARAMETER

Tumbling paintballs can take time to settle in the breech before they can be successfully fired. This parameter is used to set the amount of time that a paintball has to be in the breech before the GSL is allowed to fire. This parameter can be set between 1.0 and 20 milliseconds in 0.1ms increments.



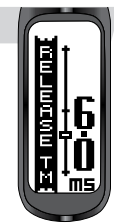
PULL TM PARAMETER

The PULL TM parameter is used to set the minimum amount of time that the trigger must be pulled before it is recognised as a valid trigger pull. This parameter can be set between 3.0 and 20.0 milliseconds in 0.1ms increments.



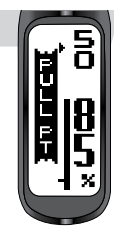
RELEASE TM PARAMETER

The RELEASE TM parameter is used to set the minimum amount of time that the trigger must be released before it is recognised as a valid trigger release. This parameter can be set between 3.0 and 25.0 milliseconds in 0.1ms increments.



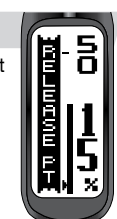
PULL PT PARAMETER*

The PULL PT parameter is only available if OPTO has been selected in the Hardware menu. PULL PT defines the point at which the trigger is considered pulled and is adjustable between 51% and 99% in 1% increments.



RELEASE PT PARAMETER*

The RELEASE PT parameter is only available if OPTO has been selected in the Hardware menu. RELEASE PT defines the point at which the trigger is considered released and is adjustable between 1% and 49% in 1% increments.



BASIC TRIGGER FILTER SET-UP

95% of trigger bounce problems can be eliminated by utilizing one of the nine fixed DEBOUNCE choices (LEVEL 1-9). In attempting to eliminate trigger bounce it is advisable to try the nine fixed DEBOUNCE choices before attempting any advanced set up of the trigger filters.

ADVANCED TRIGGER FILTER SET-UP

In order to optimize the trigger filters it is necessary to have the PULL PT parameter set as high as possible and the RELEASE PT parameter set as low as possible:

1. Select the PULL PT parameter. Observe that the graphical bar rises and falls as the trigger is pulled and released. The actual value of the graphical bar is displayed in the top right of the display.

2. Set the rear stop screw as required, ensuring that the bar is as close to 100% as possible when the trigger is fully depressed against the set screw. It is advisable to allow for some extra travel in the trigger pull once the bar has reached its maximum value.

3. Adjust the PULL PT parameter so that when the trigger is fully depressed the bar settles above the indicator on the left hand side of the screen (see page 35).

4. Select the RELEASE PT parameter. Observe that the graphical bar rises and falls as the trigger is pulled and released. The actual value of the graphical bar is displayed in top right of the display.

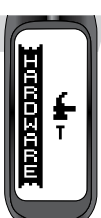
5. Set the front stop screw as required, ensuring that the bar is as close to 0% as possible when the trigger is fully released against the set screw. It is advisable to allow for some extra travel in the trigger release once the bar has reached its minimum value.

6. Adjust the RELEASE PT parameter so that when the trigger is fully released the bar settles beneath the indicator on the left hand side of the screen (see page 35).

7. Set the magnet return strength screw and the spring return strength screw as required, making both the spring tension and the return force as strong as possible without compromising the “feel” of the trigger.

HARDWARE MENU

This menu comprises parameters that control low level functionality of the GSL electronic hardware.



TRIGGER PARAMETER

The GSL is fitted with a dual trigger pull detection system. A non-contact OPTO-electronic trigger sensor arrangement is used to detect trigger movement whilst a micro-switch is used to provide a more traditional tactile feedback for the trigger. The TRIGGER parameter is used to select which system is used. The choices available are as follows:

> OPTO: Select the OPTO sensor for trigger pull detection.
> SWITCH: Select the micro-switch for trigger pull detection.
> CANCEL: Cancel editing and leave the parameter unchanged.

SOLENOID PARAMETER

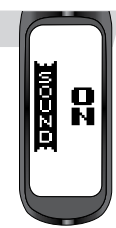
This parameter controls the amount of power used by the solenoid valve and should normally be left at it's default 'LO PWR' setting. Cold weather (sub 0°C/32°F) will cause lubricants to thicken and increase stiction in the marker system which may cause velocity drop-off and/or shot to shot inconsistency. Increasing the solenoid power will often help to eliminate these problems, but will cause more drain on the battery. The choices available for the parameter are:-

> LO PWR: Low power solenoid drive
> HI PWR: High power solenoid drive
> CANCEL: Cancel editing and leave the parameter unchanged

SOUND PARAMETER

The GSL board is capable of emitting a variety of sounds to audibly signal when certain functions have been performed including, but not limited to, powering up, powering off, changing the BBSS mode and resetting various counters and timers. This parameter determines if this feature is switched on or off. Switching it on will cause increased drain on the battery. The choices available for this parameter are:

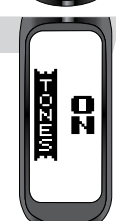
>OFF: Sounds switched off.
>ON: Sounds switched on.
>CANCEL: Cancel editing and leave the parameter unchanged.



TONES PARAMETER*

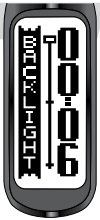
This parameter determines if the GSL emits a tone each time any of the pushbuttons on the navigation console are activated. As part of the smart menu system the TONES parameter will only be shown in the Hardware menu if the SOUND parameter is switched 'ON'. The choices available for this parameter are:

>OFF: Tones switched off.
>ON: Tones switched on.
>CANCEL: Cancel editing and leave the parameter unchanged.



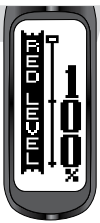
BACKLIGHT PARAMETER

This parameter sets the time that the LCD backlight is illuminated after a pushbutton is pressed. The parameter can be set between 00:00 and 00:20 (20 seconds). If set to 00:00 then the backlight will not be illuminated.



RED LEVEL PARAMETER*

This parameter sets the percentage of red light in the LCD backlight and can be set between 0% and 100% in 10% increments.

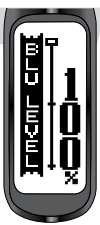


GRN LEVEL PARAMETER*

This parameter sets the percentage of green light in the LCD backlight and can be set between 0% and 100% in 10% increments.

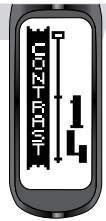
BLU LEVEL PARAMETER*

This parameter sets the percentage of blue light in the LCD backlight and can be set between 0% and 100% in 10% increments.



CONTRAST PARAMETER

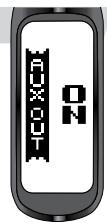
The parameter sets the contrast level of the LCD. This parameter is adjustable between 0 and 30 in increments of 1.



AUX OUT PARAMETER

This parameter turns on and off the AUX socket on the PCB. The choices available for this parameter are:

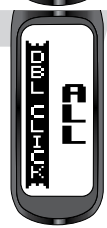
>OFF: AUX socket switched off.
>ON: AUX socket switched on.
>CANCEL: Cancel editing and leave the parameter unchanged.



DBL CLICK PARAMETER

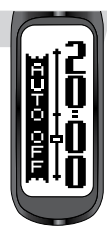
This parameter is used to select where double-clicking the button can be used. The choices available for this parameter are:

>NONE: Double clicking is disabled entirely. To power up the GSL and enter the Main Menu the user needs to push and hold the button.
>POWER UP: Double clicking only works when powering up the GSL. To enter the Main Menu the user still needs to push and hold the button.
>ALL: Double clicking works when powering up the GSL and entering the Main Menu. Push and hold still works for these procedures as well.
>CANCEL: Cancel editing and leave the parameter unchanged.



AUTO OFF PARAMETER

This parameter sets the time that has to elapse before the GSL switches itself off if not used. The parameter can be set between 05:00 and 20:00 minutes.



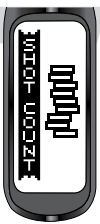
TRAINING PARAMETER

In training mode the GSL simulates the firing cycle so that the user may practice pulling the trigger without wasting air and making lots of noise. The BBSS is overridden in order to simulate paintballs entering the breech and the beeper indicates when a shot is fired. Training mode is indicated with a 'T' in the BBSS indicator.

> OFF: Training mode is disabled and the GSL functions normally.
> ON: Training mode is enabled.
> CANCEL: Cancel editing and leave the parameter unchanged.

SHOT COUNT MENU

This menu is comprised of parameters that control the shot counter.



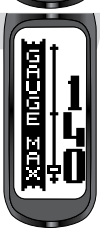
GAUGE PARAMETER

This parameter allows the user to toggle the gauge graphic on and off in the shot counter Run Screen. The choices for the GAUGE parameter are:

> OFF: Gauge graphic on the shot counter run screen is disabled.
> ON: Gauge graphic on the shot counter run screen is enabled.
> CANCEL: Cancel editing and leave the parameter unchanged.

GAUGE MAX PARAMETER*

The gauge max parameter allows the user to set the number the gauge counts down from every time the GSL is fired. The user can set the gauge from 100 to 2000 in increments of 10.



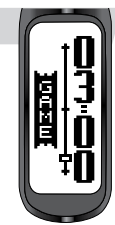
GAME TIMER MENU

This menu is comprised of parameters that control the operation of the Game Timer.

GAME PARAMETER

This parameter is used to set the Game Time, the time from which the game timer counts down to zero. This parameter can be set between 00:00 and 60:00 minutes in 10 second increments. The factory default is 07:10 (7 minutes 10 seconds).

When the game timer reaches 00:00, GAME OVER will be displayed and the audible alarm will sound continually, provided that the SOUND parameter is set to 'ON'.



ALARM PARAMETER

An alarm condition is generated whenever the Game Timer counts down to the time set by the ALARM parameter. This parameter can be set between 00:00 and 10:00 minutes in 10 second increments.

When the alarm condition is generated the Game Timer will start to flash and the audible alarm will sound every second, provided that the SOUND parameter is set to 'ON'.

START PARAMETER

This parameter is used to select the event which will cause the Game Timer to begin counting down. This parameter has the following choices:

> BUTTON: Pressing the button will start the Game Timer.
> TRIGGER: Pulling the trigger will start the Game Timer.
> CANCEL: Cancel editing and leave the parameter unchanged.

THE BREAK BEAM SENSOR SYSTEM

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

Undo the retaining screw for the Break Beam Eye cover on the left hand side of the GSL using a 5/64" (2mm) hex key *(SEE FIGURE 15A)*.

Remove the eye cover to expose the back of the Break Beam Sensor unit *(SEE FIGURE 15B)*. Using a dry cotton bud, carefully remove any debris, paint or moisture from the back of the sensor unit and from inside the eye cover.

Lift the Break Beam Sensor unit free from the GSL body and using another dry cotton bud, remove any grease or debris build-up from the front of the sensor unit *(SEE FIGURE 15C)*.


FIG 15A


FIG 15B


FIG 15C

(CONTINUED)

Remove the rubber detent and using a dry cotton bud clean the detent and its location point in the GSL body, replacing the detent if it is damaged *(SEE FIGURE 15D)*.

Reinsert the detent back into the GSL body and place the BBSS back into the designated slot in the body *(SEE FIGURE 15E)*. Ensure that the sensor is face down in the body i.e. looking into the breech.[1]

Replace the eye cover and using a 5/64" hex key, replace the retaining screw to hold the eye cover in place *(SEE FIGURE 15F)*.

Repeat the procedure for the opposite side of the GSL.

You have now cleaned your Break Beam Sensor System.

FIG 15D

FIG 15E

FIG 15F

[1]*Ensure that the receiver sensor (indicated by a red mark & red heat shrink) is located on the right-hand side of the marker body.*

⚠ WARNING ⚠
IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.

THE SL4 INLINE REGULATOR ASSEMBLY

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

Unscrew and remove the gas pipe assembly from the SL4 inline regulator *(SEE FIGURE 16A)*. See page 15 for more information on removing the gas pipe assembly.

Grip the SL4 inline regulator tightly through the rubber sleeve and unscrew the SL4 inline regulator from the GSL body *(SEE FIGURE 16B)*. Pull the foregrip crown down to free it from the GSL body *(SEE FIGURE 16C)*.

Inspect the o-ring at the top of the threads on the FRM for damage *(LABELLED Ⓐ FIGURE 16D)*. Replace and re-lubricate as necessary.[1]

Tip both the piston and spring out of the top of the inline regulator *(SEE FIGURE 16E)*.

Insert a 1/8" hex key into the adjuster screw assembly in the bottom of the inline regulator, turn the adjuster screw clockwise through the inline regulator body *(SEE FIGURE 16F & 16G)*, and push the adjuster assembly out of the top of the inline regulator body.[2]

Thoroughly clean the 011 NBR70 o-rings that sits on the outside of the adjuster assembly, then re-lubricate with Eclipse Grease *(SEE FIGURE 16H)*.[1]

Using a dry cotton bud, clean the internal 008 NBR70 o-ring that sits inside the top section of the adjuster top. Then using a small hex key gently apply Eclipse Grease to the o-ring *(SEE FIGURE 16I)*.[1]


FIG 16A


FIG 16B


FIG 16C

FIG 16D

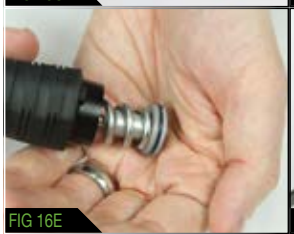


FIG 16E


FIG 16F

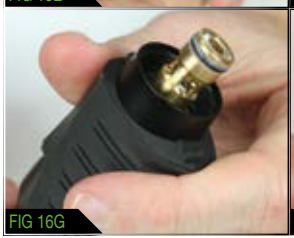


FIG 16G

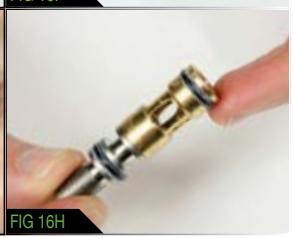


FIG 16H

[1] *If any o-rings are damaged then replace them. Extra o-rings are available in parts kits available at www.planeteclipse.com*
[2] *The adjuster screw can only be removed by turning it upwards through the bottom section of the inline regulator. The regulator will be damaged if the adjuster screw is removed incorrectly.*

(CONTINUED)

Inspect the internal sealing surfaces of the regulator body, removing any dirt or debris with a cotton bud *(SEE FIGURE 16J)*.

Re-install the adjuster assembly into the inline regulator body threaded end first. Apply light pressure to the top of the adjuster, while using a 1/8" hex turn the adjuster screw counter-clockwise until is stops at the base of the inline regulator body *(SEE FIGURE 16K)*.

Take the piston, inspect for damage and clean the 14x2 NBR70 o-ring at the top. Re-lubricate it with a light application of Eclipse Grease *(SEE FIGURE 16L)*. Place the inline regulator spring over the piston, then insert the piston and spring into the top of the inline regulator body *(SEE FIGURE 16M)*.[1]

To replace the foregrip crown, push the crown up onto the body until the FRM threads and body plug are covered *(SEE FIGURE 16N)*.

Re-attach the inline regulator to the GSL FRM *(SEE FIGURE 16O)*, then re-connect the gas pipe fitting (see page 15).

Basic cleaning of the SL4 inline regulator is complete.

Reset the input pressure to the factory default before suppling the GSL with compressed air.


FIG 16I


FIG 16J


FIG 16K


FIG 16L

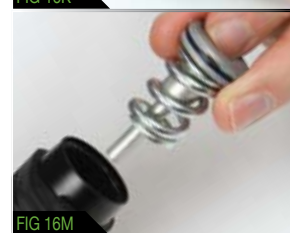


FIG 16M


FIG 16N


FIG 16O

[1]*If any o-rings are damaged then replace them. Extra o-rings are available in parts kits available at www.planeteclipse.com*

⚠ WARNING ⚠

IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.

ADVANCED INLINE REGULATOR MAINTENANCE

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

This procedure is only required if your are fixing a supercharging SL4 inline regulator (common symptoms of supercharging are a very high velocity first shot and/or large variances in shot to shot consistency).

Place a 3/32" hex key through the adjuster top *(SEE FIGURE 17A)*, then insert a 1/8" hex key into the bottom of the adjuster screw and carefully turn it counter-clockwise until the two parts begin to unscrew freely *(SEE FIGURE 17B)*. With your fingers fully unscrew the two parts taking care not to lose any of the internal components *(SEE FIGURE 17C)*.

Inside the adjuster screw you will find a regulator seal, purge poppet and spring (purge poppet assembly) *(SEE FIGURE 17D)*. Inspect and clean the regulator seal, turning it over if one side appears excessively worn or damaged or replace if necessary. Inspect and clean the purge poppet or replace if necessary.

Place the purge poppet and attached spring in the central hole in the regulator seal, then insert these parts into the adjuster screw *(SEE FIGURE 17E)*. Ensure is it re-installed correctly, failure to do so may seriously damage the GSL solenoid.

With the regulator seal, purge valve and spring installed back into the adjuster screw, replace the adjuster top *(SEE FIGURE 17F)*. Screw the two parts tightly together using 1/8" and 3/32" hex keys. Refer to the 'SL4 Inline Regulator Assembly' section on pages 44-45 to re-assemble the SL4 inline regulator.

⚠ WARNING ⚠
IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.


FIG 17A

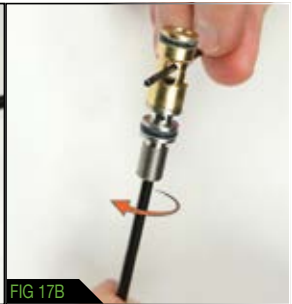


FIG 17B


FIG 17C

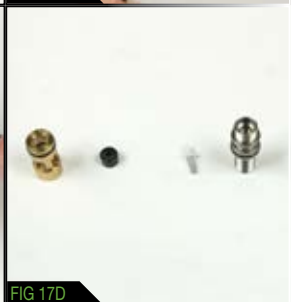


FIG 17D

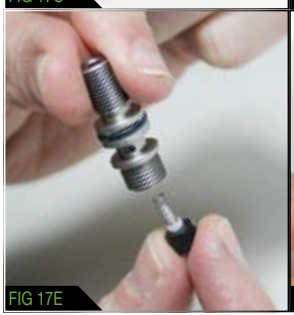


FIG 17E


FIG 17F

CLEANING THE BODY FILTER

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

Remove the inline regulator as covered on page 44. Turn the GSL upside down to reveal the body filter inside the body *(SEE FIGURE 18A)*.

Using a 5/64" hex key unscrew and remove the retaining screw *(SEE FIGURE 18B)*.

Then remove the body filter *(SEE FIGURE 18C)*.

Inspect and clean the body filter. If the filter is very dirty replace with a new filter.

Insert the filter[1] into the FRM on the GSL body, ensuring the hole in the filter lines up with the threads in the body *(SEE FIGURE 18D)*.

Using a 5/64" hex key, replace the retaining screw. DO NOT over tighten the retaining screw as this may result in the filter being crushed between the screw and GSL body *(SEE FIGURE 18E)*.

Re-attach the inline regulator to the GSL.

If after cleaning the GSL is still experiencing slow purge and low velocity issues the filter may need replacing.

[1]*If the filter has only been cleaned and not replaced with a new one, ensure the filter is inserted back into the body facing the same way it was removed. This will prevent any dirt embedded in the filter being blow into the bolt system of the marker when supplied with compressed air.*

⚠ WARNING ⚠
IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.


FIG 18A

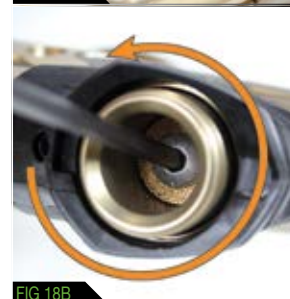


FIG 18B


FIG 18C


FIG 18D

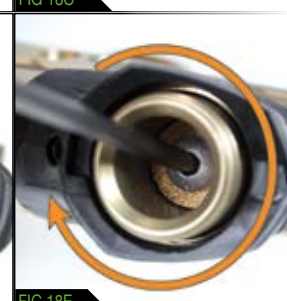


FIG 18E

MAINTAINING THE BOLT SYSTEM

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

The GSL comes with two bolts. A soft nosed ST3 Bolt and an all metal ST Bolt (see page 72).

To install the ST bolt follow the maintenance procedure below, swapping over the bolts.

After installation, re-chronograph the GSL and adjust the SL4 inline regulator accordingly.

ALWAYS CHECK THE SHOOTING VELOCITY OF THE GSL WITH A CHRONOGRAPH BEFORE USING THE MARKER.

Push the bolt bonnet up, unlocking the bolt system *(SEE FIGURE 19A)*. With the bolt bonnet disengaged pull the entire bolt system out of the GSL body *(SEE FIGURE 19B)*.

Unscrew and separate the propshaft and bolt can sub-assemblies *(SEE FIGURE 19C)*. Then push the bolt out of the back of the bolt can.

You should now have the following parts from the marker body: the bolt part Ⓐ, the bolt can part Ⓑ and the prop shaft assembly Ⓒ *(SEE FIGURE 19D)*.

Take the bolt can and having cleaned off any old grease, paint or debris, apply a small amount of Eclipse Grease to the internal o-ring and the two external o-rings *(SEE FIGURE 19E & 19F)*[1].

Smear a light coat of Eclipse Grease onto the smooth internal bore of the bolt can from the rear *(SEE FIGURE 19G)*.

Take the prop shaft and having cleaned off any old grease, paint or debris, apply Eclipse Grease to the large rear o-ring *(SEE FIGURE 19H)* and also to the 14x2 o-ring near the front of the prop shaft *(SEE FIGURE 19I OVERLEAF)*.

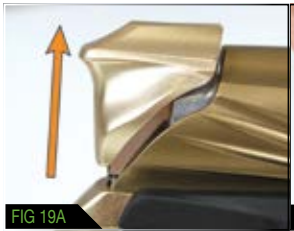


FIG 19A


FIG 19B


FIG 19C

FIG 19D


FIG 19E


FIG 19F


FIG 19G


FIG 19H

(CONTINUED)

Take the bolt and having cleaned off any old grease, paint or debris, examine the rubber bolt tip for any signs of damage *(SEE FIGURE 19J)*, replacing if necessary.

Apply a light film of Eclipse Grease to cover the front end of the bolt and also the internal rear bore of the bolt *(SEE FIGURE 19K &19L)*. Apply a coat of Eclipse Grease to the rear external Bolt o-ring near the centre of the bolt *(SEE FIGURE 19M)*.

Remove excess Eclipse Grease by wiping off with finger. Aim to apply only a very thin film of grease to the components maintained, as excess grease bolt can cause poor performance.

Slide the bolt onto the prop shaft *(SEE FIGURE 19N)* and slide the bolt can over the bolt and screw onto the prop shaft back cap *(SEE FIGURE 19O)*. The can and propshaft parts should meet when fully screwed together.

Finally wipe any excess grease off the bolt tip and insert the complete bolt assembly into the marker body.

With the bolt assembly full inserted into the body, push the bolt bonnet down into the body. The bolt bonnet should match the body profile at the rear when correctly located *(SEE FIGURE 19P)*.

[1]*Remove any excess blobs of Eclipse Grease from the inside and outside of the bolt can.*

⚠ WARNING ⚠

IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.


FIG 19I


FIG 19J


FIG 19K


FIG 19L


FIG 19M


FIG 19N


FIG 19O

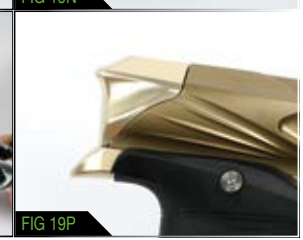


FIG 19P

ADVANCED BOLT SYSTEM MAINTENANCE

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

This procedure is only required if you are maintaining the rear section of the prop shaft assembly due to a leak coming from within the bolt bonnet sub assembly or from the front of the bolt. After maintaining the front 14x2 propshaft o-ring and 017 internal can o-ring.

Firstly remove the bolt system assembly, then separate the bolt can and prop shaft assemblies as detailed on pages 48-49.

Push down on the split in the delrin retaining ring and pull the retaining ring out of the prop shaft back cap.*(SEE FIGURE 20A)*.

Remove the prop shaft from the back cap, taking care not to lose the prop shaft spring, plunger or plunger o-ring.

Check the 14x2 o-ring at the back of the prop shaft, and clean or replace then re-lubricate with Eclipse Grease as necessary. Check the rear bumper for signs of wear, replace as necessary. *(SEE FIGURE 20B)*.

Check the 5x1 o-ring seated on the plunger, clean or replace as necessary.

Place the plunger and spring within the propshaft, with plunger dome pointing away from the prop shaft *(SEE FIGURE 20C)*.

Replace the back cap over the rear of the prop shaft, pushing the prop shaft back into the back cap *(SEE FIGURES 20D)*[1].

Compress the retaining ring *(SEE FIGURE 20E)* and push the retaining ring into the back cap. The retaining ring needs to sit in its designated groove in the back cap. If the prop shaft can be pulled out of the back cap then the retaining ring has not seated correctly.


FIG 20A


FIG 20B


FIG 20C


FIG 20D


FIG 20E

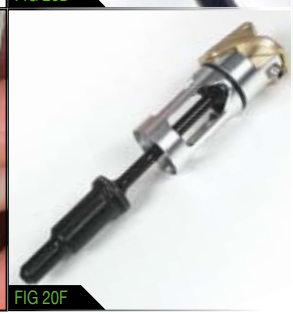


FIG 20F

[1]*If any o-rings or the bumper are damaged then replace them. Extra o-rings and bumpers are available in parts kits available at www.planeteclipse.com*

REMOVING THE FRAME

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

Removal of the frame is required for access to the solenoid assembly, trigger bearing carrier assembly and Break Beam Sensor System wires if maintenance on either is required.

Disconnect any hosing and unscrew the inline regulator from the Front Regulator Mount (FRM) as detailed in the 'Cleaning the inline regulator' section of this Maintenance Guide.

Using a 5/64" hex key, remove the four screws that attach the GSL rubber grips to the GSL frame *(SEE FIGURE 21A)*.

Unplug the solenoid and the Break Beam Sensor System wiring harnesses from their respective ports on the GSL circuit board *(SEE FIGURE 21B)*.

Using a 1/8" hex key, unscrew but DO NOT REMOVE the front frame screw located under the foregrip crown *(SEE FIGURE 21C)*.

Using the short arm of a 1/8" hex key, loosen the rear frame screw 2-3 full turns *(SEE FIGURE 21D)*.

Slide the frame backwards approximately half an inch so that the rear frame screw disengages from the frame and remove the frame from the GSL body taking care not to damage any wires *(SEE FIGURE 21E)*.

You have now removed your GSL frame from the GSL body.

⚠ WARNING ⚠
IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.

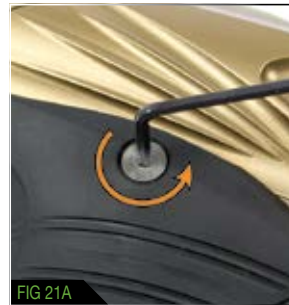


FIG 21A

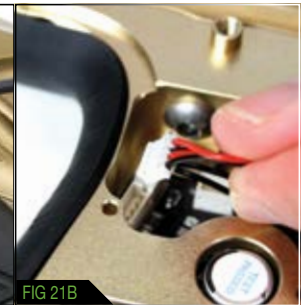


FIG 21B


FIG 21C

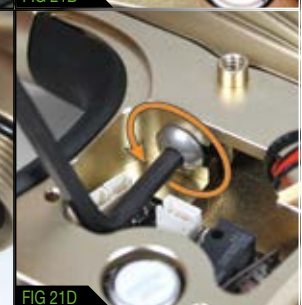


FIG 21D


FIG 21E

ATTACHING THE FRAME

⚠ WARNING ⚠

DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

To install the frame, firstly check the SFR seal is correctly located in the top of the frame *(SEE FIGURE 22A)*, then carefully thread the solenoid and the Break Beam Sensor System wiring harnesses through the access hole in the top of the frame and line the frame up so that the rear frame screw sits in the access hole *(SEE FIGURE 22B)*.

Be careful not to trap or pinch the BBSS or solenoid wires between the body and frame.

Slide the frame forward so that it sits completely flush with the GSL body and using the short arm of a 1/8" hex key, tighten the rear frame screw into place *(SEE FIGURE 22C)*. Check that no wires are trapped before tightening down the rear frame screw.

Once the rear frame screw is secure, insert a 1/8" hex key into the front frame screw hole in the foregrip crown and tighten the front screw into place *(SEE FIGURE 22D)*.

Connect the solenoid and Break Beam Sensor System wiring harnesses to their respective ports on the GSL circuit board and *(SEE FIGURE 22E)*. Adjust the wires so that they sit neatly in the grip frame and ensure that the wires do not obstruct either the micro-switch or the Opto sensor *(SEE FIGURE 22F)*.

Attach the GSL rubber grips to the frame using a 5/64" hex key to replace the four grip screws *(SEE FIGURE 22G)*.

Screw the inline regulator back into the Front Regulator Mount and connect any hosing that was disconnected earlier *(SEE FIGURE 22H)*.

You have now re-installed the frame onto the GSL.

⚠ WARNING ⚠

IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.


FIG 22A


FIG 22B


FIG 22C


FIG 22D


FIG 22E


FIG 22F

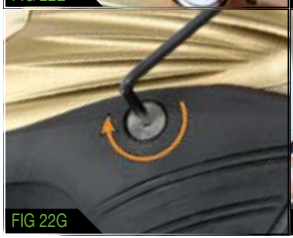


FIG 22G


FIG 22H

MAINTAINING THE SFR

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

The stages below on SFR maintenance do not require the frame to be removed, and can be followed for SFR removal/ blanking plug installation.

Using a small hex key push the SFR body out of the left side of the frame *(SEE FIGURE 23A)*.

Inspect and clean the SFR body and o-rings, making sure the hole through the centre of the SFR body is free of paint or debris *(SEE FIGURE 23B)*.

Lastly make sure the pocket in the frame that houses the SFR and the exhaust port below are clean *(SEE FIGURE 23C)*.

Next, insert the SFR body into the frame as shown in *FIGURE 23D*. Make sure the dial sits flush with the surface of the frame *(SEE FIGURE 23E)*.

This last stage of maintenance requires the frame to be removed. It is only need if the SFR is having little or no effect.

In the top of the frame locate and remove the SFR seal *(SEE FIGURE 23F)*. Inspect and clean the seal, replacing if damaged or heavily worn.

Reinsert the SFR seal into the top of the frame, making sure the contoured face is exposed *(SEE FIGURE 23G)*.

⚠ WARNING ⚠
IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.


FIG 23A


FIG 23B


FIG 23C

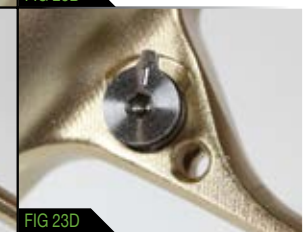


FIG 23D


FIG 23E

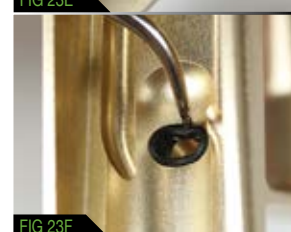


FIG 23F


FIG 23G

THE TRIGGER ASSEMBLY

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

Having removed the frame completely from the GSL body (see page 51). Unscrew the two M2.5x5 retaining screws which hold the bearing carrier in the frame *(SEE FIGURE 24A)*.

Gently lift the bearing carrier and trigger assembly free from the frame taking care not to damage the micro-switch or the OPTO sensors *(SEE FIGURE 24B)*.

Remove the trigger spring from the bearing carrier, removing any paint or moisture *(SEE FIGURE 24C)*.

Using a 1/16" hex key, loosen the trigger pin retaining set screw from the back of the trigger *(SEE FIGURE 24D)*.

Use a small hex key to push the trigger pin out of the bearing carrier from one side *(SEE FIGURE 24E)*, then remove the bearing carrier from the trigger *(SEE FIGURE 24F)*.

Clean the trigger and bearing carrier thoroughly and also clean the space within the frame that the trigger sits in.


FIG 24A

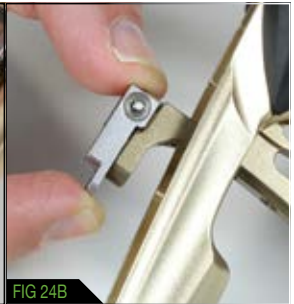


FIG 24B


FIG 24C


FIG 24D


FIG 24E

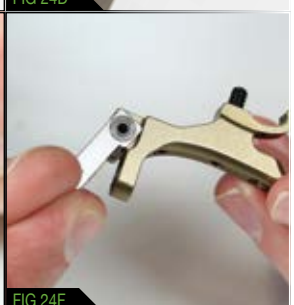


FIG 24F

(CONTINUED)

Position the trigger so that the hole through the trigger lines up with the holes in the bearing carrier, slide the trigger pin into place *(SEE FIGURE 24G)*.

Gently lower the trigger assembly and bearing carrier into the frame, taking care not to damage the micro-switch or the OPTO sensor, and ensuring that the trigger is positioned correctly *(SEE FIGURE 24H)*.

Using a 5/64” hex key screw the right side M2.5x5 retaining screw into place but do not fully tighten it into place *(SEE FIGURE 24I)*.

Ensure the trigger moves freely within the frame, then using a 1/16” hex key tighten down the trigger pin retaining set screw.

Place the trigger spring over the bearing carrier in its designated groove, align the hole in the trigger spring with the front/left hole in the bearing carrier, then screw the retaining screw into the frame. Tighten both screws with a 5/64” hex key *(SEE FIGURE 24J)*.

DO NOT overtighten the retaining screws. Doing so may damage the trigger spring and threads in the frame.

You have now stripped and cleaned your GSL trigger assembly.

⚠ WARNING ⚠
IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.


FIG 24G

FIG 24H


FIG 24I


FIG 24J

THE GSL SOLENOID ASSEMBLY

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

IMPORTANT

The GSL solenoid assembly contains two sub-assemblies, the solenoid valve and the solenoid manifold. Removal of the solenoid valve is required to access the solenoid manifold for servicing. The solenoid valve itself *(SEE FIGURE 25A)* is a non-serviceable item. Any attempt to strip or service the solenoid valve will immediately void the GSL warranty. If you experience any issue with the GSL solenoid valve then please contact your Eclipse Service Centre. See page 66 for Eclipse Service Centre details.

With the frame separated from the GSL body and the solenoid and BBSS wires unplugged from the circuit board (see page 51) use a 5/64" hex key to undo and remove the two screws that hold the solenoid assembly onto the GSL body *(SEE FIGURE 25B)*.

Firstly remove the solenoid valve from the body, this will expose the solenoid manifold which sits partially inside the GSL body *(SEE FIGURE 25C)*.

Carefully pull the solenoid manifold out from the GSL body, exposing the gas transfer holes which lead to the bolt assembly *(SEE FIGURE 25D)*. The solenoid gasket may still be attached to the body, if this is the case, carefully peel the gasket off the body and place to one side.

With the solenoid assembly completely removed from the GSL body, the bottom of the GSL body should now resemble *FIGURE 25E*. Ensure that the air transfer holes in the bottom of the body are free from contamination from any dirt, debris, paint or moisture and clear away any excess grease if it appears to be blocking any of the transfer holes.

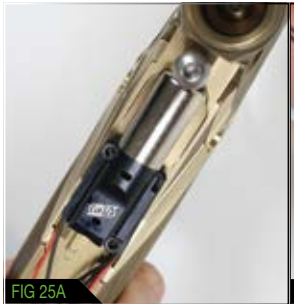


FIG 25A


FIG 25B


FIG 25C


FIG 25D


FIG 25E


FIG 25F

(CONTINUED)

Check the underside of the solenoid valve to ensure that it is free from damage or debris *(SEE FIGURE 25F)*.

The solenoid manifold has two gaskets, the top gasket Ⓐ and the bottom gasket Ⓑ as illustrated in *FIGURE 25G*. Carefully remove both gaskets from the solenoid manifold. Inspect and clean the top and bottom gaskets and the solenoid manifold, replacing any damaged components.

Using a small size hex key or flat headed screw driver, gently push the poppet and cap out of the solenoid manifold *(SEE FIGURE 25H)*. Inspect and clean the poppet, paying particular attention to the condition front face and o-rings *(SEE FIGURE 25I)*. If either is damaged or worn, the poppet will need replacing.

Reinsert the poppet into the solenoid manifold in the orientation shown in *FIGURE 25J*. Then insert the cap, ensuring that it is firmly held in the solenoid manifold.

Replace the top and bottom gaskets into their respective grooves in the solenoid manifold as shown in *FIGURES 25K AND 25L*. Applying a small amount of Eclipse Grease to the surface of the solenoid manifold and gaskets.

[1]*If the Solenoid Manifold is damaged remember to remove the poppet and cap before disposing of the Solenoid Manifold.*

⚠ WARNING ⚠

IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.

FIG 25G

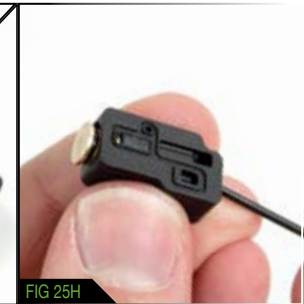


FIG 25H

FIG 25I

FIG 25J

FIG 25K

FIG 25L

(CONTINUED)

Lastly inspect and clean the large solenoid gasket, replacing if damaged *(SEE FIGURE 25M)*.

Apply a small amount of grease to the outer most groove surrounding the solenoid manifold pocket in the GSL body. Then making sure the top solenoid manifold gasket lies flat in the solenoid manifold, insert the solenoid manifold back into the GSL body *(SEE FIGURE 25N)*.

Next place the solenoid gasket over the solenoid manifold ensuring that the gasket is secure in its groove in the GSL body *(SEE FIGURE 25O)*. Make sure that the bottom solenoid manifold gasket is flat in its groove in the solenoid manifold.

Place the solenoid valve over the solenoid manifold *(SEE FIGURE 25P)*, making sure the location holes line up with the threads in the GSL body *(SEE FIGURE 25Q)*.

Replace the retaining screws which hold the solenoid onto the GSL using a 5/64" hex key *(SEE FIGURE 25R)*. DO NOT over tighten screws in the solenoid assembly.

Maintenance of the solenoid assembly is complete.


FIG 25M


FIG 25N


FIG 25O


FIG 25P


FIG 25Q

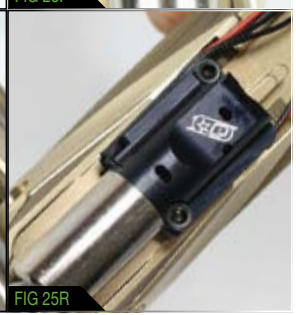


FIG 25R

⚠ WARNING ⚠

IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.

THE PUSH ON PURGE SYSTEM (POPS)

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

THERE IS NO NEED TO REMOVE THE POPS FROM THE GSL FRAME FOR GENERAL MAINTENANCE. IF THE POPS IS REMOVED, ENSURE THE O-RING IS CORRECTLY SEATED BEFORE POPS RE-ATTACHMENT.

Fully depress the latch button then slide the bonnet forward while continuing to depress latch button *(SEE FIGURE 26A)*.

When the bonnet is in the forward position *(SEE FIGURE 26B)* remove the latch button and spring from the bonnet *(SEE FIGURE 26C)* then slide the bonnet off the POPS body *(SEE FIGURE 26D)*. Be careful not to lose the spring.

Carefully slide the push rod out from either side of the POPS body, taking care not to lose the two o-rings on the push rod *(SEE FIGURE 26E)*.

Clean off any dirt, debris or moisture from the bonnet, the POPS body and the latch button *(SEE FIGURE 26F)*.

Remove the POPS insert assembly using a 5/32" hex key *(SEE FIGURE 26G)*. Remove the POPS pin from the POPS Insert.

Clean and check the condition of the 007 NBR70 o-ring on the outside of the POPS insert, replacing as necessary *(SEE FIGURE 26H)*.


FIG 26A


FIG 26B


FIG 26C


FIG 26D


FIG 26E


FIG 26F


FIG 26G


FIG 26H

(CONTINUED)

Clean and check the condition of the single internal 005 NBR90 o-ring in the front of the POPS insert, replace if necessary *(SEE FIGURE 26I)*. Lubricate this o-ring liberally using Eclipse grease.

Lubricate the narrow end of the POPS pin with a smear of Eclipse grease and push the pin, narrow end first, into the POPS insert so that it sits in the POPS insert and pokes through to the front *(SEE FIGURES 26J & 26K)*.

Screw the POPS insert back into the POPS body ensuring that the o-ring end goes in first *(SEE FIGURE 26G)*.

Replace the push rod into its designated slot *(SEE FIGURE 26L)*, then side a 004 NBR70 o-rings on both ends of the push rod. Make sure the push rod is centred in the POPS body *(SEE FIGURE 26M)*.

Slide the bonnet over the POPS body and align the hole on the bonnet with the front hole on the POPS body *(SEE FIGURE 26N)*.

Ensure the spring is on the latch button then slide them both into the POPS body through the hole in the bonnet, spring end first, making sure the latch button pokes out the right side of the bonnet *(SEE FIGURE 26O)*.

Push the button down as far as it will go, then (while still holding down the button) slide the bonnet back until the button engages with the POPS body and cannot slide into the forward position *(SEE FIGURE 26P)*.

You have now successfully cleaned and maintained the Push On Purge System.

⚠ WARNING ⚠

IF YOU ARE UNSURE ABOUT PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.


FIG 26I


FIG 26J

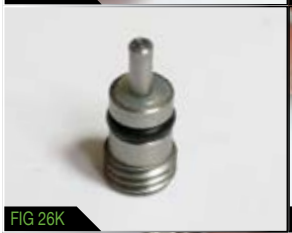


FIG 26K


FIG 26L

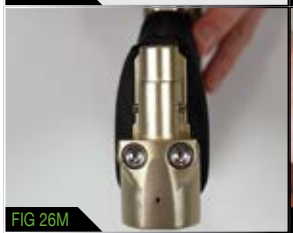


FIG 26M


FIG 26N


FIG 26O

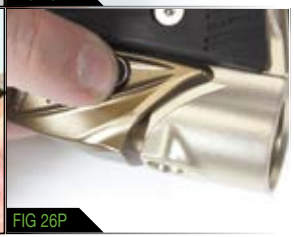


FIG 26P

The Fault Finding guide covers common symptoms, causes and solutions that are likely to be encountered by the average user. If a issue with the GSL cannot be solved using the Fault Finding guide, contact your nearest Eclipse Service Centre for assistance.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Although a fresh battery has been fitted, the GSL will not switch on.	The battery has been fitted incorrectly.	Fit the battery correctly with the positive terminal nearest to the side of the frame.
	The battery has drained on the shelf.	Replace with another fresh battery.
	The battery terminals are not making proper contact with the battery.	Remove the battery, gently bend the terminals towards where the battery will sit and then replace the battery.
The battery does not seem to last very long.	The battery type is of a low quality.	Use an alkaline or metal hydride battery. Do not use a low quality or rechargeable battery.
The GSL does not fire.	The POPS is not engaged.	Engage the POPS fully.
	Solenoid flow restrictor (SFR) set too low.	Increase the flow through the SFR.
	The SFR assembly is blocked.	Strip and clean the SFR assembly.
	Battery quality or level of charge is very low.	Install new high quality battery.
	Battery is flat.	Install new high quality battery.
	Training Mode is enabled.	Disable training mode.
	Trigger and trigger detection method are set up incorrectly.	Set up the trigger correctly (refer to “Setting the trigger” section).
	Trigger detection system is blocked.	Remove any wires or debris from the trigger detection system.
	Solenoid assembly is not plugged into GSL PCB correctly.	Plug solenoid assembly plug into the solenoid port on the GSL PCB.
	The break beam sensor system is enabled but there are no paintballs in the breech.	Fill the loader with paint/ turn on loader.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
The GSL does not fire.	The micro-switch is not being activated.	Adjust the micro-switch activation screw accordingly.
	The micro-switch is damaged.	Replace the circuit board.
	The PCB is damaged.	
	The solenoid valve is damaged.	Replace the solenoid valve.
	The solenoid valve wires are damaged.	
The GSL does not cycle fully.	The bolt assembly is dirty or incorrectly lubricated.	Clean, re-lubricate and replace the o-rings on the bolt as necessary.
	The Dwell parameter is set too low.	Increase the Dwell parameter.
	A sticky or faulty poppet in the solenoid manifold.	Check the poppet, clean and replace as necessary.
The GSL is inconsistent.	The Dwell parameter is set too low.	Increase the Dwell parameter.
	The SFR is set too low.	Increase the flow through the SFR.
	Using poor quality paintballs.	Use better quality paintballs.
	A poor paintball to barrel bore match.	Use a better paintball to barrel bore size match.
	The inline regulator is supercharging.	Strip and clean inline regulator.
	Dirty body filter.	Strip and clean the body filter.
	Poor / inconsistent air supply into POPS.	Use a good quality preset air system.
The GSL is inefficient.	The Dwell is excessively high.	Reduce the Dwell.
The GSL has low rate of fire.	The solenoid flow restrictor is set too low.	Increase the amount of flow on the SFR.
	The force setting on the loader is too low.	Adjust the loader force feed setting.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
The GSL degasses very slowly.	The body filter is blocked / damaged.	Clean the body filter and inspect for damage. Replace if damaged.
The GSL leaks from the solenoid assembly.	Check that the three solenoid gaskets are intact and seated in their designated pockets both in and around the solenoid manifold.	Replace any of the solenoid gaskets if they are damaged.
	GSL solenoid assembly is over-pressurising.	Check the inline regulator output pressure and consequent velocity. Adjust accordingly.
		Strip and clean the SL4 inline regulator. Replacing the seals as necessary.
	Debris on / damage to poppet.	Clean / replace the poppet.
	Damaged GSL solenoid valve.	Replace the GSL solenoid valve.
GSL leaks down the barrel.	Front or rear prop shaft 14 x2 NBR 70 o-rings are damaged, dirty or dry.	Replace, clean and lubricate 14 x 2 NBR 70 o-rings on prop shaft.
	Internal 017 NBR 70 o-ring and external 020 NBR 70 o-rings on bolt can are damaged, dry or dirty.	Replace, clean and lubricate 017 NBR 70 o-ring and 020 NBR 70 o-rings on the bolt can.
Gas vents quickly down the barrel as soon as the GSL is gassed up.	The bolt is stuck in a forward position.	Push the bolt backwards.
	Main prop shaft 014x2 o-ring is damaged or an incorrect size.	Replace with a new 014x2 size o-ring.
The GSL is chopping or trapping paint.	The loader has too high a force feed setting.	Adjust the loader to a lower force feed setting.
	Poor quality paintballs.	Use better quality paintballs.
	The break beam sensor system is switched off.	Switch on the break beam sensor system.
	The bolt is dirty causing the incorrect detection of paintballs.	Clean the bolt and breach.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
The GSL is chopping or trapping paint.	The break beam sensor system is dirty causing the incorrect detection of paintballs. solenoid.	Clean the break beam sensor system.
	Incorrectly seated rubber bolt tip.	Re-seat the rubber bolt tip.
	Damaged rubber bolt tip.	Replace the rubber bolt tip.
The GSL has low velocity on the first shot.	The FSDO parameters are set too low to overcome o-ring stiction.	Adjust FSD COMP and FSD DLY parameters.
The GSL has high velocity on the first shot.	The FSDO parameters are set too high.	Adjust FSD COMP and FSD DLY parameters.
	The inline regulator output pressure is creeping.	Strip, clean and maintain inline regulator.
GSL has velocity drop-off during rapid fire.	The battery is poor quality or has insufficient power.	Use an Alkaline or metal hydride battery. Do not use a low quality or rechargeable battery.
	The SFR is set too low.	Increase the flow through the SFR.
	Air system/regulator does not flow fast enough to keep up.	Try another air system/regulator and replace as necessary.
	Sticky/over lubricated o-rings in bolt assembly.	Clean, re-lubricate and replace o-rings on bolt assembly as necessary.
	Blocked body filter.	Clean/replace the body filter as necessary.
	Solenoid poppet is sticking from debris or too much grease.	Clean and lightly grease the solenoid poppet.
	Poorly maintained inline regulator.	Strip, lubricate and rebuild inline regulator.
Constant low velocity.	The SL4 inline regulator is set too low.	Increase the output pressure of the SL4 inline regulator.
GSL trigger is very “bouncy”.	Incorrect filter settings.	Check that your trigger filter and debounce settings suit your trigger set-up.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
The break beam sensor system does not appear to be reading correctly.	The break beam sensor system is dirty.	Clean the break beam sensor system.
The break beam sensor system is not reading at all.	The break beam sensors are the wrong way around.	Check that the red receiver is on the right-hand side of the breech.
	There is a broken wire or contact, or a short circuit on either of the break beam sensor cables.	Check the plug on the cables.
		Check for cuts or pinches in the sensor cables.
	Either break beam sensor is back to front.	Check that the sensors face each other when installed.
	The rubber detents are broken / missing.	Change the rubber finger detents.
Two or more balls are being fed into the breech.	Loader feed force is set too high.	Reduce the feed force on the loader.
The break beam sensor system turns itself off after firing.	The eye is dirty.	Clean the eyes.
	The eye is faulty.	Replace the eyes.
	The eye is out of place.	Re-install the eyes then check the alignment.
When the GSL powers up, the right hand side of the screen is not displayed and the marker will not fire.	The trigger is permanently depressed.	Adjust the trigger until the selected trigger detection method is activated when the trigger is released.

The Fault Finding guide covers common symptoms, causes and solutions that are likely to be encountered by the average user. If a issue with the GSL cannot be solved using the Fault Finding guide, contact your nearest Eclipse Service Centre for assistance.

ECLIPSE SERVICE CENTRES

Are you unsure of where to send your GSL to be repaired or serviced? If your local Eclipse dealer can't assist you, why not contact your nearest certified Eclipse Service Centre and arrange for them to undertake any work that you require.

A map listing all of our Service Centres and their contact details can be found in the SUPPORT section of the Planet Eclipse web site at

www.planeteclipse.com/site/service-centres

For any Technical Support or Customer Service enquiries please ensure that you have registered your product (where applicable) using the Warranty Card in this manual or online prior to contacting the appropriate representative in your region.

OPERATIONAL OVERVIEW

Below is a brief overview of what happens when you fire your GSL. The location of parts discussed in the text below can be found on pages 68-69.

Assuming the GSL is gassed up and turned on *FIGURE 27A* shows the marker in its idle position. The firing chamber is full of compressed air, the prop shaft is pushed back into the back cap by this compressed air. The bolt is held back by the air in the bolt can. Both the firing chamber and the bolt can are supplied with air via the solenoid valve.

Providing a ball is in the breach when the trigger is pulled, a signal is sent to the solenoid valve which shuts off the supply of air to the firing chamber and allows the air in the bolt can to be exhausted. This removes the force holding the bolt in its rear position and the bolt is propelled forwards *(FIGURE 27B)*.

As the bolt passes the front prop shaft o-ring the firing chamber seal is broken and the air in the firing chamber vents down the bolt, in turn propelling a ball *(FIGURE 27C)*.

As air is vented from the firing chamber the force pushing the prop shaft back is overcome by the spring tension in the back cap. The spring, along with a small volume of air used to propel the paintball ported to the rear of the propshaft, pushes the prop shaft forward. The front 14x2 o-ring on the prop shaft seals off the firing chamber against the inside of the bolt *(FIGURE 27D)*.

The length of time the bolt remains in this forward position is dependant on dwell. When the solenoid has completed its dwell time, air is routed back into the bolt can and pushes the bolt back towards its rear position. Simultaneously the firing chamber is re-filled through the solenoid valve to the operating pressure set by the user via the inline regulator, and the prop shaft is pushed into its rear position by the air pressure inside the valve chamber *(FIGURE 27E)*.


FIG 27A AIR SUPPLY FROM SOLENOID

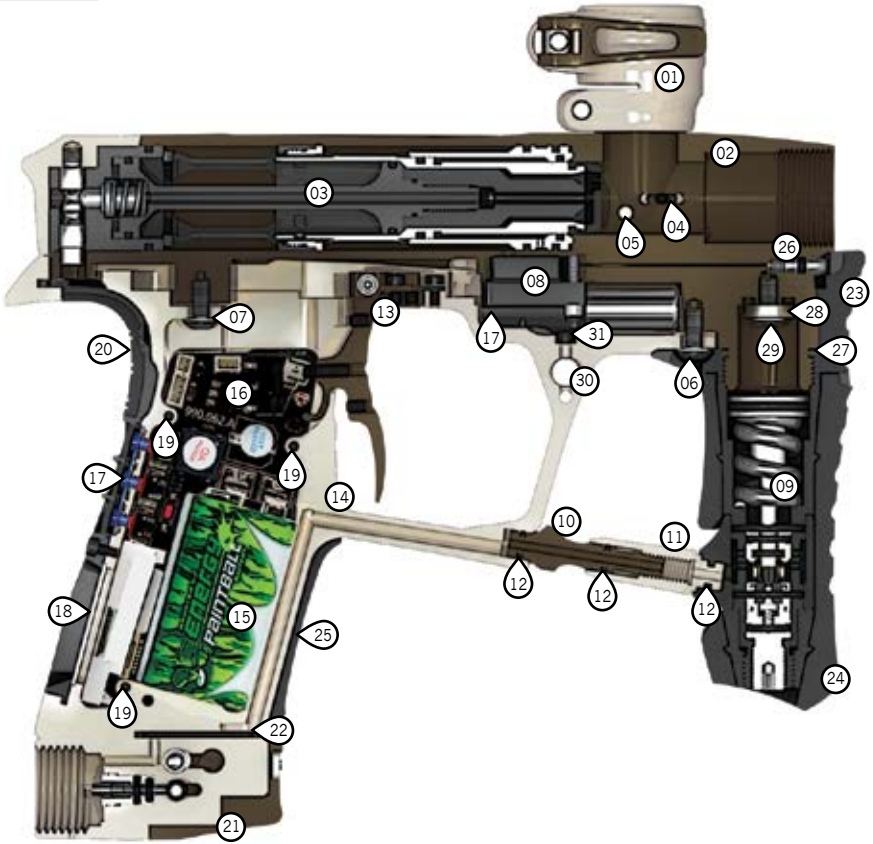

FIG 27B AIR SUPPLY FROM SOLENOID


FIG 27C AIR SUPPLY FROM SOLENOID


FIG 27D AIR SUPPLY FROM SOLENOID


FIG 27E AIR SUPPLY FROM SOLENOID

PARTS LIST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PARTS LIST

01 Clamping feed tube assembly
02 Body
03 Bolt assembly
04 Rubber detent
05 BBSS unit
06 Front frame screw
07 Rear frame screw
08 Solenoid assembly
09 SL4 inline regulator assembly
10 Gas pipe
11 Pipe nut
12 Gas pipe assembly o-ring
13 Trigger assembly
14 Frame
15 9V battery
16 Printed circuit board
17 Push button strip
18 Display window
19 PCB screw
20 Navigation console
21 POPS assembly
22 POPS seal
23 Foregrip crown
24 Foregrip sleeve
25 Rubber grip
26 Body plug
27 Body FRM o-ring
28 Body filter
29 Body filter Retaining Screw
30 Solenoid Flow Restrictor
31 Solenoid Flow Restrictor Seal

SL3 SHAFT BARREL

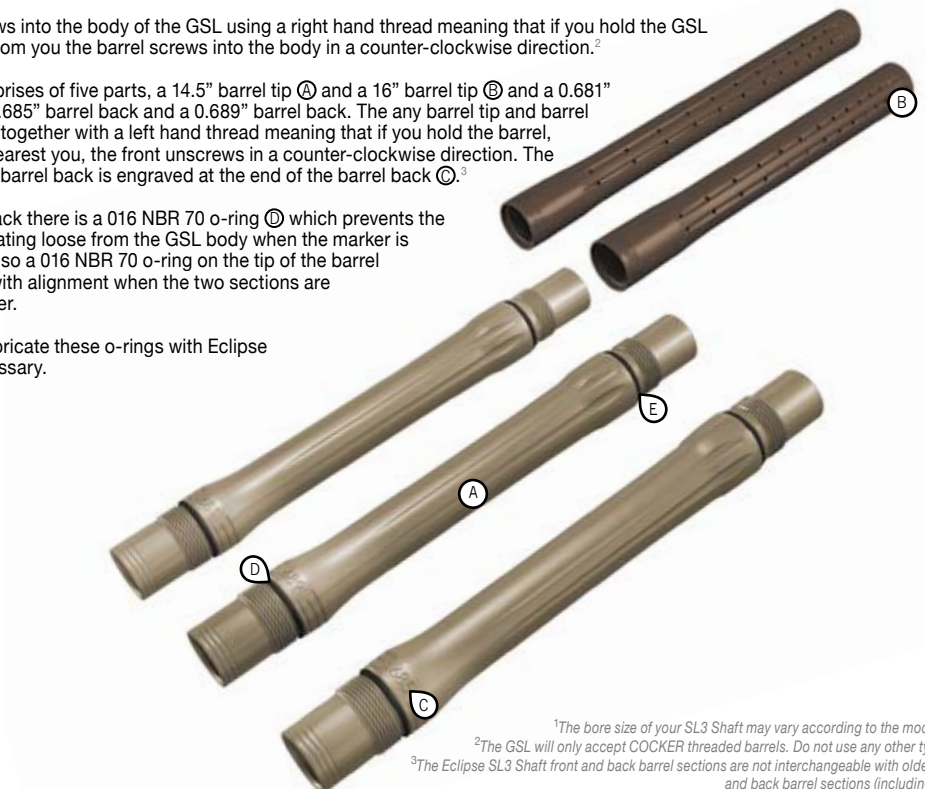
The Eclipse GSL comes as standard with an Eclipse SL3 Shaft barrel.[1,4]

The barrel screws into the body of the GSL using a right hand thread meaning that if you hold the GSL pointing away from you the barrel screws into the body in a counter-clockwise direction.[2]

The barrel comprises of five parts, a 14.5" barrel tip Ⓐ and a 16" barrel tip Ⓑ and a 0.681" barrel back, a 0.685" barrel back and a 0.689" barrel back. The any barrel tip and barrel back are joined together with a left hand thread meaning that if you hold the barrel, with the back nearest you, the front unscrews in a counter-clockwise direction. The bore size of the barrel back is engraved at the end of the barrel back Ⓒ.[3]

On the barrel back there is a 016 NBR 70 o-ring Ⓓ which prevents the barrel from vibrating loose from the GSL body when the marker is fired. There is also a 016 NBR 70 o-ring on the tip of the barrel back Ⓔ helps with alignment when the two sections are screwed together.

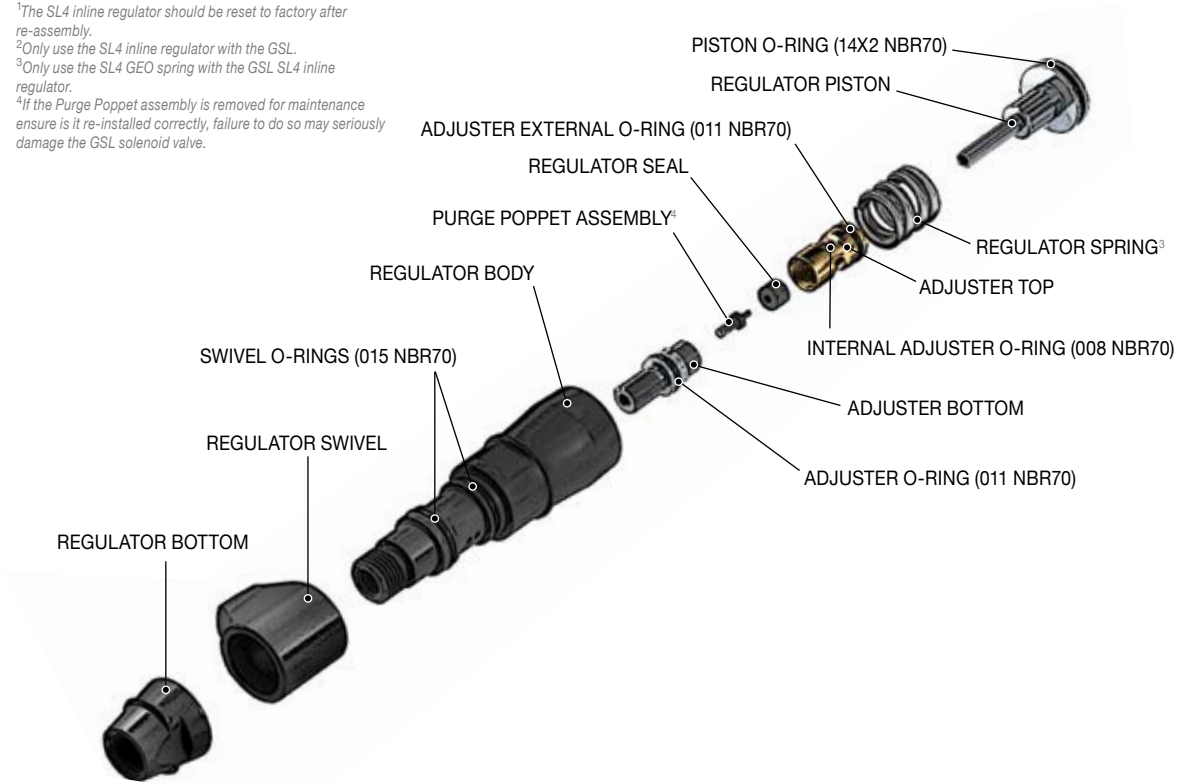
Replace and lubricate these o-rings with Eclipse Grease as necessary.



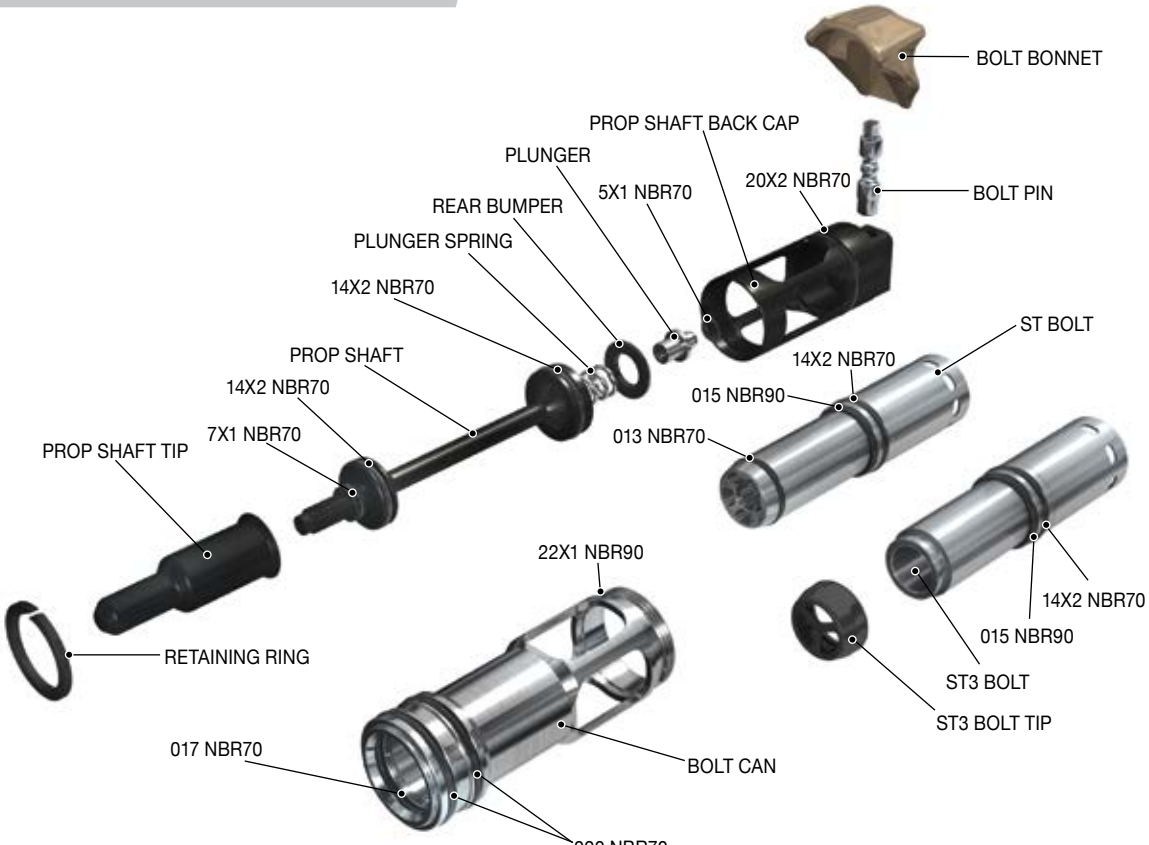
[1]*The bore size of your SL3 Shaft may vary according to the model of GSL you have.*
[2]*The GSL will only accept COCKER threaded barrels. Do not use any other type of barrel thread.*
[3]*The Eclipse SL3 Shaft front and back barrel sections are not interchangeable with older version shaft front and back barrel sections (including Shaft3 barrel kits).*
[4]*The model of barrel accompanying your GSL may differ from described.*

SL4 INLINE REGULATOR[1,2]

[1]*The SL4 inline regulator should be reset to factory after re-assembly.*
[2]*Only use the SL4 inline regulator with the GSL.*
[3]*Only use the SL4 GEO spring with the GSL SL4 inline regulator.*
[4]*If the Purge Poppet assembly is removed for maintenance ensure is it re-installed correctly, failure to do so may seriously damage the GSL solenoid valve.*

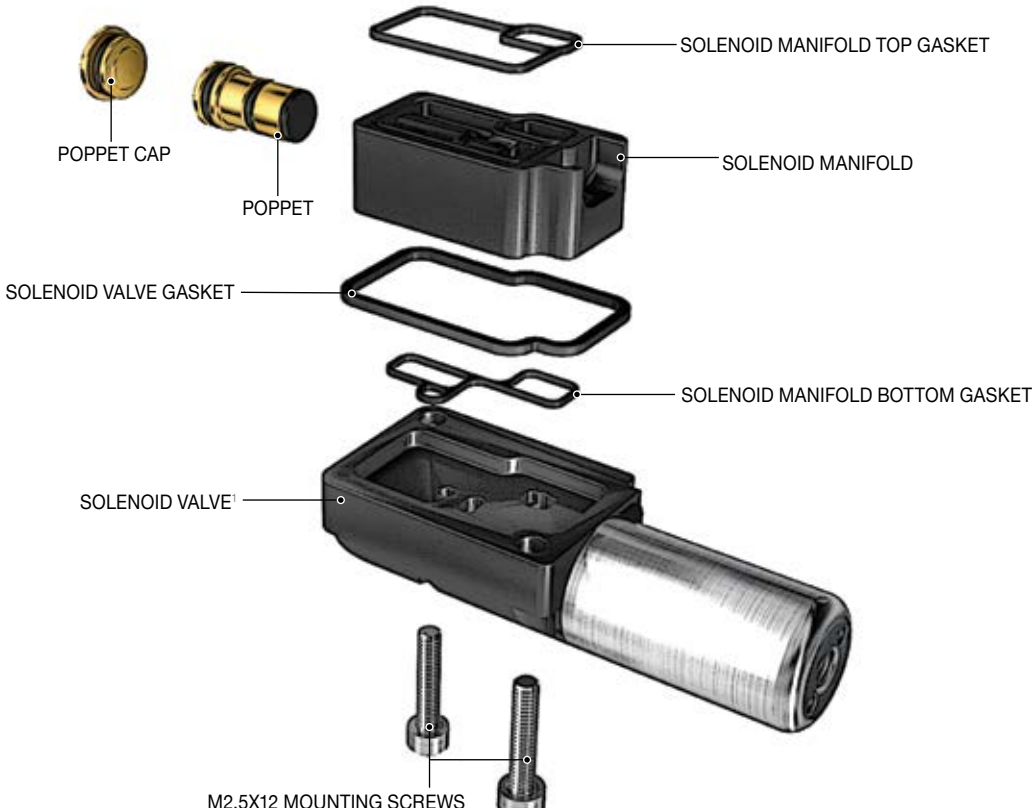


GSL BOLT SYSTEM



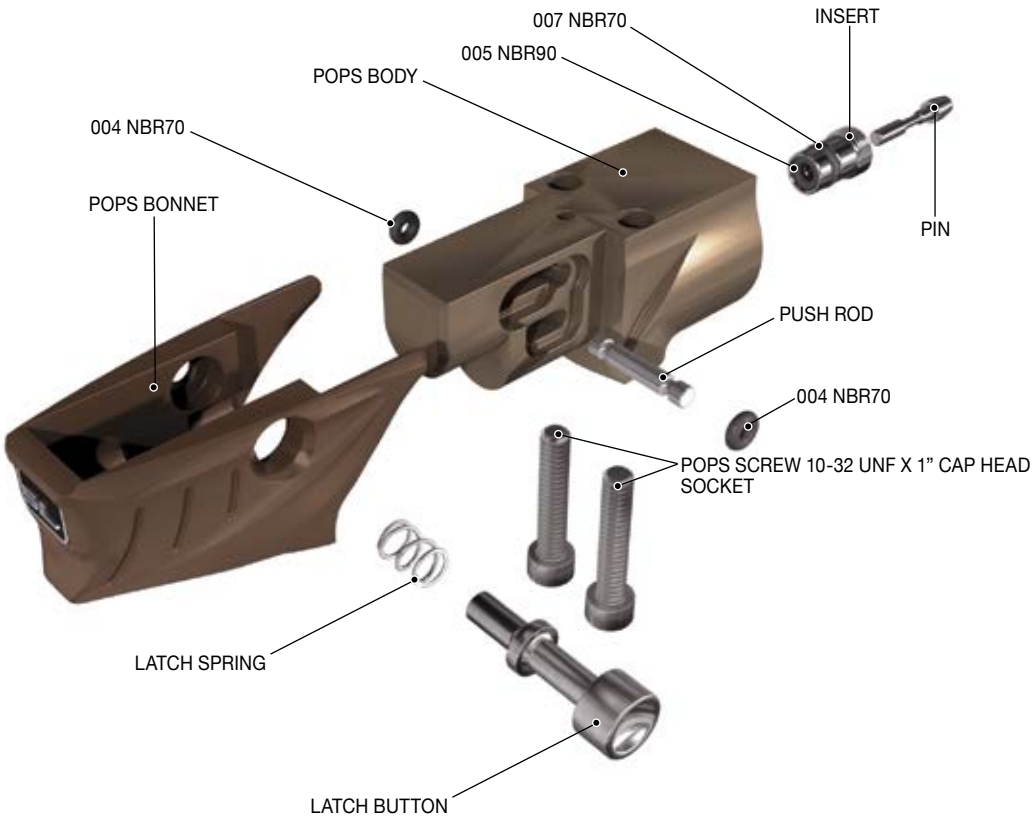
[1]*The prop shaft assembly does not need to be fully disassembled for basic maintenance.*

GSL SOLENOID ASSEMBLY



[1]*The GSL solenoid valve is NON-SERVICEABLE. Any attempt to strip, dismantle or service the solenoid valve will immediately void your Warranty. For more information on the GSL solenoid valve please see page 56.*

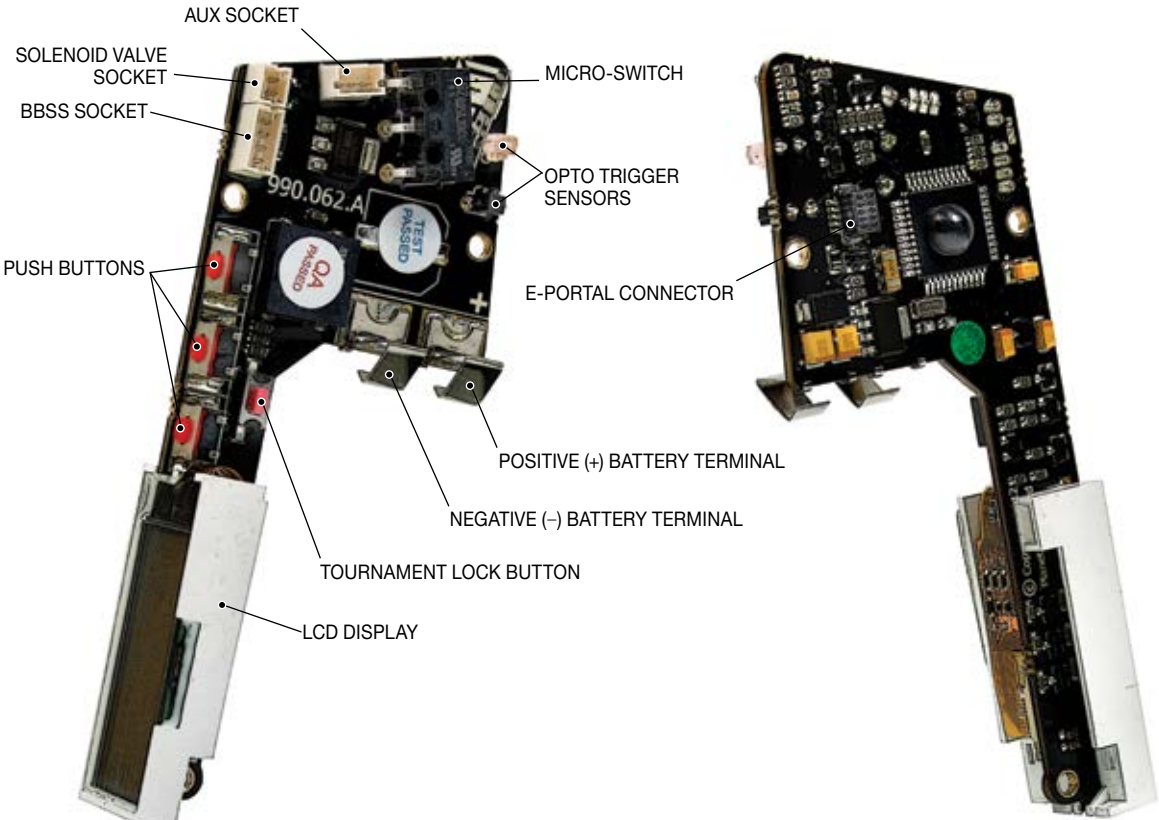
GSL PUSH ON PURGE SYSTEM (POPS)

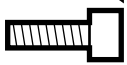
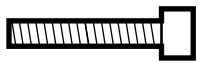


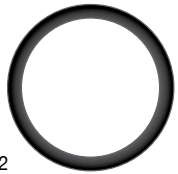
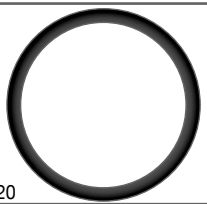
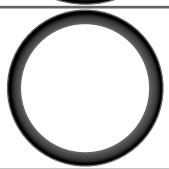
TRIGGER ASSEMBLY

CLAMPING FEED TUBE ASSEMBLY

GSL CIRCUIT BOARD



SCREW	QTY	DESCRIPTION
	6	PCB SCREW (3), BEARING CARRIER SCREW (2), NAVIGATION CONSOLE (1) (M2.5 x 5 CAP HEAD SOCKET)
	2	SOLENOID SCREW (2) (M2.5 x 12 CAP HEAD SOCKET)
	4	RUBBER GRIP SCREW (4), BBSS COVERS SCREW (2) (6-32UNC x 5/16” COUNTERSUNK SOCKET)
	1	SHORT FEED NECK SCREW (10-32UNF x 1/2” CAP HEAD SOCKET)
	2	POPS SCREW (10-32UNF x1” CAP HEAD SOCKET)
	1	Micro-switch SCREW (6-32 UNC x 1/2” SOCKET SET SCREW)
	2	TRIGGER ADJUSTMENT SCREW (6-32 UNC x 3/16” SOCKET SET SCREW)
	3	TRIGGER PIN RETAINING SCREW (6-32 UNC x 1/8” SOCKET SET SCREW)
	3	FRAME SCREW (2), BODY FILTER (1) (10-32 UNF x 3/8 SOCKET BUTTON HEAD)

 18x2	POPS Seal
 14x2	SL4 Inline Regulator Piston Propshaft (x2) Bolt External
 020	Bolt Can External (x2) Prop Shaft Back Cap
 017	Front Regulator Mount (Body) Bolt Can Internal
 016	SL3 Shaft Barrel Back (body end) SL3 Shaft Barrel Back (tip end)

 015	SL4 Swivel Bolt Bumper (Middle) NBR90
 013	ST Bolt Tip
 011	SL4 Inline Regulator Adjuster Outside
 009	Propshaft Retaining Screw Rear
 008	SL4 Inline Regulator Adjuster Inside
 007	Gas Transfer Pipe POPS Insert External
 006	Body Plug Feed Tube Swivel
 005	POPS Insert Internal (NBR 90)
 004	POPS Push Rod
 7x1	Propshaft Tip
 5x1	Solenoid Flow Restrictor (x2) Bolt Plunger
 4x1	Propshaft Retaining Screw Front

All O-rings are NBR70 durometer unless otherwise stated.

THE MENU TREE

The 🔒 symbol indicates parameters that are locked when the Tournament Lock is on. See Accessing the Menu System on page 27 for instruction on releasing the Tournament Lock.

Parameters followed by a * are part of the Smart Menu System and will only be displayed depending on your chosen settings. (e.g. The BS ON ROF parameter will only become available if the ROF CAP parameter is set to on).

MAIN MENU

- TURN OFF — Turn off the GSL.
- PRESET
  - 🔒LOAD
    - USER 1 — Load the USER 1 settings.
    - USER 2 — Load the USER 2 settings.
    - FACTORY(Default) — Load the default factory settings (semi-automatic).
    - NPPL — Load NPPL compliant settings.
    - PSP 10 — Load the PSP 10 balls per second (BPS) compliant settings.
    - PSP 12 — Load the PSP 12 balls per second (BPS) compliant settings.
    - MS 10 — Load Millennium Series 2010 compliant settings.
    - CANCEL — Cancel the load operation.
  - 🔒SAVE
    - USER 1 — Save the current settings as the USER 1 settings.
    - USER 2 — Save the current settings as the USER 2 settings.
    - CANCEL — Cancel the save operation.
  - BACK — Return to Main Menu.
- 🔒FIRE MODE
  - SEMI (Default) — Select semi-automatic mode of fire.
  - RAMP — Select ramping mode of fire.
  - CANCEL — Cancel the mode selection.
- 🔒ROF CAP
  - ON — Rate of fire cap on.
  - OFF (Default) — Rate of fire cap off.
  - CANCEL — Cancel selection.
- 🔒BS ON ROF*
  - 4.0 - 30.0 bps — Maximum rate of fire with breech sensor on (ROF CAP dependant). (Default 15.0bps)
- 🔒BS OFF ROF
  - 4.0 - 15.0 bps — Maximum rate of fire with breech sensor off. (Default 10.0bps)

- RAMP SETUP* (FIRE MODE DEPENDANT)
  - TYPE
    - STEP (Default) — Step ramping.
    - LINEAR — Linear ramping.
    - CANCEL — Cancel selection.
  - RATE*
    - 0 - 100% — Percentage linear ramp rate (TYPE dependant). (Default 50%)
  - SEMI SHOTS
    - 3 - 9 — Number of shots before ramping can start. (Default 3)
  - KICK IN
    - 3.3 - 10.0 pps — Rate at which the trigger has to be pulled in pulls per second (pps) before ramping can start. (Default 5pps)
  - SUSTAIN
    - 3.3 - 10.0 pps — Rate at which the trigger has to be pulled in pulls per second (pps) in order to maintain ramping. (Default 5pps)
  - RESTART
    - 0.0 - 1.0 s — Time in seconds (s) after the last trigger pull during which ramp can be restarted. (Default 0.0s)
  - BACK — Return to Main Menu.
- TIMING
  - DWELL
    - 10.0 - 30.0 ms — Solenoid energise time in milliseconds (ms) for each shot. (Default 26.2ms)
  - FSD COMP
    - 0.0 - 5.0 ms — First shot drop-off compensation time in milliseconds (ms). (Default 5.0ms)
  - FSD DELAY
    - 00:00 - 04:00 — First shot drop-off delay. (Default 00:30)
  - BACK — Return to Main Menu.
- FILTER
  - DEBOUNCE
    - Level 9 — Use trigger Debounce level 9 (highest level of trigger bounce filtering).
    - Level 8 - 2 — Use trigger Debounce level 8 - 2. (Default LEVEL 5)
    - Level 1 — Use trigger Debounce level 1 (lowest level of trigger bounce filtering).
    - Cancel — Cancel Debounce selection.
  - EMPTY
    - 1.0 - 20.0 ms — Time in milliseconds (ms) that the breech must remain empty before the BBSS looks for a paintball. (Default 4.0ms)
  - FULL
    - 1.0 - 20.0 ms — Time in milliseconds (ms) that a paintball must be in the breech for the GSL to be ready to fire. (Default 4.0ms)
  - PULL TM
    - 3.0 - 25.0 ms — Time in milliseconds (ms) that the trigger must be pulled for a shot to be fired. (Default 6.0ms)
  - RELEASE TM
    - 3.0 - 25.0 ms — Time in milliseconds (ms) that the trigger must be released before a pull can be recorded. (Default 6.0ms)
  - PULL PT*
    - 51 - 99% — Percentage at which the trigger OPTO sensor pull point is set (TRIGGER dependant). (Default 85%)
  - RELEASE PT*
    - 1 - 49% — Percentage at which the trigger OPTO sensor release point is set (TRIGGER dependant). (Default 15%)
  - BACK — Return to Main Menu.

(CONTINUED)

- HARDWARE
  - TRIGGER
    - OPTO (Default) — Use OPTO sensor to detect trigger operation.
    - SWITCH — Use micro-switch to detect trigger operation.
    - CANCEL — Cancel trigger detection method selection.
  - SOLENOID
    - LO PWR (Default) — Select standard solenoid power level.
    - HI PWR — Select high power level for solenoid.
    - CANCEL — Cancel solenoid power level selection.
  - SOUND
    - Off — Turn off audible indicator.
    - On (Default) — Turn on audible indicator.
    - Cancel — Cancel audible indicator selection.
  - TONES*
    - Off — Turn off audible tone when any button is pressed (SOUND dependant).
    - On (Default) — Turn on audible tone when any button is pressed (SOUND dependant).
    - Cancel — Cancel audible tone selection.
  - BACKLIGHT
    - 00:00 - 00:20 — Time in seconds that the backlight comes on for (00:00 = no backlight). (Default 00:06)
  - RED LEVEL*
    - 0 - 100% — Percentage of red light in backlight (BACKLIGHT dependant).
  - GRN LEVEL*
    - 0 - 100% — Percentage of green light in backlight (BACKLIGHT dependant).
  - BLU LEVEL*
    - 0 - 100% — Percentage of blue light in backlight (BACKLIGHT dependant).
  - CONTRAST
    - 0 - 30 — LCD contrast level. (Default 14)
  - AUX OUT
    - Off — AUX socket output off.
    - On (Default) — AUX socket output on.
    - Cancel — Cancel AUX socket selection.
  - AUTO OFF
    - 05:00 - 60:00 — Time in minutes after which the GSL automatically powers off. (Default 20:00)
  - DBL CLICK
    - NONE — Double click is disabled entirely.
    - POWER UP — Double click for power up only.
    - ALL (Default) — Double click is fully enabled.
    - CANCEL — Cancel the double click selection.
  - BACK — Return to Main Menu.
- TRAINING
  - Off (Default) — Training mode disabled.
  - On — Training mode enabled.
  - Cancel — Cancel training mode selection.

- SHOT COUNT
  - GAUGE
    - OFF — Shot gauge off.
    - ON (Default) — Shot gauge on.
    - CANCEL — Cancel selection.
  - GAUGE MAX*
    - 100-2000 — Shot gauge maximum (reset value) (GAUGE dependant). (Default 140 shots)
  - BACK — Return to Main Menu.
- GAME TIMER
  - GAME
    - 00:00 - 60:00 — Countdown game timer start time in minutes. (Default 07:10)
  - ALARM
    - 00:00 - 60:00 — Alarm activation time in minutes. (Default 01:00)
  - START
    - Button (Default) — Pressing the ▼ button starts the Game Timer.
    - Trigger — A trigger pull starts the Game Timer.
    - Cancel — Cancel Game Timer start selection.
  - BACK — Return to Main Menu.
- EXIT

From time to time the software of the GSL may be updated, resulting in changes to the default values for some parameters. For the most up to date default values please consult the online version of this manual at www.planeteclipse.com

The arrangement of menus and sub menus displayed in the above menu tree may not be replicated in your marker due to any software updates that may have taken place since printing.

ECLIPSE E-PORTAL

⚠ WARNING ⚠
DE-GAS YOUR MARKER, DISCHARGING ANY STORED GAS IN A SAFE DIRECTION, AND REMOVE THE BARREL, LOADER, AIR SYSTEM AND ANY PAINTBALLS TO MAKE THE MARKER EASIER AND SAFER TO WORK ON.

Included with the Eclipse GSL is the Eclipse E-Portal Software, USB cable and USB daughter board.[1]

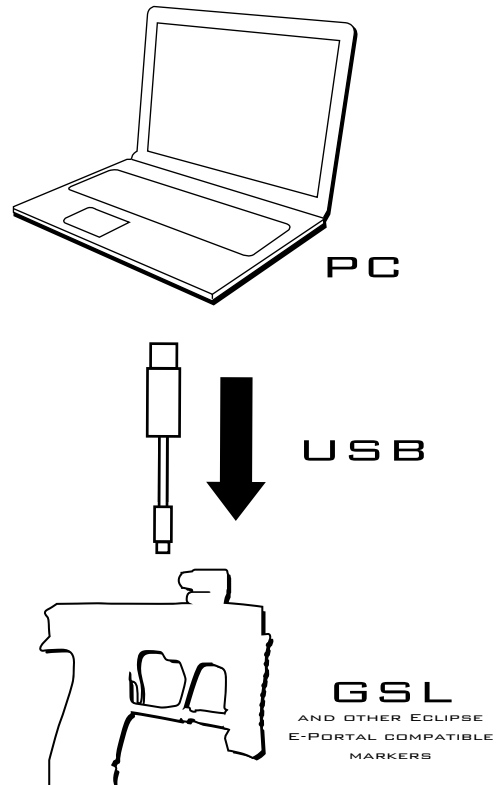
Instructions on how to use Eclipse E-Portal can be found on the installation disc.

E-Portal allows you to connect the Eclipse GSL to a PC, where a number of operations can be performed:[2]

Update the marker firmware - from time to time new firmware may be released by Planet Eclipse. You can now install the latest firmware using the Eclipse E-Portal.

Alter the electronic parameters - the Eclipse E-Portal will give you full access to all of the parameters on the GSL circuit board.

Customise screen graphics - customise the boot up screen graphic.



[1]If you already own an Eclipse E-portal kit (such as the kit included with the Eclipse SLS or CSL Ego), this kit will be compatible with the GSL.
[2]Minimum system requirements :
Monitor Resolution - 1024x768 or higher, CD-ROM drive,Keyboard, Mouse, USB socket, 5MB of hard disk space, 1GHz Processor, 384Mb RAM, Microsoft® Windows® XP / Windows Vista / Windows 7 / Windows 8, internet connection (required for software and firmware updates).

NOTES

NOTES

802.050.A-000

PLANET ECLIPSE PAINTBALL

GET MORE AT
PLANETECLIPSE.COM

USA
130 Franklin Street
Building L4 & L5
Warren, RI, 02885, USA
Call: +1 401 247 9061
info.usa@planeteclipse.com

UK
Unit 14 Premier Park, Acheson Way
Trafford Park Road, Trafford Park
Manchester, M17 1GA, England
Call: +44(0) 161 872 5572
info.europe@planeteclipse.com