
OPERATORS MANUAL

⚠WARNING

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

01. **PLEASE READ AND UNDERSTAND ALL INSTRUCTION MANUALS BEFORE USE.**
02. The Eclipse Ego11 is not a toy. **PAINTBALL SAFETY RULES MUST BE FOLLOWED AT ALL TIMES.**
03. Careless or improper use, including failure to follow instructions and warnings within this User Manual and attached to the Ego11 could cause death or serious injury.
04. Do not remove or deface any warnings attached to the Ego11.
05. 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 user and any person within range. Proper protection must be worn during assembly, cleaning and maintenance.
06. Never shoot at a person who is not wearing proper protection.
07. 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 Ego11 whilst the marker is switched on and able to fire.
08. Keep the Ego11 switched off until ready to shoot.
09. Treat every marker as if it is loaded and ready to fire.
10. The electronic on/off is the markers safety, always switch off the marker when not in use.
11. Always fit a barrel-blocking device to the Ego11 when not in use.
12. Always remove all paintballs from the Ego11 when not in use on the field of play.
13. Never point the Ego11 at anything you do not intend to shoot.
14. Do not shoot at persons at close range.
15. Do not field strip or remove any parts while the marker is pressurised.
16. Do not fire the Ego11 without the bolt in the breech, as high-pressure gas will be emitted.
17. Do not fire the Ego11 without the bolt pin locked securely in place.
18. Never put your finger or any foreign objects into the paintball feed tube of the Ego11.
19. Never allow pressurised gas to come into contact with any part of your body.
20. Always remove the first stage regulator and relieve all residual gas pressure from the Ego11 before disassembly.
21. Always remove the first stage regulator and relieve all residual gas pressure from the Ego11 for transport and storage.
22. Always follow guidelines given with your first stage regulator for safe transportation and storage.
23. Always store the Ego11 in a secure place.

⚠WARNING

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24. Persons under 18 years of age must have adult supervision when using or handling the Ego11.
25. Observe all local and national laws, regulations and guidelines.
26. Use only professional paintball fields where codes of safety are strictly enforced.
27. Use compressed air/nitrogen only. **DO NOT** use any other compressed gas or pressurised liquid including CO_2.
28. Always follow instructions, warnings and guidelines given with any first stage regulator you use with the Ego11.
29. Use 0.68 calibre paintballs only.
30. Always measure your markers velocity before playing paintball, using a suitable chronograph.
31. Never shoot at velocities in excess of 300 feet (91.44 meters) per second, or at velocities greater than local or national laws allow.
32. 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 73)

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 within 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.

6 QUICK SET-UP

Details on how to get up and running quickly with your Ego11. This section is essential reading for everyone.

10 ORIENTATION

Names the component parts of the Ego11 Marker. This section is essential reading for everyone.

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Ego11 Manual Index

WARRANTY CARD

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

SWITCHING ON THE EGO11

To switch on the Ego11 press the ❁ button twice in quick succession, referred to elsewhere in this manual as *'double-clicking'*. The Ego11 can also be switched on by pushing and holding the ❁ button **(FIGURE 1A)**.[1]

SWITCHING OFF THE EGO11

Press and hold the ❁ button until the display shows "**TURN OFF**". Release the ❁ button and re-press it to turn off the Ego11. Alternatively double click the ❁ button to enter the menu tree then press ❁ to turn off the Ego11.[1]

FIRING THE EGO11

Pull the Trigger to fire the Ego11. The entire firing sequence is controlled electronically by the Ego11 Circuit Board, enabling any user to easily achieve high rates of fire.

THE EGO11 CIRCUIT BOARD

There are four sockets on the Ego11 Circuit Board; the BBSS socket **(A)**, the Ego11 Solenoid socket **(B)**, the Auxiliary socket to which third party products such as loaders and RF transmitters can be connected using the relevant wiring harness **(C)** and the Expansion Board socket which connects the Eclipse E-Portal USB Daughter Board to the Ego11 **(D)** **(SEE FIGURE 1B)**.[2,3]

[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 45).*
[2] *The Auxiliary socket is turned on and off manually via the AUX OUT parameter in the Hardware menu on page 45.*
[3] *Eclipse E-Portal sold separately (see page 79).*

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 Ego11. If no paintball is ready then the BBSS will inhibit the Ego11 from firing. This prevents the Ego11 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 2A)**.

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 looks like this when a ball has been detected the icon changes to look like this .

Additional features of the Ego11's Break Beam Sensor System are covered in full on page 26 of this operators manual.

[1]*When the Ego11 is turned on, the Break Beam Sensor System is automatically enabled.*


FIG 2A

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 Ego11 it is important to make sure the Inline Regulator, Low Pressure Regulator (LPR), both Solenoid Flow Restrictors (SFRs) and all electronically controlled parameters are set correctly, as all of these can have a negative effect on the performance of the marker if incorrectly set.

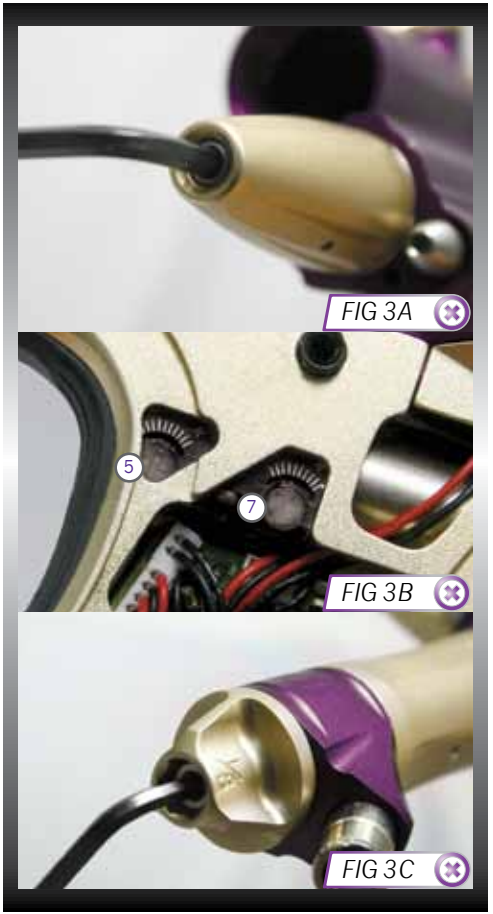
The steps below will restore the Ego11 settings to the factory settings. These settings will give the Ego11 a more balanced performance, ideal for the average user.

·Check that the LPR is set two turns in from flush with the LPR Cap **(SEE FIGURE 3A)**. See page 23 for more information on LPR adjustment.

·Check that the both SFRs are set to the following settings; return restrictor level 5, forward restrictor level 7 **(SEE FIGURE 3B)**. To access the SFRs, unscrew and peel away the right side of the grips. See page 24 for more information on the Solenoid Flow Restrictors.

·Load the *FACTORY* preset stored on the Ego11 Circuit Board. This preset will restore all the electronic parameters to their default settings. See page 36 on loading the *FACTORY* preset.

·Lastly check the Inline Regulator Adjuster Screw is set to 4 1/2 turns clockwise from its maximum out (counter-clockwise) position **(SEE FIGURE 3C)**. This will ensure the Inline Regulator is set to an output pressure that will not damage the Ego11 when supplied with compressed air/nitrogen (see page 23 for more information on the Inline Regulator).



INSTALLING A 9V BATTERY

Ensure that the Ego11 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 wrench to remove the two countersunk screws that hold the Rubber Grip onto the Frame. 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 4A)**.

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.

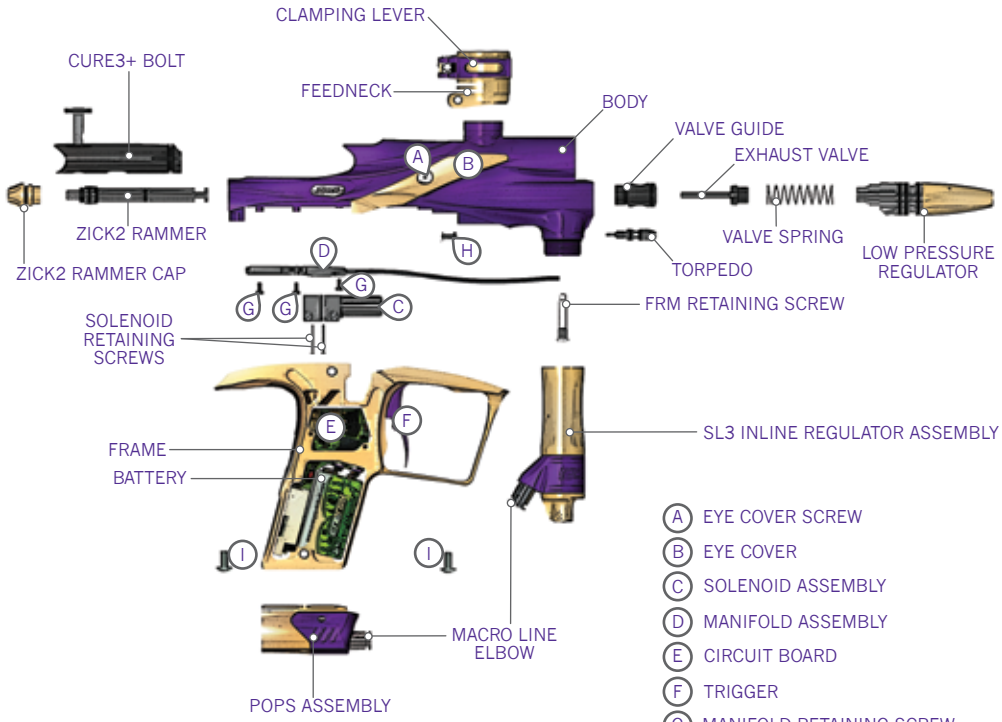
Fit a 9-volt alkaline battery (type PP3, 6LR61 or MN1604) into the recess with the battery terminals away from you. The positive terminal should be on the right hand side, nearest to the front side of the Frame **(SEE FIGURE 4B)**.[1]

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 and replace the Rubber Grip and replace the two countersunk screws.

DO NOT OVER-TIGHTEN THE SCREWS.

[1] *Do not use rechargeable batteries or low quality batteries.*

THE ECLIPSE EGO11



- (A) EYE COVER SCREW
- (B) EYE COVER
- (C) SOLENOID ASSEMBLY
- (D) MANIFOLD ASSEMBLY
- (E) CIRCUIT BOARD
- (F) TRIGGER
- (G) MANIFOLD RETAINING SCREW
- (H) VALVE PLUG
- (I) FRAME SCREW

ECLIPSE SHAFT4 BARREL

The Eclipse Ego11 comes as standard with an Eclipse Shaft 4 Barrel.[1,4]

The Barrel screws into the body of the Ego11 using a right hand thread meaning that if you hold the Ego11 pointing away from you the Barrel screws into the body in a counter-clockwise direction.[2]

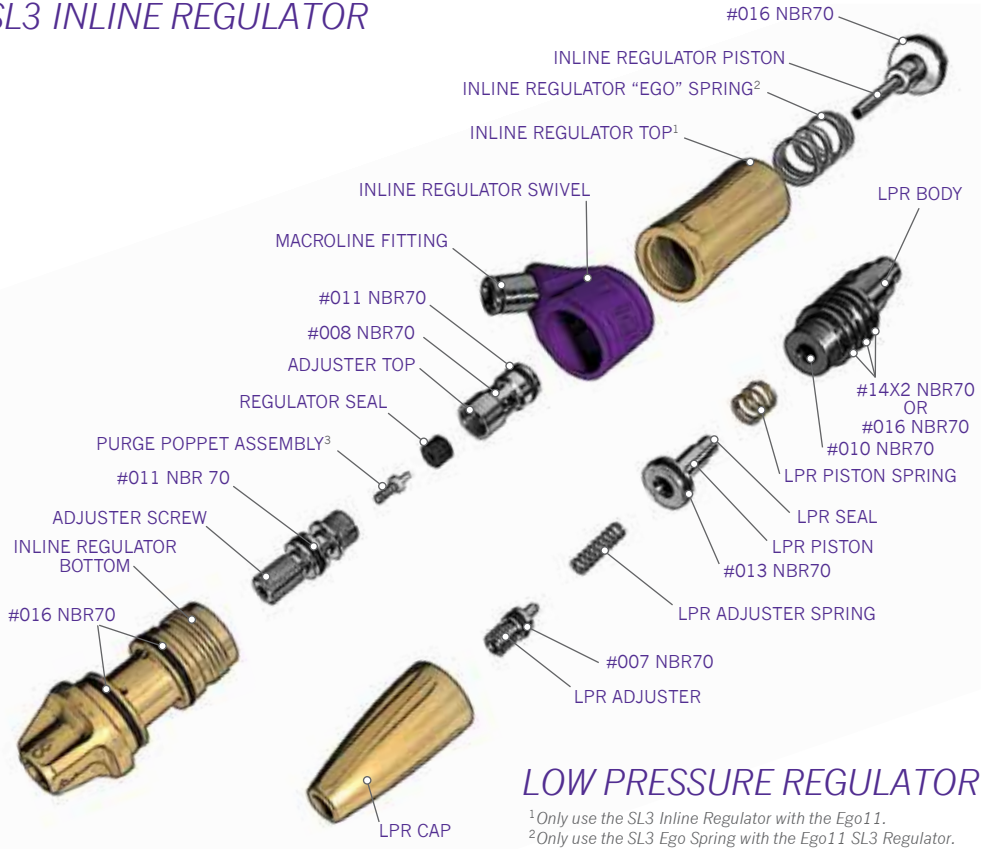
The Barrel comprises of two parts, a Barrel Back ***(A)*** and a Barrel Front ***(B)***. The two parts are joined together with a left hand thread meaning that if you hold the barrel, with the back nearest you, the front unscrews in a counter-clockwise direction. The bore size of the Barrel Back is engraved at the end of the Barrel Back ***(C)***.[3]

On the Barrel Back there is a 016 NBR 70 o-ring ***(D)*** which prevents the barrel from vibrating loose from the Ego11 Body when the marker is fired. There is also a 015 NBR 70 o-ring on the tip of the Barrel Back ***(E)*** 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 Shaft4 may vary according to the model of Ego11 you have.*
[2]*The Ego11 will only accept COCKER threaded barrels. Do not use any other type of barrel thread.*
[3]*The Eclipse Shaft4 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 Ego11 may differ from that stated in this manual.*

SL3 INLINE REGULATOR



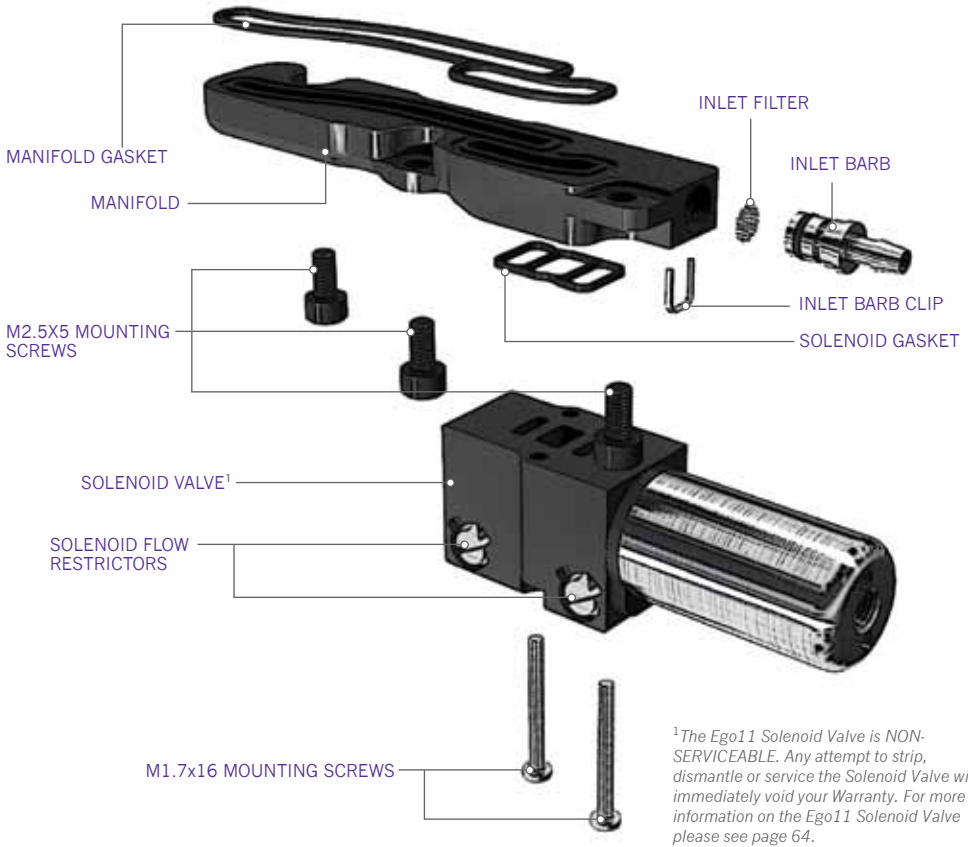
LOW PRESSURE REGULATOR

[1] *Only use the SL3 Inline Regulator with the Ego11.*
[2] *Only use the SL3 Ego Spring with the Ego11 SL3 Regulator.*
[3] *If the Purge Poppet Assembly is removed for maintenance ensure is it re-installed correctly, failure to do so may seriously damage the Ego11 Solenoid Valve.*

CURE3+ BOLT ASSEMBLY

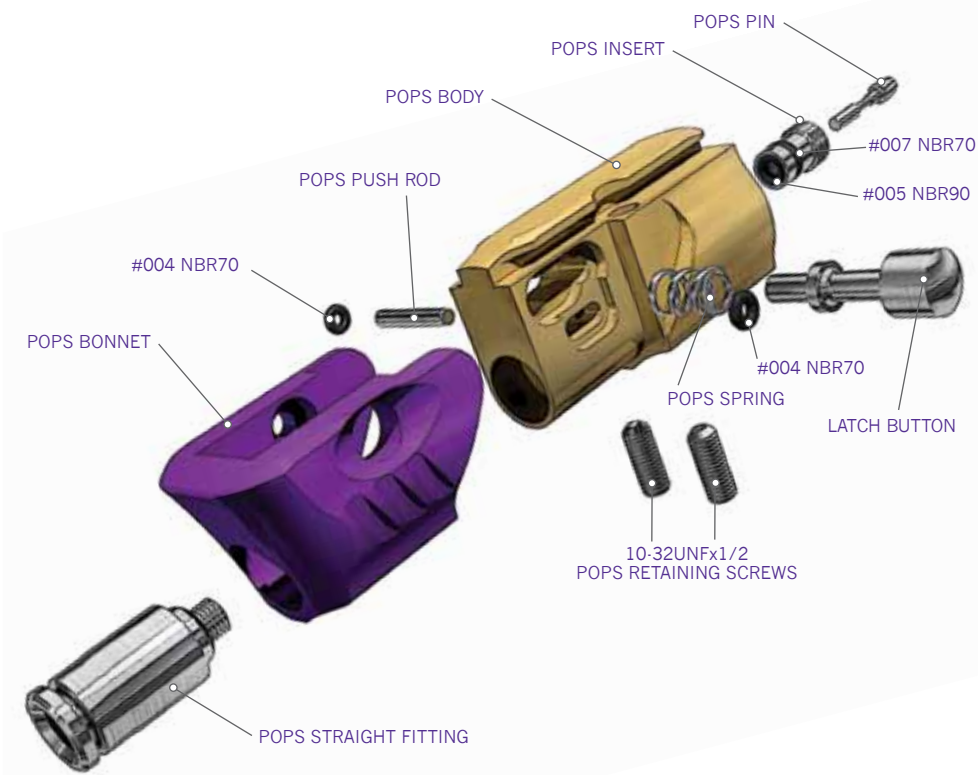
ZICK2 RAMMER ASSEMBLY

EGO11 SOLENOID ASSEMBLY



[1] *The Ego11 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 Ego11 Solenoid Valve please see page 64.*

PUSH OPERATED PURGE SYSTEM (POPS) ASSEMBLY



THE EGO11 NAVIGATION CONSOLE

At the rear of the Ego11 Frame you will find the Navigation Console **(FIGURE 5A)** which is used for:

> TURNING THE EGO11 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 EGO11 BREAK BEAM SENSOR SYSTEM 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 44.

OPERATIONAL OVERVIEW

Below is a brief overview of what happens during the Ego11 firing cycle. The location of parts discussed in the text below can be found on page 74-75.

Assuming the Ego11 is gassed up and turned on, **FIGURE 6A** shows the marker in its idle position. The Rammer is held in its rear position with pressurised gas from the LPR directed through the Solenoid to the front of the Rammer. The Valve Chamber is full of pressurised gas from the Inline Regulator.

Providing a ball is in the Breach, when the Trigger is pulled, a signal is sent to the Solenoid which redirects the supply of gas from the front of the Rammer to the rear, which pushes the Rammer and Bolt forward toward the Exhaust Valve **(FIGURE 6B)**. As this happens the gas in front of the Rammer is vented out through an exhaust port in the Solenoid Valve.

The Rammer makes contact with the Valve Stem and continues to be pushed forward, now pushing the Exhaust Valve forward with it. This opens the Exhaust Valve allowing pressurised gas to flow up through the Valve Guide and into the Bolt and vent down the Barrel, propelling the ball **(SEE FIGURE 6C)**.

The time that the Rammer is held in this forward position is dependant on the *DWELL* parameter. The longer this dwell time the longer the Ego11 vents gas down the Barrel. When this dwell time has elapsed, the Solenoid redirects the supply of gas from the back of the Rammer to the front, pushing the Rammer and Bolt back to the rear position. This loss of forward force allows the Exhaust Valve to re-seal and the Valve Chamber is re-pressurised. As the Rammer moves back gas behind it is vented through an exhaust port in the Solenoid Valve **(SEE FIGURE 6D)**. The Ego11 has now completed a full cycle.

FIG 6A

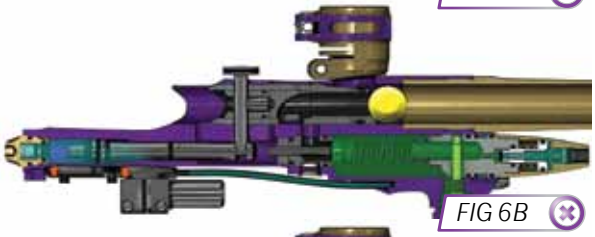


FIG 6B

FIG 6C

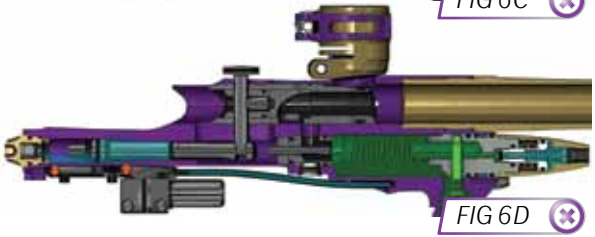


FIG 6D

SETTING UP YOUR EGO11

Before you can begin to use your Ego11, you will need to attach an air system and a paintball loader.

INSTALLING A PRESET AIR SYSTEM

⚠WARNING

THE EGO11 CANNOT BE USED WITH CO2. ONLY USE COMPRESSED AIR OR NITROGEN.

ALWAYS RELIEVE ALL RESIDUAL GAS PRESSURE FROM THE EGO11 BEFORE UNSCREWING THE PRESET AIR SYSTEM.

MAKE SURE THE MARKER IS TURNED OFF AND THAT NO PAINTBALLS ARE IN THE MARKER OR LOADER BEFORE INSTALLING AN AIR SYSTEM.

Every Ego11 comes complete with a new Eclipse Push Operated 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 7A)**. If the Bonnet is engaged, depress the Latch Button and slide the Bonnet forward.

Screw the preset air system into the POPS **(SEE FIGURE 7B)** so that the bottle screws in all the way and is tight. Pull the Bonnet backwards allowing the POPS Pin to depress the pin in the preset air system causing the Ego11 to become pressurised (providing that there is sufficient air in your tank) **(SEE FIGURE 7C)**. 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 Ego11.

[1]*High, mid and low pressure output preset air systems can be used with the Ego11, providing the Ego11 has the SL3 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.*

FIG 7A

FIG 7B

FIG 7C

T-SLOT MOUNTING SYSTEM

The Ego11 utilises a T-slot arrangement to mount the POPS to the bottom of the Frame **(SEE (A) FIGURE 8A)**. The T-slot is an improvement over the dovetail mounting system found on most paintball markers, and is much more able to withstand the rigours of modern tournament paintball.

STRAIGHT HOSE FITTINGS

The straight hose fittings found on the Ego11 DO NOT require 'Loctite' to secure them on the marker. These are secured by the capture o-ring on the end of the fitting. Only use a 3/32" hex key in the designated hole inside the fitting to remove or re-attach the fitting **(SEE FIGURE 8B)**. When re-attaching the fittings DO NOT apply too much force or the threads on the fitting/receiving part may be damaged (remember to stop when you meet resistance).

MACROLINE HOSING

To aid the longevity of your Macroline hosing, it is very important to remove it from (and install it back into) the fittings in the correct manner:

Pull back the collet section of the hose fitting and keep the collet depressed. Pull the Macroline hose out of the hose fitting and release the collet.

Before installing the Macroline hose into the hose fitting ensure that the end has been trimmed correctly to ensure a tight fit in the hose fitting.

⚠WARNING

IF YOU EVER REMOVE THE MACROLINE HOSE FROM THE FITTING, ALWAYS CHECK THE CONDITION OF YOUR MACROLINE HOSING AND IF IT IS WORN OR THE WRONG LENGTH REPLACE IT IMMEDIATELY.

FIG 8A

FIG 8B

FIG 8C

FIG 8D

ATTACHING A LOADER

⚠WARNING

DO NOT OVER TIGHTEN THE CLAMPING FEED NECK AS THIS MAY DAMAGE THE LOADER OR FEED NECK ITSELF.

Using a 5/32" hex key or your fingers, turn the Sprocket Screw of the Clamping Feed Neck counter clockwise **(SEE FIGURE 9A)**.

Release the Clamping Lever on the Feed Neck **(SEE FIGURE 9B)** and test to see if your loader can easily be pushed into the top of the Feed Neck. If the loader cannot easily be pushed into the Feed Neck, loosen the Sprocket Screw of the Clamping Feed Neck a little more by turning it counter clockwise using a 5/32" hex key or your fingers **(SEE FIGURE 9A)**.

When you have managed to push your loader into the Clamping Feed Neck, close the clamp to secure it firmly in place **(SEE FIGURE 9C)**. 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 Ego11. Once you have filled your loader and air tank you will then be ready to begin using your Ego11.

FIG 9A

FIG 9B

FIG 9C

SETTING THE TRIGGER

The Ego11 provides the user with the option to use either a Micro-switch or an Opto sensor 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 43).

There are five adjustment points on the Trigger – the **Front Stop Trigger Screw**, the **Rear Stop Trigger Screw**, the **Magnet Return Strength Screw,** the **Micro Switch Activation Screw** and the **Spring Return Strength Screw.**

As standard each Ego11 comes with a factory set trigger travel of approximately 2mm in total length; one millimeter of travel before the firing point and one millimeter of travel after the firing point, and the trigger detection method set to Opto.

The **Front Stop Trigger 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 work. Turn this screw counter clockwise to increase the amount of Trigger travel **(SEE FIGURE 10A)**.

The **Rear Stop Trigger 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 10B)**.

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 Trigger 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 10C)**.

(CONTINUED)

The **Micro-switch Activation Screw** is used to adjust the point in the trigger pull at which the Micro-switch is activated. 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 10D)**.

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 10E)**.

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 27 and The *FILTER* menu on pages 41-43.

FIGURE 10F KEY

- Ⓐ Spring
- Ⓑ Spring Return Strength Screw
- Ⓒ Trigger Pin Retaining Screw
- Ⓓ Front Stop Trigger Screw
- Ⓔ Magnet Return Strength Screw
- Ⓕ Micro Switch Activation Screw
- Ⓖ Rear Stop Trigger Screw


FIG 10D


FIG 10E

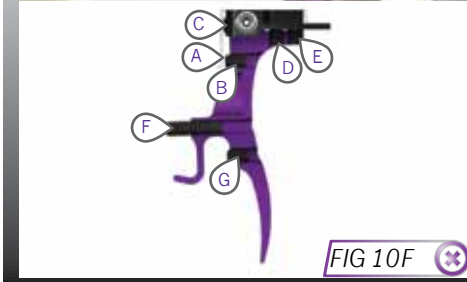


FIG 10F

ADJUSTING THE VELOCITY

When using your Ego11, you may wish to change the velocity at which your Ego11 is firing. This is done by inserting a 1/8" hex key into the Adjuster Screw at the bottom of your Ego11 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 there are engraved arrows to illustrate which direction to turn the hex key to make the relevant adjustment.[1,2]

ADJUSTING THE LPR PRESSURE

When using your Ego11, you may wish to change the output pressure of your LPR. This is easily done by inserting a 1/8" inch hex key into the Adjuster Screw at the front and adjusting it accordingly **(SEE FIGURE 11B).** However we recommend that the LPR Adjuster Screw be left set 2 turns in (clockwise) from the screw being flush with the front of the LPR Cap.

By turning the Adjuster Screw clockwise, you decrease the output pressure of your LPR and consequently reduce the pressure driving your Rammer back and forth. By turning the Adjuster Screw counter clockwise, you increase the output pressure of your LPR and consequently increase the pressure driving your Rammer back and forth.[3]

[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 Ego11, providing the Ego11 has the SL3 Inline Regulator originally supplied with the marker.*
[3]*Turning the LPR adjuster screw in too far will prevent the Ego11 from firing.*

FIG 11A


FIG 11B

SOLENOID FLOW RESTRICTORS

The following section covers direct adjustment of the Solenoid Valve which should only be used by users with a sound knowledge of the Ego11 firing cycle.

Built into the right side of the Solenoid Valve are two Solenoid Flow Restrictors SFR(s) which control the exhaust flow from the Rammer bore on the backward (Restrictor 'A') and forward stroke (Restrictor 'B') **(SEE FIGURE 12A)**. By controlling the exhaust flow from the Rammer bore, the speed of the Rammer during its forward and backward strokes can be sped up or slowed down. The SFRs can be adjusted using a small flat headed screw driver.

Each restrictor has a range of adjustability from 1(-) to 10 (+). Setting an SFR at 1 will provide the **minimum** level of exhaust flow from that restrictor. Setting an SFR at 10 will provide the **maximum** level of exhaust flow.

By setting these restrictors at different levels of flow the user can control how the gun performs and feels when firing the marker.

Setting the restrictors to a higher level of flow will allow for higher cycles per second (dependent on the ROF Cap, see page 37). However these higher settings will also reduce the smoothness of the firing cycle compared to setting the restrictors at a lower level of flow.[1]

Setting the restrictors 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 Ego11.[1]

Restrictor B controls the forward stroke of the Rammer. As such it has the ability to directly control the velocity of the paintball. Setting restrictor B BELOW levels 6-7 on the scale will start to reduce the velocity below the optimal setting. This however may be ideal for indoor/re-ball use.

SOLENOID FLOW RESTRICTOR PRESETS

Below are a list of recommended settings and their effects on the Ego11. The settings are expressed in the follow format 1/6 where the first number is the flow level of Restrictor A and the second is the flow level of Restrictor B.[1]

> *EGO11 FACTORY SETTING* · 5/7 · this setting will provide a smooth shooting marker with a reasonable rate of fire, ideal for most ramping presets (eg PSP10, PSP12 etc).

> *HIGH RATE OF FIRE* · 10/10 · this setting will provide optimal cycling speeds but will have slightly more kick than the factory setting. Ideal for unlimited rate of fire modes

> *SMOOTH SHOT* · 1/7· this setting will provide a very smooth shot and a low cycling speed. Ideal for low rate of fire modes.

⚠WARNING

EXCESSIVE FORCE OR ADJUSTMENT WITH ANYTHING OTHER THAN THE RECOMMENDED TOOLS AND/OR OUTSIDE OF THE RECOMMENDED RANGES MAY DAMAGE THE SOLENOID VALVE

[1] *These results may differ due to the LPR output pressure and Dwell settings on the Ego11.*

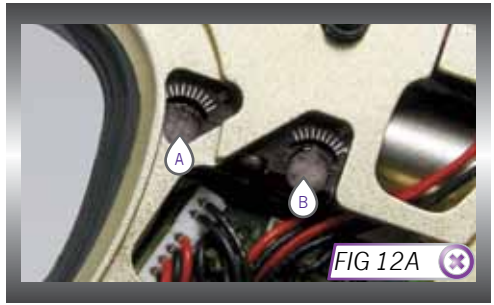


FIG 12A

USER INTERFACE

The Ego11 has a simple user interface through which all aspects of it's electronic control system can be monitored and adjusted by means of the three Pushbuttons and a graphical LCD which comprise the navigation console.

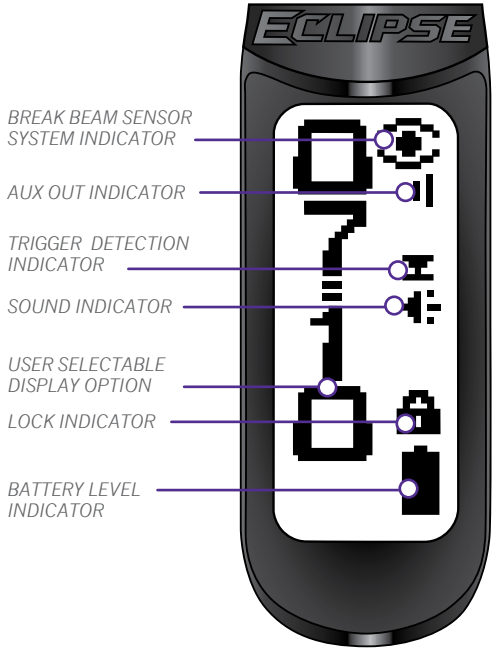
RUN SCREEN LAYOUT

The root of the user interface is the *RUN SCREEN*. This screen is the one most often displayed and provides the user with essential feedback on the state of the Ego11. A typical *RUN SCREEN* is shown on the right.[1]

On the left of the screen is a display option that is user selectable from by briefly pressing the button on the navigation console:

> *A GAME TIMER*
> *A SHOT COUNTER*
> *AN ACTUAL RATE OF FIRE INDICATOR*
> *A PEAK RATE OF FIRE INDICATOR*

On the right of the screen are a number of icons, each of which provides graphical indication on different parts of the Ego11 control electronics:



[1]*The layout of the run screen is correct at time of printing. However newer versions of the Ego11 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.*

THE BREAK BEAM SENSOR SYSTEM (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 Run Screen is used to indicate the eight possible states of the BBSS as follows:

BBSS ENABLED AND BALL DETECTED
The Ego11 can be fired at the maximum rate of fire determined by the chosen firing mode.

BBSS ENABLED NO BALL DETECTED
The Ego11 cannot be fired.

BBSS DISABLED
The Ego11 can be fired at a maximum rate of fire as set by the *BS OFF ROF* parameter (see page 38).

BBSS FAULT DETECTED
The system is disabled. The Ego11 can only be fired at a maximum rate of 2bps less than the maximum rate of fire, up to a maximum of 10 bps.[1]

BBSS FAULT HAS BEEN CLEARED AND BALL DETECTED
The sensor has been re-enabled. A ball is detected and the Ego11 can be fired at the maximum rate of fire determined by the chosen firing mode.[1]

BBSS FAULT HAS BEEN CLEARED AND NO BALL DETECTED
The sensor is enabled. No ball is detected so the Ego11 cannot be fired.[1]

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 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 38).

THE AUX OUT INDICATOR

The auxiliary socket on the Ego11 Circuit Board allows third party products such as loaders or RF transmitters to be interfaced to the Ego11.

The AUX Out indicator is turned on and off via the *AUX OUT* parameter (see page 45).

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 socket on the Circuit Board.

AUX OUT DISABLED
The AUX OUT is disabled. No signal will be sent to the AUX socket on the Circuit Board.

[1]*To clear the BBSS fault icon, use the button to switch off the BBSS and then back on again.*

THE SOUND INDICATOR

The Sound indicator on the Run Screen is used to convey if the *SOUND* parameter in the *HARDWARE* menu (page 44) is switched on or off.

There are two possible conditions that can be indicated:

SOUND ENABLED
The *SOUND* parameter is enabled. The Ego11 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 Ego11 will not make any sounds.

THE TRIGGER DETECTION INDICATOR (TDI)

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 Ego11 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 Ego11 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 MID-RANGE
The Ego11 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.

OPTO SENSOR SELECTED, READING ABOVE PULL POINT
The Ego11 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 100%
The Ego11 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.

MICRO-SWITCH SELECTED, NOT ACTUATED
The Ego11 is configured to use the micro-switch to detect trigger pulls. The micro-switch is not currently actuated, i.e. the Trigger is released.

MICRO-SWITCH SELECTED, ACTUATED
The Ego11 is configured to use the micro-switch to detect trigger pulls. The micro-switch is currently actuated, i.e. the Trigger is pulled.

From the factory the Ego11 will have the Opto sensor enabled. The Micro-switch option can be selected by referring to the *HARDWARE* menu (see page 43).

THE LOCK INDICATOR

The Ego11 has a Tournament Lock which prevents the user from making changes to any parameter that affects the way in which the Ego11 shoots, without the need for tools. This feature is necessary in order to make the Ego11 legal for tournament play.

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 .

To enable or disable the Tournament Lock see *Accessing the Menu System* on page 34.

THE BATTERY LEVEL INDICATOR

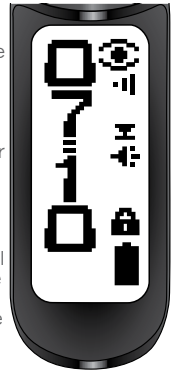
The Battery Level Indicator is used to show the state of the battery within the Ego11. When the battery is fresh the indicator will show a 'full' battery and as the battery is drained, so the indicator will show the battery emptying. When the battery reaches a point at which the Ego11 will no longer 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.

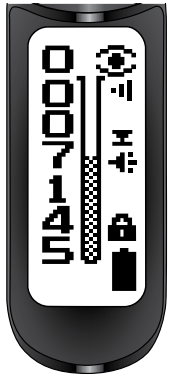
The Game Timer can also be configured to start on a trigger pull with the *START* parameter (see page 47). When the Game Timer reaches the *ALARM TIME* the Gamer Timer will start to flash and the audible alarm will sound every second, provided that the *SOUND* parameter is on.



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 1 second. The Game Timer will also be reset whenever the Ego11 is switched off.

THE SHOT COUNTER



The Shot Counter will increment every time that the Ego11 Solenoid Valve is activated, 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 46. The gauge is reset whenever the Ego11 is switched off or the button is pressed.

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 rate 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 1 second.

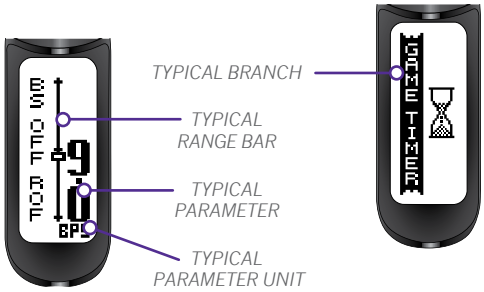
THE PEAK RATE OF FIRE

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 time.

THE MENU SYSTEM

Behind the Run Screen is a structured Menu System which contains a number of menu items; 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. For a detailed list of which parameters have units, and what they stand for, please see the Menu Tree on pages 30-33.

MAIN MENU

MAIN MENU

TURN OFF		Turn off the Ego11.
PRESET		
🔒 LOAD	USER 1	Load the USER1 settings.
	USER 2	Load the USER 2 settings.
	FACTORY	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	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	Rate of fire cap off.
	CANCEL	Cancel selection.
🔒 BS ON ROF*	4.0 - 30.0 BPS	Maximum with breech sensor on (ROF CAP dependant).
🔒 BS OFF ROF	4.0 - 15.0 BPS	Maximum rate of fire with breech sensor off.

The 🔒 symbol indicates parameters that are locked when the Tournament Lock is on. See Accessing the Menu System on page 34 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

- RAMP SETUP* (FIRE MODE DEPENDANT)
  - TYPE
    - STEP — Step ramping.
    - LINEAR — Linear ramping.
    - CANCEL — Cancel selection.
  - RATE*
    - 0 - 100% — Percentage linear ramp rate (TYPE dependant).
  - SEMI SHOTS
    - 3 - 9 — Number of shots before ramping can start.
  - 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.
  - 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.
  - RESTART
    - 0.0 - 1.0 S — Time in seconds after the last Trigger pull during which ramp can be restarted.
  - BACK — Return to Main Menu.
- TIMING
  - DWELL
    - 0.0 - 25.0 ms — Solenoid energise time in milliseconds (ms) for each shot.
  - FSD COMP
    - 0.0 - 5.0 ms — First shot drop-off compensation time in milliseconds (ms).
  - FSD DELAY
    - 00:00 - 04:00 — First shot drop-off delay.
  - BACK — Return to Main Menu.
- FILTER
  - DEBOUNCE
    - LEVEL 9 — Use Trigger Debounce level 9 (less bounce).
    - LEVEL X — Use Trigger Debounce level 8 - 2.
    - LEVEL 1 — Use Trigger Debounce level 1 (more bounce).
    - CANCEL — Cancel Debounce selection.
  - EMPTY
    - 1.0 - 20.0 ms — Time in milliseconds (ms) that the breech must remain empty before the BBSS can look for a paintball.

MAIN MENU

FULL	1.0 - 20.0 ms	Time in milliseconds (ms) that a paintball must be in the breech for the Ego11 to be ready to fire.
PULL TM	3.0 - 25.0 ms	Time in milliseconds (ms) that the Trigger must be pulled for a shot to be fired.
RELEASE TM	3.0 - 25.0 ms	Time in milliseconds (ms) that the Trigger must be released before a pull can be recorded.
PULL PT*	51 - 99%	Percentage at which the Trigger Opto sensor pull point is set (TRIGGER dependant).
RELEASE PT*	1 - 49%	Percentage at which the Trigger Opto sensor release point is set (TRIGGER dependant).
BACK		Return to Main Menu.
HARDWARE		
TRIGGER	OPTO	Use Opto sensor to detect Trigger operation.
	SWITCH	Use Micro-switch to detect Trigger operation.
	CANCEL	Cancel Trigger detection method selection.
SOLENOID	NORMAL	Select standard solenoid power level.
	HI POWER	Select high power level for solenoid.
	CANCEL	Cancel solenoid power level selection.
SOUND	OFF	Turn off audible indicator.
	ON	Turn on audible indicator.
	CANCEL	Cancel audible indicator selection.
TONES*	OFF	Turn off audible tone when any button is pressed (SOUND dependant).
	ON	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).
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).
AUX OUT	OFF	AUX socket output off.
	ON	AUX socket output on.
	CANCEL	Cancel AUX socket selection.

MAIN MENU

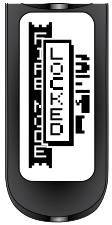
- AUTO OFF
  - 05:00 - 60:00 — Time in minutes after which the Ego11 automatically powers off.
- DBL CLICK
  - NONE — Double click is disabled entirely.
  - POWER UP — Double click for power up only.
  - ALL — Double click is fully enabled.
  - CANCEL — Cancel the DBL click selection.
- BACK — Return to Main Menu.
- TRAINING
  - OFF — Training mode disabled.
  - ON — Training mode enabled.
  - CANCEL — Cancel training mode selection.
- SHOT COUNT
  - GAUGE
    - OFF — Shot gauge off.
    - ON — Shot gauge on.
    - CANCEL — Cancel selection.
  - GAUGE MAX*
    - 100-2000 SHOTS — Shot gauge maximum (reset value) (GAUGE dependant).
  - BACK — Return to Main Menu.
- GAME TIMER
  - GAME
    - 00:00 - 60:00 — Countdown game timer start time in minutes.
  - ALARM
    - 00:00 - 60:00 — Alarm activation time in minutes.
  - START
    - BUTTON — The V button starts the Game Timer.
    - TRIGGER — Trigger pull starts the Game Timer.
    - CANCEL — Cancel Game Timer start selection.
  - BACK — Return to Main Menu.
- EXIT

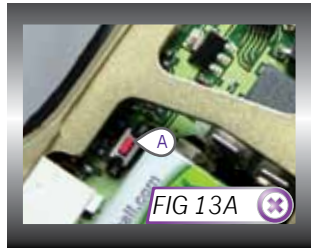
The arrangement of menus and sub menus displayed in the above menu tree may not be replicated in your marker due to any software updates that may have taken place since printing.

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 to Tournament Lock button on the Circuit Board **(SEE A IN FIG 13A)**. If you try to select a parameter that is locked, the locked display will show on the screen.



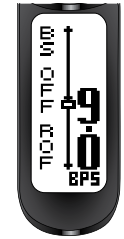


MOVING AROUND THE MENUS

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.

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

ALTERING PARAMETERS



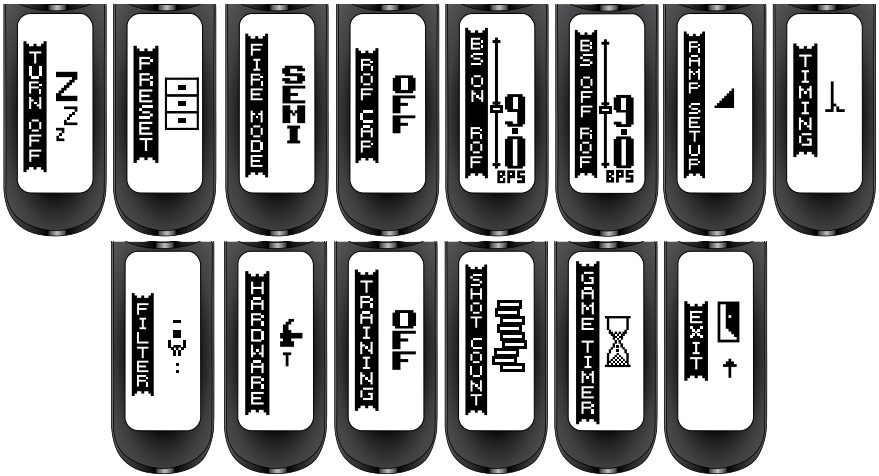
When the displayed item is a parameter, as indicated by a parameter value on the right of the screen, pressing the ✱ button will activate the *EDIT* mode which allows the parameter value to be altered. When *EDIT* mode is active, the black box surrounding the text disappears. There are two types of parameter, 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 it's 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 it's 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



The Main Menu is contains both individual editable parameters and sub-menus which contain editable parameters. Some of these parameters affect the way the Ego11 shoots and are tournament locked as standard from the factory.[1]

[1]*The layout of the Main Menu is correct at time of printing. However newer versions of the Ego11 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

THE PRESET MENU

In order to simplify the set up of the Ego11 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 Ego11 comply with the rules governing a particular paintball league.[1]

It is also possible for the user to save up to two preset configurations of their own.

LOAD

THE LOAD PRESET 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 Ego11 leaves the factory set in this way.

> *NPPL:* Load a set of parameters that configures the Ego11 to comply with the NPPL rules governing firing modes.[1,2]

> *PSP 10:* Load a set of parameters that configures the Ego11 to comply with the PSP rules governing firing modes in lower divisions (10bps).[1,2]

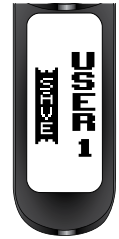
> *PSP 12:* Load a set of parameters that configures the Ego11 to comply with the PSP rules governing firing modes in higher divisions (12bps).[1,2]

> *MS10:* Load a set of parameters that configures the Ego11 to comply with the 2010 Millennium Series rules governing firing modes. [1,2]

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

SAVE

THE SAVE PRESET 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'*.

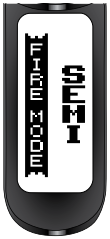
> *USER 2:* Save the current parameters as the preset *'USER 2'*.

> *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 Ego11.*
[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

THE FIRING MODE PARAMETER



This parameter is used to select the firing mode of the Ego11 and has the following choices:

> *SEMI:* This is the default and in this firing mode the Ego11 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.

ROF CAP

THE RATE OF FIRE CAP PARAMETER

The *ROF CAP* parameter is used to specify whether or not the Ego11 should have a limited, or capped rate of fire. When the *ROF CAP* 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.

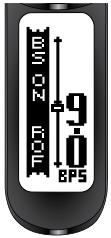
[1] *Some presets and fire modes may only be available in certain countries and on some models of the Ego11.*

BS ON ROF

THE MAXIMUM RATE OF FIRE PARAMETER

The *BS ON ROF* parameter is used to set the maximum achievable rate of fire from the Ego11. The value of this parameter can be adjusted between 4.0 and 30.0 balls per second in 0.1bps increments.[1]

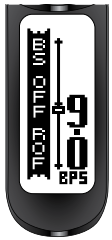
The *BS ON ROF* parameter will only be displayed if you have set the *ROF CAP* parameter to 'ON'.



BS OFF ROF

THE RATE OF FIRE WHEN BBSS IS OFF PARAMETER

The *BS OFF ROF* parameter is used to control how fast the Ego11 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 Ego11 ROF CAP parameters to the local field BPS meter as readings may vary from meter to meter.*

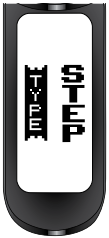
RAMP SETUP

THE RAMP SETTINGS 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 Ego11 ramps, as shown below.

TYPE

THE RAMP TYPE PARAMETER



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

> *STEP:* Step ramping will cause the Ego11 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 Ego11 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

THE LINEAR RAMP 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

THE SEMI SHOTS MENU

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

THE 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.

(CONTINUED OVERLEAF)

SUSTAIN

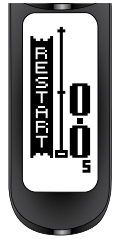
THE SUSTAIN RATE PARAMETER

Once the Ego11 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

THE RAMP 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.



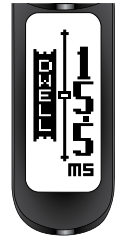
TIMING

THE TIMING MENU

These parameters all relate to the control of the Solenoid Valve.

DWELL

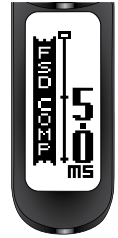
THE DWELL PARAMETER



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 Ego11. 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 Ego11 louder. The *DWELL* can be set between 0.0 and 25.0 milliseconds. The factory default setting can normally be reduced after a few thousand shots as the Ego11 'beds-in'.

FSD COMP

THE FIRST SHOT DROP-OFF COMPENSATION PARAMETER

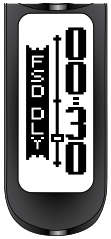


"First shot drop off" is a reduction in velocity of the first shot fired after an extended period of not firing and is caused by the stiction between dynamic o-rings and the surfaces that they are in contact with. In order to compensate for first shot drop-off this parameter can be set to add extra time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

FSD DLY

THE FIRST SHOT DROP-OFF DELAY PARAMETER

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



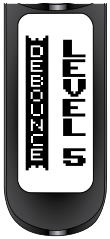
FILTER

THE FILTER MENU

The parameters on the *FILTER* menu are all used to tune the Ego11's software filters which prevent the Ego11 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

THE DEBOUNCE PARAMETER



The *DEBOUNCE* parameter is used to combat any trigger bounce that might occur in the Ego11 and can be set between level 1 and level 9 in one level increments.

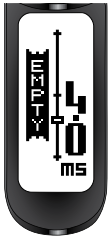
> *LEVEL 9:* Level 9 providing the most filtering (least 'bouncy').

> *LEVEL1:* Level 1 providing the least filtering (most 'bouncy').

> *CANCEL:* Cancel editing and leave the parameter unchanged.

EMPTY

THE BREECH EMPTY TIME PARAMETER



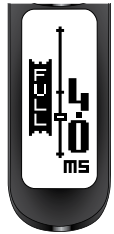
In order for the BBSS to function correctly it must first detect that the Bolt is fully retracted and the breech is empty, and then detect that a paintball is loaded into the breech before the Ego11 is allowed to fire. The parameter can be set between 1.0 and 20.0ms in 0.5ms increments.

(CONTINUED OVERLEAF)

FULL

THE BREECH FULL TIME PARAMETER

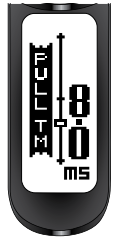
Tumbling paintballs can take time to settle in the breech before they can be successfully fired. This parameter is used to set the amount of time that a paintball has to be in the breech before the Ego11 is allowed to fire. This parameter can be set between 1.0 and 20 milliseconds in 0.5ms increments.



PULL TM

THE TRIGGER PULL TIME PARAMETER

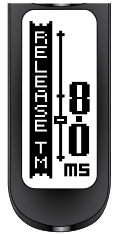
The *PULL TM* parameter is used to set the minimum amount of time that the Trigger must be pulled before it is recognised as a valid trigger pull. This parameter can be set between 3.0 and 20.0 milliseconds in 0.5 increments.



RELEASE TM

THE TRIGGER RELEASE TIME PARAMETER

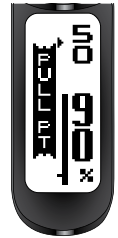
The *RELEASE TM* parameter is used to set the minimum amount of time that the Trigger must be released before it is recognised as a valid trigger release. This parameter can be set between 3.0 and 25.0 milliseconds in 0.1 millisecond increments.



PULL PT

THE TRIGGER PULL POINT PARAMETER

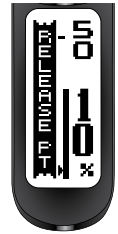
The *PULL PT* parameter is only available if OPTO has been selected in the *HARDWARE* menu. *PULL PT* defines the point at which the Trigger is considered pulled and is adjustable between 51% and 99% in 1% increments.



RELEASE PT

THE TRIGGER RELEASE POINT 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 Trigger 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 42).

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 Trigger 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 42).

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

THE HARDWARE MENU

This menu comprises parameters that control low level functionality of the Ego11 electronic hardware.

TRIGGER

THE TRIGGER DETECTION PARAMETER

The Ego11 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.

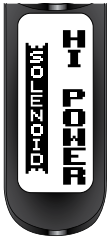
> SWITCH: Select the Micro-switch for trigger pull detection.

> CANCEL: Cancel editing and leave the parameter unchanged.

(CONTINUED OVERLEAF)

SOLENOID

THE SOLENOID POWER PARAMETER



This parameter controls the amount of power used by the Solenoid Valve and should normally be left at it's default 'Normal' power setting. Cold weather (sub 0℃) 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:-

> *NORMAL:* Normal power Solenoid drive

> *HI POWER:* High power Solenoid drive

> *CANCEL:* Cancel editing and leave the parameter unchanged

SOUND

THE SOUND PARAMETER

The Ego11 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:

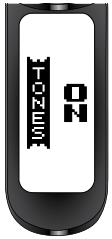
>*OFF:* Sounds switched off.

>*ON:* Sounds switched on.

>*CANCEL:* Cancel editing and leave the parameter unchanged.

TONES

THE TONES PARAMETER



This parameter determines if the Ego11 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

BACKLIGHT

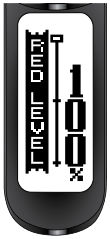
THE LCD BACKLIGHT TIME PARAMETER

The time the LCD backlight remains on after a Pushbutton is pushed. The parameter can be set between 0 and 20 seconds.

If the time is set to 00:00 then the light will not be displayed.

RED LEVEL

THE LCD BACKLIGHT RED LEVEL PARAMETER

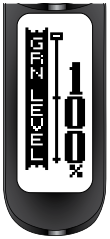


The percentage of red light emitted from the LCD backlight.

GRN LEVEL

THE LCD BACKLIGHT GREEN LEVEL PARAMETER

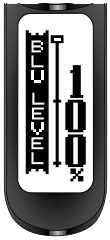
The percentage of green light emitted from the LCD backlight.



BLU LEVEL

THE LCD BACKLIGHT BLUE LEVEL PARAMETER

The percentage of blue light emitted from the LCD backlight.



AUX OUT

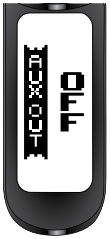
THE AUX OUT PARAMETER

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.

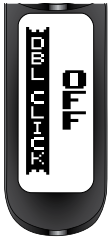


DBL CLICK

THE DOUBLE CLICKING 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 Ego11 and enter the Main Menu the user needs to push and hold the ❋ button.



>*POWER UP:* Double clicking only works when powering up the Ego11. To enter the Main Menu the user still needs to push and hold the ❋ button.

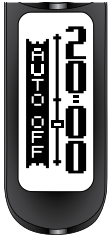
>*ALL:* Double clicking works when powering up the Ego11 and entering the Main Menu. Push and hold still works for these procedures as well.

>*CANCEL:* Cancel editing and leave the parameter unchanged.

AUTO OFF

THE AUTO POWER OFF TIME PARAMETER

The time that has to elapse before the Ego11 switches itself off if not used. The parameter can be set between 5 and 60 minutes.



TRAINING

THE TRAINING PARAMETER

The *TRAINING* parameter is used to select Training mode. In Training mode the Ego11 will function exactly the same as normal but with two important differences:

1. The solenoid valve is not driven so the Bolt does not move and does not release a burst of air. Instead the beeper will sound for each pull of the Trigger. This simulates the firing cycle without wasting air and generating lots of noise.

2. The BBSS is overridden so that the Ego11 can cycle without paint. The centre of the BBSS indicator changes to a 'T' to indicate that Training mode is enabled. The *TRAINING* parameter choices are as follows:

> *OFF:* Training mode is disabled and the Ego11 functions normally.

> *ON:* Training mode is enabled.

> *CANCEL:* Cancel editing and leave the parameter unchanged.

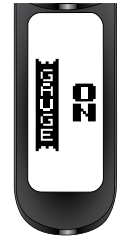
SHOT COUNT

THE SHOT COUNT MENU

The *SHOT COUNT* menu allows the user to alter the shot gauge that appears in the shot count Run Screen.

GAUGE

THE GAUGE PARAMETER



The *GAUGE* 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:

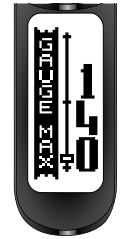
>*OFF:* Gauge graphic on the shot count run screen is disabled.

> *ON:* Gauge graphic on the shot count run screen is enabled.

> *CANCEL:* Cancel editing and leave the parameter unchanged.

GAUGE MAX

THE GAUGE MAX PARAMETER



The *GAUGE MAX* parameter allows the user to set the number the gauge counts down from every time the Ego11 is fired. The user can set the gauge from 100 to 2000 in increments of 10.

TIMER

THE GAME TIMER MENU

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

GAME

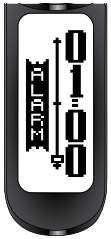
THE GAME TIME PARAMETER

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 and 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

THE ALARM TIME PARAMETER



An alarm condition is generated whenever the Game Timer counts down to a specific 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

THE TIMER 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.

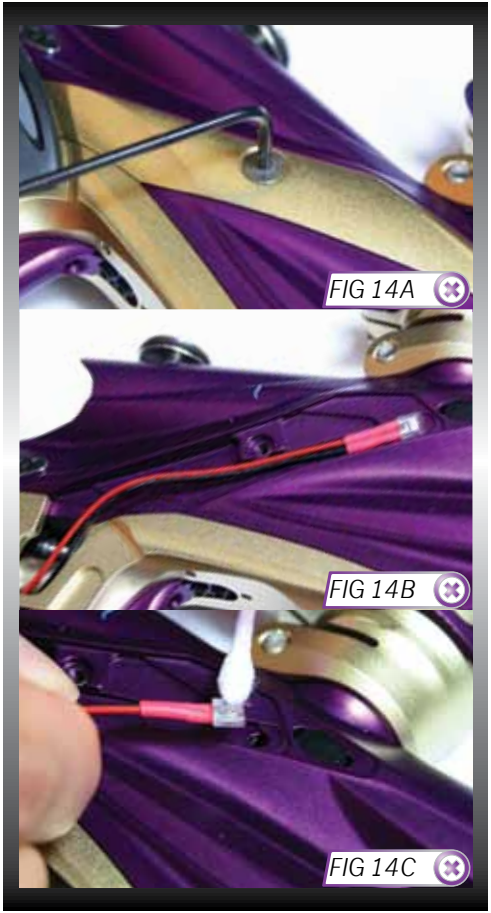
THE BREAK BEAM SENSOR SYSTEM (BBSS)

⚠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 BBSS Cover on the left hand side of the Ego11 using a 5/64" (2mm) hex key **(SEE FIGURE 14A)**.

Remove the cover to expose the back of the sensor unit **(SEE FIGURE 14B)**. Using a dry cotton bud, carefully remove any debris, paint or moisture from the back of the sensor unit and from inside the BBSS cover.

Lift the sensor unit free from the Ego11 Body and using another dry cotton bud, remove any grease or debris build-up from the front face of the sensor **(SEE FIGURE 14C)**.



(CONTINUED)

Remove the Rubber Detent and using a dry cotton bud clean the Detent and it's location point in the Ego11 Body. **(SEE FIGURE 14D)**. Inspect the Detent for damage and replace if necessary.[1]

Insert the Detent back into the Ego11 Body **(SEE FIGURE 14E)** and place the BBSS back into the designated slot in the body **(SEE FIGURE 14B)**. Ensure that the sensor unit is face down in the body i.e. looking into the breech.[2]

Replace the BBSS cover, then using a 5/64" hex key screw the sensor cover retaining screw into the body **(SEE FIGURE 14F)**.

Repeat the procedure for the opposite side of the Ego11.

You have now cleaned your Break Beam Sensor System.

FIG 14D

FIG 14E

FIG 14F

[1]*Replace any worn/damaged parts using authentic Eclipse Ego11 spare parts.*
[2]*Ensure that the receiver sensor (indicated by red heat shrink) is located on the right-hand side of the marker body.*

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

THE SL3 INLINE REGULATOR

⚠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.

Disconnect the Macroline hosing from your Inline Regulator allowing it to be unscrewed from the Front Regulator Mount (FRM) **(SEE FIGURE 15A)**. Inspect the o-ring at the top of the threads on the FRM for damage. Replace and re-lubricate as necessary.[1]

Turn the Inline Regulator upside down and carefully unscrew the bottom section from the top section **(SEE FIGURE 15B)**.

Tip both the Piston and Spring out of the top of the Inline Regulator **(SEE FIGURE 15C)**.

Insert a 1/8" hex key into the Adjuster Screw in the bottom section of the Inline Regulator, turn the Adjuster Screw clockwise through the top of the Inline Regulator Bottom **(SEE FIGURE 15D)**, and pull out of the Inline Regulator Bottom when it will no longer turn upwards.[2]

Thoroughly clean the 011 NBR70 o-rings that sit on the outside of the Adjuster Assembly, then re-lubricate with Eclipse Grease **(SEE OVERLEAF FIGURE 15E)**.[1]

[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)

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 15F)**.[1]

At this point if you are maintaining the Inline Regulator to fix a supercharging issue, turn to page 52 to the *'ADVANCED SL3 INLINE REGULATOR MAINTENANCE'* section. If you are not fixing a supercharging issue then there is no need to perform this advanced maintenance procedure.

Re-install the Adjuster Assembly into the bottom section of the Inline Regulator 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 **(SEE FIGURE 15G)**. Then turn the Adjuster Screw back in 4 turns to set an Inline Regulator output pressure that will not damage the marker when it is 'gassed up'.

Take the Piston, inspect for damage and clean the 016 NBR70 o-ring at the top, re-lubricate it with a light application of Eclipse Grease **(SEE FIGURE 15H)**. Place the Inline Regulator Spring over the Piston, then insert the Piston and Spring into the top of the Inline Regulator top section **(SEE FIGURE 15I)**.[1] With the top section of the Inline Regulator upside down, screw the top and bottom sections together.

Re-attach the Inline Regulator to the Ego11 FRM **(SEE FIGURE 15J)**, then re-connect the Macroline hose to the fitting on the Regulator Swivel. Basic cleaning of the SL3 Inline Regulator is complete.

[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 AT ALL UNSURE OF PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.

⚠WARNING

THE SPRING IN THE EGO11 INLINE REGULATOR HAS BEEN DESIGNED SPECIFICALLY FOR THE ECLIPSE EGO11. USING ANY OTHER SPRING WILL DAMAGE THE EGO11 AND VOID YOUR WARRANTY.

ADVANCED SL3 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 you are fixing a supercharging SL3 Inline Regulator (common symptoms of supercharging are a very high velocity first shot and/or large variances in shot to shot consistency).

Place 3/32" hex key through the Adjuster Top **(SEE FIGURE 16A)**, 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 16B)**. With your fingers fully unscrew the two parts taking care not to lose any of the internal components **(SEE FIGURE 16C)**.

Inside the Adjuster Screw you will find a Regulator Seal, Purge Poppet and Spring (Purge Poppet Assembly) **(SEE FIGURE 16D)**. 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.[1]

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 16E)**.

With the Regulator Seal, Purge Poppet and Spring installed back into the Adjuster Screw, replace the Adjuster Top **(SEE FIGURE 16F)**. Screw the two parts tightly together using 1/8" and 3/32" hex keys **(SEE FIGURE 16B)**. Refer to the *'THE SL3 INLINE REGULATOR'* section on page 50 to re-assemble the SL3 Inline Regulator.

[1] *If the Purge Poppet Assembly is removed for maintenance ensure is it re-installed correctly, failure to do so may seriously damage the Ego11 Solenoid Valve.*

THE CURE3+ BOLT

⚠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.

Raise the Bolt Pin and remove the Bolt Assembly from the Ego11 marker body **(FIGURE 17A)**.

Using a dry cotton bud remove any paint or grease from the surface of the Bolt **(SEE FIGURE 17B)**.

Lubricate the Detent slots on either side of the Bolt with gun oil, ensuring that a drop of oil is placed on the o-rings at the point where they cross the Detent slots **(SEE FIGURE 17C)**.[1]

Replace the Bolt Assembly, locking the Bolt Pin into the designated slot in the Rammer using the dot on the Bolt as a reference guide **(SEE FIGURE 17D)**.

Incorrect location of the Bolt can seriously damage the Body of your Ego11.

[1]*We recommend the use of Eclipse Oil on the Ego11 Rammer and Bolt.*

THE LOW PRESSURE REGULATOR (LPR)[1]

⚠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 Inline Regulator can be removed if needs be.

Unscrew the LPR Cap from the marker body **(SEE FIGURE 18A)**.

Remove the LPR Piston and Rear Spring from the LPR Cap **(SEE FIGURE 18B)**.

Cupping the palm of one hand, turn the LPR Cap upside down and tip the Front Spring out into your palm **(SEE FIGURE 18C)**.

Remove the Rear Spring from the LPR Piston and using a dry cotton bud, carefully clean the 013 NBR70 o-ring on the LPR Piston **(SEE FIGURE 18D)**. If the seal is damaged then replace it. Once the seal has been cleaned, lubricate with a light application of Eclipse Grease so that it is ready for re-assembly.[2]

[1] *The internals of your LPR may vary according to the model of Ego11 you have.*
[2] *The adjuster screw does not need to be removed from the LPR Cap for regular maintenance.*

(CONTINUED)

Insert the Front Spring (silver in colour) into the LPR Cap, so that it rests neatly on the Adjuster Screw **(SEE FIGURE 18E)**.

Place the gold coloured Rear Spring onto the LPR Piston and insert the Piston and Spring into the LPR Cap, o-ring end first **(SEE FIGURE 18F)**.

Before screwing the LPR Cap back onto your Ego11, use a dry cotton bud to clean the 010 NBR70 o-ring inside the LPR Body **(SEE FIGURE 18G)**. Lubricate this seal using a light gun oil, such as Eclipse Oil.

Replace the LPR Cap by screwing it onto the LPR Body in the Ego11 **(SEE FIGURE 18H)**.

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

THE ZICK2 RAMMER

⚠ 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.

Pull the Bolt Pin upwards so that it disengages the Zick2 Rammer, allowing the Bolt to be removed via the rear of the Ego11 **(SEE FIGURE 19A)**.

Using a 3/16" hex key, unscrew and remove the Zick2 Rammer Cap at the rear of the Ego11 **(SEE FIGURE 19B)**.

Raise the front of the Ego11 and tap the Ego11 onto your hand until the Zick2 Rammer falls into the palm of your hand **(SEE FIGURE 19C)**.

Thoroughly clean the Rammer Shaft and all of its seals, paying special attention to the 009 NBR70 o-ring on the middle of the shaft **(SEE FIGURE 19D)**, the rear 011 NBR70 o-ring **(SEE FIGURE 19E)** and the condition of the Rammer Bumper Cushion inside the Zick2 Rammer Cap **(SEE FIGURE 19F OVERLEAF)**.[1]

[1] *Replace any worn seals/bumpers using authentic Eclipse Ego11 spare parts.*

(CONTINUED)

Lubricate all of the seals on the Rammer Shaft and inside the Zick2 Rammer Cap and replace the Zick2 Rammer into the rear of the Ego11 Body as shown in **(SEE FIGURE 19G)**.[1,2]

Replace the Zick2 Rammer Cap, using the 3/16" hex key to secure it into the Ego11 Body **(SEE FIGURE 19H)**.[3]

Noting the position of the Rammer Shaft in the Ego11 Body **(SEE FIGURE 19I),** replace the Bolt and locate the Bolt Pin into the designated slot in the Rammer Shaft using the dot on the Bolt as a reference guide **(SEE FIGURE 19J)**.

Incorrect location of the Bolt can seriously damage the Body of your Ego11.

[1]*DO NOT use Eclipse Grease on the Rammer. Only use light paintgun oil, we recommend Eclipse Oil.*
[2]*The number of o-rings on the Rammer may vary according to the model of Ego11 that you have.*
[3]*DO NOT over tighten the Rammer Cap.*

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

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.

Disconnect any hosing and unscrew the Inline Regulator from the Front Regulator Mount as detailed in the SL3 Inline Regulator section of this maintenance guide (pages 50-51).

Using a 5/64" hex key remove the four screws that attach the Ego11 Rubber Grips to the Ego11 Grip Frame **(SEE FIGURE 20A)**. Unplug the Solenoid and BBSS wires from their sockets on the Ego11 Circuit Board **(SEE FIGURE 20B)**.

Using a 1/8" hex key undo the two Frames screws **(SEE FIGURES 20C & 20D)** and remove the Frame from the Ego11 Body, taking care not to damage any wires **(SEE FIGURE 20E)**.

You have now removed the Frame.

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

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.

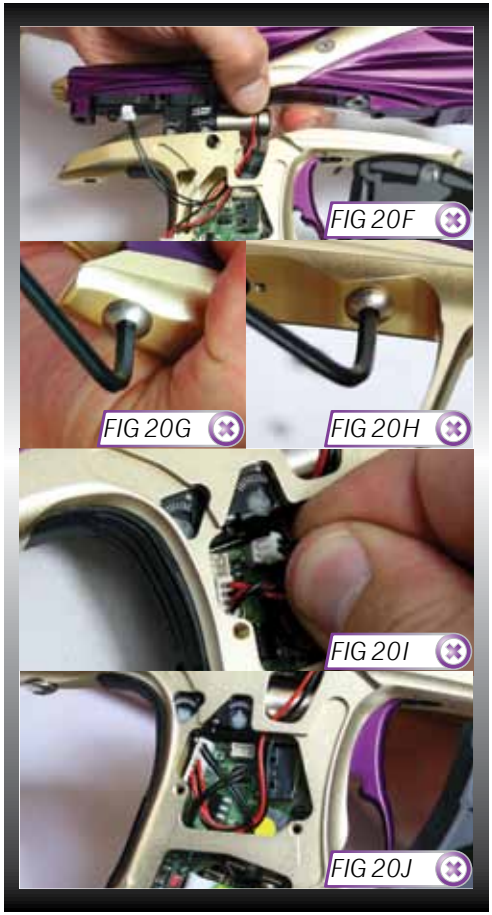
Carefully thread the Solenoid and BBSS wires through the access holes in the top of the Ego11 Frame **(SEE FIGURE 20F)**. Making sure that the BBSS and Solenoid wires are not trapped between the Frame and Body, re-attach the Frame to the Ego11 Body by tightening the two frame screws using a 1/8" hex key **(SEE FIGURES 20G & 20H)**.

Ensure that the BBSS cables lie neatly in the slots provided for them in the Frame and re-connect the Solenoid and the BBSS using relevant sockets on the Ego11 Circuit Board **(SEE FIGURE 20I)**.

Adjust both the Solenoid and BBSS wires so that they sit neatly within the Frame, making sure the wires do not interfere with the Opto sensors or Micro-switch **(SEE FIGURE 20J)**.

Re-attach the Ego11 Rubber Grips to the Frame by using a 5/64" hex key to replace the four grip screws.

⚠WARNING//////////////////////////////////////
IF YOU ARE AT ALL UNSURE OF PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.



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 Ego11 Body (see page 58). Unscrew the two M2.5x5 retaining screws which hold the Bearing Carrier in the Frame. **(SEE FIGURE 21A)**.

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 21B)**.

Remove the Trigger Spring from the Bearing Carrier, removing any paint or moisture **(SEE FIGURE 21C)**.

Using a 1/16" hex key, loosen the Trigger Pin retaining set screw from the back of the Trigger **(SEE FIGURE 21D)**.

Use a small hex key to push the Trigger Pin out of the Bearing Carrier from one side **(SEE FIGURE 21E)**, then remove the Bearing Carrier from the Trigger **(SEE FIGURE 21F)**.

Clean the Trigger and Bearing Carrier thoroughly and also clean the space within the Frame that the Trigger sits in.

(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 21G)**.

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 21H)**.

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 21I)**.

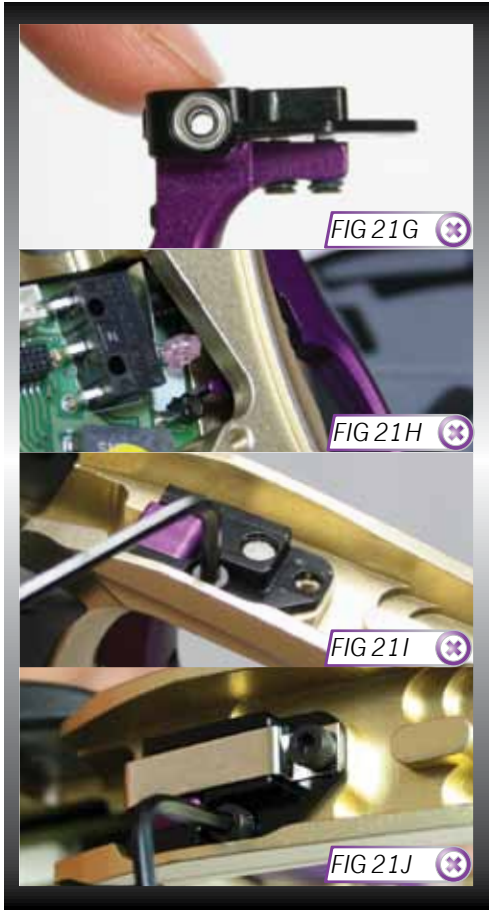
Ensure the Trigger moves freely within the Frame, then using a 1/16" hex key tighten down the Trigger Pin retaining set screw.

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 21J)**.

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 Ego11 Trigger Assembly.

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



THE SOLENOID MANIFOLD

⚠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 Solenoid Valve or Manifold for any kind of regular maintenance. There are NO serviceable parts within the Solenoid Valve or Manifold that require maintenance.

With the Frame separated from the Ego11 Body and the Solenoid and BBSS wires unplugged from the Circuit Board (see page 58) use a small flat headed screw driver to undo and remove the two screws that hold the Solenoid Valve onto the Solenoid Manifold **(SEE FIGURE 22A)**.

After removing the Solenoid Valve, the three retaining screws which hold the Solenoid Manifold onto the Ego11 Body will be accessible. Remove these using a 5/64" hex key **(SEE FIGURE 22B)**.

With the Solenoid Manifold completely removed from the Ego11 Body the bottom of the Ego11 Body should now resemble **FIGURE 22C**. 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 air transfer holes.

Check the top face of the Solenoid Manifold to ensure that it is free from damage or debris **(SEE FIGURE 22D)**. Remove, clean and inspect the Manifold Rubber Gasket as shown in **FIGURE 22E**. Replace the gasket ensuring that it lies flat in its designated groove in the Solenoid Manifold body **(SEE FIGURE 22D)**.[1]

[1] *Replace any worn/damaged seals using authentic Eclipse Ego11 spare parts.*

(CONTINUED)

Check the bottom face of the Solenoid Manifold to ensure that it is also free from damage or debris **(SEE FIGURE 22G)**. Remove, clean and inspect the Solenoid Rubber Gasket as shown in **FIGURE 22H**. Replace the gasket ensuring that it lies flat in its designated groove in the Solenoid Manifold Body **(SEE FIGURE 22G)**.[1]

Inspect and clean the Solenoid Valve, removing any moisture, dirt and debris, paying particular attention to the top sealing surface and exhaust ports **(SEE FIGURE 22I)**.

DO NOT ATTEMPT TO DISASSEMBLE THE SOLENOID VALVE UNIT OR THE USER WARRANTY WILL BE VOID.

Hold the Solenoid Manifold onto the bottom of the Ego11 Body taking care to line it up correctly with the screw holes in the body and to avoid pinching the BBSS wires underneath it. Use a 5/64" hex key to tighten the three screws that hold the Solenoid Manifold onto the Ego11 Body **(SEE FIGURE 22J)**.[1]

Hold the Solenoid Valve onto the bottom face of the Solenoid Manifold ensuring the small Solenoid Rubber Gasket is still in place, lining up the two screw holes screw the Solenoid retaining screws into the Solenoid Manifold **(SEE FIGURE 22K)**.[2]

You have now successfully stripped and cleaned your Ego11 Solenoid Assembly.

[1]*Replace any worn/damaged seals using authentic Eclipse Ego11 spare parts.*
[2]*DO NOT over tighten retaining screws, doing so may strip the threads or damage the part being retained.*

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

THE EGO11 SOLENOID VALVE

The Ego11 Solenoid Valve (SEE FIGURE 23A) is Non-Serviceable unlike some previous Ego and Geo Solenoid Valves. Any attempt to strip or service the Ego11 Solenoid Valve will immediately void your warranty.

If you experience any issue with your Ego11 Solenoid Valve then please contact your nearest Eclipse Service Centre for details on replacement Solenoid Valves.

See page 73 for Eclipse Service Centre details.

FIG 23A

THE EXHAUST VALVE 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.

Lift the Bolt Pin and slide the Bolt Assembly out of the rear of the marker. Disconnect any hosing and unscrew the Inline Regulator from the Front Regulator Mount as detailed in the SL3 Inline Regulator section of this maintenance guide (page 50-51). Remove the Frame as detailed on page 58.

Take the Ego11 Body and turn it so that the underside of the Solenoid Assembly, and Valve Plug are visible and accessible. Using a 1/8" hex key remove the screw from inside the Front Regulator Mount that holds the LPR Assembly in the marker **(SEE FIGURE 24A)**.

Remove the entire LPR Assembly (A), Valve Spring (B) and Exhaust Valve (C) from the marker body **(SEE FIGURE 24B)**. Using a 1/8" hex key unscrew the Valve Plug from the underside of the Ego11 Body **(SEE FIGURE 24C)**. The bottom of the Valve Guide should now be visible through the Valve Plug hole **(SEE FIGURE 24D)**. Ensure that the Rammer is in its rear position and taking an L-shaped hex key, place it down through the Bolt Pin Slot in the top of the body so that you can apply light pressure to pop the Valve Guide out of its place in the Ego11 Body **(SEE FIGURE 24E)**.

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

FIG 24A
FIG 24B
FIG 24C
FIG 24D
FIG 24E

(CONTINUED)

Note how one side of the Valve Guide is flat **(A)** whilst the other is raised **(B)** to create the surface that the Exhaust Valve seals on **(SEE FIGURE 24F)**. Inspect the sealing face of both the Valve Guide and the Exhaust Valve for any excessive wear or damage. If either the Exhaust Valve or the Valve Guide are damaged then replace with authentic Ego11 parts.

Lubricate both of the o-rings on the Valve Guide with Eclipse Oil **(SEE FIGURE 24G)**. Lubricate the o-rings on the LPR Body with Eclipse Oil **(SEE FIGURE 24H)**.

Place the Exhaust Valve in the Valve Guide, making sure that the sealing faces are next to each other, and place the Valve Spring over the end of the Exhaust Valve and then place this sub-assembly over the LPR Body **(SEE FIGURE 24I)**. Make sure the larger diameter FRM Screw hole (A) in the LPR Body, and the blocked side of the Valve Guide (B) are in line with each other before inserting the sub-assembly into the Ego11.

Holding the LPR Assembly so that the larger hole on the LPR Body is facing the bottom of the marker body, insert the Valve Assembly, Valve Spring and LPR Assembly into the front of the marker body **(SEE FIGURE 24J)**.

(CONTINUED)

When the Valve Guide is in the correct place, you will be able to see the closed side through the Valve Plug hole in the Ego11 Body **(SEE FIGURE 24K)**.

Using a 1/8" hex key replace the FRM Screw that secures the LPR Body into the marker body **(SEE FIGURE 24L)**. Ensure that the LPR Body is in the correct orientation before attempting to replace the FRM Screw. The larger of the two holes on the LPR Body should be at the bottom when aligning the holes with the Ego11 Body.

Make sure that the Valve Guide is lined up correctly and then take a 1/8" hex key and replace the Valve Plug **(SEE FIGURE 24M)**.

You have now successfully stripped and cleaned your Ego11 Valve Assembly. See page 59 on how to attach the Ego11 Frame.

FIG 24K

FIG 24L

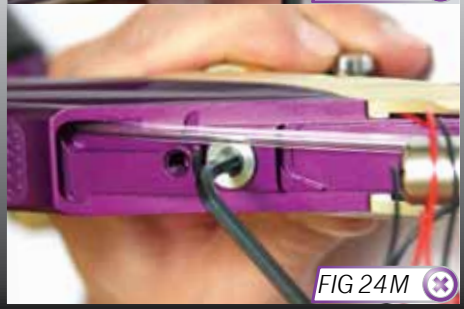


FIG 24M

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

THE PUSH OPERATED 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.

Having disconnected the Macroline hose from the fitting on the POPS Body, fully depress the Latch Button then slide the Bonnet forward while continuing to depress Latch Button **(SEE FIGURE 25A)**.

When the Bonnet is in the forward position **(SEE FIGURE 25B)** remove the Latch Button and Spring from the Bonnet **(SEE FIGURE 25C)** then slide the Bonnet off the POPS Body **(SEE FIGURE 25D)**. 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 25E)**.

Clean off any dirt, debris or moisture from the Bonnet, the POPS Body and the Latch Button **(SEE FIGURE 25F)**.

Remove the POPS Insert Assembly using a 5/32" hex key **(SEE FIGURE 25G)**. 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 25H)**.

(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 25I)**. 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 25J & 25K)**.

Screw the POPS Insert back into the POPS Body ensuring that the o-ring end goes in first **(SEE FIGURE 25G)**.

Replace the Push Rod into its designated slot **(SEE FIGURE 25L)**, 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 25M)**.

Slide the Bonnet over the POPS Body and align the hole on the Bonnet with the front hole on the POPS Body **(SEE FIGURE 25N)**.

Ensure the Latch Button and Spring are attached to each other 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 25O)**.

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 25P)**. Reconnect the Macroline hose to the fitting on the POPS Body.

You have now successfully cleaned and maintained your Push Operated Purge System.

⚠WARNING

IF YOU ARE AT ALL UNSURE OF PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Although a fresh battery has been fitted, the Ego11 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 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 fresh alkaline or lithium battery. Do not use a low quality or rechargeable battery.
The Ego11 leaks from the Solenoid and/ or Manifold.	Either gasket is damaged and/or not seated correctly in its designated pocket in the Manifold Body.	Replace the gasket if damaged using Ego11 parts kit. Ensure the gasket is seated correctly.
	Damaged Ego11 Solenoid Valve.	Replace Ego11 Solenoid Valve.
	LPR is supercharging causing intermittent leaking.	Clean LPR Piston Seal.
		Inspect regulator seal (in LPR piston) and regulator seat (in LPR body). Replace if necessary.
	Damaged or incorrect seals on Rammer.	Replace seals.
	Damaged Manifold Inlet Barb or Low Pressure Hose	Check Low Pressure Hose for cuts or replace Barb.
The Ego11 leaks down the Barrel.	Damaged Exhaust Valve.	Replace Exhaust Valve.
	Damaged Valve Guide.	Replace Valve Guide and o-rings.
Gas vents quickly down Barrel as soon as it is gassed up.	Incorrect o-ring on front of Valve Guide.	Replace front o-ring on Valve Guide with a new 013 NBR70 o-ring
	The Exhaust Valve has become jammed in the Valve Guide.	Replace Exhaust Valve and Valve Guide as necessary (see Maintenance section).
The Ego11 fires yet Bolt doesn't move.	Bolt Pin is not located in Rammer correctly.	Lift Bolt Pin and line up with position of Rammer correctly (See Maintenance section).
Low rate of fire / Rate of fire not reaching the ROF Cap.	The Solenoid Flow Restrictors (SFRs) A+B are set too low.	Set the SFRs to their factory levels. A set to level 5, B set to level 7.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
The marker is chopping or trapping paint.	The Break Beam Sensor System is switched off.	Switch on the BBSS.
	The Bolt is dirty, causing the BBSS to incorrectly detect a paintball.	Clean the Bolt.
	The BBSS is dirty causing the incorrect detection of paintballs.	Clean the BBSS.
	The Dwell parameter is set too low.	Increase the Dwell parameter.
The Ego11 does not fire.	Trigger is set up incorrectly.	Set Trigger up correctly. (See Advanced Set-Up Section)
	Solenoid wire is not plugged into the Ego11 PCB.	Plug Solenoid wire into port on the Ego11 PCB.
	The BBSS is enabled but there is no paint.	Fill loader with paint.
	Micro-switch is not being activated.	Adjust Micro-switch activation screw accordingly.
	Micro-switch/Opto Sensors damaged.	Replace Circuit Board.
	Solenoid Valve is damaged.	Replace Solenoid Valve.
Low constant velocity.	Solenoid Flow Restrictor (SFR) B is set too low.	Set SFR B to level 6-7.
Low velocity first shot.	FSD Comp parameter is too low to overcome stiction on Solenoid and / or Rammer o-rings.	Increase FSD Comp parameter.
High velocity first shot.	FSD Comp parameter set too high.	Reduce FSD Comp parameter.
	Inline Regulator pressure is creeping.	Strip and clean the Inline Regulator replacing the Piston Seal if necessary.
	LPR pressure is creeping.	Strip and clean the LPR replacing the Piston Seal if necessary.
The Trigger is very “bouncy”.	Incorrect filter settings.	Check that your Trigger Filter and Debounce settings suit your Trigger set-up.
	Trigger pull too short and return strength too low.	Refer to Advanced Set-Up section for guidelines of how to adjust your Ego11 Trigger accordingly.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
The BBSS does not appear to be reading correctly.	The Break Beam Sensor System is dirty.	Keep the Break Beam Sensors clean to ensure correct readings (See Maintenance Section).
	Break Beam Sensors are the wrong way around.	Check that the red receiver is on the right-hand side of the breech.
The BBSS is not reading at all.	There is a broken wire or contact, or a short circuit on either of the breech sensor cables.	Check the plug of the cables.
		Check for cuts or pinches in the sensor cables.
	Either sensor is back to front.	Check that the sensors face each other when installed.
Two or more balls are being fed into the breech.	Worn/Damaged Detents.	Change the Rubber Detent.
	Feed force too high from loader.	Adjust loader settings/use lower force loader.
Ego11 is inconsistent.	Inline Regulator is supercharging.	Strip and clean Inline Regulator.
	Dwell too low.	Increase Dwell Parameter.
Leaking Rammer assembly (Leak gets louder when bolt is removed).	Front Rammer Shaft o-ring deteriorated.	Replace front Rammer shaft o-ring.
BBSS turns itself off after firing.	Sensor is dirty.	Clean the BBSS.
	Sensor is faulty.	Replace the BBSS.
	Sensor is out of place.	Re-Install BBSS. Check alignment.
When the Ego11 powers up, no game timer / shot counter / ROF indicator is displayed and the gun will not fire.	The Trigger is permanently depressed.	Turn the front stop set screw in the top of the Trigger counter-clockwise until the display reads correctly. If there is sufficient Trigger adjustment then turn the return force set screw counter clockwise also.
The Ego11 leaks out of the LPR Body Vent Hole (small hole below the LPR assembly on the Ego11 Body).	The two rear most o-rings on the LPR Body are damaged.	Replace both rear o-rings with new 14x2 NBR70 / 016 NBR70 o-rings.

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 Ego11 cannot be solved using the Fault Finding guide, contact your nearest Eclipse Service Centre for assistance.

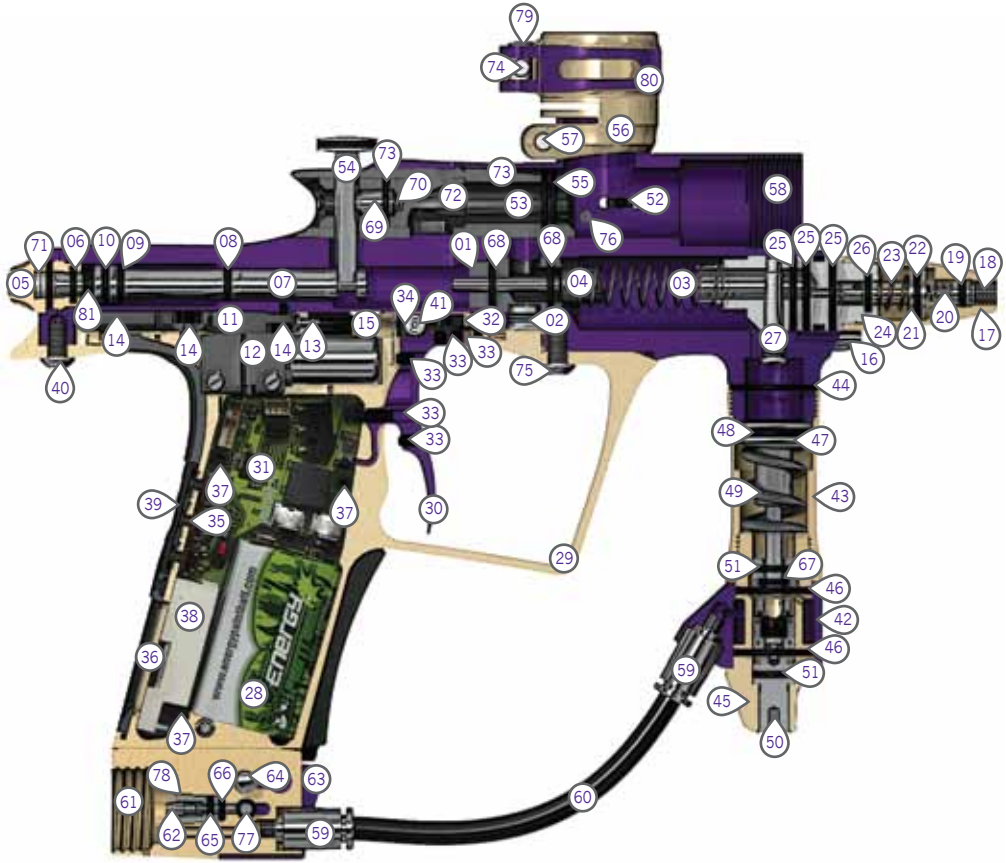
ECLIPSE CERTIFIED SERVICE CENTRES

Are you unsure of where to send your Ego11 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 to send it into 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.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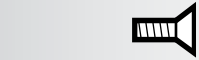
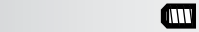
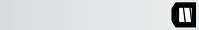
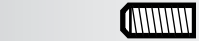
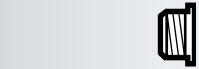
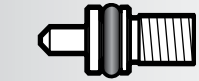
PART NAME

01 Valve Guide
02 Valve Plug
03 Valve Spring
04 Exhaust Valve Assembly
05 Rammer Cap
06 Rammer Cap O-Ring
07 Rammer
08 Front Rammer O-Ring
09 Rammer Bumper O-Ring
10 Rear Rammer O-Ring
11 Manifold
12 Solenoid Assembly
13 Inlet Barb
14 Solenoid Retaining Screw
15 Low Pressure Hose
16 Torpedo
17 LPR Cap
18 LPR Adjuster Screw
19 LPR Adjuster Screw O-Ring
20 LPR Adjuster Spring
21 LPR Piston
22 LPR Piston O-Ring
23 LPR Piston Spring
24 LPR Body
25 LPR Body External O-Ring
26 LPR Body Internal O-Ring
27 FRM Screw
28 9V Battery
29 Frame
30 Trigger
31 Printed Circuit Board
32 Bearing Carrier
33 Trigger Adjuster Screw
34 Trigger Pin Locking Screw
35 Push Button Strip
36 Display Window
37 PCB Screw
38 LCD Module
39 Navigation Console
40 Rear Frame Screw
41 Trigger Pin
42 Inline Regulator Swivel
43 Inline Regulator Top
44 Inline Regulator Top O-Ring
45 Inline Regulator Bottom
46 Inline Regulator Bottom O-Ring
47 Inline Regulator Piston
48 Inline Regulator Piston O-Ring
49 Inline Regulator Spring
50 Inline Regulator Adjuster Screw
51 Inline Regulator Adjuster O-Ring
52 Anti-Double Ball Finger
53 Bolt
54 Bolt Pin
55 Bolt O-Rings
56 Clamping Feed Tube
57 Clamping Feed Screw
58 Body
59 Hose Fitting
60 1/4" Hose
61 POPS Body
62 POPS Pin
63 POPS Bonnet
64 Latch Button
65 POPS Insert External O-Ring
66 POPS Insert Internal O-Ring
67 Inline Reg Adjuster Internal O-Ring
68 Valve Guide O-Rings
69 Bolt Plunger
70 Bolt Spring
71 Zick 2 Rammer Cushion
72 Bolt Insert
73 Bolt Insert O-Ring
74 Clamping Feed Sprocket Screw
75 Front Frame Screw
76 BBSS Sensor
77 POPS Push Rod
78 POPS Insert
79 Clamping Feed Swivel
80 Clamping Feed Lever
81 Rammer Rear Bumper

SCREW	QTY	DESCRIPTION
	8	PCB SCREW (3), BEARING CARRIER SCREW (2),MANIFOLD SCREW(3) *(M2.5 x 5 CAP HEAD SOCKET)*
	2	SOLENOID SCREW (2) *(M1.7 x 16 CAP HEAD SOCKET)*
	6	RUBBER GRIP SCREW (4), BBSS COVERS SCREW (2) *(6-32 UNC x 5/16 COUNTERSUNK SOCKET)*
	1	SHORT FEED NECK SCREW *(10-32 UNF x 1/2 CAP HEAD SOCKET)*
	1	CLAMPING FEED SPROCKET SCREW *(CUSTOM MANUFACTURED)*
	1	MICRO-SWITCH SCREW (6-32 UNC x 1/2 SOCKET SET SCREW)
	4	TRIGGER ADJUSTMENT SCREW (6-32 UNC x 3/16 SOCKET SET SCREW)
	1	TRIGGER PIN RETAINING SCREW (6-32 UNC x 1/8 SOCKET SET SCREW)
	2	POPS RETAINING SCREW (10-32 UNF x 1/2 SOCKET SET SCREW)
	1	VALVE PLUG (CUSTOM MANUFACTURED)
	1	LPR ADJUSTER SCREW (CUSTOM MANUFACTURED)
	2	FRONT & REAR FRAME SCREW (10-32 UNF x 3/8 SOCKET BUTTON HEAD)
	1	FRM RETAINING SCREW (CUSTOM MANUFACTURED)

O-RING	LOCATION
 017	Ego11 Body FRM
 016	SL3 Inline Regulator Piston SL3 Inline Regulator Bottom Shaft4 Barrel Back (body end) LPR Body*
 015	Shaft 4 Barrel Back (tip end) Cure3+ Bolt
 14x2	LPR Body*
 013	Valve Guide LPR Piston

O-RING	LOCATION
 012	Bolt insert
 011	Back of the Rammer Rammer Cap SL3 Inline Regulator Adjuster Outside
 010	Inside LPR Body Inside Rammer Cap
 009	Rammer Front Bumper Rammer Shaft
 008	SL3 Inline Regulator Adjuster Inside
 007	Torpedo LPR Adjuster Screw POPS Insert External
 005	POPS Insert Internal (NBR 90)
 004	POPS Push Rod

*** = EITHER 016 OR 14x2 O-RINGS CAN BE USED ON THE LPR BODY DUE TO THE FACT THAT IT HAS TWO SEALING O-RINGS.**

ALL O-RINGS ARE NBR 70 DUROMETER UNLESS OTHERWISE STATED.

ECLIPSE GREASE
The recommended grease for use in all maintenance and servicing procedures that require grease.

ECLIPSE OIL
The recommended oil for use in all maintenance and servicing procedures that require oil.

ECLIPSE SHAFT4 BARREL KITS
A 2-piece Barrel Bore kit (includes .685 & .691 Barrel Backs) and a single 16" Barrel Front kit. *COLOURS SUBJECT TO AVAILABILITY.*

EGO11 SERVICING & SPARES
Contact your nearest service centre for all your service and spares needs. See the interactive map at www.planeteclipse.com.

BALL DETENTS
10 Replacement rubber Detents for your Ego11.

ECLIPSE EGO11 TOOL TUBE
This handy little tool tube includes all of the hex key sizes that you will need to strip and maintain your Ego11.

THE 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.

The Ego11 is compatible with Eclipse E-Portal Software. This software is an upgrade to the Ego11 platform. The Eclipse E-Portal Software, USB cable and USB daughter board are sold as a kit, separate from the Ego11.[1]

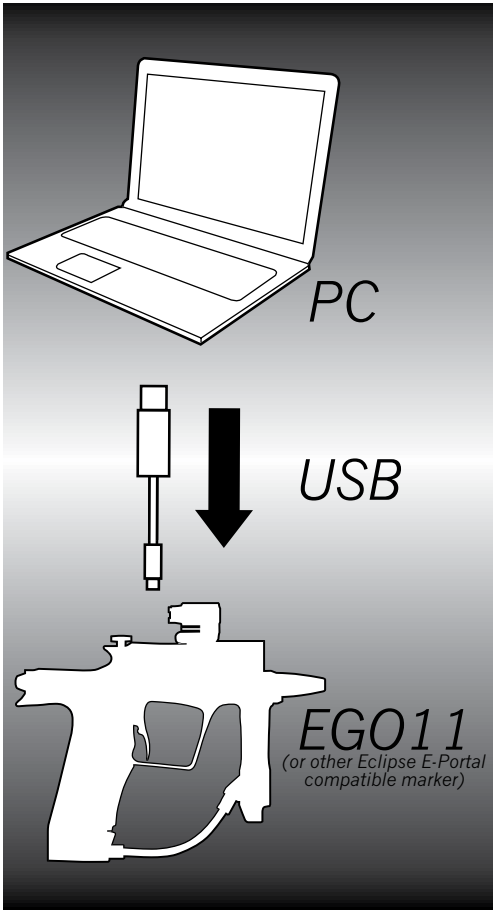
The Eclipse E-Portal allows you to connect the Eclipse Ego11 to a PC, where a number of operations can be performed:[2]

UPDATE THE MARKERS FIRMWARE - from time to time new firmware may be released by Planet Eclipse. You can now download and 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 Ego11 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), this kit will be compatible with the Ego11.*
[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, Windows XP/Windows Vista/Windows 7, internet connection (required for software and firmware updates).*



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