EGO

ADVANCED PAINTBALL MARKER

OPERATORS MANUAL

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

1. The Eclipse Ego8 is not a toy.

2. Careless or improper use, including failure to follow instructions and warnings within this User Manual and attached to the Ego8 could cause death or serious injury.

3. Do not remove or deface any warnings attached to the Ego8.

4. 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.

5. Persons under 18 years of age must have adult supervision when using or handling the Ego8.

6. Observe all local and national laws, regulations and guidelines.

7. Use only professional paintball fields where codes of safety are strictly enforced.

8. Use compressed air/nitrogen only. Do not use CO_2

9. Always follow instructions, warnings and guidelines given with any first stage regulator you use with the Ego8.

10. Use 0.68 calibre paintballs only.

11. Keep the Ego8 switched off until ready to shoot.

12. Treat every marker as if it is loaded.

13. Never point the Ego8 at anything you do not intend to shoot.

14. Do not shoot at persons at close range.

15. Always measure your markers velocity before playing paintball, using a suitable chronograph.

16. Never shoot at velocities in excess of 300 feet (91.44 meters) per second, or at velocities greater than local or national laws allow

17. Do not fire the Ego8 without the bolt in the breech, as high-pressure gas will be emitted.

18. Do not fire the Ego8 without the bolt pin locked securely in place.

19. Never look into the barrel or breech area of the Ego8 whilst the marker is switched on and able to fire.

20. Never put your finger or any foreign objects into the paintball feed tube of the Ego8.

21. Never allow pressurised gas to come into contact with any part of your body.

22. Always switch off the Ego8 when not in use.

23. Always fit a barrel-blocking device to the Ego8 when not in use on the field of play.

⚠ WARNING

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24. Always remove all paintballs from the Ego8 when not in use on the field of play.

25. Always remove the first stage regulator and relieve all residual gas pressure from the Ego8 before disassembly.

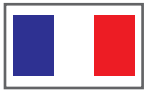
26. The Ego8 can hold a small residual charge of gas, typically 2 shots, with the first stage regulator removed. Always discharge the marker in a safe direction to relieve this residual gas pressure.

27. Always remove the first stage regulator and relieve all residual gas pressure from the Ego8 for transport and storage.

28. Always follow guidelines given with your first stage regulator for safe transportation and storage..

29. Always store the Ego8 in a secure place..

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.
Ilcontient 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 (OPERARIOS Y) usarios està en Inglés.
Contiene importantes normas de seguridad e instrucciones. Si no esta seguro de algùn punto o no entiende los conteindos de este manual debe conultar con un experto.

DIESE BEDIENUNGS - UND BENUTZERANLEITUNG IST IN ENGLISCH.
Sie enthält wichtige Sicherheitsrichtlinen und - bestimmungen. Solten Sie sich in irgendeiner Weise un sicher sein. Oder den inhalte dies heftes nicht versthen, lassen Sie siche bitte von einen Experten beraten.

NOTE: 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 CENTERS)

ORIENTATION

Names the component parts of the Ego8 Marker. This section is essential reading for everyone.

QUICK SET-UP

Details on how to get up and running quickly with your Ego8. This section is essential reading for everyone.

USING YOUR EGO8

More detailed information on how to use and interact with the Ego8 via its user interface.

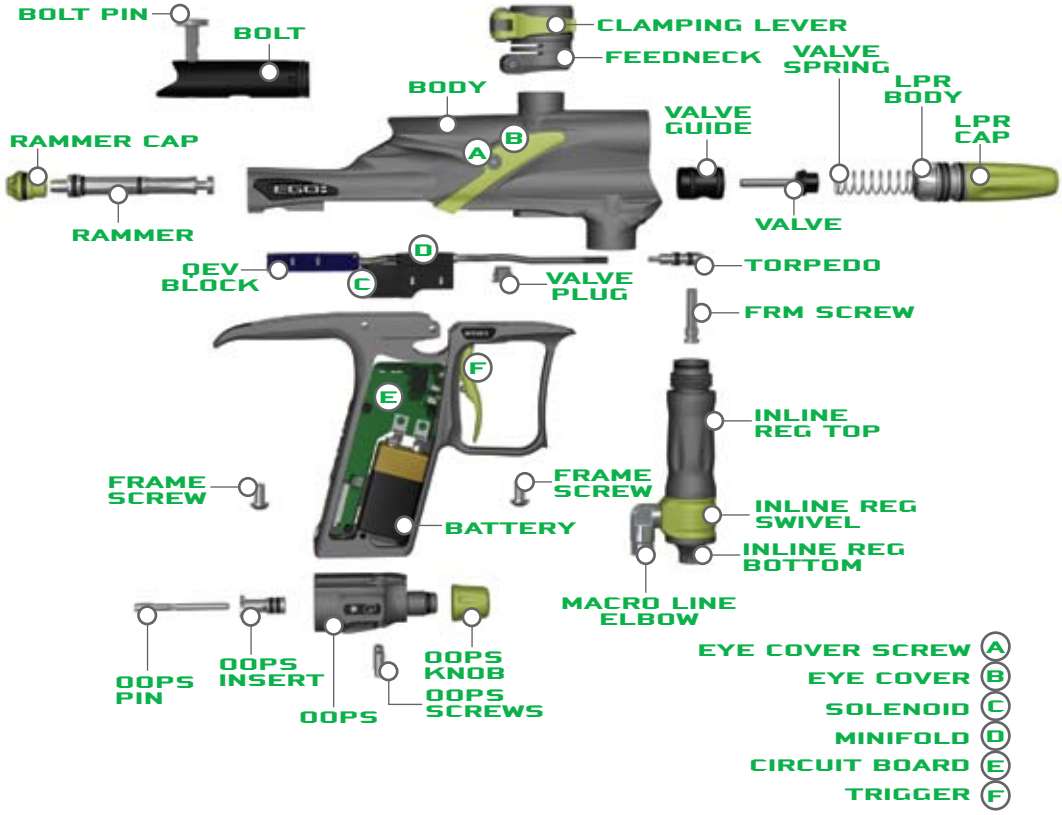
MENU TREE

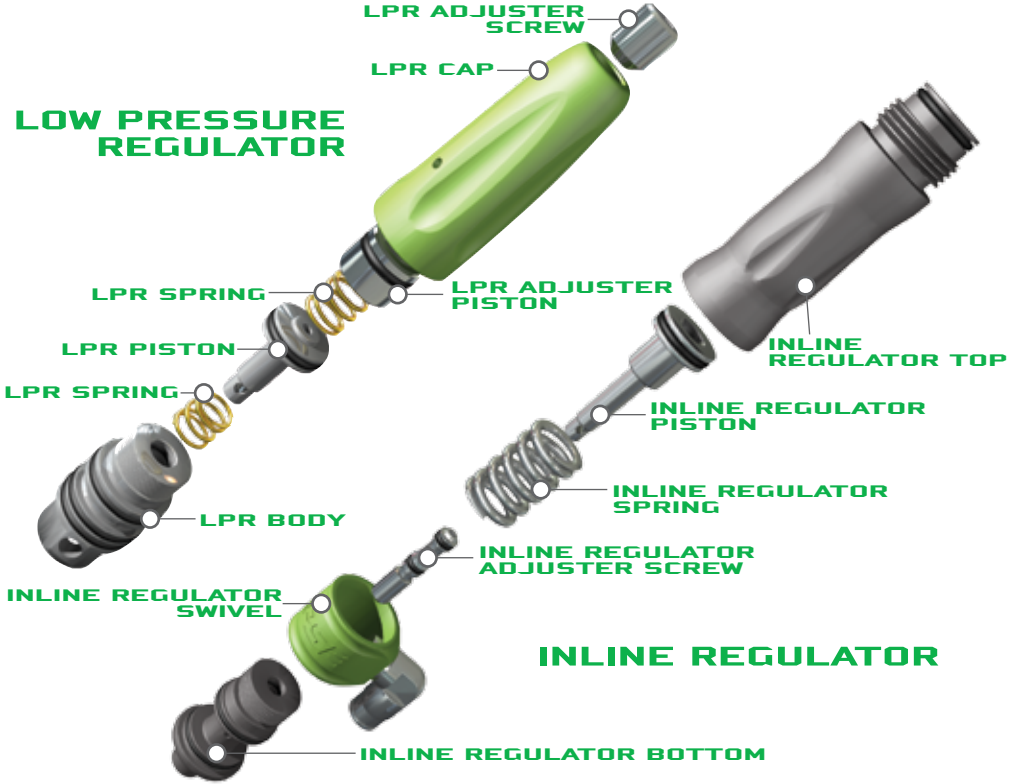
A quick reference guide to the user interface.

ADVANCED SET-UP

In depth information on setting up the Ego8.

KNOW YOUR EGO8




LPR ADJUSTER SCREW
LPR CAP
LOW PRESSURE REGULATOR
LPR SPRING
LPR ADJUSTER PISTON
LPR PISTON
LPR SPRING
LPR BODY
INLINE REGULATOR TOP
INLINE REGULATOR PISTON
INLINE REGULATOR SPRING
INLINE REGULATOR ADJUSTER SCREW
INLINE REGULATOR SWIVEL
INLINE REGULATOR
INLINE REGULATOR BOTTOM

THE EGO8 NAVIGATION CONSOLE

At the rear of the Ego8 grip frame you will find the Navigation Console. The Navigation Console is used for:

- TURNING THE EGO8 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 EGO8 BBSS ON AND OFF USING THE BUTTON
- RESETTING RECORDED VALUES USING THE BUTTON
- CONTROLLING THE GAME TIMER WITH THE BUTTON

INSTALLING A 9V BATTERY

Ensure that the Ego8 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 three 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 any fitted battery by sliding your thumb or finger into the recess below the battery and levering the battery out of the frame **(SEE FIGURE 2.1)**.

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 side of the frame **(SEE FIGURE 2.2)**.

Ensure that all of the wires are within the recess of the frame and away from the trigger microswitch and opto sensors so as not to interfere with their operation and replace the rubber grip and replace the three countersunk screws.

DO NOT over-tighten the screws.

FIG 2.1

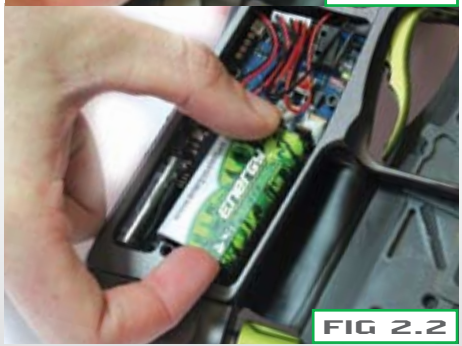


FIG 2.2

NOTE: BATTERY VOLTAGE MUST NOT EXCEED 10 VOLTS. SOME 9 VOLT RECHARGEABLE BATTERIES CAN EXCEED THIS VOLTAGE IF OVER CHARGED. IF IN DOUBT DO NOT USE RECHARGEABLE BATTERIES.

SWITCHING ON THE EGO8

Press and hold the ⏣ button **(SEE FIGURE 3.1)**. After one second the Ego8 logo will be displayed. Release the ⏣ button and the Run Screen will be displayed.

SWITCHING OFF THE EGO8

Press and hold the ⏣ button until the display shows **OFF?** Release the ⏣ button and re-press it to turn off the Ego8. Alternatively when the display reads **OFF?**, you can pull the trigger once to turn off the Ego8.

FIRING THE EGO8

Pull the trigger to fire the Ego8. The entire firing sequence is controlled electronically by the Ego8 circuit board, enabling any user to easily achieve high rates of fire.

THE EGO8 CIRCUIT BOARD

There are three sockets on the Ego8 Circuit board two of which are occupied by the BBSS Connector (A) and the Ego8 Solenoid (B). The third socket on the board (C) is the Auxiliary socket to which third party products such as loaders and RF transmitters can be connected using the relevant wiring harness. **(SEE FIGURE 3.2)**

FIG 3.1

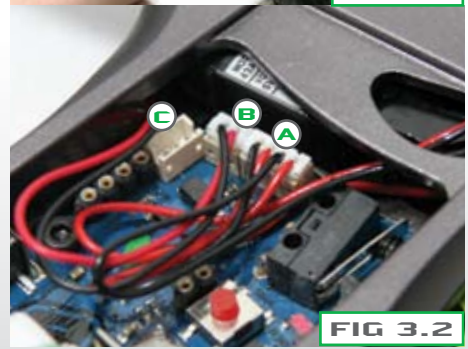


FIG 3.2

USING THE BREAK BEAM SENSOR SYSTEM

The Break Beam Sensor System is used to detect when a paintball is ready to fire from the Ego8. If no paintball is ready then the **BBSS** will inhibit the Ego8 from firing. This prevents the Ego8 from 'chopping' paintballs that are not fully loaded into the marker.

To switch off the Break-Beam Sensor System, press and hold the button for 0.5 second **(SEE FIGURE 3.3).**

The break beam sensor system indicator on the top right of the LCD will change from (enabled) to (disabled) .

To switch the Break-Beam Sensor System back on, press and hold the button for one second. The indicator will change back to .

When the Break-Beam Sensor System is enabled, the indicator will change depending on if 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 Ego8's Break-Beam Sensor System are covered in full on page 20 of this user manual.

NOTE: WHEN THE EGO8 IS TURNED ON, THE BREAK-BEAM SENSOR SYSTEM IS AUTOMATICALLY ENABLED

FIG 3.3

SETTING UP

Before you can begin to use your Ego8, you will need to attach an air-system and a paintball loader.

NOTE: THE EGO8 CANNOT BE USED WITH CO2, IT CAN ONLY BE POWERED BY COMPRESSED AIR OR NITROGEN.

INSTALLING A PRESET AIR SYSTEM

Every Ego8 comes complete with an Eclipse On/Off Purge System (OOPS) which provides a direct connection for a preset air system. Before screwing the air system into the OOPS ensure that the On/Off knob is wound out approximately half way **(SEE FIGURE 4.1).**

Be careful not to unscrew the On/Off knob too far as it will come completely off the OOPS. If this happens, replace the On/Off knob by screwing it back onto the OOPS body in a clockwise direction.

Screw the preset air system into the OOPS **(SEE FIGURE 4.2)** so that the bottle screws in all the way and is tight. Slowly turn the On/Off knob in a clockwise direction allowing the OOPS to depress the pin of the preset air system causing the Ego8 to become pressurized, providing that there is sufficient air in your tank **(SEE FIGURE 4.3).**

You have now installed a preset air system onto your Ego8.


FIG 4.1


FIG 4.2


FIG 4.3

NOTE: WHEN USING AN OOPS ON YOUR EGO8, THE EGO8 WILL STILL HAVE STORED AIR IN THE VALVE CHAMBER, GAS LINE AND INLINE REGULATOR AFTER YOU HAVE SWITCHED THE OOPS OFF. PLEASE REMEMBER TO DISCHARGE THE STORED AIR IN A SAFE DIRECTION AS YOU ARE UNSCREWING THE ON/OFF KNOB ON THE OOPS.

T-SLOT MOUNTING SYSTEM

The Ego8 utilises a T-slot arrangement to mount the OOPS to the bottom of the frame. 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.

For backwards compatibility there are industry standard mounting holes in the base of the frame for mounting third party air source adaptors (ASAs).

MACROLINE HOSING AND ELBOWS

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 macroline fitting and keep the collet depressed.

Pull the macroline hose out of the macroline fitting and release the collet.

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

INSTALLING AN ADJUSTABLE AIR SYSTEM

Firstly disconnect the macroline hosing from the elbow attached to the OOPS at the base of the grip frame **(SEE FIGURE 4.4).**

Unscrew the On/Off knob completely from the OOPS and using a 3/32" hex key turn the two screws on the bottom of the OOPS in a counter clockwise direction so that the OOPS can be removed from the rail by sliding it backwards **(SEE FIGURE 4.5).**

As well as the integrated slide rail at the base of the Ego8's grip frame, there are also two 10-32 UNF threaded screw holes which will accept all standard bottom line screws **(SEE FIGURE 4.6).**

Attach the air system of your choice, taking care to ensure that you use the correct length and size of hosing to accommodate your requirements.

⚠ WARNING

BEFORE ATTACHING ANY FIXED AIR SYSTEM, PLACE ATTACHING SCREW IN DESIGNATED SLIDE RAIL AND MEASURE PROTRUDING SCREW LENGTH. SCREW LENGTH MUST NOT PROTRUDE MORE THAN 10MM/0.40" OTHERWISE THE EGO8 CIRCUIT BOARD WILL BECOME DAMAGED.

FIG 4.4

FIG 4.5

FIG 4.6

ATTACHING A LOADER

Using a 5/32" hex key, turn the top screw of the clamping feed neck counter clockwise **(SEE FIGURE 5.1).**

Release the clamping lever on the feed neck **(SEE FIGURE 5.2)** 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 top screw of the clamping feed neck a little more by turning it counter clockwise using a 5/32" hex key **(SEE FIGURE 5.1).**

When you have managed to push your loader into the clamping feed neck, close the clamp to secure it firmly in place **(SEE FIGURE 5.3)**. If the loader is loose then you will need to release the clamp, tighten the screw slightly by turning it clockwise with a 5/32" hex key and closing the clamp. Repeat this process as necessary to secure your loader in place.

You have now attached a loader to your Ego8. Once you have filled your loader and air tank you will then be ready to begin using your Ego8.

FIG 5.1

FIG 5.2

FIG 5.3

SETTING THE TRIGGER

The Ego8 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 Set-Up Menu and making your selection from the Hardware Menu **(SEE PAGE 48).**

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

As standard each Ego8 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 7.1).**

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 7.2).**

FIG 7.1

FIG 7.2

SETTING THE TRIGGER CONT...

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 will not be enough force to return the trigger **(SEE FIGURE 7.3).**

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 7.4).**

If you have selected **SWITCH** from the **HARDWARE** Menu and are consequently using the micro-switch as the method of trigger detection then check that the micro-switch activates and de-activates fully on each trigger pull and trigger release. If you have selected **OPTO** from the **HARDWARE** Menu and are using the **OPTO** sensor as the method of trigger detection, refer to setting the **BAND HI** and **BAND LO (SEE PAGE 45-46)** as it is crucial that the trigger pull and trigger filters are set up together for the trigger filtering to work correctly.

FIG 7.3

FIG 7.4

ADJUSTING THE VELOCITY

When using your Ego8, you may wish to change the velocity at which your Ego8 is firing. This is done by inserting a 1/8" hex key into the adjuster screw at the bottom of your Ego8 Inline Regulator and adjusting it accordingly **(SEE FIGURE 6.1).** 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.

NOTE: AFTER EACH ADJUSTMENT FIRE TWO CLEARING SHOTS TO GAIN AN ACCURATE VELOCITY READING. NEVER EXCEED 300FPS.

ADJUSTING THE LPR PRESSURE

When using your Ego8, you may wish to change the output pressure of your LPR. This is easily done by inserting a 5/32" inch hex key into the adjuster screw at the front and adjusting it accordingly **(SEE FIGURE 6.2).** However we recommend that the LPR screw be left set 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.

NOTE: TURNING THE ADJUSTER SCREW OUT TOO FAR WILL CAUSE IT TO FALL OUT.

FIG 6.1

FIG 6.2

USER INTERFACE

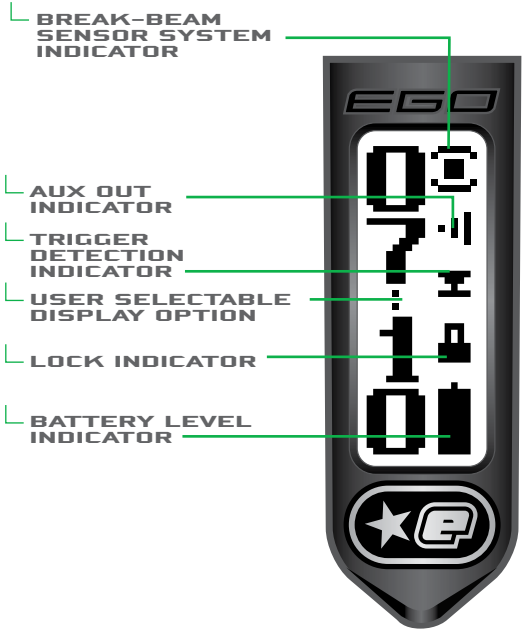
The Ego8 has a simple user interface through which all aspects of it's electronic control system can be monitored and adjusted by means of the three pushbuttons and graphical LCD which comprise the Navigation Console.

SWITCHING ON

Pressing and holding the button will switch the Ego8 on. The LCD display will show the Ego8 logo. When the button is released, the LCD will show the Run Screen, which is the screen displayed during the normal use of the Ego8.

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 Ego8. A typical Run Screen is shown on the right.



On the left of the screen is a display option that is user selectable from the Main Menu (see page 29). This option can be:-

- A GAME TIMER
- A SHOT COUNTER
- AN AVERAGE RATE OF FIRE INDICATOR
- A PEAK RATE OF FIRE INDICATOR

Briefly pressing the button will replace the display option with the name of the currently selected Preset (see page 33).

On the right of the screen are up to five icons, each of which provides graphical indication on different parts of the Ego8 control electronics.

UNDERSTANDING THE BBSS INDICATOR (BBSS)

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

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

BBSS ENABLED AND BALL DETECTED

The Ego8 can be fired at the maximum rate of fire determined by the chosen firing mode.

BBSS ENABLED NO BALL DETECTED

The Ego8 cannot be fired.

BBSS DISABLED

The Ego8 can be fired at a maximum rate of fire as set by the **OFF ROF** parameter **(SEE PAGE 36)**

BBSS FAULT DETECTED

The system is disabled. The Ego8 can only be fired at a maximum rate of fire of 10bps, regardless of the chosen firing mode.

BBSS SENSOR FAULT HAS BEEN CLEARED

The sensor has been re-enabled. A ball is detected and the Ego8 can be fired at the maximum rate of fire determined by the chosen firing mode.

BBSS FAULT HAS BEEN CLEARED

The sensor is enabled. No ball is detected so the Ego8 cannot be fired. To reset the BBSS icon, use the A button to switch off the BBSS and then back on again.

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 **OFF ROF** parameter (see page 36).

UNDERSTANDING THE AUX OUT INDICATOR (AOI)

The Aux Out Indicator on the main screen is used to convey if the Aux Out parameter in the Hardware menu (AUX OUT) is switched on or off.

There are two possible conditions that the SOI can indicate:

AUX OUT ENABLED

The Aux Out parameter is enabled. Each time the circuit board detects a valid trigger pull a signal will be sent to the AUX connector on the circuit board and to an expansion board (if fitted).

AUX OUT DISABLED

The Aux Out parameter is disabled. No signal will be sent to either the AUX connector on the circuit board or to an expansion board (if fitted).

UNDERSTANDING THE TRIGGER DETECTION INDICATOR (TDI)

The Trigger Detection Indicator on the main screen is used to convey both the method of trigger detection in use and the current state of the trigger.

From the factory the Ego8 will have the opto sensor enabled. The micro-switch option can be selected by referring to the **HARDWARE** Menu (see page 48).

There are seven possible conditions that the TDI can indicate:

OPTO SENSOR SELECTED, 0% SIGNAL

The Ego8 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, BELOW BAND LO

The Ego8 is configured to use the opto sensor to detect trigger pulls. The opto sensor is currently reading below the **BAND LO** value but above 0%, i.e the trigger is slightly depressed.

OPTO SENSOR SELECTED, WITHIN BAND

The Ego8 is configured to use the opto sensor to detect trigger pulls. The opto sensor is currently reading somewhere between the **BAND LO** and **BAND HI** values, i.e. the trigger is half depressed.

OPTO SENSOR SELECTED, ABOVE BAND HI

The Ego8 is configured to use the opto sensor to detect trigger pulls. The opto sensor is currently reading above the **BAND HI** value but below 100%, i.e. the trigger has passed the activation point.

OPTO SENSOR SELECTED, 100% SIGNAL

The Ego8 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 Ego8 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 Ego8 is configured to use the micro-switch to detect trigger pulls. The micro-switch is currently actuated, i.e. the trigger is pulled.

UNDERSTANDING THE LOCK INDICATOR

The Ego8 has a tournament lock which prevents the user from making changes to any parameter that affects the way in which the Ego8 shoots, without the need for tools. This feature is necessary in order to make the Ego8 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.

UNDERSTANDING THE BATTERY LEVEL INDICATOR

The battery level indicator is used to show the state of the battery within the Ego8. 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 Ego8 will no longer function reliably, the indicator will start to flash. At this point the battery must be changed immediately.

THE GAME TIMER

When the Game Timer is shown on the Run Screen then it can be started by pressing the button and the timer will start to count down. The Game Timer can also be configured to start on a trigger press with the **START** parameter (see page 31).

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 optional Ego8 expansion board is fitted and the **BEEPER** parameter is set to 'on'.

When the Game Timer reaches 00:00, **GAME OVER** will be displayed and the audible alarm will sound continually, provided that the optional Ego8 expansion board is fitted and the **BEEPER** 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 Ego8 is switched off.

THE SHOT COUNTER

The Shot Counter increments every time that the Ego8 is fired, 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.

THE AVERAGE RATE OF FIRE

When the Average 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 the last second - the average rate of fire over the second. The number below it is the maximum average rate of fire that has been recorded. To reset this maximum, press and hold the A button for 0.5 seconds.

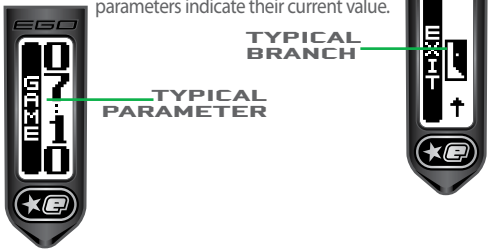
THE PEAK RATE OF FIRE

When the Peak **ROF** is selected for display the Run Screen will look something like the screen to the left, which differs from the display of the Average **ROF** by the inclusion of the indicator 'PK'. The value displayed in the top left of the screen represents the rate of fire measured between the last two shots. The number below it is the maximum peak rate of fire that has been recorded. To reset this maximum, press and hold the Y button for 0.5seconds.

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

THE MENU SYSTEM

Behind the Run Screen is a structured menu system comprised of multiple levels of menus. Each menu contains a number of menu items and each menu item can either be an editable parameter or a branch to another menu. Branches always have an animated graphic whereas parameters indicate their current value.



The menu structure is shown in the following pages.

The menus are 'smart menus' in that they will expand and contract depending upon the state of certain parameters. For example, the **MAX ROF** parameter is only visible when the **ROF CAP** parameter is set to 'on'. Smart menu items are indicated with a * in the table below.

MAIN MENU

MAIN MENU

- **OFF?** — Turn off the Ego8
- **DISPLAY**
  - Timer — Display the game timer on the Run Screen
  - Shots — Display the shot counter on the Run Screen
  - Avg ROF — Display the average rate of fire on the Run Screen
  - Peak ROF — Display the peak rate of fire on the Run Screen
  - Cancel — Cancel the display selection
- **TIMER**
  - **GAME**
    - 00:00 - 60:00 — Countdown game timer start time
  - **ALARM**
    - 00:00 - 10:00 — Alarm activation time
  - **START**
    - Button — Y button starts the game timer
    - Trigger — Trigger pull starts the game timer
    - Cancel — Cancel game timer start event selection
  - **BACK** — Go back one menu level
- **EXIT** — Return to the Run Screen

SET-UP MENU

SET-UP MENU

- **LOCK**
  - Off — Turn the tournament lock off
  - On — Turn the tournament lock on
  - Cancel — Make no changes to the tournament lock
- **PRESET**
  - **LOAD**
    - User 1 — Load the User 1 settings
    - User 2 — Load the User 2 settings
    - Factory — Load the default factory settings (semi-automatic)
    - NPPL — Load NPPL compliant settings
    - PSP — Load PSP compliant settings
    - MILLEN — Load Millenium Series compliant settings
    - CFOA — Load CFOA compliant settings
    - Cancel — Cancel the load operation
  - **SAVE**
    - User 1 — Save the current settings at the User 1 settings
    - User 2 — Save the current settings as the User 2 settings
    - Cancel — Cancel the save operation
  - **BACK** — Go back one menu level
- **MODE**
  - Semi — Select semi-automatic mode of fire
  - Ramp — Select ramping mode of fire
  - Cancel — Cancel the mode selection
- **ROF CAP**
  - Off — Turn off the rate of fire cap
  - On — Turn on the rate of fire cap
  - Cancel — Cancel the ROF cap selection
- **MAX ROF***
  - 10.0 - 30.0 — Rate of fire cap in balls per second when BBSS is enabled
- **OFF ROF**
  - 4.0 - 15.0 — Rate of fire cap in balls per second when BBSS is disabled
- **RAMP SET***

SET-UP MENU

- **TYPE**
  - Step — Select step type ramping
  - Linear — Select linear type ramping
  - Cancel — Cancel the ramp type selection
- **RATE** — 0 - 100 — Percentage linear ramp rate
- **PULL NO** — 4 - 9 — Number of shots before ramping can start
- **KICK IN** — 5.0 - 15.0 — Rate at which trigger has to be pulled in pulls per second before ramping can start
- **SUSTAIN** — 5.0 - 15.0 — Rate at which trigger has to be pulled in pulls per second in order to maintain ramping
- **RESTART** — 0.0 - 1.0 — Time in seconds after last trigger pull during which ramp can be restarted
- **BACK** — Go back one menu level

- **TIMING**
  - **DWELL** — 0.0 - 25.0 — Solenoid energise time in milliseconds for each shot
  - **FSDO** — 0.0 - 3.0 — First shot drop-off compensation time in milliseconds
  - **LIGHT** — 0.5 - 20.0 — Backlight off delay in seconds
  - **SLEEP** — 5 - 60 — Auto power off time in minutes
  - **BACK** — Go back one menu level
- **FILTER**
  - **DBOUNCE**
    - TT — Use Trigger Transition Filter
    - Level 9 — Use trigger debounce level 9 (less bounce)
    - .
    - .
    - Level 1 — Use trigger debounce level 1 (more bounce)
    - Cancel — Cancel debounce selection
  - **EMPTY** — 1.0 - 20.0 — Time in milliseconds that the breech must remain empty before the BBSS can look for a paintball.
  - **BALL** — 1.0 - 20.0 — Time in milliseconds that a paintball must be in the breech for the Ego8 to be ready to fire

SET-UP MENU

PULL	3.0 - 25.0	Time in milliseconds that the trigger must be pulled for a shot to be fired
RELEASE	3.0 - 25.0	Time in milliseconds that the trigger must be released before a pull can be recorded
BAND HI*	51 - 99	Top limit (trigger activation point) of debounce band expressed as a percentage
BAND LO*	1 - 49	Bottom limit (trigger release point) of debounce band expressed as a percentage
TT TOL*	0 - 100	Percentage Trigger Transition Filter tolerance
BACK		Go back one menu level
TRAININ	Off	Training mode disabled
	On	Training mode enabled
	Cancel	Cancel training mode selection
HARDWRE		
TRIGGER	Opto	Use opto sensor to detect trigger operation
	Switch	Use micro-switch to detect trigger operation
	Cancel	Cancel trigger detection method selection
BBSS	Lo Power	Select standard BBSS power level
	Hi Power	Select high power level for BBSS
	Cancel	Cancel BBSS power level selection
SOLNOID	Lo Power	Select standard solenoid power level
	Hi Power	Select high power level for solenoid
	Cancel	Cancel solenoid power level selection
BEEPER	Off	Turn off audible indicator
	On	Turn on audible indicator (if expansion board fitted)
	Cancel	Cancel audible indicator selection
SIG OUT	Off	Turn off auxiliary output
	On	Turn on auxiliary output
	Cancel	Cancel auxiliary output selection
BACK		Go back one menu level
EXIT		Return to the Run Screen

ACCESSING THE MENU SYSTEM

To access the Main Menu from the Run Screen, push and hold the ⏣ button for 1 second. The name of the currently selected Preset will be displayed followed by the first item on the Main Menu.

To access the Setup Menu from the Run Screen, push and hold the internal button for 1 second. The first item on the Setup Menu will then be displayed.

NOTE: IF THE TOURNAMENT LOCK IS SET TO 'OFF' THEN THE MAIN MENU AND SETUP MENU ARE JOINED TOGETHER WHICH MEANS THAT THEY CAN BE ACCESSED IN EITHER OF THE TWO WAYS ABOVE.

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 menu item is a branch, as indicated by an animation on the right of the screen, press the ⏣ button to move to another menu.

ALTERING PARAMETERS

When the displayed menu 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, edit indicators appear on the left of the screen as shown in the screen below.

EDIT INDICATORS

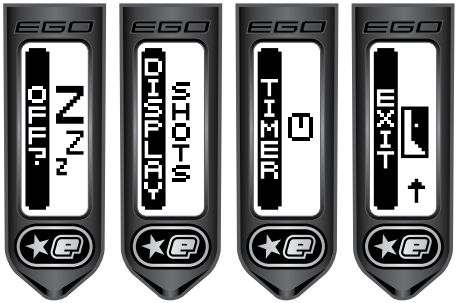
There are two types of parameter, numeric parameters and choice parameters. A numeric parameter has a value which is a number whereas a choice parameter is one that has a small number of distinct choices. Altering parameter values is essentially the same for both types of parameter.

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 it 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 comprises parameters that do not affect the way in which the Ego8 shoo and which therefore do not have to be tournament locked.



From the Run Screen push and hold the button. Initially, the current Preset configuration will be displayed and then after one 1 second **OFF?** will be displayed, the first item on the Main Menu.

To turn off the Ego8, select the **OFF?** branch or pull the trigger while the **OFF?** branch is displayed.

To return to the Run Screen, select the **EXIT** branch.

NOTE: IF THE LOCK OPTION IS DISABLED FURTHER OPTIONS WILL BE DISPLAYED IN THE MAIN MENU.

THE DISPLAY PARAMETER (DISPLAY)

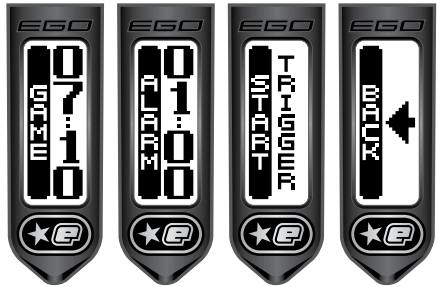
This parameter is used to select the information that is displayed on the left of the Run Screen. This parameter has the following choices:-

- **TIMER:** The Game Timer is displayed on the Run Screen
- **SHOTS:** The Shot Counter is displayed on the Run Screen
- **AVG ROF:** The Average Rate of Fire is displayed on the Run Screen
- **PEAK ROF:** The Peak Rate of Fire is displayed on the Run Screen
- **CANCEL:** Editing is cancelled and the parameter remains unchanged.

This parameter differs from most others in that once a choice has been made then the **EDIT** mode it ended and the display returns to the Run Screen.

THE GAME TIMER MENU (TIMER)

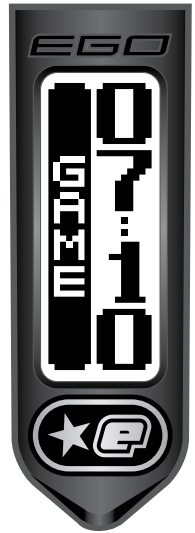
This menu is comprised of parameters that control the operation of the Game Timer:



GAME PARAMETER (GAME)

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 optional Ego8 expansion board is fitted and the **BEEPER** parameter is set to 'on'.



ALARM PARAMETER (ALARM)

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 optional Ego8 expansion board is fitted and the **BEEPER** parameter is set to 'on'.

NOTE: THE EGO8 HAS THE ABILITY TO BE UPGRADED WITH AN AUDIBLE ALARM FEATURE BY INSTALLING AN ECLIPSE EXPANSION BOARD (SOLD SEPARATELY).

START PARAMETER (START)

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 Y button will start the game timer.
- **TRIGGER:** Pulling the trigger will start the game timer.
- **CANCEL:** Cancel editing and leave the parameter unchanged.

THE SETUP MENU

This menu is the starting point for access to all of the parameters that control the way that the Ego8 operates. To access this menu, first turn on the Ego8 and then remove the 3 screws holding the right hand cheek of the rubber grips (see figure 8.1). Peeling back the cheek will reveal a red **SETUP** button on the circuit board **(SEE FIGURE 8.2)** which should be pushed and held for 1 second.

If the tournament lock **(LOCK)** is off then this menu is joined to the end of the Main Menu and can therefore be accessed without tools.

FIG 8.1

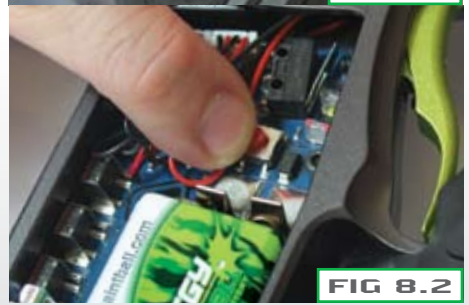


FIG 8.2

THE TOURNAMENT LOCK PARAMETER (LOCK)

The Ego8 has a tournament lock which prevents the user from making changes to any parameter that affects the way in which the Ego8 shoots without the use of tools.

This parameter is used to set the state of the tournament lock and has the following choices:-

> **OFF:** Turn on the tournament lock. The **SETUP** menu is added to the **MAIN** menu, making it easily accessible by pressing and holding the ⊛ button.

> **ON:** Turn off the tournament lock. The **SETUP** menu is only accessible by removing the right hand cheek of the rubber grips and then pressing and holding the red **SETUP** button on the circuit board.

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

THE PRESET MENU (PRESET)

In order to simplify the set up of the Ego8 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 Ego8 comply with the rules governing a particular paintball league. It is also possible for the user to save up to two Preset configurations of their own.

THE LOAD PRESET PARAMETER (LOAD)

This parameter is used to load the required Preset configuration and has the following choices. With the exception of **FACTORY** each of the Presets changes only those parameters that control the firing mode of the Ego8, leaving Filter, Timing and Hardware parameters unchanged.

> **FACTORY:** Reset every parameter to the factory set defaults. The Ego8 leaves the factory set in this way and this is also described on the Run Screen as **SEMI**.

> **NPPL:** Load a set of parameters that configures the Ego8 to comply with the 2007 **NPPL** rules governing firing modes.

> **PSP:** Load a set of parameters that configures the Ego8 to comply with the 2007 **PSP** governing firing modes

> **MILLEN:** Load a set of parameters that configures the Ego8 to comply with the 007 Millennium Series rules governing firing modes.

> **CFOA:** Load a set of parameters that configures the Ego8 to comply with the 2007 **CFOA** rules governing firing modes.

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

THE LOAD PRESET PARAMETER CONT...

- **USER 1:** Load a set of custom firing mode parameters that have been previously saved by the user.
- **USER 2:** Load a second set of custom firing mode parameters that have been previously saved by the user.

With the exception of **FACTORY** each of the Presets changes only those parameters that control the firing mode of the Ego8, leaving Filter,Timing and Hardware parameters unchanged.

THE SAVE PRESET PARAMETER (SAVE)

This parameter is used to save the current set of parameters as a user defined custom Preset configuration.This parameter has the following choices:-

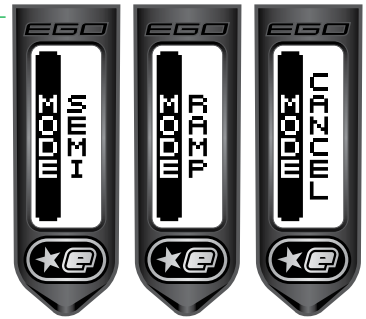
- **USER 1:** Save the current parameters as the Preset '**USER 1**'
- **USER 2:** Save the current parameters as the Preset '**USER 2**'
- **CANCEL:** Editing is cancelled and the parameter remains unchanged.

NOTE: THE CURRENT PRESET CONFIGURATION CAN BE VIEWED FROM THE RUN SCREEN BY PRESSING THE ⊛ BUTTON.

THE FIRING MODE PARAMETER (MODE)

This parameter is used to select the firing mode of the Ego8 and has the following choices:

- **SEMI:** This is the default and in this firing mode the Ego8 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 SET** menu
- **CANCEL:** Editing is cancelled and the parameter is unchanged



PLEASE NOTE: CERTAIN MODES MAY ONLY BE AVAILABLE IN CERTAIN COUNTRIES AND ON CERTAIN MODELS OF THE EGO8.

RATE OF FIRE CAP PARAMETER (ROF CAP)

The Rate of Fire Cap parameter is used to specify whether or not the Ego8 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 **MAX ROF** parameter. Choices for the **ROF CAP** parameter are:-

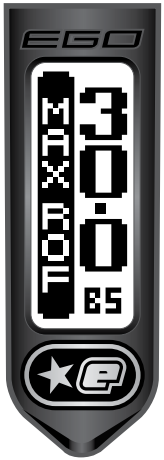
- **OFF:** Rate of Fire only limited bu the loader
- **ON:** Rate of Fire limited to the **MAX ROF** parameter value
- **CANCEL:** Cancel editing and leave the parameter unchanged

If the **ROF CAP** is switched **ON**, then the **MAX ROF** parameter will feature as an item in the **SET-UP** Menu. If the **ROF CAP** is switched **OFF**, the **MAX ROF** parameter is redundant and omitted from the **SET-UP** Menu.

MAXIMUM RATE OF FIRE PARAMETER (MAX ROF)

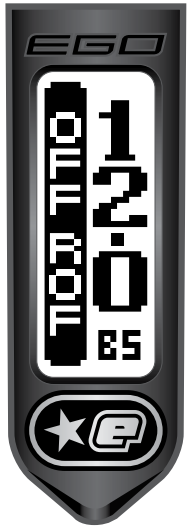
The Maximum Rate Of Fire parameter is used to set the maximum achievable rate of fire from the Ego8. The value of this parameter can be adjusted between 10.0 and 30.0 balls per second in 0.1bps increments.

The **MAXIMUM RATE OF FIRE** parameter will only be displayed if you have set the **ROF CAP** parameter to 'on'.



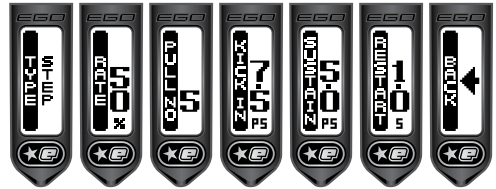
RATE OF FIRE WHEN BBSS OFF PARAMETER (OFF ROF)

The **OFF ROF** parameter is used to control how fast the Ego8 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.



THE RAMP SETTINGS MENU (RMP SET)

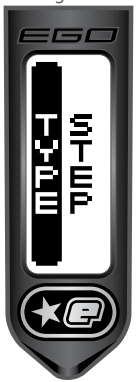
This menu is only available when ramping has been selected with the **MODE** parameter and comprises a list of parameters that control the way in which the Ego8 ramps, as shown below:



THE RAMP TYPE PARAMETER (TYPE)

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

- **STEP:** Step ramping will cause the Ego8 to shoot in semi-automatic until a number of trigger pulls, set by **PULL NO**, 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 **MAX ROF** (or the maximum loader speed if the rate of fire cap, **ROF CAP** is 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 Ego8 to shoot in semi-automatic until a number of trigger pulls, set by **PULL NO**, 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 **MAX ROF**, if the rate of fire cap is off). 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.



THE LINEAR RAMP RATE PARAMETER (RATE)

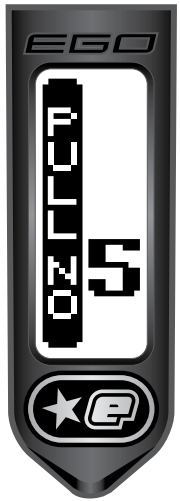
The parameter is only available when Linear Ramping is selected and is used to set the percentage increase in rate of fire over rate of trigger pulls.

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.

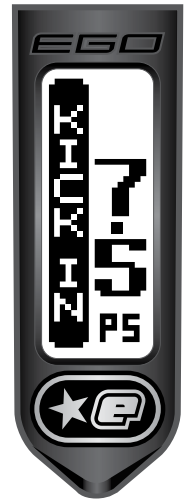
THE RAMP START PARAMETER (PULL NO)

The parameter sets the number of trigger pulls that are required at the **KICK IN** rate before ramping will start. The parameter can be set between 4 and 9 pulls in increments of 1.



THE RAMP KICK-IN PARAMETER (KICK IN)

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 5.0 and 15.0 pulls per second in 0.1 pulls per second increments.

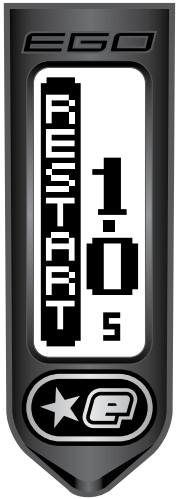


THE SUSTAIN RATE PARAMETER (SUSTAIN)

Once the Ego8 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 5.0 and 15.0 pulls per second in 0.1 pulls per second increments.

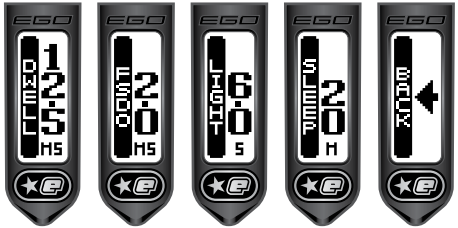
THE RAMP RESTART PARAMETER (RESTART)

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.



THE TIMING MENU

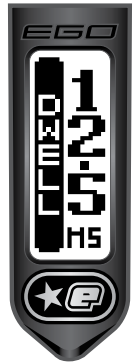
The parameters on the Timing menu all relate to the timing of specific events.



THE DWELL PARAMETER (DWELL)

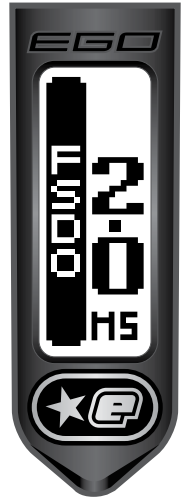
The Dwell parameter sets the amount of time that the solenoid is energized and therefore the amount of gas that is released with each shot of the Ego8. Setting this parameter too low will result in low velocity shots and/or excessive shot to shot velocity fluctuations. Setting the parameter too high will simply waste gas and make the Ego8 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 Ego8 'beds-in'.



THE FIRST SHOT DROP-OFF COMPENSATION PARAMETER (FSDO)

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 **FSDO** 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 3.0 milliseconds.

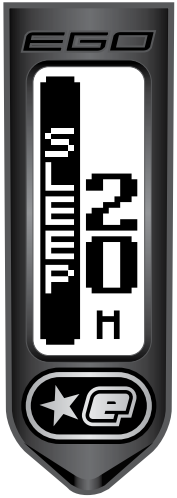


THE LIGHT PARAMETER (LIGHT)

The LCD backlight is illuminated whenever any of the buttons are pressed on the Ego8. The **LIGHT** parameter is used to set the amount of time that the backlight stays lit between 0.0 and 20.0 seconds in 0.5 second increments.

THE SLEEP PARAMETER (SLEEP)

If the Ego8 is inactive for a period of time then it will automatically switch off in order to save power. The **SLEEP** parameter is used to set that time between 5 and 60 minutes in 5 minute increments.



THE FILTER MENU

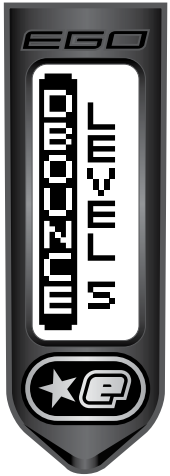
The parameters on the Filter menu are all used to tune the Ego8's software filters which prevent the Ego8 from firing unless all of the necessary conditions are met. The factory default settings will be suitable for most set-ups, however certain loader and trigger set-ups may require modification of one or more of these parameters.:

THE DEBOUNCE PARAMETER (DBOUNCE)

This parameter is used to combat any trigger bounce that might occur in the Ego8.

This parameter can be set to the following choices:-

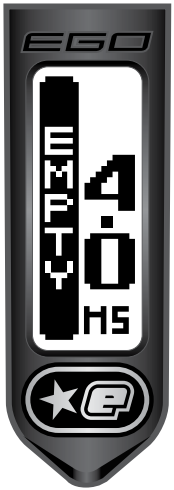
- **TT:** The trigger Transition Filter is used to remove trigger bounce
- **LEVEL 9:** The debounce filter is used to remove trigger bounce, this filter has nine levels with level 9 providing the most filtering and
- **LEVEL1:** Level 1 providing the least filtering
- **CANCEL:** Cancel editing and leave the parameter unchanged



THE EMPTY BREECH TIME PARAMETER (EMPTY)

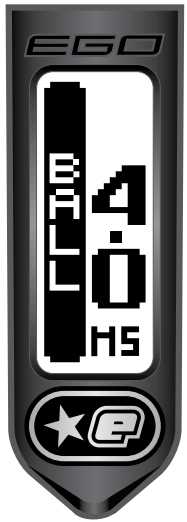
In order for the **BBSS** to function correctly it must first detect that the bolt is fully retracted and the breech is empty, and then detect that a paintball is loaded into the breech before the Ego8 is allowed to fire.

Slots or holes in some third party bolts can fool the **BBSS** and so this parameter is used to specify a minimum time that the breech must be empty. The parameter can be set between 1.0 and 20.0ms in 0.5ms increments.



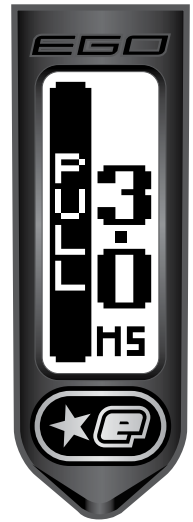
THE BALL PARAMETER (BALL)

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 Ego8 is allowed to fire.This parameter can be set between 1.0 and 2.0 milliseconds in 0.5ms increments.



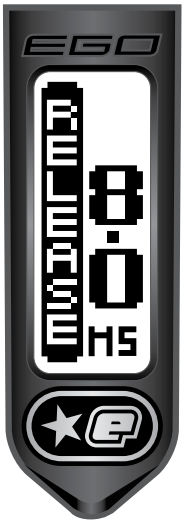
THE PULL PARAMETER (PULL)

The **PULL** 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 1.0 and 20.0 milliseconds in 0.5 increments.



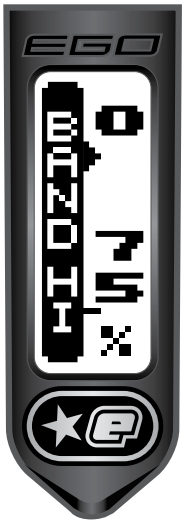
THE RELEASE PARAMETER (RELEASE)

The **RELEASE** 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.



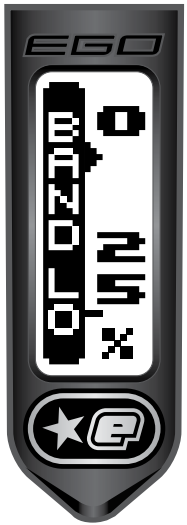
THE BAND HIGH PARAMETER (BAND HI)

The **BAND HI** parameter is only available if **OPTO** has been selected in the **HARDWARE** menu. **BAND HI** defines the point at which the trigger is considered pulled and is adjustbale between 51% and 99% in 1% increments.



THE BAND LOW PARAMETER (BAND LO)

The **BAND LO** parameter is only available if **OPTO** has been selected in the **HARDWARE** menu. **BAND LO** 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 **BAND HI** parameter set as high as possible and the **BAND LO** parameter set as low as possible:

1. Select the **BAND HI** 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 **BAND HI** 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 45).**

4. Select the **BAND LO** 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.

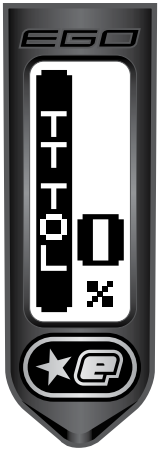
5. Set the **FRONT STOP TRIGGER SCREW** as equired, ensuring that the bar is as close to 0% as possible when the trigger is fully released against the set screw. It is advisable to allow for some extra travel in the trigger release once the bar has reached its minimum value.

6. Adjust the **BAND LO** 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 43).**

7. Set the **MAGNET RETURN STRENGTH SCREW** and the Micro Switch Activation Screw as required, making both the spring tension and the return force as strong as possible without compromising the "feel" of the trigger.

Optional (only if TT had been selected in Debounce parameter):

8. Select the **TT TOL** parameter. With the gun gassed up and preferably fitted with loader and firing paint, try to get the marker to bounce by pulling the trigger very slowly. If the marker bounces, then reduce the **TT TOL** value until it no longer does so. If the marker does not bounce then increase the **TT TOL** value until it starts to bounce and then reduce it again until the bouncing stops.



Whilst this set up process should completely eliminate bounce, it may result in a trigger pull that is not ideally suited to the user, in which case it will be necessary to make adjustments to the trigger and then modify the Trigger Filter parameters accordingly.

NOTE: THE FASTEST WAY TO SHOOT AN EGO8 IS TO WALK THE TRIGGER WITH TWO OR MORE FINGERS. FEATHERING (NOT FULLY RELEASING) THE TRIGGER WILL CAUSE THE FILTERING SYSTEM TO REDUCE THE RATE OF FIRE DOWN IN ORDER TO ELIMINATE WHAT IT PERCEIVES AS TRIGGER BOUNCE.

THE TRAINING PARAMETER (TRAININ)

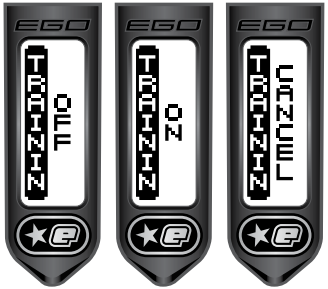
The **TRAININ** parameter is used to select Training Mode. In Training Mode the Ego8 will function exactly the same as normal but with two important differences:-

1. The solenoid valve is under - driven so that the rammer only moves a small amount and does not strike the exhaust valve. This simulates the firing cycle without wasting air and generating lots of noise.

2. The BBSS is overridden so that the Ego8 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 Ego8 functions normally
- **ON:** Training Mode is enabled.
- **CANCEL:** Cancel editing and leave the parameter unchanged



THE HARDWARE MENU

The **HARDWARE** Menu comprises parameters that control low level functionality of the Ego8 electronic hardware.

THE TRIGGER PARAMETER (TRIGGER)

The Ego8 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 microswitch for trigger pull detection
- **CANCEL:** Cancel editing and leave the parameter unchanged

THE BBSS PARAMETER (BBSS)

This parameter controls the amount of power used by the Break Beam Sensor System and should normally be left on it's default low power setting. However scratches on the surface of either of the sensors, or the use of some third party sensors, may require that the **BBSS** power level be increased. Higher power levels will cause more drain on the battery. The choices available for this parameter are:-

- **LO POWER:** Low power **BBSS** drive
- **HI POWER:** High power **BBSS** drive
- **CANCEL:** Cancel editing and leave the parameter unchanged

THE SOLENOID PARAMETER (SOLNOID)

This parameter controls the amount of power used by the pneumatic solenoid and should normally be left at it's default low power setting. Cold weather (sub - zero degress Celcius) will cause lubricants to thicken and increase stiction in the system which may cause velocity drop - off and/or shot to shot inconsistancy. Increasing the solenoid power will often help to eliminate these problems however the higher power level will cause more drain on the battery. The choices available for the paramater are:-

- **LO POWER:** Low power solenoid drive
- **HI POWER:** High power solenoid drive
- **CANCEL:** Cancel editing and leave the parameter unchanged

THE AUX OUT PARAMETER

The auxiliary output is on a three pin connector in the circuit board and is used to provide an interface between the Ego8 and third party equipment such as loaders. The **AUX OUT** parameter is used to enable the auxiliary output which pulses every time the Ego8 is fired. The parameter choices are:-

- **OFF:** Auxiliary output off
- **ON:** Auxiliary output on
- **CANCEL:** Cancel editing and leave the parameter unchanged

NOTE: If the optional Ego8 expansion board is fitted then the output on that board is pulsed at the same time as the auxiliary output.

CLEANING THE BREAK-BEAM SENSOR SYSTEM

⚠ WARNING

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

Undo the retaining screw for the Break-Beam Sensor Cover on the left hand side of the Ego8 using a 5/64" (2mm) hex key **(SEE FIGURE 9.1).**

Remove the Sensor Cover to expose the back of the Break-Beam Sensor unit **(SEE FIGURE 9.2).** Using a dry cotton bud, carefully remove any debris, paint or moisture from the back of the sensor unit and from inside the Sensor Cover.

Lift the **BBSS** free from the Ego8 body and using another dry cotton bud, remove any grease or debris build-up from the front of the sensor unit **(SEE FIGURE 9.3)**.

FIG 9.1

FIG 9.2

FIG 9.3

(CONTINUED)

Remove the rubber finger detent and using a dry cotton bud clean the detent and it's location point in the Ego8 Body. **(SEE FIGURE 9.4)** Replace the detent back into the Ego8 body **(SEE FIGURE 9.5)** and place the BBSS back into the designated slot in the body **(SEE FIGURE 9.2).** Ensure that the sensor is face down in the body i.e looking into the breech.

Replace the Sensor Cover and using a 5/64" hex key, replace the Bream Beam Sensor Cover retaining screw to hold the sensor cover in place **(SEE FIGURE 9.6).**

Be careful not to cross-thread the screw. Do not over tighten the screw.

Repeat procedure for opposite side of the Ego8.

You have now cleaned your Break-Beam Sensor System.

NOTE: WHEN CLEANING BREAK-BEAM SENSOR SYSTEM INSPECT CONDITION OF RUBBER FINGER DETENTS AND REPLACE IF NECESSARY. ENSURE THAT THE RECEIVER SENSOR (INDICATED BY A RED MARK & RED HEAT SHRINK) IS LOCATED ON THE RIGHT-HAND SIDE OF THE MARKER BODY.

FIG 9.4

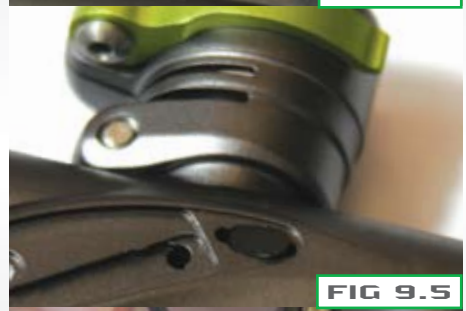


FIG 9.5

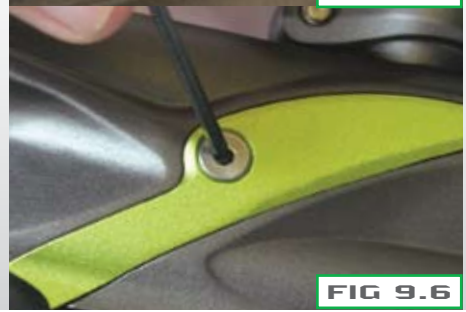


FIG 9.6

CLEANING THE INLINE REGULATOR

⚠ WARNING

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

Note: The internals of your Inline Regulator may vary according to the model of Ego8 that you have.

Disconnect the macroline hosing from your Inline Regulator allowing it to be unscrewed from the Front Regulator Mount (FRM) **(SEE FIGURE 10.1).**

Turn the Inline Regulator upside down and carefully unscrew the two sections **(SEE FIGURE 10.2).**

By firmly gripping the exposed end of the Inline regulator piston, carefully remove the piston and spring in its entirety **(SEE FIGURE 10.3).**

Insert a 1/8" hex key into the adjuster screw in the bottom half of the Inline Regulator, and wind the screw clockwise through the bottom section of the regulator body **(SEE FIGURE 10.4)** and pull free when it will no longer turn upwards anymore.

NOTE: THE ADJUSTER SCREW CAN ONLY BE REMOVED BY TURNING IT UPWARDS THROUGH THE BOTTOM SECTION OF THE INLINE REGULATOR. THE REGULATOR WILL BECOME DAMAGED IT THE ADJUSTER SCREW IS REMOVED INCORRECTLY.

FIG 10.1

FIG 10.2

FIG 10.3

FIG 10.4

(CONTINUED)

Using a dry cotton bud, clean the seal that sits at the top of the body of the bottom section of the Inline Regulator **(SEE FIGURE 10.5).** Using a light oil and a fresh cotton bud, re-lubricate the seal ready for re-assembly.

Thoroughly clean the two o-rings on the adjuster screw and lubricate ready for re-assembly. Inspect the top face of the adjuster unit for any excessive wear or damage as this could cause the Inline Regulator to creep **(SEE FIGURE 10.6).**

NOTE: THE SEALING FACE ON THE INLINE REGULATOR PISTON CAN ALSO CAUSE THE REGULATOR TO CREEP OR "SUPERCHARGE", SO THIS SHOULD ALSO BE CHECKED.

With the threaded section towards to the base of the regulator body, re-insert the adjuster screw into the bottom half of the regulator body **(SEE FIGURE 10.7).** Apply light pressure to the top of the adjuster screw and using a 1/8" hex key wind the adjuster screw counter-clockwise until it stops at the base of the regulator body. Turn the adjuster screw five turns in a clockwise direction to set the inline regulator pressure at approximately 250-260 psi.

Take the piston and spring and clean the seal at the top of the piston, re-lubricating it with a light smear of Vaseline ready for re-assembly **(SEE FIGURE 10.8).** Insert the piston and spring into the top half of the Inline Regulator body **(SEE FIGURE 10.9).**

Keeping the top half of the Inline Regulator upside down, screw the two halves of the Inline Regulator together **(SEE FIGURE 10.10).**

You have now stripped, cleaned, lubricated and assembled your Inline Regulator.

NOTE: IF ANY SEALS ARE DAMAGED THEN REPLACE THEM. EXTRA SEALS ARE AVAILABLE IN EGO8 PARTS KITS AVAILABLE ONLINE AT WWW.PLANETECLIPSE.COM.


FIG 10.5


FIG 10.6


FIG 10.7


FIG 10.8


FIG 10.9


FIG 10.10

CLEANING THE LPR

⚠ WARNING

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

Note: The internals of your LPR may vary according to the model of Ego8 that you have.

The Inline regulator can be removed if needs be.

Unscrew the Low-Pressure Regulator cap from the marker body **(SEE FIGURE 11.1).**

Remove the LPR piston and rear spring from the LPR cap **(SEE FIGURE 11.2)**.

Cupping the palm of one hand, turn the LPR cap upside down and tip the front spring out into your palm **(SEE FIGURE 11.3)**.

Remove the rear spring from the LPR piston and using a dry cotton bud, carefully clean the seal on the LPR piston **(SEE FIGURE 11.4)**. If the seal is damaged then replace it. Once the seal has been cleaned, lubricate with a light application of Eclipse Paintball Gun Oil so that it is ready for re-assembly.

NOTE: THE ADJUSTER PISTON (COLOURED CAP THAT THE FRONT SPRING RESTS IN) DOES NOT NEED TO BE REMOVED FROM THE LPR CAP FOR REGULAR MAINTENANCE.

FIG 11.1

FIG 11.2

FIG 11.3

FIG 11.4

(CONTINUED)

Insert one of the gold colored springs into the LPR cap, so that it rests neatly in the adjuster piston **(SEE FIGURE 11.5)**.

Place the 2nd gold coloured spring onto the LPR piston and insert piston and spring into the LPR cap, o-ring end first **(SEE FIGURE 11.6)**.

Before screwing the LPR cap back onto your Ego8, use a dry cotton bud to clean the seal inside the LPR body **(SEE FIGURE 11.7)**. Lubricate this seal using a light 3 in 1 oil, such as Eclipse Oil.

Replace the LPR cap by screwing it onto the LPR body in the Ego8 **(SEE FIGURE 11.8)**.

FIG 11.5

FIG 11.6

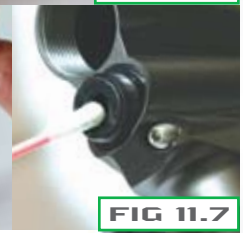


FIG 11.7

FIG 11.8

CLEANING AND LUBRICATING THE RAMMER

⚠ WARNING

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

Note: The number of o-rings on the rammer may vary according to the model of Ego8 that you have.

Pull the bolt pin upwards so that it disengages the rammer, allowing the bolt to be removed via the rear of the Ego8 **(SEE FIGURE 12.1).**

Using a 3/16" hex key, unscrew and remove the rammer cap at the rear of the Ego8 **(SEE FIGURE 12.2)**.

Raise the front of the Ego8 and tap the Ego8 onto your hand until the rammer falls into the palm of your hand **(SEE FIGURE 12.3)**.

Thoroughly clean the rammer shaft and all of its seals, paying special attention to the seal on the middle of the shaft **(SEE FIGURE 12.4),** the rear seal **(SEE FIGURE 12.5)** and the condition of the bumper in the rammer cap **(SEE FIGURE 12.6** overleaf).

Replace any worn seals/bumpers using authentic Eclipse Ego8 spare parts.

FIG 12.1


FIG 12.2

FIG 12.3


FIG 12.4


FIG 12.5

(CONTINUED)

Lubricate all of the seals on the rammer shaft and inside the rammer cap and replace the rammer into the rear of the Ego8 body as shown in **(SEE FIGURE 12.7)**.

DO NOT use grease or vaseline on the rammer. Only use light paintgun oil, we recommend Eclipse Oil.

Replace the rammer cap, using the 3/16" hex key to secure it into the Ego8 body **(SEE FIGURE 12.8)**.

DO NOT over tighten the rammer cap screw.

Noting the position of the rammer in the Ego8 body **(SEE FIGURE 12.9)**, replace the bolt and locate the bolt pin into the designated groove in the rammer shaft **(SEE FIGURE 12.10)**.


FIG 12.6


FIG 12.7


FIG 12.8


FIG 12.9

FIG 12.10

HOW TO STRIP THE EGO8...

⚠ WARNING

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

Lift the bolt pin and slide the bolt out of the rear of the marker. Disconnect any hosing and unscrew the inline regulator from the front regulator mount as detailed in the "Cleaning the Inline Regulator" section of this Maintenance guide.

Using a 5/64" hex key remove the six screws that attach the Ego8 rubber grips to the Ego8 grip frame **(SEE FIGURE 13.1).** Unplug the solenoid and unplug the break beam sensor system from their connections on the Ego8 circuit board **(SEE FIGURE 13.2).**

Using a 1/8" hex key undo the two frame retaining screws **(SEE FIGURE 13.3)** and remove the frame from the Ego8 body, taking care not to damage any wires **(SEE FIGURE 13.4).** Take the Ego8 body and turn it so that the underside of the solenoid, QEV Block and Valve plug are all be visible and accessible **(SEE FIGURE 13.5)**. Using a 1/8" hex key remove the screw from the front regulator mount that holds the LPR Body into the marker body **(SEE FIGURE 13.6)**.

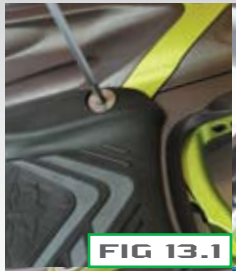


FIG 13.1

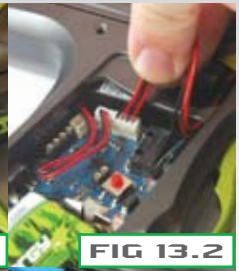


FIG 13.2

FIG 13.3

FIG 13.4

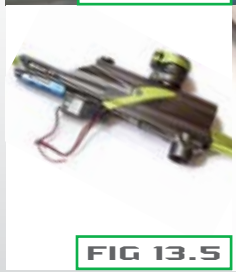


FIG 13.5

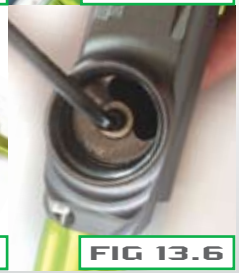


FIG 13.6

(CONTINUED)

Remove the entire LPR assembly, the valve spring and the exhaust valve from the marker body **(SEE FIGURE 13.7)**. Using a 1/8" hex key remove the valve plug from the underside of the Ego8 body **(SEE FIGURE 13.8)**. The bottom of the exhaust valve guide should now be visible through the valve plug hole **(SEE FIGURE 13.9)**. Ensure that the rammer is in its rear position and taking an L-shaped hex key, place it down through the bolt 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 Ego8 body **(SEE FIGURE 13.10).**

Note how one side of the exhaust valve guide is flat **(SEE FIGURE 13.11)**, whilst the other is raised to create the surface that the exhaust valve seals on **(SEE FIGURE 13.12)**. Inspect the sealing face of both the exhaust valve guide and the exhaust valve for any excessive wear or damage. If the exhaust valve or the exhaust valve guide is damaged then replace with authentic Ego8 parts.

You have now stripped the Ego8.

FIG 13.7

FIG 13.8

FIG 13.9

FIG 13.10

FIG 13.11

FIG 13.12

HOW TO ASSEMBLE THE EGO8

⚠ WARNING

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

Lubricate both of the o-rings on the exhaust valve guide with Eclipse Oil **(SEE FIGURE 14.1)**. Place the exhaust valve in the exhaust 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 **(SEE FIGURE 14.2)**. Holding the exhaust valve guide so that the closed side of it is facing the bottom of the marker body, insert the exhaust valve guide, exhaust valve and valve spring into the front of the marker body **(SEE FIGURE 14.3)**. When the exhaust valve is in the correct place, you will be able to see the closed side through the valve plug hole in the Ego8 body **(SEE FIGURE 14.4)**. Make sure that the exhaust valve guide is lined up correctly and then take a 1/8" hex key and replace the valve plug **(SEE FIGURE 14.5)**.

NOTE: DO NOT OVER TIGHTEN THE VALVE PLUG.!

Lubricate the o-rings on the LPR body with Eclipse Oil **(SEE FIGURE 14.6)** and slide the LPR assembly into the front of the Ego8 marker body until the hole in the LPR body lines up with the hole in the front regulator mount **(SEE FIGURE 14.7)**.

FIG 14.1

FIG 14.2

FIG 14.3

FIG 14.4

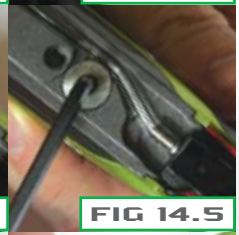


FIG 14.5

FIG 14.6

FIG 14.7

(CONTINUED)

Using a 1/8" hex key replace the screw that secures the LPR body into the marker body **(SEE FIGURE 14.8)**.

Carefully thread the solenoid and break beam sensor system wires through the access holes in the top of the Ego8 grip frame **(SEE FIGURE 14.9)** and re-attach the grip frame to the marker body by tightening the two grip frame screws using a 1/8" hex key **(SEE FIGURE 14.10)**.

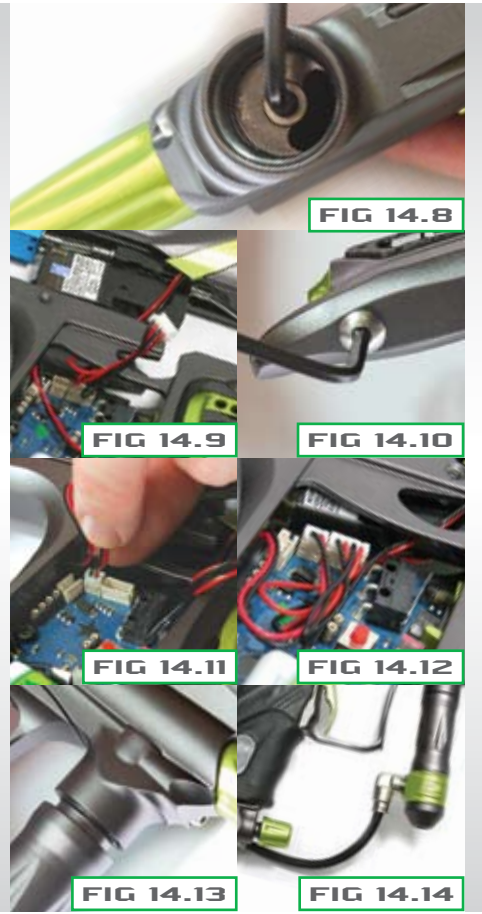
NOTE: CHECK THAT NO WIRES ARE TRAPPED BEFORE TIGHTENING DOWN THE FRAME SCREWS

Ensure that the break beam sensor system cables lie neatly in the slots provided for them in the Ego8 grip frame and connect the solenoid and the break beam sensors to their relevant connections on the Ego8 circuit board **(SEE FIGURE 14.11)**. Adjust both the solenoid wires and the break beam sensor system wires so that they sit neatly within the grip frame **(SEE FIGURE 14.12)**.

NOTE: TWIST THE BBSS WIRES SO THAT THEY DO NOT OBSTRUCT THE MOVEMENT OF THE MICRO-SWITCH LEVER.

Re-attach the Ego8 rubber grips to the frame by using a 5/64" hex key to replace the 6 grip screws. Screw the inline regulator back into the front regulator mount **(SEE FIGURE 14.13)** and connect any hosing that was disconnected earlier **(SEE FIGURE 14.14).** Lift the bolt pin and slide the bolt into position, locating the bolt pin in the designated groove in the rammer.

You have now assembled your Ego8.



CLEANING THE TRIGGER ASSEMBLY

Having removed the trigger frame completely from the Ego8 body, use a 5/32" hex key to remove the two screws that hold the bearing carrier in place in the top of the frame **(SEE FIGURE 15.1)**. Gently lift the bearing carrier and trigger assembly free from the trigger frame taking care not to damage the micro-switch or the opto sensors **(SEE FIGURE 15.2)**.

Using a 1/16" hex key, loosen the trigger pin retaining set screw from the rear of the trigger **(SEE FIGURE 15.3)**. Use a small hex key to push the trigger pin out of the bearing carrier from one side **(SEE FIGURE 15.4)** Clean the trigger and bearing carrier thoroughly and also clean the space within the frame that the trigger sits into.

FIG 15.1

FIG 15.2

FIG 15.3

FIG 15.4

(CONTINUED)

Positioning the trigger so that the hole through the trigger lines up with the holes in the bearing carrier, slide the trigger pin in place and using a 1/16" hex key tighten down the trigger pin retaining set screw to hold the assembly together **(SEE FIGURE 15.5)**.

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 15.6)**. Using a 5/32" hex key tighten the two screws that hold the bearing carrier in place in the top of the Ego8 frame.

You have now stripped and cleaned your Ego8 trigger.

FIG 15.5

FIG 15.6

CLEANING AND LUBRICATING THE BOLT

This procedure can be performed with the Ego8 gassed up as well as de-gassed.

Raise the bolt pin and remove the bolt and bolt pin from the Ego8 marker body.

Using a dry cotton bud remove any paint or grease from the surface of the bolt (**SEE FIGURE 16.1**).

Lubricate the bolt and replace the bolt, locking the bolt pin into the designated slot in the rammer.

NOTE: WE RECOMMEND THE USE OF ECLIPSE PAINTBALL GUN OIL ON THE EGO8 RAMMER AND BOLT.

FIG 16.1

CLEANING THE QEV BLOCK

With the frame separated from the marker body us a 5/32" hex key to undo and remove the two screws that hold the QEV Block onto the Ego8 body **(SEE FIGURE 17.1)**.

With the QEV Block completely removed from the Ego8 body, the bottom of the Ego8 body should now resemble **FIGURE 17.2**. Ensure that the two o-rings are located in their respective pockets in the base of the body and check that they are free from contamination from any dirt, debris, paint or moisture. If either (or both) o-rings are damaged or missing replace them as necessary.

Check the underside of the QEV Block to ensure that it is also free from damage or debris **(SEE FIGURE 17.3)**. To begin to strip the QEV Block, turn it over to expose the QEV Block Retainer Clip access holes and use a pick to gently poke both sides of the Rear QEV Block Retainer Clip free from the QEV Block **(SEE FIGURE 17.4)**. When the clip protrudes sufficiently from the QEV Block, hook the pick into the hole in the clip to pull it free from the QEV Block **(SEE FIGURE 17.5)**. You should now be able to remove the Rear QEV Cap and the QEV Diaphragm from the rear of the QEV Block by tapping it onto the palm of your hand. **(SEE FIGURE 17.6)**


FIG 17.1


FIG 17.2


FIG 17.3


FIG 17.4


FIG 17.5


FIG 17.6

(CONTINUED)

Repeat the above process on the Front end of the QEV Block assembly using a pick to push up the Front QEV Block Retainer Clip **(SEE FIGURE 17.7)** and then to lift the Front QEV Block Retainer Clip free from the QEV Block **(SEE FIGURE 17.8)**. The contents of the QEV Block should now look like **FIGURE 17.9**.

To correctly assemble the QEV Block it is essential that the internal components are arranged in the correct order. Using a cotton bud soaked in Eclipse Oil, lubricate the chambers at both the back and front of the QEV Block. Referring to **FIGURE 17.10**, assemble the QEV Block as shown, ensuring that once the Front and Rear QEV Caps hold the relevant internals in place they are secured by the Retainer Clips.

It is Important to pay attention to the orientation of the QEV Diaphragm and to make sure that they are sat in the correct position before inserting the end caps. Make sure they are perfectly square and not tilted over.

You have now successfully stripped and cleaned your QEV Block.

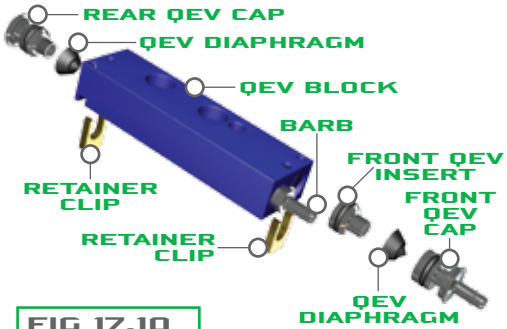


FIG 17.10

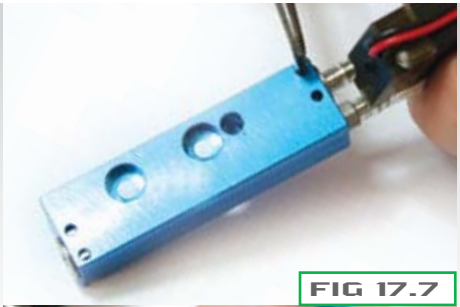


FIG 17.7

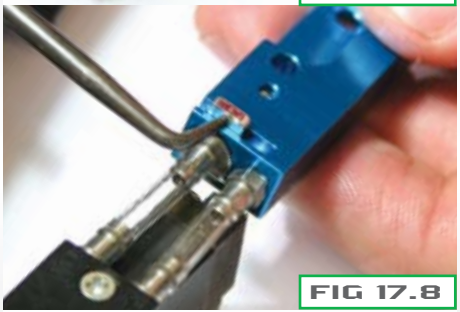


FIG 17.8

FIG 17.9

THE EGO8 SOLENOID ASSEMBLY

Ego8 utilises a purpose built solenoid. Unlike previous Ego solenoids - the Ego8 solenoid is **NON-serviceable** and as such **ANY** attempt to strip or service your Ego8 solenoid will immediately void your warranty.

If you experience any issues with your Ego8 solenoid then please contact your nearest **Eclipse Service Center** for details on how to get a replacement Ego8 solenoid. Details of Eclipse Service Centers can be found **(SEE PAGES 70-71)** at the back of this manual or in the Support section online at **www.planeteclipse.com.**

FIG 18.1

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Although a fresh battery has been fitted, the Ego8 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 alkaline or metal hydride battery. Do not use a low quality or rechargeable battery.
The Ego8 leaks from the solenoid.	Check that 3 solenoid seals are intact and seated correctly in their designated pockets in the Minifold.	Replace seals if damaged using Ego8 Parts kit. Ensure seals are sealed correctly.
	Damaged Ego8 Solenoid.	Replace Ego8 Solenoid.
	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.
	Check for damaged or incorrect seals on Rammer.	Replace seals.
	Is it leaking from the Barbs?	Check hose for cuts or replace barbs.
	Is it over-pressurizing from damaged seals on the valve chamber?	Change Valve Chamber seals.
The Ego8 leaks down the barrel	Leaky Exhaust Valve.	Replace Exhaust Valve.
	Damaged Valve Seat.	Replace Valve Guide.
	Incorrect seal on front of Valve Guide.	Replace front seals on Valve Guide with 014 NBR70.
Gas vents quickly down barrel as soon as it is gassed up.	The Exhaust Valve has become jammed in the valve guide.	Replace Exhaust Valve and valve guide as necessary (see Maintenance Section).

SYMPTOM	POSSIBLE CAUSE	SOLUTION
The marker is chopping or trapping paint.	The Break-Beam Sensor System is switched off.	Switch on the Break-Beam Sensor System.
	The Bolt is dirty, causing the sensor system to incorrectly detect a paintball.	Clean the Bolt.
	The Break-Beam Sensor System is dirty causing the incorrect detection of paintballs.	Clean the Break-Beam Sensor System.
The Ego8 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).
QEV Block leaks.	Main Rammer seal is damaged.	Replace 011 seal on Rammer Shaft.
	Faulty seals inside QEV Block.	Strip QEV Block and inspect seals for debris or damage.
The Ego8 does not fire.	Trigger is set up incorrectly.	Set trigger up correctly. (See Advanced Set-Up Section)
	Solenoid is not plugged into the Ego8 PCB.	Plug solenoid into port on the Ego8 PCB.
	The Break-Beam Sensor System is enabled but there is no paint.	Fill loader with paint.
	Microswitch is not being activated.	Adjust Microswitch activation screw accordingly.
	Microswitch is damaged.	Replace circuit board.
Low Velocity First Shot.	FSDO parameter is too low to overcome stiction on Solenoid and / or Rammer O-rings.	Increase FSDO parameter.
High Velocity First Shot.	FSDO parameter set too high.	Reduce FSDO parameter.
	Inline Regulator pressure creeping.	Strip and clean Inline Regulator. Replace Inline Regulator piston if necessary.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
My Trigger is very "Bouncy", how can I reduce it?	Incorrect Filter settings.	Check that your trigger pull is within the limits of your BAND HI and BAND LO settings and that your TT TOL suits your current set-up.
	Lengthen and strengthen your trigger pull.	Refer to Advanced Set-Up Section for guidelines of how to adjust your Ego8 Trigger accordingly.
The Break-Beam Sensor System 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 Break-Beam Sensor System 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.	If the Ego8 is being used with a force feed loader, it is possible that the loader is forcing balls past the ball detent.	Change the rubber finger detent.
Ego8 is inconsistent.	Inline Regulator is supercharging.	Strip and clean Inline Regulator. (See Maintenance Section)
Leaking Rammer Assembly (Leak gets louder when bolt is removed).	Front ram shaft seal deteriorated.	Replace front Rammer Shaft seal.
Eye turns itself off after firing.	Eye is dirty.	Clean the eyes.
	Eye is faulty.	Replace the eyes.
	Eye is out of place.	Re-Install Eyes. Check alignment.
When the Ego8 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.

ECLIPSE CERTIFIED SERVICE CENTERS

Are you unsure of where to send your Ego8 to be repaired or serviced? If your local Eclipse dealer can't assist you, why not contact your nearest Certified Eclipse Service Center and arrange to send it into them to undertake any work that you require.

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Email: egdesigns@hughes.net
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Visit: www.espxtremesportz.com

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Visit: www.prostarpb.com

FOX PAINTBALL
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Visit: www.foxpaintball.com

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Visit: www.badlandspaintball.com

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Email: daniel@extremeindoorpaintball.com.au
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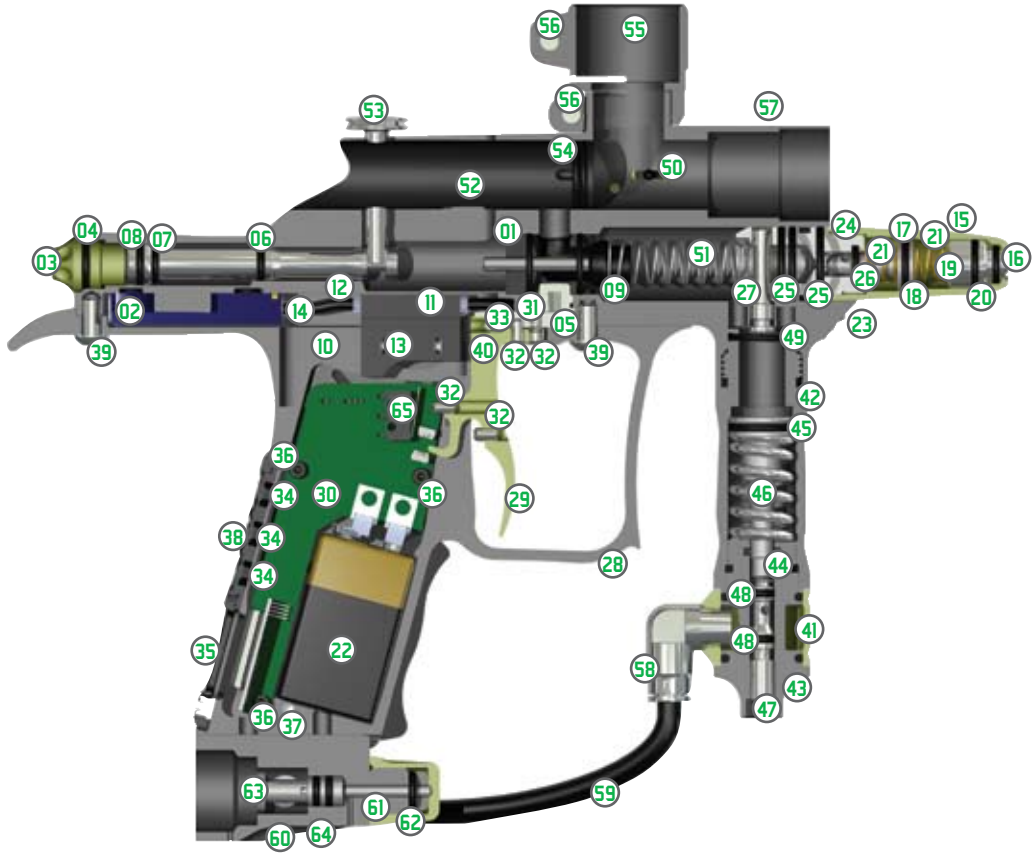
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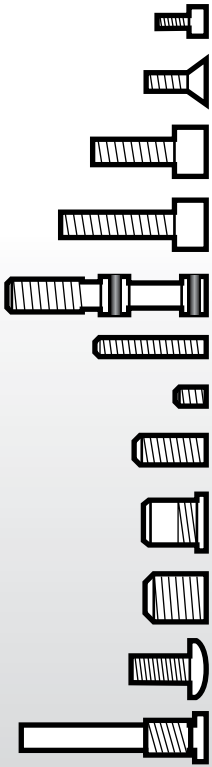
PART NAME

01 Valve Guide
02 QEV Block
03 Rammer Cap
04 Rammer Cap O-Rlng
05 Valve Plug
06 Front Rammer O-Ring
07 Front Rammer Bumper O-Ring
08 Rear Rammer O-Ring
09 Exhaust Valve Assembly
10 Solenoid
11 Minifold
12 Minifold Barb
13 Solenoid Retaining Screw
14 Low Pressure Hose
15 LPR Cap
16 LPR Adjuster Screw
17 LPR Piston
18 LPR Piston O-Ring
19 Adjuster Piston
20 Adjuster Piston O-Ring
21 LPR Spring Heavy (Gold)
22 9 Volt Battery
23 Torpedo
24 LPR Body
25 LPR Body O-Ring
26 LPR Body Groove O-Ring
27 FRM Bolt
28 Frame
29 Trigger
30 Printed Circuit Board
31 Magnet
32 Trigger Adjuster Screw
33 Trigger Pin Locking Screw
34 Push Buttons
35 Display Window
36 PCB Screw
37 Grip Screw
38 Navigation Console
39 Frame Screw
40 Trigger Pin
41 Swivel Collar
42 Inline Regulator Top
43 Inline Regulator Bottom
44 Inline Regulator Piston
45 Inline Regulator Piston O-Ring
46 Inline Regulator Spring
47 Inline Regulator Adjuster Screw
48 Inline Regulator Adjuster O-Ring
49 Inline Regulator Top O-Ring
50 Anti-Double Ball Finger
51 Valve Spring
52 Bolt
53 Bolt Pin
54 Bolt O-Ring
55 Clamping Feed Tube
56 Clamping Feed Tube Screw
57 Body
58 1/4"Elbow
59 1/4"Hose
60 OOPS Body
61 OOPS Pin
62 OOPS On/Off Knob
63 OOPS Insert
64 OOPS Adjuster Screw
65 Micro - Switch

SCREW	QTY	DESCRIPTION
	7	PCB SCREW (3), BEARING CARRIER (2), QEV BLOCK (2) (M3 x5 CAP HEAD SOCKET)
	8	RUBBER GRIP SCREW (6), BBSS COVERS SCREW (2) (6-32UNC x3/8 COUNTERSUNK SOCKET)
	1	SHORT FEED NECK SCREW (1 x10-32UNF x1/2 CAP HEAD SOCKET)
	1	LONG FEED NECK SCREW (1 x10-32UNF x5/8 CAP HEAD SOCKET)
	1	INLINE REGULATOR ADJUSTER SCREW (CUSTOM MANUFACTURED)
	1	MICROSWITCH SCREW (6-32 UNC x1/2 SOCKET SET SCREW)
	4	TRIGGER ADJUSTMENT SCREW (6-32 UNC x3/16 SOCKET SET SCREW)
	2	T-RAIL SCREW (10-32 UNF x1/2 SOCKET SET SCREW)
	1	VALVE PLUG (CUSTOM MANUFACTURED)
	1	LPR ADJUSTER SCREW (5/16UNF x3/8 SOCKET SET SCREW)
	2	SHORT FRAME SCREW (10-32 UNF x3/8 SOCKET BUTTON HEAD)
	1	FRM RETAINING SCREW (CUSTOM MANUFACTURED)

O-RING	LOCATION	O-RING	LOCATION
 016	Reg Swivel.	 012	Adjuster Piston.
 015	Inline Regulator Piston. Inline Regulator Top.	 011	Rear Rammer O-Ring. Rammer Cap.
 014x2	LPR Body.	 010	Inside LPR Body. Inside Adjuster Section of Inline. Inside Rammer Cap. Inside LPR Cap.
 014	Valve Guide	 009	Rammer Front Bumper. Rammer Shaft O-Ring.
 013	LPR Piston.	 008	Oops Insert.
		 006	Torpedo. Inline Adjuster Screw. Oops Insert.

EGO8 CCU UPGRADE KIT

This unique kit allows you to swap and customise the look of your Ego8 marker by replacing these key components.

LASER EYE KIT

Add a Red Laser Beam to the breach of your Ego8 or Etek marker with this Laser Eye Kit! This product is not compatible with other Egos.

ECLIPSE GUN OIL

The recommended oil to use on all maintenance and servicing procedures.

EGO8 MULTI-REG SPARES KIT

Replacement spares to service your Inline Regulator and Low Pressure Regulator.

BBSS SPARES KIT

Replacement Break-Beam Sensor System kit for your Ego8.

ECLIPSE EGO8/ETEK TOOL TUBE

This handy little tool tube includes all of the hex key sizes that you will need to strip and maintain your Ego8 or Etek marker.

TECH FLEX MAT
Protect your Ego whilst you maintain it with the Eclipse Tech Flex Mat.

08 STRIPE LAPTOP BAG
Transport your Laptop in style with the new '08 Laptop Bag.

08 STRIPE KITBAG
What better place to keep your Ego8?

BALL DETENTS
10 Replacement rubber Detents for your Ego8.

ECLIPSE SHAFT 2 BARREL KIT
3 different bores size backs, 2 different length barrel tips; a combination to suit every occasion.


EGO:

NOTES

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