

The logo features the text "ES60" in a large, bold, white, stylized font with a double-line outline. Below it, the words "OPERATION MANUAL" are written in a smaller, white, sans-serif font. The entire text is set against a black background and is enclosed within a white, stylized arrow shape that points towards the top right.

ES60
OPERATION MANUAL

WARNING

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

1. THE ECLIPSE EGO7 IS NOT A TOY.
2. CARELESS OR IMPROPER USE, INCLUDING FAILURE TO FOLLOW INSTRUCTIONS AND WARNINGS WITHIN THIS USER MANUAL AND ATTACHED TO THE EGO7 COULD CAUSE DEATH OR SERIOUS INJURY.
3. DO NOT REMOVE OR DEFACE ANY WARNINGS ATTACHED TO THE EGO7.
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 EGO7.
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 CO2
9. ALWAYS FOLLOW INSTRUCTIONS, WARNINGS AND GUIDELINES GIVEN WITH ANY FIRST STAGE REGULATOR YOU USE WITH THE ECLIPSE EGO7.
10. USE 0.68 CALIBRE PAINTBALLS ONLY.
11. KEEP THE EGO7 SWITCHED OFF UNTIL READY TO SHOOT.
12. TREAT EVERY MARKER AS IF IT IS LOADED.
13. NEVER POINT THE EGO7 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 ECLIPSE EGO WITHOUT THE BOLT IN THE BREECH, AS HIGH-PRESSURE GAS WILL BE EMITTED.
18. DO NOT FIRE THE ECLIPSE EGO WITHOUT THE BOLT PIN LOCKED SECURELY IN PLACE.
19. NEVER LOOK INTO THE BARREL OR BREECH AREA OF THE EGO7 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 EGO7.
21. NEVER ALLOW PRESSURISED GAS TO COME INTO CONTACT WITH ANY PART OF YOUR BODY.
22. ALWAYS SWITCH OFF THE EGO7 WHEN NOT IN USE.



WARNING

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

23. ALWAYS FIT A BARREL-BLOCKING DEVICE TO THE EGO7 WHEN NOT IN USE ON THE FIELD OF PLAY.

24. ALWAYS REMOVE ALL PAINTBALLS FROM THE EGO7 WHEN NOT IN USE ON THE FIELD OF PLAY.

25. ALWAYS REMOVE THE FIRST STAGE REGULATOR AND RELIEVE ALL RESIDUAL GAS PRESSURE FROM THE EGO7 BEFORE DISASSEMBLY.

26. THE EGO7 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 EGO7 FOR TRANSPORT AND STORAGE.

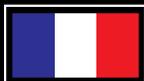
28. ALWAYS FOLLOW GUIDELINES GIVEN WITH YOUR FIRST STAGE REGULATOR FOR SAFE TRANSPORTATION AND STORAGE.

29. ALWAYS STORE THE EGO7 IN A SECURE PLACE.



THIS USER'S MANUAL IS IN ENGLISH.

It contains important safety guidelines and instructions. Should you be unsure at any stage, or unable to understand the contents within this manual you must seek expert advice.



LE MODE D'EMPLOI EST EN ANGLAIS.

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



ESTE MANUAL DE (OPERARIOS Y) USARIOS ESTÁ EN INGLÉS.

Contiene importantes normas de seguridad e instrucciones. Si no está seguro de algún punto o no entiende los contenidos de este manual debe consultar con un experto.



DIESE BEDIENUNGS- UND BENUTZERANLEITUNG IST IN ENGLISCH.

Sie enthält wichtige Sicherheitsrichtlinien und -bestimmungen. Sollten 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)

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- > THE EGO7 NAVIGATION CONSOLE

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Details on how to get up an running quickly with your Ego7. This section is essential reading for everyone.

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- > USING THE BREAK-BEAM SENSOR SYSTEM

USING YOUR EGO

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- > SETTING UP
- > INSTALLING A PRESET AIR SYSTEM
- > T-SLOT MOUNTING SYSTEM
- > MACROLINE HOISING & ELBOWS
- > INSTALLING AN ADJUSTABLE AIR SYSTEM
- > ATTACHING A LOADER
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- > THE MAIN MENU
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- > THE DISPLAY MENU
- > USING THE DISPLAY MENU
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- > SETTING THE GAME TIMER
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- > ADJUSTING THE LPR PRESSURE
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- > THE MODE PARAMETER
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- > TYPE
- > RATE
- > PULL NUMBER (PULL NO)
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- > SUSTAIN
- > RESTART
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- > CLEANING THE LPR
- > CLEANING AND LUBRICATING THE RAMMER
- > HOW TO STRIP THE EGO7
- > HOW TO ASSEMBLE THE EGO7
- > CLEANING THE TRIGGER ASSEMBLY
- > CLEANING AND LUBRICATING THE BOLT
- > CLEANING THE QEV

FAULT FINDING

Information on how to resolve any problems that might arise with your Ego7.

SERVICE CENTRES

Information on the location of your nearest Ego7 Service Centre.

PARTS LIST

A table of components that make up the Ego7.

WARRANTY CARD

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

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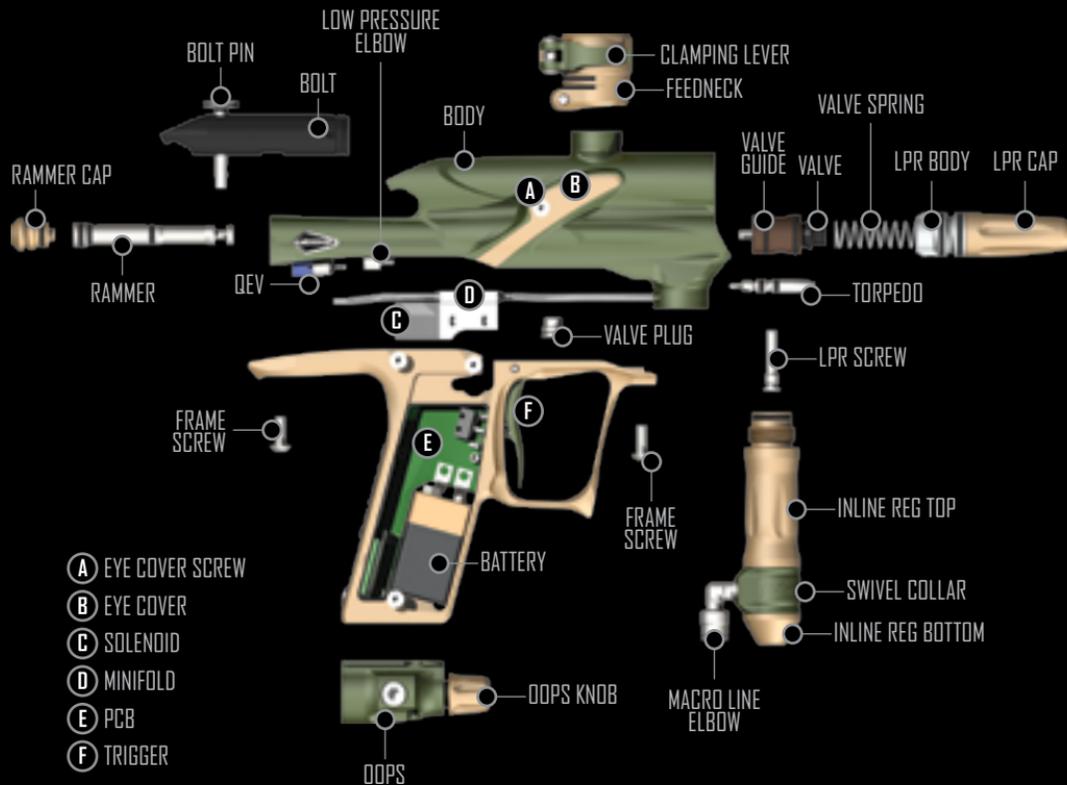
Available upgrade / repair kits for your Ego7.

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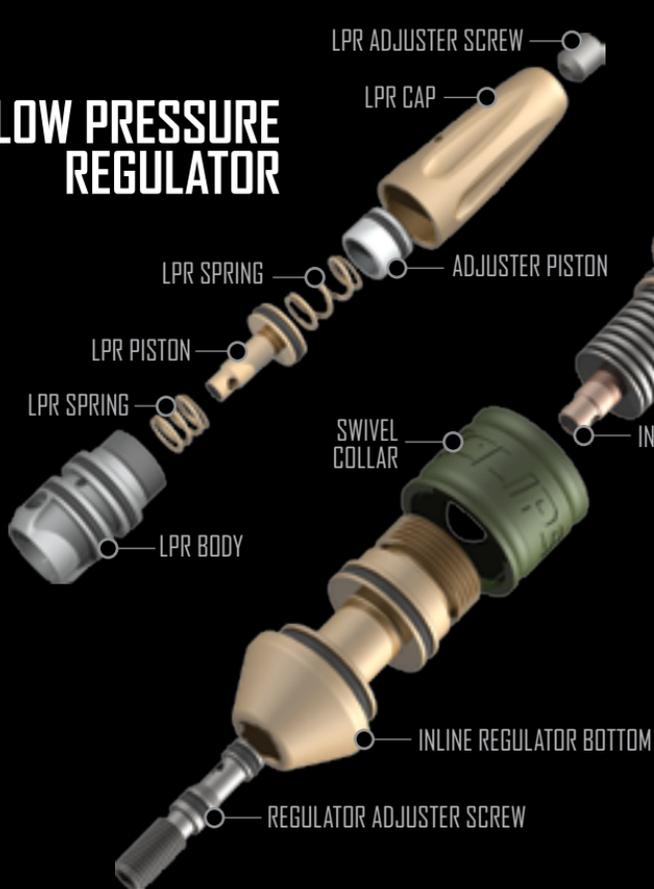
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KNOW YOUR EGO7



- Ⓐ EYE COVER SCREW
- Ⓑ EYE COVER
- Ⓒ SOLENOID
- Ⓓ MINIFOLD
- Ⓔ PCB
- Ⓕ TRIGGER

LOW PRESSURE REGULATOR



ECLIPSE INLINE REGULATOR



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THE EGO7 NAVIGATION CONSOLE

At the rear of the Ego7's grip frame you will find the Navigation Console. The Navigation Console is used for several purposes including:

- L TURNING THE EGO ON AND OFF USING THE  BUTTON
- L SCROLLING THROUGH MENU CHOICES WITH  AND  BUTTONS
- L SELECTING PARAMETERS TO EDIT USING THE  BUTTON
- L EDITING PARAMETERS USING THE  AND  BUTTONS
- L TURNING THE EGO BBSS ON AND OFF USING THE  BUTTON
- L RESETTING CERTAIN DISPLAY FEATURES USING THE  BUTTON

 FWD / RAISE

 SELECT

 BACK / LOWER



INSTALLING A 9V BATTERY

Ensure that the Eclipse Ego7 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" hex wrench to remove the three countersunk screws that hold the rubber grip onto the frame (Note: a 2mm hex key can also be used). Peel the grip to the right to expose the electronics within the frame.

If present, remove the existing 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 then replace the rubber grip and replace the three countersunk screws.

Do Not over-tighten the screws.

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.



FIG 2.1



FIG 2.2

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SWITCHING ON THE ECLIPSE EGO7

At the rear of the frame is the **Ego7 Navigation Console**. Press and hold the  button (SEE FIGURE 3.1). After one second the Eclipse Ego7 logo will be displayed. Release the  button and the display will revert to the designated run screen (Average Rate of Fire, Peak Rate of Fire, Shot Counter or Game Timer).

SWITCHING OFF THE ECLIPSE EGO7

Press and hold the  button for 1 second. The display will read OFF?. Release the  button and re-press it to turn off the Eclipse Ego7. Alternatively when the display reads OFF?, You can also pull the trigger once to turn off the Eclipse Ego7.

FIRING THE ECLIPSE EGO7

Pull the trigger to fire the Eclipse Ego7. The entire firing sequence is controlled electronically by the Eclipse Ego7 circuit board and solenoid, enabling any user to achieve high rates of fire easily.



FIG 3.1

USING THE BREAK BEAM SENSOR SYSTEM

The Break Beam Sensor System is used to detect when a paintball is ready to fire from the Ego7. If no paintball is ready then the BBSS will inhibit the Ego7 from firing. This prevents the Ego7 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 one second (SEE FIGURE 3.2).

The eye on icon  in the top left hand corner of the LCD screen will change to the eye off icon  indicating that the Break-Beam Sensor System has been disabled.

To switch the Break-Beam Sensor System back on, press and hold the  button for one second. The eye off icon  in the top left hand corner of the LCD screen will change to the eye on icon  indicating that the breech sensor has been enabled.

When the Break-Beam Sensor System is enabled, the icon will change depending on if the system has detected a ball or not. When no ball has been detected the icon looks like this  when a ball has been detected the icon changes to look like this .

Additional features of the egos Break-Beam Sensor System are covered in full in the "Using Your Ego7" section of this user manual.

NOTE: WHEN TURNING ON THE ECLIPSE EGO7, THE BREAK-BEAM SENSOR SYSTEM IS AUTOMATICALLY ENABLED



FIG 3.2

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SETTING UP

Before you can begin to use your Eclipse Ego7, there are a few necessary components that are required to enable the Eclipse Ego7 to function namely an air system and a loader of your choice.

NOTE: THE ECLIPSE EGO7 CANNOT BE USED WITH CO₂, IT CAN ONLY BE POWERED BY COMPRESSED AIR OR NITROGEN.

INSTALLING A PRESET AIR SYSTEM

Every Eclipse Ego7 comes complete with an Eclipse On/Off Purge System (OOPS) allowing a preset regulator and tank to be screwed straight in for immediate use. Before screwing the preset 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 Eclipse Ego7 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 Eclipse Ego7.



FIG 4.1



FIG 4.2



FIG 4.3

NOTE: WHEN USING AN OOPS ON YOUR ECLIPSE EGO7, THE ECLIPSE EGO7 WILL STILL HAVE STORED AIR IN THE VALVE CHAMBER, GAS LINE AND INLINE REGULATOR AFTER YOU HAVE SWITCHED THE ECLIPSE OOPS OFF. PLEASE REMEMBER TO DISCHARGE THE STORED AIR IN A SAFE DIRECTION AS YOU ARE UNSCREWING THE ON/OFF KNOB ON THE ECLIPSE OOPS.

T-SLOT MOUNTING SYSTEM

The current industry standard Dovetail rail that is used to connect the ASA to the frame has consistently proved to be the weakest link for every manufacturer out there when it comes to the durability of the system used to mount the tanks to the guns. For that reason we have shunned the flawed design of the dovetail in favour of a new T-Slot design. By using a T-shaped slide rail, as opposed to the double V of the old fashioned dovetail, the ASA-To-Frame interface has been drastically strengthened. There should be no way that a well executed dive into a bunker should dislodge the ASA now, but even if you feel you have to go and use a different ASA there are still standard mounting holes in the frame to fit your own inferior rail and ASA.



MACROLINE HOISING 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 HOISING AND IF IT IS WORN OR THE WRONG LENGTH REPLACE IT IMMEDIATELY.

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INSTALLING AN ADJUSTABLE AIR SYSTEM

Firstly disconnect the 1/4" hosing from the elbow attached to the Eclipse OOPS at the base of the grip frame (SEE FIGURE 4.4).

Unscrew the On/Off knob completely from the Eclipse OOPS and using a 3/32nd hex key turn the two screws on the left hand side of the integrated slide rail at the base of the grip frame in a counter clockwise direction so that the Eclipse 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 Eclipse Ego7'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 EGO7 PRINTED CIRCUIT BOARD WILL BECOME DAMAGED.



FIG 4.4



FIG 4.5



FIG 4.6

14. USING YOUR EGO7

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 Eclipse Ego7. Once you have filled your loader and air tank you will then be ready to begin using your Eclipse Ego7.



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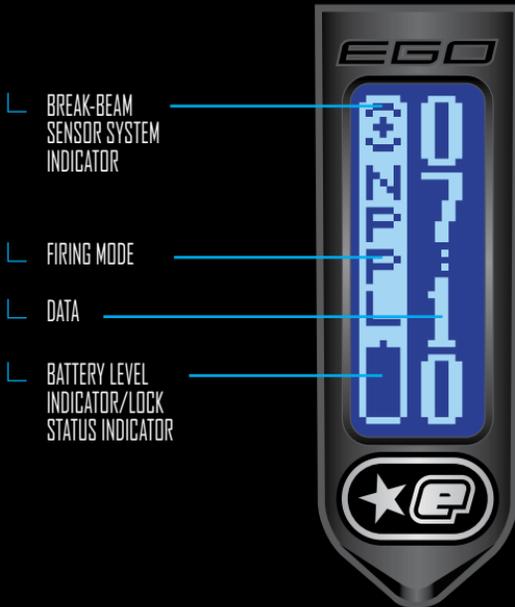


SWITCHING ON

Pressing and holding the  button will switch the Eclipse Ego7 on. The LCD display will show the Eclipse Ego7 logo. When the  button is released, the LCD display will show the selected display.

SCREEN LAYOUT

The standard layout of an Eclipse Ego7 display is as follows:



16. USING YOUR EGO7



THE MAIN MENU

To activate the Main Menu (providing the Eclipse Ego7 is already turned on), press and hold the  button. After one second **OFF** will be displayed. This is one of the options on the Main Menu, as **shown below**:



Press the  button to scroll down through each of the options on the menu. Once the last option on the menu has been displayed, pressing the  button will cause the first option to be displayed.

Press the  button to scroll up through each of the options on the menu. Once the first option on the menu has been displayed, pressing the  button will cause the last option to be displayed.

Press the  button to select the displayed option.

Selecting the **EXIT** option will exit the main menu and return to the display from which the Main Menu was selected.

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

THE EDIT INDICATORS

Whenever you wish to edit a parameter that has been selected from any of the menu options, press the  button and the Edit Indicators will appear on screen, as **shown below**:

 EDIT INDICATORS



With the Edit Indicators present on screen, you can use the  button and the  button to edit the chosen parameter accordingly.

Once you have finished editing the parameter, press the  button to confirm the setting and the Edit Indicators will disappear from the screen.

You can now successfully edit a parameter.

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THE DISPLAY MENU

Scroll through the main menu until the **DISPLAY** option is displayed and then press . This has now activated the **DISPLAY** Menu.

The left hand side of the screen shows **DISPLAY**, the name of the parameter that is currently shown, whilst the right hand side of the screen can be changed by using the and buttons to scroll through the different **DISPLAY** options as **shown below**:

NOTE: THE OPTION CHOSEN IN THE DISPLAY MENU WILL BE THE DESIGNATED RUN SCREEN WHEN THE ECLIPSE EGO IS IN NORMAL USE, AND WHEN THE MARKER IS FIRST SWITCHED ON.

To display the Game Timer when the frame is in normal use, simply select the **TIMER** option from the **DISPLAY** Menu.

To display the Shot Counter when the frame is in normal use, simply select the **SHOTS** option from the **DISPLAY** Menu.

To display the Average Rate of Fire Indicator when the frame is in normal use, simply select the **AVG ROF** option from the **DISPLAY** menu.

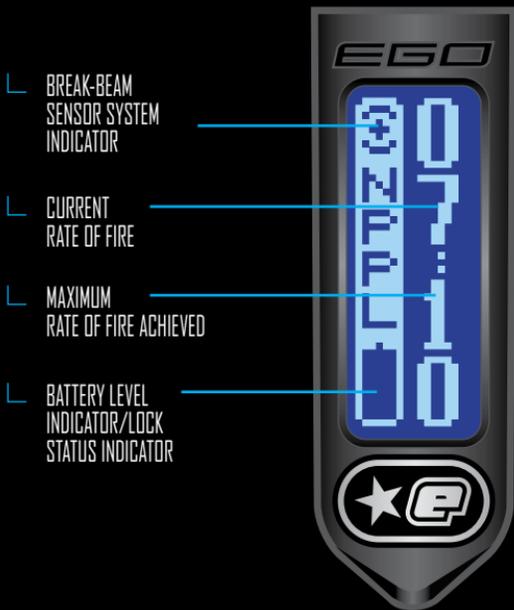
To display the Peak Rate of Fire Indicator when the frame is in normal use, simply select the **PEAK ROF** from the **DISPLAY** Menu.

To return to the Main Menu, scroll to the **CANCEL** option and press .



USING THE DISPLAY MENU

As both the **TIMER** and the **SHOTS** options from the **DISPLAY** Menu are covered in their respective sections in the following pages we will start by looking at the Rate of Fire options.



THE AVERAGE RATE OF FIRE OPTION

The Average Rate of Fire (**AVG ROF**) option is one of two ways in which you can monitor your rate of fire whilst using the Eclipse Ego7. The Average Rate of Fire screen looks like the screen to the left.

Unlike some other markers the Average Rate of Fire on the Eclipse Ego7 is measured over a period of one second.

The current Average Rate of Fire is displayed in the top right hand corner of the display, whilst the maximum Average Rate of Fire is displayed in the bottom right hand corner of the display.

To reset the maximum Average Rate of Fire simply push and hold the  button for a one second period.

With the Break-Beam Sensor System enabled and paint present, the Average Rate of Fire is only limited by the speed of your loader. To achieve the highest rates of fire we recommend using a high speed loader such as the Reloader B2, Pulse or Velocity Loader. With the Break-Beam Sensor System enabled and no paint present, the rate of fire will be 0 as your Ego7 will be unable to fire.

To use the Average Rate of Fire screen without shooting paint, simply switch the Break-Beam Sensor System off using the  button. In this scenario the Average Rate of Fire is only limited to whatever value you have selected in the **OFF ROF** option in the **TIMING** Menu.

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THE PEAK RATE OF FIRE OPTION

The Peak Rate of Fire (**PEAK ROF**) option is one of two ways in which you can monitor your rate of fire whilst using the Eclipse Ego. The Peak Rate of Fire screen looks like the screen **shown below**:



The Peak Rate of Fire option calculates both the current and maximum Peak Rate of Fire achieved based on the time between the closest two consecutive shots.

The current Peak Rate of Fire is displayed in the top right hand corner of the display, whilst the maximum Peak Rate of Fire is displayed in the bottom right hand corner of the display.

To reset the maximum Peak Rate of Fire simply push and hold the **Y** button for a one second period.

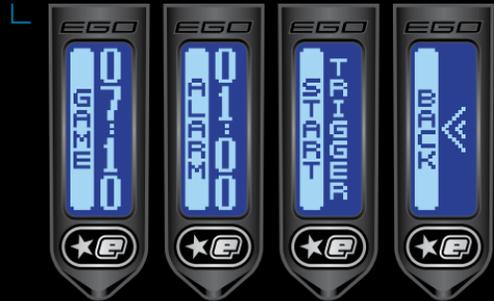
With the Break-Beam Sensor System enabled and paint present, the Peak Rate of Fire is only limited by the speed of your loader. To achieve the highest rates of fire we recommend using a high speed loader such as the Reloader B2, Pulse or Velocity Loader. With the Break-Beam Sensor System enabled and no paint present, the rate of fire will be 0 as your Ego7 will be unable to fire.

To use the Peak Rate of Fire screen without shooting paint, simply switch the Break-Beam Sensor System off using the **A** button. In this scenario the Peak Rate of Fire is only limited to whatever value you have selected in the **OFF ROF** option in the **TIMING** Menu.

THE GAME TIMER MENU

Scroll through the Main Menu until the **TIMER** option is displayed and then press **X**. You have now entered the **GAME TIMER** Menu.

By using the **▲** and **▼** buttons, you can scroll through the menu as **shown below**:



To set the game timer, simply select the **GAME** option.

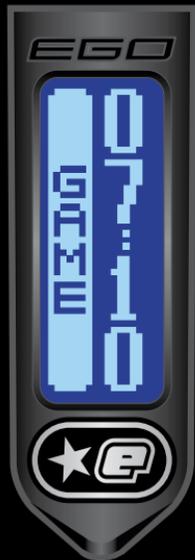
To set the alarm timer, simply select the **ALARM** option.

To set the starting method of the game timer, simply select the **START** option.

To return to the Main Menu, scroll to the **BACK** option and press .

SETTING THE GAME TIMER

Once the **GAME** option has been selected from the **TIMER** menu, the preset game time will be displayed on the right hand side of the screen, the factory setting for which is 7 minutes and 10 seconds, as **shown below**:



To increase the preset game time, repeatedly press and release the **▲** button. Each time that the button is pressed, the game time will increase by 10 seconds. To increase the time more rapidly, press and hold the **▲** button. The maximum preset game time is 60 minutes and 0 seconds, once this value has been exceeded the game timer will wrap around to 0 minutes and 0 seconds.

To decrease the preset game time, repeatedly press and release the **▼** button. Each time that the button is pressed, the game time will decrease by 10 seconds. To decrease the time more rapidly, press and hold the **▼** button. The minimum preset game time is 0 minutes and 0 seconds, once this value has been exceeded the game timer will wrap around to 60 minutes and 0 seconds.

Once you have set the game timer to the time that you require, press the **⊕** button to save the value. The Edit Indicators will disappear, indicating that the time has been accepted.

SETTING THE ALARM TIME

As well as a game timer we have an added **ALARM** feature that allows you to set a designated time during the game timer at which the **ALARM** feature will be activated. When the game timer reaches the Alarm time the display will flash continually to indicate this.

Once the **ALARM** option has been selected from the **GAME TIMER** Menu, the edit indicators will appear and the preset alarm time will be displayed on the right hand side of the screen, the factory setting for which is 1 minute and 0 seconds.

To increase the preset alarm time, repeatedly press and release the **▲** button. Each time that the button is pressed, the alarm time will increase by 10 seconds. To increase the time more rapidly, press and hold the **▲** button. The maximum preset alarm time is 60 minutes and 0 seconds, once this value has been exceeded the alarm timer will wrap around to 0 minutes and 0 seconds.

To decrease the preset alarm time, repeatedly press and release the **▼** button. Each time that the button is pressed, the alarm timer will decrease by 1 second. To decrease the time more rapidly, press and hold the **▼** button. The minimum preset alarm time is 0 minutes and 0 seconds, once this value has been exceeded the alarm timer will wrap around to 60 minutes and 0 seconds.

Once you have set the alarm time to the preset time that you require, press the **⊕** button to save the value. The edit indicators will disappear, indicating that the time has been accepted.

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SETTING THE START METHOD OF THE GAME TIMER

Once the **START** option has been selected from the **GAME TIMER** Menu, the edit indicators will appear and the method of starting the Game Timer will be displayed on the right hand side of the screen, the factory setting for which is **BUTTON**.

To change the starting option for the Game Timer, simply use the  or  buttons to scroll through the **menu choices**:



BUTTON means that pressing the  button will start the game timer (when displayed).

TRIGGER means that pulling the trigger will start the game timer (when displayed).

Selecting **CANCEL** returns to the **TIMER** Menu.

STARTING THE GAME TIMER

When **TIMER** has been selected as the designated display screen, the Game Timer will be displayed.

Starting the Game Timer depends on whether you have chosen **BUTTON** or **TRIGGER** in the **START** option of the **GAME TIMER** Menu.

By starting the Game Timer using your chosen method, the timer will start to count backwards, in seconds, towards zero.

To stop the game timer, push and hold the lower button for 0.5 seconds. The game timer will pause at whatever time it had counted down to.

The  button, or trigger, depending on your choice of starting method can be used to restart the Game Timer if required.

To now reset the Game Timer, press and hold the  button for 2 seconds. The Game Timer will return to its preset value. The Game Timer will also be reset whenever the Eclipse Ego7 is switched off.

UNDERSTANDING THE BBSS OPERATION

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



BBSS ENABLED AND BALL DETECTED

The Ego7 can be fired at the maximum rate of fire determined by the chosen firing mode.



BBSS ENABLED NO BALL DETECTED

The Ego7 cannot be fired.



BBSS DISABLED

The Ego7 can be fired at a maximum rate of fire as set by the **OFF ROF** parameter (SEE PAGE 32)



BBSS FAULT DETECTED

The system is disabled. The Ego7 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 Ego7 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 Ego7 cannot be fired. To reset the BBSS icon, use the **(▲)** button to switch off the BBSS and then back on again.



BBSS ENABLED IN TRAINING MODE

The BBSS has been over-riden 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 **MAX ROF** parameter.



BBSS DISABLED IN TRAINING MODE

The BBSS has been over-riden 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.

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ADJUSTING YOUR VELOCITY

When using your Eclipse Ego7, you may wish to change the velocity at which your Eclipse Ego7 is firing. This is done by inserting a 1/8th" hex key into the adjuster screw at the bottom of your Eclipse Ego7 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 YOUR LPR PRESSURE

When using your Eclipse Ego7, you may wish to change the output pressure of your LPR. This is easily done by inserting a 5/32nd" inch hex key into the adjuster screw at the front and adjusting it accordingly (SEE FIGURE 6.2).

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.



SMART MENUS.

The electronic software on the Ego7 circuit board utilises **Smart Menus** to aid swift navigation through the menu system.

Depending on changes that the user makes to their settings, different options become available if they are relevant to the changes that have been made. This eliminates any confusion by eliminating the parameters that do not apply to the menu choices that the user has selected.

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SETTING THE TRIGGER

Ego7 provides the user with the option to use either the Micro Switch or the Opto sensor as the means of 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 45).

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 Eclipse Ego7 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.

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).

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.



SETTING THE TRIGGER CONT...

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 at which in the trigger pull 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 **MSWITCH** 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 42-43) 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

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THE SETUP MENU

To activate the **SET-UP** Menu, first remove the three rubber grip screws from the right hand side of the frame (SEE FIGURE B.1) and peel back the rubber grip to expose the PCB inside the frame. Press and hold the **SET-UP** button, which is located on the PCB above the battery (SEE FIGURE B.2). After one second, the **LOCK** parameter will be displayed - this is the first item on the **SET-UP** Menu as **shown below**:

Press the  button to scroll down through each of the items on the menu. Once the last item has been displayed, pressing the  button will cause the first item to be displayed.

Press the  button to scroll up through each of the items on the menu. Once the first item has been displayed, pressing the  button will cause the last item to be displayed.

Press the  button to select the displayed item.

Selecting **EXIT** will return the display to the display from which the **SET-UP** Menu was selected.

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FIG 8.1



FIG 8.2

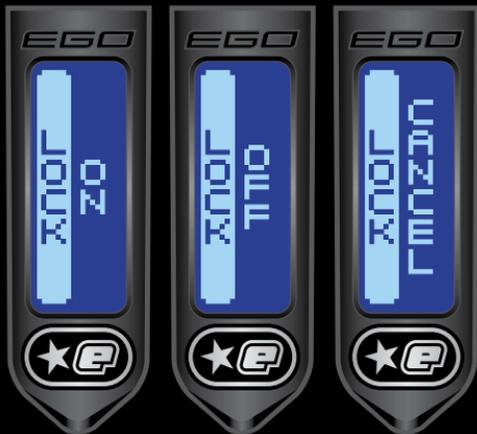
LOCK

The **LOCK** parameter is used to control the Tournament Lock feature of your Ego7.

The **LOCK** parameter can either be switched “On” or “Off”.

If the **LOCK** parameter is “On” the **SET-UP** menu will only be accessible by following the procedure outlined in “The Set-up Menu” section of this manual (SEE PAGE 28).

If the **LOCK** parameter is “Off” then the **SET-UP** menu is accessible as either an extension of the Main Menu or by following the procedure outline in “The Set-up Menu” section of this manual (SEE PAGE 28)



THE PRESET PARAMETER

The **PRESET** parameter can be used to either **LOAD** a preset group of settings using the **LOAD** option on the **PRESET** Menu, or to **SAVE** a group of settings as a user defined custom preset using the **SAVE** option on the **PRESET** Menu.

To use the **PRESET** Parameter scroll through the **SET-UP** menu until the **PRESET** parameter is displayed. To enter the **PRESET** Menu press **⊕** until the **LOAD** screen is displayed - this is the first option on the **PRESET** Menu:

Press the **⏴** to scroll down through each of the **PRESET** Menu options. Once the last option has been displayed, pressing the **⏴** will cause the first option to be displayed.

Press **⏵** to scroll up through each of the **PRESET** Menu options. Once the last option has been displayed, press in the **⏵** will cause the first option to be displayed.

Once you have reached the option on the **PRESET** Menu that you wish to enter, press the **⊕** and the edit indicators will appear. You have now entered your chosen option and can use the **⏴** and **⏵** to scroll through the available items in that option. Once you have selected the item simply press the **⊕** to confirm that choice and you will return to the **PRESET** Menu.

Selecting **BACK** will return the display to the **SET-UP** Menu.



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THE MODE PARAMETER

The **MODE** parameter is used to control the firing mode of the Ego7. Each of the selectable modes has its own features as outlined below:

SEMI

This is the default firing mode which produces one shot for every pull of the trigger and is uncapped with the Break-Beam Sensor System (BBSS) enabled.

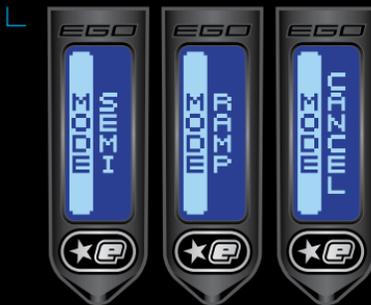
RAMP

This is an assisted mode of fire that allows the rate of fire to **RAMP** to a higher level than the users number of trigger pulls per second.

PLEASE NOTE: CERTAIN MODES MAY ONLY BE AVAILABLE IN CERTAIN COUNTRIES AND ON CERTAIN MODELS OF THE ECLIPSE EGO7. IF IN DOUBT, THE CURRENT FIRING MODE IS DISPLAYED AT ALL TIMES ON THE MAIN SCREEN.

ADJUSTING THE MODE PARAMETER

Scroll through the **SET-UP** menu until the **MODE** parameter is displayed. The current firing mode is shown on the right-hand side of the display. To change the **MODE** parameter press and the edit indicators will appear. You have now entered the **MODE** parameter. The options for the **MODE** parameter are shown below:



Press the button to scroll down through each of the available firing mode options. Once the last option has been displayed, pressing the button will cause the first option to be displayed.

Press the button to scroll up through each of the available firing mode options. Once the first option has been displayed, pressing the button will cause the last option to be displayed.

Press the button to change the firing mode to the displayed option.

Selecting **CANCEL** will return the display to the **SET-UP** Menu.

ROF CAP

The **RATE OF FIRE CAP** parameter allows you to choose if you wish to cap your rate of fire in any of the selectable firing modes.

The **ROF CAP** Menu looks like this:



If the **ROF CAP** is switched **ON**, then the **MAX ROF** Option will feature as an option 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.

To alter the **ROF CAP** setting, scroll through the **SET-UP** Menu until **ROF CAP** is displayed. The current state of the **ROF CAP** will be displayed on the right hand side of the screen. To alter the state of the **ROF CAP**, press the **⊕** to enter the parameter and the edit indicators will appear. Use the **▲** and **▼** to scroll through the options and once you have selected the option that you require press the **⊕** to select that option and return to the **ROF CAP** screen as part of the **SET-UP** Menu.

MAX ROF

The **MAX ROF** is used to control how fast the Ego7 can cycle in each of the capped firing modes (**MILLEN**, **PSP**).

The **MAXIMUM RATE OF FIRE** parameter will only be displayed if you have turned the **ROF CAP** on in the **RATE OF FIRE CAP** parameter.

Scroll through the **SET-UP** Menu until the **MAX ROF** parameter is displayed.

The current value of the **MAXIMUM RATE OF FIRE** is shown in balls per second on the right hand side of the display. Press the **⊕** button to enter **MAX ROF** parameter as shown below:



Press and release the **▲** button to increase the **MAX ROF** value in 0.1 ball per second increments, up to a maximum of 25.0 bps. Press and hold the **▲** button to a maximum of 25.0 bps. Press and hold the **▲** button to increase the **MAX ROF** value more rapidly.

Press and release the **▼** button to decrease the **MAX ROF** value in 0.1 ball per second increments, down to a minimum of 10 bps. Press and hold the **▼** button to decrease the **MAX ROF** value more rapidly.

Press **⊕** to save the **MAX ROF** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **SET-UP** Menu.

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OFF ROF

The **OFF ROF** parameter is used to control how fast the Ego7 cycles when the Break-Beam Sensor System is disabled. This parameter should be set to match the slowest speed of the loading system in use.

Scroll through the **TIMING** Menu until the **OFF ROF** parameter is displayed.

The current value of the **MAXIMUM RATE OF FIRE** (with BBSS off) is shown in balls per second on the right hand side of the display. Press the button to enter the edit function see left.



Press and release the button to increase the **OFF ROF** value in 0.1 ball per second increments, up to a maximum of 15 bps. Press and hold the button to increase the **OFF ROF** value more rapidly.

Press and release the button to decrease the **OFF ROF** value in 0.1 ball per second increments, down to a minimum of 1 bps. Press and hold the button to decrease the **OFF ROF** value more rapidly.

Press to save the **OFF ROF** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **SET-UP** Menu.

THE RAMPSET MENU

The **RAMPSET** Menu provides access to parameters that are used to define the characteristics of the ramping mode of fire that has been selected.

To locate and enter the **RAMPSET** menu scroll the **SET-UP** Menu until **RAMPSET** is displayed and then press the button. This will display **TYPE**, the first option on the **RAMP SET** Menu as shown below:



Press the button to scroll down through each of the items on the **RAMP SET** Menu. Once the last item has been displayed, pressing the button will cause the first item to be displayed.

Press the button to scroll up through each of the items on the **RAMP SET** Menu. Once the last item has been displayed, pressing the button will cause the first item to be displayed.

Press the to edit the displayed parameter.

Selecting **BACK** will return the display to the **SET-UP** Menu.

TYPE

TYPE refers to the style of ramping that the user wishes to enable when in a ramping mode of fire. There are two options in **TYPE**:



STEP

When a pre-determined rate of fire has been achieved (set by the **KICK IN** parameter) the rate of fire ramps to a higher rate as set by either the **ROF CAP** or **MAX ROF** parameters, providing the **SUSTAIN** level is maintained.

LINEAR

When a pre-determined rate of fire has been achieved (set by the **KICK IN** parameter) the rate of fire ramps to an increased rate of fire in proportion to users current rate of fire, providing it remains above the level specified in the **SUSTAIN** parameter.

To edit the **TYPE** parameter scroll through the **RAMP SET** Menu until **TYPE** is displayed. Press the  button, the edit indicators will be displayed and you are now able to edit the parameter by using either the  button or the . When you have successfully edited the parameter press the  to return to the **RAMP SET** Menu.

RATE

NOTE: THE RATE OPTION IS ONLY FEATURED WHEN LINEAR HAS BEEN SELECTED IN THE TYPE PARAMETER IN THE RAMP SET MENU.

RATE is a additional percentage of the current rate of fire that is added to the current rate of fire to create the ramping rate of fire (assuming that **KICK IN** and **SUSTAIN** requirements are satisfied). For example if the **RATE** was set to 50%, once the **KICK IN** rate of pulls per second had been achieved the rate of fire would ramp up to an additional 50% of the current rate of fire.



To edit the **RATE** parameter scroll through the **RAMP SET** Menu until **RATE** is displayed.

Press the  button, the edit indicators will be displayed and you are now able to edit the parameter. Press the  button to increase the **RATE** value in 10% increments. Press and hold the  to increase the **RATE** value more rapidly.

Press the  to decrease the **RATE** value in 10% increments. Press and hold the  to decrease the **RATE** value more rapidly.

When you have successfully edited the parameter press the  to return to the **RAMP SET** Menu.

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PULL NO

The **PULL NO** parameter defines the number of consecutive trigger pulls that must be pulled at the **KICK IN** rate (or above) before the ramp will activate.

To edit the **PULL NO** parameter scroll through the **RAMP SET** Menu until **PULL NO** is displayed. Press the button, the edit indicators will be displayed and you are now able to edit the parameter.



Press the button to increase the **PULL NO** value in increments of 1. Press and hold the button to increase the **PULL NO** value more rapidly.

Press the button to decrease the **PULL NO** value in increments of 1. Press and hold the button to decrease the **PULL NO** value more rapidly.

When you have successfully edited the parameter press the button to return to the **RAMP SET** Menu.

KICK IN

The **KICK IN** parameter defines the rate of trigger pulls per second that must be pulled in order to initiate the ramp, providing that the **PULL NO** criteria is also met.

To edit the **KICK IN** parameter scroll through the **RAMP SET** Menu until **KICK IN** is displayed. Press the button, the edit indicators will be displayed and you are now able to edit the parameter.



Press the button to increase the **KICK IN** value in 1 pull per second increments. Press and hold the button to increase the **KICK IN** value more rapidly.

Press the button to decrease the **KICK IN** value in 1 pull per second increments. Press and hold the button to decrease the **KICK IN** value more rapidly.

When you have successfully edited the parameter press the button to return to the **RAMP SET** Menu.

SUSTAIN

The **SUSTAIN** parameter defines the rate of trigger pulls per second that must be sustained (after **KICK IN** and **PULL NO** criteria have been satisfied) in order to keep the marker firing in ramp.

To edit the **SUSTAIN** parameter scroll through the **RAMP SET** Menu until **SUSTAIN** is displayed. Press the  button, the edit indicators will be displayed and you are now able to edit the parameter.



Press the  button to increase the **SUSTAIN** value in 1 pull per second increments. Press and hold the  button to increase the **SUSTAIN** value more rapidly.

Press the  button to decrease the **SUSTAIN** value in 1 pull per second increments. Press and hold the  button to decrease the **SUSTAIN** value more rapidly.

When you have successfully edited the parameter press the  button to return to the **RAMP SET** Menu

RESTART

The **RESTART** parameter defines the amount of time after the last trigger pull in which the ramp can be restarted with a single trigger pull. If the trigger pull occurs after the **RESTART** time has expired, then the other conditions in the **RAMP SET** Menu will have to be satisfied before ramp will be initiated.

To edit the **RESTART** parameter scroll through the **RAMP SET** Menu until **RESTART** is displayed. Press the  button, the edit indicators will be displayed and you are now able to edit the parameter.



Press the  button to increase the **RESTART** value in 0.1 second increments. Press and hold the  button to increase the **RESTART** value more rapidly.

Press the  button to decrease the **RESTART** value in 0.1 second increments. Press and hold the  button to decrease the **RESTART** value more rapidly.

When you have successfully edited the parameter press the  button to return to the **RAMP SET** Menu.

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THE TIMING MENU

The **TIMING** Menu provides access to parameters which control the Ego7's firing cycle.

Scroll through the Set-up Menu until **TIMING** is displayed and then press . This will display **ROF CAP** the first item on the **TIMING** Menu.



Press the button to scroll down through each of the items on the **TIMING** Menu. Once the last item has been displayed, pressing the button will cause the first item to be displayed.

Press the button to scroll up through each of the items on the **TIMING** Menu. Once the first item has been displayed, pressing the button will cause the last item to be displayed.

Press the button to edit the displayed parameter.

Selecting **BACK** will return the display to the **SET-UP** Menu.

DWELL

The Dwell parameter controls the amount of time that the solenoid is energized and therefore the amount of gas that is released with each shot.

Scroll through the **TIMING** Menu until the **DWELL** parameter is displayed. The current value of the **DWELL** is shown on the right hand side of the display.

Press the button to enter the edit function and the edit indicators will appear on the display.

Press and release the button to increase the **DWELL** time in 0.1 millisecond increments. Press and hold the button to increase the **DWELL** time more rapidly.

Press and release the button to decrease the **DWELL** time in 0.1 millisecond increments. Press and hold the button to decrease the **DWELL** time more rapidly.

Press to save the **DWELL** time and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **TIMING** Menu.



FIRST SHOT DROP OFF (FSDO)

First shot drop off is a reduction in velocity of the first paintball to be fired after the Ego7 has been left un-fired for more than 4 minutes. The **FSDO** parameter is used to define an increase in dwell time for the 'First Shot' in order to combat this problem.

Scroll through the **TIMING** Menu until the **FSDO** parameter is displayed.



The current value of the **FIRST SHOT DROP OFF** is shown on the right hand side of the display.

Press the **⊕** button to enter the edit function and the edit indicators will appear on the display.

Press and release the **⬆** button to increase the **FSDO** value in 0.1ms increments. Press and hold the **⬆** button to increase the **FSDO** value more rapidly.

Press and release the **⬇** button to decrease the **FSDO** value in 0.1ms increments. Press and hold the **⬇** button to decrease the **FSDO** value more rapidly.

Press **⊕** to save the **FSDO** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **TIMING** Menu.

LIGHT

The **LIGHT** parameter determines the amount of time that the backlight stays on after the last button push on the control console.

To edit the **LIGHT** parameter scroll through the **TIMING** Menu until **LIGHT** is displayed. Press the **⊕** button, the edit indicators will be displayed and you are now able to edit the parameter.



Press the **⬆** button to increase the **LIGHT** value in 0.5 second increments. Press and hold the **⬆** button to increase the **LIGHT** value more rapidly.

Press the **⬇** button to decrease the **LIGHT** value in 0.5 second increments. Press and hold the **⬇** button to decrease the **LIGHT** value more rapidly.

When you have successfully edited the parameter press the **⊕** button to return to the **TIMING** Menu.

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SLEEP

The **SLEEP** parameter determines the amount of time that the marker must be inactive before it powers down.

To edit the **SLEEP** parameter scroll through the **TIMING** Menu until **SLEEP** is displayed. Press the  button, the edit indicators will be displayed and you are now able to edit the parameter.



Press the  button to increase the **SLEEP** value in 5 minute increments. Press and hold the  button to increase the **SLEEP** value more rapidly.

Press the  button to decrease the **SLEEP** value in 5 minute increments. Press and hold the  button to decrease the **SLEEP** value more rapidly.

When you have successfully edited the parameter press the  button to return to the **TIMING** Menu



THE FILTER MENU

The **FILTER** Menu provides access to parameters that are used to control the various software filters.

Scroll through the **SET-UP** Menu until the **FILTER** is displayed and then press Select. This will display **EMPTY**, the first item on the **FILTER** Menu **see below**.



Press the **▼** button to scroll down through each of the items on the **FILTER** Menu. Once the last item has been displayed, pressing the **▼** button will cause the first item to be displayed.

Press the **▲** button to scroll up through each of the items on the **FILTER** Menu. Once the first item has been displayed, pressing the **▲** button will cause the last item to be displayed.

Press the **✳** button to edit the displayed parameter.

Selecting **BACK** will return the display to the **SET-UP** Menu.

USING THE BREAK-BEAM SENSOR SYSTEM

NOTE: The type of Break Beam Sensor System that comes as standard with your Ego 7 will be dependant on the model that you have purchased.

During the firing cycle, the breech sensor looks first for an empty breech and then for a paintball within the breech. Only when the sensor has detected both conditions will it allow the Eclipse Ego7 to be fired. The sensor software filter allows you to fine tune the operation of the Break-Beam Sensor System by allowing you to specify how long the sensors have to see an 'empty' breech for and how long they have to see a ball for.



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SETTING THE DEBOUNCE LEVEL

This parameter is used to set the level of **DEBOUNCE** (anti-bounce) on your Ego7. It can also be used to turn the TT Filter on or off. Selecting the TT option from the available parameters turns the TT Filter on, whilst selecting **DEBOUNCE** 1-9 turns the TT Filter off.

Scroll through the **FILTER** Menu until the **DEBOUNCE** parameter is displayed.



The current value of the **DEBOUNCE** setting is shown on the right hand side of the display.

Press the **⊕** button to enter the edit function and the edit indicators will appear on the display.

Press and release the **▲** button to increase the **DEBOUNCE** level in increments of 1. Press and hold the **▲** button to increase the **DEBOUNCE** value more rapidly.

Press and release the **▼** button to decrease the **DEBOUNCE** level in increments of 1. Press and hold the **▼** button to decrease the **DEBOUNCE** value more rapidly.

Press **⊕** to save the **DEBOUNCE** level and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **FILTER** Menu.

SETTING THE EMPTY BREACH DETECTION TIME

Custom and third party bolts can fool the BBSS if they have slots or holes that allow the Break-Beam to pass through. To overcome this problem the **EMPTY** parameter defines how long the Break-Beam has to be in-tact before the breach is considered to be empty.

Scroll through the **FILTER** Menu until the **EMPTY** parameter is displayed.



The current value of the **EMPTY BREACH DETECTION TIME (EMPTY)** is shown on the right hand side of the display.

Press the **⊕** button to enter the edit function and the edit indicators will appear on the display.

Press and release the **▲** button to increase the **EMPTY** value in 1 millisecond increments. Press and hold the **▲** button to increase the **EMPTY** value more rapidly.

Press and release the **▼** button to decrease the **EMPTY** value in 1 millisecond increments. Press and hold the **▼** button to decrease the **EMPTY** value more rapidly.

Press **⊕** to save the **EMPTY** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **FILTER** Menu.

SETTING THE BALL DETECTION TIME

The **BALL** parameter defines how long a paintball has to sit in the breech before it is considered ready to fire.

Scroll through the **FILTER** Menu until the **BALL** parameter is displayed.

The current value of the **BALL DETECTION TIME (BALL)** is shown on the right hand side of the display **see below**.



Press the **⊕** button to enter the edit function and the edit indicators will appear on the display.

Press and release the **⬆** button to increase the **BALL** value in 1-millisecond increments. Press and hold the **⬆** button to increase the **BALL** value more rapidly.

Press and release the **⬇** button to decrease the **BALL** value in 1-millisecond increments. Press and hold the **⬇** button to decrease the **BALL** value more rapidly.

Press **⊕** to save the **BALL** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **FILTER** Menu.

SETTING THE TRIGGER PULL TIME

The **PULL** parameter defines the amount of time that the trigger pull must be detected for before it is recognised as a valid trigger pull.

Scroll through the **FILTER** Menu until the **PULL** parameter is displayed.

The current value of the trigger **PULL TIME (PULL)** is shown on the right hand side of the display **see below**.



Press the **⊕** button to enter the edit function and the edit indicators will appear on the display.

Press and release the **⬆** button to increase the **PULL** value in 1-millisecond increments. Press and hold the **⬆** button to increase the **PULL** value more rapidly.

Press and release the **⬇** button to decrease the **PULL** value in 1-millisecond increments. Press and hold the **⬇** button to decrease the **PULL** value more rapidly.

Press **⊕** to save the **PULL** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **FILTER** Menu.

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41. ADVANCED SET-UP

SETTING THE TRIGGER RELEASE TIME

The **RELEASE** parameter defines the minimum amount of time that the trigger must be released before it is recognised as a valid trigger release.

Scroll through the **FILTER** Menu until the **RELEASE** parameter is displayed.

The current value of the trigger **RELEASE TIME (RELEASE)** is shown on the right hand side of the display **see below**.



Press the **⊕** button to enter the edit function and the edit indicators will appear on the display.

Press and release the **⬆** button to increase the **RELEASE** value in 1-millisecond increments. Press and hold the **⬆** button to increase the **RELEASE** value more rapidly.

Press and release the **⬇** button to decrease the **RELEASE** value in 1-millisecond increments. Press and hold the **⬇** button to decrease the **RELEASE** value more rapidly.

Press **⊕** to save the **RELEASE** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **FILTER** Menu.

SETTING THE BAND HIGH VALUE

The **BAND HI** parameter is only available if **OPTO** has been selected in the **HARDWARE** menu. **BAND HI** defines the exact point in the trigger pull that is considered the activation point.

Scroll through the **FILTER** Menu until the **BAND HI** parameter is displayed.

The current value of the **BAND HI** setting is shown on the bottom right hand side of the display **see below**.



Press the **⊕** button to enter the edit function and the edit indicators will appear on the display.

Press and release the **⬆** button to increase the **BAND HI** value in increments of 1%. Press and hold the **⬆** button to increase the **BAND HI** value more rapidly.

Press and release the **⬇** button to decrease the **BAND HI** level in increments of 1%. Press and hold the **⬇** button to decrease the **BAND HI** value more rapidly.

Press **⊕** to save the **BAND HI** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **FILTER** Menu.

SETTING THE BAND LOW VALUE

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.

Scroll through the **FILTER** Menu until the **BAND LO** parameter is displayed.

The current value of the **BAND LO** setting is shown on the bottom right hand side of the display **see below**.



Press the  button to enter the edit function and the edit indicators will appear on the display.

Press and release the  button to increase the **BAND LO** value in increments of 1%. Press and hold the  button to increase the **BAND LO** value more rapidly.

Press and release the  button to decrease the **BAND LO** level in increments of 1%. Press and hold the  button to decrease the **BAND LO** value more rapidly.

Press  to save the **BAND LO** value and the edit indicators will disappear from the display to indicate that the value has been accepted.

You have now returned to the **FILTER** Menu.

BASIC TRIGGER FILTER SET-UP

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

ADVANCED TRIGGER FILTER SET-UP

In order to optimize the **ID FILTER** 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 42).
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.

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43. ADVANCED SET-UP



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

6. Adjust the **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 **ID FILTER** parameters accordingly.

TRAINING

The **TRAINING** Menu allows the user to enable or disable training mode; this is where the marker cycles but does not fire.

The **TRAINING** Menu looks like this:



If **TRAINING** is switched “On”, then the marker will cycle without opening the valve and will provide an air efficient means of testing your latest selection of setting without creating any unnecessary noise. If **TRAINING** is switched “Off” then the marker will perform as normal.

To alter the **TRAINING** setting, scroll through the **SET-UP** Menu until **TRAINING** is displayed. The current state of the **TRAINING** will be displayed on the right hand side of the screen. To alter the state of the **TRAINING**, press the button to enter the parameter and the edit indicators will appear.

NOTE: THE FASTEST WAY TO SHOOT AN EGO7 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.

Use the **▲** and **▼** buttons to scroll through the options and once you have selected the option that you require press the **⊕** button to select that option and return to the **TRAINING** screen as part of the **SET-UP** Menu

HARDWARE

The **HARDWARE** Menu allows the user to optimise their Hardware settings. You can now choose the method of sensing the trigger movement, which level you wish to power the **BSSS** at, and whether or not you wish the beeper and signal out functions to be enabled.

NOTE: The Beeper (**BEEPER**) and Signal Out (**SIG OUT**) features can be enabled or disabled on any Ego 7, but will not function unless the relevant expansion board is installed.



To alter the **TRIGGER** setting, scroll through the Hardware Menu until **TRIGGER** is displayed. The current setting for the **TRIGGER** will be displayed on the right hand side of the screen. To alter the state of the **TRIGGER**, press the **⊕** button to enter the parameter and the edit indicators will appear.

Use the **▲** and **▼** buttons scroll through the options and once you have selected the option that you require press the **⊕** button to select that option and return to the **TRIGGER** screen as part of the **HARDWARE** Menu .

To alter the **BSSS** setting, scroll through the **HARDWARE** Menu until **BSSS** is displayed. The current setting for the **BSSS** will be displayed on the right hand side of the screen. To alter the state of the **BSSS**, press the **⊕** button to enter the parameter and the edit indicators will appear. Use the **▲** and **▼** buttons to scroll through the options and once you have selected the option that you require press the **⊕** button to select that option and return to the **BSSS** screen as part of the **HARDWARE** Menu .

To alter the **BEEPER** setting, scroll through the **HARDWARE** Menu until **BEEPER** is displayed. The current setting for the **BEEPER** will be displayed on the right hand side of the screen. To alter the setting of the **BEEPER**, press the **⊕** button to enter the parameter and the edit indicators will appear. Use the **▲** and **▼** buttons to scroll through the options and once you have selected the option that you require press the **⊕** button to select that option and return to the **BEEPER** screen as part of the **HARDWARE** Menu.

To alter the **SIGNAL OUT** setting, scroll through the **HARDWARE** Menu until **SIG OUT** is displayed. The current setting for the **SIGNAL OUT** will be displayed on the right hand side of the screen. To alter the setting of the **SIGNAL OUT**, press the **⊕** button to enter the parameter and the edit indicators will appear. Use the **▲** and **▼** buttons to scroll through the options and once you have selected the option that you require press the **⊕** button to select that option and return to the **SIGNAL OUT** screen as part of the **HARDWARE** Menu.

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MAIN MENU

- OFF? Turn **OFF** the Ego7.
- DISPLAY
- L TIMER Display the **GAME TIMER**
 - SHOTS Display the **SHOT COUNTER**
 - AVG ROF Display the **AVERAGE RATE OF FIRE**
 - PEAK ROF Display the **PEAK RATE OF FIRE**
 - CANCEL Return to the **MAIN MENU**
- TIMER
- L GAME Adjust the **GAME TIMER**
 - ALARM Adjust the **ALARM TIMER**
 - START Choose how to start the **GAME TIMER**
 - BACK Return to the **MAIN MENU**
- EXIT Return to the **MAIN MENU**

SET-UP MENU...

- LOCK
- L ON Turn the tournament **LOCK ON**
 - OFF Turn the tournament **LOCK OFF**
 - CANCEL Return to the **SET-UP MENU**
- PRESET
- L LOAD Load a saved **PRESET**
 - SAVE Save a new **PRESET**
 - BACK Return to the **SET-UP MENU**
- MODE
- L SEMI Select **SEMI MODE**
 - RAMP Select **RAMP MODE**
 - CANCEL Return to the **SET-UP MENU**
- ROF CAP
- L ON Turn the **RATE OF FIRE CAP ON**
 - OFF Turn the **RATE OF FIRE CAP OFF**
 - CANCEL Return to the **SET-UP MENU**
- MAX ROF Set the maximum possible rate of fire with **BBSS** on
- OFF ROF Set the **RATE OF FIRE** with **BBSS** disabled

SET-UP MENU CONTINUED

RAMPSET

- TYPE Choose the **TYPE** of ramping
- RATE Choose the **RATE** at which the ramping occurs
- PULL NO Choose the **PULL NUMBER** on which ramping
- KICK IN Choose the rate of fire required for ramp to **KICKIN**
- SUSTAIN Choose the rate of fire required to **SUSTAIN** ramp
- RESTART Specify the time in which ramp can **RESTART**
- BACK Return to the **SET-UP MENU**

TIMING

- DWELL Set the **DWELL TIME**
- FSDO Set the **FIRST SHOT DROP OFF**
- LIGHT Set the **BACKLIGHT TIME**
- SLEEP Set the **POWER OFF TIME**
- BACK Return to the **SET-UP MENU**

FILTER

- DEBOUNCE Set the **DEBOUNCE TIME**
- EMPTY Set the **EMPTY BREECH DETECTION TIME**
- BALL Set the **BALL DETECTION TIME**
- PULL Set the **TRIGGER PULL TIME**
- RELEASE Set the **TRIGGER RELEASE TIME**
- BAND HI Set the **BAND HIGH VALUE**
- BAND LO Set the **BAND LOW VALUE**
- TT TOL Set the **TRIGGER TRANSITION TOLERANCE**
- BACK Return to the **SET-UP MENU**

TRAININ

- ON Turn **TRAINING MODE ON**
- OFF Turn **TRAINING MODE OFF**
- CANCEL Return to the **SET-UP MENU**

HARDWARE

- TRIGGER Choose the **TRIGGER SENSOR METHOD**
- BBSS Choose the power level of the **BBSS**
- BEEPER Choose to enable the **BEEPER** function
- SIG OUT Choose to send a **SIGNAL OUT** each time the trigger is pulled
- BACK Return to the **SET-UP MENU**

EXIT

Return to the **REGULAR DISPLAY MODE**

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47. MENU TREE

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 Eclipse Ego7 using a 5/64th" 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 Q-tip, carefully remove any debris, paint or moisture from the back of the sensor unit and from inside the Sensor Cover.

Carefully slide the sensor unit down approximately half an inch (SEE FIGURE 9.3), allowing it to be lifted free from the Eclipse Ego7 body and using another dry Q-tip, remove any grease or debris build-up from the front of the sensor unit (SEE FIGURE 9.4).



FIG 9.1



FIG 9.2



FIG 9.3

(CONTINUED)

Remove the rubber finger detent and using a dry Q-tip clean the detent and it's location point in the Eclipse Ego7 Body. Replace clean detent back into the Eclipse Ego7 body (SEE FIGURE 9.4) and slide sensor unit back into place (SEE FIGURE 9.5).

Replace the Sensor Cover and using a 5/64th" 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 Eclipse Ego7.

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

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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 Ego 7 that you have.

Disconnect the 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, taking care not to lose any of the washers that form the spring pack inside the regulator (SEE FIGURE 10.2).

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

The spring pack comprises of 16 sprung washers, which must be in the correct configuration for the inline regulator to perform at the required pressure range (SEE FIGURE 10.4).

Insert a 1/8th inch 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 10.5) 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 IF THE ADJUSTER SCREW IS REMOVED INCORRECTLY.



FIG 10.1



FIG 10.2



FIG 10.3



FIG 10.4



FIG 10.5

(CONTINUED)

Using a dry Q-tip, clean the seal that sits at the top of the body of the bottom section of the Inline regulator (SEE FIGURE 10.6). Using a light oil and a fresh Q-tip, 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 top face of adjuster unit for any excessive wear or damage as this could cause inline regulator to creep (SEE FIGURE 10.7).

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 10.8). Apply light pressure to the top of the adjuster screw and using a 1/8th" 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.

Next take the piston and spring stack 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 10.9). Insert the piston and spring stack into the top half of the inline regulator body (SEE FIGURE 10.10).

Keeping the top half of the inline regulator upside down, screw the two halves of the inline regulator together (SEE FIGURE 10.11).

You have now stripped, cleaned, lubricated and assembled your inline regulator.

NOTE: IF ANY SEALS ARE DAMAGED, REPLACE AS NECESSARY. EXTRA SEALS ARE AVAILABLE IN EGO PARTS KITS AVAILABLE ONLINE AT WWW.PLANETECLIPSE.COM.



FIG 10.6



FIG 10.7



FIG 10.8



FIG 10.9



FIG 10.10



FIG 10.11

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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.

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 Q-tip, carefully clean the seal on the LPR piston (SEE FIGURE 11.4). If the seal is damaged, replace as necessary. Once the seal has been cleaned, lubricate with a light application of Eclipse Paintball Gun Oil so that it is ready for re-assembly.



FIG 11.1



FIG 11.2



FIG 11.3



FIG 11.4

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.

(CONTINUED)

Insert the **1st Gold** coloured spring 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 Eclipse Ego7, use a dry Q-tip to clean the seal inside the LPR body (SEE FIGURE 11.7). Lubricate this seal using a light 3 in 1 oil.

Replace the LPR cap by screwing it onto the LPR body in the Eclipse Ego7 (SEE FIGURE 11.8).



FIG 11.5



FIG 11.6

FIG 11.7



FIG 11.8

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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 Ego 7 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 Eclipse Ego7 (SEE FIGURE 12.1).

Using a 3/16" hex key, unscrew and remove the rammer cap at the rear of the Eclipse Ego7 (SEE FIGURE 12.2).

Raise the front of the Eclipse Ego7 and tap the Eclipse Ego7 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 12.4) and the condition of the bumper at the rear of the shaft (SEE FIGURE 12.6) overleaf.

Replace any worn seals/bumpers using authentic Eclipse Ego7 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 replace the rammer into the rear of the Eclipse Ego7 body with the bumper at the back (SEE FIGURE 12.7).

Note: Use Eclipse Paintball Gun Oil.

Replace the rammer cap, using the 3/16" hex key to secure it into the Eclipse Ego7 body (SEE FIGURE 12.8).

Do Not over tighten the rammer cap screw.

Noting the position of the rammer in the Eclipse Ego7 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

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HOW TO STRIP THE EGO7...

⚠ 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 QEVs and the appearance of the LPR body may vary according to the model of Ego7 that you have.

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 5/64th" hex key remove the six screws that attach the Ego7 rubber grips to the Ego7 grip frame (SEE FIGURE 13.1). Unplug the solenoid and unplug the break beam sensor system from their connections on the Ego7 circuit board (SEE FIGURE 13.2).

Using a 1/8th" hex key undo the two frame retaining screws (SEE FIGURE 13.3) and remove the frame from the Ego7 body, taking care not to damage any wires (SEE FIGURE 13.4). Take the Ego7 body and turn it so that the underside of the solenoid, QEV and Valve plug are all be visible and accessible (SEE FIGURE 13.5). Using a 1/8th" 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 1/8th" hex key remove the valve plug from the underside of the Ego7 body (SEE FIGURE 13.8). A solid brass or Delrin surface should now be visible - this is the bottom of the exhaust valve guide (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 Ego7 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 using authentic Ego7 parts.

You have now stripped the Ego7.



FIG 13.7



FIG 13.8



FIG 13.9



FIG 13.10



FIG 13.11



FIG 13.12

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HOW TO ASSEMBLE THE EGO7

⚠ 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.

Having stripped down the Ego7, here is a guide on how we recommend you re-assemble it.

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 Ego7 body (SEE FIGURE 14.4). Make sure that the exhaust valve guide is lined up correctly and then take a 1/8th" hex key and replace the valve plug (SEE FIGURE 14.5).

NOTE: DO NOT OVER TIGHTEN THE VALVE PLUG SCREW!

Lubricate both of the O-rings on the LPR body with Eclipse Oil (SEE FIGURE 14.6) and slide the LPR assembly into the front of the Ego7 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

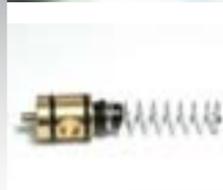


FIG 14.2



FIG 14.3



FIG 14.4



FIG 14.5



FIG 14.6



FIG 14.7

(CONTINUED)

Using a 1/8th" 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 Ego7 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 1/8th" hex key (SEE FIGURE 14.10).

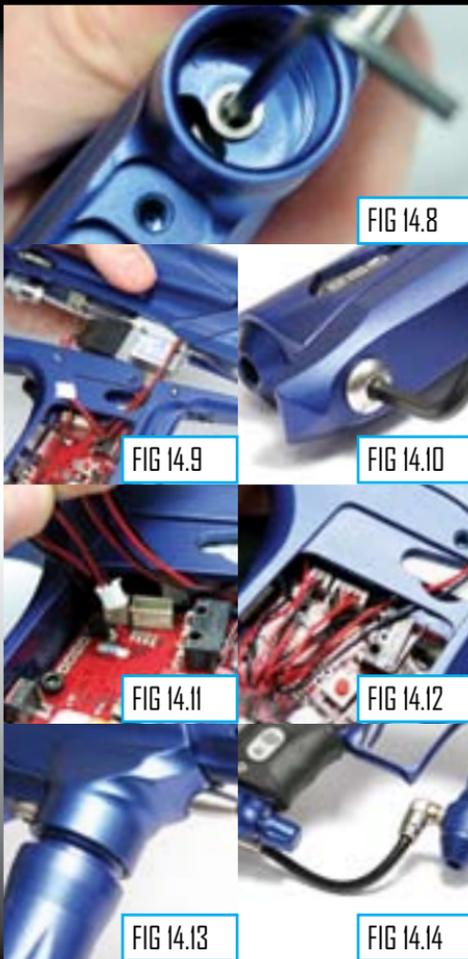
NOTE: CHECK THAT NO WIRES ARE TRAPPED BEFORE TIGHTENING DOWN THE FRAME SCREWS

Ensure that the break beam sensor system cables lie neatly in the slots provided for them in the Ego7 grip frame and connect the solenoid and the break beam sensors to their relevant connections on the Ego7 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 MICROSWITCH LEVER.

Re-attach the Ego7 rubber grips to the frame by using a 5/64th" hex key to replace the 6 rubber 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 Ego7.



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STRIPPING AND CLEANING THE TRIGGER

Having removed the trigger frame completely from the Ego7 body, use a 1/16" hex key to loosen the trigger pin retaining set screw at the rear of the trigger (SEE FIGURE 15.1). Use a small hex key to gently push the trigger pin out of the frame from one side (SEE FIGURE 15.2). Use a 5/32" hex key to remove the two screws that hold the bearing carrier in place in the top of the trigger frame (SEE FIGURE 15.3). Gently pull the bearing carrier upwards and remove it from the frame (SEE FIGURE 15.4). Clean the bearings and the bearing carrier to ensure that they are free from dirt, paint or moisture (SEE FIGURE 15.5).



FIG 15.1



FIG 15.2



FIG 15.3



FIG 15.4



FIG 15.5

(CONTINUED)

Gently move the trigger forward and carefully remove it from the trigger frame taking care not to damage the micro switch or the optical sensors (SEE FIGURE 15.6). Clean the trigger thoroughly and also clean the space within the frame that the trigger sits in (SEE FIGURE 15.7).

Replace the trigger into the frame making sure that it is sitting in the correct position so that the bottom prong passes cleanly through the optical sensor and the set screw moves towards the micro switch. Replace the bearing carrier and using the 5/32" hex key tighten the two bearing carrier retaining screws down into the frame (SEE FIGURE 15.8). Having lined up the trigger with the bearing carrier and the frame, replace the trigger pin to hold the trigger securely in place in the frame (SEE FIGURE 15.9). Using a 1/16" hex key tighten the trigger pin retaining set screw at the rear of the trigger to hold the trigger pin firmly in place in the frame (SEE FIGURE 15.10).

You have now stripped and cleaned your Ego7 trigger.



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61. MAINTENANCE



CLEANING AND LUBRICATING THE BOLT

This procedure can be performed with the Eclipse Ego7 gassed up as well as de-gassed.

Raise the bolt pin and remove the bolt and bolt pin from the Eclipse Ego7 marker body.

Using a dry Q-tip remove any paint or grease from the surface of the bolt (SEE FIGURE 15.1).

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 EGO RAMMER AND BOLT.



FIG 15.1

CLEANING THE QEV

Note: Certain models of the Ego7 may contain more than one QEV.

The QEV used on the Ego7 is new and improved compared to previous versions. One of the improvements that we wanted to prioritise was the fact that you can now strip and clean your QEV without the use of any specialist tools. With the frame already separated from the marker body and the manifold disconnected from the QEV, use the correctly sized flat head screw driver to unscrew the banjo fitting section of the QEV from the marker body (SEE FIGURE 16.1).

With the QEV completely removed from the marker, gently unscrew the silver barb cap from the QEV body (SEE FIGURE 16.2). This will allow the cone shaped internal seal to be removed from the barb cap and cleaned if necessary. At this stage your QEV should be split into three separate components; QEV body (blue), QEV seal (black) and barb cap (silver) (SEE FIGURE 16.3). Check that the 4 inlet holes and the exhaust ports on the QEV body are free from dirt and debris as this will effect the performance of your QEV. If they are at all blocked, remove any debris to unblock them. If your internal QEV seal is damaged then replace that at this time

To rebuild your QEV insert the cone shaped internal seal into the barb cap with the tip of the cone pointing towards the barb. Having checked that the seal is sitting snugly inside the barb cap, screw the barb cap onto the QEV body. Using the correct sized flat head screw driver, screw the banjo fitting section of the QEV to the marker body making sure that the QEV lines up parallel to the marker body when it is tight.

Reconnect the low pressure hose from the manifold to your QEV and re-assemble the marker. You have now successfully stripped and cleaned your QEV.

⚠ WARNING //

WARNING: DO NOT OVER-TIGHTEN THE BANJO FITTING!



FIG 16.1



FIG 16.2



FIG 16.3

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63. MAINTENANCE



THE EGO7 SOLENOID ASSEMBLY

Ego7 utilises a new purpose built solenoid. Unlike previous Ego solenoids - the Ego7 solenoid is **NON-serviceable** and as such **ANY** attempt to strip or service your Ego7 solenoid will immediately void your warranty.

If you experience any issues with your Ego7 solenoid then please contact your nearest **Eclipse Service Centre** for details on how to get a replacement Ego7 solenoid. Details of Eclipse Service Centres can be found (SEE PAGE 69) at the back of this manual or in the Support section online at planetecclipse.com.



SYMPTOM	POSSIBLE CAUSE	SOLUTION
Although a fresh battery has been fitted, the Eclipse Ego7 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 Eclipse Ego7 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 Eclipse Ego7 Parts kit. Ensure seals are sealed correctly.
	Damaged Eclipse Ego7 Solenoid.	Replace Eclipse Ego7 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 Eclipse Ego7 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 015 seals.
Gas vents quickly down barrel as soon as it is gassed up.	The Exhaust Valve has become jammed in the brass valve guide.	Replace Exhaust Valve and brass 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 Ego7 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 leaks.	Main Rammer seal is damaged.	Replace 011 seal on Rammer Shaft.
	Faulty seals inside QEV.	Strip QEV and inspect seals for debris or damage.
The Ego7 does not fire.	Trigger is set up incorrectly.	Set trigger up correctly. (SEE ADVANCED SET-UP SECTION)
	Solenoid is not plugged into the Eclipse Ego7 PCB.	Plug solenoid into port on the Eclipse Ego7 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 Ego7 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 Eclipse Ego7 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.



68. FAULT FINDING

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Ego7 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.
How can I get the best performance out of my gun?	Check your set-up.	Using a force-fed loader (Halo B, Pulse or Reloader B2) with the Break-Beam Sensor System enabled will give the highest performance.
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 Ego7 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 CENTRES

Are you unsure of where to send your **Eclipse Ego7** to be repaired or serviced? If your local Eclipse dealer can't assist you, why not contact your nearest Certified Eclipse Service Centre and arrange to send it into them to undertake any work that you require.



USA & CANADA

PLANET ECLIPSE LLC
RHODE ISLAND - USA
Call: 401 247 9061
Fax: 401 247 0931
Email: ustechnical@planetecclipse.com
Visit: www.planeteclipse.com

PEVS PAINTBALL
MANASSAS - USA
Call: 703 257 5090
Visit: www.pevs.com

PAINTBALL SUPPLY SHACK
RHODE ISLAND - USA
Call: 401 353 6040

PAINTBALL CENTRAL
HAWAII
Call: 808 533 0462
Fax: 401 247 0931
Email: ron@pbchawaii.com
Visit: www.pbchawaii.com

VELOCITY PAINTBALL
SOUTHERN CALIFORNIA - USA
Call: 619 479 3533
Fax: 619 479 3630
Visit: www.velocitypaintball.com

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Email: info@paintball.ru
Visit: www.paintball.ru

EXTREME SKATE & PAINT
FLORIDA - USA
Call: 305 248 3145
Email: mikecanto1@msn.com

BADLANDS
CANADA
Call: 416 245 3856
Fax: 416 245 4517
Email: info@badlandspaintball.com
Visit: www.badlandspaintball.com

DXG PAINTBALL
NORTHERN CALIFORNIA - USA
Call: 707 255 5166
Email: dcravea@speakeasy.net

PRO STAR PAINTBALL
NEBRASKA - USA
Call: 402 403 1880
Fax: 402 292 0223
Email: walt@prostarpb.com
Visit: www.prostarpb.com

MAXIMUM PAINTBALL
TEXAS - USA
Call: 210 659 0424
Fax: 210 659 2342
Email: maximumpbsprts@sbcglobal.net
Visit: www.xfactor1team.com

DPM
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Visit: www.paintballcamp.com

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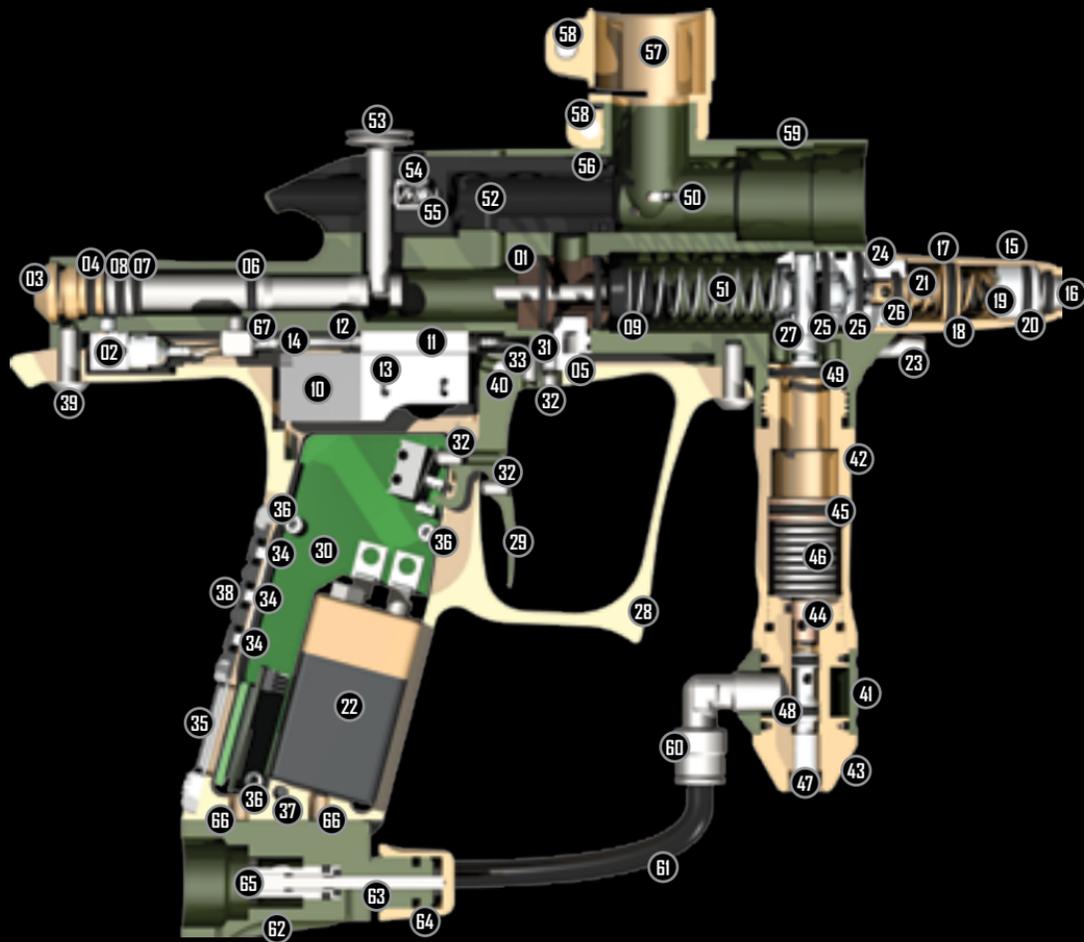
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70. PARTS LIST



PART NAME

- | | | | | | |
|----|----------------------------|----|------------------------------------|----|--------------------------|
| 01 | Valve Guide | 28 | Frame | 55 | Bolt Plunger Spring |
| 02 | QEV | 29 | Trigger | 56 | Bolt O-Ring |
| 03 | Rammer Cap | 30 | Printed Circuit Board | 57 | Clamping Feed Tube |
| 04 | Rammer Cap O-Ring | 31 | Magnet | 58 | Clamping Feed Tube Screw |
| 05 | Valve Plug | 32 | Trigger Adjuster Screw | 59 | Body |
| 06 | Front Rammer O-Ring | 33 | Trigger Pin Locking Screw | 60 | 1/4" Elbow |
| 07 | Front Rammer Bumper O-Ring | 34 | Push Buttons | 61 | 1/4" Hose |
| 08 | Rear Rammer O-Ring | 35 | Display Window | 62 | OOPS Body |
| 09 | Exhaust Valve Assembly | 36 | PCB Screw | 63 | OOPS Pin |
| 10 | Solenoid | 37 | Grip Screw | 64 | OOPS On/Off Knob |
| 11 | Minifold | 38 | Navigation Console | 65 | OOPS Insert |
| 12 | Minifold Barb | 39 | Frame Screw | 66 | OOPS Adjuster Screw |
| 13 | Solenoid Retaining Screw | 40 | Trigger Pin | 67 | Banjo Barb |
| 14 | Low Pressure Hose | 41 | Swivel Collar | | |
| 15 | LPR Cap | 42 | Inline Regulator Top | | |
| 16 | LPR Adjuster Screw | 43 | Inline Regulator Bottom | | |
| 17 | LPR Piston | 44 | Inline Regulator Piston | | |
| 18 | LPR Piston O-Ring | 45 | Inline Regulator Piston O-Ring | | |
| 19 | Adjuster Piston | 46 | Inline Regulator Belleville Spring | | |
| 20 | Adjuster Piston O-Ring | 47 | Inline Regulator Adjuster | | |
| 21 | LPR Spring Heavy (Gold) | 48 | Inline Regulator Adjuster O-Ring | | |
| 22 | 9 Volt Battery | 49 | Inline Regulator Top O-Ring | | |
| 23 | Torpedo | 50 | Anti-Double Ball Finger | | |
| 24 | LPR Body | 51 | Valve Spring | | |
| 25 | LPR Body O-Ring | 52 | Bolt | | |
| 26 | LPR Body Groove O-Ring | 53 | Bolt Pin | | |
| 27 | FRM Bolt | 54 | Bolt Plunger | | |

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SCREW	QTY	DESCRIPTION
	5	PCB SCREW (3), BEARING CARRIER (2)
	8	RUBBER GRIP SCREW (6), BBSS COVERS SCREW (2)
	2	FEED NECK SCREW
	2	FRAME SCREW
	1	FRONT REGULATOR MOUNT SCREW
	1	INLINE REGULATOR ADJUSTER SCREW
	1	MICROSWITCH SCREW
	4	TRIGGER ADJUSTMENT SCREW
	2	SLIDE RAIL SCREW
	1	VALVE PLUG
	1	LPR ADJUSTER SCREW
	1	ON/OFF BLANKING PLUG

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

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EGO7 CCU UPGRADE KITS

This unique kit allows you to swap and customise the look of your Ego7 marker by replacing these key components.



EGO7 QEV

Replacement QEV for the Ego7. (Not compatible with other Ego's)



LASER EYE KIT

Add a Red Laser Beam to the breach of your Ego7 or Etek marker with this Laser Eye Kit! This product is not compatible with other Egos.



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 Ego7.



ECLIPSE EGO/ETEK TOOL TUBE

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



ECLIPSE GUN OIL

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



ZICK KIT

Kick? What Kick? Add the ZICK Kit and the existing amount of kick when shooting your Ego 7 will be reduced even further. Includes a replacement rammer and rammer cap that must only be used together.



BALL DETENTS

10 Replacement rubber Detents for your Ego7.



ECLIPSE SHAFT 2 BARREL KIT

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



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75. SPARES



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