ESZK

OPERATORS MANUAL

⚠ WARNING ⚠

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

1. **PLEASE READ AND UNDERSTAND ALL INSTRUCTION MANUALS BEFORE USE.**

2. The Eclipse Etek4 is not a toy. **PAINTBALL SAFETY RULES MUST BE FOLLOWED AT ALL TIMES.**

3. Careless or improper use, including failure to follow instructions and warnings within this User Manual and attached to the Etek4 could cause death or serious injury.

4. Do not remove or deface any warnings attached to the Etek4.

5. Paintball industry standard eye/face/ear and head protection designed specifically to stop paintballs and meeting ASTM standard F1776 (USA) or CE standard (Europe) must be worn by the user and any person within range. Proper protection must be worn during assembly, cleaning and maintenance.

6. Hearing protection should be worn.

7. Never shoot at a person who is not wearing proper protection.

8. Never look directly into the barrel of the marker. Accidental discharge into the eyes may cause permanent injury or death. Never look into the barrel or breech area of the Etek4 whilst the marker is switched on and able to fire.

9. Keep the Etek4 switched off until ready to shoot.

10. Treat every marker as if it is loaded and ready to fire.

11. The electronic on/off is the markers safety, always switch off the marker when not in use. Always fit a barrel-blocking device to the Etek4 when not in use.

12. Always remove all paintballs from the Etek4 when not in use on the field of play.

13. Never point the Etek4 at anything you do not intend to shoot.

14. Do not shoot at persons within close range.

15. Do not field strip or remove any parts while the marker is pressurised.

16. Do not pressurise the Etek4 without the bolt system correctly installed, as high-pressure gas will be emitted.

17. Do not fire the Etek4 without the bolt system correctly installed.

18. Never put your finger or any foreign objects into the paintball feed tube of the Etek4.

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

20. Always remove the first stage regulator and relieve all residual gas pressure from the Etek4 before disassembly.

21. Always remove the first stage regulator and relieve all residual gas pressure from the Etek4 for transport and storage.

⚠ **WARNING** ⚠

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

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

23. Always store the Etek4 in a secure place. Persons under 18 years of age must have adult supervision when using or handling the Etek4.

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

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

26. Use compressed air/nitrogen only. **DO NOT** use any other compressed gas or pressurised liquid including CO_2.

27. Always follow instructions, warnings and guidelines given with any first stage regulator you use with the Etek4.

28. Use 0.68 calibre paintballs only.

29. Always measure your marker's velocity before playing paintball, using a suitable chronograph.

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

31. Any installations, modifications or repairs should be carried out by a qualified individual at a licensed and insured paintball facility.

THIS USER MANUAL MUST ACCOMPANY THE PRODUCT IN THE EVENT OF RESALE OR NEW OWNERSHIP. SHOULD YOU BE UNSURE AT ANY STAGE YOU MUST SEEK EXPERT ADVICE (SEE SERVICE CENTRES PAGE 84).

THIS USERS MANUAL IS IN ENGLISH. It contains important safety guidelines and Instructions. Should you be unsure at any stage, or unable to understand the contents of this manual you must seek expert advice.

LE MODE D'EMPLOI EST EN ANGLAIS. Il contient des instructions et mesures de sécurité importantes. En cas de doute, ou s'il vous est impossible de comprendre le contenu du monde d'emploi, demandez conseil à un expert.

ESTE MANUAL DE USUARIOS (OPERARIOS) USARIOS ESTÁ EN INGLÉS. Contiene importantes normas de seguridad e instrucciones. Si no está seguro de algùn punto o no entiende los contenidos de este manual debe consultar con un experto.

DIESE BEDIENUNGS - UND BENUTZERANLEITUNG IST IN ENGLISCH. Sie enthält wichtige Sicherheitsrichtlinen und · bestimmungen. Solten Sie sich in irgendeiner Weise unsicher sein, oder den Inhalte dies Heftes nicht verstehen, lassen Sie sich bitte von einen Experten beraten.

ETEK

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MAINTENANCE
A guide to performing routine maintenance.

UPGRADING
Information on how to upgrade your Etek4 with Official Eclipse upgrade components.

Information on how to resolve any problems that might arise with your Etek4.

Tables of components that make up the Etek4.

Information on the location of your nearest Etek4 Service Centre.

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

Available upgrade / repair kits for your Etek4.

SECTION HEADERS OF THIS MANUAL THAT ARE PRINTED IN ■ , CONTAIN INFORMATION REGARDING THE EMORTAL BOARD UPGRADE.

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PLEASE READ ALL THE WARNINGS ON PAGES 2 & 3 BEFORE USING THIS MARKER

SWITCHING ON THE ETEK4

At the rear of the frame is the navigation console. Press and hold the Select button ⏻ (SEE FIGURE 1A). Release the Select button ⏻ when the LEDs light up and your Etek4 will begin its power up sequence.[1,2]

SWITCHING OFF THE ETEK4

Press and hold the Select button ⏻. Release the Select button ⏻ when all three of the LEDs on the navigation console turn red. The LEDs will extinguish one by one and the Etek4 will turn off.

FIRING THE ETEK4

If the Break Beam Sensor System (BBSS) is disabled, pull the trigger to fire the Etek4. If the Break Beam Sensor System is enabled and there is a paintball in the breech, pulling the trigger will also fire the Etek4. The entire firing sequence is controlled electronically by the Etek4 circuit board and solenoid, enabling any user to achieve high rates of fire easily.

THE ETEK4 LED CIRCUIT BOARD

There are three sockets on the Etek4 circuit board, the BBSS connector Ⓐ, the Etek4 solenoid connector Ⓑ and the micro-switch connector Ⓒ. There is a tournament lock button in between the BBSS and micro-switch connectors Ⓓ. Information on the tournament lock button functionality can be found on page 29 (SEE FIGURE 1B).

[1] *When the Etek4 is turned on, the Break Beam Sensor System is automatically enabled.*
[2] *The colours displayed during the power up sequence may vary depending on the region the marker was originally purchased.*

ETEK LT   ETEK AM   FIG 1A

FIG 1B

SWITCHING ON THE ETEK4 EMORTAL BOARD

To switch on the Etek4 press and hold the ⬡ button until the screen lights up and the Emortal board begins its power up sequence (FIGURE 2A).[1,2]

SWITCHING OFF THE ETEK4 EMORTAL BOARD

Press and hold the ⬡ button until the display shows *TURN OFF*. Release the ⬡ button and re-press it to turn off the Etek4.

FIRING THE ETEK4

If the Break Beam Sensor System (BBSS) is disabled, pull the trigger to fire the Etek4. If the Break Beam Sensor System is enabled and there is a paintball in the breech, pulling the trigger will also fire the Etek4. The entire firing sequence is controlled electronically by the Etek4 Emortal board and solenoid, enabling any user to achieve high rates of fire easily.

THE ETEK4 EMORTAL BOARD

There are three sockets on the Etek4 circuit board, the BBSS connector Ⓐ, the Etek4 solenoid connector Ⓑ and the micro-switch connector Ⓒ. There is a tournament lock button parallel with the middle push button Ⓓ. Information on the tournament lock button functionality can be found on page 47 (SEE FIGURE 2B).

[1] *When the Etek4 is turned on, the Break Beam Sensor System is automatically enabled.*
[2] *By continuing holding down the ⬡ button when turning on the Emortal board the software version number will be displayed.*

FIG 2A

FIG 2B

USING THE BREAK BEAM SENSOR SYSTEM

When the Etek4 is powered up, the Break Beam Sensor System (BBSS) is automatically enabled.

To switch off the Break Beam Sensor System, push and hold the Select button ⏻ for 0.5 seconds. The 'E' on the navigation console will flash purple indicating that the Break Beam Sensor System has been disabled.

To switch on the Break Beam Sensor System, push and hold the Select button ⏻ for 0.5 seconds. The 'E' on the navigation console will flash either yellow (no ball detected) or light blue (ball detected) indicating that the Break Beam Sensor System has been enabled.

Additional features of the Etek4 Break Beam Sensor System are covered in full in the *'Understanding the BBSS Operation'* section on page 30 of this User Manual.

PURPLE LIGHT - BBSS DISABLED

YELLOW LIGHT - NO BALL DETECTED

LIGHT BLUE LIGHT - BALL DETECTED

USING THE EMORTAL BOARD BREAK BEAM SENSOR SYSTEM

The Break Beam Sensor System (BBSS) is used to detect when a paintball is ready to fire from the Etek4. If no paintball is ready then the BBSS will inhibit the Etek4 from firing. This prevents the Etek4 from 'chopping' paintballs that are not fully loaded into the marker.

To switch off the Break Beam Sensor System, press and hold the ⬣ button for 0.5 second (SEE FIGURE 3A).

The Break Beam Sensor System indicator on the top right of the LCD will change from ⊏⊐ (enabled) to ⎯ (disabled).

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

When the Break Beam Sensor System is enabled, the indicator will change depending on whether the system has detected a ball or not. When no ball has been detected the indicator looks like this ⊏⊐, when a ball has been detected the indicator changes to look like this ⊏■⊐.

Additional features of the Emortal Board's Break Beam Sensor System are covered in full on page 37 of this user manual.

FIG 3A ✕

FACTORY SET-UP GUIDE

Before using the Etek4 it is important to make sure that the inline regulator, low pressure regulator and all electronically controlled parameters are set correctly, as some of these may have a negative (and potentially damaging) effect on the marker (in terms of performance and reliability), if incorrectly set.

The steps below will restore the Etek4 to the state that it left the factory.

·Reset the control parameters to the factory settings (see page 34).

·Check the inline regulator adjuster screw is set to $4^{1/2}$ turns clockwise from its maximum output (counter-clockwise) position (SEE FIGURE 4A). This will ensure the inline regulator is set to an output pressure that will not damage the Etek4 when supplied with compressed air/nitrogen (see page 26 for more information on the inline regulator).

·Check the low pressure regulator adjuster screw is set to two turns clockwise from being flush with the LPR Cap (SEE FIGURE 4B) (see page 26 for more information on the low pressure regulator).

FIG 4A

FIG 4B

INSTALLING A 9V BATTERY

Ensure that the Etek4 is switched off. Place the marker on a flat surface in front of you with the feed tube furthest away from you and the barrel pointing to the right.

Using a 5/64" (2mm) hex key, remove the three countersunk screws that holds the rubber grip onto the grip frame. Peel the rubber grip to the right to expose the electronics within the grip frame.

If present, remove the existing 9 volt battery by sliding your thumb into the recess provided below the battery and lever the battery gently out of the frame (SEE FIGURE 5A).

On top of the battery you will see the battery connector and wire that is used to connect the battery to the circuit board. Gently separate the battery connector from the battery, so that the existing battery can be disposed of accordingly and taking a new 9 volt Alkaline battery (type PP3, 6LR61, MN1064)[1] connect it to the battery connector (SEE FIGURE 5B).

The battery will only connect to the battery connector one way. If you are unsure of how to install a new battery please contact your nearest Eclipse Service Centre.

Ensure that all of the wires are within the recess of the frame and not trapped in micro-switch, then replace the rubber grip and tighten the countersunk grip screws using the 5/64th (2mm) hex key.

DO NOT OVER-TIGHTEN THE SCREWS.

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

FIG 5A

FIG 5B

ETEK

BOLT PIN
BOLT
RAMMER HOUSING
FEED LEVER
FEEDNECK
BODY
VALVE SPRING
EXHAUST VALVE
LPR BODY
A
B
VALVE PLUG
LPR CAP
ZICK2 RAMMER ASSEMBLY
TORPEDO
G
C
D
FRM SCREW
FRAME ASSEMBLY
F
INLINE REGULATOR ASSEMBLY
E
BATTERY
FRAME SCREW
FRAME SCREW
MACROLINE FITTING
OOPS KNOB
EYE COVER SCREW (A)
EYE COVER (B)
SOLENOID ASSEMBLY (C)
OOPS BODY
MACROLINE FITTING
MACROLINE
TRIGGER RETAINING CLIP (D)
CIRCUIT BOARD (E)
TRIGGER (F)
SOLENOID MANIFOLD ASSEMBLY (G)

THE SHAFT4 BARREL

The Eclipse Etek4 comes as standard with an Eclipse Shaft4 barrel.[1,4]

The barrel screws into the front of the Etek4 using a *right hand thread* meaning that if you hold the Etek4 pointing away from you the barrel screws into the body in a counter-clockwise direction.[2]

The barrel comprises of two parts, a barrel back (A) and a barrel tip (B). The two parts are joined together with a *left hand thread* meaning that if you hold the barrel, with the back section nearest you, the barrel tip screws in a *clockwise direction*.

On the barrel back there is a 016 NBR 70 o-ring (C) which prevents the Shaft4 barrel from vibrating loose from the Etek4 body when the marker is fired. There is also a 016 NBR 70 o-ring on the front of the barrel back (D) helps with alignment when the two barrel sections are screwed together.

Replace and lubricate these o-rings with Eclipse Grease as necessary.
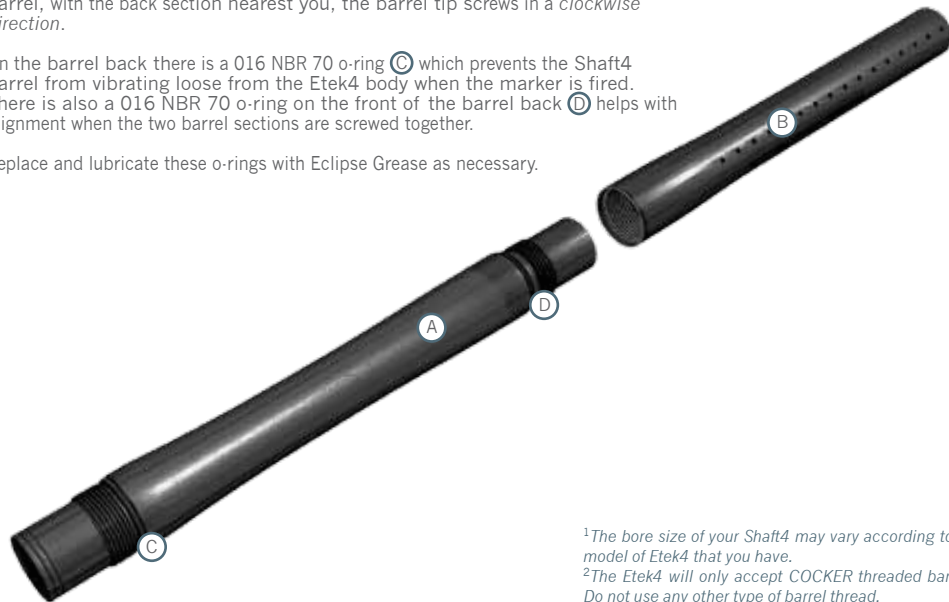
[1] The bore size of your Shaft4 may vary according to the model of Etek4 that you have.
[2] The Etek4 will only accept COCKER threaded barrels. Do not use any other type of barrel thread.
[3] The Eclipse Shaft4 tip and back barrel sections are not interchangeable with older version Shaft tip and back barrel sections (including Shaft3 barrel kits).
[4] The model of barrel accompanying your Etek4 may differ from that stated in this manual.

SL3 INLINE REGULATOR

[1] *Only use the SL3 inline regulator with the ETEK4.*
[2] *Only use the SL3 Ego spring with the ETEK4 SL3 inline regulator.*
[3] *If the purge poppet assembly is removed for maintenance ensure is it re-installed correctly, failure to do so may seriously damage the ETEK4 solenoid valve.*
[4] *The macroline fitting* **DOES NOT** *need to be removed for regular maintenance.*

#016 NBR70

SL3 PISTON

SL3 INLINE REGULATOR TOP[1]

SL3 EGO SPRING[2]

#011 NBR70

ADJUSTER TOP

#008 NBR70

REGULATOR SEAL

#14X2 NBR70 OR #016 NBR70

#010 NBR70

PURGE POPPET ASSEMBLY[3]

#011 NBR70

ADJUSTER SCREW

LPR BODY

1/8 NPTF MACROLINE FITTING[4]

PISTON SPRING

LPR PISTON

#013 NBR70

INLINE REGULATOR SWIVEL

ADJUSTER SPRING

#007 NBR70

ADJUSTER SCREW

#016 NBR70

INLINE REGULATOR BOTTOM

LPR CAP

LOW PRESSURE REGULATOR

ETEK4 BOLT ASSEMBLY

#014 NBR70

BOLT PIN

BOLT

#015 NBR70

BOLT PLUNGER

BOLT SPRING

RAMMER CAP

#011 NBR70

#010 NBR70

RAMMER
CUSHION

RAMMER
BUMPER

011 NBR70

#009 NBR70

#009 NBR70

RAMMER
SHAFT

ZICK2 RAMMER ASSEMBLY

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ESEK

MANIFOLD/BODY GASKET

FILTER

INLET BARB

LOW PRESSURE HOSE

SOLENOID MANIFOLD

MANIFOLD/SOLENOID GASKET

BARB CLIP

M2.5x5 MANIFOLD RETAINING SCREWS

SOLENOID CLIP

SOLENOID BODY

SOLENOID PILOT SECTION

SOLENOID CLIP

SPOOL SHAFT

M1.6X16 SOLENOID RETAINING SCREWS
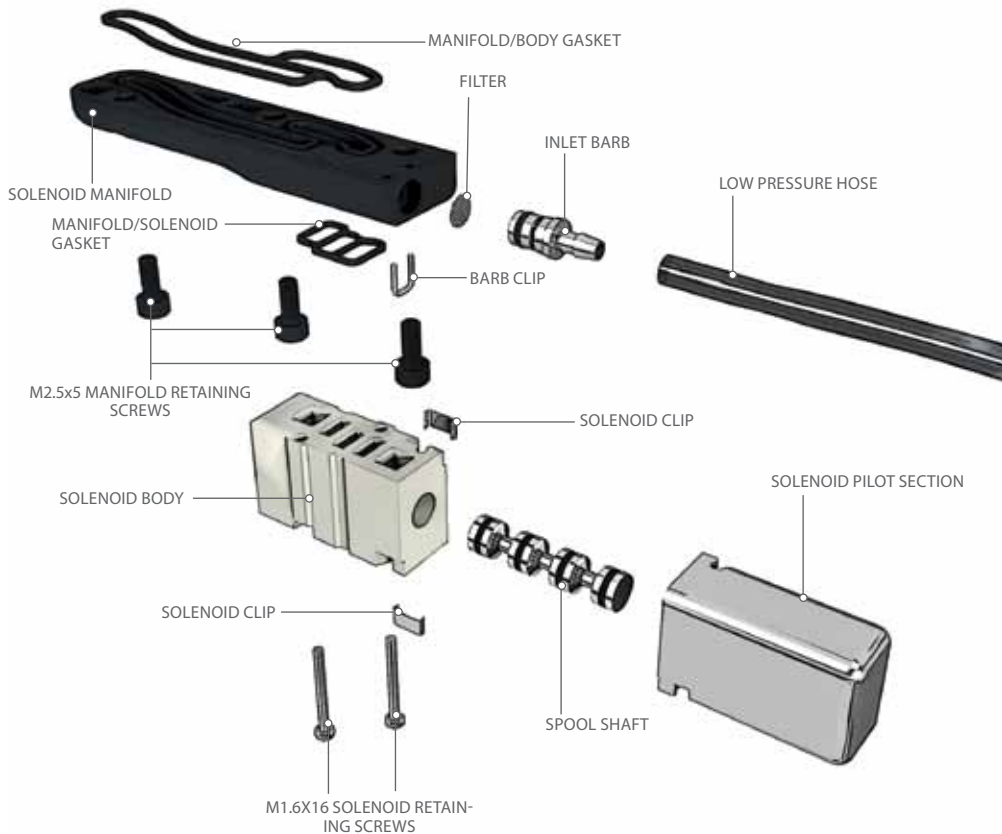
THE ON/OFF PURGE SYSTEM (OOPS)

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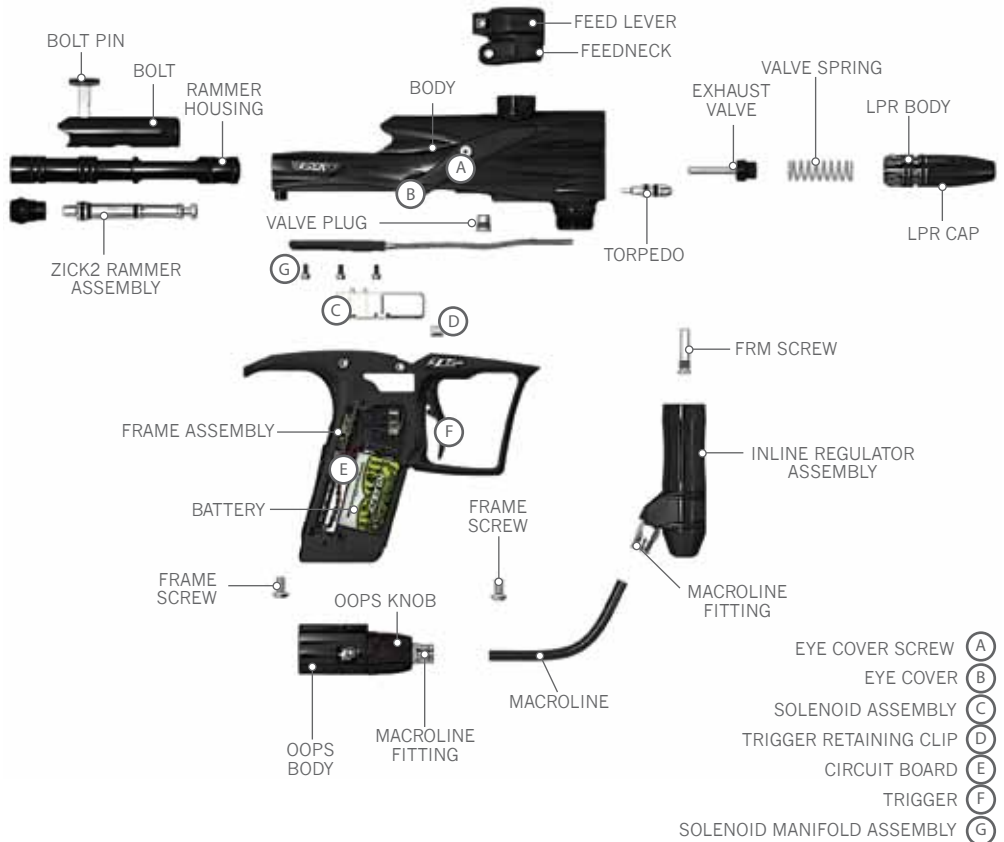UPGRADING
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OOPS PIN

#007 NBR70

OOPS BODY

#004 NBR70

1/8 NPTF STRAIGHT
MACROLINE FITTING

OOPS INSERT

#005 NBR90

#004 NBR70

OOPS PUSH ROD

10-32UNFx1/2
OOPS RETAINING SCREWS

OOPS KNOB
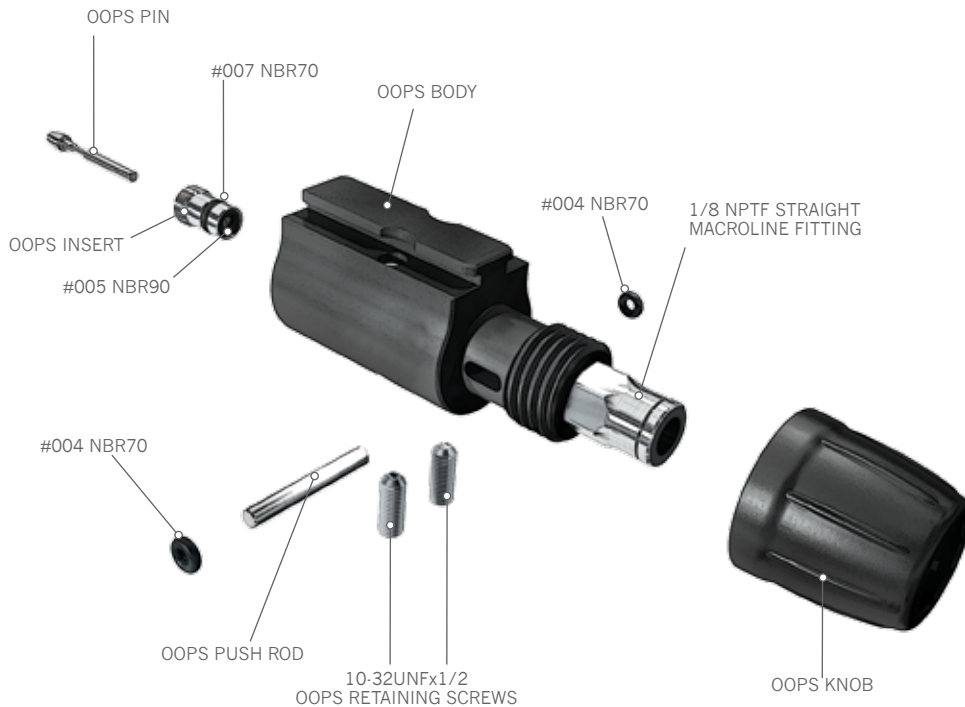
THE ETEK4 NAVIGATION CONSOLE

The Etek4 utilises multi coloured LEDs to display all of the information that the user requires via the Etek4 navigation console.

Each area of the navigation console is used to perform different functions and display different information as outlined below:

The Select button ⏻ is used to:
· Switch the Etek4 on and off.
· Switch the BBSS (eye system) on and off.
· To scroll through parameters and edit parameters.

The "E" on the navigation console is used to:
· Display the status of the BBSS (eye system).
· Display the value of a parameter in tens (10 · 90)

The "G" on the navigation console is used to:
· Display the value of a parameter in units (0 · 9)
· Display the status of the battery.

The "O" on the navigation console is used to:
· Display the value of a parameter in tenths (0.0 · 0.9)

As a combined unit the "E", "G" and "O" are also used to:
· Display power up and power down status.
· Display tournament lock status.
· Display that factory settings have been restored
· To confirm whether a parameter value has been accepted or rejected.

ETEK LT ⊗

ETEK AM ⊗

SELECT BUTTON
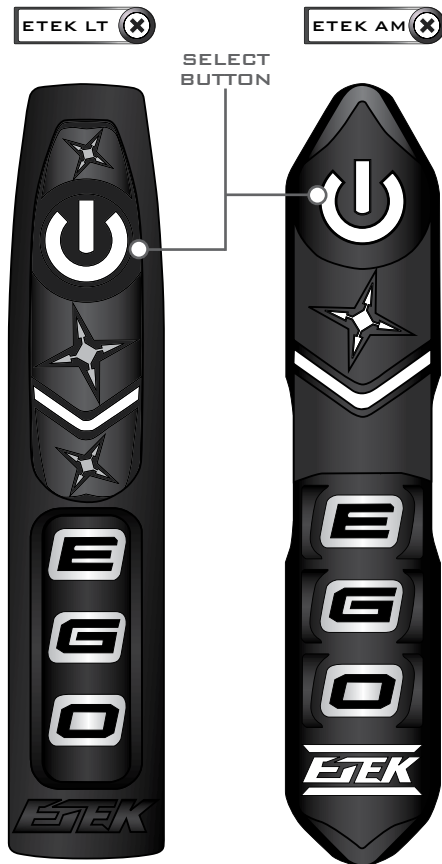
OPERATIONAL OVERVIEW

Below is a brief overview of what happens during the Etek4 firing cycle. The location of parts discussed in the text below can be found on page 80-83.

Assuming the Etek4 is gassed up and turned on, FIGURE 6A shows the marker in its idle position. The rammer is held in its rear position with pressurised air from the LPR directed through the solenoid to the front of the rammer. The valve chamber is full of pressurised air from the inline regulator.

Providing a ball is in the breach, when the trigger is pulled, a signal is sent to the solenoid which redirects the supply of air from the front of the rammer to the rear, which pushes the rammer and ball and bolt forward toward the valve (FIGURE 6B). As this happens the air in front of the rammer is vented out through an exhaust port in the solenoid manifold.

The rammer makes contact with the valve stem and continues to be pushed forward, now pushing the valve forward with it. This breaks the valve seal allowing pressurised air to flow up through the valve and into the bolt and vent down the barrel, propelling a ball (FIGURE 6C).

The time that the rammer is held in this forward position is dependant on the Dwell parameter. The longer the dwell time the longer the Etek4 vents gas down the barrel. When this dwell time has elapsed, the solenoid redirects the supply of air from the back of the rammer to the front, pushing the rammer and bolt back to the rear position. This loss of forward force allows the valve to re-seal and the valve chamber is re-pressurised. As the rammer moves back air behind it is vented through an exhaust port in the solenoid manifold (FIGURE 6D).

The Etek4 has now completed one cycle.
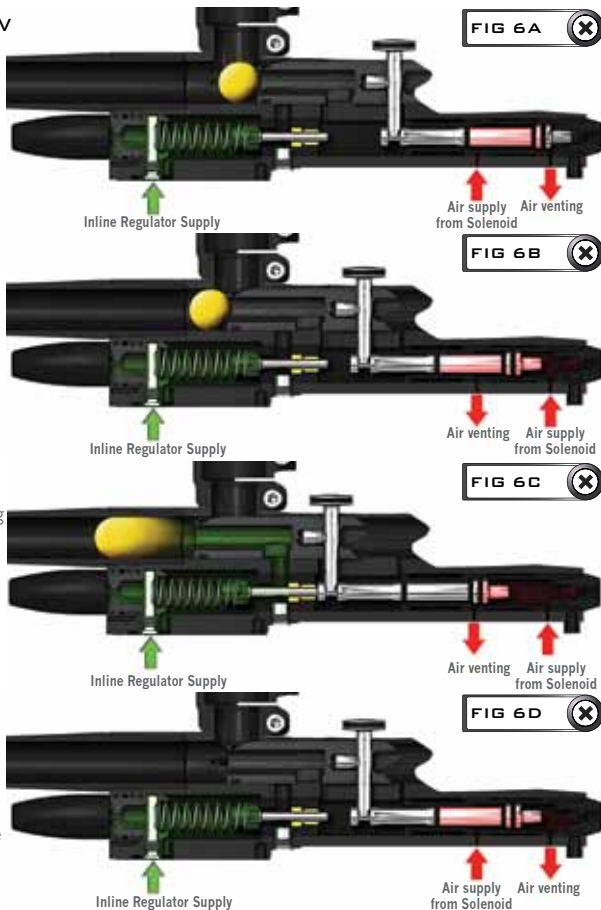
FIG 6A ⊗

Inline Regulator Supply
Air supply from Solenoid
Air venting

FIG 6B ⊗

Inline Regulator Supply
Air venting
Air supply from Solenoid

FIG 6C ⊗

Inline Regulator Supply
Air venting
Air supply from Solenoid

FIG 6D ⊗

Inline Regulator Supply
Air supply from Solenoid
Air venting

SETTING UP THE ETEK4

Before you can begin to use your Etek4, you will need to attach a barrel, an air system and a paintball loader.

INSTALLING A BARREL

⚠ **WARNING** ⚠

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

Every Etek4 comes complete with an Eclipse Shaft4 barrel (see page 13).

To install the Shaft4 barrel, firstly screw the barrel tip and barrel back sections together. The threads on the Shaft4 barrel tip are *reverse threaded*, to screw the two sections together, with the barrel pointing away from you, turn the barrel tip in a clockwise direction (SEE FIGURE 7A).

While pointing the Etek4 marker in a safe direction, insert the assembled Shaft4 barrel into the front of the Etek4 body and screw the Shaft4 barrel into the Etek4 (in a counter-clockwise direction). Continue to screw the Shaft4 barrel into the Etek4 body until the barrel becomes tight in the body (SEE FIGURE 7B). **DO NOT** over tighten the barrel.

Install a barrel blocking device over the barrel such as the Eclipse Barrel Sock supplied with the Etek4[1] (SEE FIGURE 7C). You have now installed the barrel.

T-SLOT MOUNTING SYSTEM

The Etek4 utilises a T-slot arrangement to mount the OOPS to the bottom of the frame (A). There are two retaining screws on the OOPS body underside (B). These are used to clamp the OOPS onto the frame. It is advisable to make sure that these screws are tight using a 3/8" hex key before attaching an air system (SEE FIGURE 7D).

[1]*Instruction on using the Eclipse barrel sock can be found on the barrel sock warning label.*

FIG 7A

FIG 7B

FIG 7C

FIG 7D
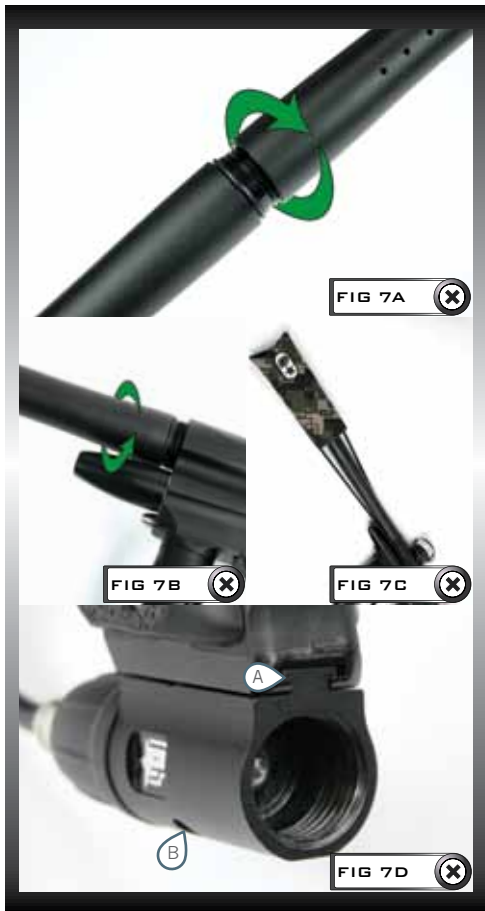
STRAIGHT MACROLINE FITTINGS

A straight macroline fitting can be found on the inline regulator swivel and OOPS as shown in FIGURES 8A & 8B. These fittings are secured using *thread lock* and **DO NOT** need to be removed during regular maintenance.

MACROLINE HOSING

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

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

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

⚠ WARNING ⚠

IF THE MACROLINE BECOMES WORN, DAMAGED OR IS THE WRONG LENGTH, REPLACE IT IMMEDIATELY.

**REPLACE THE MACROLINE HOSE WITH THE FOLLOWING GRADE OR HIGHER -
1/4" OD X 1/8"ID SEMI RIGID NYLON 11
IF UNSURE CONTACT YOUR NEAREST ECLIPSE SERVICE CENTRE**

FIG 8A

FIG 8B

INSTALLING A PRESET AIR SYSTEM

⚠ **WARNING** ⚠

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

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

ONLY USE A AIR SYSTEM CERTIFIED FOR USE WITHIN THE COUNTRY OF USE

THE ETEK4 CANNOT BE USED WITH CO2. ONLY USE COMPRESSED AIR OR NITROGEN.

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

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

DO NOT PRESSURISE THE ETEK4 WITHOUT THE BOLT SYSTEM CORRECTLY INSTALLED, AS HIGH PRESSURE GAS WILL BE EMITTED.

DO NOT INSTALL A COMPRESSED AIR SYSTEM OR LOAD PAINTBALLS INTO THE ETEK4 UNTIL YOU FEEL COMPLETELY CONFIDENT WITH YOUR ABILITY TO HANDLE THE MARKER SAFELY AND RESPONSIBLY.

ALWAYS RELIEVE ALL RESIDUAL GAS PRESSURE FROM THE ETEK4 BEFORE UNSCREWING THE PRESET AIR SYSTEM.

⚠ **WARNING** ⚠

(CONTINUED)

High, mid and low pressure output preset air systems can be used with the Etek4, providing the Etek4 is fitted with the SL3 inline regulator originally supplied with the marker.

The Eclipse Etek4 comes complete with an Eclipse On/Off Purge System (OOPS) which provides a direct connection for a preset air system. Before screwing an air system into the OOPS ensure that the OOPS knob is fully unscrewed (SEE FIGURE 9A). In this position the OOPS is off and will not pressurise the Etek4 when an air system is screwed into the OOPS.

Lining the threads up correctly between the OOPS and the air system, screw the air system into the OOPS until the air system is screwed all the way in and tight on the OOPS. The air system MUST be screwed all the way in before turning on the OOPS (SEE FIGURE 9B).

Now with the air system attached and the barrel pointing away from you, start to slowly turn the OOPS knob counter-clockwise to turn the OOPS on and pressurise the Etek4. Keep turning the knob until it stops against the OOPS body as shown in FIGURE 9C.

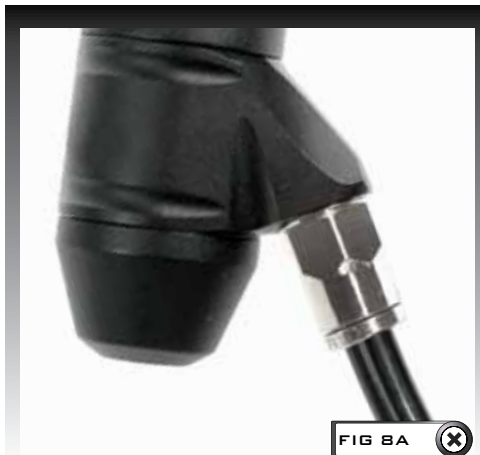You have now installed a preset air system onto your Etek4.

FIG 9A

FIG 9B

FIG 9C

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ATTACHING A LOADER

⚠ WARNING ⚠

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

Release the clamping lever on the feed neck (SEE FIGURE 10A) 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 on the feed neck by turning it counter-clockwise using a 5/32" hex key (SEE FIGURE 10B).

When you have managed to push your loader into the feed neck, close the clamping lever to secure it firmly in place (SEE FIGURE 10C). If the loader is loose then you will need to release the clamping lever, tighten the top screw slightly by turning it clockwise with a 5/32" hex key (SEE FIGURE 10B), then close the clamping lever. Repeat this process as necessary to secure your loader in place.

You have now attached a loader to your Etek4. Once you have filled your loader and air tank you will then be ready to begin using your Etek4.

FIG 10A ⊗

FIG 10B ⊗

FIG 10C ⊗

SETTING THE TRIGGER

There are three adjustment points on the trigger – the front stop trigger screw, the rear stop trigger screw, and the magnet return screw.

As standard each Etek4 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 11A).

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 11B).

The magnet return screw is used to adjust the amount of return force with which the trigger is returned. Turn the screw clockwise to increase the amount of magnet return force. Do not turn the screw to far or it will negate the position of the Front Stop Trigger Screw. Turn the screw counter clockwise to reduce the amount of spring tension (SEE FIGURE 11C).

EMORTAL BOARD USERS ONLY
When setting the trigger it is important to ensure that the electronic trigger detection is working correctly. When the trigger is fully depressed the Trigger Detection Indicator (TDI) should point upwards ⊼. When the trigger is fully released the TDI should point downwards ⊻. For more information, see *'Understanding the Trigger Detection Indicator'* (TDI) on page 37 and the Filter menu on page 53.

FIG 11A

FIG 11B

FIG 11C

ADJUSTING THE VELOCITY

When using your Etek4, you may wish to change the velocity at which your Etek4 is firing. This is done by inserting a 1/8" hex key into the adjuster screw at the bottom of your Etek4 inline regulator and adjusting it accordingly (SEE FIGURE 12A). 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[1]. On the bottom of the inline regulator there are engraved arrows to illustrate which direction to turn the hex key to make the relevant adjustment.

ADJUSTING THE LPR PRESSURE

When using your Etek4, you may wish to change the output pressure of your low pressure regulator (LPR). This is easily done by inserting a 1/8" inch hex key into the adjuster screw at the front and adjusting it accordingly (SEE FIGURE 12B). However we recommend that the LPR screw be left set 2 turns in (clockwise) from the screw being flush with the front of the LPR cap.

By turning the adjuster screw clockwise, you decrease the output pressure of your LPR and consequently reduce the pressure driving your rammer back and forth. By turning the adjuster screw counter clockwise, you increase the output pressure of your LPR and consequently increase the pressure driving your rammer back and forth.[2]

[1]*After each adjustment fire two clearing shots to gain an accurate velocity reading. Never exceed 300fps.*
[2]*Turning the adjuster screw in too far will prevent the Etek4 from firing.*

FIG 12A

FIG 12B

UNLOADING THE ETEK4

<div style="background-color:orange">

⚠ WARNING ⚠

ALWAYS KEEP THE ECLIPSE ETEK4 POINTED IN A SAFE DIRECTION AND ENSURE ALL PERSONS WITHIN RANGE CONTINUE TO WEAR FACE PROTECTION, UNTIL MARKER IS COMPLETELY UNLOADED AND SAFE.

</div>

Securely attach a barrel blocking device such as the Eclipse Barrel Sock[1] (supplied with the Etek4) to the marker as shown in FIGURE 13A.

Turn off the Etek4 electronics by holding down the ⏻ button on the back of the frame. When the LED display turns red then extinguishes, the marker has been turned off (SEE FIGURE 13B).

With the Etek4 pointing away from you. De-gas the marker by turning OOPS knob clockwise until the OOPS begins to vent air. Only when the OOPS has fully degassed the Etek4 marker, unscrew the air system from the OOPS (SEE FIGURE 13C).

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

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

Next remove the barrel blocking device, and unscrew the barrel (SEE FIGURE 13F). Remove any paintballs within the barrel.

The Eclipse Etek4 has now been unloaded and is ready for storage.

[1]Instruction on using the Eclipse barrel sock can be found on the sock warning label.

FIG 13A

FIG 13B

FIG 13C

FIG 13D

FIG 13E

FIG 13F

STORAGE AND TRANSPORTATION

CAUTION: NEVER CARRY YOUR ECLIPSE ETEK4 UN-CASED WHEN NOT ON A PLAYING FIELD. THE NON-PLAYING PUBLIC AND LAW ENFORCEMENT PERSONNEL MAY NOT BE ABLE TO DISTINGUISH BETWEEN A PAINTBALL MARKER AND A REAL FIREARM. FOR YOUR OWN SAFETY AND TO PROTECT THE IMAGE OF PAINTBALL, ALWAYS CARRY THE ECLIPSE ETEK4 (OR ANY OTHER PAINTBALL MARKER) IN A SUITABLE MARKER CASE SUCH AS THE ONE IN WHICH IT WAS SUPPLIED.

-Your Eclipse Etek4 must be clear of all paint and propellant during transportation or storage.

-Make sure the Eclipse Etek4 marker is off.

-Remove the Barrel from the marker.

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

-Store your Eclipse Etek4 in a clean, cool, dry place.

-Keep your Eclipse Etek4 away from any unauthorized and unsafe users.

-It may be a good idea to remove the battery when storing your Eclipse Etek4 to prevent unauthorized use.

-Protect your Eclipse Etek4 from excessive heat during transportation.

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

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

When shipping the Eclipse Etek4 for any reason, Planet Eclipse recommends using the box in which the marker was originally supplied to protect the marker against rough handling during transport.

USING THE ETEK4

THE TOURNAMENT LOCK

The Etek4 has an electronic tournament lock which, once enabled, prevents the user from making any changes to the setup parameters of the marker. This tournament lock complies with the rules of all major tournaments and must be enabled prior to entering the field of play in order to avoid penalties.

To enable the tournament lock -

1. Unscrew the three screws from the right hand side of the rubber grips (SEE FIGURE 14A) using a 5/64" hex key.

2. Turn on the Etek4.

3. Locate and press the Lock button on the circuit board (SEE Ⓐ IN FIGURE 14B). The navigation console will flash green to indicate that the tournament lock has been enabled.

4. Replace the three rubber grip screws using a 5/64" hex key.

To disable the tournament lock -

1. Unscrew the three screws from the right hand side of the rubber grips (SEE FIGURE 14A) using a 5/64" hex key.

2. Turn on the Etek4.

3. Locate and press the Lock button on the circuit board (SEE Ⓐ IN FIGURE 14B). The navigation console will flash red to indicate that the tournament lock has been disabled.

4. Replace the three rubber grip screws using a 5/64" hex key.

FIG 14A ⊗

FIG 14B ⊗

UNDERSTANDING THE BBSS OPERATION

The Etek4 displays the status of the Break Beam Sensor System using the 'E' area of the navigation console as follows:

INDICATION	BREECH SENSOR STATUS
Flashing Yellow	BBSS enabled (On), no paintball detected - marker will not fire.
Flashing Light Blue	BBSS enabled (On), paintball detected - marker will fire.
Flashing Purple	BBSS disabled (Off) - marker will fire.
Fast Flashing Purple	Blockage detected, BBSS temporarily disabled (Off) - marker will fire.

Any changes to the Breech Sensor Status will be displayed immediately. This provides valuable feedback to the user.

An example of this is when you are shooting a string of shots with the BBSS enabled, the "E" on the navigation console will alternate in colour from Yellow (no paintball detected) to Light Blue (paintball detected). In this instance too much yellow would indicate that your chosen loader cannot keep up with how fast you are shooting and is consequently slowing down your rate of fire.

The BBSS is able to switch itself off in the event that a blockage or contamination prevents it from functioning correctly. This is represented by a fast flashing purple light in the "E" area of the navigation console. The Etek's ROF will be capped at 7.5bps. In this instance, the BBSS will switch itself back on once the blockage is cleared and the correct operation of the BBSS can then be resumed.

THE BATTERY LEVEL INDICATOR

The Etek4 displays the status of the battery using the 'G' area of the navigation console. When the battery is fresh, the 'G' LED will flash green.

As the battery is drained the 'G' LED will change colour from green to yellow.

When the battery reaches a level where it will no longer function reliably, the 'G' LED will start to flash red. At this point the battery must be changed for a new one. For instructions on installing a new battery see page 11.

THE SET UP MODE

The Set Up Mode can only be entered if tournament lock is off. See page 29 for details on the tournament lock. To activate the Set Up Mode, firstly ensure that the Etek4 is switched off. Pull and hold the trigger, and whilst the trigger is still pulled push and hold the ⏻ button until the 'E' and the 'O' on the navigation console alternately flash white to indicate entry to Set Up mode. When you have entered the Set Up mode, the 'G' on the navigation console will turn red to indicate the first parameter of the Set Up Mode. You can now release the trigger.

Press the ⏻ button to scroll through each of the parameters on the Set Up Mode:

COLOUR	PARAMETER	RANGE
Red	Firing Mode	1 to 3
Green	Maximum ROF with BBSS on (capped modes only).	4.0 bps to 15.4 bps
Blue	Maximum ROF with BBSS off.	4.0 bps to 15.4 bps
White	Ramp Kick-in Rate (ramp only)	5.0 pps to 10.0 pps
Dark Red	Ramp Restart Time (ramp only)	0.0 to 1.0 s
Purple	Dwell	1.0 ms to 15.0 ms
Light Blue	Debounce	1 to 10
Yellow	Ball Detection Time	1 ms to 10 ms

To see the value that any setup parameter is set to, pull and release the trigger. The value will be indicated by flashing the tens on the 'E' LED, the units on the 'G' LED and tenths on the 'O' LED. E.g. 14.5 would be indicated as follows-
- 1 FLASH OF THE 'E' LED
- 4 FLASHES OF THE 'G' LED
- 5 FLASHES OF THE 'O' LED

A zero is indicated by no flashes. E.g. 3.0 would be indicated as follows:
- 0 FLASHES OF THE 'E' LED
- 3 FLASHES OF THE 'G' LED
- 0 FLASHES OF THE 'O' LED

MODIFYING A PARAMETER

You can modify a parameter by using the following guidelines.

1. Ensure that you are in Set Up mode.

2. Choose the parameter that you wish to modify by pressing ⏻ until G turns to the parameter colour.

3. Pull and hold the trigger for 1 second. The 'E' LED will light up.

4. Set the tens digit by pressing the trigger once for each ten, the 'E' LED will flash with each trigger pull. DO NOT pull the trigger if the required digit is zero.

5. Push the ⏻ button. The 'G' LED on the navigation console is illuminated.

6. Set the units digit by pressing the trigger once for each unit, the 'G' LED will flash with each trigger pull. DO NOT pull the trigger if the required digit is zero.

7. Push the ⏻ button. The 'O' on the navigation console is illuminated.

8. Set the units digit by pressing the trigger once for each unit, the 'O' LED will flash with each trigger pull. DO NOT pull the trigger if the required digit is zero.

9. Push the ⏻ button. The "E", "G" and "O" will flash three times; if the colour is green then the value has been accepted and saved, if the value is red then the value has been rejected and restored to its value before modifying.

For example to set a parameter to 14.5 -

- PULL THE TRIGGER 1 TIME WHILE THE 'E' LED IS LIT THEN PRESS ⏻
- PULL THE TRIGGER 4 TIMES WHILE THE 'G' LED IS LIT THEN PRESS ⏻
- PULL THE TRIGGER 5 TIMES WHILE THE 'O' LED IS LIT THEN PRESS ⏻

To leave a parameter unchanged having already started to modify it, simply set an illegal value (any single digit greater than 9) and the value will consequently be rejected.

SET UP PARAMETERS

The first five set up parameters will need to be set to comply with the rules of the field or site at which this Etek4 is used. It is the user's responsibility to ensure that these parameters are correctly set.

THE FIRING MODE PARAMETER

This parameter is used to control the firing mode of the Etek4. The Firing Mode parameter is indicated by a red light on the navigation console when you are in the Set Up Mode. There are three selectable Firing Modes as outlined below:

1.0 : UNCAPPED SEMI
In this mode the Etek4 will fire one shot for every pull of the trigger. This mode is uncapped with the BBSS enabled. If the BBSS is off then the rate of fire is limited by the Maximum ROF with BBSS OFF parameter.

2.0 : CAPPED SEMI
This mode is the same as the Uncapped Semi mode, except that the rate of fire is capped to the Maximum ROF with BBSS ON parameter.

3.0 : CAPPED RAMP
This mode allows the rate of fire to ramp to a maximum set by the Maximum ROF with BBSS ON parameter, once the trigger is being pulled at the required pulls per second rate set by the Ramp Kick-in Rate parameter. The number of trigger pulls has to remain equal or above the Ramp Kick-in Rate parameter to continue ramping. After the last trigger pull, the ramp can be restarted with a single trigger pull within the time set in the RAMP RESTART TIME parameter.

Certain modes may only be available in certain countries and on certain models of the Etek4.

THE MAXIMUM ROF WITH BBSS ON (CAPPED MODES)

In capped firing modes this parameter is used to control how fast the Etek4 can cycle.

The Maximum ROF with BBSS ON parameter is indicated by a green light on the navigation console when you are in the Set Up mode.

This is fully adjustable between 4.0 balls per second and 15.4 balls per second in 0.1 bps increments.

THE MAXIMUM ROF WITH BBSS OFF

This parameter is used to control how fast the Etek4 cycles when the Break Beam Sensor System has been disabled.

The Maximum ROF with BBSS off parameter is indicated by a blue light on the navigation console when you are in the Set Up Mode.

This parameter is fully adjustable between 4.0 balls per second and 15.4 balls per second in 0.1 bps increments.

This parameter should be set to match the slowest speed of the loading system in use.

RAMP KICK-IN RATE
(RAMP ONLY)

The RAMP KICK-IN RATE parameter sets the rate at which the trigger has to be pulled in order to start and maintain ramping.

The RAMP KICK-IN RATE parameter is indicated by a white light on the navigation console when you are in the Set Up Mode.

This parameter can be set between 5.0 and 10.0 pulls per second in 0.1 pps increments.

RAMP RESTART TIME
(RAMP ONLY)

The Ramp Restart Time parameter sets the time during which ramping can be restarted with a single trigger pull, after the previous ramping string has stopped.

The parameter is specified in seconds and if set to 0.0 then ramping can only be restarted with four shots at the Ramp Kick-in Rate. The Ramp Restart Time parameter is indicated by a dark red light on the navigation console when you are in the Set Up Mode.

This parameter is fully adjustable between 0.0 and 1.0 seconds.

SET UP PARAMETERS TABLE

The following table lists the set up parameters required for compliance with the 2011 rules for the major paintball leagues. For your convenience there is space to add settings for additional leagues and future rules changes.

	MILLENNIUM	PSP	NPPL
Fire Mode	3.0	3.0	1.0
Max ROF/ BBSS On	10.0	12.2	15.0
Max ROF/ BBSS Off	10.0	10.0	10.0
Ramp Kick-in Rate	5.0	5.0	n/a
Ramp Restart Time	0.0	1.0	n/a

Fire Mode			
Max ROF/ BBSS On			
Max ROF/ BBSS Off			
Ramp Kick-in Rate			
Ramp Restart Time			

These parameters are correct at time of printing and are only to be treated as a guide.
It is the users responsibility to ensure that the marker complies with the rules of the field, site and/or tournament where it is being used.

The remaining set up parameters are used to configure the performance of the Etek4.

DWELL

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

The Dwell parameter is indicated by a purple light on the navigation console when you are in the Set Up mode.

This parameter is fully adjustable between 1.0ms and 15.0ms in 0.1ms increments.

DEBOUNCE

The Debounce parameter is used to set the level of Debounce (anti trigger bounce) on your Etek4.

The Debounce parameter is indicated by a 'light blue' light on the navigation console when you are in the Set Up mode.

This parameter is fully adjustable between Debounce 1 and Debounce 9 with a higher value reducing the amount of trigger bounce.

THE BALL DETECTION TIME

The Ball Detection Time parameter defines how long a paintball has to sit in the breech of the Etek4 before it is considered ready to fire.

The Ball Detection Time parameter is indicated by a yellow light on the navigation console when you are in the Set Up mode.
This parameter is fully adjustable between 1 ms and 10 ms in 1 ms increments.

THE RESET PARAMETER

Whilst in Set Up Mode, it is possible to reset all of the control parameters to the factory default settings in the following way:

1. Push and hold the Lock button for two seconds.
2. The "E", "G" and "O" on the navigation console will repeatedly flash blue to indicate that the factory default settings have been restored.

THE EMORTAL BOARD
NAVIGATION CONSOLE

At the rear of the Etek4 grip frame you will find the navigation console.

The navigation console is used for;

> *TURNING THE ETEK4 ON AND OFF USING THE ⊛ BUTTON*

> *SCROLLING THROUGH MENUS WITH THE ⬣ AND ⬥ BUTTONS*

> *SELECTING PARAMETERS TO EDIT USING THE ⊛ BUTTON*

> *EDITING PARAMETERS USING THE ⬣ AND ⬥ BUTTONS*

> *TURNING THE ETEK4 BBSS ON AND OFF USING THE ⬣ BUTTON*

> *RESETTING RECORDED VALUES USING THE ⬥ BUTTON*

> *CONTROLLING THE GAME TIMER WITH THE ⬥ BUTTON*

⬣ *PREVIOUS / RAISE*

⊛ *SELECT*

⬥ *NEXT / LOWER*

USER INTERFACE

The Etek4 has a simple user interface through which all aspects of it's electronic control system can be monitored and adjusted by means of the three buttons and graphical LCD which comprise the navigation console.

SWITCHING ON

The Etek4 is be switched on by pushing and holding the ⬡ button. The LCD will display startup information including model number and software version before displaying the Run Screen if the ⬡ button continues to be held down during startup.

RUN SCREEN LAYOUT

The root of the user interface is the Run Screen. This screen is the one most often displayed and provides the user with essential feedback on the state of the Etek4. A typical Run Screen is shown on the right. On the left of the screen is a display option that is user selectable from the Main Menu (see page 45). This option can be:-

> A GAME TIMER

> A SHOT COUNTER

> AN ACTUAL RATE OF FIRE INDICATOR

> A PEAK RATE OF FIRE INDICATOR

Briefly pressing the ⬡ button will replace the display option with the name of the currently selected Preset (see page 47), or *CUSTOM* if a parameter of the selected preset mode has been edited.

On the right of the screen are up to five icons, each of which provides graphical indication on different parts of the Etek4 control electronics.

BREAK BEAM SENSOR SYSTEM INDICATOR

TRIGGER DETECTION INDICATOR

USER SELECTABLE DISPLAY OPTION

LOCK INDICATOR

BATTERY LEVEL INDICATOR

UNDERSTANDING THE BBSS INDICATOR (BBSS)

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

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

BBSS ENABLED AND BALL DETECTED
The Etek4 can be fired at the maximum rate of fire determined by the chosen firing mode.

BBSS ENABLED NO BALL DETECTED
The Etek4 cannot be fired.

BBSS DISABLED
The Etek4 can be fired at a maximum rate of fire as set by the **OFF ROF** parameter (see page 50)

BBSS FAULT DETECTED
The system is disabled. The Etek4 can only be fired at a maximum rate of fire of 7.5bps, regardless of the chosen firing mode.

BBSS SENSOR FAULT HAS BEEN CLEARED
The sensor has been re-enabled. A ball is detected and the Etek4 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 Etek4 cannot be fired. To reset the BBSS icon, use the ◬ button to switch off the BBSS and then back on again.

UNDERSTANDING THE TRIGGER DETECTION INDICATOR (TDI)

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

MICRO-SWITCH NOT ACTUATED
The micro-switch is not currently actuated, i.e. the trigger is released.

MICRO-SWITCH ACTUATED
The micro-switch is currently actuated, i.e. the trigger is pulled.

UNDERSTANDING THE LOCK INDICATOR

The Etek4 has a tournament lock which prevents the user from making changes to any parameter that affects the way in which the Etek4 shoots, without the need for tools. This feature is necessary in order to make the Etek4 legal for tournament play.

When the lock is enabled the lock indictor will show a closed padlock 🔒.

When the lock is disabled the lock indictor will show an open padlock 🔓.

UNDERSTANDING THE BATTERY LEVEL INDICATOR

The battery level indicator is used to show the state of the battery within the Etek4. When the battery is fresh the indicator will show a 'full' battery 🔋 and as the battery is drained, so the indicator will show the battery emptying. When the battery reaches a point at which the Etek4 will no longer function reliably, the indicator will start to flash. At this point the battery must be changed immediately.

THE GAME TIMER

When the Game Timer is shown on the Run Screen then it can be started by pressing the ⬤ button and the timer will start to count down. The Game Timer can also be configured to start on a trigger press with the START parameter (see page 45).

When the Game Timer reaches 00:00, GAME OVER will be displayed.
To stop the Game Timer at any time press and hold the ⬤ button for 0.5 seconds.
To reset the Game Timer to it's preset start time, push and hold the ⬤ button for 1 second. The Game Timer will also be reset whenever the Etek4 is switched off.
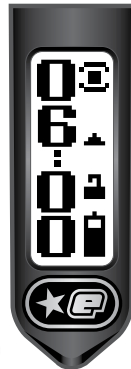
THE SHOT COUNTER

The Shot Counter increments every time that the Etek4 is fired, regardless of whether the Shot Counter is displayed or not. When the Shot Counter is displayed on the Run Screen it can be reset to 0 by pressing and holding the ⬤ button for 0.5 seconds.
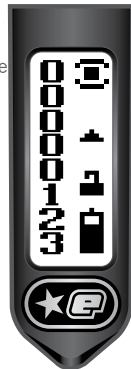
THE ACTUAL RATE OF FIRE

When the ACTUAL ROF is selected for display the Run Screen will look something like the screen to the right. The value displayed in the top left of the screen represents the number of full cycles completed in the last second - the actual rate of fire over the second. The number below it is the maximum actual rate of fire that has been recorded. To reset this maximum, press and hold the ● button for 0.5 seconds.
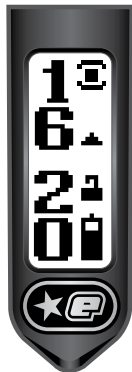
THE PEAK RATE OF FIRE

When the Peak ROF is selected for display the Run Screen will look something like the screen to the left, which differs from the display of the Actual ROF by the inclusion of the indicator 'PK'. The value displayed in the top left of the screen represents the rate of fire measured between the last two shots. The number below it is the maximum peak rate of fire that has been recorded. To reset this maximum, press and hold the ● button for 0.5 seconds.
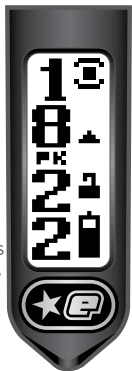
The Peak ROF is typically higher than the Actual ROF as it is much easier to fire two shots in quick succession than it is to maintain a string over a longer period of time.

THE MENU SYSTEM

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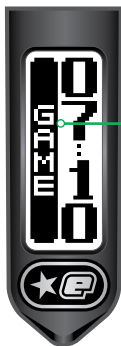
TYPICAL BRANCH

TYPICAL PARAMETER

The menus are 'smart menus' in that they will expand and contract depending upon the state of certain parameters. For example, the MAX ROF parameter is only visible when the ROF CAP parameter is set to 'on'. Smart menu items are indicated with a * in the tables on pages 40-43.

The menu structure is shown in the following pages.

ETEK

MAIN MENU

MAIN MENU

— *OFF?*   Turn off the Etek4

— *DISPLAY*

Timer	Display the game timer on the Run Screen
Shots	Display the shot counter on the Run Screen
Act ROF	Display the actual rate of fire on the Run Screen
Peak ROF	Display the peak rate of fire on the Run Screen
Cancel	Cancel the display selection

— *TIMER*

     — *GAME*

00:00 - 60:00	Countdown game timer start time

     — *ALARM*

00:00 - 10:00	Alarm activation time

     — *START*

Button	⬡ button starts the game timer
Trigger	Trigger pull starts the game timer
Cancel	Cancel game timer start event selection

     — *BACK*   Go back one menu level

— *EXIT*   Return to the Run Screen

Parameters followed by a * are part of the smart menu system and will be displayed depending on your chosen settings. (e.g. The MAX ROF parameter will only become available if the ROF CAP parameter is set to on).

SET-UP MENU

QUICK GUIDE
CONTENTS
QUICK SET-UP
ORIENTATION
USING THE ETEK4
ADVANCED SET-UP
EMORTAL BOARD
MAINTENANCE
UPGRADING
FAULT FINDING
SERVICE CENTRES
PARTS LIST
SPARES
INDEX

SET-UP MENU

LOCK

Off	Turn the tournament lock off
On	Turn the tournament lock on
Cancel	Make no changes to the tournament lock

PRESET

LOAD

User 1	Load the User 1 settings
User 2	Load the User 2 settings
Factory	Load the default factory settings (semi-automatic)
NPPL	Load NPPL 2008 compliant settings
PSP 10	Load the PSP 10 balls per second (BPS) compliant settings
PSP 12	Load the PSP 12 balls per second (BPS) compliant settings
MS 10	Load Millennium Series 2009 compliant settings
Cancel	Cancel the load operation

SAVE

User 1	Save the current settings as the User 1 settings
User 2	Save the current settings as the User 2 settings
Cancel	Cancel the save operation

BACK

	Go back one menu level

MODE

Semi	Select semi-automatic mode of fire
Ramp	Select ramping mode of fire
Cancel	Cancel the mode selection

ROF CAP

Off	Turn off the rate of fire cap
On	Turn on the rate of fire cap
Cancel	Cancel the ROF cap selection

MAX ROF*

4.0 - 22.0	Rate of fire cap in balls per second when BBSS is enabled

OFF ROF

4.0 - 15.0	Rate of fire cap in balls per second when BBSS is disabled

SET-UP MENU

RAMP SET*			
	TYPE	Step	Select step type ramping
		Linear	Select linear type ramping
		Cancel	Cancel the ramp type selection
	RATE	0 - 100	Percentage linear ramp rate
	PULL NO	4 - 9	Number of shots before ramping can start
	KICK IN	5.0 - 15.0	Rate at which trigger has to be pulled in pulls per second before ramping can start
	SUSTAIN	5.0 - 15.0	Rate at which trigger has to be pulled in pulls per second in order to maintain ramping
	RESTART	0.0 - 1.0	Time in seconds after last trigger pull during which ramp can be restarted
	BACK		Go back one menu level
TIMING			
	DWELL	0.0 - 15.0	Solenoid energise time in milliseconds for each shot
	FSD COMP	0.0 - 5.0	First shot drop-off compensation time in milliseconds
	FSD DLY	30 - 240	Delay in seconds before 'First Shot Drop Off Compensation' is applied
	LIGHT	0.0 - 20.0	Backlight off delay in seconds
	SLEEP	5 - 60	Auto power off time in minutes
	BACK		Go back one menu level
FILTER			
	DBOUNCE	Level 9	Use trigger debounce level 9 (less bounce)
		.	
		.	
		Level 1	Use trigger debounce level 1 (more bounce)
		Cancel	Cancel debounce selection
	EMPTY	1.0 - 20.0	Time in milliseconds that the breech must remain empty before the BBSS can look for a paintball.

SET-UP MENU

QUICK GUIDE

CONTENTS
QUICK SET-UP
ORIENTATION
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INDEX

FULL	1.0 - 20.0	Time in milliseconds that a paintball must be in the breech for the Etek4 to be ready to fire
PULL TM	3.0 - 25.0	Time in milliseconds that the trigger must be pulled in order for a shot to be fired
REL TM	3.0 - 25.0	Time in milliseconds the trigger must be released prior to being pulled
BACK		Go back one menu level
EXIT		Return to the Run Screen

ACCESSING THE MENU SYSTEM

To access the Main Menu from the Run Screen push and hold the ⬡ button for 2 seconds.

To access the Set-up Menu from either the Run Screen or the Main Menu push the internal Setup button and the first item on the Set-up Menu will be displayed.[1]

MOVING AROUND THE MENUS

Press and release the ⬡ button to display the next item on the menu. When the last menu item is displayed, pressing the ⬡ button will display the first item.

Press and release the ⬡ button to display the previous item on the menu. When the first menu item is displayed, pressing the ⬡ button will display the last item.

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

ALTERING PARAMETERS

When the displayed item is a parameter, as indicated by a parameter value on the right of the screen, pressing the ⬡ button will activate the EDIT mode which allows the parameter value to be altered. When EDIT mode is active, edit indicators appear on the left of the screen as shown.

EDIT INDICATORS

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

To alter a numeric parameter, first activate the EDIT mode. Press the ⬡ button to increase the parameter value one step at a time. Press and hold the ⬡ button to increase the parameter value rapidly. When the value reaches it's maximum it will revert to it's minimum value. Press the ⬡ button to decrease the parameter value one step at a time. Press and hold the ⬡ button to decrease the parameter value rapidly. When the value reaches it's minimum it will revert to it's maximum value. When the required parameter value it displayed press the ⬡ button to accept the value and end the EDIT mode.

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

[1]*If the tournament lock is set to 'off' then the Main Menu and Set-up Menu are joined together which means that they can be accessed in either of the two ways above.*

THE MAIN MENU

The Main Menu comprises parameters that do not
affect the way in which the Etek4 shoots and which
therefore do not have to be tournament locked.[1]

DISPLAY
THE DISPLAY PARAMETER

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

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

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

TIMER
THE GAME TIMER MENU

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

GAME
THE GAME TIME PARAMETER

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

START
THE TIMER START PARAMETER

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

> BUTTON: Pressing the ⬢ button will
start the game timer.

> TRIGGER: Pulling the trigger will start
the game timer.

> CANCEL: Cancel editing and leave the
parameter unchanged.

[1]*If the lock option is disabled further options will be displayed in the
main menu.*

THE SETUP MENU

This menu is the starting point for access to all of the parameters that control the way that the Etek4 operates. To access this menu, first turn on the Etek4 and then remove the 3 screws holding the right hand cheek of the rubber grips (SEE FIGURE 15A). Peeling back the cheek will reveal a red Setup button on the circuit board (SEE (A) IN FIGURE 15B), push and hold this button for 2 seconds.

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

FIG 15A

FIG 15B

LOCK
THE TOURNAMENT LOCK PARAMETER

The Etek4 has a tournament lock which prevents the user from making changes to any parameter that affects the way in which the Etek4 shoots without the use of tools.

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

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

> OFF: Turn off the tournament lock. The Set-Up Menu is added to the Main Menu, making it easily accessible by pressing and holding the ⬡ button.

> CANCEL: Cancel selection and leave the parameter unchanged.

[1] *All presets are correct at time of printing. Please check with the event organiser to make sure the above presets are still considered legal.*
[2] *The current preset configuration can be viewed from the run screen by pressing the ⬡ button.*
[3] *Certain modes may only be available in certain countries and on certain models of the Etek4.*

PRESET
THE PRESET MENU

In order to simplify the set up of the Etek4 a number of Preset configurations are available for selection. Choosing one of these presets will cause all of the necessary parameters to be set in such a way as to make the Etek4 comply with the rules governing a particular paintball league. It is also possible for the user to save up to two Preset configurations of their own.[1,2,3]

LOAD
THE LOAD PRESET PARAMETER

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

> USER 1: Load a set of custom firing mode parameters that have been previously saved by the user.
> USER 2: Load a set of custom firing mode parameters that have been previously saved by the user.
> FACTORY: Reset every parameter to the factory set default. The Etek4 leaves the factory set in this way.
> NPPL: Load a set of parameters that configures the Etek4 to comply with the 2008 NPPL rules governing firing modes.[1]
> PSP 10: Load a set of parameters that configures the Etek4 to comply with the PSP rules governing firing modes in lower divisions (10bps).[1]
> PSP 12: Load a set of parameters that configures the Etek4 to comply with the PSP rules governing firing modes in higher divisions (12bps).[1]
> MS10: Load a set of parameters that configures the Etek4 to comply with the 2009 Millennium Series rules governing firing modes.[1]
> CANCEL: Editing is cancelled and the parameter remains unchanged.

SAVE
THE SAVE PRESET PARAMETER

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

> USER 1: Save the current parameters as the preset *'USER 1'*.

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

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

With the exception of FACTORY each of the Presets changes only those parameters that control the firing mode of the Etek4, leaving Filter and Timing unchanged.

MODE
THE FIRING MODE PARAMETER

This parameter is used to select the firing mode of the Etek4 and has the following choices:

> SEMI: This is the default and in this firing mode the Etek4 will fire one shot for every trigger pull.

> RAMP: In this firing mode, the rate of fire is increased above the rate at which the trigger is pulled once certain criteria have been met. These criteria are set by the parameters on the Ramp Set Menu.[1]

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

[1]*Certain modes may only be available in certain countries and on certain models of the Etek4.*

EMORTAL BOARD

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ROF CAP
THE RATE OF FIRE CAP PARAMETER

The ROF CAP parameter is used to specify whether or not the Etek4 should have a limited, or capped rate of fire. When the ROF CAP is enabled, the maximum achievable rate of fire is set by the MAX ROF parameter. Choices for the ROF CAP parameter are:-

> OFF: Rate of Fire only limited by the loader.

> ON: Rate of Fire limited to the MAX ROF parameter value.

> CANCEL: Cancel editing and leave the parameter unchanged.

If the ROF CAP is switched on, then the MAX ROF parameter will feature as an item in the Set-Up Menu. If the ROF CAP is switched off, the MAX ROF parameter is redundant and omitted from the Set-Up Menu.

MAX ROF
THE MAXIMUM RATE OF FIRE PARAMETER

The MAX ROF parameter is used to set the maximum achievable rate of fire from the Etek4. The value of this parameter can be adjusted between 4.0 and 22.0 balls per second in 0.1bps increments.

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

OFF ROF
THE RATE OF FIRE WHEN BBSS OFF PARAMETER

The OFF ROF parameter is used to control how fast the Etek4 cycles when the Break Beam Sensor System is disabled. This parameter can be set between 4.0 and 15.0 balls per second and should always be set to the slowest speed of the loading system in use.

RMP SET
THE RAMP SETTINGS MENU

This menu is only available when ramping has been selected with the MODE parameter and comprises a list of parameters that control the way in which the Etek4 ramps, as shown below:

TYPE
THE RAMP TYPE PARAMETER

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

> STEP: Step ramping will cause the Etek4 to shoot in semi-automatic until a number of trigger pulls, set by PULL NO, have been made at a minimum pull rate, set by KICK IN. At this point the rate of fire will step up to the maximum rate of fire as set by MAX ROF (or the maximum loader speed if the ROF CAP parameter is set to off). Ramping is maintained as long as the user continues to pull the trigger at a required rate set by SUSTAIN.

> LINEAR: Linear ramping will cause the Etek4 to shoot in semi-automatic until a number of trigger pulls, set by PULL NO, have been made at a minimum pull rate, set by KICK IN. At this point the rate of fire will equal the rate of trigger pulls increased by the percentage specified by RATE up to a maximum rate of fire as set by MAX ROF, if the ROF CAP is on. Ramping is maintained as long as the user continues to pull the trigger at a required rate set by SUSTAIN.

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

EMORTAL BOARD

ETEK

RATE
THE LINEAR RAMP RATE PARAMETER

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

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

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

PULL NO
THE RAMP START PARAMETER

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

KICK IN
THE RAMP KICK-IN PARAMETER

This parameter sets the minimum rate at which the user has to pull the trigger in order to start ramping. This parameter can be set between 5.0 and 15.0 pulls per second in 0.1 pulls per second increments.

SUSTAIN
THE SUSTAIN RATE PARAMETER

Once the Etek4 is ramping the user has to continue to pull the trigger at a minimum rate in order to maintain the ramping. This parameter sets this rate and can be between 5.0 and 15.0 pulls per second in 0.1 pulls per second increments.

RESTART
THE RAMP RESTART PARAMETER

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

TIMING
THE TIMING MENU

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

DWELL
THE DWELL PARAMETER

The Dwell parameter sets the amount of time that the solenoid is energized and therefore the amount of air that is released with each shot of the Etek4. Setting this parameter too low will result in low velocity shots and/or excessive shot to shot velocity fluctuations. Setting the parameter too high will simply waste gas and make the Etek4 louder.

The DWELL can be set between 0.0 and 15.0 milliseconds. The factory default setting can normally be reduced after a few thousand shots as the Etek4 'beds-in'.

FSD COMP
THE FIRST SHOT DROP-OFF COMPENSATION PARAMETER

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

FSD DLY
THE FIRST SHOT DROP OFF DELAY PARAMETER

This parameter sets the amount of time after the last shot before the FSD Comp is used on the next shot. The first shot after powering on the Etek4 will always have FSD Comp. This parameter can be set between 30 and 240 seconds in 10 second increments.

LIGHT
THE LIGHT PARAMETER

The LCD backlight is illuminated whenever any of the buttons are pressed on the Etek4. The LIGHT parameter is used to set the amount of time that the backlight stays lit between 0.0 and 20.0 seconds in 0.5 second increments.

SLEEP
THE SLEEP PARAMETER

If the Etek4 is inactive for a period of time then it will automatically switch off in order to save power. The SLEEP parameter is used to set that time between 5 and 60 minutes in 5 minute increments.

FILTER
THE FILTER MENU

The parameters on the Filter Menu are all used to tune the Etek4's software filters which prevent the Etek4 from firing unless all of the necessary conditions are met. The factory default settings will be suitable for most set-ups, however certain loader and trigger set-ups may require modification
of one or more of these parameters:

DBOUNCE
THE DEBOUNCE PARAMETER

The Dbounce parameter is used to combat any trigger bounce that might occur in the Etek4 and can be set between level 1 and level 9 in one level increments.

> LEVEL 9: Level 9 providing the most filtering.

LEVEL 8 - LEVEL 2

> LEVEL1: Level 1 providing the least filtering.

> CANCEL: Cancel editing and leave the parameter unchanged.

EMPTY
THE EMPTY BREECH TIME PARAMETER

In order for the BBSS to function correctly it must first detect that the bolt is fully retracted and the breech is empty, and then detect that a paintball is loaded into the breech before the Etek4 is allowed to fire. Slots or holes in some third party bolts can fool the BBSS and so this parameter is used to specify a minimum time that the breech must be empty. The parameter can be set between 1.0 and 20.0ms in 0.5ms increments.

FULL
THE FULL PARAMETER

Tumbling paintballs can take time to settle in the breech before they can be successfully fired. This parameter is used to set the amount of time that a paintball has to be in the breech before the Etek4 is allowed to fire. This parameter can be set between 1.0 and 20 milliseconds in 0.5ms increments.

PULL TM
THE PULL TIME PARAMETER

The PULL TM parameter is used to set the minimum amount of time that the trigger must be pulled before it is recognised as a valid trigger pull. This parameter can be set between 3.0 and 25.0 milliseconds in 0.5 ms increments.

REL TM
THE RELEASE TIME PARAMETER

The REL TM parameter is used to set the minimum amount of time that the trigger must be released before it is recognised as a valid trigger release. This parameter can be set between 3.0 and 25.0 milliseconds in 0.5 ms increments.

CLEANING THE BREAK BEAM SENSOR SYSTEM

Undo the retaining screw for the break beam sensor cover on the left hand side of the Etek4 using a 5/64" (2mm) hex key (SEE FIGURE 16A).

Remove the sensor cover to expose the back of the break beam sensor unit (SEE FIGURE 16B). Using a dry cotton bud, carefully remove any debris, paint or moisture from the back of the sensor unit and from inside the sensor cover.

Lift the BBSS free from the Etek4 body and using another dry cotton bud, remove any grease or debris build-up from the front of the sensor unit (SEE FIGURE 16C).

FIG 16A

FIG 16B

FIG 16C

(CONTINUED)

Remove the rubber detent, inspect the condition of the rubber finger (replacing if necessary), then using a dry cotton bud clean the detent and it's location point in the Etek4 Body. (SEE FIGURE 16D)

Replace the detent back into the Etek4 body (SEE FIGURE 16E) and place the BBSS back into the designated slot in the body, ensuring that the receiver sensor (indicated by a red mark & red heat shrink) is located on the right-hand side of the marker body (SEE FIGURE 16B). Ensure that the sensor is face down in the body i.e. looking into the breech.

Replace the sensor cover and using a 5/64" hex key, replace the break beam sensor cover retaining screw to hold the sensor cover in place (SEE FIGURE 16F).

Repeat the procedure for the opposite side of the Etek4.

You have now cleaned your break beam sensor system.

FIG 16D

FIG 16E

FIG 16F

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

THE SL3 INLINE REGULATOR

Disconnect the macroline hosing from your inline regulator by pulling back the collet section of the hose fitting and keeping the collet depressed. Pull the macroline hose out of the hose fitting and release the collet.

Unscrew the inline regulator from the Etek4 body in a counter-clockwise direction (SEE FIGURE 17A). Inspect the o-ring at the top of the threads on the Etek4 body for damage. Replace and re-lubricate as necessary[1].

Turn the inline regulator upside down and carefully unscrew the bottom section from the top section (SEE FIGURE 17B).

Push both the piston and spring out of the top of the inline regulator (SEE FIGURE 17C).

Insert a 1/8" hex key into the adjuster screw in the bottom section of the inline regulator, turn the adjuster screw clockwise through the top of the inline regulator bottom (SEE FIGURE 17D), and pull out of the inline regulator bottom when it will no longer turn upwards[2].

Thoroughly clean the 011 NBR70 o-rings that sit on the outside of the adjuster assembly, then re-lubricate with Eclipse Grease (SEE OVERLEAF FIGURE 17E)[1].

[1]*If any o-rings are damaged please replace them. Extra o-rings are available from planeteclipse.com or your local Eclipse Service Centre.*
[2]*The adjuster screw can only be removed by turning it upwards through the bottom section of the inline regulator. The regulator may be damaged if the adjuster screw is removed incorrectly.*

FIG 17A

FIG 17B

FIG 17C

FIG 17D

(CONTINUED)

Using a dry cotton bud, clean the internal 008 NBR70 o-ring that sits inside the top section of the adjuster assembly. Then using a small hex key gently apply Eclipse Grease to the o-ring (SEE FIGURE 17F)[1].

At this point if you are maintaining the inline regulator to fix a supercharging issue, turn to page 58, the *'Advanced SL3 Inline Regulator Maintenance'* section. If you are not fixing a supercharging issue then there is no need to perform this advanced maintenance procedure.

Re-install the adjuster assembly into the bottom section of the inline regulator threaded end first. Apply light pressure to the top of the adjuster assembly, while using a 1/8" hex turn the adjuster screw counter-clockwise until is stops at the base of the inline regulator (SEE FIGURE 17G). Then turn the adjuster screw back in $2^{1/2}$ turns to set an inline regulator output pressure that will not damage the marker when it is 'gassed up'.

Take the piston, inspect for damage and clean the 016 NBR70 o-ring at the top, re-lubricating it with a light application of Eclipse Grease (SEE FIGURE 17H). Place the inline regulator spring over the piston, then insert the piston and spring into the top of the inline regulator top section (SEE FIGURE 17I). Holding the piston and spring in place, screw the top and bottom sections of the inline regulator together.

Screw the inline regulator onto the Etek4 body in a clockwise direction (SEE FIGURE 17J), then re-connect the macroline hose to the fitting on the regulator swivel. Basic cleaning of the inline regulator is complete.

[1]*If any o-rings are damaged please replace them. Extra o-rings are available from planeteclipse.com or your local Eclipse Service Centre.*
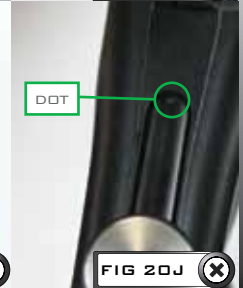
⚠ **WARNING** ⚠
IF YOU ARE AT ALL UNSURE OF PERFORMING A MAINTENANCE PROCEDURE PLEASE CONTACT YOUR NEAREST SERVICE CENTRE.

FIG 17E   FIG 17F
FIG 17G   FIG 17H
FIG 17I   FIG 17J

⚠ **WARNING** ⚠
THE SPRING IN THE ETEK4 INLINE REGULATOR HAS BEEN DESIGNED SPECIFICALLY FOR USE WITH THE ECLIPSE ETEK4. USING ANY OTHER SPRING WILL DAMAGE THE ETEK4 AND VOID YOUR WARRANTY.

ADVANCED SL3 INLINE REGULATOR MAINTENANCE

This procedure is only required if you are fixing a supercharging SL3 inline regulator (common symptoms of supercharging are a very high velocity first shot and/or large variances in shot to shot consistency).

Place a 3/32" hex key through the adjuster top section (SEE FIGURE 18A), then insert a 1/8" hex key into the bottom of the adjuster screw and carefully turn it counter-clockwise until the two parts begin to unscrew freely (SEE FIGURE 18B). With your fingers fully unscrew the two parts taking care not to lose any of the internal components (SEE FIGURE 18C).

Inside the adjuster screw Ⓒ you will find a regulator seal Ⓐ, purge poppet and spring Ⓑ *(together these two form the purge poppet assembly)* (SEE FIGURE 18D). Inspect and clean the regulator seal, turning it over if one side appears excessively worn or damaged or replace if necessary. Inspect and clean the purge poppet or replace if necessary.[1]

Place the purge poppet and attached spring in the central hole in the regulator seal, then insert these parts into the adjuster screw (SEE FIGURE 18E).

With the regulator seal, purge poppet and spring installed back into the adjuster screw, replace the adjuster top section (SEE FIGURE 16BF). Screw the two parts tightly together using 1/8" and 3/32" hex keys (SEE FIGURE 18B). Refer to the 'The SL3 Inline Regulator' section on page 57 to re-assemble the SL3 inline regulator.

[1] *If the Purge Poppet Assembly is removed for maintenance ensure that is it re-installed correctly, failure to do so may seriously damage the Etek4 solenoid valve.*

FIG 18A

FIG 18B

FIG 18C

FIG 18D

FIG 18E

FIG 18F

CLEANING THE LOW PRESSURE REGULATOR (LPR)

The inline regulator can be removed if needs be.

Unscrew the LPR cap from the marker body (SEE FIGURE 19A).

Remove the LPR piston and rear spring from the LPR cap (SEE FIGURE 19B).

Cupping the palm of one hand, turn the LPR cap upside down and tip the front spring out into your palm (SEE FIGURE 19C).

Remove the rear spring from the LPR piston and using a dry cotton bud, carefully clean the 013 NBR 70 o-ring on the LPR piston (SEE FIGURE 19D). If the o-ring is damaged then replace it. If the seal in the tip of the LPR piston is damaged then the entire LPR piston will need to be replaced. Once the seal has been cleaned, lubricate with a light application of Eclipse Grease so that it is ready for re-assembly.

FIG 19A

FIG 19B

FIG 19C

FIG 19D

(CONTINUED)

Insert the front spring (silver in colour) into the LPR cap, so that it rests neatly on the adjuster screw[1] (SEE FIGURE 19E).

Place the gold coloured spring onto the LPR piston and insert piston and spring into the LPR cap, o-ring end first (SEE FIGURE 19F).

Before screwing the LPR cap back onto your Etek4, use a dry cotton bud to clean the 010 NBR 70 o-ring inside the LPR body (SEE FIGURE 19G). Lubricate this seal using Eclipse Grease

Replace the LPR cap by screwing it onto the LPR body in the Etek4 (SEE FIGURE 19H).

[1] The adjuster screw does not need to be removed from the LPR cap for regular maintenance.

FIG 19E

FIG 19F

FIG 19G

FIG 19H

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

MAINTAINING THE RAMMER

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

Pull the bolt pin upwards so that it disengages the rammer, allowing the bolt to be removed via the rear of the Etek4 (SEE FIGURE 20A).

Using a 3/16" hex key, unscrew and remove the rammer cap at the rear of the Etek4 (SEE FIGURE 20B).

Raise the front of the Etek4 and tap the Etek4 onto your hand until the rammer falls into the palm of your hand (SEE FIGURE 20C).

Thoroughly clean the rammer shaft and all of its seals[1], paying special attention to the 009 NBR 70 o-ring on the middle of the shaft (SEE FIGURE 20D), the rear 011 NBR 70 o-ring (SEE FIGURE 20E) and the condition of the rammer bumper cushion in the rammer cap (SEE FIGURE 20F OVERLEAF).

Replace any worn seals/bumpers using authentic Eclipse Etek4 spare parts.
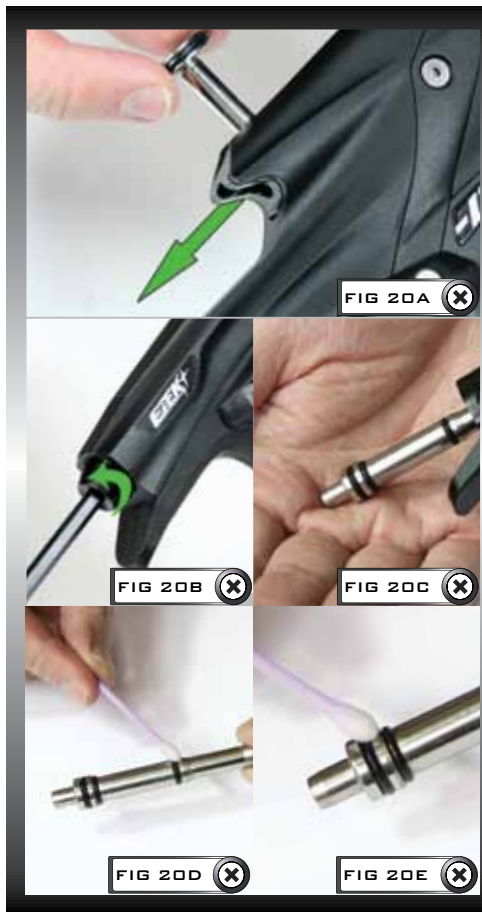
[1] *The number of o-rings on the rammer may vary according to the model of Etek4 that you have.*

FIG 20A

FIG 20B

FIG 20C

FIG 20D

FIG 20E

(CONTINUED)

Lubricate all of the seals on the rammer shaft and inside the rammer cap and replace the rammer into the rear of the Etek4 body as shown in (SEE FIGURE 20G).

DO NOT use Eclipse Grease on the rammer. Only use Eclipse Gun Oil.

Replace the rammer cap, using the 3/16" hex key to secure it into the Etek4 body (SEE FIGURE 20H).

DO NOT over tighten the rammer cap screw.

Noting the position of the rammer in the Etek4 body (SEE FIGURE 20I), replace the bolt and locate the bolt pin into the designated groove in the rammer shaft using the dot on the bolt as a reference guide (SEE FIGURE 20J).

FIG 20F

FIG 20G

FIG 20H

FIG 20I

DOT
FIG 20J

CLEANING AND LUBRICATING THE BOLT

<div style="background:orange">

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

</div>

Raise the bolt pin and remove the bolt assembly from the rear of the Etek 4 marker body (FIGURE 21A).

Using a dry cotton bud remove any paint or grease from the surface of the bolt (SEE FIGURE 21B).

Lubricate the detent slots on either side of the bolt with gun oil, ensuring that a drop of oil is placed on the o-rings at the point where they cross the detent slots (SEE FIGURE 21C). Replace the bolt, locking the bolt pin into the designated slot in the rammer using the dot on the bolt as a reference guide (SEE FIGURE 21D).

We recommend the use of Eclipse Gun Oil on the Etek4 rammer and bolt.

FIG 21A

FIG 21B

FIG 21C

DOT
FIG 21D

REMOVING AND ATTACHING THE FRAME

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 (pages 56-57).

Using a 5/64" hex key remove the six screws that attach the Etek4 rubber grips to the Etek4 grip frame (SEE FIGURE 22A). Unplug the solenoid Ⓐ and break beam sensor system connectors Ⓑ from the Etek4 circuit board (SEE FIGURE 22B).

Using a 1/8" hex key undo the two frame retaining screws (SEE FIGURE 22C) and remove the frame from the Etek4 body, taking care not to damage any wires (SEE FIGURE 22D).

You have now removed the frame.

FIG 22A

Ⓐ
Ⓑ

FIG 22B

FIG 22C

FIG 22D

(CONTINUED)

To re-attach the frame follow the instructions below.

Carefully thread the solenoid and break beam sensor system wires through the access holes in the top of the Etek4 grip frame (SEE FIGURE 22E) and re-attach the grip frame to the marker body by tightening the two grip frame screws using a 1/8" hex key (SEE FIGURE 22F).

Ensure that the break beam sensor system cables lie neatly in the slots provided for them on the inside of the Etek4 grip frame and connect the solenoid and the break beam sensors to their relevant connections on the Etek4 circuit board (SEE FIGURE 22G). Adjust both the solenoid wires and the break beam sensor system wires so that they sit neatly within the grip frame away from the micro-switch arm (SEE FIGURE 22H).

Re-attach the Etek4 rubber grips to the frame by using a 5/64" hex key to replace the 6 grip screws.

FIG 22E

FIG 22F

FIG 22G

FIG 22H

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

THE ETEK4 TRIGGER ASSEMBLY

Having removed the trigger frame completely from the Etek4 body (see page 64), remove the retaining clip that holds the bearing carrier in place in the top of the frame, this is best done using some pointed nose pliers to pinch the clip and lift free from the frame (SEE FIGURE 23A).

Gently lift the bearing carrier and trigger assembly free from the frame taking care not to damage the micro-switch (SEE FIGURE 23B).

Using a 1/16" hex key, loosen the trigger pin retaining set screw in the back of the trigger (SEE FIGURE 23C). Use a small hex key to push the trigger pin out of the bearing carrier from one side (SEE FIGURE 23D).

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

FIG 23A

FIG 23B

FIG 23C

FIG 23D

MAINTENANCE

(CONTINUED)

Position the trigger so that the hole through the trigger lines up with the holes in the bearing carrier (SEE FIGURE 23E).Then slide the trigger pin in place, tighten the trigger pin locking screw in the back of the trigger ensuring that the trigger can still move freely in the bearing carrier.

Gently lower the trigger assembly and bearing carrier into the frame, taking care not to damage the micro-switch and ensuring that the trigger is positioned correctly (SEE FIGURE 23F). Then insert the retaining clip into the frame on top of the bearing carrier, ensuring the legs of the clip are sat in the locating holes in the frame wall (SEE FIGURE 23G).

You have now stripped and cleaned your Etek4 trigger assembly.
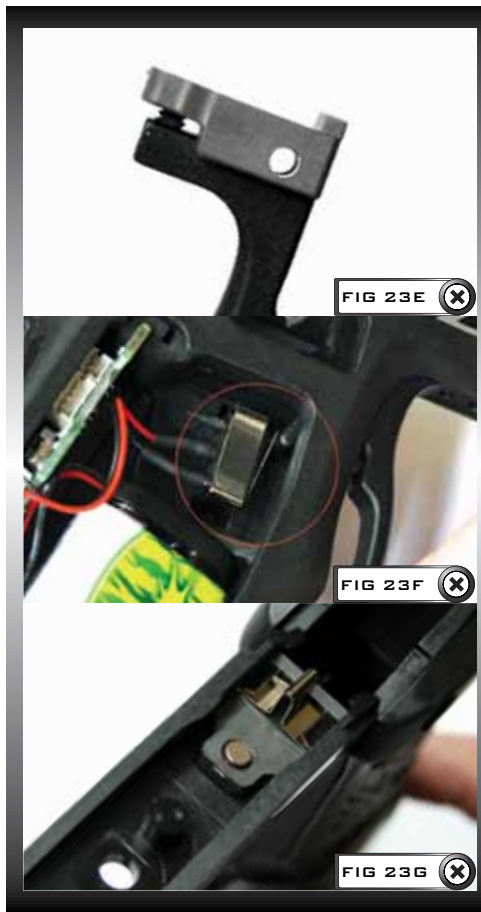
FIG 23E

FIG 23F

FIG 23G

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

THE ETEK4 SOLENOID ASSEMBLY

With the frame separated from the Etek4 body and the solenoid assembly and BBSS assembly unplugged from the circuit board (see page 64) (SEE FIGURE 24A), use a small Phillips head screw driver to undo and remove the two M1.6x16 screws that hold the solenoid assembly onto the solenoid manifold (SEE FIGURE 24B).

Removing the solenoid will completely reveal the solenoid manifold (SEE FIGURE 24C), using a 5/64 hex key remove all three M2.5x5 screws which hold the manifold to the Etek4 body (SEE FIGURE 24D).

With the solenoid assembly completely removed from the Etek4 body the bottom of the Etek4 body should now resemble FIGURE 24E. Ensure that the air transfer holes in the bottom of the body are free from contamination from any dirt, debris, paint or moisture and clear away any excess grease if it appears to be blocking any of the transfer holes.

Check the top and bottom of the solenoid manifold to ensure that it is also free from damage or debris (SEE FIGURE 24E). Remove and clean the rubber gaskets as shown in FIGURE 24F. Replace the rubber gaskets ensuring that they lie flat in their designated grooves in the solenoid manifold body.

Re-attach the solenoid manifold to the Etek4 body with the three M2.5x5 screws.

FIG 24A

FIG 24B

FIG 24C

FIG 24D

FIG 24E

FIG 24F

FIG 24G

(CONTINUED)

With the solenoid detached from the manifold, use a small flat instrument to gently lever the two solenoid retainer clips off the solenoid (SEE FIGURE 24G). This will allow you to split the solenoid into two and access the spool valve.

Using a pair of needle-nose pliers remove the spool shaft from the main section of the solenoid (SEE FIGURE 24H). Note that it is the flat side of the spool shaft that is facing you when you remove the spool shaft. It may be necessary to also remove the front cap of the solenoid to push the shaft out, if it cannot be pulled out with the needle nose pliers.

Thoroughly clean and inspect the spool shaft and its o-rings for any debris or dirt (SEE FIGURE 24I). Lubricate the o-rings using Eclipse Grease lubricant and re-insert the spool shaft into the solenoid body, insuring that the concave end goes in first. FIGURE 24J shows the concave end and FIGURE 24K shows the flat end.

Ensure the solenoid manifold is attached to the Etek4 body before attempting to attach the solenoid.

Replace the two solenoid retaining clips to the sides of the solenoid body. Then having ensured that the small manifold gasket is in place; screw the solenoid back into the correct position on the manifold. For reference, the pilot end of the solenoid with the metal casing should be towards the front of the marker as shown in FIGURE 24L.

You have now stripped and cleaned your Etek4 solenoid.

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

FIG 24H

FIG 24I

FIG 24J

FIG 24K

FIG 24L

MAINTAINING THE VALVE ASSEMBLY

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 (page 56-57). Remove the frame as detailed on page 64.

Take the Etek4 body and turn it so that the underside of the solenoid assembly, and valve plug are visible and accessible. Using a 1/8" hex key remove the screw from the front regulator mount that holds the LPR body in the marker body (SEE FIGURE 25A).

Remove the entire LPR assembly, the valve spring and the exhaust valve from the marker body (SEE FIGURE 25B). Using a 1/8" hex key remove the valve plug from the underside of the Etek4 body (SEE FIGURE 25C). The bottom of the rammer housing should now be visible through the valve plug hole (SEE FIGURE 25D). 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 the end of the rammer and push it backwards along with the rammer housing out the back of the Etek4 body (SEE FIGURE 25E AND 25F).

FIG 25A

FIG 25B

FIG 25C

FIG 25D

FIG 25E

FIG 25F

(CONTINUED)

Inspect the sealing face of both the rammer housing (SEE FIGURE 25G) and the exhaust valve (SEE FIGURE 25H) for any excessive wear or damage. If either the exhaust valve or the rammer housing are damaged then replace with authentic Etek4 parts.

Clean and lubricate all of the o-rings on the rammer housing with Eclipse Gun Oil paying particular attention to the front two around the outlet port on the rammer housing(SEE FIGURE 25I).

Insert the rammer housing back into the Etek4 body ensuring that the outlet port is facing upwards and the valve plug hole is facing downwards (SEE FIGURE 25J).
Slide the rammer housing all the way into the Etek4 body until the rammer cap nears the back of the body.

Looking on the underside of the Etek4 body carefully line up the hole in the body and rammer housing which accommodates the valve plug screw (SEE FIGURE 25K).
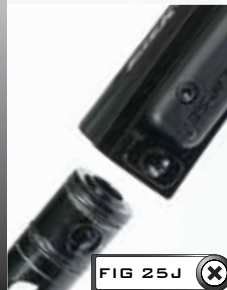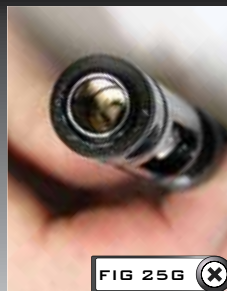
FIG 25G

FIG 25H

FIG 25I

FIG 25J

FIG 25K

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

(CONTINUED)

Then take a 1/8" hex key and replace and tighten down the valve plug screw (SEE FIGURE 25L).

Using Eclipse Gun Oil or Eclipse Grease lubricate the LPR body o-rings (SEE FIGURE 25M).

Take the exhaust valve and insert the white end into the valve spring, and the other end of the valve spring into the back of the LPR body (creating a stack of parts) (SEE FIGURE 25N).

Take the stack and insert it into the valve chamber bore of the Etek4 body, exhaust valve first (SEE FIGURE 25O).

When inserted, line up the holes in the LPR body with the FRM screw hole in the Etek4 body (SEE FIGURE 25P).

Insert and tighten down the FRM screw using a 1/8" hex key (SEE FIGURE 25Q).

Attach the Etek4 frame (See page 65).

You have now stripped and cleaned your Etek4 Exhaust Valve Assembly.

FIG 25L

FIG 25M

FIG 25N

FIG 25O

FIG 25P

FIG 25Q

MAINTENANCE

THE ON/OFF PURGE SYSTEM (OOPS)

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

Having disconnected the macroline hose from the fitting on the OOPS body, unscrew and remove the OOPS knob from the OOPS body (SEE FIGURE 26A).

The push rod and o-rings will now be exposed (SEE FIGURE 26B).Carefully slide the push rod out from either side of the OOPS body, taking care not to lose the two o-rings on the push rod (SEE FIGURE 26C).

Clean off any dirt, debris or moisture from the OOPS knob and the OOPS body (SEE FIGURE 26D).

Remove the OOPS insert assembly using a 5/32" hex key (SEE FIGURE 26E). Remove the OOPS pin from the OOPS insert.

Clean and check the condition of the 007 NBR 70 o-ring on the outside of the OOPS insert, replacing as necessary (SEE FIGURE 26F).

FIG 26A ❌   FIG 26B ❌

FIG 26C ❌   FIG 26D ❌

FIG 26E ❌   FIG 26F ❌

73.

(CONTINUED)

Clean and check the condition of the single internal 005 NBR 90 o-ring in the front of the OOPS insert and replace if necessary (SEE FIGURE 26G). Lubricate this o-ring liberally using Eclipse Grease.

Lubricate the narrow end of the OOPS pin with a smear of Eclipse Grease and push the OOPS pin, narrow end first, into the OOPS insert so that it sits in the OOPS insert and pokes through to the front (SEE FIGURES 26H & 26I).

Screw the OOPS insert back into the OOPS body ensuring that the o-ring end goes in first.

Replace the push rod into its designated slot (SEE FIGURE 26J) then side 004 NBR 70 o-rings onto both ends of the push rod. Make sure the push rod is centred in the OOPS body (SEE FIGURE 26K).

Slide the OOPS knob over the OOPS body and screw the knob onto the body (SEE FIGURE 26L).

Reconnect the macroline hose to the fitting on the OOPS body (SEE FIGURE 26M).

You have now successfully cleaned and maintained your On/Off Purge System.

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

FIG 26G ⊗

FIG 26H ⊗

FIG 26I ⊗

FIG 26J ⊗

FIG 26K ⊗

FIG 26L ⊗

FIG 26M ⊗

INSTALLING THE EMORTAL BOARD (ETEK4 AM FRAMES ONLY)

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

Open up the frame by unscrewing the three grip screws with a 5/64" hex key. (SEE FIGURE 27A)

Unplug all 3 connectors from the circuit board. (SEE FIGURE 27B)

Unplug and remove the battery. See page 11 on *'Installing a 9V Battery'* for instructions on how to do this. (SEE FIGURE 27C)

Slide the LED board out of the frame along with the retainers. (SEE FIGURE 27D)

Using a hex key or finger push the LED navigation console out of the frame from the back though the window in the frame (SEE FIGURE 27E). Leave the plastic push button strip in the back of the frame. (SEE FIGURE 27F)

FIG 27A
FIG 27B
FIG 27C
FIG 27D
FIG 27E
FIG 27F

(CONTINUED)

Take the Emortal Board navigation console and peal off the sticker backing. (SEE FIGURE 27G)

Making sure the small plastic lens is still in the window at the bottom of the navigation console, and the push button strip is still in the back of the frame, insert the navigation console into the back of the frame with the window at the bottom. (SEE FIGURE 27H)

Ensure the circuit board retainers are attached in the correct orientation to the Emortal board (SEE FIGURE 27I). Then insert the Emortal board into the frame with the screen at the bottom of the frame.

Connect the BBSS, Solenoid and Trigger connectors to the circuit board with their corresponding sockets on the board. (SEE FIGURE 27J)

Install a 9V battery as described on page 11. (SEE FIGURE 27K)

Replace the three grip screws using a 5/64" hex key. (SEE FIGURE 27L)

You have now installed the Etek4 Emortal board.

UPGRADING

FIG 27G

FIG 27H

ETEK4 EMORTAL BOARD ORIENTATION

FRAME
FIG 27I

FIG 27J

FIG 27K

FIG 27L

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Although a fresh battery has been fitted, the Etek4 will not switch on.	The battery has been fitted incorrectly.	Fit the battery correctly.
	The battery connector is not making proper contact with the battery.	Remove the battery, check the battery connector is clean and re-install the battery.
The battery does not seem to last very long.	The battery type is of a low quality.	Use an alkaline or lithium battery. Do not use a low quality or rechargeable battery.
The Etek4 leaks from the solenoid.	Either gasket is damaged and/or not seated correctly in its designated pocket in the manifold body.	Replace the gasket if damaged using Etek4 parts kit. Ensure the gasket is seated correctly.
	The Etek4 is leaking from the barbs.	Check hose for cuts or replace barbs.
	LPR is supercharging causing intermittent leaking.	Inspect and clean regulator seal (in LPR piston) and regulator seat (in LPR body). Replace if necessary.
	Damaged or incorrect seals on rammer.	Replace seals.
	Solenoid Spool Shaft is damaged or dirty.	Clean or replace Spool Shaft as required.
	Damaged Etek4 solenoid.	Replace Etek4 solenoid.
The Etek4 leaks down the barrel.	Incorrect seal on front of rammer housing.	Replace front seals on rammer housing with 014 NBR70.
	Dirty / damaged exhaust valve.	Clean / replace exhaust valve.
	Dirty / damaged rammer housing.	Clean / replace rammer housing and o-rings.
Gas vents quickly down barrel as soon as it is gassed up.	The exhaust valve has become jammed in the rammer housing.	Inspect and replace exhaust valve and rammer housing 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 Dwell parameter is set too low.	Increase the Dwell parameter.
The Etek4 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).
The Etek4 does not fire.	Trigger is set up incorrectly.	Set trigger up correctly. (See Setting the Trigger on page 25)
	Solenoid is not plugged into the Etek4 PCB.	Plug solenoid into port on the Etek4 PCB.
	The break beam sensor system is enabled but there is no paint.	Fill loader with paint.
	Micro-switch is not being activated.	Adjust front and rear travel screws accordingly.
	Micro-switch is damaged.	Replace Micro-switch.
	Solenoid valve is damaged	Replace Solenoid
Low velocity first shot.	FSD Comp parameter is too low to overcome stiction on solenoid and / or rammer o-rings.*	Increase FSD Comp parameter.
High velocity first shot.	FSD Comp parameter set too high.*	Reduce FSD Comp parameter.
	Inline regulator pressure is creeping.	Strip and clean inline regulator. Replace inline regulator piston if necessary.
The trigger very "bouncy".	Incorrect filter settings.	Check that your trigger filter and debounce settings suit your trigger set-up.
	Trigger pull too short and return magnet strength too low.	Refer to Setting the Trigger section for guidelines of how to adjust your Etek4 trigger accordingly.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
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 Etek4 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.
Etek4 is inconsistent.	Bad quality paint.	Use better quality paint.
	Poor paint size to barrel bore match.	Use a paint size and barrel bore that match.
	Inline regulator is supercharging.	Strip and clean inline regulator.
Leaking rammer assembly (Leak gets louder when bolt is removed).	Front rammer shaft seal deteriorated.	Replace front rammer shaft seal.
Eye turns itself off after firing.	Eye is dirty.	Clean the eyes.
	Eye is faulty.	Replace the eyes.
	Eye is out of place.	Re-Install Eyes. Check alignment.
When the Etek4 powers up, the marker enters the set up mode. (LED board) When the Etek4 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 insufficient trigger adjustment then turn the magnet return force set screw counter clockwise also.
The Etek4 leaks out of the LPR body vent hole (small hole below the LPR assembly on the Etek4 body).	The two rear 14x2 o-rings on the LPR body are damaged.	Replace both rear o-rings with new 14x2 NBR70 o-rings.
* ONLY APPLIES TO ETEK4'S WITH AN EMORTAL BOARD FITTED		

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56 Bolt Pin
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58 Body
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60 1/4" Macroline
61 OOPS Knob
62 OOPS Body
63 OOPS Insert
64 OOPS Insert External o-ring
65 OOPS Insert Internal o-ring
66 OOPS Pin
67 OOPS Push Rod
68 Rammer Housing o-rings
69 Bolt Plunger
70 Bolt Spring
71 Zick2 Rammer Bumper
72 Clamping Lever
73 Clamping Feed Tube
74 Clamping Feed Screw (Short)
75 Clamping Feed Screw (Long)
76 Purge Poppet Assembly
77 Break Beam Sensor Unit
78 Bearing Carrier Retaining Clip
79 Clamping Feed Swivel Assembly
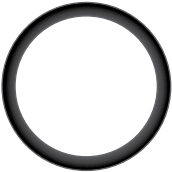
SCREW	QTY	DESCRIPTION
	3	SOLENOID MANIFOLD SCREWS (M2.5x5 CAP HEAD SOCKET)
	2	SOLENOID SCREW (2) (M1.6X16 PHILLIPS BUTTON HEAD)
	8	RUBBER GRIP SCREW (6), BBSS COVERS SCREW (2) (6-32UNC x 5/16 COUNTERSUNK SOCKET)
	1	SHORT FEED NECK SCREW (10-32UNF x1/2 CAP HEAD SOCKET)
	1	LONG FEED NECK SCREW (10-32 UNF x 5/8 CAP HEAD SOCKET)
	3	TRIGGER ADJUSTMENT SCREW (6-32 UNC x 3/16 SOCKET SET SCREW)
	1	TRIGGER PIN RETAINING SCREW (6-32 UNC x1/8 SOCKET SET SCREW)
	2	OOPS SCREW (10-32 UNF x 1/2 SOCKET SET SCREW)
	1	VALVE PLUG (CUSTOM MANUFACTURED)
	1	LPR ADJUSTER SCREW (CUSTOM MANUFACTURED)
	2	FRAME SCREW (10-32 UNF x 3/8 SOCKET BUTTON HEAD)
	1	FRM RETAINING SCREW (CUSTOM MANUFACTURED)
	2	MICRO SWITCH RETAINING SCREW (AM ONLY) (M2X10 PHILLIPS BUTTON HEAD)

O-RING	LOCATION	O-RING	LOCATION
18x2	Etek Body FRM	*014*	Rammer Housing
016	LPR Body* Shaft4 Barrel Back (body end) SL3 Inline Regulator Piston SL3 Inline Regulator Bottom (x2)	*013*	LPR Piston
		011	Back of the Rammer Rammer Cap SL3 Inline Regulator Adjuster External (x2)
		010	Inside LPR Body Inside Rammer Cap
015	Bolt (x2) Shaft4 Barrel Back (tip end)	*009*	Rammer Front Bumper Rammer Shaft
		008	SL3 Inline Regulator Adjuster Internal
14x2	LPR Body*	*007*	Torpedo LPR Adjuster Screw OOPS Insert External
		005	OOPS Insert Internal (NBR 90)
		004	OOPS Push Rod (x2)

* = EITHER 016 OR 14x2 O-RINGS CAN BE USED ON THE LPR BODY DUE TO THE FACT THAT IT HAS TWO SEALING O-RINGS.
ALL O-RINGS ARE NBR 70 DUROMETER UNLESS OTHERWISE STATED.

ECLIPSE CERTIFIED SERVICE CENTRES

Are you unsure of where to send your Etek4 to be repaired or serviced? If your local Eclipse dealer can't assist you, why not contact your nearest Certified Eclipse Service Centre and arrange to send it into them to undertake any work that you require.

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

www.planeteclipse.com/site/service_centres

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

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

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

ECLIPSE ETEK4 TOOL TUBE
This handy little tool tube includes all of the hex key sizes that you will need to strip and maintain your Etek4.

ETEK4 SPARES
Replacement spares to service your Etek4 are available from all Eclipse Service Centres (Not all parts shown).

BALL DETENTS
10 Replacement rubber Detents for your Etek4.

ETEK4 EMORTAL BOARD
Fully functional LCD Circuit Board for Etek4 AM frames.

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