



#### WARNING: ADHERE STRICTLY TO THESE AND ALL OTHER SAFETY INSTRUCTIONS AND GUIDELINES.

Warnings for safe Etek Ego handling:

- The Etek Ego is not a toy.
- Careless or improper use, including failure to follow instructions and warnings within this User Manual and attached to the Etek Ego could cause death or serious injury.
- Do not remove or deface any warnings attached to the Etek Ego.
- Paintball industry standard eye/face/ear and head protection designed specifically to stop paintballs and meeting ASTM standard F1776 (USA) or CE standard (Europe) must be worn by user and any person within range.
- Persons under 18 years of age must have adult supervision when using or handling the Etek Ego.
- Observe all local and national laws, regulations and guidelines.
- Use only professional paintball fields where codes of safety are strictly enforced.
- Use compressed air/nitrogen only. Do not use Co2
- Always follow instructions, warnings and guidelines given with any first stage regulator you use with the Etek Ego.
- Use 0.68 calibre paintballs only.
- · Keep the Etek Ego switched off until ready to shoot.
- Treat every marker as if it is loaded.
- Never point the Etek Ego at anything you do not intend to shoot.
- Do not shoot at persons at close range.
- Always measure your markers velocity before playing paintball, using a suitable chronograph.
- Never shoot at velocities in excess of 300 feet (91.44 meters) per second, or at velocities greater than local or national laws allow.

- Do not fire the Etek Ego without the bolt in the breech, as highpressure gas will be emitted.
- Do not fire the Etek Ego without the bolt pin locked securely in place.
- Never look into the barrel or breech area of the Etek Ego whilst the marker is switched on and able to fire.
- Never put your finger or any foreign objects into the paintball feed tube of the Etek Ego.
- Never allow pressurised gas to come into contact with any part of your body.
- Always switch off the Etek Ego when not in use.
- Always fit a barrel-blocking device to the Etek Ego when not in use on the field of play.
- Always remove all paintballs from the Etek Ego when not in use on the field of play.
- Always remove the first stage regulator and relieve all residual gas pressure from the Etek Ego before disassembly.
- The Etek Ego can hold a small residual charge of gas, typically 2 shots, with the first stage regulator removed. Always discharge the marker in a safe direction to relieve this residual gas pressure.
- Always remove the first stage regulator and relieve all residual gas pressure from the Etek Ego for transport and storage.
- Always follow guidelines given with your first stage regulator for safe transportation and storage.
- Always store the Etek Ego in a secure place.

NOTE: THIS USER MANUAL MUST ACCOMPANY THE PRODUCT IN THE EVENT OF RESALE OR NEW OWNERSHIP, SHOULD YOU BE UNSURE AT ANY STAGE YOU MUST SEEK EXPERT ADVICE (SEE SERVICE CENTERS)

#### ORIENTATION

This section names the component parts of the Etek Ego Marker. This section is essential reading for everyone.

- > GET TO KNOW YOUR ETEK EGO
- > THE ETEK EGO CONTROL CONSOLE

#### OUICK SET-UP

This section provides details on how to get up and running quickly with your Etek Eqo. This section is essential reading for everyone.

- > INSTALLING A BATTERY
- > SWITCHING ON THE ETEK EGO
- > SWITCHING OFF THE ETEK EGO.
- > FIRING THE ETEK EGO.
- > USING THE ETEK BREAK-BEAM SENSOR SYSTEM

#### **USING YOUR EGO**

This section provides more detailed information on how to use and interact with the Etek Ego via its user interface.

- > SETTING UP
- > INSTALLING A PRESET AIR SYSTEM
- > INSTALLING AN ADJUSTABLE AIR SYSTEM
- > ATTACHING A LOADER
- > SWITCHING ON
- > THE CONTROL, CONSOLE
- > LINDERSTANDING THE BRSS OPERATION
- > ADJUSTING VELOCITY
- > ADJUSTING THE LPR PRESSURE

#### ADVANCED SET-UP

This section contains in-depth information on setting up the Etek Ego.

- > SETTING THE TRIGGER
- > THE TOURNAMENT LOCK
- > THE SET-UP MENU
- > THE MODIFYING PARAMETER
- > THE MODE PARAMETER
- > MAXIMUM RATE OF FIRE (CAPPED MODES)
- > MAXIMUM BATE OF FIRE (BBSS DISABUED)
- > DWELL
- > DEBOLINGE
- > THE BALL DETECTION TIME
- > THE RESET PARAMETER

#### MAINTENANCE

This section acts as a guide to performing routine maintenance.

- > CLEANING THE BREAK-BEAM SENSOR SYSTEM
- > STRIPPING AND CLEANING THE INLINE REGULATOR
- > STRIPPING AND CLEANING THE L.PR
- > CLEANING AND LUBRICATING THE RAMMER
- > HOW TO STRIP THE ETEK EGO
- > ASSEMBLING THE ETEK EGO
- > CLEANING THE BOLT
- > STRIPPING AND CLEANING THE SOLENOID

WARNING

#### FAULT FINDING

This section provides information on how to resolve any problems that might arise with your Etek Ego.

#### SERVICE CENTRES

This section provides information on the location of your nearest Etek Ego Service Centre.

#### PARTS LIST

This section provides a table of components that make up the Eclipse Ego.

#### WARRANTY CARD

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

#### **ACCESSORIES**

Available upgrade / repair kits for your Etek Ego.



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



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



- Este manual de (operarios y) usarios està en Inglés.
- Contiene importantes normas de seguridad e instrucciones.
- Si no esta seguro de algún punto o no entiende los conteindos de este manual debe conultar con un experto.



- Diese Bedienungs und Benutzeranleitung ist in Englisch.
- Sie enthålt wichtige Sicherheitsrichtlinen und - bestimmungen.
- Solten Sie sich in irgendeiner Weise un sicher sein. Oder den inhalte dies heftes nicht versthen, lassen Sie siche bitte von einen Experten heraten

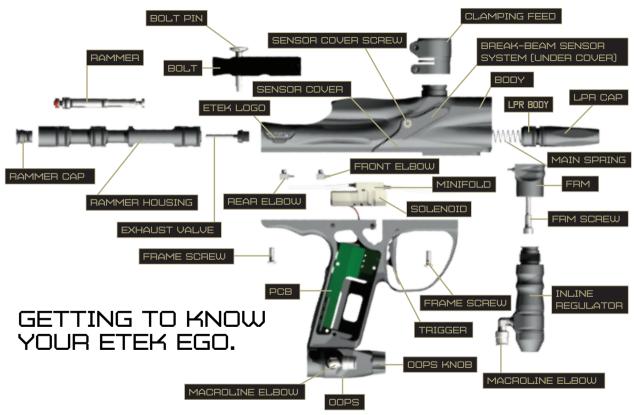
## FOR YOUR RECORDS

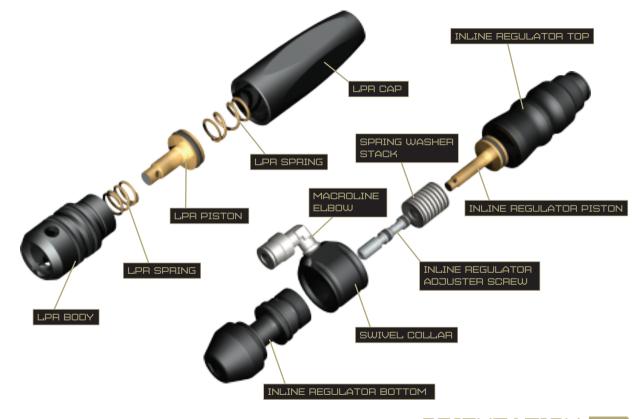
Please complete the details to keep a permanent record of your purchase of an Etek Ego. Please note, the form is intended for your personal records only, and will not act as a suitable warranty card for your purchase. Please complete the warranty card provided in the manual or the online warranty form, which can be found at WWW.PLANETECLIPSE.COM to validate your Etek Ego warranty.

PRODUCT PURCHASED	COLOUR
DATE OF PURCHASE	PURCHASED FROM
PURCHASE PRICE	SERIAL NUMBER

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#### THE ETEK EGO CONTROL CONSOLE

At the rear of the Etek Ego's grip frame you will find both the Select push button and the User Interface Display (UID) which combine to form the Etek Ego's Control Console. The Control Console is used for several different purposes including:

- TUANING THE ETEK EGO ON AND OFF USING THE SELECT PUSHBUTTON.
- DISPLAYING THE VALUE OF PARAMETERS USING THE LIID.
- SELECTING AND EDITING PARAMETERS USING THE SELECT PUSHBUTTON.
- DISPLAYING THE BATTERY LEVEL USING THE UID.
- TURNING THE ETEK BBSS ON AND OFF USING THE SELECT PUSHBUTTON.



#### INSTALLING A BATTERY

Ensure that the Etek Ego 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<sup>th</sup>" (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 2.1].

DD NDT pull on the top of the battery to remove it as this will cause the battery terminals to bend and will result in a poor electrical connection.

Fit a 9 volt alkaline battery (type PP3, 6LR61, MN1064) into the recess with the battery terminals away from you. The positive terminal should be on the right hand side, nearest to the side of the frame [SEE FIGURE 2.2].

Ensure that all of the wires are within the recess of the frame and then replace the rubber grip and tighten



SWITCHING ON THE

At the rear of the grip frame is the CONTROL CONSOLE. Press and hold the Select Pushbutton. [SEE FIGURE 2.3]. Release the Select Pushbutton when the UID lights up and your Etek Ego will begin its power up sequence.

SWITCHING OFF THE ETEK EGO

Press and hold the Select push button. Release the Select push button when all three of the LEDs on the User Interface Display (UID) turn red. The LEDs will extinguish one by one and the Etek Ego will turn off.

#### FIRING THE ETEK EGO

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

NOTE: WHEN TURNING ON THE ETEK EGO, THE BREAK-BEAM SENSOR SYSTEM IS AUTOMATICALLY ENABLED.

# USING THE BREAK BEAM SENSOR SYSTEM (BBSS)

When the Etek Ego 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 pushbutton for 0.5 seconds. The "E" on the Control Console will flash red indicating that the Break Beam Sensor System has been disabled [SEE FIGURE 2.41.

To switch on the Break Beam Sensor System, push and hold the Select pushbutton for 0.5 seconds. The "E" on the Control Console will flash either yellow (no ball detected) or blue (ball detected) indicating that the Break Beam Sensor System has been enabled [SEE FIGURE 2.5].

Additional features of the Etek Egos Break Beam Sensor System are covered in full in the "Understanding the BBSS Operation" section on Page 12 of this User Manual.



QUICK SET-UP

#### SETTING UP

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

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

## INSTALLING A PRESET AIR SYSTEM

Every Etek Ego comes complete with an Eclipse On/Off Purge System (OOPS) allowing a preset regulator and tank to be screwed straight in for immediate use. Before screwing the preset into the OOPS ensure that the On/Off knob is wound out approximately half way [SEE FIGURE 3.1].

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

Screw the preset air system into the OOPS System [SEE FIGURE 3.2] so that the bottle screws in all the way and is tight. Slowly turn the On/Off knob

in a clockwise direction allowing the On/Off knob System to depress the pin of the preset air system causing the Etek Ego to become pressurized, providing that there is sufficient air in your tank [SEE FIGURE 3.3].

You have now installed a preset air system onto your Etek Ego.





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

# INSTALLING AN ADJUSTABLE AIR SYSTEM

Firstly disconnect the 1/4" Macroline hosing from the elbow attached to the OOPS at the base of the grip frame (SEE FIGURE 3.4).

Unscrew the On/Off knob completely from the OOPS body. Using a 5/64" hex key, remove the three countersunk screws from the rubber grip, peel the rubber grip back and if there is one present, remove the 9 volt battery from within the frame. Using a 3/32" hex key loosen the set screw that tightens the OOPS body onto the base of the grip frame, so that the OOPS body can be removed from the rail by sliding it backwards (SEE FIGURE 3.5).

As well as the integrated slide rail at the base of the Etek Egos grip frame, there are also two 10-32 UNF threaded screw holes which will accept standard bottom line screws (SEE FIGURE 3.6).

Attach the air system of your choice, taking care to use the correct fittings and length and size of hose to accommodate your requirments.



#### ATTACHING A LOADER

Using a 5/32" hex key, turn the top screw of the clamping feed tube counter clockwise until the feed neck of your loader can easily be pushed into the top of the clamping feed tube [SEE FIGLIRE 3.7]. Push your choice of loader firmly into the clamping feed tube so that it rests on the shelf inside the clamping feed tube [SEE FIGLIRE 3.8]. Using a 5/32" hex key, tighten the top screw of the clamping feed tube by turning it clockwise until the loader is firmly gripped [SEE FIGLIRE 3.8].

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



#### SWITCHING ON

Pressing and holding the Select push button will switch the Etek Ego on. Release the Select push button when the UID lights up and your Etek Ego will begin its power up sequence.

USING YOUR EGO



# THE CONTROL CONSOLE

The Etek Ego utilises multi coloured LEDs to display all of the information that the user requires via the Etek Egos Control Console.

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

The Select Pushbutton is used to:

- Switch the Etek Ego On and Off.
- Switch the BBSS (eye system) On and Off.
- To enter the Set-Up Mode.
- To scroll through parameters and edit parameters.
- To access the test mode.

The "E" on the Control Console is used to:

- Display the status of the BBSS (eye system).
- Display the value of a parameter in Tens (10 90)
- Test the top LED in Test Mode.
- Test that the BBSS is working in Test Mode.

The "G" on the Control Console is used to:

- Display the value of a parameter in Units (0 9)
- Display the status of the battery.
- Test the middle LED in Test Mode.
- Test the battery indicator in Test Mode.

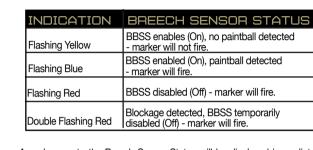
The "O" on the Control Console is used to:

- Display the value of a parameter in Tenths (0.0 0.9)
- Test the bottom LED in Test Mode.
- Test the solenoid in Test Mode.

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.





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 Control Console will alternate in colour from Yellow (no paintball detected) to 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 double flashing red light in the "E" area of the Control Console. 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.

#### ADJUSTING YOUR VELOCITY

When using your Etek Ego, you may wish to change the velocity at which your Etek Ego is firing. This is done by inserting a 1/8th" hex key into the adjuster screw at the bottom of your Etek Ego Inline regulator and adjusting it accordingly [SEE FIGURE 3.10]. By turning this adjuster screw clockwise you decrease the output pressure of the inline regulator and consequently the velocity, by turning the adjuster screw counter clockwise you increase the output pressure of the inline regulator and consequently the velocity.

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



# ADJUSTING YOUR LPR PRESSURE

When using your Etek Ego, you may wish to change the output pressure of your LPR. This is easily done by inserting a 5/32nd" inch hex key into the adjuster screw at the front and adjusting it accordingly [SEE FIGURE 3.11].

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

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



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#### SETTING THE TRIGGER

There are three adjustment points on the trigger - the FRONT STOP TRIGGER SCREW, the REAR STOP TRIGGER SCREW, and the SPRING TENSION SCREW.

As standard each Etek Ego 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 trigge 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 4.1].

The REAR STOP TRIGGER SCREW is used to set the amount of travel after the marker has fired. Turn this screw clockwise to reduce the amount of travel. Do not turn the screw too far or the trigger will be prevented from reaching its firing point and the marker will not work. Turn this screw counter clockwise to increase the amount of travel [SEE FIGURE 4.2].

The SPRING TENSION SCREW is used to adjust the amount of spring tension behind the trigger when it is pulled. Turn the screw clockwise to increase the amount of spring tension. Turn the screw counter clockwise to reduce the amount of spring tension [SEE FIGURE 4.3].



#### THE TOURNAMENT LOCK

The Etek Ego has an electronic tournament lock which, once enabled prevents the user from making any changes to the operating 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 4.4) using a 5/64" hex kev.
- 2. Turn on the Etek Ego.
- 3. Locate and press the Lock pushbutton on the circuit board (see figure 4.5). The Control 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 4.4) using a 5/64" hex key.
- 2. Turn on the Etek Ego.
- 3. Locate and press the Lock pushbutton on the circuit board (see figure 4.5). The Control 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.



NOTE: THE ETEK EGO IS SHIPPED WITH THE TOURNAMENT LOCK DISABLED.

#### THE SET UP MENU

To activate the Set Up Menu, firstly ensure that the Etek Ego is switched off. Pull and hold the trigger, and whilst the trigger is still pulled push and hold the Select pushbutton until the "E" and the "O" on the Control Console alternately flash white to indicate entry to Set Up mode. When you have entered the Set Up Menu, the "G" on the Control Console will turn red to indicate the first parameter of the Set Up Menu: The Firing Mode. You can now release the trigger.

Press the select pushbutton to scroll through each of the parameters on the Set Up Menu:

COLOUR	PARAMETER	RANGE
Red	Firing Mode	1 to 5
Green	Maximum ROF with Breech Sensor	10.0 bps to 15.0 bps
Blue	Maximum ROF without Breech Sensor	10.0 bps to 15.0 bps
Magenta ( Purple)	Dwell	1.0 ms to 15.0 ms
Cyan (Light Blue)	Debounce	1 to 10
Yellow	Ball Detection Time	1 ms to 10 ms

To display a parameter value, pull and release the trigger. The value of the currently selected parameter is indicated by the "E", "G" and "O" on the Control Console flashing in turn, top to bottom. Each letter represents one digit of the value as follows:

"E"	"G"	" <b>□</b> "
Tens (10-90)	Units (0-9)	Tenths (0.0-0.9)

For example a value of 14.5 would be displayed as:

- One flash of the "E", followed by Four flashes of the "G", followed by
- Five flashes of the "O".

If a digit is zero then thus is represented by no flashes on the area of the

Control Console that represents that digit. For example a value of 3.0 would be displayed as:

- No flashes of the "E", followed by

- Three flashes of the "G", followed by
- No flashes of the "O".

#### MODIFYING A PARAMETER

You can modify a parameter by using the following guidelines.

- 1. Ensure that you are in Set Up mode (see previous page).
- 2. Choose the parameter that you wish to modify.
- 3. Pull and hold the trigger. The value of the currently selected parameter is indicated by flashing the three letters on the Control Console as previously described.
- 4. When the sequence is complete, the "E" on the Control Console is illuminated. Release the trigger.
- 5. Pull the trigger up to nine times to set the tens digit. DO NOT pull the trigger if the required digit is zero.
- 6. Push the Select pushbutton. The "G" on the Control Console is
- 7. Pull the trigger up to nine times to set the units digit. DO NOT pull the trigaer if the required digit is zero.
- 8. Push the Select pushbutton. The "O" on the Control Console is illuminated
- 9. Pull the trigger up to nine times to set the tenths digit. DO NOT pull the trigger if the required digit is zero.
- 10. Push the Select pushbutton. The "E", "G" and "O" will flash three times: if the colour is green then the value has been accepted, if the value is red then the value has been rejected.

If the value is accepted, it will then be saved as the new value for that

parameter. If the value is rejected, then the parameter will remain unchanged from how it was before you began modifying it.

Note: To leave a parameter unchanged having already started to modify it. simply set an illegal value (00.0 or any single digit greater than 9) and the value will consequently be rejected.

ADVANCED SET-UP

## THE FIRING MODE PARAMETER.

The Firing Mode Parameter is used to control the firing mode of the Etek Ego. The Firing Mode Parameter is displayed by a Red light on the Control Console when you are in the Set Up Menu. There are five

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selectable Firing Modes on the Etek Ego. Each of the selectable firing modes has its own features as outlined below:

SEMI 1 (Mode 1 on the Firing Mode Parameter)

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

SEMI 2 (Mode 2 on the Firing Mode Parameter) This mode is the same as Semi 1 mode, except for the fact that the rate of fire is capped at 15 balls per second (bps).

RAMP 1 (Mode 3 on the Firing Mode Parameter)

This mode allows the rate of fire to ramp to a maximum set by the Maximum Rate of Fire with BBSS enabled parameter, once the trigger has been pulled four times at a minimum rate of 5 pps (pulls per second), and allows this rate of fire to maintained as long as the required trigger pull rate is maintained. After the last trigger pull, the ramp can be restarted with a single trigger pull if that pull occurs within one second.

PAMP 2 (Mode 4 on the Firing Mode Parameter)

This mode is the same as Ramp 1 mode but without the one second ramp

RAMP 3 (Mode 5 on the Firing Mode Parameter)

This mode is the same as Ramp 2 mode but activates at a minimum rate of 7.5 pulls per second.

Please Note: Certain modes may only be available in certain countries and on certain models of the Etek Egos.

# THE MAXIMUM RATE OF FIRE (CAPPED MODES).

The Maximum Rate of Fire in capped modes is used to control how fast the Etek Ego can cycle in each of the capped firing modes; Semi 2, Ramp 1, Ramp 2 and Ramp 3.

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(\*E)

The Maximum Rate of Fire (capped modes) Parameter is displayed by a Green light on the Control Console when vou are in the Set Up Menu.

This is fully adjustable between 10.0 balls per second and 15.0 balls per second.

#### 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 displayed by a Purple light on the Control Console when you are in the Set Up Menu.

This parameter is fully adjustable between 1.0 ms and 15.0 ms.

# THE BALL DETECTION TIME.

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

\*E

The Ball Detection Time Parameter is displayed by a Yellow light on the Control Console when you are in the Set Up Menu.

This parameter is fully adjustable between 1.0 ms and 10.0 m

# THE MAXIMUM RATE OF FIRE (BBSS DISABLED).

The Maximum Rate of Fire with the BBSS disabled is used to control how fast the Etek Ego cycles when the Break Beam Sensor System has been disabled.

The Maximum Rate of Fire (BBSS disabled) Parameter is displayed by a Blue light on the Control Console when you are in the Set Up Menu.

This parameter is fully adjustable between 10.0 balls per second and 15.0 balls per second.

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

#### DEBOUNCE.

The Debounce Parameter is used to set the level of Debounce (anti-bounce) on your Etek Ego.

The Debounce Parameter is displayed by a Light Blue light on the Control Console when you are in the Set Up Menu.

This parameter is fully adjustable between Debounce 1 and Debounce 10.

#### 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 pushbutton (SEE FIGURE 4.5)
- 2. The "E", "G" and "O" on the control will repeatedly flash blue to indicate that the factory default settings have been
- 3. Release the Lock pushbutton.







# CLEANING THE BREAK-BEAM SENSOR SYSTEM

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

Undo the retaining screw for the Break-Beam Sensor Cover on the left hand side of the Etek Ego using a 5/64" hex key [SEE FIGURE 5.1]

Remove the Sensor Cover to expose the back of the Break-Beam Sensor unit [SEE FIGURE 5.2]. Using a dry Q-tip, carefully remove any debris, paint or moisture from the back of the sensor unit and from inside the Sensor Cover.

Carefully lift the sensor unit free from the Etek Ego body and using another dry Q-tip, remove any grease or debris build-up from the front of the sensor unit (SEE FIGURE 5.3).





Remove the rubber finger detent and using a dry Q-tip clean the detent and it's location point in the Etek Ego Body. Replace clean detent back into the Etek Ego body [SEE FIGURE 5.4] and install sensor unit back into place [SEE FIGURE 5.5].

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 5.6].

BE CAREFUL NOT TO CROSS-THREAD THE SCREW. DO NOT OVER TIGHTEN THE SCREW.

Repeat procedure for opposite side of the Etek Ego. You have now cleaned your Break-Beam Sensor System.

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





# CLEANING THE INLINE REGULATOR

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

Disconnect the hosing from your Inline Regulator allowing it to be unscrewed from the Front Regulator Mount (FRM) [SEE FIGURE 5.7].

Turn the Inline Regulator upside down and carefully unscrew the two sections, taking care not to lose any of the washers that form the spring pack inside the regulator (SEE FIGURE S.8).

By firmly gripping the exposed end of the brass regulator piston, carefully remove the piston and spring stack in its entirety (SEE FIGURE 5.9).

The spring pack comprises of 16 sprung washers, which must be in the correct configuration for the inline regulator to perform at the required pressure range(SEE FIGURE 5.10).



Insert a 1/8" hex key into the adjuster screw in the bottom half of the inline regulator, and wind the screw clockwise through the bottom section of the regulator body [SEE FIGURE 5.11] and pull free when it will no longer turn upwards anymore.



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

Continued >

Using a dry Q-tip, clean the seal that sits at the top of the body of the bottom section of the Inline regulator [SEE FIGURE 5.1.2]. Using a light oil and a fresh Q-tip, re-lubricate the seal ready for re-assembly.

Thoroughly clean the two o-rings on the adjuster screw and lubricate ready for re-assembly [SEE FIGURE 5.13]. Inspect top face of adjuster unit for any excessive wear or damage as this could cause inline regulator to creep [SEE FIGURE 5.14].

Note: The sealing face on the inline regulator piston can also cause the regulator to creep or "supercharge", so this should also be checked.

With the threaded section towards to the base of the regulator body, reinsert the adjuster screw into the bottom half of the regulator body [SEE FIGURE 5.15]. Apply light pressure to the top of the adjuster screw and using a 1/8th" hex key wind the adjuster screw counter clockwise until it stops at the base of the regulator body. Turn the adjuster screw five turns in a clockwise direction to set the inline regulator pressure at approximately 300 - 350 psi.

Next take the piston and spring stack and clean the o-ring at the end of the piston, re-lubricating it with a light smear of Vaseline ready for re-assembly [SEE FIGURE 5.16]. Insert the piston and spring stack into the top half

of the inline regulator body (SEE FIGURE 5.17).

Keeping the top half of the inline regulator upside down, screw the two halves of the inline regulator together [SEE FIGURE S.1.8].

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



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

MAINTENANCE PT



#### CLEANING THE LPR



The Inline regulator can be removed if needs be.

Unscrew the low-pressure regulator cap from the Etek Ego body (SEE FIGURE 5.19).

Remove the LPR piston and rear spring from the LPR cap (SEE FIGURE 5.20).

Cupping the palm of one hand, turn the LPR cap upside down and tip the front spring out into your palm (SEE FIGURE 5.21).

Remove the rear spring from the LPR piston and using a dry Q-tip, carefully clean the seal on the LPR piston [SEE FIGURE 5.22]. If the seal is damaged, replace as necessary. Once the seal has been cleaned, lubricate with a light smear of Vaseline. So that it is ready for re-assembly.



MAINTENANCE



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

Continued >

Insert the front spring into the LPR cap, so that it rests neatly in the adjuster piston (SEE FIGURE 5.23).

Place the rear spring onto the LPR piston and insert piston and spring into the LPR cap, o-ring end first (SEE FIGURE 5.24).

Before screwing the LPR cap back onto your Etek Ego, use a dry Q-tip to clean the seal inside the LPR body (SEE FIGURE 5.25). Lubricate this seal using a light 3 in 1 oil.

Replace the LPR cap by screwing it onto the LPR body in the Etek Ego (SEE FIGURE 5.26).





MAINTENANCE 25

# CLEANING AND LUBRICATING THE RAMMER

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

Pull the bolt pin upwards so that it dis-engages the rammer, allowing the bolt to be removed via the rear of the Etek Ego (SEE FIGURE 5.27).

Using a 3/16" hex key, unscrew and remove the rammer cap at the rear of the Etek Ego (SEE FIGURE 5.28).

Raise the front of the Etek Ego and tap the Etek Ego onto your hand until the rammer falls into the palm of your hand (SEE FIGURE 5.29).

Thoroughly clean the rammer shaft and all of its seals, paying special attention to the seal on the middle of the shaft [SEE FIGURE 5.30], the rear seal [SEE FIGURE 5.31] and the condition of the bumper at the rear of the shaft [SEE FIGURE 5.32].

Replace any worn seals/bumpers using authentic Etek Ego spare parts.



Lubricate all of the seals on the rammer shaft and replace the rammer into the rear of the Etek Ego body with the bumper at the back (SEE FIGURE 5.33).

NOTE: USE LIGHT PAINTGUN OIL.

Replace the rammer cap, using the 3/16" hex key to secure it into the Etek Ego body [SEE FIGURE 5.34].

Noting the position of the rammer in the Etek Ego body [SEE FIGURE 5.35], replace the bolt and locate the bolt pin into the designated groove in the rammer shaft.









# HOW TO STRIP WARNING: DE-GAS ANY STORED GAS REMOVE THE BARRE EGO EASIER TO WORKS

Remove the bolt and bolt pin, disconnect any hosing and unscrew the inline regulator from the front bottle mount as detailed above.

Using a 5/64th" hex key remove the six screws that attach the Etek Ego grips to the Etek Ego frame (SEE FIGURE 5.36).

Unplug the solenoid and unplug the Break-Beam sensors from their ports on the Etek Ego printed circuit board (SEE FIGURE 5.37).

Using a 1/8" hex key undo the two frame retaining screws [SEE FIGURE 5.38] and remove the frame from the Etek Ego body, taking care not to damage any wires.

Free the hose from the barb fitting at the rear of the front regulator mount, using a pick or other suitable implement [SEE FIGURE 5.39].





Continued >

Using a 1/8th" hex key, remove the valve plug from the underside of the Etek Ego body (SEE FIGURE 5.40).

Taking the Etek Ego body, turn it so that the underside of the front regulator mount (FRM) is visible, exposing the retaining screw [SEE FIGURE 5.41]. Using a 3/16th" hex key remove the FRM retaining screw and remove the FRM from the Etek Ego body [SEE FIGURE 5.42].

Once the FRM has been removed the LPR body is exposed through the bottom of the Etek Ego body. Slide the complete LPR out of the Etek Ego body (SEE FIGURE 5.43).

Slide the rammer assembly out of the rear of the Etek Ego, remembering to remove the valve and valve spring (SEE FIGURE 5.44).

Remove the exhaust valve and valve spring from the rammer assembly, and inspect the sealing face of both the rammer assembly body and exhaust valve for any excessive wear or damage. If the exhaust valve or brass bushed valve guide is damaged then replace using authentic Etek Ego parts.

You have now stripped down your Etek Ego.









#### ASSEMBLING THE EGO

Having stripped down the Etek Ego, here is a guide of how best to re-assemble it.

Clean and lubricate the seal at the back of the LPR body [SEE FIGURE 5.45]. Slide the entire LPR back into the Etek Ego body, so that the bottom of the LPR body lines up with the FRM window in the bottom of the Etek Ego body [SEE FIGURE 5.46].

Insert the FRM, ensuring that all of the seals are in the correct place and that the FRM lines up with the bottom of the LPR body [SEE FIGURE 5.47]. Using the 3/16th" hex key tighten down the FRM retaining screw to secure both the FRM and LPR in place.

Lubricate the six seals of the rammer assembly [SEE FIGURE 5.48] and lubricate the exhaust valve shaft before inserting exhaust valve into the brass bushed valve guide [SEE FIGURE 5.49].





Continued >

Remembering to include the valve spring, begin to insert the rammer assembly into the Etek Ego body. By applying slight pressure to the back of the rammer assembly hold the rammer in place against the exhaust valve spring tension, so that the valve plug can be replaced (SEE FIGURE 5.50).

NOTE: DO-NOT OVERTIGHTEN THE VALVE PLUG SCREW.

Attach low-pressure hosing to the barb at the back of the FRM (SEE FIGURE 5.51).









# ...ASSEMBLING THE EGO

Carefully thread the solenoid and Break-Beam Sensor leads through the access hole in the top of the grip frame (SEE FIGURE 5.52), and reattach the grip frame to the marker, tightening the grip frame screws using a 1/8" hex key (SEE FIGURE 5.53).

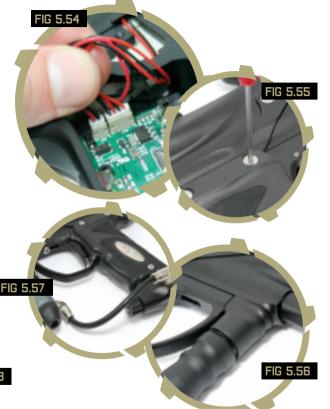
Ensure that the Break-Beam Sensor cables lie neatly in the slots provided for them in the Etek Ego grip frame. Connect the solenoid and the Break-Beam Sensors into their relevant places on the Etek Ego PCB [SEE FIGURE 5.54] and re-attach the Etek Ego grips by securing the six grip screws using a 5/64th" hex key [SEE FIGURE 5.55].

Screw the inline regulator back into the FRM [SEE FIGURE 5.56] and connect any hosing that was disconnected (SEE FIGURE 5.57). Replace bolt and locate bolt pin in the designated groove in the rammer.

You have now assembled your Etek Ego.

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





#### CLEANING THE BOLT

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

Raise the bolt pin and remove the bolt and bolt pin from the Etek Ego marker body.

Using a dry Q-tip remove any paint or grease from the surface of the bolt [SEE FIGURE 5.58].

Replace the bolt, locking the bolt pin into the designated slot in the rammer





MAINTENANCE

MAINTENANCE 31

# STRIPPING AND CLEANING THE SOLENOID

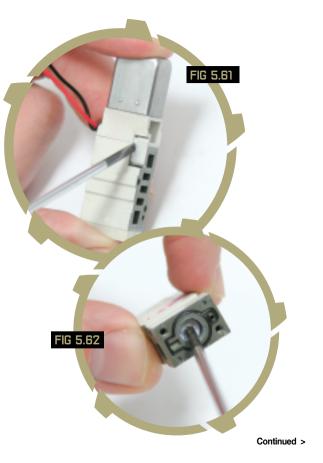
Remove the three rubber grip screws from the right hand side of your grip frame and unplug the solenoid and BBSS from the PCB. Remove the two frame screws allowing you to remove your frame, Inline regulator and hosing set-ups from your Etek Ego so that you are left with the solenoid exposed [SEE FIGURE 5.55].

Using a small Philips head screw driver, undo the two solenoid retaining screws [SEE FIGURE 5.60] and remove the solenoid from the minifold taking care not to loose the gasket from the face of the minifold.

With the solenoid detached from the minifold, use a small flat instrument to gently lever the two solenoid retainer clips off the solenoid [SEE FIGURE 5.61]. 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 from the front section of the solenoid [SEE FIGURE 5.62]. Note that it is the flat side of the spool valve facing you when you remove the spool valve. It may be necessary to also remove the front cap of the solenoid to push the spool out, if it cannot be pulled out with the needle nose pliers.





Thoroughly clean and inspect the spool and its O-rings for any debris or dirt (SEE FIGURE 5.63). Lubricate the o-rings using Dow 33 or similar lubricant and re-insert the spool into the solenoid body, with the concave end towards end A of the solenoid body.

FIGURE 5.64 and FIGURE 5.65 show the difference between the flat end of the spool and the concave end of the spool.

Replace the two solenoid retaining clips to the sides of the solenoid body and having ensured that the minifold o-rings are in place; screw the solenoid back into the correct position on the minifold. For reference, the end of the solenoid with the metal casing should be towards the rear of the marker.

Replace the Inline regulator, grip frame and hosing set-up, taking care to feed the solenoid and BBSS leads through the grip frame correctly so that they do not get caught or damaged. Having screwed ini the three rubber grip screws to finish the process.

You have now stripped and cleaned your Ego solenoid.



MAINTENANCE 33

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Although a fresh battery has been fitted, the Etek Ego will not switch on.	The battery has been fitted incorrectly.	Fit the battery correctly with the positive terminal nearest to the side of the frame.
	The battery terminals are not making proper contact with the battery.	Remove the battery, gently bend the terminals towards where the battery will sit and then replace the battery.
The battery does not seem to last very long.	The battery type is of a low quality.	Use an alkaline or metal hydride battery. Do not use a low quality or rechargeable battery.
The Etek Ego leaks from the Solenoid	Check that gasket is intact and seated correctly in their designated pockets in the Minifold.	Replace gasket if damaged using Etek Ego Parts kit. Ensure gasket is seated correctly.
	Dirt on Spool of Etek Ego Solenoid.	Strip and clean solenoid (See Maintenance Section).
	Damaged Eclipse Ego Solenoid.	Replace Etek Ego Solenoid.
	LPR is supercharging causing intermittent leaking.	Clean LPR Piston seal.
		Inspect regulator seal (in LPR Piston) and regulator seat (in LPR Body). Replace if neccessary.
	Check for damaged or incorrect seals on Rammer.	Replace seals.
	Is it leaking from the Barbs?	Check hose for cuts or replace minifold.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
The Etek Ego leaks down barrel	Leaky Exhaust Valve.	Replace Exhaust Valve.
	Damaged Valve Seat.	Replace Rammer Housing.
	Incorrect seal on front of Rammer Housing.	Replace front seals on Rammer Housing with 016 seals.
Gas vents quickly down barrel as soon as it is gassed up.	The Exhaust Valve has become jammed in the brass valve guide.	Replace Exhaust Valve and brass valve guide as necessary (see Maintenance Section).
The marker is chopping or trapping paint.	The Break-Beam Sensor System is switched off	Switch on the Break-Beam Sensor System.
	on.	Increase the ball detection time.
	The Bolt is dirty, causing the sensor system to incorrectly detect a retracted bolt.	Clean the Bolt.
	The Break-Beam Sensor System is dirty causing the incorrect detection of paintballs.	Clean the Break-Beam Sensor System.
The Etek Ego 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).



SYMPTOM	POSSIBLE CAUSE	SOLUTION
The Etek Ego does not fire.	Trigger is set up incorrectly.	Set trigger up correctly ( See Advanced Set- Up Section ).
	Solenoid is not plugged into the Etek Ego PCB.	Plug solenoid into port on the Etek Ego PCB.
	The Break-Beam Sensor System is enabled but there is no paint.	Fill loader with paint.
Low Velocity First Shot.	DWELL parameter is too low to overcome stiction on Solenoid and / or Rammer O-rings.	Increase DWELL parameter.
High Velocity First Shot.	DWELL parameter set too high.	Reduce DWELL parameter.
	Inline Regulator pressure creeping.	Strip and clean Inline Regulator. Replace Inline Regulator piston if necessary.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
My Trigger is very "Bouncy", how can I reduce it?	Too low Debounce setting.	Increase Debounce setting.
	Lengthen and strengthen your trigger pull.	Refer to Advanced Set-Up Section for guidelines of how to adjust your Etek Ego Trigger accordingly.
The Break-Beam Sensor System does not appear to be reading correctly.	The Break-Beam Sensor System is dirty.	Keep the Break-Beam Sensors clean to ensure correct resdings ( 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 ribbon cables.	Check the plug of the cables.
reduirig at air.		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 beinng fed into the breech.	If the Etek Ego 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 detents.

36 FAULT FINDING

FAULT FINDING 37

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Etek Ego is inconsistent.	Inline Regulator is supercharging.	Strip and clean Inline Regulator ( See Maintenance Section ).
Leaking Rammer Assembly ( Leak gets louder when bolt is removed ).	Front ram shaft seal deteriorated.	Replace front Rammer Shaft seal.
How can I get the best performance out of my gun?	Check your set-up.	Using a force-fed loader ( Halo B, VL eVLution II ) with the Break-Beam Sensor System enabled will give the highest peformance.
BBSS 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.

#### CERTIFIED ETEK EGO SERVICE CENTERS

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

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#### LINKS

WWW.PBNATION.COM WWW.EGOOWNERS.COM

SERVICE CENTRES

SCREW	QTY	DESCRIPTION
	XЗ	PCB SCREW
	XB	AUBBER GRIP SCREW (6), BBSS COVERS SCREW (2)
111111111	x2	FEED NECK SCREW
	X2	FRAME SCREW
	×1	FRONT REGULATOR MOUNT SCREW
	×ı	INLINE REGULATOR ADJUSTER SCREW
(m)	×4	TRIGGER ADJUSTMENT SCREW
	×ı	SLIDE RAIL SCREW
	×ı	VALVE PLUG
	Xl	LPR ADJUSTER SCREW
	×1	ON / OFF BLANKING PLUG

O-RING	LOCATION
016	Rammer Housing, LPR Body, Feed Stub.
015	Inline Regulator piston, Front Reg Mount.
013	LPR Piston.
012	Adjuster Piston.
on O	Rear Rammer O-Ring, Rammer Cap O-Ring.

O-RING	LOCATION
010	Inside LPR body, inside Adjuster Section of Inline.
009	Rammer Front Bumper, Rammer Front O-Ring.
006	Inline Adjuster Screw.
004	Small O-Ring on top of Front Reg Mount.

# EGO CCU KITS

CONTRAST COLOUR UPGRADE KITS. This unique kit allows you to swap and customize the look of your Ego marker by replacing these key components.





Players are constantly looking to shoot more fragile paint. The Ego D.A.R.T (Dyanmic Air Release Technology ) Bolt has been designed to help achieve just that.







# STAR SWIVEL INLINE REG.

Taking the excellent Ego Inline Regulator internals and performance and packaging it up in a unit with a swivel collar.



Makes fitting your loader a breeze. Available in various colours.





#### COMPREHENSIVE SPARES KIT.

Kit features a combination of all the required spares for Etek Ego.







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