

ECLIPSEBLADE®
> UPGRADE BOARD

ZERO3

OPERATORS MANUAL

TYPE F43B-RH



ZERO.B

- 1. INSTALLATION**
- 2. USING ZERO.B**
- 3. ADVANCED SET-UP**
- 4. WARRANTY INFO**

INSTALLATION

ZERO-B

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ZERO-B

INSTALLING YOUR ZERO-B BOARD

Ensure that your Eclipseblade frame is powered down and de-gassed. Remove the barrel and loader to make the frame easier to work on.

Remove the three grip rubber grip screws from the right hand side of the Eclipseblade grip frame and bend the rubber grip out of the way.

Remove the 9 volt battery (if present), and carefully unplug the cocking solenoid from the top port on your PCB, the sear solenoid from the middle port on your PCB and the Breech sensor from the bottom port on your PCB.

Using a 5/64th inch (2mm) hex key undo the three PCB screws that are holding your original circuit board into the frame. Remove the old PCB being careful not to loose the 3 pushbutton caps in the rear of the frame.

Ensure that the three pushbutton caps are correctly positioned, and position the Zero-B board into the frame. Loosely screw in the three PCB screws and holding the middle pushbutton, tighten

all three screws to correctly position the Zero-B board.

Release the middle pushbutton, and manually test all three push buttons, to ensure that the Zero-B board is in the correct position. Reconnect the cocking solenoid to the top port on your Zero-B PCB, the sear solenoid to the middle port on your Zero-B PCB and the Breech sensor to the bottom port on your Zero-B PCB.

Install a fresh 9 volt battery and turn the Zero B frame on in exactly the same manner as your old Eclipseblade PCB. Ensure that the trigger activates the PCB when pulled, and if not make the necessary adjustments (see setting the trigger in either the Eclipseblade or the E2 manual).

Screw in the three rubber grip screws on the right hand side of your frame using the 5/64th inch hex key.

Congratulations! You have now installed your Zero-B board.

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INSTALLATION

USING ZERO.B

ZERO.B

SWITCHING ON

Pressing and holding the **Select** (middle) pushbutton will switch the frame on. The LCD display will show the Eclipseblade Zero.B logo. When the pushbutton is released, the LCD display will show the designated display screen.

SCREEN LAYOUT

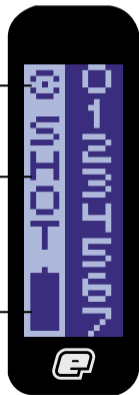
The standard layout of an Eclipseblade Zero.B display is as follows:



*Breach
Sensor Indicator*

Run Screen Name

*Battery Level
Indicator*



USING ZERO.B

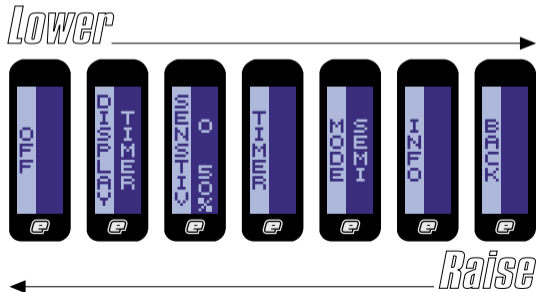
THE MAIN MENU

To activate the Main Menu, press and hold the **Select** pushbutton. After one second **OFF** will be displayed, this is one of the options on the Main Menu, as shown below.

Press the **Lower** (bottom) pushbutton to scroll down through each of the options on the menu. Once the last option on the menu has been displayed, pressing the **Lower** pushbutton will cause the first option to be displayed.

Press the **Raise** (top) pushbutton to scroll up through each of the options on the menu. Once the first option on the menu has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed. Press the **Select** pushbutton to select the displayed option.

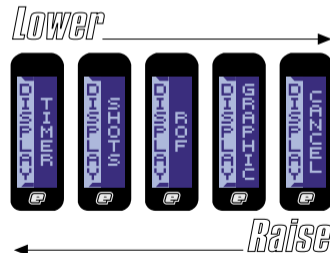
Selecting the **Back** option will return the display to the display from which the main menu was selected.



THE MAIN MENU

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

The left hand side of the screen shows **DISPLAY**, the name of the option that you are currently in, whilst the right hand side of the screen can be changed by using the **Raise** and **Lower** pushbuttons to scroll through the different **DISPLAY** options as detailed below.



NOTE: The Edit indicators appear on the left hand side when editing an option.

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

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

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

To display the Graphics Option when the frame is in normal use, simply **Select** the **GRAPHIC** option from the **DISPLAY** Menu. To return to the Main Menu, scroll to the **CANCEL** option and press **Select**.

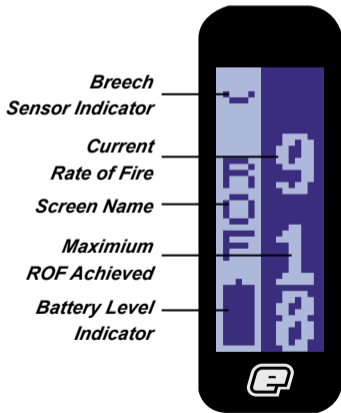
NOTE: The Option chosen in the **DISPLAY** Menu, will be the designated run screen when the Zero.B is in normal use.

USING THE DISPLAY MENU

Both the **TIMER** and the **SHOTS** options from the **DISPLAY** Menu are covered in their respective sections in the following pages.

RATE OF FIRE OPTION

The **Rate of Fire (ROF)** option is a means by which you can monitor your rate of fire whilst using the Eclipseblade Zero.B. The Rate of Fire screen looks like this:



With the breech sensor on (and no paint present), the rate of fire will be limited by your Cocking Time Out setting as it will determine the length of time the breech is held open waiting for a ball to fall into the breech.

To use the Rate of Fire screen without shooting paint, simply switch the breech sensor off using the **Raise** pushbutton.

The Rate of Fire Indicator records every pull and release of the trigger over a period of one second and calculates the number of valid shots that were fired during that period.

The current Rate of Fire is displayed in the top right hand corner. The maximum Rate of Fire that has been achieved is displayed in the bottom right hand corner.

To reset the maximum Rate of Fire simply push and hold the **Lower** pushbutton for a 1 second period.

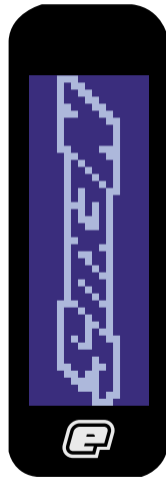
GRAPHIC OPTION

The **GRAPHIC** option is a means by which you can display either the standard Eclipseblade Zero.B logo or a custom graphic of your choice that has been uploaded using the Eclipseblade Programmer Kit (sold separately). When **GRAPHIC** is chosen from the Display menu, it simply displays the graphic that you have chosen whilst the frame is in use.

REFLECTIVE BREECH SENSOR

The Eclipseblade Zero.B is designed to be used with a Reflective breech sensor. The breech sensor is an advanced anti-chop eye. When the breech sensor is on, the software will prevent the breech from closing until a ball is detected in the breech. In this way the Eclipseblade Zero.B prevents the bolt from closing prematurely and chopping or trapping a paintball.

The Eclipseblade Zero.B is compatible with the Eclipseblade E2 Break-beam eye kit, available separately from www.planeteclipse.com



THE SENSITIVITY PARAMETER

The sensitivity parameter is used to define the point at which the Eclipseblade Zero.B registers that a ball is in the breach of the marker.

Scroll through the Main Menu until the **SENSTIV** parameter is displayed.

The signal from the breach sensor is represented as a percentage value and this value is shown at the top right of the display. As an object passes in front of the breach sensor (or between the transmitter and receiver in the case of a break beam sensor) then this value increases, as the object is removed then the value decreases. The breach sensor value is also represented by a graphical bar on the right-hand side of the screen.

The Sensitivity parameter is shown at the bottom right of the display and this is also expressed as a percentage value. When the breach sensor value is less than the Sensitivity then the Eclipseblade Zero.B considers that the breach is empty. When the breach sensor value is greater than the Sensitivity then the Eclipseblade Zero.B considers that the breach is full,

i.e. that a paintball is present.

To determine whether or not the breach sensor is working correctly, simply open the breach by retracting the bolt and watch the breach sensor value drop. Close the bolt and the breach sensor value will rise.



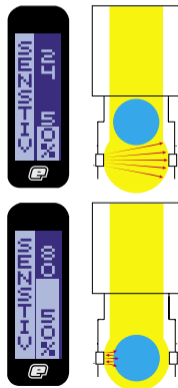
SETTING THE SENSITIVITY PARAMATER

The factory setting for the Sensitivity parameter should be fine for most setups and paint, however you may have to make adjustments to this parameter if the breach sensor is not detecting paintballs. The procedure for doing this is as follows:

1. Retract the bolt and ensure that nothing is in the breach. Note the breach sensor value in the top right of the display.
2. Drop a paintball into the breach. In the case of multi-coloured paintballs, ensure that the darker colour is facing the breach sensor (not applicable for break beam sensors). Note the breach sensor value.
3. Set the Sensitivity parameter to a value approximately half way between the two recorded breach sensor values.

To adjust the parameter, press **SELECT** to enter the edit mode. Press and release the **Raise** pushbutton to increase the parameter value. Press and hold the **Raise**

pushbutton to increase the parameter value more rapidly. Press and release the **Lower** pushbutton to decrease the parameter value. Press and hold the **Lower** pushbutton to decrease the parameter value more rapidly.

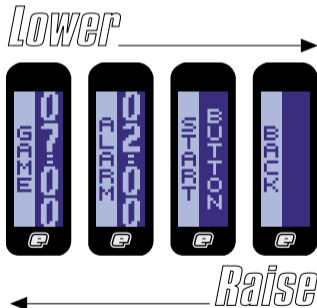


Break Beam If Fitted Break Beam If Fitted

THE GAME TIMER MENU

Scroll through the main menu until the **TIMER** option is displayed and then press **Select**. You have now entered the **GAME TIMER** Menu.

By using the **Raise** and **Lower** pushbuttons, you can scroll through the menu as illustrated below:



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

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

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

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



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SETTING THE GAME TIMER

Once the **GAME** option has been selected from the **GAME TIMER** Menu, the preset game time will be displayed on the right hand side of the screen, the factory setting for which is 7 minutes and 0 seconds, and the edit indicators also appear.

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

To decrease the preset game time, repeatedly press and release the **Lower** pushbutton. Each time that the pushbutton is pressed, the game time will decrease by 10 seconds. To decrease the time more rapidly, press and hold the **Lower** pushbutton. The minimum preset game time is 0 minutes and 0 seconds, once this value has been exceeded

the game timer will wrap around to 60 minutes and 0 seconds.

Once you have set the game timer to the preset time that you require, press the **Select** pushbutton to save the value. The time will briefly flash, indicating that the time has been accepted.

SETTING THE ALARM TIMER

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

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

To increase the preset alarm time, repeatedly press and release the **Raise** pushbutton. Each time that the pushbutton is pressed, the alarm time will increase by 10 seconds.

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To increase the time more rapidly, press and hold the **Raise** pushbutton. The maximum preset alarm time is 9 minutes and 59 seconds, once this value has been exceeded the alarm timer will wrap around to 0 minutes and 0 seconds.

To decrease the preset alarm time, repeatedly press and release the **Lower** pushbutton. Each time that the pushbutton is pressed, the alarm time will decrease by 10 seconds. To decrease the time more rapidly, press and hold the **Lower** pushbutton. The minimum preset alarm time is 0 minutes and 0 seconds, once this value has been exceeded the alarm timer will wrap around to 9 minutes and 59 seconds.

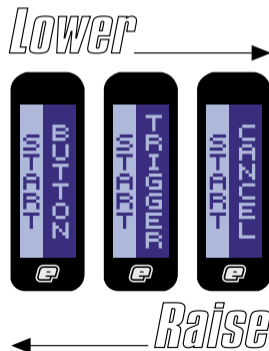
Once you have set the alarm time to the preset time that you require, press the **Select** pushbutton to save the value. The time will briefly flash, indicating that the time has been accepted.

SETTING THE START METHOD OF THE GAME TIMER

Once the **START** option has been selected from the **GAME TIMER** Menu, the

preset method of starting the game timer will be displayed on the right hand side of the screen, the factory setting for which is **BUTTON**.

To change the starting option for the Game Timer, simply use the **Raise** or **Lower** pushbuttons to scroll through the menu choices.



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BUTTON means that pressing the **Lower** pushbutton will start the game timer (when displayed). **TRIGGER** means that pulling the trigger will start the game timer (when displayed). **CANCEL** returns to the **GAME TIMER** Menu.

STARTING THE GAME TIMER

When **TIMER** has been selected as the designated Display screen, the game timer will be displayed.

Starting the game timer depends on whether you have chosen **BUTTON** or **TRIGGER** in the **START** option of the **GAME TIMER** Menu (detailed above). By starting the game timer using your chosen method, the timer will start to count backwards, in seconds, towards zero.

If an alarm time has been set, the display will flash when the timer reaches the designated alarm time. The display will continue to flash every two seconds until the timer reaches 0 minutes and 0 seconds, when **GAME OVER** will be displayed until the game timer is reset.

If no alarm time has been set, the display will still flash **GAME OVER** when the game timer reaches 0 minutes and 0 seconds.

To stop the game timer, push and release the **Lower** pushbutton. The game timer will pause at whatever time it had counted down to.

To reset the game timer, press and hold the **Lower** pushbutton for 1 second. The game timer will return to its preset value. The game timer will also be reset whenever the Eclipseblade Zero.B is switched off.



THE MODE MENU

Scroll through the main menu until the **MODE** option is displayed and then press **Select**. The edit indicators appear and you you have now entered the **MODE** Menu as shown to the right:

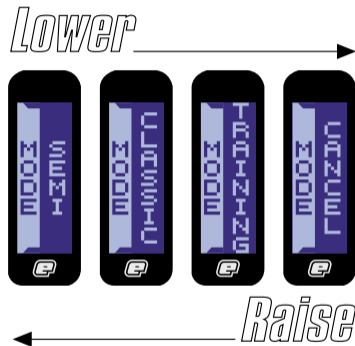
The Eclipseblade Zero.B has three different modes of operation: Semi-automatic mode, Classic mode and Training mode.

To select the Semi-automatic mode of operation, scroll to the **SEMI** option and press **Select**.

To select the Classic mode of operation, scroll to the **CLASSIC** option and press **Select**.

To select the Training mode of operation, scroll to the **TRAINING** option and press **Select**.

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



continued ...

USING THE MODE MENU

In **SEMI** mode, depressing the trigger will start the firing cycle as follows:

The Sear solenoid is energised, which actuates the sear and causes the hammer to be released.

The Cocking solenoid is energised, which causes the cocking block to retract the bolt and open the breech.

If the breech sensor is active, then the cocking block remains retracted for a preset time (determined by your **C T/OUT** value) or until a paintball is detected in the breech. If the breech sensor is inactive then the cocking block will remain retracted for a preset time (determined by your **C ON** value).

The cocking solenoid is de-energised and the cocking block brings the bolt forward, closing the breech.

In **CLASSIC** mode, depressing the trigger will again start the firing cycle as follows:

The Sear solenoid is energised, which actuates the sear and causes the hammer to be released.

The Cocking solenoid is energised, which causes the cocking block to retract the bolt and open the breech.

If the breech sensor is active, then the cocking block remains retracted until the trigger is released, and either a ball is detected by the sensor or a preset time has elapsed without a ball being detected (determined by your **C T/OUT** value). If the breech sensor is inactive then the cocking block will remain retracted until the trigger is released, provided that the cocking block has been retracted for at least a preset time (determined by your **C ON** value).

The cocking solenoid is de-energised and the cocking block brings the bolt forward, closing the breech.

continued ...

CLASSIC mode provides the feel of a classic mechanical marker, but without the possibility of “short stroking” the trigger.

In **TRAINING** mode, depressing the trigger will start the cocking cycle as follows:

The Cocking solenoid is energised, which causes the cocking block to retract the bolt and open the breech.

If the breech sensor is active, then the cocking block remains retracted for a preset time (determined by your **C T/OUT** value) or until a paintball is detected in the breech. If the breech sensor is inactive then the cocking block will remain retracted for a preset time (determined by your **C ON** value).

The cocking solenoid is de-energised and the cocking block brings the bolt forward, closing the breech.

In **TRAINING** mode the firing cycle does not activate. Training mode provides a way of using your Eclipseblade Zero.B to increase your rate of fire and find a trigger set-up that suits your requirements, without the noise of the marker firing.



THE INFORMATION MENU

Scroll through the main menu until the **INFO** option is displayed and then press **Select**. You have now entered the Information menu.

By using the **Raise** and **Lower** pushbuttons, you can scroll through the **INFO** Menu as illustrated below:

In the **INFO** Menu, the Eclipseblade E2 Electronic Grip Frame displays the current version of firmware that it has programmed into it, and the total number of shots that the frame has fired. There is no user interaction in the Information Menu; it is simply a way of finding out facts about your Zero.B.

To display the current Version of Firmware being used, scroll to the **VERSION** option.

To display the Total number of shots that your Zero.B has fired, scroll to the **SHOTS** option.

To return to the main menu, scroll to the **BACK** option and press **Select**.

Lower →



← Raise

ADVANCED SET-UP

ZEROB

THE SET-UP MENU

To activate the **SET-UP** Menu, first remove the three rubber grip screws from the right hand side of the frame and peel back the rubber grip to expose the Zero.B board inside the frame. Press and hold the **Set-up** pushbutton, which is located on the PCB above the battery.

After one second, **TIMING** will be displayed - this is the first option on the **SET-UP** Menu as shown below:

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

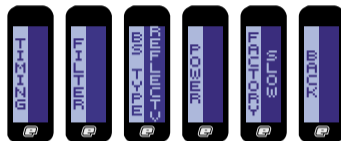
Press the **Raise** pushbutton to scroll up through each of the options on the menu. Once the first option has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed.

Press the **Select** pushbutton to select the displayed option.

Selecting **BACK** will return the display to

the Run Screen from which the **SET-UP** Menu was selected.

Lower →

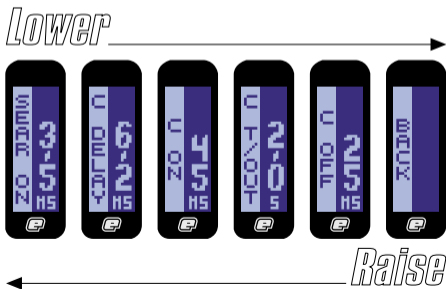


← *Raise*

THE TIMING MENU

Scroll through the **SET-UP** Menu until the **TIMING** option is displayed and then press **Select**. This will display **SEAR ON** the first parameter on the **TIMING** Menu.

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



Press the **Raise** pushbutton to scroll up through each of the options on the **TIMING** Menu. Once the first option has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed.

Press the **Select** pushbutton to select the displayed option.

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

SEAR SOLENOID ON TIME

Scroll through the **TIMING** Menu until the **Sear Solenoid On Time (SEAR ON)** parameter is displayed.

The current value of the **Sear Solenoid On Time (SEAR ON)** is displayed in milliseconds on the right hand side of the display.

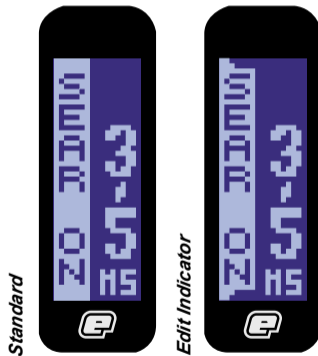
Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Sear Solenoid On Time (SEAR ON)** in 0.1 millisecond increments. Press and hold the **Raise** pushbutton to increase the **Sear Solenoid On Time (SEAR ON)** more rapidly.

Press and release the **Lower** pushbutton to decrease the **Sear Solenoid On Time (SEAR ON)** in 0.1 millisecond increments. Press and hold the **Lower** pushbutton to decrease the **Sear Solenoid On Time (SEAR ON)** more rapidly.

Press **Select** to save the **Sear Solenoid**

On Time (SEAR ON) and the edit indicator will disappear from the display to indicate that the value has been accepted.



COCKING SOLENOID ON DELAY

Scroll through the **TIMING** Menu until the **Cocking Solenoid On Delay (C DELAY)** parameter is displayed.

The current value of the cocking solenoid on delay is displayed on the right hand side of the display.

Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Cocking Solenoid On Delay (C DELAY)** time in 0.1 millisecond increments. Press and hold the **Raise** pushbutton to increase the **Cocking Solenoid On Delay (C DELAY)** time more rapidly.

Press and release the **Lower** pushbutton to decrease the **Cocking Solenoid On Delay (C DELAY)** time in 0.1 millisecond increments. Press and hold the **Lower** pushbutton to decrease the **Cocking Solenoid On Delay (C DELAY)** time more rapidly.

Press **Select** to save the **Cocking Solenoid On Delay (C DELAY)** time and the edit indicator will disappear from the display to indicate that the value has been accepted.

**COCKING SOLENOID ON TIME**

Scroll through the **TIMING** Menu until the **Cocking Solenoid On Time (CON)** option is displayed.

The current value of the **Cocking Solenoid On Time (CON)** is displayed on the right hand side of the display.

Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Cocking Solenoid On Time (CON)** in 1 millisecond increments. Press and hold the **Raise** pushbutton to increase the **Cocking Solenoid On Time (CON)** more rapidly.

Press and release the **Lower** pushbutton to decrease the **Cocking Solenoid On Time (CON)** in 1 millisecond increments. Press and hold the **Lower** pushbutton to decrease the **Cocking Solenoid On Time (CON)** more rapidly.

Press **Select** to save the **Cocking Solenoid On Time (CON)** and the edit

indicator will disappear from the display to indicate that the value has been accepted.



COCKING SOLENOID TIME OUT

Scroll through the **TIMING** Menu until the **Cocking Solenoid Time Out (C T/OUT)** option is displayed.

The current value of the **Cocking Solenoid Time Out (C T/OUT)** is displayed on the right hand side of the display.

Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Cocking Solenoid Time Out (C T/OUT)** in 0.1 second increments. Press and hold the **Raise** pushbutton to increase the **Cocking Solenoid Time Out (C T/OUT)** more rapidly.

Press and release the **Lower** pushbutton to decrease the **Cocking Solenoid Time Out (C T/OUT)** in 0.1 second increments. Press and hold the **Lower** pushbutton to decrease the **Cocking Solenoid Time Out (C T/OUT)** more rapidly.

Press **Select** to save the **Cocking Solenoid Time Out (C T/OUT)** setting

and the edit indicator will disappear from the display to indicate that the value has been accepted.

**COCKING SOLENOID OFF TIME**

Scroll through the timing menu until the **Cocking Solenoid Off Time (C OFF)** option is displayed.

The current value of the **Cocking Solenoid Off Time (C OFF)** is displayed on the right hand side of the display.

Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Cocking Solenoid Off Time (C OFF)** in 1 millisecond increments. Press and hold the **Raise** pushbutton to increase the **Cocking Solenoid Off Time (C OFF)** more rapidly.

Press and release the **Lower** pushbutton to decrease the **Cocking Solenoid Off Time (C OFF)** in 1 millisecond increments. Press and hold the **Lower** pushbutton to decrease the **Cocking Solenoid Off Time (C OFF)** more rapidly.

Press **Select** to save the **Cocking Solenoid Off Time (C OFF)** time and

the edit indicator will disappear from the display to indicate that the value has been accepted.



THE FILTER MENU

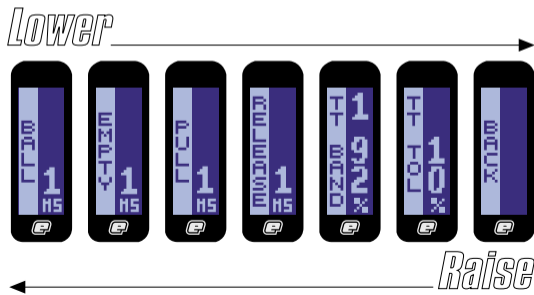
Scroll through the **SET-UP** Menu until the **FILTER** option is displayed and then press **Select**. This will display **BALL**, the first option on the **FILTER** Menu:

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

Press the **Raise** pushbutton to scroll up through each of the options on the **FILTER** Menu. Once the first option has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed.

Press the **Select** pushbutton to select the displayed option.

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



USING THE BREECH SENSOR FILTER

During the firing cycle, the breech sensor looks first for an empty breech and then for a paintball within the breech. Only when the sensor has detected both conditions will it allow the bolt to close. The breech sensor software filter allows you to fine tune the operation of the breech sensor by allowing you to specify how long the sensor has to see an "empty" breech for and how long it has to see a ball for.

SETTING THE BALL DETECTION TIME

Scroll through the **FILTER** Menu until the **Ball Detection Time (BALL)** option is displayed.

The current value of the **Ball Detection Time (BALL)** is displayed on the right hand side of the display.

Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Ball Detection Time**

(**BALL**) in 1 millisecond increments. Press and hold the **Raise** pushbutton to increase the **Ball Detection Time (BALL)** more rapidly.

Press and release the **Lower** pushbutton to decrease the **Ball Detection Time (BALL)** in 1 millisecond increments. Press and hold the **Lower** pushbutton to decrease the **Ball Detection Time (BALL)** more rapidly.

Press **Select** to save the **Ball Detection Time (BALL)** and the edit indicator will disappear from the display to indicate that the value has been accepted.



SETTING THE EMPTY BREACH DETECTION TIME

Scroll through the **FILTER** Menu until the **Empty Breach Detection Time (EMPTY)** option is displayed.

The current value of the **Empty Breach Detection Time (EMPTY)** is displayed on the right hand side of the display.

Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Empty Breach Detection Time (EMPTY)** in 0.1 millisecond increments. Press and hold the **Raise** pushbutton to increase the **Empty Breach Detection Time (EMPTY)** more rapidly.

Press and release the **Lower** pushbutton to decrease the **Empty Breach Detection Time (EMPTY)** in 0.1 millisecond increments. Press and hold the **Lower** pushbutton to decrease the **Empty Breach Detection Time (EMPTY)** more rapidly.

Press **Select** to save the **Empty Breach Detection Time (EMPTY)** and the edit indicator will disappear from the display to indicate that the value has been accepted.

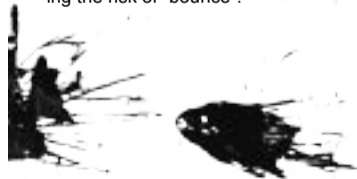


USING THE TRIGGER FILTERING

The trigger has to be pulled for a specific time in order for that trigger pull to be accepted as a valid trigger pull. The marker cannot be fired until it has had a valid trigger pull.

The trigger then has to be released for a specific time in order for that release to be accepted as a valid trigger release. The marker cannot be fired again until it has first had a valid trigger release (followed, of course, by another valid trigger pull).

With the addition of the Trigger Transition software filter, you can minimise the amount of time for which the trigger has to be pulled and released in order to maintain high rates of fire whilst eliminating the risk of "bounce".



SETTING THE TRIGGER PULL TIME

Scroll through the **FILTER** Menu until the **Trigger Pull Time (PULL)** option is displayed.

The current value of the **Trigger Pull Time (PULL)** is displayed on the right hand side of the display.

Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Trigger Pull Time (PULL)** in 1 millisecond increments. Press and hold the **Raise** pushbutton to increase the **Trigger Pull Time (PULL)** more rapidly.

Press and release the **Lower** pushbutton to decrease the **Trigger Pull Time (PULL)** in 1 millisecond increments. Press and hold the **Lower** pushbutton to decrease the **Trigger Pull Time (PULL)** more rapidly.

Press **Select** to save the **PULL** value and the edit indicator will disappear from

the display to indicate that the value has been accepted.

Note: A **Trigger Pull Time (PULL)** of 1ms is recommended when using the additional TT filtering correctly.

**SETTING THE TRIGGER RELEASE TIME**

Scroll through the **FILTER** Menu until the **Trigger Release Time (RELEASE)** option is displayed.

The current value of the **Trigger Release Time (RELEASE)** is displayed on the right hand side of the display.

Press the **Select** pushbutton to enter the edit function and the edit indicator will appear on the display.

Press and release the **Raise** pushbutton to increase the **Trigger Release Time (RELEASE)** in 1 millisecond increments. Press and hold the **Raise** pushbutton to increase the **Trigger Release Time (RELEASE)** more rapidly.

Press and release the **Lower** pushbutton to decrease the **Trigger Release Time (RELEASE)** in 1 millisecond increments. Press and hold the **Lower** pushbutton to decrease the **Trigger Release Time (RELEASE)** more rapidly.

Press **Select** to save the **Trigger Release Time (RELEASE)** and the edit

indicator will disappear from the display to indicate that the value has been accepted.

Note: A **Trigger Release Time (RELEASE)** of 1ms is recommended when using the additional TT filtering correctly.



USING THE TRIGGER TRANSITION FILTERING

The Zero.B incorporates an advanced debounce (anti-bounce) algorithm known as the Trigger Transition Filter (TT Filter), which is fully adjustable and can be used to completely eliminate trigger bounce. The TT Filter works by analysing each trigger pull and determining whether that trigger pull is a legitimate pull of the trigger by the user, or one that has been caused by the gun bouncing, in which case the algorithm will take steps to stop that bounce.

There are two adjustable parameters associated with the TT Filter -

TT BAND

This parameter defines the operating range of the TT Filter in terms of trigger movement. The larger the TT Band, the less the gun is able to bounce.

TT TOLERANCE

This parameter defines how strictly the TT Filter applies its debounce rules - the lower this value, the less the gun is able to bounce.



SETTING UP THE TT FILTER

In order to optimise the TT Filter it is necessary to have the **TT Band** parameter as high as possible and the **TT Tolerance** parameter as low as possible -

1. Select the **TT Band** parameter. Observe that the graphical bar rises and falls as the trigger is pulled and released. The actual value of the bar is displayed in the top right of the display.

2. Set the **Post-travel Trigger Stop** as required and ensure that the bar is as close to 100% as possible when the trigger is fully depressed against the set screw.

3. Set the **Pre-travel Trigger Set Screw** as required and ensure that the bar is as close to 0% as possible when the trigger is fully released against the set screw.

4. Set the **Trigger Return Force Set Screw** as required, making the return force as strong as possible without compromising the 'feel' of the pull.

5. Adjust the **TT Band** parameter, shown

in the bottom right of the screen, and observe the movement of the two horizontal markers by the side of the bar. As the **TT Band** is decreased these markers move closer together, and as the **TT Band** is increased these markers move further apart. Set the **TT Band** such that when the trigger is fully depressed the bar settles above the upper marker and when the trigger is fully released the bar settles below the lower marker. This ensures that the **TT Band** operates across the full range of the trigger pull

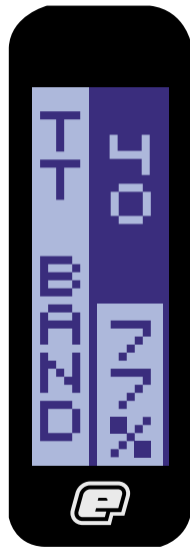
6. Select the **TT Tolerance** parameter. With the gun gassed up and preferably fitted with loader and firing paint, try to get the gun to bounce by pulling the trigger very slowly. If the gun does bounce then reduce the **TT Tolerance** until it no longer does so. If the gun does not bounce then increase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

Whilst this set up should completely eliminate bounce, it may result in a trig-

continued ...

ger pull that is not ideally suited to the user, in which case it will be necessary to make adjustments to the trigger and then modify the TT Filter parameters accordingly.

Note: The fastest way to shoot an E2 is to walk the trigger with two or more fingers. Feathering (not fully releasing) the trigger will cause the TT Filter to reduce the rate of fire in order to eliminate what it perceives as trigger bounce.



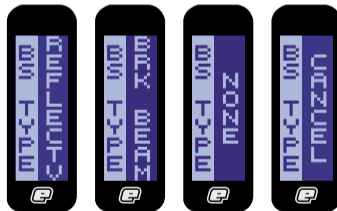
THE BREECH SENSOR TYPE

The **Breach Sensor Type** parameter defines which type of breach sensor is fitted to the marker.

REFLECTV refers to the standard Reflective Breach Sensor which is supplied with the Eclipseblade / Eclipseblade E2.

BRK BEAM refers to the Break-beam Breach Sensor system, sold separately.

Lower →



← *Raise*

NONE allows the Zero.B to be used with no Breach Sensor fitted.

Note: When selecting **NONE**, the Zero.B will power up with the breach sensor permanently disabled and the user will not be able to switch it on or off.

SELECTING THE BREECH SENSOR TYPE

Scroll through the **SET-UP** Menu until the **Breach Sensor Type (BS TYPE)** option is displayed. The current breach sensor choice is displayed. Pressing **Select** enters into the edit feature of the **Breach Sensor Type (BS TYPE)** Menu.

Press the **Lower** pushbutton to scroll down through each of the options on the **Breach Sensor Type (BS TYPE)** Menu. Once the last option has been displayed, pressing the **Lower** pushbutton will cause the first option to be displayed.

Press the **Raise** pushbutton to scroll up through each of the options on the

continued ...

Breach Sensor Type (BS TYPE) Menu. Once the first option has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed.

Press the **Select** pushbutton to select the displayed option.

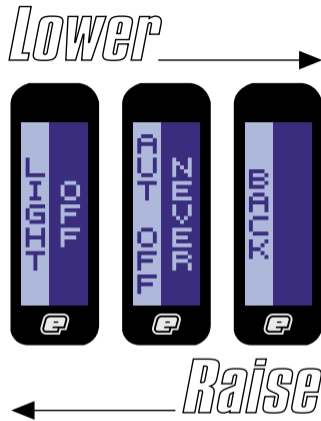
Selecting **BACK** will return the display to the **SET-UP** Menu.

THE POWER MENU

The **POWER** Menu gives the user options to adjust the power saving settings of their Zero.B. It is possible to change the characteristics of both the LCD backlight and of the Auto-off feature using the **POWER** Menu.

USING THE POWER MENU

Scroll through the **SET-UP** Menu until the **POWER** option is displayed and then press **Select**. This will display **LIGHT**, the first option on the **POWER** Menu:



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

continued ...

Press the **Raise** pushbutton to scroll up through each of the options on the **POWER** Menu. Once the first option has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed.

Press the **Select** pushbutton to select the displayed option.

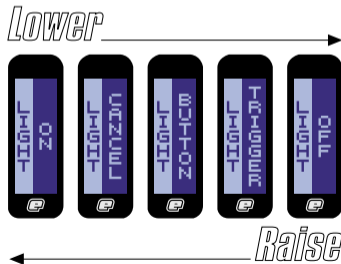
Selecting **BACK** will return the display to the **SET-UP** Menu.



THE BACKLIGHT MENU

Scroll through the **POWER** Menu until the **LIGHT** option is displayed and then press **Select**. This will display the current backlight option on the **Backlight (LIGHT)** Menu:

Press the **Lower** pushbutton to scroll down through each of the options on the **Backlight (LIGHT)** Menu. Once the last option has been displayed, pressing the **Lower** pushbutton will cause the first option to be displayed.



Press the **Raise** pushbutton to scroll up through each of the options on the **Backlight (LIGHT)** Menu. Once the first option has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed.

Press the **Select** pushbutton to select the displayed option.

To have the backlight permanently on, select the **ON** option.

To have the backlight permanently off, select the **OFF** option. To activate the backlight every time the trigger is pulled, select the **TRIGGER** option.

To activate the backlight every time a push button is depressed, select the **BUTTON** option.

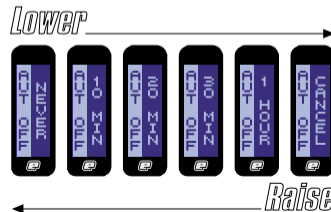
Selecting **CANCEL** will terminate the selection mode leaving the original choice unchanged.

SELECTING THE AUTO-OFF TIME

Scroll through the **POWER** Menu until the **Auto Off-time (AUT OFF)** option is displayed and then press **Select**. This will display the current Auto-off option on the **Auto Off-time (AUT OFF)** Menu:

Press the **Lower** pushbutton to scroll down through each of the options on the **Auto Off-time (AUT OFF)** Menu. Once the last option has been displayed, pressing the **Lower** pushbutton will cause the first option to be displayed.

Press the **Raise** pushbutton to scroll up through each of the options on the **Auto Off-time (AUT OFF)** Menu. Once the



first option has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed.

Press the **Select** pushbutton to select the displayed option.

To set the Zero.B to never power down after a period of inactivity, select the **NEVER** option.

To set the Zero.B to power down after ten minutes of inactivity, select the **10 MIN** option.

To set the Zero.B to power down after twenty minutes of inactivity, select the **20 MIN** option.

To set the Zero.B to power down after thirty minutes of inactivity, select the **30 MIN** option.

To set the Zero.B to power down after sixty minutes of inactivity, select the **1 HOUR** option. Selecting **CANCEL** will terminate the selection mode leaving the original choice unchanged.

THE FACTORY SETTINGS PARAMETER

The Factory settings option gives the user a simple way of selecting a group of factory settings to suit their marker, without having to individually go through and adjust each parameter.

As a guideline, we would recommend that:

When using the Zero.B on a standard autococker with standard pneumatics using a gravity fed loading device, the frame should be set at **Factory Slow**.

When using the Zero.B on a mid-range autococker, such as an Eclipse Pro Series or Pro Series Plus marker using an electronic loading device, the frame should be set at **Factory Medium**.

When using the Zero.B on a top of the line autococker, with heavily upgraded pneumatics (Nexus Ram and QEV's), such as the Nexus DC2 marker, the frame should be set at **Factory Fast**.

As an aside, if the user has chosen to deviate from the factory settings,

CUSTOM will be displayed as the selected choice.

SELECTING A FACTORY SETTING

Scroll through the **SET-UP** Menu until the **Factory Setting (FACTORY)** option is displayed and then press **Select**. This will display the current Factory option on the **Factory Setting (FACTORY)** Menu:

Press the **Lower** pushbutton to scroll down through each of the options on the **Factory Setting (FACTORY)** Menu. Once the last option has been displayed, pressing the **Lower** pushbutton will cause the first option to be displayed.

Press the **Raise** pushbutton to scroll up through each of the options on the **Factory Setting (FACTORY)** Menu. Once the first option has been displayed, pressing the **Raise** pushbutton will cause the last option to be displayed.

Press the **Select** pushbutton to select the displayed option.

continued ...

Full Name

Address

Postal / Zip Code

City

Country

Serial No

Email

Signed _____

ZERO.B

WARRANTY REGISTRATION

Planet Eclipse offers a 6-month limited warranty period on the Zero.B Board and is warranted to be free from all manufacturing and production defects for a period of 6 months from the time of original purchase. Warranty cover is dependant on successful completion, and receipt by Planet Eclipse Limited, of warranty form either in electronic form on www.planeteclipse.com or via mail using the warranty card included in every Zero.B manual. Warranty exemptions include, but are not limited to, accidental damage, wear and tear, unreasonable force and perishable components (at our discretion).

Please complete and return this form with proof of purchase, within 14 days so that we may validate your 6 month limited warranty on your Eclipse® manufactured product. Please return to the address on the reverse of this form.

I verify that I am at least 18 years of age and I have read the manual supplied with my Eclipse® Ego and I understand the safety cautions and warnings that it contains. (Contact your dealer or Planet Eclipse Limited directly if you need a replacement set of instructions).

Note: warranty form must be completed in full to validate warranty.



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Please complete and return in an envelope

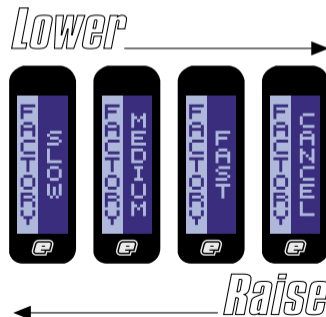
Cut along line

To set the Zero.B frame to Factory Slow, select the **SLOW** option.

To set the Zero.B frame to Factory Medium, select the **MEDIUM** option.

To set the Zero.B frame to Factory Fast, select the **FAST** option.

It is not possible to select **CUSTOM** as an option from the **Factory Setting**



(FACTORY) Menu, as this is only displayed when Factory Settings are not adhered to.

Selecting **CANCEL** will terminate the selection mode leaving the original choice unchanged.



ADVANCED SET-UP

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ZERO3

- > ECLIPSEBLADE UPGRADE BOARD
- > ELIMINATES BOUNCE
- > ADVANCED TT FILTER

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