Remains

2006

By

Alien

Warning:

This is a dangerous piece of sporting equipment. Like any air rifle or air pistol, it can cause injury or death. By purchasing this paintball marker you assume all liability. Alien Paintball Products INC. (Alien) assumes no liability for its use or misuse or for injury or death due its to misuse or mishandling. Please follow all Federal, state and local ordinances.

Risk of injury, especially blindness, can be greatly reduced by the proper handling of the marker. It is of utmost importance that user and everyone within 200 feet of the marker have proper paintball goggles on at all times when this weapon is ready for firing.

Remember it is the “unloaded” gun that shoots and hurts people. This marker retains air even after the bottle has been taken off. It can retain a charge hours or even days after the bottle has been removed. Before removing protective eye gear always check and double check that there are no balls in the chamber and that the marker has no pressure.

Always have a safety plug in, or a safety sock on between uses. Always put on paintball approved safety goggles before uncovering barrel. Always cover barrel before removing safety goggles.

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Safety

The Remains marker will propel a paintball at speeds fast enough to blind, even with the barrel removed or at the lowest operating pressures.

Goggles mean: safety approved paintball goggles on the paintball field or proper safety glasses when servicing or making repairs.

- Read the entire manual before operating the Remains marker.
- Never point the marker at anyone not wearing goggles.
- Never look down the barrel of your marker while it is attached to the marker, even if you are wearing goggles.
- Never look into the firing chamber of a marker without goggles on and the barrel and bolt removed.
- Never look down the feed neck of a marker without goggles on.
- Extra care is needed when handling a marker when the bolt is removed as a ball or exploded ball can additionally fire out of feed neck or back of marker.
- Disassembly of a marker while pressurized increases risk to the Air Tech and should be done only by those qualified in the art of airsmithing.
- Do not gas up marker with LPR cap off unless wearing safety goggle
- Turn off marker when operation is not desirable.
- Play only at commercial playing fields. Proper fields will have a Chronograph, referees and clearly marked safety areas. Chronograph your marker before every game at safety limit of 280 feet per second.
- You will be held liable if someone is hurt from a paintball shot from your marker, regardless of fault. Make sure you are not shooting at unsafe velocities and that everyone present has proper eyewear.
- Alien DOES NOT recommend the use of ramping modes. Increased safety risks outweigh any perceived advantages of ramping. Goggle manufactures specifically recommend replacement of goggle lenses after a direct hit. Ramping dramatically increases the chance of lens failure or goggle dislodgement. Notwithstanding this, the capabilities for ramping are included only because some tournaments allow for ramping and the Remains is a tournament level gun used by professional paintball players and many serious tournament players. Only the most experienced players should consider ramping and then only for approved tournament play. Most players should not use ramping.

Congratulations on your purchase of the **Remains** paintball marker by:

We believe it to be the best paintball marker available today and the best value.

Limited Warranty: Alien warrantees the Remains against damages in manufacturing and defects for the period of One Year from time of purchase. Copy of sales receipt must be included for all warranty work. Pneumatic valves (solenoids) are not made by Alien and are not coved either by their maker or by Alien. Wicked Air Sportz covers Circuit Board with a Limited Lifetime warrenty. Warranty on wiring harnesses is limited to defects in manufacturing.
Misuse, abuse or alteration of the marker voids the warrenty.

Alien will pay return shipping only on warranty work. Owners will pay shipping to Alien for warrenty work. Owner will pay shipping both directions on non-warrenty work.

Operating Design: The Remains is an open bolt, pneumatic ram design, yet it is a new design. Alien places the solenoid on the ram and places the ram solenoid module on the trigger frame. The constant air supply is attached directly to the ram. This “Independent Ram” eliminates the torturous air paths cut into the body and the lengthy additional hoses. The resulting shorter air passages equating to faster cycling times. Having the ram housing outside the receiver body gives you a smaller, tighter, lighter marker and one that has a unique and appealing look.

The Remains also utilizes a patent pending “Sweep Valve” and “Sweep Bolt” to minimize turbulence and to cause the air to flow under and around the ball. The resulting “Sweep Trajectory” improves accuracy. The ball is carried to its destination, not poked. Like the Beach Boy song says, “catch a wave and you’re sitting on top of the world”

A brief use of the Remains will show its improved trajectory and that it is fast, reliable, comfortable to hold and easy to aim and shoot. By taking a new path Alien again ended up "Light-years Ahead”.

Remains Specifications

Weight	1 lbs. 9 ozs. without barrel or high pressure Air regulator
Length	9.5 inches without barrel
Height	6.75 inches; 8 inches with riser
Range	175+ feet
Ball detents	Dual rubber catch bumpers
Power	Single nine volt. Alkaline battery recommend

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High Pressure Air (HPA) & Nitrogen

The Remains includes a HPA Inline regulator. This accepts high preset tanks (800 to 850 psi), low preset tanks (400 to 500 psi), or adjustable tanks. Adjustable tanks should be set to, at least, the upper limits of low-pressure tanks (500 psi) so as not to starve the Inline regulator and cause slower cycling or low shots. High preset tanks are recommended for their lower weight, compared to adjustable tanks, and their ability to be used with more of the aftermarket regulators, as some Inline regulators creep with low input pressure.

CO2

CO2 is not recommended. High firing rates can freeze the pneumatic valves in electro pneumatic paintball markers and damage O-Rings. Damage from using CO2 can be minimized by using an Anti-Siphon tank or a remote harness mounted tank with hose. Nevertheless performance loss can occur and will be more noticeable on colder days. Should liquid CO2 get into the solenoid it will likely freeze the valve and the valve must be replaced.

Barrels and Accessories

All Aliens use the most standard type barrel threading, the same as found on Cockers and most high-end guns. Standard paintball Inline Regulators fit, as will “standard” drops, rails and cradles.

Operation and Maintenance

As described in the following Equalizer section, pressing the power button turns on the electronics. Next air the marker up and you are now ready to fire.

For both regulators
Clockwise (In or Down) lowers the air pressure
Counter Clockwise, (Out or Up) increases the air pressure

To setup your Remains, begin with the LPR screw out, about flush with the front of the LPR cap. Chrono your marker by adjusting the inline regulator to the field speed limits, generally about 280 fps. Next, turn down the LPR, by screwing the setscrew in, until either the ball speed drops or the cycling speed drops. Next, turn the LPR pressure up (counter clockwise) until the marker is performing optimally again. After shooting several cases it is common for required maximum LPR pressure to drop. Do not try to get too close to the lowest setting. Find the lowest setting and turn the LPR setscrew out (counter clockwise) a quarter turn and forget about it. You will quickly learn how to “feel’ the best LPR range for your Remains, how low the LPR is set before getting inconsistent shots and how high before it has increased kick. The feel is in both the shot and the pressure of the bolt as you press on it with your thumb when the Remains is gassed up. Note; pressing on the bolt with your thumb can allow additional balls to chamber.

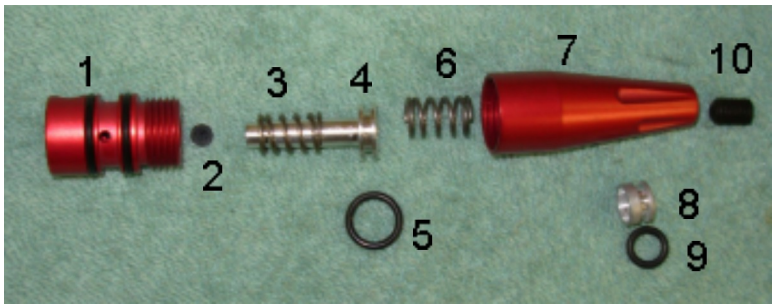
The main maintenance on your Remains is cleaning it after usage to avoid dirt build up on the bolt and trigger, and keeping an eye on the power light to see when it goes to blinking red and the battery has to be changed. Sudden inconsistency in shots can mean battery is low even before the light starts red. Always change the battery if the guns performance decreases mysteriously. When you oil your Ram shaft, it is best to apply a dab of Dow 33 or couple of drops of oil to the piston rod by extending the hammer forward. You can let a small amount of oil run down a screwdriver shaft or apply with a Q-Tip.

Hopper and Paint

Only the fastest hoppers are capable of keeping up with the Remains rate of fire.. Likewise the use of top quality paintballs will be necessary for highest performance and accuracy. NOTE: The use of clear hoppers is not recommended with the Remains. The Remains anti-chop eyes can be fooled by sunlight. Let the sunlight hit the eyes and you will notice the LED will go from blinking green to pulsating green without a ball in place.

Low Pressure Regulator

Clockwise (In or Down) lowers the air pressure
Counter Clockwise, (Out or Up) Increases the air pressure

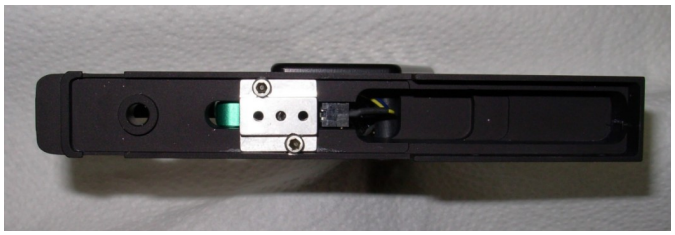


The REMAINS LPR design is a common one in high-end paintball markers. A floating piston (4) is suspended between two O-Rings (5 and one inside LPR body 1). The floating piston has an appendage that both conducts air and seals the incoming air. A top cap (7) has another piston (8) that is adjustable by use of a setscrew (10). The spring (3) between the piston and the LPR body is the stiffer of the two springs. This stiffer spring pushes the Piston away from the LPR body to allow air to escape through the LPR body (1). A setscrew in the LPR cap pushes a second piston (8). That piston in turn pushes a lighter spring (6), which rests against the same piston (4) as the stiffer spring. Screwing down the setscrew (10) increases the pressure on the lighter spring, which lowers the LPR pressure.

For servicing, or cleaning of your LPR, remove the cap. The “T” shaped piston and the two springs will easily fall out. You can take the setscrew out of the cap and then press out the piston (8) and re-grease that O-Ring, plus the O-Ring inside the LPR housing (1) that seals on the piston (4) can be removed and re-greased. It is a number 010 O-ring and can be seen by looking into the LPR body once the piston has been removed. The only service usually necessary is to re-lube the O-Rings. In the event that you have LPR creep that is not fixed by lubing the O-Rings then the quarter inch seal at the bottom of the “T” piston (2) should be removed and replaced.

LPR creep is only possible if air is escaping past seal in the bottom of the “T” piston. Air leaking past the piston O-Ring (5) will have an audible leak from the surface between the LPR cap and the Front gun body. The same air leak is heard if you remove the LPR body and damage the 015, O-rings sealing the LPR body. Bad O-Ring seating on the cap piston (8) causes air to leak between the LPR cap and the front setscrew.

Setting the trigger pull



The trigger can be easily adjusted without disassembly of you marker. The Trigger Set Screws are accessible by removing the bolt and looking down to see the hammer. When the hammer is back you can see the trigger stop plate. There are three adjustments. Forward travel, backward travel and trigger spring pressure. Front setscrew adjusts the trigger spring tension. Counter clockwise to increase the tension, Clockwise to lessen the tension. If the tension is not getting lighter do not continue to turn or you will screw the setscrew out of the trigger, or it will hit the ledge and not allow the trigger to travel enough. Repeat! If the trigger isn't getting lighter – STOP! It is best to start by increasing the tension to get a feel how the spring works and then lower the spring set screw until it is at you preference or it is a the minimum tension.

Middle cap screw hits the top plate and limits the travel after the switch is activated. It is generally best raise the screw – counter clockwise -all the way up until it hits the top plate and then lower it until you hear the trigger switch click. You can lower it more for increased trigger play. If you cannot lower the middle set screw enough to get the trigger to click, you have adjusted the back screw badly. Raise the back Setscrew by tuning it counter-clockwise.

Back setscrew hits ledge in trigger frame. This adjusts where the trigger stops before the marker is fired. A clockwise turn on the setscrew lessens trigger travel. NOTE: the two trigger adjustment screws are opposite Clockwise (down increases the travel on one, but decreases on the other. Make small adjustments until you are sure which is which. Half turns are all that is necessary. Large movements mean you are turning the wrong way.

The trigger contact point is fixed; the only way to move the trigger contact point forward is to take the trigger switch out of the marker and bend the metal lever on the trigger switch. If you break the switch while bending the lever you can get a replacement at most Radio Shack stores or purchase one from Alien.

The Trigger pin is pressed in and improper removal can be very hard on the gun, especially the trigger. Alien does not recommend removal of the trigger pin! Removal of the switch does not require removal of Trigger Pin. Read Disassembly, starting on page 17, and be sure you know what you are doing before you remove Trigger Pin. Give a copy of this Owners Manual to the Air Smith before they proceed

Electronics is by Wicked Air Sportz. The following is their copyrighted manual.

Wicked Air Sportz

Equalizer™

Usage Manual for

Alien Remains
Alien Interceptor

Equalizer™ is a trademark of Wicked Air Sportz

Revision 1.2- 05/05/05

USAGE

The Equalizer has numerous features, which can be a bit overwhelming to those that are not use to having so much flexibility. However, every possible step has been taken to make sure that the use of this product is extremely simple.

Turning on the Equalizer

To turn on the Equalizer, press and hold the power button (located on the back of the grip frame) for ½ of a second, and release it. The LED should light solid orange or flickering orange and stay that way for several seconds after releasing the button.

Turning off the Equalizer

To turn off the Equalizer, press and hold the power button until the LED becomes solid red, and then release the button. The LED will blink red while the button is being held, this is normal.

Bypassing the Eye System

In order to be able to "dry fire" the marker, the eye system must be bypassed. When the eye system is enabled, the marker will not fire unless there is something in the breech. To bypass the eye system, press and hold the power button for ½ second. The LED will then blink orange (instead of green) indicating that the eye system has been bypassed. Repeating this procedure will enable the eye system.

General Usage Tips

The LED boot sequence is as follows: solid or flickering orange (booting), followed by either solid green (normal mode) or solid red (competition mode). The LED will be flickering orange at boot-up if the Firing Mode is not set to semi-auto. Viewing the LED boot-up is an easy way for tournament organizers to determine if the marker is in a semi-auto mode, and/or locked.
The rate of fire is limited only by how fast the pneumatics will cycle, how fast you can pull the trigger, and how fast your loader can feed your marker.
Because the Equalizer can easily exceed the feed rate of any loader in existence, it is recommended that you use a force-feed type of loader for the best possible performance.

LED Colors and Meanings

The LED used with the Equalizer can light up in one of 3 different colors. The Equalizer uses this to indicate to the user when certain events are occurring. This is a breakdown of what the LED states represent:

Blinking Green (once per second): Normal operation, anti-chop system is enabled, Eye Mode 1 (rate of fire capped at user preset).

Blinking Green (twice per second): Normal operation, anti-chop system is enabled, Eye Mode 2 (unlimited rate of fire).

Blinking Orange: Normal operation, anti-chop system is disabled.

Blinking Red: Battery is low.

Red/Green toggle: There is an error with the anti-chop system (Eye Mode 2 only).

Flickering green: object is in the breech.

Tournament Lock

It is possible to put the Equalizer into a tournament lock (COMPETITION) mode. You can do this by making sure the power off,

grounding (connecting) the two center pins on the Equalink interface connector, and then turning on the power. Each time you 'reboot' with the pins grounded, the NORMAL and COMPETITION modes will toggle. The marker will not fire with the jumper in place! Removing the jumper will allow the normal operation of the marker.

You can also change the tournament lock mode using the Equalink.

It is necessary to remove the battery after changing the tournament lock or using the Equalink to alter settings or update firmware.

Trigger Programming

The Dwell, Debounce™, Eye Mode, BIP Delay™, ROF Cap, Eye Power, and Firing Mode functions are programmable by following these instructions:

Make sure the power turned off. During trigger programming, make sure that your marker has a barrel condom in place and the air supply shut off. Although it is not possible to fire the marker while in programming mode, it is always good to practice safe marker handling.

Pull the trigger, and hold it in the back position. Now, press and hold the power button for ½ second. During this time, the LED will light up green.

Now, release the trigger. The LED will light red. The marker is now in "trigger programming mode".

Pulling and releasing the trigger will change the LED color, advancing to the next programming feature. This is also known as the "programming menu". The following colors equate to the feature selected:

Solid Red: Dwell programming mode.
Solid Green: Debounce™ programming mode.
Solid Orange: Eye Mode programming mode.
Flickering Red: Ball In Place (BIP) Delay™ programming mode.
Flickering Green: Rate of Fire (ROF) cap programming mode.
Flickering Orange: Eye Power programming mode.
Alternating Green/Orange: Firing mode.

Once you have reached the last feature (alternating green/orange), an additional trigger pull will start the sequence of colors over again. This is also known as the "programming menu start".

When you decide which programming feature you want to change, pull the trigger and hold it until the LED goes out, and then release the trigger. There will be a 2 second pause, and then the LED will flash the same color of the programming mode you are in (red=Dwell, green=Debounce™, orange=Eye Mode, etc.) the number of times that represents something associated with that feature. For example, if you were programming the Debounce™ and the settings were the factory default (10ms), you would see the LED flash green 10 times in a row, indicating the Debounce™ is set to 10ms. The flashing of the LED shows you the current setting ***before*** you change it.

Once the LED is done flashing, there is a 5 second time period to begin programming the new setting. To change the setting, pull and release the trigger the number of times equal to how you wish to program the feature. On each pull of the trigger, the LED will light up (indicating that the pull has been detected). If you decide not to change the feature setting at all, simply do not touch the trigger at all for 5 seconds. The LED will then blink green/red alternately to indicate there was a programming error, and then go back to the programming menu. The feature setting will not be changed.

Once you have pulled and released the trigger the number of times you wanted the feature setting to be, do not touch the trigger. After 5 seconds, the LED will flash a rainbow of colors indicating that the feature setting change has been accepted. After this, the marker is in the programming menu again. If you program a feature outside of its specifications (for example, programming the dwell to 1ms) the LED will blink green/red alternately indicating that there was a programming error.

Each feature and its programming are described in detail below:

Dwell

Trigger programming for changing the dwell is different than any other feature as there are two steps involved instead of one due to allowing for .1ms (tenths) increments.

After selecting the Dwell programming feature, and once the LED stops flashing, you can now pull and release the trigger once for every FULL 1ms of time you want the dwell to be. Once you have pulled the trigger the number of times you want the full milliseconds to be, after a 2 second pause the LED will blink orange and then off. You can then pull the trigger again, but this time with each trigger pull being 1/10th of a millisecond (.1ms). So, if you wanted to set the dwell to be 6.3ms, you would select the dwell programming mode by pulling/releasing the trigger until the LED was solid red. Next, you would hold the trigger until the LED went out. Next, the current dwell setting (say 7.5ms) would be shown as 7 red flashes, a pause, an orange flash, a pause, and then 5 red flashes. The orange flash is there to separate the full milliseconds from the 1/10th of a millisecond (.1ms) intervals.

The default dwell is 8.0ms. The lowest allowable dwell time is 4.0ms and the longest allowable time is 50.0ms. According to the solenoid manufacturer, the dwell should never be below 6.0ms for proper operation.

Debounce™

Pull and release the trigger once for every 1ms of time you want the setting to be. For example, if you were programming the Debounce™ to 5ms, you would pull and release the trigger 5 times. The default Debounce™ setting is 10ms.

Eye Mode

Pull and release the trigger the number of times necessary to set the Eye Mode to what you want to use.

The following is a list of the possible Eye Modes and the flashes (also trigger pulls required):

1 flash - Bypassed mode
2 flashes - Eye Mode 1 (uses rate of fire cap)
3 flashes - Eye Mode 2 (monitors bolt)
4 flashes - Simulate mode

If you pull and release the trigger more than 4 times, then the LED will toggle green/red alternately to indicate there was a programming

error, and then go back to the programming menu. The default Eye Mode is 2.

BIP Delay™

Pull and release the trigger once for every 1ms of time you want the setting to be. For example, if you were programming the BIP Delay™ to 5ms, you would pull and release the trigger 5 times. The default BIP Delay™ setting is 3ms.

Rate of Fire (ROF) Cap

Pull and release the trigger once for the number of times you want the Rate of Fire (ROF) cap to be. For example, 20 pulls/releases would be 20 bps. The ROF cap is only used with Eye Mode 1. In Eye Mode 2, the rate of fire is unlimited. The default ROF Cap is 15 bps.

Eye Power

Pull and release the trigger once for the number of times you want the Eye Power to be. Each trigger pull represents a level increase. So, a setting of 5 would make the eye more powerful (able to see through liquid paint) than a setting of 4. Higher values use more battery life. The default Eye Power is 10.

Firing Mode

Pull and release the trigger the number of times necessary to set the Firing Mode to what you want to use.

The following is a list of the possible Firing Modes and the flashes (trigger pulls required):

1 flash - Semi-auto (NPPL legal)
2 flashes - 3 shot ramping (PSP legal)
3 flashes - 3 shot full auto (NXL legal)

If you pull and release the trigger more than 3 times, then the LED will toggle green/red alternately to indicate there was a programming error, and then go back to the programming menu. The default Firing Mode is 1.

Programming Complete

Once you pulled and released the trigger the number of times necessary to set the function, wait a few seconds. The LED will flash red/green/orange in rapid succession (numerous times) to let you know that the new setting has been saved. After this, the LED will return to the color representing what the current programming menu item is. At this point, you can once again pull and release the trigger to toggle between Dwell, Debounce™, Eye Mode, BIP Delay™, ROF Cap, Eye Power, and Firing Mode programming modes.

You can perform a complete **reset**, restoring all settings to the factory defaults. To do this, just hold down the trigger for 6 full seconds. It does not matter what programming mode you are currently in. The LED will start flashing red, letting you know that a reset operation is being performed. After this occurs, you will be back to the programming starting point. DO NOT release the trigger until you see the LED flashing red or the reset will not occur.

Computer Programming Mode (Equalink)

Just as with all other Equalizer boards, this version has an Equalink port. This port allows customers to fine tune settings as well as download the latest firmware updates for the board from our website (free of charge!)

To get into computer programming mode, hold the trigger and press the power button for ½ second and release the power button… but not the trigger! Keep holding the trigger until the LED switches from the normal green color to off. The Equalizer is now ready to connect to a PC. If you accidentally get into computer programming mode, you can get out by pressing and holding the power button until it turns RED and release it. If your trigger adjustment setscrew is adjusted too far in so that it depresses the trigger switch when in the released position, the marker will go into computer programming mode when it is turned on!

Terminology

Dwell

Dwell is the amount of time that the solenoid will be activated. This time is measured in milliseconds (1/1000th of a second). The user can alter the Dwell only when in NORMAL mode. In COMPETITION mode, the Dwell menu item is not available. Possible values are from 4.0ms to 50.0ms. The factory default is 8.0ms. Changes are made in .1ms units via the trigger.

Increasing your Dwell will increase the velocity of your marker. If you are experiencing a great variance in your chrono results, try increasing your Dwell and lowering your high pressure regulator. If your dwell is too low, consistency will suffer greatly.

Debounce™

Debounce™ is the amount of time the trigger switch must be stable in the up position before checking for another trigger pull. This time is measured in milliseconds. The user can alter the Debounce™ only when in NORMAL mode. In COMPETITION mode, the Debounce™ menu item is not available. Possible values are from 1ms to 50ms. The factory default is 10ms. Changes are made in 1ms units.

If you find that your marker is double firing, increase the Debounce™ time. To make your marker fire faster due to being more responsive to the trigger, decrease the Debounce™ time.

Eye Mode

The Eye Mode is can be set to one of four different modes:

Bypass - The anti-chop system is disabled. When this occurs, the maximum rate of fire is limited to 13 balls per second to help prevent chopping of balls in the breech.

Eye Mode 1 – In this mode, the marker will not fire unless there is a ball in the breech. This mode uses a rate of fire cap to determine the speed of the cycling. The bolt is not monitored.

Eye Mode 2 - In this mode, the marker will not fire unless there is a ball in the breech. This mode works by monitoring the bolt position, and thus the rate of fire is unlimited. **This is the default eye mode.**

Simulate – In this mode, a ball is simulated to be in the breech. This allows you to fire the marker with just air, at the full speed that the marker is capable of firing! This mode can be used for practicing trigger pull methods, without wasting paint. **DO NOT SHOOT PAINT IN THIS MODE!**

BIP Delay™

The BIP Delay™ is a feature that allows you to adjust for the differences in the eye sensor, its installation, and the loader being used. When using a slower gravity-feed loader it may be necessary to have a longer BIP Delay™ to prevent balls from being chopped.

Possible values are from 1ms to 50ms. The factory default is 3ms. Changes are made in 1ms units.

ROF Cap

The rate of fire (ROF) cap sets the maximum cycle speed of the marker when Eye Mode 1 is used. Setting this value to low will reduce the usable speed of the marker. Setting this value too high can cause misfires if the marker pneumatics are very slow due to bad o-rings or swollen bolt.
Possible values are from 10 bps to 30 bps. The factory default is 15 bps. Changes are made in 1 bps units.

Eye Power

The eye power controls how much power the eye system uses when transmitting infrared energy to the receiver. Setting this value too low will cause problems if debris such paint, dirt, etc. is between the transmitter and receiver. Setting this value too high can cause problems with paint that uses a clear shell (the infrared is transmitted through the shell). Possible values are from 1 to 20. The factory default is 10. Changes are made in 1 unit increments.

Firing Mode

The Firing Mode determines how the marker will fire. Possible modes are semi-auto (one pull/release of the trigger fires the marker one time), 3 shot ramping (adheres to the 2005 PSP rules), and 3 shot full auto (adheres to the 2005 NXL rules).

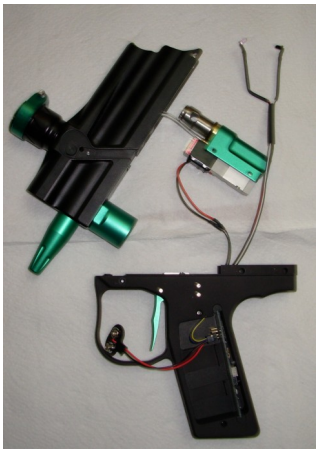
The firing mode controls how the marker fires regardless of other settings. For example, if the Eye Mode is set to Eye Mode 2 (unlimited rate of fire), and the Firing Mode is set to 3 (full auto), then the marker will fire in full auto as fast as the hopper can feed. Now, if you changed the Eye Mode to Eye Mode 1 (capped), then the ROF Cap would determine the maximum rate of fire while in full auto.

Reset

This option will reset ALL of the settings to the factory default! If you find that you are having problems remembering the factory defaults, just use this option to reset your board and start over! The user can reset the board only when in NORMAL mode._

This is the end of the copyrighted Wicked Air Sportz Equalizer use section. Hope you got all that!

Disassembly



The Remains can be pulled into its three main pieces, powered up and fired. Each piece is visible. This ability makes the Remains exceptionally easy to trouble shoot. Problems are found quickly and easily, and are just as easy to fix.

To disassemble:

Remove the bolt and take the four screws off the eye covers and remove the eye coves. Next, take the front two of the four screws off the ram, plus the one off under the trigger guard.

Note the tape on the Allen driver to keep the trigger guard from being scratched.

Gently pull the marker apart with the ram attached to the trigger frame. The marker components are now mostly visible. You can gas up the marker and inspect most of the components. Both of the barbs can be inspected. The valve pin assembly is easily viewed. Ram is removed by pulling the ram straight up, if it is sticking try rocking it sideways or lifting by the hammer.

The stop plate should only be removed if the trigger area needs to be cleaned out, much easier to spray it out with a water bottle or WD40 or silicone type spray. If you lift off the stop plate be careful not to lose the spring.

To inspect or repair the pin valve assembly, first make sure the marker does not have any gas pressure in it! This is best done by pressing on the valve pin and opening it. Remove the LPR by first removing the Inline regulator, then remove the ASA adaptor by removing the screw that holds both the ASA and the LPR body in place. Pull the LPR body out.

With a wooden dowel, and pushing from the front of the valve on the top of the cup seal and towards the back of the marker, push the valve out of the receiver body. Pushing on the valve face can easily damage the sealing surface of the valve!

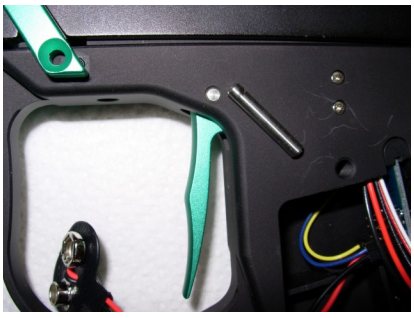
With the valve removed the valve's sweep features are visible, the oval outlet hole that is the same with as the entrance, the radius on the valve's back wall. Check the contact area for the cup seal by rubbing a fingernail on the raised contact area. If a nail catches that is where it is leaking. Before sending in for a replacement valve you can try sanding the contact surface against a very flat surface with some very fine sandpaper. However once it is nicked it is likely that you will have to replace the Valve body.

Note: the valve can be removed without removing the LPR body by simply removing the setscrew and gassing the marker up. However the valve can come out of the gun with some force and can hurt someone or damage the other body parts. Usually the valve body will only slide out until the air escapes out the setscrew whole and the valve body needs to be removed by pushing against the valve pin through the setscrew hole, but utmost caution must be used.

It is best NOT to take the board out of the marker as the On Off pin is easily lost and the Equalink port can be broken.

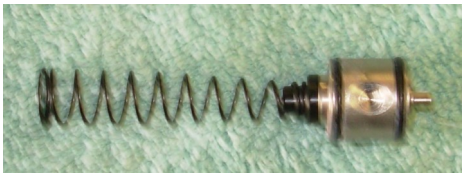
The head of the trigger pin is out of round to get it to lock in place in the gun.

ALWAYS remove the Trigger pin from Right to Left with the gun facing forward.

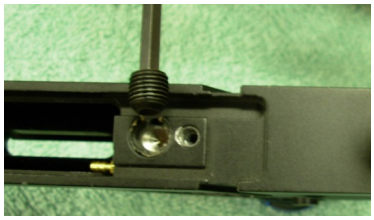


As stated in the Trigger adjustment section Alien does not recommend removal of the trigger pin except by Air Smiths trained by Alien. If the trigger pin is push through the wrong direction the resulting damage will require replacement of the pin, at the least, to get the marker to operate correctly again.

Reassembly



Put the cup seal pin into the valve and put the spring on it. Place the valve assembly in the gun body by pushing on the valve pin and carefully aligning the valve body so that the O-Rings are not cut. Make sure the hole is at the top and the alignment recess for the



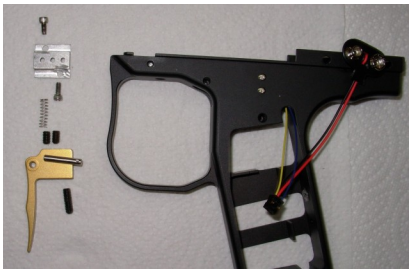
setscrew is at the bottom. Setscrew the valve in place once valve is properly centered. No tools are needed to insert the valve.

Push the LPR body in place and attach the ASA to the body by screwing in the ASA screw into the LPR body.

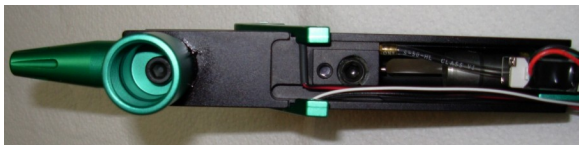
Pull the ASA forward to expose as much of the air passage in the ASA body as is possible.

If the LPR wasn't removed, just check that the LPR body is forward.

Reassemble the trigger fame so that the trigger and stop plate are correctly in place and the eye wires are in approximately the right



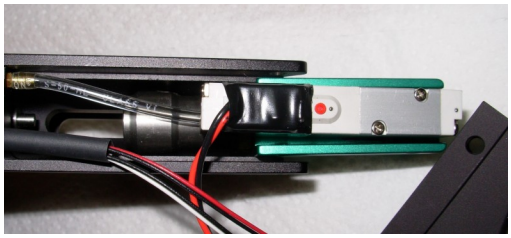
place. Slide ram back into trigger frame. Make sure solenoid wires are pulled into trigger frame so they don't interfere with ram seating or trigger movement. Also note the eye wires. Eye wires slide easily between trigger frame and the solenoid. Properly aligned, the ram will have very little or no resistance. Check the back of the ram and solenoid, and at the side of the trigger frame where the eye wires are, lower ram into grip frame. One of the trigger grip cover plates should be removed to ease in feeding and aligning the wires.



Note the channel cut into the trigger frame for the trigger grip and the wider deeper groove for the eye wires. Also note the wide groove between the eye channels. BEING CAREFUL not to crush the eye wires between the Trigger frame and the body, align wires so that wires are going down the channel opposite the hose.

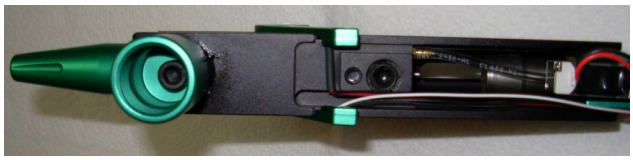
Pull excess wires into frame, push hammer back into ram. Hose will sit along side the trigger stop plate.

If you have replaced the hose, check the hose length now to be sure that, when aligned, it is almost taught. If hose has slack, you must remove hose and shorten it. I need to have just enough length to allow ram and solenoid to align in Trigger Frame. Straighten wire along side of trigger frame and into groove next to trigger and opposite hose top.



This is the view from below w/the trigger frame to the side. Note hose length.

Align the holes in the ram, body and trigger frame. The screws that go into the body, trigger frame and ram are just a bit longer than the back ones that only go through the trigger frame and ram. DO NOT over tighten! Screws can loosen during play. Locktite the screws and put the 2 screws in the back of the ram first, snug them up. Start the large screw under the trigger frame next, but do not tighten it. Then start the 2 screws in the front of the ram. The proper ways to align any screw is to make sure it is perpendicular to the hole and then turn it counterclockwise until it clicks (assuming a standard right threaded screw). The click tells you you've just past the start of the threading of both the screw and the hole. Start turning clockwise and the screw will start to go in. Any binding at this point tells you that the screw is not properly aligned, do not force. Unscrew counterclockwise until you feel and hear the click, recheck the angle, and then screw it in. Again do not over tighten the screws! Pull the wires into the trigger grip. Caution, until the Trigger Frame is tight against the Body, pulling the wires can lower the wires out of the channel. If wires are not properly aligned they will get crushed between the body and trigger frame. Once you are satisfied that the wires are properly aligned and all excess wire is pulled into the trigger frame, tighten the larger screw under trigger guard first and then the screws going into the ram. Do not over tighten. You can get enough pressure by holding the short end of the Allen. Tightening by holding the long end of an Allen wrench gives enough force to strip out the screw threads. Alien does not cover stripped threads. Use Locktite. The Screws were held in with Locktite when you got the marker, keep them that way! **DO NOT OVER TIGHTEN.**



Finally attach the eye covers; just start the screws to make alignment easier. Before you air up check that hammer hole is to the top, if hole doesn't face the top reach down with a tool and spin the hammer. If hammer doesn't spin check to make sure the air is off and the marker has no pressure. The hammer can be turned while the marker is gassed up but it takes substantially more effort. Once aligned, place bolt into body and push bolt pin into hammer.

Problem	Cause	Repair
Inconsistent Shots	Inconsistent Hammer speeds.	Turn up LPR until consistent shot.
	Dirty bolt	Remove and clean bolt.
	LPR piston is sticky, dry	Remove, clean and lube
	Low power supply	Use fresh, high quality, alkaline batteries.
	Low dwell setting	Turn up dwell
	Inconsistent Inline Reg	Change Inline Reg and check
Creeping LPR	Dirty LPR seal	Remove Clean and Lube
	Dirty or dry LPR Piston	Remove Clean and Lube
Marker is on, bolt is not firm	Air is off	Turn air on, turn up inline reg and/or Low Pressure Reg
Marker won't fire, air on, and bolt is firm	Power not turned on	Press on off button
	No ball in chamber	Check for pulsating green light.
Won't turn on	Dead Battery	Replace battery
	Short in Electrical	Turn battery harness around. Check to see if any wires are cut or squished
Unsure if trigger is registering pull.		Press on/off to get blinking orange. Pull trigger, led flashes green, trigger is registering.
Trigger not registering pull.	Trigger has been set incorrectly.	Turn set screws until trigger has enough movement.
	Eye Harness in incorrectly	Turn top harness around or align pins correctly
	Trigger wires broken	Replace trigger switch.
Trigger registering pull, won't fire.	Air is off	Turn on air.
	Dwell is too low	Set dwell higher.
	Bolt pin in front of hammer	Align bolt pin in hammer
Firing without ball in place	Eyes bypassed	Turn eyes on
	Eyes are getting sunlight.	Use dark Hopper
Chopping balls	Eyes bypassed	Turn on eyes
	Eyes are getting sunlight.	Use dark Hopper
	Ball detents are breaking balls	See special instruction on Ball Detents at end
Double Feeding	Worn Ball Detents	Replace Ball Detents

LED flickers green w/o ball in place	Eyes are getting sunlight.	Use dark Hopper
	Eye harness in incorrectly	Rotated harness or align to pins.
Adding shots, going “automatic”	Trigger is bouncing	Set Debounce higher
	Soft or missing spring	Replace or increase spring tension.
Sticky Trigger	Paint in trigger	Clean w/ WD 40 type cleaner or silicone spray. See section on disassembly before removing trigger pin.
Air leak inside trigger frame	Hose is leaking	Check for cuts, replace as necessary.
	Barbs are leaking	Barbs are held in with sealer. Barbs should not be tightened or removed. Reseal w/ thread sealant – not thread locker
Air valve loose from ram, leaking around solenoid	Tighten valve to ram	Air valve has come loose from ram, leaking around solenoid
	Dirt inside air valve	Return to manufacturer
	Deteriorated valve O-Ring	Return to Manufacturer

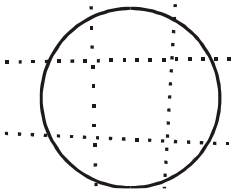
Note: The first 50 Remains had two problems.
The first is the hose was too soft and it could blow off the barbs. It should be replaced with standard cocker type hose found at most any paintball store, or contact Alien.

Second is the O-Ring on the LPR is speced out to be a standard half-inch on the outside. However the inside of the LPR cap was milled out to just over .500 of an inch. In order for the LPR to work correctly the O-Ring was replaced with a metric O-Ring that is .511 on the outside. Because O-Rings are measured on the inside the Correct O-Ring is a 10 mm with 1.5mm walls. These are quite common; however if you have any trouble finding them please contact Alien.

Detents:
Double feeding comes from two sources. Detents can either be worn, in which case they should be replaced, or they can be not fully inserted in which cash the shoulder needs only be pushed through hole in body. The correct detents are the same used on the original Matrix guns and can be obtained at most paintball stores or by contacting Alien.

Broken balls on some very brittle paints can be caused by the ball detents. If you use the most brittle paints, especially in cold weather, and are experiencing higher breakage than other to end markers you may want to cut back your Ball detents. It is a good idea to first obtain several new detents an a new X-Acto type razor knife.

Cut four lines around the center of the detent



Then cut sideways and cut the four sections off, being careful to leave the shoulders – or at least most of them.
This will leave enough to keep the ball from double feeding but give the detent extra flexibility and eliminate ball breakage.

Four cut off pieces, two long two short.

Before and after.