



OPERATOR'S MANUAL

## **WARNING!**

This is not a toy. Misuse may cause serious injury or death. Eye protection designed specifically for paintball must be worn by the user and persons within range. Must be 18 years of age or older to purchase. **READ AND FOLLOW THIS MANUAL BEFORE USING.**

## **WARNING! PAINTBALL GUNS AND PAINTBALL GUN ACCESSORIES ARE NOT TOYS!**

- Careless use or misuse may result in serious bodily injury or death!
- Eye protection designed for paintball must be worn by the user and all persons within range.
- Not for sale to persons under 18 years of age.
- Must be 18 years of age or older to operate or handle any paintball gun and paintball gun accessories without adult or parental supervision.
- Read and understand all cautions, warnings, and operating manuals before using any paintball gun or paintball gun accessory.
- Do not aim paintball gun at eyes or head of people or at animals.
- Paintball guns are to be used with Paintballs only.
- To prevent fire or shock hazard, do not expose unit to rain or moisture.
- To prevent fire or shock hazard, do not immerse unit in liquids.
- To prevent fire or shock hazard, do not disassemble any electronic paintball device.
- The disposal of the battery used to power this product may be regulated in your area.
- Please conform to all local or state regulations with regard to battery disposal.
- Use common sense and have fun.

Any tampering with the unit voids your warranty. There are no consumer serviceable parts inside the unit. The use of non factory authorized components within this product may cause a critical failure, fire or shock hazard.

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, OR LOSSES OR EXPENSES RESULTING FROM ANY DEFECTIVE PRODUCT OR THE USE OF ANY PRODUCT.

**WARNING:** This product may contain one or more chemicals that are known to the State of California to cause cancer and birth defects or other reproductive harm. *Wash hands after handling.* You must be at least 18 years of age to purchase this product. This product may be mistaken for a firearm by law enforcement officers or others. Altering the color of the product or brandishing the product in public may be considered a crime.

*Designed for Paintball use only.*

## Rules for Safe Marker Handling

**WARNING:** Never carry your paintball marker uncased when not on a playing field. The non-playing public and law enforcement personnel may not be able to distinguish between a paintball marker and a firearm. For your own safety and to protect the image of the sport, always carry your marker in a suitable marker case or in the box in which it was shipped.

- Treat every marker as if it were loaded.
  - Never look down the barrel of a paintball marker.
  - Keep the marker in "Safe Mode" until ready to shoot, power Off and barrel blocking device installed in/on the marker's Barrel.
  - Keep your finger off the Trigger until ready to shoot.
  - Never point the marker at anything you don't wish to shoot.
  - Keep the barrel sock or another ASTM approved blocking device installed when not shooting.
  - Always remove paintballs and the air source before disassembly.
  - After removing the air source, point marker in safe direction and discharge until marker is degassed.
  - Store the marker unloaded and degassed in a secure place.
  - Follow warnings listed on the air source for handling and storage.
  - Do not shoot at fragile objects such as windows.
  - The operator and every person within range must wear eye, face and ear protection designed specifically to stop paintballs and meeting ASTM standard F1776.
  - Always measure your marker's velocity before playing paintball and never shoot at velocities in excess of 300 feet-per-second (91.44 meters-per-second).
  - Read and understand this entire manual before loading, attaching a propellant source or in any way attempting to operate the marker
- 
- Safety and safe marker handling are the most important aspects of paintball sports. Do not install compressed air or load paintballs into your AXE until you feel completely confident with your ability to handle your AXE safely.
  - Keep your finger out of the Trigger guard and away from the Trigger; point the muzzle of the marker in a safe direction at all times. Keep the marker turned off until ready to operate. The AXE uses an On-Off button as one of its safety devices.
  - Always keep your AXE pointed in a safe direction. Always use a barrel plug or barrel blocking device.
  - Always use ASTM approved paintball specific eye protection in any areas where paintball markers may be discharged. Remember that the ultimate safety device is you, the operator.

## TABLE OF CONTENTS

Specifications .....	Page 1
Basic Operation .....	Page 2
Firing the Axe.....	Page 3
Break Beam Eyes Operation .....	Page 3
Regulator and Velocity Adjustment .....	Page 4
Shockwave Board Settings and Functions.....	Page 4
Assembly/Disassembly and Maintenance .....	Page 7
Empire Regulator Service Guide.....	Page 9
Solenoid Service Guide .....	Page 11
Storage and Transportation.....	Page 11
Troubleshooting Guide .....	Page 12
Diagram and Parts List .....	Page 14
Warranty Information .....	Page 16

## SPECIFICATIONS

- Engine: Pressure controlled poppet
- Barrel: Driver XX Aluminum Ported 2-piece .688
- Caliber: .68
- Action: Electro-pneumatic
- Air Source: Compressed Air Only
- Battery: One 9-Volt Alkaline
- Cycle Rate: 20 BPS (Semi-Auto only)
- Main Body Material: Aluminum
- Accuracy Range: 150+ ft. (45+ m)
- Weight: 2.01 lbs. (911.7 grams)

## Included with your Empire AXE

- 14" Driver XX Aluminum 2pc Barrel (.688 bore)
- Hex Keys
- Spare Parts Kit
- Barrel Sleeve
- One 9-Volt Battery

## 1. BASIC OPERATION

### Barrel Installation

1. Make sure marker is degassed, loader removed, no paintballs in the feed port or breech and the marker is OFF.
2. Slide the longer barrel tip into the barrel back, turning the barrel tip clockwise until it stops (do not over tighten).
3. While pointing marker in a safe direction, thread the barrel into the front opening of the marker body.
4. Turn the barrel clockwise (when looking at the front opening) until it stops (do not over tighten).
5. Install a barrel blocking device. This can be a barrel bag or other such device that prevents the accidental discharge of a paintball.

### HIGH PRESSURE COMPRESSED AIR TANK INSTALLATION

The Empire AXE is designed to work with compressed air/nitrogen only. Do not use CO2, as it will damage your marker. The Empire AXE utilizes a fully functional Regulator at the bottom of the grip frame that doubles as an On/Off ASA (Air Source Adapter) or receiver for a standard threaded preset output compressed air system. The Regulator can function using either “high pressure” or “low pressure” air systems.

*Note: If you are using an adjustable Regulator system, the output pressure should be set between 350-450 psi.*

### BEFORE PRESSURIZING YOUR AXE MARKER

- Check to make sure that you and anyone within range are wearing eye protection designed specifically for paintball.
- Double check that all screws are tightened and no parts are loose before installing your tank.
- Ensure you have a barrel sock or other specifically designed barrel-blocking device in place.
- Make sure there are no paintballs in the marker and that the AXE is turned OFF.

*Notes:*

- Remember compressed air or nitrogen systems can be extremely dangerous if misused or improperly handled. Use only cylinders meeting D.O.T, TC, or regionally defined specifications. Do not perform any work to your tank or tank Regulator.
- Never disassemble your tank or tank Regulator. Only a qualified and trained technician should perform work on your tank and tank Regulator.
- Never add any lubricants or greases into the fill adapter on your tank Regulator

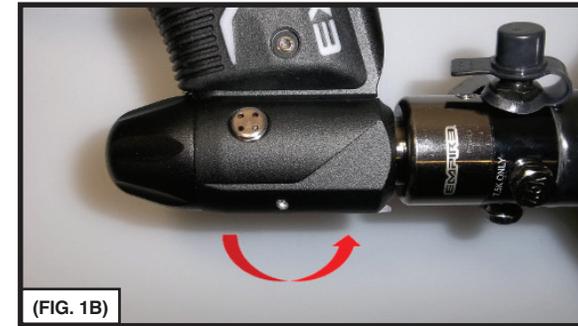
### PRESSURIZING THE MARKER

1. Flip the On/Off lever forward and allow the gas to vent from the Regulator. (Fig. 1a)



2. Air may remain within the marker once the Regulator is vented. While the barrel blocking device is still installed, turn your AXE on, turn the eyes off and pull the trigger a few times to deplete all remaining air.

3. Remove your air cylinder by slowly and carefully unscrewing it counter-clockwise. (Fig. 1b)



### DE-PRESSURIZING THE MARKER

1. Flip the On/Off lever forward and allow the gas to vent from the Regulator.
2. Air may remain within the marker once the Regulator is vented. While the barrel blocking device is still installed, turn your AXE on, turn the eyes off and pull the trigger a few times to deplete all remaining air.
3. Remove your air cylinder by slowly and carefully unscrewing it counter-clockwise.

### INSTALLING A LOADER AND PAINTBALLS

The Empire AXE uses .68 caliber, water-soluble paintballs, readily available at paintball pro-shops, commercial playing fields, and many sporting goods stores. The paintballs feed from the loader through the feed-neck and into the breech of the marker.

The Empire AXE comes equipped to accept standard-gravity feed loaders as well as most agitating and force-feed loaders. Open the clamp lever and place the loader neck directly into the marker feed neck. Align the loader in line with the marker so the nose points in the same direction as the barrel. Close the lever, noting that it might be necessary to adjust the feed-neck's clamping screw to get a snug fit on your loader.

### POWERING ON YOUR AXE

- To switch the AXE On, locate the Power Button on the back side of the front Foregrip, in front of the Trigger guard and under the LED. (Fig 2-3)



- Push and hold the button for 2 seconds. The LED will glow solid RED as soon as the button is pressed. Continue to hold the button until the LED glows solid GREEN.
- Release button and the LED will intermittently flash indicating that the marker is now ON and LIVE in FIRE Mode.
- The LED color will be determined by the battery level, as listed in the chart described under the Battery Life Indicator section of this manual.

*NOTE: Be sure not to have the Trigger pressed when turning the board on, as this will enter the board into Settings Mode.*

## LED INDICATION

The LED indicator, located above the button, is used to indicate the current Break Beam Sensor System status, the Battery Life Indicator and Trigger Pull indication. The Break Beam Sensor Status is indicated by the blinking frequency of the LED (See Section 5 for further explanation). If the Trigger is being pressed the LED will glow a dim RED which can be seen between blinks of the LED.

## BATTERY LIFE INDICATOR

The AXE also has a Battery Life Indicator, shown by the LED located on the back of the Foregrip. If in standard operation and the LED flashes with a GREEN color, then the battery is “good”. If the LED flashes YELLOW/AMBER, then the battery is fairly depleted and should be replaced soon. If the LED flashes RED, then there is less than 20% of the full battery strength remaining and should be replaced immediately. Battery Level is indicated by the color of the LED (see table below for explanation)

LED COLOR	BATTERY LEVEL
GREEN	BATTERY GOOD
YELLOW	LOW BATTERY SHOULD REPLACE
RED	BATTERY DEPLETED REPLACE IMMEDIATELY

*NOTE: During rapid firing, the battery can be depleted quickly and the LED may change color and give an incorrect reading. Allow time for the battery to recover before determining if the battery life is good or truly depleted.*

## BATTERY REPLACEMENT

The AXE requires a single 9-volt battery as the electronic power source. The use of long life, name-brand alkaline batteries is recommended for optimum performance. The 9-volt battery is located in the front Foregrip in front of the Trigger Guard. The battery is accessed by removing the front rubber Grip.

Confirm that the marker is Off. Remove the two screws that secure the front rubber grip to the left-hand side of the Foregrip with a 5/64” hex wrench. Peel back the rubber grip to access the battery compartment underneath. If there is already a battery in the Foregrip, gently remove the battery, and then connect a fresh 9-Volt battery into the compartment following the polarity markings for positive (+) and negative (-). (Fig 2-4) Then re-install the front rubber Grip and screw it securely into place.



## SWITCHING OFF YOUR AXE

Push and hold the button on the front Foregrip. After the button is held for 2 seconds, the LED will turn to a solid RED color. Release button and the AXE will switch Off.

## AUTOMATIC OFF FEATURE

The AXE also has an “Automatic OFF” feature. If you leave your AXE powered on, it will shut itself off after approximately 60 minutes of inactivity. This time cannot be adjusted.

## EYE FUNCTION

The AXE board is pre-programmed to activate the eye system each time the marker is powered up. See Section 4 (Break Beam Eyes Operation) for more details.

## 3. FIRING THE AXE

Keep your finger out of the Trigger Guard and away from the Trigger, point the barrel of your marker in a safe direction at all times during this process. Be sure your goggles are securely in place and make sure the AXE marker is OFF.

**WARNING- Everyone within firing range should always use paintball approved eye and face protection in the presence of live paintball markers.**

- Place the empty loader onto the marker.
- Be sure that it is securely mounted in place.
- Apply the compressed gas, pressurizing the marker.
- Put the paintballs into the loader.
- Remove the barrel plug, sock or barrel-blocking device.
- Aim the AXE in a safe direction.
- Turn the AXE ON: Push the button for 2 seconds until the LED light changes to solid GREEN, then release button and LED should display a flashing LED according to Eye Status
- Aim the AXE at the target.
- Pull the Trigger with a smooth squeezing motion.

## 4. BREAK BEAM EYES OPERATION

The AXE uses a break beam eye system to determine the absence or presence of a paintball in the breech for the purposes of reduced paint breakage and optimum rates of fire. When the break beam system is activated the marker will not fire unless the break beam system detects a paintball. The AXE board is pre-programmed to activate the eye system each time the marker is powered up.

To turn the eyes OFF, ensure that there are no paintballs in the AXE breech or feed-neck, make sure the marker is switched On, and then tap the button once. A fast, flashing LED will indicate that the eye system has been deactivated.

To turn the eyes back ON, tap the button one time.

A slow consistent single blinking Green LED indicates that the eyes are ON with no ball in the breech and a double blink LED indicates that there is a ball in the breech.

If the Break Beam Eye System malfunctions, the marker assumes there was a ball broken and the Rate of Fire (ROF) is limited to 8.0 balls-per-second (bps) to prevent further ball breaks. The LED indicator will flash slowly. Turn the Break Beam Eye System OFF to allow firing at Max ROF cap setting. Break Beam Sensor Status is indicated by blinking frequency of the LED (See table below for explanation). Color would be determined by battery level, as listed in the chart in Section 3.

BLINK FREQUENCY	BREAK BEAM (BB) EYE STATUS
SINGLE BLINK	BB SENSOR SYSTEM ACTIVE, NO BALL IN BREECH
DOUBLE BLINK	BB SENSOR SYSTEM ACTIVE, BALL IN BREECH
FLASHING	BB SENSOR SYSTEM HAS MALFUNCTIONED
FAST FLASHING	BB SENSOR SYSTEM DEACTIVATED

For optimal performance of the AXE eyes, keep the inside of the AXE breech clean and clear of broken paint, paint residue, or other debris. Although the eyes can be cleaned via cleaning the breech of the AXE marker, if the eye board needs to be accessed, please follow the steps outlined in the Main Body Assembly section of this manual.

### TRIGGER PULL INDICATION

If the Trigger is being pressed, the LED will display a dim Red LED which can be seen between blinks of the Eye Setting LED.

## 5. REGULATOR AND VELOCITY ADJUSTMENT

The AXE utilizes a Regulator at the bottom of the Grip Frame that doubles as an Air Source Adapter (ASA) for a standard threaded pre-set output compressed air system. This unique Regulator system channels air through a chamber in the Grip Frame eliminating the need for external hoses and fittings. The Regulator controls the amount of air pressure going from your compressed air system into the marker itself.

### ADJUSTING THE VELOCITY

The Regulator output pressure and the Velocity Adjuster setting both affect and the Axe's velocity. Your marker should be factory set to shoot about 275fps, but it will be necessary to adjust your Axe marker due to field rules and paintball size differences.

#### Setting the Velocity Adjuster

- With marker degassed, turn the velocity adjuster all the way in until it stops using a 3/32" hex wrench (Fig 5-1).



- Then turn the velocity adjuster counter-clockwise 1 full turn.
- This sets your velocity adjuster to the default setting of 1 turn.

#### Adjusting Regulator Output Pressure

- With the marker degassed, adjust the regulator adjustment screw using a 3/32" hex wrench so it's flush with the regulator cap. (Fig 5-2) This is the default setting.



- Using the regulator lever, apply air into the marker.
- Use a paintball specific chronograph to adjust regulator to the desired velocity. Which should never

be above 300 feet per second, please check the fields specific velocity requirements as they vary.

- To Increase input pressure, turn Clockwise, making small adjustments while checking velocity using a chronograph.
- To Decrease pressure, turn Counter-clockwise, making small adjustments while checking velocity using a chronograph. It is necessary to shoot the marker to decrease the pressure stored in the marker.
- The regulator is designed to vent if it's turned up too high. If this happens, degas your marker and turn the adjustment counter clockwise.

#### Fine Tuning the Velocity with Adjuster

If further adjustment is needed to fine tune your markers velocity. When adjusting the velocity adjuster, make small ¼ turn adjustments at a time.

- Turning the velocity adjuster clockwise will lower the velocity slightly, as it allows the poppet open less.
- Turning the velocity adjuster counter clockwise will increase the velocity slightly, as it allows the poppet to open further. It is recommended that you don't go above 2 full turns from all the way in

#### Notes:

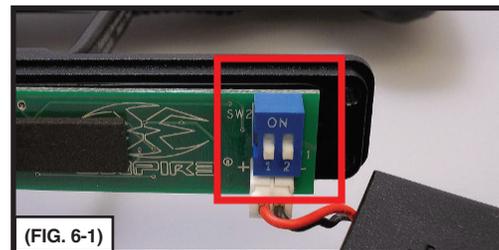
- Always make regulator adjustments while using a paintball chronograph.
- Do not use CO2!!!
- The Regulator should not be disassembled.
- The regulator is designed to vent at about 275psi.
- This marker was designed with safety and safety standards in mind. If you attempt to shoot paintballs at a higher velocity than established safety standards, the marker may not function properly.
- If you attempt to operate the marker at extremely high velocities, the internals will not function properly.
- This marker is not designed to shoot above the safety limits established by industry standards but under certain conditions it may. It is therefore important to check the velocity each time before playing with your AXE.

## 6. SHOCKWAVE BOARD SETTINGS AND FUNCTIONS

The electronic board features several modes and functions that are listed below. The board is located inside the front Foregrip of the marker. Before changing or adjusting any of the board functions, remove the propellant source from the AXE and install a barrel blocking device. The board inside your AXE features 4 firing modes and 6 adjustable functions. It uses a 3 color LED indicator on the backside of the front Foregrip to indicate functions and modes during programming

### TOURNAMENT LOCK

Tournament lock is a feature that prevents the marker from entering the Settings Mode while in the field, to allow the marker to be tournament legal. See your tournament's rule book for an explanation on what is required to lock your marker. Tournament Lock can be turned on/off by using the dip switch 1 located on the inside of the Foregrip near the bottom of the circuit board. Flip dip switch #1 to the ON (UP when lying flat) position to activate the Tournament Lock. (Fig 6-1) When tournament lock is ON, Settings Mode cannot be activated. See Section 7 for instructions to access the Foregrip.



## SETTINGS MODE

The AXE must be Off and the Tournament Lock must be Off to begin managing the settings and functions. To activate the marker in Settings Mode, press and hold the Trigger, then press and hold the button on the back side of the Foregrip. The LED will cycle through an array of colors to indicate the Settings mode is active. You may now release the Trigger and the button. Once the LED is done cycling you are ready to navigate through settings mode.

## NAVIGATING THROUGH SETTINGS

Once in Settings Mode, use the Trigger is used to navigate to the next setting, where the LED indicates which setting as listed in the chart below. Pressing and releasing the Trigger quickly will navigate to the next setting.

The LED color/status will change accordingly.

Example: If currently in Firing Mode (solid Red), press and release the Trigger 3 times to get to De-Bounce (flashing Red).

LED COLOR	SETTING
SOLID RED	FIRING MODE
SOLID GREEN	MAX ROF
SOLID AMBER	DWELL
FLASHING RED	DE-BOUNCE
FLASHING GREEN	BALL IN PLACE
FLASHING AMBER	RAMP START
FAST FLASHING RED	RAMP SUSTAIN

## CHANGING SETTINGS

To change a setting, first navigate to the setting you would like to change by using the Trigger as described above. Once at the desired function, press and hold the Trigger for 2 seconds. The LED will then begin blinking to indicate the setting's current value. Once the blinking stops, the LED will turn off and you have a 3 second window to begin entering a new value. Press and release the Trigger the number of times corresponding to the desired new setting value. After the desired number is reached, release the Trigger and after 3 seconds the LED will cycle through an array of colors to indicate the setting is saved. If you do not enter any Trigger pulls to modify a setting, the value remains the same. If you enter more than maximum amount of Trigger pulls for any setting, the value will become the maximum value for that setting. Power off the marker to exit the Settings Mode. Any setting that was modified will be stored and ready to use upon startup.

## FIRING MODES

Indicated by a Solid Red LED

You must be in the Settings Mode to change Firing Modes, see above for instructions on how to enter Settings Mode. After choosing Firing Modes (Solid Red), hold the Trigger, the LED will flash Red LED blinks equal to the current setting, followed by a pause. Pull the Trigger the number of times equal to your new desired setting (see chart below). Once done, the LED will cycle through an array of colors to indicate the setting is saved and return to the Settings Mode. There are 4 firing modes available: Semi Auto, Burst, Ramp, and Full Auto.

*Note: All modes will perform 3 semi-auto safety shots prior to the activation of the mode, as required by ASTM.*

**IMPORTANT: When the Firing Mode is changed it will also automatically modify the corresponding Max Rate of Fire and ramping parameters that correspond to that mode. These settings may be changed after Firing Mode is selected**

NUMBER OF BLINKS	MODE
1	SEMI-AUTO
2	BURST
3	RAMPING
4	FULL AUTO

Semi Auto: Marker will shoot 1 time for each time the Trigger is pulled.

Default: Max ROF = 15.0bps

Burst: Marker will shoot in semi-auto mode equal to the number of shots specified by the Ramp Start setting (see below for more information), then will go into a 3-shot burst at the Max ROF setting. If the marker is not fired for 1 second, the marker will shoot semi-auto until Ramp Start is again achieved.

Default: Max ROF = 12.0bps; Ramp Start = 3 shots

Ramping: Marker will shoot in semi-auto mode equal to the number of shots specified by the Ramp Start setting, and if the Ramp Sustain ROF (see below for more information) is achieved, the marker will ramp up to the Max ROF setting. If the marker is not fired for 1 second, the marker will shoot semi-auto until ramping parameters are achieved.

Default: Max ROF = 10.0bps; Ramp Start = 3 shots; Ramp Sustain = 6tps (Trigger pulls per second)

Full Auto: Marker will shoot in semi-auto mode equal to the number of shots specified by the Ramp Start setting, then will go into full automatic mode as long as the Trigger is held down. If the marker is not fired for 1 second, the marker will then shoot semi-auto again until Ramp Start is achieved again.

Default: Max ROF=12.0bps; Ramp Start = 3 shots

## MAX RATE OF FIRE (ROF)

- INDICATED BY SOLID GREEN LED

This setting controls the maximum number of paintball per second the marker is allowed to fire. The setting can be varied from 8 to 20 balls per second (bps) in 0.5bps intervals. Use the chart below to set the Max ROF.

Default: Max ROF = 15.0 bps

You must be in the Settings Mode to change the Max ROF, see above for instructions on how to enter Settings Mode. After choosing Max ROF Mode (Solid Green), hold the Trigger to get into the Mode, the LED will flash GREEN LED blinks equal to the current setting, followed by a pause. Pull the Trigger the number of times equal to your new desired setting (see chart below). Once done, the LED will cycle through an array of colors to indicate the setting is saved and return to the Settings Mode.

Example: 10 LED blinks = 12.5 BPS

# LED BLINKS	BPS VALUE	# LED BLINKS	BPS VALUE	# LED BLINKS	BPS VALUE
1	8	10	12.5	19	17
2	8.5	11	13	20	17.5
3	9	12	13.5	21	18
4	9.5	13	14	22	18.5
5	10	14	14.5	23	19
6	10.5	15	15	24	19.5
7	11	16	15.5	25	20
8	11.5	17	16		
9	12	18	16.5		

Starting in 2021

# of Blinks	BPS Value	# of Blinks	BPS Value	# of Blinks	BPS Value
1	4.0	12	9.5	23	15.0
2	4.5	13	10.0	24	15.5
3	5.0	14	10.5	25	16.0
4	5.5	15	11.0	26	16.5
5	6.0	16	11.5	27	17.0
6	6.5	17	12.0	28	17.5
7	7.0	18	12.5	29	18.0
8	7.5	19	13.0	30	18.5
9	8.0	20	13.5	31	19.0
10	8.5	21	14.0	32	19.5
11	9.0	22	14.5	33	20.0

### DWELL SETTING

- WILL BE INDICATED BY SOLID AMBER LED

This setting controls the amount of time the solenoid valve is left open. A setting too high will waste excess gas and affect efficiency. A setting too low will prevent marker from operating properly. It is not recommended to change this setting unless you are an experienced user. Dwell time is 3.0ms and is increased in .5ms increments up to 10ms. Use the chart below to set the Dwell.

Default: Dwell = 8.0 ms

You must be in the Settings Mode to change the Dwell Setting, see above for instructions on how to enter Settings Mode. After choosing Dwell Setting (Solid Amber), hold the Trigger to get into the Mode, the LED will flash Amber LED blinks equal to the current setting, followed by a pause. Pull the Trigger the number of times equal to your new desired setting (see chart below). Once done, the LED will cycle through an array of colors to indicate the setting is saved and return to the Settings Mode.

# LED BLINKS	DWELL IN MS	# LED BLINKS	DWELL IN MS
1	3	9	7
2	3.5	10	7.5
3	4	11	8
4	4.5	12	8.5
5	5	13	9
6	5.5	14	9.5
7	6	15	10
8	6.5		

### TRIGGER DE-BOUNCE

- WILL BE INDICATED BY A FLASHING RED LED

Time in milliseconds the Trigger pull must be released before the next Trigger pull can be registered. This eliminates electronic noise and vibrations ("Trigger Bounce") that the board may wrongly interpret as a Trigger action (Trigger pull) and fire the marker. A higher setting will reduce the bounce. A lower setting will allow for more bounce. One blink corresponds to 1ms of De-Bounce time. De-Bounce is adjustable from 1-15ms in 1.0ms increments.

Default: De-Bounce = 5.0 ms

You must be in the Settings Mode to change the De-Bounce Setting, see above for instructions on how to enter Settings Mode. After choosing De-Bounce Setting (Flashing Red), hold the Trigger to display the value, the LED will show flashing Red LED blinks equal to the current value, followed by a pause. Pull the Trigger the number of times equal to your new desired setting, one pull per desired setting equal to each millisecond. Once done, the LED will cycle through an array of colors to indicate the setting is saved and return to the Settings Mode.

### BALL IN PLACE (BIP) DELAY

- WILL BE INDICATED BY A FLASHING GREEN LED

Time in milliseconds the ball must stay in breach before it can be fired. Increase this setting for slower feeding loaders to avoid chopping balls in the breach. Faster force feed loader systems may allow for a lower setting to help achieve higher rates of fire. BIP Delay is adjustable from 1-40ms in 1.0ms increments.

Default: BIP Delay = 5.0ms

*Note: If you are not using a force-feed loader, it is recommended that you use a higher BIP setting.*

You must be in the Settings Mode to change the BIP Delay Setting, see above for instructions on how to enter Settings Mode. After choosing BIP Delay (Flashing Green), hold the Trigger to get into the Mode, the LED will show flashing Green LED blinks equal to the current setting, followed by a pause. Pull the Trigger the number of times equal to your new desired setting, one pull per desired setting equal to each millisecond. Once done, the LED will cycle through an array of colors to indicate the setting is saved and return to the Settings Mode.

### RAMP START

- INDICATED BY A FLASHING AMBER LED

This setting controls the amount of semi-automatic shots must be fired before ramping will start. If the marker is not fired for 1 second, the count will start over. Ramp Start is adjustable from 1-12 shots in 1 shot increments. Default: Ramp Start = 3 Shots

You must be in the Settings Mode to change the Ramp Start Setting, see above for instructions on how to enter Settings Mode. After choosing Ramp Start (Flashing Amber), hold the Trigger to get into the Mode, the LED will show flashing Amber LED blinks equal to the current setting, followed by a pause. Pull the Trigger the number of times equal to your new desired setting, one pull per desired setting equal to one shot. Once done, the LED will cycle through an array of colors to indicate the setting is saved and return to the Settings Mode.

### RAMP SUSTAIN

- INDICATED BY A FAST FLASHING RED LED

This setting controls the amount of Trigger pulls per second (TPS) that must be achieved and sustained for ramp to kick in. Ramp Sustain is adjustable from 1-12 Trigger-pulls-per-second (tps) in 1 tps increments.

Default: Ramp Sustain = 3 tps

You must be in the Settings Mode to change the Ramp Sustain Setting, see above for instructions on how to enter Settings Mode. After choosing Ramp Sustain (Fast Flashing Red), hold the Trigger to get into the Mode, the LED will show fast flashing Red LED blinks equal to the current setting, followed by a pause. Pull the Trigger the number of times equal to your new desired setting, one pull per each

TPS. Once done, the LED will cycle through an array of colors to indicate the setting is saved and return to the Settings Mode.

*Note: This setting affects only Millennium/ Ramp Firing Mode.*

## FACTORY RESET

The board has a feature that allows the user to reset all of the settings back to the stock configuration. Tournament Lock must be off to perform factory reset. The following steps are required to perform a Factory Reset:

1. With board Off, turn marker On in settings mode.
2. Press and hold the button on the Foregrip, then press and hold the Trigger so that both the button and Trigger are being held simultaneously (Note: button must be pressed first).
3. Hold both the button and Trigger for approximately 5-6 seconds. The LED will then start alternating green and red. Now release the button and Trigger.
4. When the board is done resetting the board will turn off.

## TRIGGER ADJUSTMENT

There are five adjustments that can be made on the on the trigger (Fig 6-2). Use the 5/64" hex wrench to make any desired adjustments:

**A. Forward Travel** – This adjusts the position of the trigger when not being fired

- Turning the adjustment screws "in" or clockwise will decrease the trigger length of travel

**B. Stop** – This adjusts the farthest position the trigger will travel when depressed

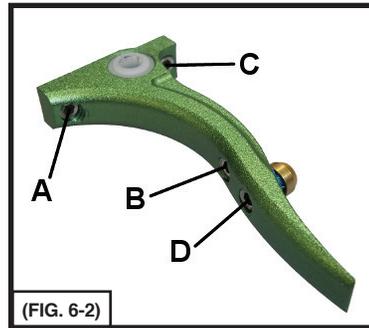
- Turning the adjustment screws "in" or clockwise will decrease the travel of the trigger by having the trigger stop sooner

**C. Activation Point** – This adjusts the position where the trigger pull registers a shot by activating the trigger switch

- Turning the adjustment screws "in" or clockwise will decrease the travel of the trigger needed before the AXE registers a shot

**D. Magnetic Tension** – This affects how "hard" the pull of the trigger is

- Turning the adjustment screws "in" or clockwise will increase the force needed to pull the trigger



## 7. ASSEMBLY/DISASSEMBLY AND MAINTENANCE

**CAUTION:** Before attempting to perform any maintenance operations or any marker disassembly, make sure that all paintballs and propellant sources have been removed from the marker and that the Regulator gauge reads 0 psi. Install a barrel blocking device, and that the power is Off.

### GENERAL MAINTENANCE

Keep your AXE clean and lubricated to eliminate the friction that would prevent reliable operation. Clean and lube the marker before each use, and do not put it away dirty. Only use oils designed for paintball and they may only be used on the regulator. **DO NOT USE OIL ON THE BOLT SYSTEM.** Do NOT use petroleum-based lubricants in the lubrication of this marker. Under any circumstances, do NOT use a solvent-based lubricant. Teflon or silicone (Non-spray only) lubricants designed for use on O-rings may be used for lubrication for the bolt area only of the main housing. Only use Paintball specific marker grease, such as Empire Vitamin E grease. The following maintenance procedures described below should be performed before each day of use or every 20,000 shots, whichever comes first.

## REMOVAL, INSTALLATION AND CLEANING OF BALL DETENTS AND EYES

- Using a 5/64" hex wrench, insert hex wrench into the screw hole of the Eye Cover and turn counter-clockwise. (Fig 7-1)



- Using the end of the hex wrench, carefully pry the Ball Detent from the Body
- Clean the detent with a damp cloth or with warm water if covered with paint
- Place the Detent back into its socket within the Body
- Using the end of the hex wrench, carefully pry the Eye from the Body using care not to damage the eye wires
- Clean the Eye with a dry cloth
- Carefully replace the Eye into the socket in the Body
- Install the Eye Cover making sure the Eye is safely in its socket. Tighten the screw with a 5/64" hex wrench.

*Note: Be careful not to lose the detents as they are small and unattached.*

## REMOVAL OF BOLT AND BOLT GUIDE ASSEMBLY

- Press and hold the Bolt Guide Release Button, located on the left-side of the rear of the Grip Frame (Fig 7-2)



- While holding the button, grip and pull the Bolt Guide free of the Body removing the bolt system (Fig 7-3)



## MAINTENANCE OF BOLT AND BOLT GUIDE ASSEMBLY

- Inspect the O-rings on both the bolt and Bolt Guide for any wear or damage. Replace damaged or worn O-rings if necessary. (Fig 7-4)
- Lubricate all O-rings on Bolt and Bolt Guide with Empire marker grease, the supplied grease or a paintball specific marker grease. Only a small amount is needed.



## MAINTENANCE OF POPPET

- Use a 3/32" hex wrench and insert it into the back of the Bolt Guide Cap. Turn counter-clockwise until Bolt Guide Cap is completely removed. (Fig 7-5)
- Inspect and lubricate Bolt Guide Cap O-ring.
- Carefully insert a non-metallic object (like the back of a pen) into the front of the Bolt Guide. Push Poppet Assembly out the back of the Bolt Guide. (Spring may fall out of Bolt Guide) (Fig 7-6)
- Lubricate the Poppet O-ring, which is the most important O-ring used in the AXE and should be maintained often.



## REPLACING THE POPPET SEAL

If there is a slight air leak evident coming through the bolt area, the Poppet Seal may be worn and need to be replaced. With the Poppet removed, grab the Poppet Seal with pliers and unscrew the Poppet by hand from the Poppet Seal. Do not grab the Poppet with pliers or put in a vice as it may damage the brass. Install the new Poppet Seal by hand. Once tightened by hand, the Poppet will hold the Poppet Seal in place and it should not come apart during operation.

## REINSTALLATION OF POPPET, POPPET SPRING AND BOLT GUIDE CAP

- Place Poppet assembly into the back of the Bolt Guide and gently push forward. If installed properly the Poppet assembly will be all the way forward resting on the Bolt Guide internal face. Make sure the Poppet spring is seated straight in the back of the Poppet. (Fig 7-7)
- Using the 3/32" hex wrench, screw the Bolt Guide Cap clockwise back into the Bolt Guide. Screw the Bolt guide cap all the way in, then turn out 1/2 turn. Further adjustment over a chronograph will be needed to achieve desired velocity.



## REINSTALLATION OF MAIN SPRING, BOLT AND BOLT GUIDE ASSEMBLY

Slide main spring onto bolt, and then bolt onto Bolt Guide, so it is one assembly. You will notice, one end of the spring is smaller and will lock onto the bolt. (Fig 7-8) Insert assembly into the back of Body.



### Notes:

- On the bottom side of the Bolt Guide there is a small alignment pin at the rear of Bolt Guide. This must line up with the alignment hole.
- Holding the bolt assembly tight into the back of the Body with one hand, re-install the rear frame screw and tighten using the 1/8" hex wrench.

## REMOVAL OF FOREGRIP ASSEMBLY

Note: Be careful with the Battery wires when removing the Foregrip.

- Using a 5/64" hex wrench, loosen and remove the four screws holding the rubber Grip onto the Foregrip.
- There are five screws that hold the Foregrip to the Grip Frame and Transfer Plate.

- Locate the two screws near the corners of the Trigger Guard, one on each side of the AXE. Use a 5/64" hex wrench to remove those screws.
- There are three screws located on the front of the Foregrip. One in the center at the very top and two at the bottom. Remove them using a 3/32" hex wrench
- Carefully unplug the Battery Harness from the board. Do not pull the wires or they may break off the battery contacts.
- The Foregrip assembly will now lift free of the Grip Frame. (Fig 7-9)



## INSTALLATION OF FOREGRIP

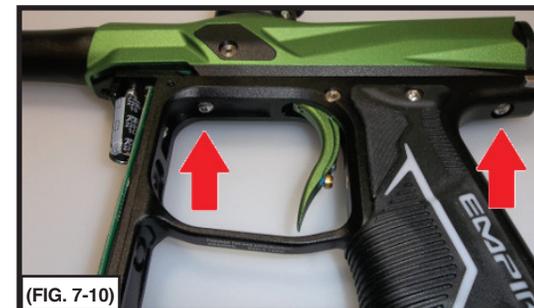
To reinstall the Foregrip Assembly onto the Grip Frame and Body.

- Connect the Battery Harness from the Foregrip into the Board on the Grip Frame.
- Slide the Foregrip assembly back over the board and onto the Grip Frame, aligning the screw holes.
- Install the three front screws using the 3/32" hex wrench and the two side screws using the 5/64" hex wrench.
- Reinstall the rubber Grip using the four screws and a 5/64" hex wrench.

Note: If not installed correctly, you might damage the Circuit Board!

## REMOVAL OF GRIP FRAME

- Using a 5/64" hex wrench, loosen and remove the four screws holding the rubber Grip onto the Foregrip.
- Peel back the rubber Foregrip and remove the top screw at the front of the Foregrip using a 3/32" hex wrench.
- Using a 3/32" hex wrench, remove the two Grip Frame screws by turning counter-clockwise. (Fig 7-10)
- The forward Grip Frame screw is located within the Trigger Guard
- The rearward screw is located at the back of the marker, below the Bolt Guide
- Gently pull down the frame from Body.



## INSTALLATION OF GRIP FRAME

- Inspect the Air Transfer Tube O-ring and lightly grease. As you install the Grip Frame, make sure the Solenoid wires do not get pinched and hold the Trigger in to prevent the Trigger activation lever from getting damaged. Gently push Grip Frame back on and line up the air transfer tubes.
- When the Grip Frame is back on, use the 3/32" hex wrench and tighten the (2) Grip Frame screws clockwise.
- Do not over tighten.

## REMOVAL OF REGULATOR

- Remove the four screws that hold the rear Grip to the Grip Frame using a 5/64" hex wrench.
- Remove the Air Transfer tube by unscrewing it counter-clockwise. Be careful not to lose the female Air Transfer Tube bottom O-ring, which sits on the bottom of the tube.
- Loosen the two Regulator Mount screws located on the inside of the Grip Frame (on each side of the transfer tube) with a 3/32" hex wrench by turning them counter clockwise. (Fig 7-11)
- The Regulator can now be slid forward and off the Grip Frame.

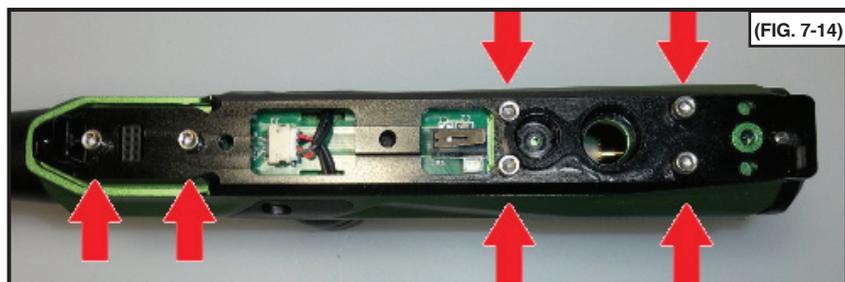
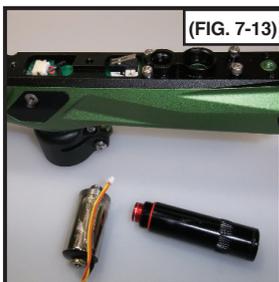
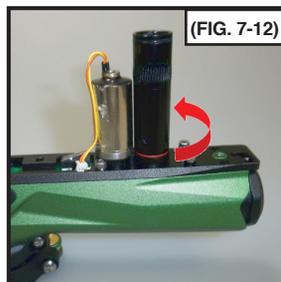


## INSTALLATION OF REGULATOR ASSEMBLY

- Slide Regulator along the T-rail of the Grip Frame, orientated for the ASA opening is facing the rear of the marker.
- Install the two Regulator Mount screws located on the inside of the Grip Frame (on each side of the transfer tube) with a 3/32" hex wrench by turning them clockwise. Do not over tighten.
- Make sure the female Air Transfer Tube O-ring is on the bottom of the Air Tube, add grease if necessary.
- Install the Air Transfer tube by screwing it clockwise. Do NOT torque, hand tighten only.
- Install the four screws that hold the rear Grip to the Grip Frame using a 5/64" hex wrench.

## REMOVAL OF AIR TRANSFER PLATE

- Remove the Foregrip and Grip Frame using instructions shown earlier in this manual.
- Carefully unplug the solenoid from the Sensor board.
- Remove the male Air Transfer Tube assembly from the Air Transfer Plate by unscrewing it counter clockwise. (Fig 7-12)
- Remove the Solenoid from the Air Transfer Plate by unscrewing it counter-clockwise. (Fig 7-13)
- Using a 3/32" hex wrench, remove all of the Air Transfer Plate screws (7 total). (Fig 7-14)
- Once the screws are removed the Air Transfer Plate will then lift off.



Note: Be careful not to lose the Check Valve (air restrictor). The Check Valve is a small plastic piece located between the Body and air transfer plate.

## INSTALLATION OF AIR TRANSFER PLATE

- It is recommended that a small amount of Empire marker grease or paintball marker specific grease is applied to the Air Transfer Gasket before the Air Transfer Plate is reattached.
- Also make sure the Check Valve is in the Body, as seen in the picture above.
- Place Transfer Plate back on Body and evenly tighten all 7 screws using a 3/32" hex wrench.
- Screw the Solenoid into the Air Transfer Plate, tightening in a clockwise direction.
- Repeat with the male Air Transfer Tube
- Plug the Solenoid back into the sensor board.

## REMOVAL AND CLEANING OF SENSOR BOARD

- Remove Foregrip, Grip Frame, and Air Transfer Plate as described in the steps above.
- Gently remove the Sensor Board from the Body, using caution to prevent bending the Eyes.
- Once the board is removed, use a dry cloth to clean the Eye sensors.
- If paint is on the board, use a dry cloth to wipe paint off the board.
- Rubbing alcohol may be used if deep cleaning is needed. Do not use water on any electronics.

## INSTALLATION OF SENSOR BOARD

- When installing board back in main Body, be careful that the sensors line up correctly.
- The board should drop into the Body very easily. Do NOT force the Sensor Board into the Body.
- Once in place, install the Air Transfer Plate and other components as described in this manual.

## 8. EMPIRE REGULATOR SERVICE GUIDE

**WARNING:** Remember to remove all gas and ensure marker is discharged before servicing Regulator.

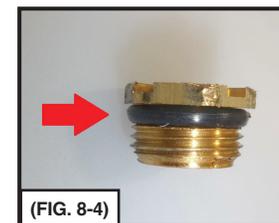
**WARNING:** The following service should be performed by an experienced user. If you are not comfortable performing the steps below, please contact Empire customer service at [www.paintballsolutions.com](http://www.paintballsolutions.com)

For ASA/Regulator service you will need the following tools: 3/32" hex wrench, needle nose pliers, O-ring pick, 1/2in socket or nut driver, 3mm nut driver, Dow 33 type grease

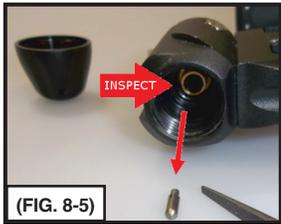
1. Grasp the Regulator Front Cap and unscrew counter-clockwise. If it does not turn easily, use a 3/32 hex wrench in hole on front cap of the regulator and unscrew the front cap (Fig 8-1). The Main Spring and Spring Plate will be sitting loose in the Front Cap. Be sure not to lose these parts (Fig 8-2).



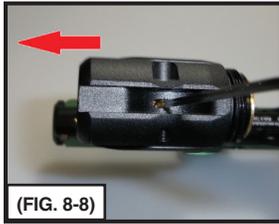
2. Flip the On/Off Lever forward to Off position. Insert the 1/2in. hex socket into open side of Regulator and unscrew the brass nut from the Regulator in the counter-clockwise direction (Fig 8-3).
3. Inspect the O-ring on the brass nut and replace if damaged (Fig 8-4)



- Use a pair of pliers to remove the tank depression pin from the Pin/Seal Retainer in the tank side of the Regulator. Be sure to grab the pin by its smaller section, near the tip. Inspect O-ring on the inside of the pin retainer and replace if necessary (Fig 8-5).
- Use a 3/32" hex wrench to unscrew the Lever Retaining Screw (Fig 8-6). The Lever is under spring pressure, so you may have to push the Lever down slightly to remove the screw. Once the screw is removed, the Lever will fall out and the Pin Depression Ramp with Spring will fall from the bottom of the Regulator (Fig 8-7).



- Insert the 3/32" hex wrench into the bottom of the Regulator where the Pin Depression Ramp was removed from. Use the hex wrench to unseat the Pin/Seal Retainer by pushing it towards the tank side (rear) of the Regulator (Fig 8-8). Once unseated, remove the hex wrench and turn the tank side opening down to allow Pin/Seal Retainer to fall into your hand. Inspect the outer O-rings of the pin/seal retainer for damage and replace if needed (Fig 8-9).

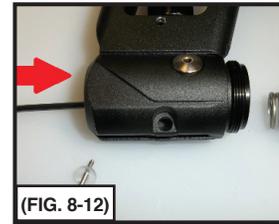


- Insert the 3mm nut driver into the tank side of the Regulator onto the silver Piston. On the opposite side of the Regulator (front), place the O-ring pick in the small hole on the brass piston as shown in (Fig 8-10) Hold the brass Piston stationary and unscrew the silver Piston. Once fully unscrewed, turn the tank opening side down and allow the washer and silver piston to come out on the 3mm nut driver as shown in (Fig 8-11).



- If the Piston and washer don't fall out easily, use pliers to grab the Piston by the head and lift it from the Regulator body. Then use an O-ring pick to loosen the washer, carefully, while not damaging the washer. Note the washer is semi-transparent and may be hard to see. If the washer is damaged or the Regulator was having over pressurization problems the washer should be replaced.

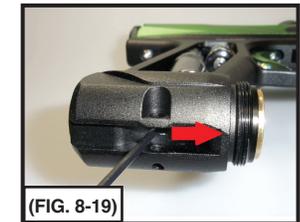
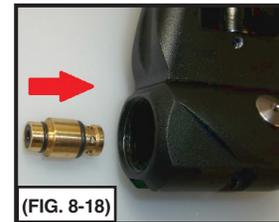
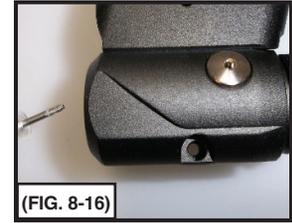
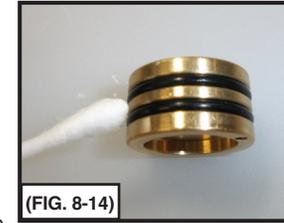
- Once the silver Piston and washer is removed, insert a 3/32" hex wrench into the tank side of the Regulator to push the silver piston through the front of the Regulator as seen in (Fig 8-12)
- Insert a 3/32" hex wrench into the silver cap on side of Regulator to unscrew filter retainer cap. The filter will fall out onto the cap once removed. Inspect the O-ring on filter cap and replace if needed. (Fig 8-13)



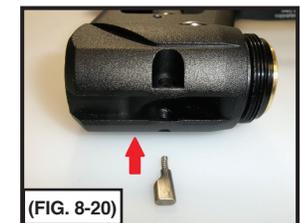
- Proceed to clean the inside of the Regulator and the removed parts with a clean cloth or cotton swab.

### REASSEMBLY

- Once clean, apply a liberal amount of Dow 33 or equivalent grease to the two O-rings on the brass Piston as shown in (Fig 8-14,) making sure to fill the grooves that the O-rings sit in with grease.
- Place the secondary spring into the deeper side of the brass piston and insert the assembly into the front of the Regulator (Fig 8-15).
- Place the silver piston into the 3mm nut driver and the washer onto the silver piston with the curved side of the washer facing the head of the piston (Fig 8-16). Insert the assembly into the tank side of Regulator and screw silver piston into brass piston until snug. DO NOT OVER TIGHTEN the silver piston. Only tighten until turning silver piston spins brass piston as well.
- Place filter in filter cap and screw the assembly into filter area using 3/32 hex wrench (Fig 8-17).
- Insert pin/seal retainer in orientation shown in (Fig 8-18) into tank side of Regulator ensuring oval slot in the pin/seal retainer is lined up with bottom slot on Regulator.
- Insert the 3/32" hex wrench into bottom slot of Regulator and push the Pin/Seal Retainer towards front of Regulator until the slot on the Regulator lines up with the slot on the seal retainer (Fig 8-19).

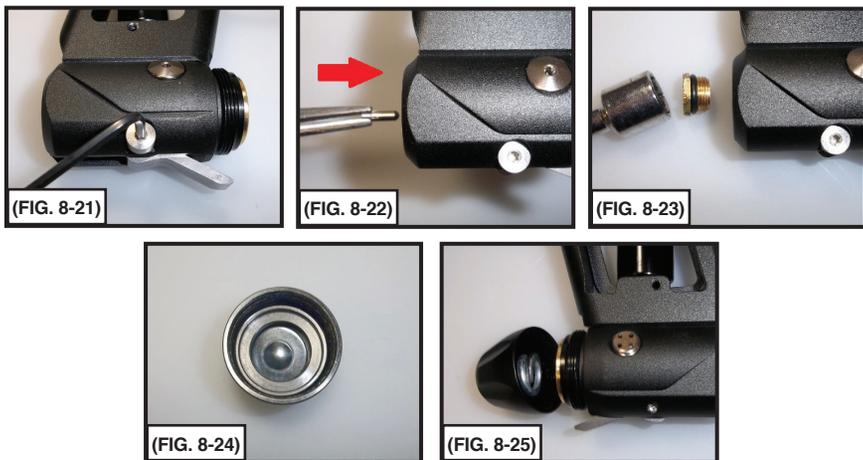


- Insert the Pin Depression Ramp and Spring back into the bottom of Regulator with the ramp facing toward tank side of Regulator (Fig 8-20). The ramp should fall into place easily and if not, ensure the slots on the Regulator and Pin/Seal Retainer line up on all sides.



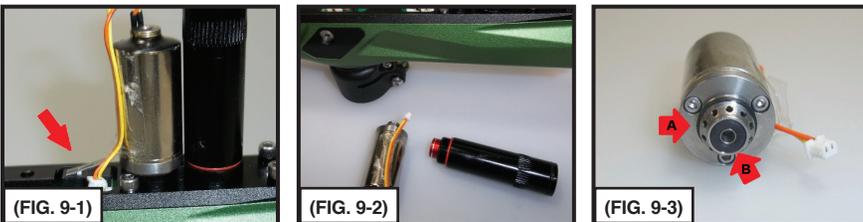
- Place lever on top of pin ramp in off position and install lever retainer screw using 3/32 hex wrench (Fig 8-21).
- Apply a small amount of Dow33 grease to the large part of the tank depression pin. Use pliers to place the tank depression pin back into the Pin/Seal Retainer, being careful to only grip the small end of the pin with the pliers. (Fig 8-22).
- Use the 1/2" socket to reinstall the brass nut into the tank side of the Regulator (Fig 8-23).
- Place silver washer in Regulator front cap as shown in Figure 8-24. Place main spring on top of washer and screw front cap onto front of Regulator. Only hand tightening is needed (Fig 8-25).

**WARNING: Before applying air to marker unscrew Regulator adjustment screw to set pressure to zero as pressures may have changed during service.**



## 9. SOLENOID SERVICE GUIDE

- Unplug the solenoid from the sensor board (Figure 9-1).
- Unscrew the solenoid from air transfer plate (counter-clockwise) and set the marker off to the side (Fig 9-2).
- Inspect each O-ring at the bottom of solenoid threads (labeled A) and the top of solenoid (labeled B) for damage, replace as necessary (Fig 9-3).

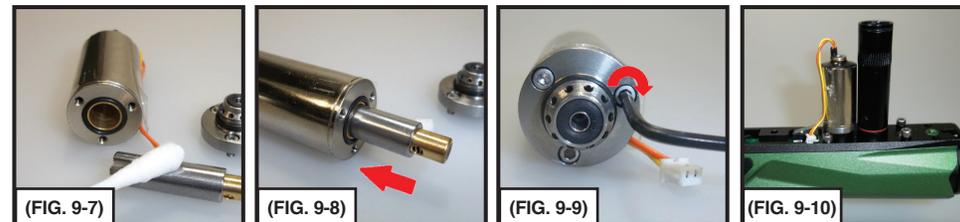


- Remove the 3 small screws on the top of the solenoid using a 1/16 hex wrench or small Phillips head screw driver depending on the screw head (Fig 9-4).
- Lift the top cap off the solenoid to expose the solenoid piston. Be careful not to lose the small O-ring at the top of the solenoid, it may be stuck to the top cap (labeled A in Fig 9-5). If O-ring is damaged, replace it.
- Lift the piston from the solenoid (Fig 9-6).

**WARNING: If you are not comfortable performing this maintenance please contact Empire technical support by going to [www.paintballsolutions.com](http://www.paintballsolutions.com)**



- Use a Q-tip or clean cloth to clean the piston and the cavity that holds the piston. Also clean the rubber seals on both the top and bottom of the piston (Fig 9-7).
- Once the solenoid cavity and piston have been cleaned, re-insert the piston into the cavity as orientated in (Fig 9-8). The solenoid piston doesn't require lubrication, though a very light coat of paintball marker oil may be applied to the silver area of the piston if desired.
- Replace the solenoid cap and the 3 screws that secure the cap in place (Fig 9-9). Do NOT over tighten the screws.
- Screw the solenoid back into air transfer plate and plug the wire back into sensor board (Fig 9-10).
- Solenoid maintenance is now complete.



**WARNING: Solenoid may be in open position after service. Before gassing up marker, turn marker on, turn eyes off and pull trigger several times to close solenoid**

## 10. STORAGE AND TRANSPORTATION

- Your AXE must be clear of all paint and propellant when not being used.
- Make sure the AXE marker is Off: Push the Power button and hold for over 2 seconds until the LED light changes to Red
- Put the barrel blocking device in its place. Make sure the marker is clean.
- Store your AXE in a clean, cool, dry place.
- Keep your AXE away from unauthorized and unsafe users.
- It may be a good idea to remove the battery when storing your marker to prevent unauthorized use and to extend battery life.

Your AXE must be clear of all paint and any source of propellant during transportation to and from the playing field. Keep your barrel blocking device in place. Keep the AXE Marker switched Off. Protect your marker from excessive heat during transportation. Observe and obey all local, state and federal laws concerning the transportation of paintball markers. For information concerning any of the laws in your area, contact your nearby law enforcement agency. If you must ship your AXE for any reason, the box in which you purchased the marker should be used to protect your marker against rough handling during transport.

Never ship filled pressurized gas (HPA) cylinders!

**IMPORTANT: Never carry your AXE uncased when not on a playing field. The non-playing public and law enforcement personnel may not be able to distinguish between a paintball marker and firearm. For your own safety and to protect the image of the sport, always carry your AXE in a suitable marker case or in the box in which it was shipped.**

## 11. TROUBLESHOOTING GUIDE

Marker does not turn On	Battery may not be fresh	If you have tried several different batteries, check to make sure the battery harness is plugged in to the board properly. If it is, unplug the battery from the harness, press and hold the power button for 15sec then release. Plug the battery back in and try again.
	Board may have moisture damage	The circuit board is protected with a moisture resistant coating but occasionally prolonged exposure to moisture can cause a malfunction. If the marker was used in wet conditions unplug the battery and remove both circuit board from marker to allow them to dry for at least 24 hours then try turning it on again.
Marker does not fire/cycle	Marker may not be turned on	Check screen on rear of foregrip. OLED screen should be on when marker is turned on.
	Paintballs may not be fed into breech	The anti-chop eye system prevents the marker from firing unless a ball is present. When the eyes detect a ball the eye symbol on the screen will have a filled circle in the middle. Never put anything other than a paintball down the feedneck of the AXE. Check that the bolt is fully returning and if not service you may need to change bolt tip, small bolt guide O-rings and/or the bolt O-rings. Check that there is a proper connection between the sensor board and main board. Check for damage to the main board pins near the tip of the foregrip.
	Trigger may need to be adjusted.	The trigger indication arrow takes place of the tournament lock symbol when the trigger is activated. If the trigger is being pressed the arrow will point down, and point up if the trigger is released. If it is not that way, then the trigger may need to be adjusted. See the "Trigger Adjustments" section earlier in the manual. Check that there is a proper connection between the sensor board and main board. Check for damage to the main board pins near the tip of the foregrip.
	Solenoid may not be connected	Remove air source and paintball before disassembling the marker. If your remove the grip frame you should be able to verify the solenoid is plugged into the AXE sensor board.
Multiple paintballs fired from only one shot	Ball detents may be torn or missing	Remove the eye cover to check the condition of the ball detents. If damaged or bent permanently replace one or both of them.
Marker is Breaking paintballs in the breech	Ball detents may be torn or missing	Remove the eye cover to check the condition of the ball detents. If damaged or bent permanently replace one or both of them.
	Eyes may be dirty	Clean the eyes as described earlier in the manual. If the eyes are dirty the eye symbol on the screen with have a big X in the middle after the marker is fired.
	Bolt tip may be bad	A bad bolt tip may allow air to escape up the feedneck causing breakage. This symptom is commonly known as "Blowback"
	Bolt guide or Bolt O-rings may be bad	Bad bolt or small bolt guide O-rings may allow air to escape up the feedneck causing breakage. This symptom is commonly known as "Blowback". Make sure these O-ring are in good condition and properly lubricated. Replace if necessary.
Marker is shooting slower than set ROF	Eyes may be dirty	When the eyes are dirty the ROF is limited to 8bps to prevent excessive ball breakage. Clean the eyes as described earlier in the manual. If the eyes are dirty the eye symbol on the screen with have a big X in the middle after the marker is fired.

Velocity is Low/Inconsistent or velocity drops during rapid fire	Poppet O-ring may be damaged or not properly lubricated	See general maintenance section earlier in the manual to see how to properly check and lubricate poppet O-ring.
	Bolt guide or Bolt O-rings may be bad/may not be lubricated	Bolt should stay on bolt guide when turned bolt side down and shaken. If bolt falls off replace 3 small bolt guide O-rings. Check bolt and bolt guide O-rings for damage. Assure these O-rings are properly lubricated according to general maintenance section of this manual.
	Possible issue with marker pressure	Pressure should be set to around 200psi. If pressure drops during rapid fire and doesn't recover to set pressure between each shot try screwing in tank all the way or try a different tank. If switching tank doesn't help the regulator/ASA may need to be serviced. See Regulator maintenance guide in the manual
Velocity of first shot is higher than rest of string	Possible issue with marker pressure	Pressure should be set to around 200psi. If pressure rises above set pressure quickly after a shot the regulator may need service. See Regulator Maintenance Guide in this manual.
Marker continues to fire when trigger is not being pulled	Trigger may be adjusted too short	If trigger is adjusted too short it could cause undesired activations on the switch. See Trigger adjustments section earlier in the manual to make trigger longer.
Solenoid doesn't click	Battery may not be fresh	Try a new battery and make sure high quality Alkaline 9V battery.
	Solenoid may be dirty and is sticking	See solenoid cleaning in the maintenance section earlier in the manual.
Marker continues to fire when trigger is not being pulled	Trigger may be adjusted too short	If trigger is adjusted too short it could cause undesired activations on the switch. See Trigger adjustments section earlier in the manual to make trigger longer.
	Trigger de-bounce may need to be increased	The circuit board has settings called pull de-bounce and release de-bounce that prevent accidental trigger switch activations. Increasing these settings may fix this issue. See Board settings and Functions section earlier in the manual to see how to adjust this.
Large gushing leak out of barrel/breech	Solenoid may need to be reset	The solenoid may occasionally stick open from being dirty, excessive shock or loss of power in which case it needs to be reset. To reset solenoid remove air source turn marker on, turn the eyes off pressing and hold if up direction, press trigger multiple times you should hear solenoid clicking. If solenoid doesn't click see "Solenoid doesn't click" section in troubleshooting guide.
Small leak down the barrel	The poppet seal may be dirty or damaged	The poppet seal may be dirty or damaged
	The bolt guide is dirty or damaged	Screw VTry cleaning poppet seal and bolt guide area with a tip. If this doesn't work your bolt guide may be damaged where the poppet seals and therefore needs to be replaced.
	Front large bolt guide O-ring is damaged	Replace O-ring
Constant leak inside grip frame	Eyes may be dirty Multiple causes	Multiple seals or parts could cause a leak inside grip frame. Check and replace seals if necessary for each possible cause. Possible causes include: Solenoid Gasket, Solenoid, Large bolt guide O-rings, O-rings on air transfer tubes,
Leak from back cap/velocity adjuster	Velocity adjuster could be unscrewed too far	Screw Velocity adjuster back in.
	Air transfer O-ring may be damaged	Change bottom air transfer O-ring.
Leak from bottom of regulator ASA where lever is	Regulator pressure is set too high	This cap contains the over pressure protection valve (OPP valve). It will leak if the pressure is approximately 250psi or higher. If it leaks at less than 200psi it may need service which would require a certified tech.





## LIMITED LIFETIME WARRANTY INFORMATION

GI Sportz ("GI") warrants that this product is free from defects in materials and workmanship for as long as it is owned by the original purchaser, subject to the terms and conditions set forth below. GI Sportz will repair or replace with the same or equivalent model, without charge, any of its products that have failed in normal use because of a defect in material or workmanship. GI Sportz is dedicated to providing you with products of the highest quality and the industry's best product support available for satisfactory play.

### ORIGINAL PURCHASE RECEIPT REQUIRED

Purchaser should register product to activate warranty. Register your product online at [www.paintballsolutions.com](http://www.paintballsolutions.com)

### WHAT THIS WARRANTY DOES NOT COVER

This warranty does not cover problems resulting from abuse, the unauthorized modification or alteration of our product, problems resulting from the addition of aftermarket products and scratches or minor superficial imperfections. Due to the nature of paintball products it is important that the product be maintained by the user as indicated in the product manual to remain in good operating condition. Your Limited Lifetime Warranty will be void if you fail to maintain the product as recommended in the product instruction manual. In addition, certain parts of a product may be subject to wear through regular usage. Replacement and repair of such parts is the responsibility of the user throughout the life of the product. These parts are not covered under the Limited Warranty. Examples of this type of part include (but are not limited to) goggle lens, straps, O-Ring seals, cup seals, springs, ball detents, batteries, hoses, drive belts, gears and any part of a product subject to continuous impact from paintballs. Hydro-testing of air cylinders is not covered under this warranty.

The Limited Lifetime Warranty also does not cover incidental or consequential damages. This warranty is the sole written warranty on KEE's product and limits any implied warranty to the period that the product is owned by the original purchaser. Some states, provinces and nations do not allow the limitation of implied warranties or of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state, province to province, and nation to nation. If you should encounter any problems with your product and you have added aftermarket parts on your product, please test it with the original stock parts before contacting paintball Solutions. Always unload and remove the air supply before shipping markers. Do not ship your air supply tank if it is not completely empty and the regulator removed. Shipping a pressurized air supply tank is unsafe and unlawful. Remove all batteries from products prior to shipping. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion of incidental or consequential damages.



**EMPIRE**

[empirepaintball.com](http://empirepaintball.com)

*For Warranty parts, service, information or manuals in other languages, (where applicable) contact Paintball Solutions:*

[www.paintballsolutions.com](http://www.paintballsolutions.com)

E-Mail: [tech@paintballsolutions.com](mailto:tech@paintballsolutions.com)

USA: 1-800-220-3222

11723 Lime Kiln Rd., Neosho, MO 64850

*PATENT(S): See [www.paintballsolutions.com/patents](http://www.paintballsolutions.com/patents) © 2017 GI Sportz Direct, LLC. All rights reserved. This GI Sportz product is protected by one or more United States patents. GI Sportz Trademarks, Designs and Copyrights are protected by one or more United States patents and International Law. For more information, contact GI Sportz at [info@GISportz.com](mailto:info@GISportz.com)*

Empire Paintball

11723 Lime Kiln Rd.

Neosho, MO 64850

[www.empirepaintball.com](http://www.empirepaintball.com)

Empire Paintball is a brand of KEE Action Sports, LLC.