



EMPIRE®

PAINTBALL MARKER SYSTEM



OWNER'S MANUAL



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Read the full Operator's Manual for technical information, usage instructions, and maintenance tips for your Axe marker. The full manual can be found on the CD enclosed with the marker or by contacting Paintball Solutions at 1-800-220-3222 or at www.paintballsolutions.com.

1. Rules for Safe Marker Handling

Important: Never carry your Empire AXE uncased when not on a playing field. The non-paintball 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 Empire AXE in a suitable marker case or in the box in which it came in.

Safety and safe marker handling are the most important aspects of paintball sports. Please practice each of the following steps with an unloaded marker before attempting to operate your marker with an air source and paintballs.

Read this entire manual before loading, or installing an air cylinder, or in any way attempting to operate the marker

READ OWNER'S MANUAL BEFORE USING

- Treat every marker as if it were loaded.
- Never look down the barrel of a paintball marker.
- Keep your finger off the trigger until ready to shoot.
- Never point the marker at anything you don't wish to shoot.
- Keep the marker off until ready to shoot.
- Keep the barrel-blocking device in/on the marker's barrel when not shooting.
- Always remove paintballs and air source before disassembly.
- After removing 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.
- 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).
- Remember that the ultimate safety device is you, the operator.

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. Persons under 18 years of age must have adult supervision.

For manuals and warranty details, go to: paintballsolutions.com

For manuals in other languages (where applicable), go to: paintballsolutions.com

2. Introduction and Specifications

Welcome to the world of the Empire AXE. The Empire AXE is a modern culmination in the pursuit of speed, technology, weight reduction, and overall performance. It started with radical imaginative concepts, which in turn inspired years of research and development, plus countless hours of testing and engineering. As a result, the Empire AXE features innovative electronic and pneumatic technologies that challenge the paradigm that formerly defined “how a high performance paintball marker should function”. The Empire AXE is precision engineered from aircraft-grade aluminum to meet the demands of the most competitive players, teams, and climates. The ultimate intent of the Empire AXE is to exceed your expectations.

Empire Paintball expects you to play hard and play frequently and thus the Empire AXE was built with this in mind. All internal parts, wear, and contact surfaces have been heat treated or hard anodized. The toughest and most resilient materials and components have been used in the construction of this marker.

The Empire AXE operates on low-pressure. The main operating pressure is 180-200 psi. The pressure can be nominally adjusted and monitored visually via the gauge on the bottom-line regulator. There is no secondary regulator to worry about.

The Empire AXE uses .68 caliber, water-soluble paintballs or reballs, readily available at paintball pro-shops, commercial playing fields, and many sporting goods stores.

Empire AXE Specifications

- Model- Empire AXE
- Barrel- 12” Ported Barrel
- Caliber- .68
- Action- Semi Auto, PSP/Millen Ramping, and NXL Full Auto
- Air Source- Compressed Air
- Battery- One 9-Volt (Alkaline Only)
- Cycle Rate- Up to 20 BPS with stock circuit board
- Main Body Material- Aluminum
- Weight- 36 ounces

Included with your Empire AXE

- 12” Barrel (.691 bore)

- Spares and Allen Wrenches
- Barrel-Blocking Device
- One 9-Volt Alkaline Battery (installed)
- Owners Manual

3. Battery Replacement and Life Indicator

The Empire AXE requires a single 9-volt battery as the electronic power source.

The use of brand-name batteries is recommended. The 9-volt battery is located in the front fore-grip. The battery is accessed through the removable left side panel on the front fore-grip. Confirm that the marker is off before changing or installing the battery.

Loosen the screw on the left side of the fore grip by turning it counter-clockwise with a 5/64” Allen wrench and lift fore grip door off. If there is already a battery in the fore-grip, carefully disconnect the battery from the battery harness, and then connect a fresh 9-Volt battery to the harness. Re-insert the battery and harness back into the battery compartment with the harness pointed down towards the bottom of the grip. Make sure that there are no abrupt kinks and the wires are comfortably placed. Do not force them into place. Then re-install the fore grip removable door.

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 7 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, the LED located on the back of the fore-grip. 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)

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.

LED Color	Battery Level
GREEN	Battery Good
YELLOW/AMBER	Low Battery, should replace
RED	Battery depleted replace immediately

Notes:

- Some rechargeable batteries may be too large for the Empire AXE battery compartment. If they don't fit, please don't force them as this may cause damage.
- The stock circuit board does not store user-defined settings. You must change the battery quickly to keep your user-defined setting. If the battery is not changed quickly the circuit board will revert to the factory default settings.

4. Basic Operation

Safety and safe marker handling are the most important aspects of paintball sports. Please practice each of the following steps with an unloaded marker before attempting to charge your marker with compressed air and paintballs.

- Keep your finger out of the trigger guard and away from the trigger; point the barrel of the marker in a safe direction at all times. Keep the marker turned off when not in use. The Empire AXE uses a power switch for its safety device.
- 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.

Barrel Installation

- Make sure the marker is degassed, loader removed, no paintballs in the feed neck or breech, and the Empire AXE is turned off before installing barrel.
- While pointing marker in a safe direction, place the threaded end of the barrel into the front opening of the marker body.
- Turn the barrel clockwise until it stops (do not over tighten).
- Install a barrel-blocking device which is included. This can be a barrel plug or other

such device that prevents the accidental discharge of paintballs.

SWITCHING ON YOUR AXE

To switch the AXE On, locate the button on the back side of the front foregrip, in front of the trigger guard and directly under the LED. 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. Color will be determined by the battery level, as listed in the chart above.

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



(Fig. 4.1)

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 up, it will shut itself off after approximately 60 minutes of inactivity. This time cannot be adjusted.

Eye Function

The Empire AXE board is pre-programmed to activate the eye system each time the marker is powered up. Read Section 8 (Break Beam Eyes Operation) for more details.

5. Compressed Air/Nitrogen Supply

The Empire AXE is designed to work with compressed air/nitrogen only. Do not use CO2, as it will damage your Empire AXE. Low-pressure output compressed air tanks are recommended.

Consult the place where you purchased your Empire AXE, or a recognized and competent air smith, for instruction in the safe handling of compressed-air cylinders before purchasing or

connecting one to your Empire AXE.

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 pre-set output compressed air systems. It is strongly recommended that a very high-flow "low-pressure" (400-450 psi) fixed-output system is utilized as an air source for your Empire AXE. Using a "high pressure" (750-850 psi) output compressed air tank is acceptable. If you are using an adjustable output regulator system, the output pressure should be 400-500 psi.

Warning:

- Remember compressed air or nitrogen systems can be extremely dangerous if misused or improperly handled. Use only cylinders meeting D.O.T. or regionally defined specifications.
- Never add any lubricants or greases into the fill adapter on your tank regulator or into the Empire AXE regulator.
- When connecting a remote system with a slide check, the sudden pressurization from the slide check can force the poppet open briefly, sometimes pushing a ball past the detents. It is recommended that you pressurize your Empire AXE before loading paintballs into your loader.
- Do not install compressed air or load paintballs into your Empire AXE until you feel completely confident with your ability to handle your Empire AXE safely.

Before Pressurizing your Empire AXE

- 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.
- Make sure the bolt guide is locked in place properly.
- Ensure you have a barrel plug, barrel sock, or other specifically designed barrel blocking device in place.
- Make sure there are no paintballs in the marker and the power is off.

Pressurizing your Empire AXE

- Flip the regulators on/off arm forward so it's pointing toward the front of the marker (Fig. 5.1).
- Install a compressed air tank, by screwing it in clockwise; making sure it's fully threaded into the ASA.



(Fig. 5.1)



(Fig. 5.2)

- Flip the on/off arm back so it's flush with the regulator (Fig. 5.2). The marker will become pressurized.

De-Pressurizing your Empire AXE

- Make sure a barrel-blocking device is installed in/on the end of the barrel.
- Turn the Empire AXE off by pressing and holding the power button. The LED will turn from green to red. Observe the light to make sure it is no longer lit.
- Remove loader and all paintballs from marker.
- Flip the on/off arm forward and allow the gas to vent from the regulator.
- Read the pressure gauge and make sure the pressure reads 0 psi.
- Remove your air cylinder by slowly and carefully unscrewing it counter-clockwise.
- Air may remain within the marker once the tank is removed. While the barrel blocking device is still installed, turn your AXE on with the eyes off and pull the trigger a few times to deplete all remaining air.

6. Installing a Loader and Paintballs

The Empire AXE comes equipped to accept standard-gravity feed loaders as well as most agitating and force-feed loaders. Fit the loader directly into the feed neck. It might be necessary to adjust the feed necks clamping screw to your loader.

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 neck and into the breech of the marker.

7. Firing the Empire AXE

Keep your finger out of the trigger guard and away from the trigger, point the muzzle 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.

Caution: When the game you are playing is over, remember to place the barrel blocking device onto your barrel and turn the marker off.

8. Break Beam Eyes Operation

The AXE uses a break beam eye system to determine the absence or presence of a paintball 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 Eye 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 press 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 4.

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.

9. Unloading the Empire AXE

Warning: Always keep your Empire AXE pointed in a safe direction and always keep your protective eye, face and ear wear on until marker is completely unloaded and safe.

- Be sure your finger is away from the trigger area.
- Place the barrel-blocking device in/on the end of the barrel.
- Turn the Empire AXE off by pressing and holding the power button. The LED will turn from green to red. Observe the LED to make sure it is no longer lit.
- Flip the regulators on/off arm forward so it's facing the front of the marker; allow the air to vent and remove your air cylinder by unscrewing it counter-clockwise.
- If you are using an electronic loader make sure loader is completely turned off.
- Slightly tilt the marker so that the loader is lower than the body.
- Remove the loader by undoing the clamp and spinning it in a clockwise direction and gently lifting it.
- Read the pressure gauge and make sure the pressure reads 0 psi.
- Do not look down the barrel but look down the feed neck to make sure there are no paintballs in the breech.
- Remove the barrel from the marker.
- Make sure there are no more paintballs remaining in the barrel.
- Your marker is now ready to be stored in its box or marker case until its next use.

10. Regulator and Velocity Adjustment

The Empire AXE utilizes a bottom-line regulator that doubles as an on/off ASA adapter and regulator for a standard threaded pre-set output compressed air systems or remote hose. This unique regulator system channels air through the air transfer tube, eliminating the need for external macro line and fittings. The Empire AXE bottom-line regulator controls the amount of air pressure going from your compressed air system into the marker.

The Empire AXE regulator should be factory pre-set at about 190 psi, as this is the best operating pressure for proper marker operation. However, if over time you do need to adjust the pressure, use the regulator adjuster screw on the front of your Empire AXE bottom-line regulator.

Regulator Adjustment

If adjustments are needed use a 3/16" Allen wrench and insert it into the regulator adjustment screw. This is located in the front of the regulator; see (Fig. 10.1).

- To increase output pressure– Turn the regulator adjustment screw clockwise.
- To decrease output pressure– Turn the regulator adjustment screw counter-clockwise.



(Fig. 10.1)

Notes:

- Always watch the gauge as you are adjusting the pressure.
- The bottom-line regulator should not be disassembled.
- Never set the regulator above 200 psi.

Adjusting Velocity

At the back of the Empire AXE main body is the bolt guide cap. The Allen screw in the bolt guide cap serves as your velocity adjuster. Confirm that the pressure on your Empire AXE bottom-line regulator is at 180-200 psi. Then you can increase or decrease the velocity on your Empire AXE by tightening or loosening the velocity adjustment screw, with a 1/4" inch Allen wrench; see Fig. 10.2.

- To increase (+) velocity, unscrew or loosen the velocity adjustment screw by turning it counter-clockwise. Rotate the velocity adjustment screw counter-clockwise in small increments (1/4 turn or less), stopping between slight turns to test velocity, until desired velocity is achieved. Do not back the adjuster out passed being flush. Stop if you hear an air leak, and adjust back in a 1/4 turn. A paintball specific radar chronograph should be used to accurately measure your velocity.
- To decrease (-) velocity, tighten or screw-in the velocity adjustment screw by turning it clockwise. Rotate the velocity adjustment screw clockwise in small increments (1/4 turn or less), stopping between slight turns to test velocity, until desired velocity is achieved. A paintball-specific radar chronograph should be used to accurately measure your markers velocity.



(Fig. 10.2)

Notes:

- 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.
- Check the velocity every time before using your Empire AXE.

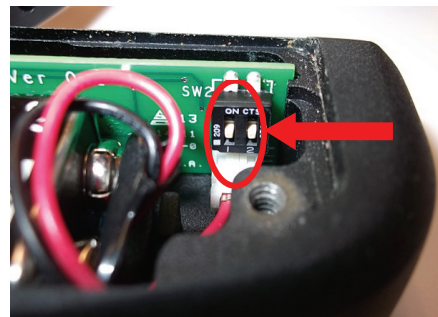
11. BOARD SETTINGS AND FUNCTIONS

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 fore grip near the bottom of the circuit board. The battery door must be removed to access the switch. Flip dip switch #1 to the ON (UP when laying flat) position to activate the Tournament Lock. When tournament lock is ON, Settings Mode cannot be activated



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 fore grip. 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 above. 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	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

-WILL BE INDICATED BY 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: NPPL/Semi Auto, PSP/Burst, Millennium/Ramp, and NXL Style Full Auto.

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.

# of Blinks	Mode
1	NPPL/Semi
2	PSP/Burst
3	Mill/Ramp
4	Full Auto

NPPL/Semi Auto: Marker will shoot 1 time for each time the trigger is pulled. The default setting meets 2011 NPPL marker rules.

Default: Max ROF = 15.0bps

PSP/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. The default setting meets 2011 PSP marker rules.

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

Millennium/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. The default setting meets 2011 Millennium marker rules.

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

NXL Style 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 = 3shots

MAX RATE OF FIRE (ROF)

-WILL BE 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 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.

Example: 10 LED blinks = 12.5 BPS

# of Blinks	BPS value	# of Blinks	BPS value	# of Blinks	BPS value
1	8.0	10	12.5	18	16.5
2	8.5	11	13.0	19	17.0
3	9.0	12	13.5	20	17.5
4	9.5	13	14.0	21	18.0
5	10.0	14	14.5	22	18.5
6	10.5	15	15.0	23	19.0
7	11.0	16	15.5	24	19.5
8	11.5	17	16.0	25	20.0
9	12.0				

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. Minimum 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.

# of Blinks	Dwell in ms	# of Blinks	Dwell in ms
1	3.0	8	6.5
2	3.5	9	7.0
3	4.0	10	7.5
4	4.5	11	8.0
5	5.0	12	8.5
6	5.5	13	9.0
7	6.0	14	9.5
8	6.5	15	10.0

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 breech before it can be fired. Increase this setting for slower feeding loaders to avoid chopping balls in the breech. 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

- WILL BE 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

- WILL BE INDICATED BY A FAST FLASHING RED LED

This settings 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 fore grip, 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.

12. Trigger Adjustments

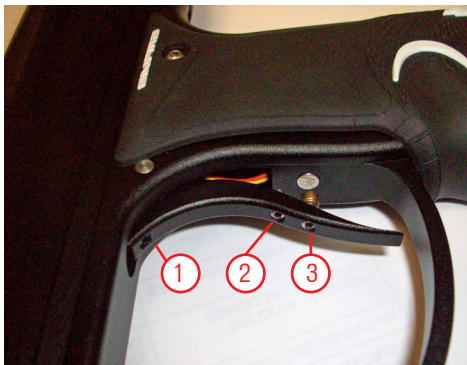
The Empire AXE trigger can be adjusted by the four set screws in the trigger. Three of the set screws can be adjusted without removing the trigger frame assembly.

When a trigger pull is recognized, the LED will quickly flash a dim red for each trigger pull. If no trigger pull is recognized, the LED flashes normally based on the status of the eyes and battery power level. If the trigger is held in, the dim red LED will stay illuminated.

Before making any trigger adjustments, de-gas the Empire AXE, make sure the gauge reads 0 psi, and then switch on the Empire AXE with eyes turned off to easily monitor the current activation point by watching the LED, while listening to the solenoid clicking.

You will notice three set screws in your trigger (Fig. 12.1). These can be adjusted with a 1/16" Allen wrench. Make small adjustments and check that the trigger is activating the solenoid.

- The (1) first set screw located in the top of the trigger adjusts forward movement, and forward stop point.
- The (2) second set screw adjusts the rear movement range, and rear stop point.



(Fig.12.1)

- The (3) third set screw located at the bottom of the trigger adjusts the trigger magnetic return. Turn it clockwise to increase the return strength and counter clockwise to decrease the return strength.
- The first screw adjusts the trigger activation point. This screw can only be adjusted once the frame or trigger has been removed. It is recommended that you do not adjust the factory setting of this set screw as setting this set screw to high may cause damage to the trigger switch.

Notes:

- Normal activity may cause set screws to back out of adjustment. If necessary use blue loctite to help keep them set correctly. However do not use an excessive amount and allow the blue loctite to dry overnight before using your Empire AXE.
- If any of the set screws are over adjusted in any direction the Empire AXE may not fire.
- If the trigger travel is adjusted too short, the Empire AXE may fire on its own, repeatedly and/or uncontrollably.

13. General Maintenance

CAUTION: Before attempting to perform any maintenance operations, make sure that all paintballs and air sources have been removed from the marker and that the regulator gauge reads 0 psi. Install a barrel-blocking device, and push the power button and hold for over 2 seconds until the LED light changes from red to green. Keep the Empire AXE power off.

Keep your Empire AXE clean and lubricated to eliminate the friction that would prevent reliable operation. It is recommended that you clean and lube the marker before each use.

Do not use oil or petroleum-based lubricants in the lubrication of this marker. Under any circumstances **DO NOT** use a solvent based lubricant. Teflon or silicon (non-spray only) lubricants designed for use on O-rings may be used for lubrication for the bolt, bolt guide and poppet area only. Dow 33 or the include factory grease is recommended.

External Cleaning

Use a clean cloth, dampened with water to clean the outside of the Empire AXE. Do not use any chemicals, as you may damage the protective finish.

Warning: Do not rinse the Empire AXE under water, as you may damage the marker's electronics.

Internal Cleaning and Greasing

The Empire AXE is designed for easy access to the bolt guide assembly without removing any hardware. On the back of the Empire AXE is a push button to allow such access for cleaning and maintenance. Refer to Section 15 for instructions on bolt guide removal.

14. Storage and Transportation

Caution: Never carry your Empire 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 Empire AXE in a suitable marker case or in the box in which it was shipped.

- Your Empire AXE must be clear of all paint and propellant when not being used during transportation.
- Make sure the Empire AXE marker is off. Push the power button and hold for 2 seconds until the LED light changes from red to green.
- Put the barrel-blocking device in its place.
- Make sure the marker is clean.
- Store your Empire AXE in a clean, cool, dry place.
- Keep your Empire AXE away from unauthorized and unsafe users.
- It may be a good idea to remove the battery when storing your Empire AXE to prevent unauthorized use.
- Protect your Empire AXE 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 Empire 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 charged CO2 or pressurized gas cylinders!

15. Assembly/Disassembly

CAUTION: Before attempting to perform any marker disassembly, make sure that all paintballs and air sources have been removed from the marker and that the regulator gauge reads 0 psi. Install a barrel-blocking device. Push the power button and hold for over 2 seconds until the LED light changes from red to green. Keep the Empire AXE power off.

Disassembly Tips

- Make sure you have a clean area to work on your marker, so you don't lose or misplace parts.
- Make sure the main spring is installed correctly on the bolt, as it needs to be installed in the right direction.
- After reassembling the Empire AXE recheck your trigger activation settings.
- Visit PaintballSolutions.com for additional information.

Barrel

It is recommended that the barrel be removed before any maintenance or disassembly is performed. Simply turn the barrel counter-clockwise to remove. Use warm water and a barrel cleaning device to keep the barrel in top condition.

Bolt Guide Assembly

Removal of Bolt and Bolt Guide Assembly

Before you remove the bolt guide assembly, make sure you remove your air cylinder and that the pressure gauge reads 0 psi.

- Push and hold in the bolt guide release button at the rear of the marker while the rear of the marker is facing a safe direction.
- While holding the button in, turn the bolt guide clockwise until it stops.
- The bolt guide assembly should spring back and stop; if it does not, pull it back until it stops.

- Next, push the bolt guide assembly slightly forward and then turn it counter-clockwise and remove.
- If the bolt and spring do not come out with the bolt guide, use a barrel swab to push them out from the front of the marker.

Maintenance of Bolt and Bolt Guide

- Inspect the O-rings on both the bolt and bolt guide for any wear or damage. Replace damaged or worn O-rings if necessary.
- Wipe the parts down with a clean rag removing any old grease or debris.
- Lubricate all O-rings on bolt and bolt guide with the supplied grease or Dow 33. Only a small amount of grease is needed.

Maintenance of Poppet

While the bolt guide assembly is out of the marker, you can service the poppet. Keeping the poppet o-ring greased will make your AXE operate properly.

- Use a 1/4" Allen wrench and insert it into the back of the bolt guide cap. Turn counter-clockwise until bolt guide cap is completely removed.
- Inspect and lubricate bolt guide cap O-ring with grease.
- Using the 1/4" Allen wrench, carefully insert it into the front of the bolt guide, pushing the poppet assembly (poppet and poppet spring) out the back of the bolt guide.
- Inspect and lubricate poppet O-ring with grease and be careful not to lubricate the front poppet seal. Your poppet seal should always stay dry.

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
- Using the 1/4" Allen wrench, screw the bolt guide cap clockwise back into the bolt guide.
- Screw the bolt guide cap all the way in, then turn out 3/4 of a turn.
- Further adjustment over a chronograph will be needed to achieve desired velocity.

Reinstallation of Main Spring, Bolt, and Bolt Guide Assembly

Before reinstalling the bolt guide assembly, make sure the inside of the body is clean and that the main spring is properly installed on the bolt. The main spring should lock onto the back of the bolt; if it's on incorrectly it will be loose and will affect the AXE's performance.

- Slide the bolt guide assembly into the body, aligning the bolt guide alignment pin with the slot in the bolt guide release housing.
- Push the bolt guide forward, then clockwise and forward again, until it's flush with the body.
- Next, push the bolt guide assembly release button and turn the bolt guide counter-clockwise
- Release the locking button and confirm that the bolt guide is now locked in place. It should not be able to turn or move forward or back if installed correctly.

Fore Grip

Removal of Fore Grip Assembly

- Using a 1/16" Allen wrench, loosen the fore grip retention set screws. They do not need to be fully removed, only loosened.
- The fore grip assembly will now slide down the front rail on the grip frame.

Installation of Fore Grip

To reinstall the fore grip assembly on to the marker, slide the fore grip assembly back onto the rail on the front of the grip frame. Slide fore grip assembly all the way up until it is back in place. Using the 1/16" Allen wrench, tighten the foregrip retention set screws. Do not over tighten the set screws as they can become damaged easily.

Note: If not installed correctly, you might damage the circuit boards!

Grip Frame and Bolt Guide Locking Assembly

Warning: It is recommended that you do not remove the grip frame, as removing it will expose the bolt guide locking assembly; this consists of a spring, detent, and button. These parts are held in place by the grip frame. If you do need to remove the grip frame, be careful not to lose these parts.

Removal of Grip Frame

- Using a 1/8" Allen wrench, remove both grip frame retention screws turning by them counter-clockwise.
- Gently pull the frame up from the body. When pulling the frame off the body, make sure not to lose the bolt guide locking components.

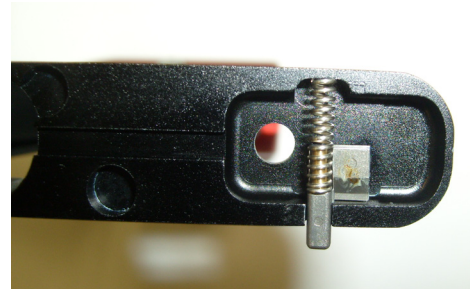
Bolt Guide Locking Assembly

- Before you re-installing the grip frame make sure the bolt guide locking detent is within the housing; see Fig. 15.1.
- Applying grease to the bolt guide locking detent will help keep it in place.



(Fig. 15.1)

- Next check that the bolt guide locking button and spring are located correctly within the grip frame; see Fig. 15.2.



(Fig. 15.2)

- Once you have confirmed all of the bolt guide locking parts are in place, you can install the grip frame.

Installation of Grip Frame

- Inspect the male air transfer tube bottom O-ring and lightly grease.
- Make sure the bolt guide locking spring and button are in place within the frame and that the bolt guide locking detent is within the air transfer plate.
- As you install the grip frame, make sure the solenoid wires do not get pinched.
- Gently push grip frame back on and line up the air transfer tubes.
- When frame is back on, use the 1/8" Allen wrench and tighten the (2) grip frame retention screws clockwise.

Removal, Installation, and Cleaning of Ball Detents

- Using a 5/64" Allen wrench, insert Allen wrench into detent cover and turn counter-clockwise.
- Clean the detents with a damp cloth and apply a small amount of grease to the outer sides of the detents if sticking is an issue.
- Installation is the reverse of the removal. Do not over tighten the ball detent covers!

Note: Be careful not to lose any of the detent parts as they are small.

Regulator

Removal of Regulator

- Loosen the two regulator mount set screws located on the bottom of the grip frame with a 3/32" Allen wrench by turning them counter-clockwise.
- The regulator and regulator mount can now be pulled down and removed from the grip frame. Be careful not to lose the female air transfer tube bottom O-ring, which sits on the bottom of the female air transfer tube.

Installation of Regulator Assembly

- Make sure the female air transfer tube O-ring is on the bottom of the air tube; grease if necessary.
- Slide regulator and regulator rail back into the grip frame and tighten the regulator mount set screws with a 3/32" Allen wrench.

Note: There are also two set screws in the regulator rail; they should only need to be adjusted if the regulator becomes loose.

Warning: Do not take the regulator apart; it is not designed to be user serviceable. Damage to the regulator will not be covered under warranty.

Air Transfer Plate

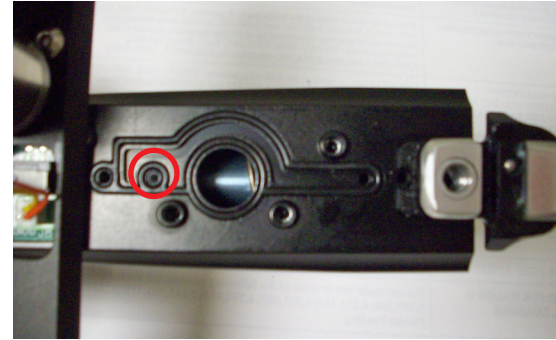
Removal of Air Transfer Plate

- Remove fore grip and grip frame.
- Carefully unplug the solenoid from the sensor board.
- Remove the solenoid and male air transfer tube from the air transfer plate by unscrewing them counter-clockwise.
- Using a 5/64" Allen wrench, remove all of the air transfer plate screws (6 total). 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. Using grease on the check valve will help hold it within the body.

Installation of Air Transfer Plate

- It is recommended that a small amount of factory-supplied grease or Dow 33 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; see Fig. 15.3.
- Place transfer plate back on body and evenly tighten all seven screws.
- Plug the solenoid back into the sensor board.



(Fig. 15.3)

Sensor Board

Removal and Cleaning of Sensor Board

- Remove fore grip, grip frame, and air transfer plate as described in the steps above.
- Gently remove the sensor board from the body.
- Once board is removed, use a dry cloth to clean sensors, if paint is on the board, use a dry cloth to wipe paint off the board.

Installation of Sensor Board

- When installing sensor board back in main body, be careful that the sensors lineup correctly. The board should drop into the body very easily. Do not force the sensor board into the body.

16. Troubleshooting Guide

Note: if you are experiencing any problems and you are using any aftermarket parts, it is necessary to re-install the factory parts and re-test before attempting any troubleshooting, as non-factory aftermarket parts are not designed by Empire Paintball to work in the Axe, and they may be the cause of the problems. Do not contact Empire Paintball until you have returned the Axe to factory stock condition and tested.

Does not turn on	Make sure you have a fresh battery.	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 for 5 minutes, then plug back in and try again.
Doesn't fire	Make sure the marker is turned on.	Check the LED light on the back of the foregrip. The LED should be rapidly blinking green when a paintball is present.
	Make sure you have a paintball in the chamber.	The anti-chop eye system prevents the marker from firing unless a ball is present. Never put anything other than a paintball down the feedneck of the Axe.
	Trigger may need to be adjusted.	Check the LED light on the back of the foregrip. While holding in the trigger, the LED should stay red in the background, and not be red when the trigger is released. If it is not that way, then the trigger may need to be adjusted. See the "Adjusting your trigger" section earlier in the manual.
Doesn't fire with eyes turned off	Trigger may need to be adjusted.	Check the LED light on the back of the foregrip. While holding in the trigger, the LED should stay red in the background, and not be red when 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.
	Solenoid may not be connected properly.	Check to make sure the solenoid is connected properly to the sensor board. If it is, the solenoid may need to be reset.
	Solenoid may need to be reset.	To reset the solenoid, with the eyes off, pull the trigger repeatedly until the solenoid makes a loud clicking sound again with each trigger pull, but do not pull the trigger more than 10 times, as this can damage the solenoid. If after 10 pulls the solenoid still doesn't click, it may need to be serviced.
Leaks constantly through the chamber	Poppet may need to be reset.	To reset the poppet, remove the gas source from your Axe. Gently turn the velocity adjuster all the way in until it stops. Then gas up your Axe. If the leak has stopped, proceed to back out the velocity adjuster 3/4 of a turn, then measure velocity with a chronograph and adjust as needed. If a small leak continues upon backing out the velocity adjuster, the air passage through the poppet may be blocked, or the poppet seal face may be worn and needs to be replaced.
	Solenoid may need to be reset.	To reset the solenoid, with the eyes off, pull the trigger repeatedly until the solenoid makes a clicking sound again with each trigger pull, but do not pull the trigger more than 10 times, as this can damage the solenoid. If after 10 pulls the solenoid still doesn't click, it may need to be replaced.
Air coming out of body in front of trigger		During each shot, it is normal for a puff of air to exit the body just in front of the trigger.
Multiple balls fired from only one shot	Loader forcing paintballs too hard into marker.	If the marker fires one time, but more than one ball exits the barrel, your loader may be pushing the paintballs into the marker too hard, and they are going past the ball detents. Remove both ball detent covers and clean the ball detents with a cloth. You may also add some grease to the outer surface of the detents to make sure they are not sticking within the covers.
	Detents Sticking	Remove both ball detent assemblies and clean the ball detents with a cloth. You may also add some grease to the outer surface of the detent to make sure they are not sticking within the detent cover.
Shoots more than once from one trigger pull	Battery may be low.	Replace battery with a fresh Duracell or Energizer brand alkaline 9V.
	Trigger may need to be adjusted.	Make sure the trigger has plenty of travel both before and after the activation point.
Regulator leaks from bottom plug	Adjust over-pressurization relief valve.	The plug on the underside of the regulator is an over-pressurization relief. If it is leaking, most likely the regulator is set to too high of a pressure and needs to be lowered. If the regulator is set to 200 psi or less and the over-pressurization relief is still leaking, it is possible to turn the plug cap just a small amount in the clockwise direction, until the leak stops.

16. Trouble Shooting Guide.....(continued)

Regulator is slow to recharge	Air tank is not screwed all the way into the Axe's regulator ASA.	If during rapid firing the first ball comes out of the barrel at full velocity and following shots decrease substantially, watch the gauge on the Axe regulator to see if the needle drops down significantly and is slow to come back to the set pressure. This is typically the result of not screwing your air tank in enough. When screwing your air tank into the Axe's regulator ASA, it is important to not stop as soon as the marker pressurizes, but to continue turning until the air tank stops. It is also acceptable to install the air tank when it is empty, then have it filled by a professional while it is installed. This will ensure that you get the maximum air flow from your air tank.
Regulator pressure spikes	Regulator adjusted too high.	If the needle on the regulator's gauge climbs well over 200 psi when attempting to install the air tank, first remove the brass adjustment screw in the front of the regulator and try again to install the air tank. If the needle reads 0, reinstall the adjustment screw and turn in until the needle reads 200 psi.
	Regulator cap installed incorrectly.	If the needle still climbs with the adjustment screw removed, then the regulator cap is installed incorrectly and needs to be reset. With the adjustment screw removed and no air tank connected, loosen the bottom locking screw with a 0.050" allen wrench (not included in Axe tool kit) then turn the regulator cap counter clockwise one full turn by hand or until it feels very loose. Then turn cap in by hand until it makes contact with the plunger, then back out 1/4 of a turn and tighten the bottom locking screw. Then install air tank again and make sure when the air tank releases air into the Axe regulator that the needle does not climb at all. Now proceed to reinstall the brass adjustment screw and turn in until the needle reads 200 psi.
Breaks paint in chamber	Eyes are turned off.	Only fire paintballs with the eyes on.
	Low quality or brittle paintballs.	Do a paintball drop test. On a level and smooth, hard, outdoor surface, such as concrete or asphalt pavement, drop ten paintballs one at a time from about 5 feet high. Don't toss them up or throw them at the ground, just drop them straight down. If more than 3 paintballs out of 10 break, the paintballs are bad and should not be used in the Axe. In the case of higher-end tournament-grade paintballs, it may be possible to tune the Axe to successfully fire brittle paintballs. Since all conditions are different, it is best to ask for help with this from your local pro shop.
	Loader pushing too hard.	Try a different loader, such as the Empire Magna Drive Loader. If using a Halo series or Empire Reloader B series loader, try installing an Empire Magna Clutch Upgrade Kit.
	Bolt or bolt guide o-rings may be worn.	Air blowing past worn o-rings can easily break paintballs in the feed neck. Replace the bolt o-rings and the smaller 3 bolt guide guide o-rings and apply fresh grease.
	Bolt front seal may be missing.	Make sure the bolt front seal is in place and has a light application of grease to reduce friction.
	Check valve may be missing.	Make sure the check valve is in place. Without the check valve, the forward force on the bolt is too great and can be too hard on the paintballs.
	Ball detents may be dirty or worn.	Clean the ball detents. If necessary, apply a small amount of grease around the outer surface to reduce friction inside the ball detent covers. Replace if tips are worn down.
	Regulator pressure may be set too high.	Lower regulator pressure.
Cycles very slow	Bolt or bolt guide o-rings may need grease.	Clean off old grease from the bolt and bolt guide o-rings, as well as the bolt front seal, and apply fresh grease.
	Rate of Fire setting may be adjusted too low.	Raise Rate of Fire setting.
	Loader may not be feeding fast.	Check your loader's batteries or use a faster loader.
Inconsistent velocity	Pressure may be set too low.	Low pressures have difficulty supplying enough volume to maintain a constant velocity. Do not lower your Axe's regulator pressure below 180 psi.
	Marker may need to be greased.	Clean old grease from the poppet, the bolt and bolt guide o-rings and apply fresh grease. Do not use too much, as it will prevent the moving parts from cycling smoothly.

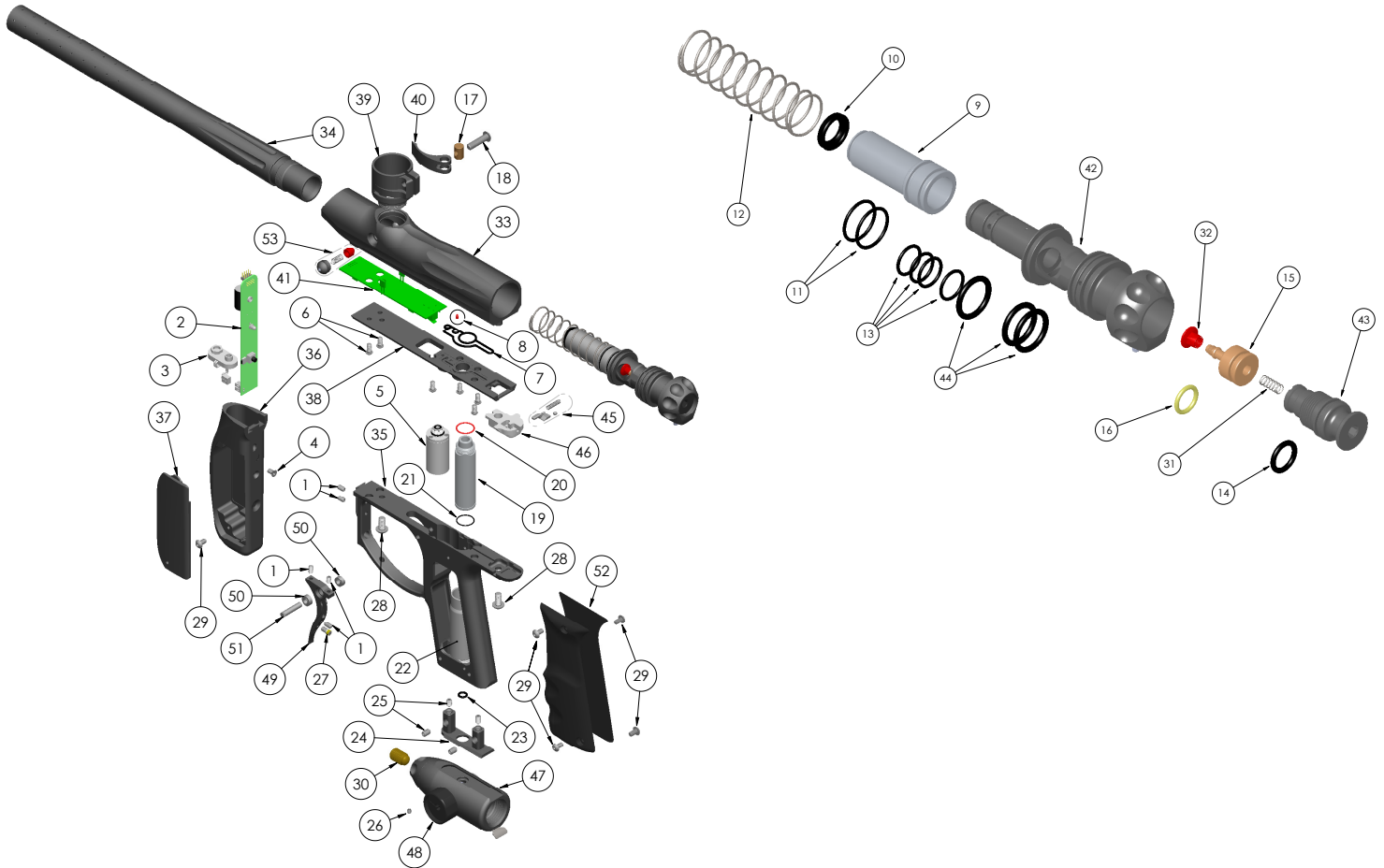
Inconsistent velocity	Dwell may be set too low or too high.	Reset the dwell setting to the factory default.
	Check valve may be missing.	Make sure the check valve is in place.
	Battery may be low.	Replace battery with a fresh Duracell or Energizer brand alkaline 9V.
	Poppet o-ring may be worn.	Replace poppet o-ring and apply fresh grease.
Velocity drops off when firing multiple shots	Air tank is not screwed all the way into the Axe's regulator ASA.	If during rapid firing the first ball comes out of the barrel at full velocity and following shots decrease substantially, watch the gauge on the Axe regulator to see if the needle drops down significantly and is slow to come back to the set pressure. This is typically the result of not screwing your air tank in enough.
Scratches on bolt	Spring may be damaged.	This can cause negative performance. The main spring should be repaired by a trained technician or it can just be replaced.
Leaks sometimes while shooting multiple shots	Poppet may be sticking open.	Clean the old grease from the poppet o-ring and apply fresh grease. If that doesn't help, replace the poppet o-ring and apply fresh grease.
	Battery may be low.	Replace battery with a fresh Duracell or Energizer brand alkaline 9V.
	Solenoid may be sticking open.	If the solenoid is sticking open occasionally, the regulator pressure may be set too high. If the pressure is set to 200 psi or less, then the solenoid may be filled with dirt and/or grease. Do not attempt to disassemble the solenoid. Only a trained technician should do this. Attempting to disassemble the solenoid will void the warranty. Take it to a trained technician for service or contact Paintball Solutions.
Regulator's on/off lever is hard to operate	Parts are dry.	If the on/off lever becomes hard to operate, you can add a few drops of paintball oil on the base of the lever and work it back and forth. Only a small amount of oil is needed.
Can not remove bolt guide assembly	Upper air tube piston is in locked in the up position.	While the marker is aired up, the piston will prevent the bolt guide assembly from being removed. If the bolt guide assembly can not be removed once the marker is degassed, it may be necessary to remove the upper air tube assembly and reset the piston.

17. Diagrams and Parts List

REF #	DESCRIPTION	SKU #
1	Set Screw (6-32 x .250)	17523
2	Main Board	17524
3	Battery Harness	17525
4	Board Screw	17526
5	Solenoid	17528
6	Air Transfer Plate Screw	17529
7	Air Transfer Gasket	17530
8	Check Valve	17531
9	Bolt	17532
10	Bolt Rubber Tip	17533
11	Bolt Oring	17534
12	Main Spring	17535
13	Bolt Guide Small (Front) Oring	17537
14	Bolt Guide Cap Oring	17538
15	Poppet with Spring	17539
16	Poppet Oring	17540
17	Feedneck Collar	17545
18	Feedneck Screw	17549
19	Air Transfer Tube Male Assembly	72397
20	Air Transfer Tube Male Top Oring	17552
21	Air Transfer Tube Male Bottom Oring	17553
22	Air Transfer Tube Female	17554
23	Air Transfer Tube Female Oring	17555
24	Regulator Mount	17556
25	Set Screw (10-24 x .250)	17557
26	Regulator Cap Set Screw	17599
27	Trigger Set Screw W/ Magnetic Top (chrome top)	17564
28	Primary Body Retention Screw	17565
29	Screw (BH 6-32 x .250)	17567
30	Regulator Adjustment Screw	17590
31	Poppet Spring	17623
32	Poppet Seal	17629
33	Body - Dust Black	72300
34	Barrel - Dust Black	72304
35	Grip Frame - Dust Black	72308
36	Foregrip Body - Dust Black	72312
37	Foregrip Door - Dust Black	72316

REF #	DESCRIPTION	SKU #
38	Air Transfer Plate - Dust Black	72319
39	Feedneck- Dust Black	72323
40	Feedneck Clamp - Dust Black	72327
41	Sensor Board	72331
42	Bolt Guide - Black Dust	72332
43	Bolt Guide Cap	72336
44	Bolt Guide Large O-ring	72340
45	Bolt Guide Lock Kit (3pc- spring, detent, button)	72341
46	Bolt Guide Release Housing	72345
47	Regulator - Dust Black (Complete)	72350
48	Black 300psi Empire gauge	72375
49	Trigger - Dust Black	72377
50	Trigger Bearing	72381
51	Trigger Pin (.155")	72394
52	Black/White Grips	72382
53	Detent Assembly- (3pc) Dust Black	72386

17. Diagrams and Parts List(continued)





Empire Paintball
11723 Lime Klin Road
Neosho, MO 64850
www.empirepaintball.com
Empire Paintball is a brand of KEE Action Sports, LLC.

This product may be covered by one or more of the following U.S. patents: 5,881,707; 5,967,133; 6,035,843; 6,474,326; 6,637,421; 7,100,593; 7,603,997; and 7,610,908 marked under license; 6,601,780; 6,925,997



LIMITED LIFETIME WARRANTY INFORMATION (ORIGINAL PURCHASE RECEIPT REQUIRED)

KEE Action Sports ("KEE") 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. KEE Action Sports 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.

KEE Action Sports is dedicated to providing you with products of the highest quality and the industry's best product support available for satisfactory play.

Purchaser should register product to activate warranty. Register your product by:

1. Online at www.paintballsolutions.com
2. Complete the product registration card (if applicable) and mail along with a copy of your receipt to Paintball Solutions, 11723 Lime Kiln Rd., Neosho, MO 64850.

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 détentes, batteries, hoses, drive belts, gears and any part of a product subject to continuous impact from paintballs. Hydrotesting 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, 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 sending it in. Always unload and remove air supply before shipping markers. Do not ship your air supply tank if it is not completely empty. 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. For Warranty parts, service, information or manuals

in other languages, (where applicable) go to:

Paintball Solutions: www.paintballsolutions.com

E-Mail: tech@paintballsolutions.com

Telephone: 1-800-220-3222

11723 Lime Kiln Rd., Neosho, MO 64850



800-220-3222