



**MINI**



No part of this document may be copied or reproduced in any form or by any means without the prior written consent of Empire Paintball and KEE Action Sports, its assigns and/or its distributors.

Notice is hereby given that this manual is part of the article owned in whole by KEE Action Sports, its assigns and/or its distributors, known as indicated in this manual and drawings. All rights of manufacture and reproduction of such articles or any part thereof are reserved by KEE Action Sports, its assigns and/or its distributors. Neither said article nor any part thereof may be manufactured or reproduced except by written authorization from KEE Action Sports, its assigns and/or its distributors. All proprietary rights and information are the sole property of KEE Action Sports, its assigns and/or its distributors.

Empire Paintball brand for all intents and purposes is owned wholly by KEE Action Sports. KEE Action Sports delivers this marker with the understanding that KEE Action Sports, its assigns and/or its distributors assumes no responsibility for its resale or safe handling. Serious injury or death may occur if mishandled, abused, or the safety instructions are ignored. KEE Action Sports, its assigns and/or its distributors assumes no responsibility for physical injury or property damage resulting from its use.

KEE Action Sports, its assigns and/or its distributors, makes no warranties with respect to this documentation and disclaims any implied warranties of merchantability or fitness for a particular purpose. The information in this document is subject to change without notice. KEE Action Sports, its assigns and/or distributors assumes no responsibility for any errors that may appear in this document.

**⚠ 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 of parental supervision. Read and understand all cautions, warnings, and operating manuals before using any paintball gun or paintball gun accessory. Common Sense and have fun.

**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.**

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.

## TABLE OF CONTENTS

### -Section

1. Rules for Safe Marker Handling.....	p. 4
2. Introduction and Specifications.....	p. 4
3. Battery Replacement and Life Indicator .....	p. 5
4. Compressed Air/Nitrogen Supply.....	p. 6
5. Basic Operation.....	p. 6
6. Firing the MINI.....	p. 7
7. Break beam Eyes Operation .....	p. 8
8. Unloading the MINI.....	p. 8
9. Regulator and Velocity Adjustments .....	p. 8
10. Shockwave Board .....	p. 10
11. Trigger Adjustments .....	p. 13
12. Mini Assembly/Disassembly and Maintenance .....	p. 13
13. Storage and Transportation .....	p. 20
14. Trouble Shooting Guide.....	p. 21
15. Diagram and Parts List.....	p. 26
16. Warranty Information .....	p. 29



## 1. RULES FOR SAFE MARKER HANDLING

### **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 contains 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.

**\* READ OWNERS MANUAL BEFORE USING.\***

## 2. INTRODUCTION AND SPECIFICATIONS

Welcome to the world of the Empire MINI. The MINI 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 MINI features innovative electronic and pneumatic technology that challenge the paradigm that formerly defined "how a high performance paintball marker should function". The patented valve design, Slip Stream™ Solenoid, and Hall Effect Sensor Trigger, set new standards for marker technology. The MINI is precision engineered from aircraft grade aluminum to meet the demands of the most competitive players, teams, and climates. The ultimate intent of the MINI is to exceed your expectations.

Empire Paintball expects you to play hard and play frequently and thus the MINI 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 MINI 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 Bottomline Regulator. There is no secondary regulator to worry about.

The MINI comes equipped to accept 1.03" (outer dimension) standard-gravity feed loaders as well as most agitating and force-feed loaders. Fit the loader directly into the vertical feed tube and always twist it down in a CLOCKWISE direction.

The MINI uses .68 Caliber, water-soluble paintballs, readily available at paintball pro-shops, commercial playing fields, and many sporting goods stores. The paintballs are fed from the loader through the direct vertical feed port and into the breech of the marker.

### 3. BATTERY REPLACEMENT

The MINI requires a single 9-volt battery as the electronic power source. The use of long life batteries is recommended. The 9-volt battery is located in the front fore-grip in front of the trigger guard. The battery is accessed through the removable left side plate on the front fore-grip.

Confirm that the marker is Off. Remove the screw at the bottom that secures the left side plate in the front fore-grip. If there is already a battery in the fore-grip, gently disconnect the battery from the battery harness, and then connect a fresh 9-Volt battery to the harness. Carefully re-insert 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 side plate and screw.



**Notes:**

- Some rechargeable batteries are too large for the MINI battery compartment. If they don't fit, please don't force them as this may damage the MINI.

- The stock circuit board does not keep user defined settings. You must change the battery quickly to keep your settings. If the battery is not changed quickly the Circuit board will go back to the factory default settings.

### EMPIRE MINI SPECIFICATIONS

Model- Empire Mini

Barrel- 12" Ported

Caliber- .68

Action- Semi Auto, PSP Ramping, and NXL Full Auto

Air Source- Compressed Air

Battery- One 9 Volt

Cycle Rate- 20 BPS

Main Body Material- Aluminum

Accuracy Range- 150+ ft.

Weight- 1.99 lbs.

### INCLUDED WITH YOUR MINI

-12" Barrel (.691 bore)

-Allen Keys

-Spare Parts

-Barrel Sleeve

-One 9 Volt Battery (installed)



#### 4. COMPRESSED AIR/NITROGEN SUPPLY

The MINI is designed to work with Compressed Air/Nitrogen Only. Do Not use CO2, as it will damage your Mini.

Consult the place where you purchased your MINI, or a recognized and competent air smith, for instruction in the safe handling of compressed-air cylinders before purchasing or connecting one to your MINI.

The MINI utilizes a fully functional regulator at the bottom of the grip frame that doubles as an ASA (Air Source Adaptor) or receiver for a standard threaded pre-set output compressed air system. It is strongly recommended that a very high-flow "low pressure" (350-450 psi) fixed-output system is utilized as an air source for your MINI. If you are using an adjustable output regulator system, the output pressure should be between 350-450 psi.

#### BEFORE PRESSURIZING YOUR MINI

- 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 plug, barrel sock or other specifically designed barrel-blocking device in place.
- Make sure there are no paintballs in the marker and that the Mini is turned OFF.
- Air can now be applied and the marker will become pressurized.

#### Notes:

- 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. 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 or into the Mini's regulator.

#### 5. 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.
- Do not install compressed air or load paintballs into your MINI until you feel completely confident with your ability to handle your MINI 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 MINI uses an On-Off button for one of its safety devices.
- Always keep your MINI 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.

#### SWITCHING ON YOUR MINI

To switch the MINI On, locate the Power Button on the back side of the front fore-grip, in front of the trigger guard and directly under the LED. Push and hold the button for 2 seconds and the LED light will turn GREEN and then to RED. Release button and the LED will intermittently flash green indicating that the marker is now ON and LIVE.



#### 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 MINI 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

## SWITCHING ON YOUR MINI

To switch the MINI 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.

## SWITCHING OFF YOUR MINI

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 MINI will switch Off.

## AUTOMATIC OFF FEATURE

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

## EYE FUNCTION

The MINI board is pre-programmed to activate the eye system each time the marker is powered up. See Section 7 (Break beam Eyes Operation) for more details.

## INSTALLING A LOADER AND PAINTBALLS

The MINI comes equipped to accept 1.03" (outer dimension) standard-gravity feed loaders as well as most agitating and force-feed loaders. Fit the loader directly into the feedneck. It might be necessary to adjust the clamp to your loader using the 3/32" Allen wrench. Always twist the loader in a Clockwise direction to prevent feedneck thread damage.

The MINI uses .68 caliber, water-soluble paintballs, readily available at paintball pro-shops, commercial playing fields, and many sporting goods stores. The paintballs are fed from the loader through the direct vertical feed port and into the breech of the marker.

## 6. FIRING THE MINI

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 MINI 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 MINI in a safe direction.
- Turn the MINI 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 MINI at the target.
- Pull the trigger with a smooth squeezing motion.



## 7. BREAK BEAM EYES OPERATION

The MINI 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 MINI 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 MINI 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.

<b>Blink Frequency</b>	<b>Break Beam (BB) Eye Status</b>
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 MINI eyes, keep the inside of the MINI breech clean and clear of broken paint, paint residue, or other debris. Although the eyes can be cleaned via cleaning the breech of the MINI 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.

## 8. UNLOADING THE MINI

- Always keep your Mini pointed in a safe direction and always keep your protective eye, face and ear wear on until marker is completely unloaded.
- Be sure your finger is away from the trigger area.
- Place the barrel plug, sock, or barrel blocking device into the end of the barrel.
- Turn the Mini Off by pressing and holding the On/Off button. The LED will turn from green to red. Observe the light to make sure it is no longer lit.
- Remove your pressurized gas source by slowly and carefully unscrewing it.
- 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 feedneck 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.

## 9. REGULATOR AND VELOCITY ADJUSTMENT

The MINI utilizes a fully functional MINI Bottomline Regulator at the bottom of the grip frame that doubles as an ASA adaptor/receiver 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 macro line and fittings. The MINI Bottomline Regulator controls the amount of air pressure going from your compressed air system into the maker itself.

The MINI regulator should be pre-set at 200 PSI, as this is the best operating pressure for firing the marker. However, if over time you do need to adjust the pressure, only use the Regulator Adjuster Screw on the front of your MINI Bottomline Regulator. Never adjust the regulator above 200psi.



## REGULATOR ADJUSTMENT

If adjustments are needed use a 3/16" Allen key and insert it into the regulator adjustment screw. This is located in the front of the regulator.

-To Increase pressure turn Clockwise.

-To Decrease pressure turn Counter-clockwise.



### Notes:

- Always watch the gauge as you are adjusting the pressure.
- Do NOT use CO2!!!
- The use of a low pressure output compressed air tank is recommended.
- The Bottomline Regulator should not be disassembled.
- Never set the regulator above 200 psi.

## ADJUSTING THE VELOCITY

At the back of the MINI 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 MINI Bottomline Regulator is at 200 PSI. Then you can increase or decrease the velocity on your MINI by tightening or loosening the velocity adjustment screw with a 1/4" inch Allen wrench.

-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 velocity



### 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.
- 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 Mini.

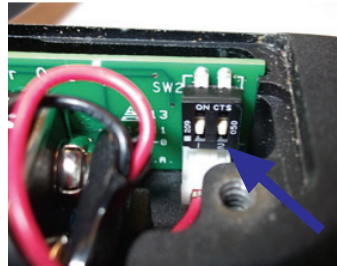


## 10. SHOCKWAVE BOARD SETTINGS AND FUNCTIONS

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 MINI and install a barrel blocking device. The board inside your MINI 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 MINI 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

Solid Red  
Solid Green  
Solid Amber  
Flashing Red  
Flashing Green  
Flashing Amber  
Fast Flashing Red

#### Setting

Firing Mode  
Max ROF  
Dwell  
De-Bounce  
Ball In Place  
Ramp Start  
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

1  
2  
3  
4

#### Mode

NPPL/Semi  
PSP/Burst  
Mill/Ramp  
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.

## 11. TRIGGER ADJUSTMENTS

The MINI features a Hall Effect Sensor Trigger. There is no trigger switch to worry about, clog with paint, or break. The LED is also used to indicate trigger pulls. When no trigger pull is recognized, the LED flashes normally based on the status of the eyes and battery power level. When a trigger pull is activated, the LED will change to a dim RED Led for each trigger pull. Before making any trigger adjustments, it is recommended to de-gas the MINI, then switch On the circuit board with eyes turned Off to easily monitor the current activation point.

You will notice three (3) set screws in your trigger. These can be adjusted with a 1/16" Allen key.

- The first set screw is located at the bottom of the trigger. This is used to adjust rear movement range, and stop point.
- The second set screw is located in the top of the trigger. This set screw adjusts forward movement, and stop point.
- The third set screw is also located in the top of the trigger. This set screw adjusts the trigger activation point. For best results, the activation point should be set right in the middle of the total trigger movement from front to back.



### Notes:

- Normal activity may cause set screws to back out of adjustment. If necessary it is OK to use blue Loctite® or similar thread-locking product on your trigger set screws. However, do not use an excessive amount. Make sure you make your adjustments carefully, and clean up any extra Loctite. Also, allow it to dry several hours before using your MINI.
- If any of the set screws are over adjusted in any direction, the MINI may not fire.
- If the trigger travel is adjusted too short, the Mini may fire on its own, repeatedly, and/or uncontrollably.

## 12. MINI 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, push Power button and hold for over 2 seconds until the LED light changes from Red to Green, and keep the MINI power Off.

### GENERAL MAINTENANCE

Keep your MINI 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. **USE NO OILS!** Do not use oils made for paintball markers, real firearms or pneumatic tools, do not use oils at all. 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 grease, Dow 33 is recommended.

### REMOVAL OF BOLT AND BOLT GUIDE ASSEMBLY

- Using a 1/8" Allen key, insert it into the rear frame screw, turn the Allen key counter-clockwise and completely remove the screw.
- This will allow you to pull out the Bolt and Bolt Guide Assembly. If assembly does not easily slide out, insert a barrel swab into the front of the body and push out the Bolt and Bolt Guide Assembly.





### 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.
- Lubricate all O-rings on Bolt and Bolt Guide with Dow 33 or supplied grease. Only a small amount is needed.



### MAINTENANCE OF POPPET

- Use a 1/4" Allen key 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.
- Use 1/8" Allen key and carefully insert it into the front of the Bolt Guide. Push Poppet Assembly out the back of the Bolt Guide.



### 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.
- Using the 1/4" Allen key, 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. Insert assembly into the back of body.



**Note:** On the top side of the bolt guide there is a small alignment hole at the rear of bolt guide. This must line up with the body alignment pin which sticks out the back of the body.

- 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" Allen key.

### REMOVAL OF FOREGRIP ASSEMBLY

- Using a 1/16" Allen key, loosen the Foregrip Retention Set Screws. They do not need to be fully removed, only loosened.



- The Foregrip assembly will now slide down the front of the grip frame.



### INSTALLATION OF FOREGRIP

- To reinstall the Foregrip Assembly on to the frame and body. Slide the Foregrip assembly back onto the grip frame rail. Slide Foregrip assembly all the way up until it is back in place. Using the 1/16" Allen key, 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!



## FEATURES:

- WEIGHS IN AT 1.99 LBS MAKING IT ONE OF THE LIGHTEST AND TIGHTEST ELECTRONIC MARKERS AVAILABLE
- OUTSTANDING VELOCITY CONSISTENCY
- BREAK BEAM ANTI-CHOP EYES STANDARD
- MULTI-MODE (NXL, PSP, NPPL, AND MILLENNIUM) FIRING CAPABILITY WITH EASY "TOURNAMENT LOCKOUT"
- CLAMPING FEEDNECK
- NO HOSES TO CRIMP OR BREAK
- LOW PRESSURE OPERATION
- STOCK BOARD 20 BPS MAX.





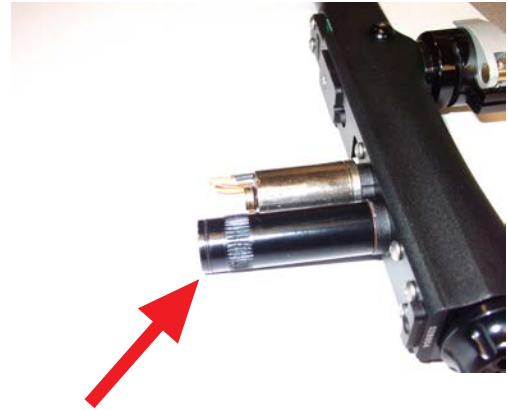
MINI™

[WWW.EMPIREPAINTBALL.COM](http://WWW.EMPIREPAINTBALL.COM)



### REMOVAL OF GRIP FRAME

- Using a 1/8" Allen key, remove both grip frame screws turning counter-clockwise.
- Gently pull down frame from body.



- When frame is back on, use the 1/8" Allen key and tighten the (2) grip frame screws clockwise.

### 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 magnet from getting damaged. Gently push grip frame back on and line up the air transfer tubes.



### REMOVAL, INSTALLATION AND CLEANING OF BALL DETENTS

- Using a 5/64" Allen key, insert Allen key 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 a 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.

## REMOVAL OF REGULATOR

- Loosen the two Regulator Mount Set Screws located on the grip frame with a 3/32" Allen key 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 key.

**Note:** There are also 2 set screws in the Regulator Rail, they should only need to be adjusted if the Regulator becomes loose.

## REMOVAL OF AIR TRANSFER PLATE

- Remove Foregrip 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 key remove all of the air transfer plate screws (7 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. (Arrow indicates check valve).



## INSTALLATION OF AIR TRANSFER PLATE

- It is recommended that a small amount of 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, as seen in the picture above.
- Place transfer plate back on body and evenly tighten all 7 screws.
- 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.
- 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 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.

## 13. STORAGE AND TRANSPORTATION

- Your MINI must be clear of all paint and propellant when not being used.
- Make sure the MINI marker is Off: Push the Power button and hold for over 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 MINI in a clean, cool, dry place.
- Keep your MINI away from unauthorized and unsafe users.
- It may be a good idea to remove the battery when storing your MINI to prevent unauthorized use.

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. Recommend 18 years of age or older to purchase. Persons under 18 years of age must have adult supervision.

Your MINI 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 MINI Marker switched off. Protect your MINI 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 MINI 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!

**IMPORTANT:** Never carry your MINI 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 MINI in a suitable marker case or in the box in which it was shipped.

## 14. MINI TROUBLESHOOTING

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 Mini, and they may be the cause of the problems. Do not contact Empire Paintball until you have returned the Mini 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 lit when the marker is powered ON.
	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 Mini.
	Trigger may need to be adjusted.	Check the LED light on the back of the foregrip. 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, 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 Mini. Gently turn the velocity adjuster all the way in until it stops. Then gas up your Mini. 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. See page 14 for more info.
	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.
Leaks from inside the trigger frame		In order to fix the leak, it is necessary to pinpoint where it is coming from. If you remove the grip, it is easier to detect where the leak is occurring. Review the schematic diagram for seal locations. Remember to remove the air source and de-gas the Mini before continuing with any disassembly.
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	Ball detents may be sticking open.	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.
	Loader forcing paintballs too hard into marker.	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.

Shoots more than once from one trigger pull	Battery may be low.	Replace battery with a fresh name brand alkaline 9-volt.
	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.
Regulator is slow to recharge	Air tank is not screwed all the way into the Mini'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 Mini 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 Mini'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.
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 Mini. In the case of higher-end tournament-grade paintballs, it may be possible to tune the Mini to successfully fire brittle paintballs. Since all conditions are different, it is best to ask for help with this from your local pro shop.



Breaks paint in chamber	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 feedneck. Replace the bolt O-rings and the smaller 3 bolt 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 Mini's regulator pressure below 180 psi.



Inconsistent velocity	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.
	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 name brand alkaline 9-volt.
	Poppet O-ring may be worn.	Replace poppet O-ring and apply fresh grease.
	Regulator pressure may be set too high.	Lower regulator pressure.
Velocity drops off when firing multiple shots	Air tank is not screwed all the way into the Mini'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 Mini 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 Mini'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.
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.



Leaks sometimes while shooting multiple shots	Battery may be low.	Replace battery with a fresh Name brand alkaline 9-volt.
	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. See Maintenance section for instructions on how to clean the solenoid.

## 15. DIAGRAM AND PARTS LIST

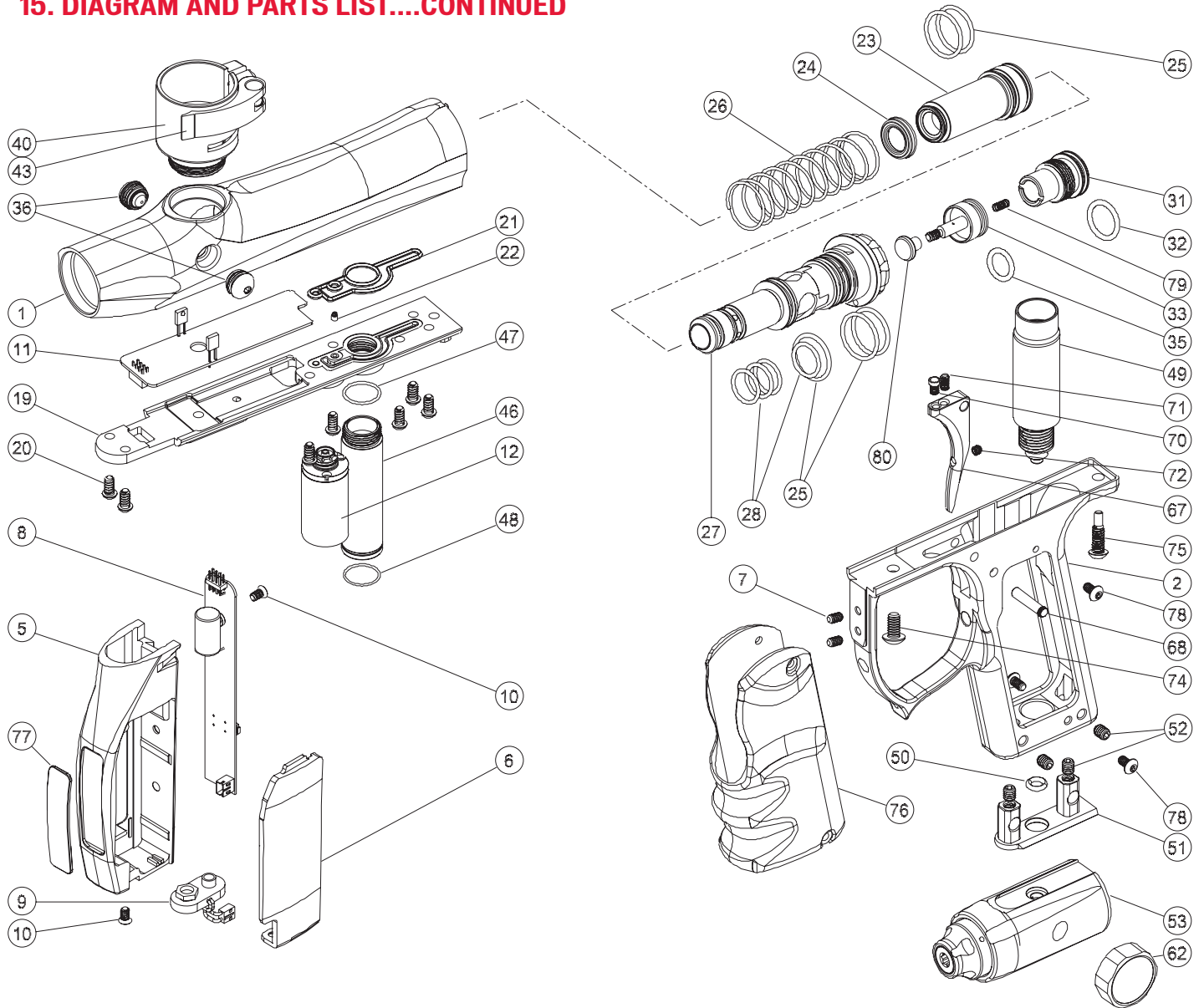
PART #	DESCRIPTION	SKU #
1	Body - Black	17505
2	Grip Frame - Black	17509
5	Foregrip Body - Black	17515
6	Foregrip Side Plate - Black	17519
7	Foregrip Retention Set Screw	17523
8	Main Board	72410
9	Battery Harness	17525
10	Foregrip Screw	17526
11	Sensor Board	17527
12	Solenoid	17528
19	Air Transfer Plate - Black	17577
20	Air Transfer Plate Screw	17529
21	Air Transfer Gasket	17530
22	Check Valve	17531
23	Bolt	17532
24	Bolt Rubber Tip	17533
25	Bolt/Bolt Guide Large O-ring	17534
26	Main Spring	17535
27	Bolt Guide	17536

## 15. DIAGRAM AND PARTS LIST....CONTINUED

PART #	DESCRIPTION	SKU #
28	Bolt Guide Small (Front) O-ring	17537
31	Bolt Guide Cap	17583
32	Bolt Guide Cap O-ring	17538
33	Poppet Assembly with Spring	17628
35	Poppet O-ring	17540
36	Ball Detent (Complete)	17541
40	Feedneck (Complete) - Silver Latch	17585
43	Feedneck Clamp - Silver	17546
46	Air Transfer Tube Male	17551
47	Air Transfer Tube Male Top O-ring	17552
48	Air Transfer Tube Male Bottom O-ring	17553
49	Air Transfer Tube Female	17554
50	Air Transfer Tube Female O-ring	17555
51	Regulator Mount	17556
52	Regulator Mount Set Screw	17557
53	Bottomline Regulator (Complete)	17558
62	Regulator Gauge	17596
67	Trigger - Black	17560
68	Trigger Pin	17562

PART #	DESCRIPTION	SKU #
70	Trigger Set Screw W/ Magnetic Top	17564
71	Trigger Set Screw Long	17602
72	Trigger Set Screw Short	17603
74	Primary Body Retention Screw	17565
75	Bolt Guide Alignment Screw	17566
76	Grip	
77	Foregrip Rubber	
78	Grip Panel Screw	17567
79	Poppet Spring	17623
80	Poppet Seal	17629

**15. DIAGRAM AND PARTS LIST....CONTINUED**



## 16. WARRANTY INFORMATION

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

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

Telephone: 1-800-220-3222

11723 Lime Kiln Rd., Neosho, MO 64850



800-220-3222



## WARRANTY REGISTRATION

**SEND TO:**  
**KEE ACTION SPORTS**  
**11723 LIME KILN RD.**  
**NEOSHO, MO 64850**  
**WWW.PAINTBALLSOLUTIONS.COM**

## PURCHASE INFORMATION

**PURCHASED FROM:** \_\_\_\_\_ **PURCHASE DATE:** \_\_\_/\_\_\_/\_\_\_

**CITY:** \_\_\_\_\_ **STATE:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_

**SERIAL:** \_\_\_\_\_

## OWNER INFORMATION

**YOUR NAME:** \_\_\_\_\_

**CITY:** \_\_\_\_\_ **STATE:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_

**PHONE:** \_\_\_\_\_ **EMAIL:** \_\_\_\_\_



Complete your Mini with these great accessories.  
Check your local shop for availability.



Rip Cord  
Barrel Bag



Halo Too  
Loader



Empire Basics  
68cu Air System



Night Stick  
Carbon Fiber Barrel

[WWW.EMPIREPAINTBALL.COM](http://WWW.EMPIREPAINTBALL.COM)





**EMPIRE**

EMPIRE PAINTBALL  
11723 LIME KILN RD.  
NEOSHO, MO 64850  
[WWW.EMPIREPAINTBALL.COM](http://WWW.EMPIREPAINTBALL.COM)