

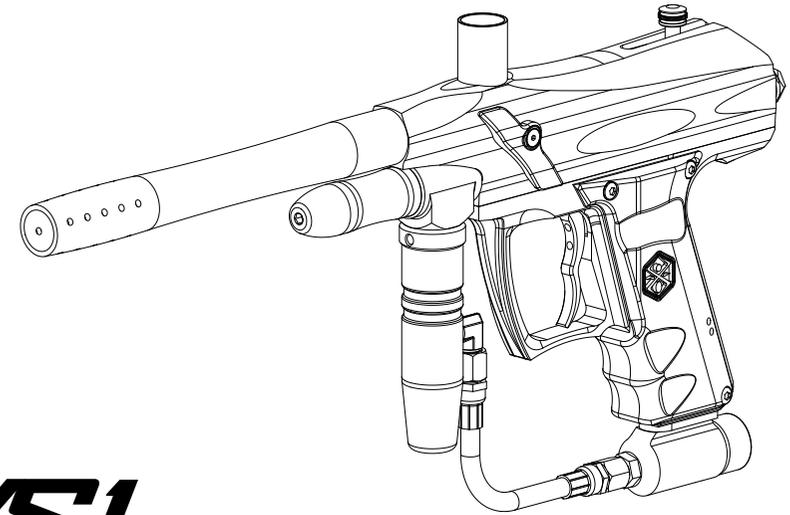


**SPYDER**

USERS MANUAL

**VSI1**

.68 CAL ELECTRONIC PAINTBALL MARKER



# VS1

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## IMPORTANT SAFETY GUIDELINES



### WARNING

- This paintball marker is NOT a toy. It can cause serious injury or death.
- Kingman recommends that the customer be at least 18 years of age to purchase this product.
- Read this manual and air tank warnings before using this product.
- Any modifications or tampering of original factory parts will void all warranties and liabilities from Kingman.
- Kingman recommends using a barrel blocking device when the marker is not in operation.
- To ensure proper adjustment of velocity (fps), Kingman strongly recommends using a chronograph for paintball use located at most paintball stores and paintball fields.
- Before / after use of the marker, make sure to fasten all screws. Screws may become loose due to vibration. Loose screws can be dangerous and cause injury.
- Kingman STRONGLY recommends that any person using this product or within range of this product while it is in use MUST wear EYE/FACE PROTECTION designed specifically for the sport of paintball. This includes, but is not limited to, performing a maintenance check and during target practice.
- Kingman reminds the user that it is YOUR RESPONSIBILITY to protect your eyes/face at all times, and will not be held liable for injuries sustained when failing to wear the appropriate protection.
- Never shoot or point your marker at a person that is not in a designated paintball facility and without proper paintball protection.
- Treat every paintball marker as if it were loaded.
- Never look down the barrel of a loaded or unloaded marker.
- Always keep the paintball marker in SAFE or OFF mode until ready to operate.
- Always remove the gas source before disassembly.
- Fire only 0.68 caliber paintballs with this product.
- Always make certain the bolt is in the un-cocked position when marker is not in use.
- Using a paintball marker outside of a non designated paintball field can be illegal, and is subject to law enforcement penalties if property damage is caused by the user.
- Transfer this instruction manual upon change of marker ownership.

## OPERATION GUIDE / START UP



**WARNING:** Always keep the marker powered OFF or on SAFE until you are ready to fire.

1. Always attach a barrel blocking device over the tip of the barrel for safety precautions when the marker is not in use.
2. Install and charge the battery see pages (See Battery Charging / Installation)
3. Attach the CO2 / Compressed Air Tank to the C/A Adapter. **HELPFUL TIP:** Make sure to have the CO2 / Compressed Air Tank filled before attaching to the marker. Tighten the tank clockwise in the markers C/A Adapter until it is snug. If an air leak occurs between the tank and the C/A Adapter, replace the urethane bottle O-ring.  
**NOTE:** O-rings in the markers parts kit are not supplied to attach with a CO2 / Compressed Air Tank.  
**IMPORTANT:** You should never need to use any hand tool to attach a CO2 / Compressed Air Tank to the C/A Adapter.
4. Attach the elbow and a paintball loader to the markers feed neck. Install the vertical elbow on to the markers feed neck, then attach a paintball loader connecting into the elbow.  
**NOTE:** Fill your paintball loader with only .68 caliber paint.
5. Cocking the marker. Pull the Top Cocking Knob (#STK002) rearward until the Delrin Bolt latches.  
**CAUTION:** Should you let go of the Top Cocking Knob before it latches, your marker may fire.
6. Remove the barrel blocking device.
7. **CAUTION:** With the power switch turned ON the marker is **LIVE**. Pulling the trigger (# TR5005) will fire a paintball.  
**IMPORTANT:** Only test your marker in a safe direction or in a designated playing field.
8. Performing a velocity (fps) check. Turning the velocity adjuster & spring guide (#VTA008) clockwise will increase the velocity (fps) while turning counter-clockwise will decrease the velocity (fps). **NOTE:** Your marker is intended to be used in a paintball facility with the proper paintball protection.  
**IMPORTANT:** Kingman recommends using a chronograph to ensure that the maker's velocity is under 300 (fps).
9. When finished playing, remove all paintballs from under the loader before detaching the paintball loader and vertical elbow from the marker.  
**CAUTION:** There may be a paintball in the marker's breach; take a couple of shots in a safe direction to make sure the barrel and receiver are empty.
10. Place the barrel blocking device over the barrel. This will help avoid any accidental discharge.
11. Kingman recommends having the marker in the "SAFE" or "OFF" position after use.
12. Unscrew the CO2 / Compressed Air Tank from the marker's C/A Adapter. Turning the tank counter-clockwise will detach it from the marker's C/A Adapter.  
**CAUTION:** Never expose any skin underneath the C/A Adapter's bleed hole when removing the tank. This can run the risk of getting skin burn from the releasing of the GAS.  
**IMPORTANT:** You should never need to use any hand tool to detach a CO2 / Compressed Air Tank.
13. Store the marker in a paintball bag or in a safe place. **WARNING:** Before / after use of the marker, make sure to fasten all screws. Screws can become loose due to vibration. Loose screws can be dangerous and cause injury.  
**HELPFUL TIP:** It is good practice to lubricate your marker before and after each use, especially when storing the marker for an extended period of time. Add a few drops of paintball gun oil on the Striker O-ring (#ORG001) (see Disassemble / Reassemble Guide). Before storing the marker, make sure the marker is in the un-cocked position. This will help the main spring maintain its tension.

### IMPORTANT

Firing velocity may vary according to altitude and climate conditions.

Before using your marker in play, you must always first perform a "SAFE VELOCITY TEST".

This can only be accomplished by using a testing device called a "Velocity Chronograph" and can be performed at a paintball dealership or local playing field.

**NOTE:** This product is intended to be used at a velocity no greater than 300 feet per second (fps).

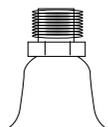
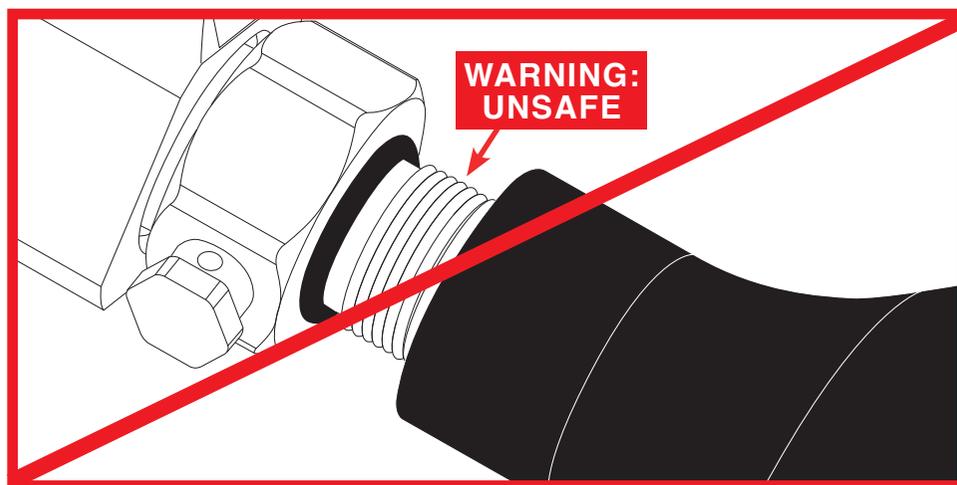
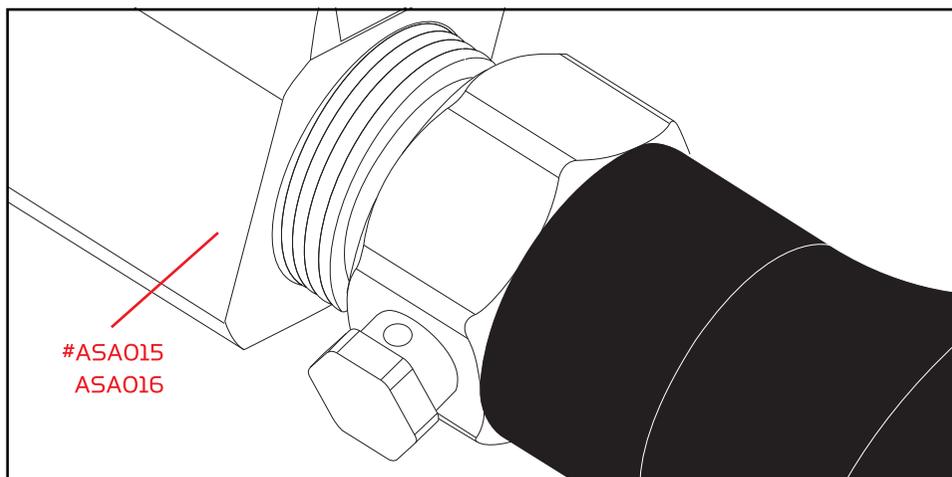
This product is NOT intended to be used at any distance less than 25 feet.

This paintball marker may have excess gas after the removal of the CO2 / Compressed Air Tank.

Please remove all paintballs and discharge the remaining gas safely.

Never store a CO2 / Compressed Air Tank attached on the marker while not supervised.

## CO2 / COMPRESSED AIR TANK WARNINGS



**DANGER**

The CO2 or Compressed Air Tank can fly off with enough force to cause serious injury or death if the Valve unscrews from the cylinder head. LOOK at the Valve when removing the cylinder from the marker. Be sure that the valve is turning with the cylinder rather than remaining stationary with the marker. STOP if the Valve starts to unscrew from the cylinder. If in doubt, screw the cylinder back onto the marker and contact a trained person for repair.

## CO2 / COMPRESSED AIR TANK WARNINGS

- All valves must only be installed or removed by a qualified airsmith.
- See CO2 / Compressed Air tank labels for retest dates. Cylinder tanks must be retested periodically.
- Improper use, filling, storage or disposal of all air cylinders may result in death, personal injury and/or property damage.
- Always keep cylinders out of reach from children or any inexperienced person(s).
- Only properly trained personnel in accordance with CGA Pamphlets P.1 and G-6.3 must fill all air cylinders. Pamphlets are available from the Compressed Gas Association or [www.CGANET.com](http://www.CGANET.com).
- Never alter the cylinder in any way.
- DO NOT expose pressurized cylinders to temperatures in excess of 130 °F (54 °C).
- Cylinders heated to an excess of 250 °F (121 °C) must be condemned or requalified in accordance with test defined in CFR-49.
- The valve should NEVER be detached from the canister. Please seek immediate assistance from a trained airsmith should this occur.
- Any tank packed with the product is intended for paintball use only.
- Confirm that there is an attached urethane O-ring on the CO2 / Compressed Air tank valve before attaching the tank to the marker. The tank will leak air as soon as it is secured to the marker, if the O-ring is missing from the valve.
- A urethane O-ring is highly recommended before attaching any air supply to the marker.
- NEVER over pressurize a CO2 / Compressed Air cylinder.
- Avoid any direct skin exposure to the escaping gas, when installing or removing any air supply.
- Never expose cylinders to corrosive materials or clean with any caustic cleaners.

## INSTALLING A CO2 / COMPRESSED AIR TANK

Firmly screw the CO2 / Compressed Air Tank clockwise into the markers C/A Adapter (#ASA015 or ASA016).

**HELPFUL TIP:** Before installing a CO2 / Compressed Air Tank, make sure that the tank is full and that it has a urethane bottle o-ring on the top of the valve to prevent air leaks.

**IMPORTANT:** You should never need to use any hand tool to attach a CO2 / Compressed Air Tank to the C/A Adapter.

## REMOVING A CO2 / COMPRESSED AIR TANK

Firmly unscrew the CO2 / Compressed Air Tank by turning the tank counter-clockwise until it comes out of the C/A Adapter.

**HELPFUL TIP:** After firing the marker, you should ALWAYS remove the CO2 / Compressed Air Tank before storing. When the tank is being removed, excess air will release from the bottom of the C/A Adapter (#ASA015 or ASA016). This is normal.

**CAUTION:** Never expose any skin to the C/A Adapters bleed hole when removing the tank. This is to avoid the risk of getting skin burn from the escaping GAS.

**IMPORTANT:** You should never need to use any hand tool to detach a CO2 / Compressed Air Tank from the C/A Adapter. If you cannot remove a tank by hand, see a certified airsmith for assistance.

## PROPER USE OF YOUR BARREL BLOCKING DEVICE

A Barrel Blocking Device or "BBD" is an essential part of your paintball safety equipment. The Barrel Blocking Device is designed to stop a paintball from exiting a paintball marker accidentally. Improper use of the Barrel Blocking Device will render this device useless.

### BARREL SOCK/BAG TYPE DEVICE

Place the bag/sock part of the Barrel Blocking Device over the end of your barrel and wrap the elastic cord around the back end of your marker.

Adjust the length of the elastic cord to make sure your Barrel Blocking Device fits securely over your marker's barrel.

**NOTE:** If the elastic cord is too long you can tie a couple of knots around the cord to shorten its length.

### BARREL PLUG TYPE DEVICE

Insert the barrel plug securely into the end of your marker's barrel before proceeding to load paintballs and screwing in your tank to your marker.

The barrel plug should fit firmly into the barrel with a significant amount of resistance.

**NOTE:** The barrel plug should not be easy to remove and always inspect the O-rings to make sure they are not worn or cut.

Remove the Barrel Blocking Device only when you are getting ready to begin play or have been instructed to do so by a field safety official.

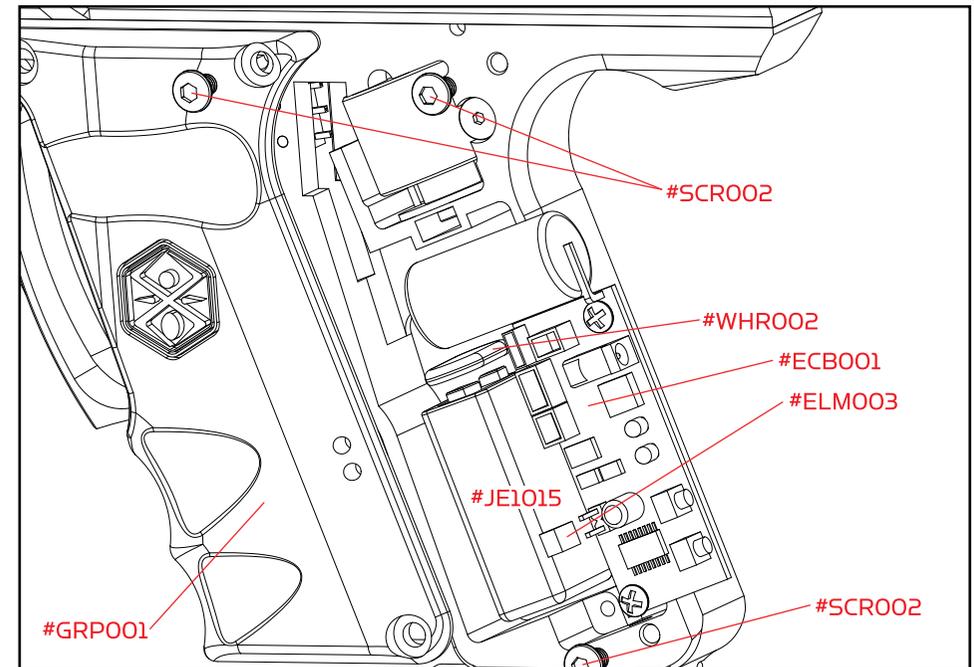
Always keep your Barrel Blocking Device on your marker after you have finished playing. Keep it in place even after you have emptied all paintballs and removed your air tank from your paintball marker.

### WARNING:

Inspect your Barrel Blocking Device regularly for any wear and tear. If it is worn, replace it immediately.

Always have your Barrel Blocking Device in place on your marker's barrel to insure safety and prevent accidents that may cause permanent injury or even death.

## INSTALLING A BATTERY/TOURNAMENT LOCK SWITCH



## INSTALLING A BATTERY

**NOTE:** Battery must be fully charged before initial use.

**STEP 1** - Remove the three M4x8 Screws (#SCR002) and left side Grip Panel (#GRPO01).

**STEP 2** - Attach the Spyder Battery (#JE1015) to the Battery Harness (#WHR002).

**STEP 3** - Re-tighten the three M4x8 screws (#SCR002).

**HELPFUL TIP:** Please note how the parts are removed for easy reassembly.

## SPYDER 9.6 NiMH BATTERY LIFE

Always use the supplied Spyder 9.6volt NiMH Battery and Spyder LED A/C Charger to operate this marker. A fully charged Spyder Battery will last about 3,000 to 5,000 shots. Under normal use and charging conditions the expected life of the Spyder 9.6 NiMH Battery is approximately 700-1,000 charging cycles.

**WARNING:** This marker is not intended to use any normal 9 volt battery or charger that is NOT a Spyder Product. Doing so will VOID all electronic warranties and liabilities from Kingman.

## REMOVAL OF TOURNAMENT LOCK SWITCH

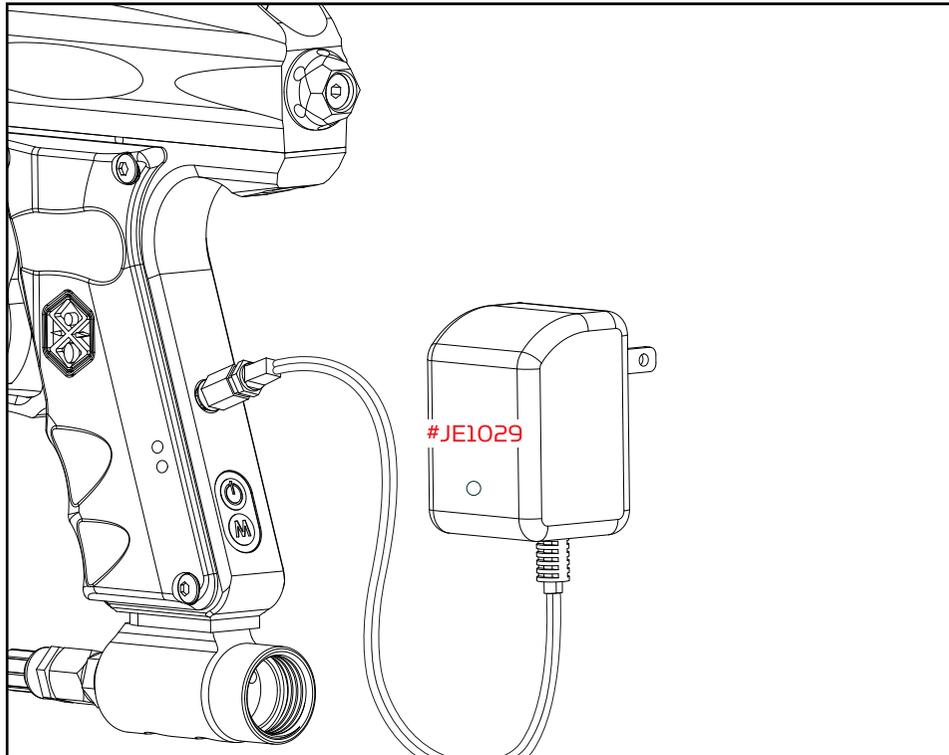
The V51 Circuit Board (#ECB001) is equipped with a Tournament Lock Switch (#ELM003) that enables the user to lock the firing mode of the marker. To lock the firing mode in Semi-Auto mode you must first turn the marker "ON" and select Semi-Auto mode, which is the "Green" lower LED indicator. Removing the Tournament Lock Switch at this point will lock the firing mode function in Semi-Auto mode. To disable the mode lock and access the Burst mode re-install the Tournament Lock Switch onto the circuit board.

**HELPFUL TIP:** Please note how the parts are removed for easy reassembly.

### WARNING

- Spyder Electronic Markers are not water resistant.
- Extreme moisture can cause serious damage to any Spyder Electronic Marker.
- Always clean any dirt or paint inside the markers electronics.
- Never attempt to modify the electronics' circuitry, doing so will VOID all electronic warranties and liabilities from Kingman.

## BATTERY CHARGING



### SPYDER LED A/C CHARGER INSTRUCTIONS

To charge a Spyder 9.6 NiMH Battery the circuit board must be in the OFF Position. Spyder Batteries (#JE1015 not pictured) are not fully charged when purchased. Using the supplied Spyder LED A/C Charger (#JE1029) Kingman recommends a charging time of 5 hours for a complete charge.

**STEP 1** - Plug the Spyder LED A/C Charger into a 110v-120v power outlet.

**STEP 2** - Connect the Spyder LED A/C Charger cord to the rear of the markers trigger frame.

**STEP 3** - The LED indicator on the A/C Charger will display RED when the battery is charging.

**STEP 4** - The LED indicator on the A/C Charger will display GREEN when the battery is fully charged.

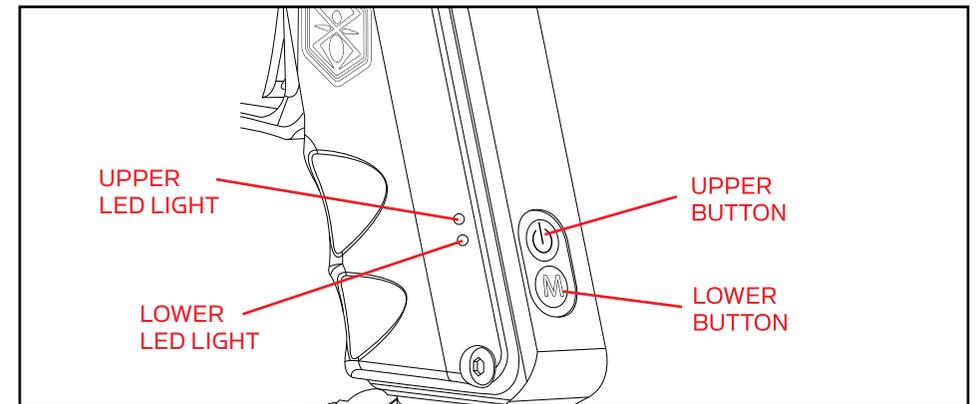
**STEP 5** - Unplug the Spyder LED A/C Charger cord from the rear of the markers trigger frame.

**STEP 6** - Remove the Spyder LED A/C Charger from the 110v-120v power outlet.

**NOTE:** It is recommended that the battery be charged prior to use in order to ensure maximum performance, especially if the battery has not been used in over a week.

**IMPORTANT:** You should never charge the battery over 24 hours or you run the risk of damaging the battery or electronics.

## ELECTRONICS & SETTINGS



### CIRCUIT BOARD SETTINGS AND LED COLOR FUNCTIONS

**POWER ON/OFF:** Pressing the Upper Button for 1 second will power the marker ON illuminating the LED lights Red and Green. To Power OFF press and hold the Upper Button for 3-4 seconds, this shuts down the circuit board and turns both LED lights off.

**NOTE:** Once the circuit board is ON, it will automatically be set in Safe Mode.

**SAFETY LIGHT ON/OFF:** When the circuit board has been turned ON, to release out of Safety press the Lower Button for 1 second to turn OFF the Safety. Press the Lower Button for 1 second will activate Safe Mode ON.

**NOTE:** The Eye Mode will automatically turn ON after you exit the Safe Mode.

**EYE MODE ON/OFF:** When the circuit board has been turned ON press the Upper Button for 1 second to release Eye Mode OFF. Press the Upper Button for 1 second to turn ON the Eyes.

**NOTE:** When the Eye Mode is turned ON the trigger will not fire until there is a paintball in the breach.

**HELPFUL TIP:** The Eye mode is able to turn ON when the marker is in 3 Burst.

**MODES SEMI / 3 BURST:** Press and hold the Lower Button for about 3-4 seconds to change modes from Semi to 3 Burst. Press and hold the Lower Button for about 3-4 seconds to change back to Semi.

**NOTE:** The Eye mode is able to turn ON when the marker is in 3 Burst Mode.

#### LED COLOR GUIDE

UPPER LED LIGHT in Red is Safe Mode ON.

UPPER LED LIGHT in Green is Eye Mode ON.

UPPER LED LIGHT off means Eye Mode OFF.

**NOTE:** Blinking Green – Eye malfunction; clean eyes or make sure the marker is being fired with paint and air. A blinking green LED is an indication that there was an error in reading the previous shot command. The eyes will still function normally even if the green LED is blinking.

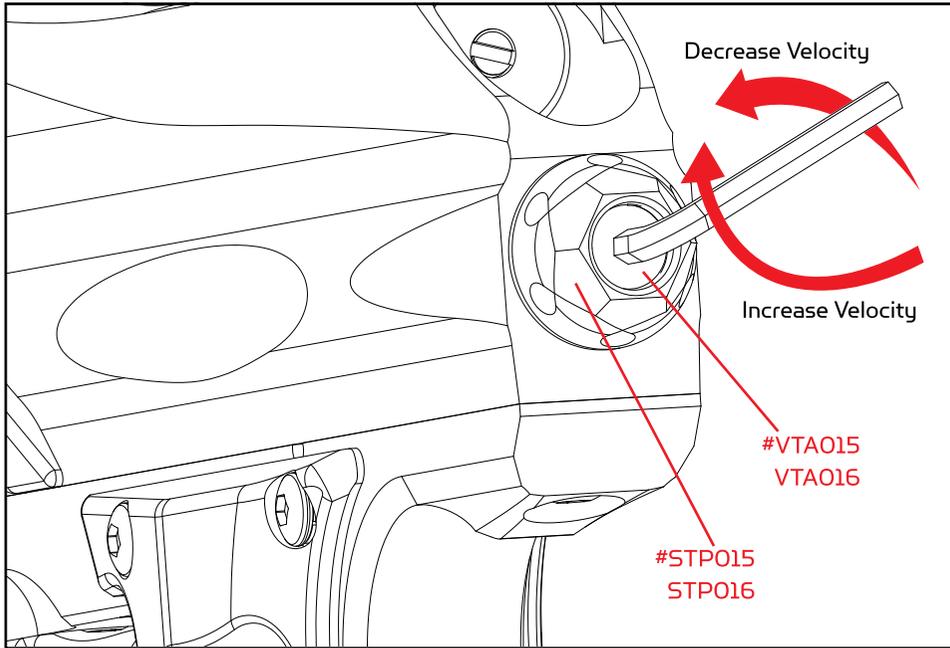
**NOTE:** When in Semi / 3 Burst Mode the lower LED light (Green or Orange) might reflect on the upper LED light.

LOWER LED LIGHT in Green is Semi-Auto ON.

LOWER LED LIGHT in Orange is 3 Burst ON.

**NOTE:** When in 3 Burst mode the lower LED light (Orange) might reflect on the upper LED light. The safety is only on when the upper LED light is RED.

## VELOCITY ADJUSTMENT INCREASE / DECREASE



To INCREASE your velocity FPS (Feet Per Second) using the Allen wrench turn the Velocity Adjuster / Spring Guide (#VTA015 or VTA016) clockwise.

To DECREASE your velocity FPS (Feet Per Second) using the Allen wrench turn the Velocity Adjuster / Spring Guide (#VTA015 or VTA016) counter-clockwise.

**NOTE:** Velocity Adjuster / Spring Guide (#VTA015 or VTA016) doesn't remove from the rear of the Sticker Plug (#STP015 or STP016).

### WARNING

The recommended Velocity speed should be no greater than 300 fps. Not doing so can cause serious injury if the Velocity is dangerously high.

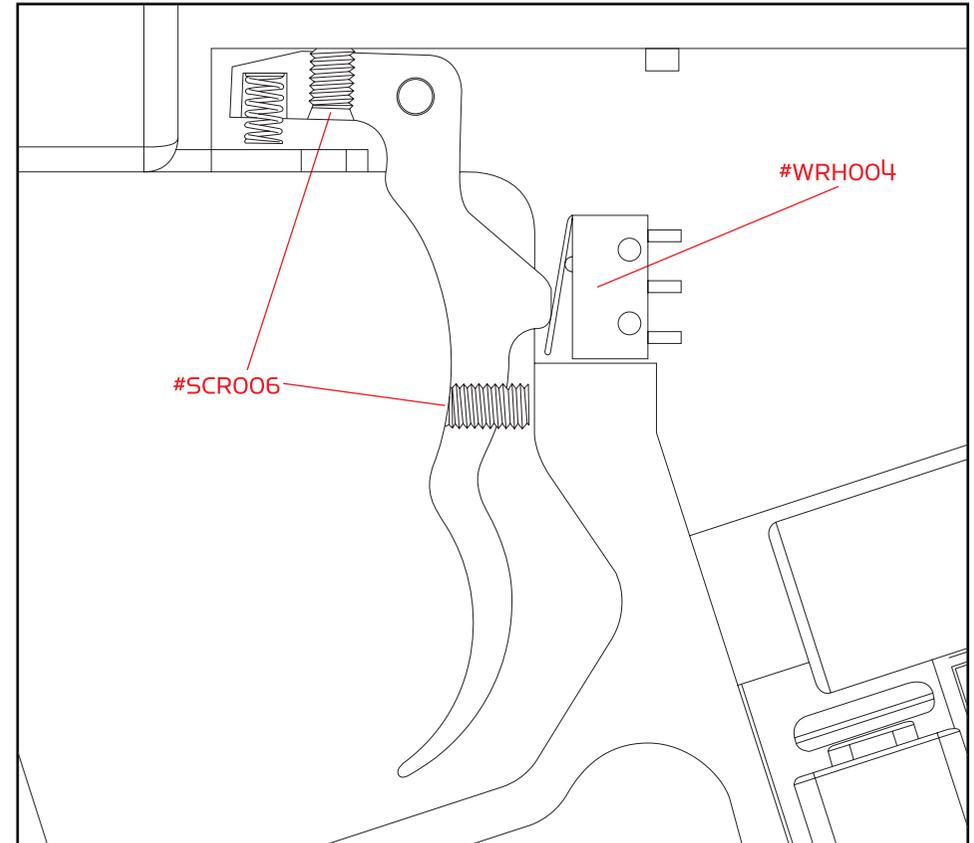
Paintball markers are not intended to shoot any person less than 25 feet.

Never point a loaded marker at any person who is not wearing the proper face protection.

Never at any point should you look down the barrel, whether the marker is loaded or not.

Using a paintball marker outside a non designated paintball field can be illegal, and is subject to law enforcement penalties if property damage is caused by the user.

## TRIGGER ADJUSTMENT



Adjusting the Top (#SCR006) located underneath the Trigger Frame clockwise will swing the trigger closer to the touch switch.

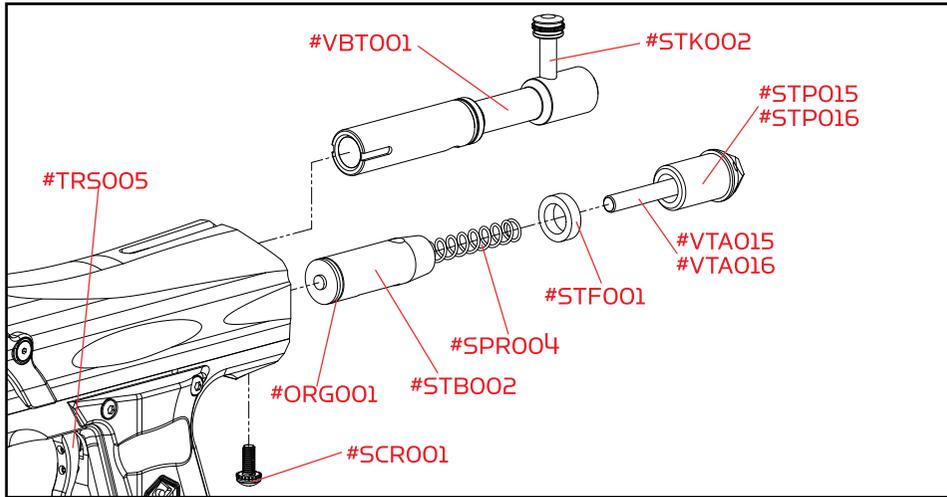
**NOTE:** Adjusting the screw counter-clockwise will increase the trigger gap.

**HELPFUL HINT:** Over adjusting the screw to close won't allow the trigger to activate the touch switch which will not allow the marker to fire.

Adjusting the Middle (#SCR006) screw clockwise will shorten the trigger stop the touch switch.

**NOTE:** This will increase trigger sensitivity. Unscrewing it counter clockwise will decrease trigger sensitivity.

## DISASSEMBLE / REASSEMBLE AND CLEANING OF REAR INTERNALS



### Part Names and Part Numbers described in this section:

Top Cocking Pin (#STK002)	Striker Spring (#SPR004)
Delrin Bolt (#VBTO01)	Striker Buffer (#STF001)
Striker Bolt (#STB002)	Trigger Frame Screw (#SCRO01)
Striker Plug (#STPO15 or #STPO16)	Velocity Adjuster & Spring Guide (#VTA015 or #VTA016)
Striker O-Ring (#ORG001)	2 Finger Trigger (#TR5005)

## QUICK CLEAN DISASSEMBLE

Lift upward on the Top Cocking Pin. This will allow the Delrin Bolt to slide from the rear of the Receiver.

**HELPFUL TIP:** Removing the Delrin Bolt from the Receiver will allow easy access to clean with a squeegee.

**NOTE:** Make sure the hole on the Striker Bolt is facing upright when looking thru the Receiver. This will allow the Top Cocking Pin to correctly fasten with the Striker Bolt.

**IMPORTANT:** The air passage hole located in the middle of the Delrin Bolt should always be facing downward when reinstalling. If the Delrin Bolt is not installed correctly, paintballs will not exit out of the barrel normally.

## DISASSEMBLE REAR INTERNALS

**STEP 1** Lift upward on the Top Cocking Pin to allow the Delrin Bolt to slide out from the rear of the Receiver.

**STEP 2** Loosen the rear Trigger Frame Screw located underneath the rear Receiver. This will allow all internal parts such as the Striker Plug with the Velocity Adjuster & Spring Guide, Striker Spring, Striker Buffer and Striker Bolt to slide from the rear of the Receiver. **NOTE:** Remove the rear Trigger Frame Screw when the marker is in the un-cocked position. This way, the tension of the Striker Spring will not allow the markers internals to spring out.

**HELPFUL TIP:** Placing your finger behind the Striker Plug before removing the rear Trigger Frame Screw will prevent the markers internals from springing out.

**STEP 3** Remove items in order; Striker Plug w/Velocity Adjuster, Striker Spring and Striker Buffer.

**STEP 4** Slide the Striker Bolt out of the rear of the Receiver.

**HELPFUL TIP:** When the internals are removed it would be wise to clean any dirt or paint from the inside of the Receiver with a squeegee. Wipe clean the Delrin Bolt with a rag or paper towel. Apply some paintball gun oil on Striker O-ring periodically.

## REASSEMBLE REAR INTERNALS

**STEP 1** Reinsert the Striker Bolt with Striker O-ring facing toward the front of the marker with the flat spot of the Striker Bolt facing down. **NOTE:** Having the Power Switch ON will ease reentry of the Striker Bolt. Apply thumb pressure behind the Bolt and at the same time pull on the Trigger. Repeat this process until the Bolt is fully inserted. **NOTE:** The hole on the Striker Bolt should be facing upright when looking thru the Receiver.

**STEP 2** Insert the Striker Buffer flush with the receiver and place the Striker Spring thru the Striker Buffer.

**STEP 3** Place the Striker Plug w / Velocity Adjuster & Spring Guide to the rear of the Receiver and tighten the Trigger Frame Screw.

**STEP 4** Insert the Delrin Bolt thru the rear of the Receiver with the Top Cocking Pin. Press downward on the Top Cocking Pin to gain entry with the Striker Bolt. **NOTE:** If the Striker Bolt hole is not aligned upright, the Top Cocking Pin will not fasten correctly. **HELPFUL TIP:** Use a small tool to align the hole upright should the Striker Bolt turn when positioned back in the receiver.

**WARNING:** Before / after use of the marker, make sure to fasten all screws. Screws may become loose due to vibration. Loose screws can be dangerous and cause injury.

To assure that the marker is assembled properly, follow the schematic drawing or position parts in order during disassembly. Parts assembled backwards or improper parts installed will / can cause the marker to malfunction.

## A JAMMED PAINTBALL IN THE BREACH

In the event of a paintball break and the Delrin bolt jams, follow these steps to help un-jam the marker. The markers breach is located where the barrel starts to thread in the receiver and underneath the markers feed neck.

Before attempting to un-jam the Delrin bolt you should always have your Goggles or Safety Glasses on.

Make sure the marker is in the SAFE / OFF position before attempting to un-jam the Delrin bolt.

Remove the CO<sub>2</sub> / Compressed Air Tank before attempting to un-jam the marker.

Remove all paintballs and the loader from the feed neck.

Have the barrel removed from the receiver to allow the paintball (s) to exit.

With enough tension on the cocking knob, pull back to release the Delrin bolt from the jammed position.

Another method is to use a "Straight Shot Squeegee" or the end of a wood dowel rod; push against the face of the Delrin bolt with enough force to release the jammed bolt.

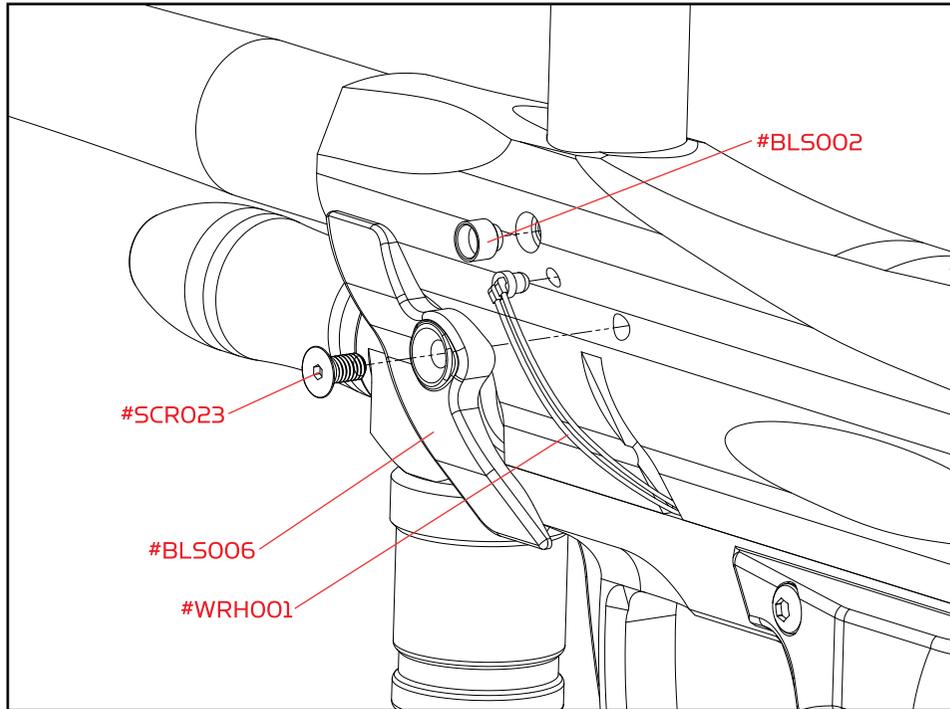
Always clean the paint from the breach and barrel to enhance the performance of your marker.

**IMPORTANT:** Never look down the barrel of the marker when loaded or unloaded.

Remove the attached CO<sub>2</sub> / Compressed Air Tank before attempting to un-jam the Delrin Bolt.

**NOTE:** Never use a metal rod or screwdriver as a tool to push on the Venturi bolt, anything metal will scratch and damage the inside of the marker.

## ANTI CHOP EYES



## ANTI CHOP EYES

The Anti Chop Eyes help prevent the chopping of paint by not allowing the marker to fire until a paintball is properly chambered in the breech. The Eyes transmit a beam across the inside of the breech. The circuit board is preset from the factory and does not need to be adjusted or altered. If the Eyes are ON and do not see each other when firing your marker, you will have to clean the Eyes.

## CLEANING THE ANTI CHOP EYES

Using a squeegee or swab thru the breech should clean the Eyes enough for the Eyes to detect each other. Another way is to use an aerosol can of air thru the breech to remove any paint or dirt. To thoroughly clean the Eyes using the supplied Allen wrench remove both Eye Panel Screws (#SCR023) and Eye Panels (#BLS006). Once the Eye Panel Screws & Eye Panels are removed, proceed with a soft pinch to remove the Eye Wire Harness (#WRH001) from the receiver. Please use a cloth or paper towel to remove any paint or dirt that is blocking the Eyes.

**IMPORTANT:** Cleaning the Eyes often will help reduce dirt, paint or oil residue that blocks the Eyes

**NOTE:** Never attempt to rush the cleaning process or you can pinch the wires and cause the marker to malfunction with the Eye Mode ON. Take precaution not to over tighten the Eye Panel Screws or this can lead to stripping the head.

**NOTE:** When the Eye Panels are removed the VS Ball Stopper(s) (#BLS002) may be attached to the Eye Panels and can cause them to fall out.

**HELPFUL TIP:** Please note how the parts are removed for easy reassembly.

**IMPORTANT:** Before removing both Eye Panels use a needle or dental pick thru the hole of the Eye Panel to remove any dirt that can build up and block the allen screw from loosening. It's possible if the dirt is not removed you can strip the Eye Panel Screw.

## CHANGING THE BALL STOPPERS

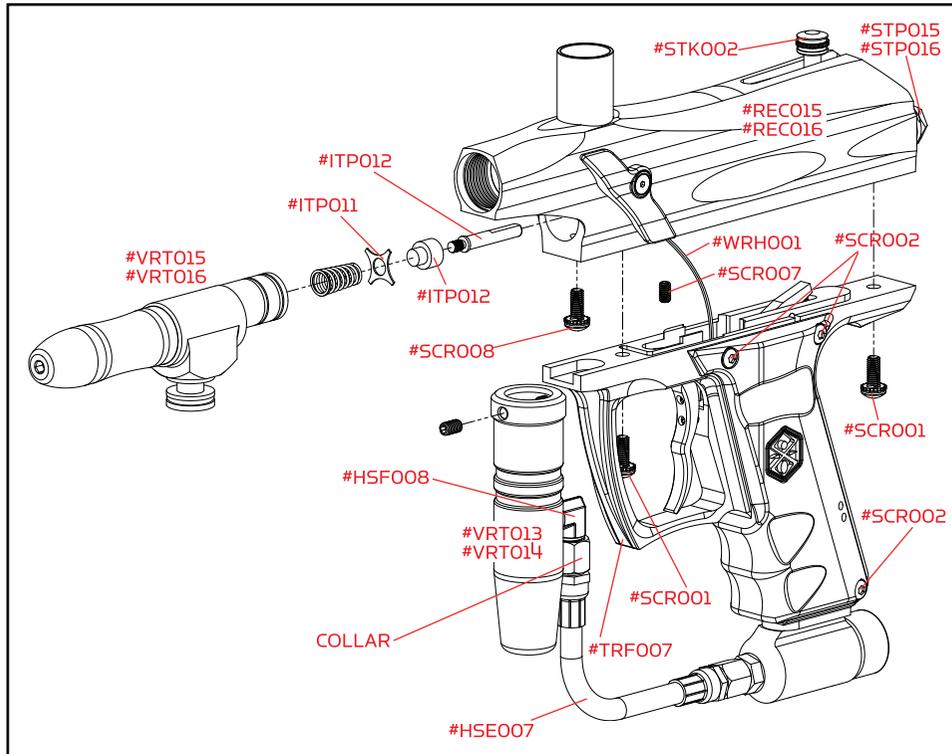
Experiencing paint rolling through the barrel can be related to small diameter paintballs or the loss of a VS Ball Stopper(s) (#BLS002). When removing Eye Panel Screws (#SCR023) and Eye Panels (#BLS006) the VS Ball Stopper(s) (#BLS002) will be accessible for cleaning or replacement.

**HELPFUL TIP:** Please note how the parts are removed for easy reassembly.

**IMPORTANT:** Before removing both Eye Panels use a needle or dental pick thru the hole of the Eye Panel to remove any dirt that can build up and block the allen screw from loosening. It's possible if the dirt is not removed you can strip the Eye Panel Screw.

**NOTE:** Take precaution not to over tighten the Eye Panel Screws or this can strip the head.

## CUP SEAL REMOVAL



## STEP BY STEP CUP SEAL ACCESS

Part Names and Part Numbers describe in this selection:

- |  |   |
|--|---|
| Cup Seal (#ITP012)                             | Trigger Frame Screw (#SCR001)                             |
| Vertical Expansion Chamber (#VRT013 or VRT014) | Vertical Adapter (#VRT015 or VRT016)                      |
| Trigger Frame (#TRF007)                        | Valve Pin (#ITP012)                                       |
| Receiver (#RECO15 or RECO16)                   | Cup Seal Guide (#ITP011)                                  |
| M4x8 Head Screw (#SCR002)                      | 90d Male to Male Adapt (STD x MET) (#HSF008)              |
| Vertical Screw (#SCR008)                       | * Striker Bolt (#STB002 not pictured)                     |
| Top Cocking Knob (#STK002)                     | * Striker Buffer (#STF001 not pictured)                   |
| Disconnect Hose (#HSE007)                      | * Striker Spring (#SPR004 not pictured)                   |
| Eye Wire Harness (#WRH001)                     | * Velocity Adjuster & Spring Guide (#VTA001 not pictured) |
| Valve Body Screw (#SCR007)                     | * Delrin Bolt (#VBT001 not pictured)                      |
| Striker Plug (#STP015 or STP016)               | * Valve Body (#ITP014 not pictured)                       |
|  | * 9.6 Rechargeable Battery (#JE1015 not pictured)         |

\* not pictured

## STEP BY STEP CUP SEAL ACCESS

**HELPFUL TIP:** The sign of a worn Cup Seal is the presence of CO<sub>2</sub> / Compressed Air leaking down the barrel.

**STEP 1** Loosen the collar of the Disconnect Hose from the 90d Male to Male adapter.

**STEP 2** Remove all three M4x8 Screws on the left side of the Trigger Frame. The Grip Panel will allow access to the Eye Wire Harness.

**STEP 3** Gently detach the Eye Wire Harness from the Circuit Board. This will allow maneuvering around certain parts.

**HELPFUL TIP:** Gently move aside the Rechargeable Battery out of the Trigger Frame to view the Eye Wire Harness. Gently remove the Eye Wire Harness thru the coil set channel exiting thru the top of the Trigger Frame.

**STEP 4** Remove both Trigger Frame Screws. This will then allow the Trigger Frame to detach from the Receiver.

**TECH TIP:** Before loosening the rear Trigger Frame Screw place your finger in front of the Striker Plug, so the internal parts don't spring outward if the Delrin Bolt is in the cocked position.

**NOTE:** Place the Striker Plug aside until ready for reassemble.

**STEP 5** Loosen the Vertical Screw counter-clockwise to allow the Vertical Adapter and Vertical Expansion Chamber to release from the Receiver.

**STEP 6** Notice all internal parts are attached with the Expansion Chamber. Remove the following parts in order Valve Spring, Cup Seal Guide, Cup Seal and the Valve Pin.

**STEP 7** Untwist the Cup Seal from the Valve Pin. Replace the defective Cup Seal.

**HELPFUL TIP:** Please note how the parts are removed for easy reassembly.

**CAUTION:** Use the proper Allen wrenches to fasten all screws and never apply more force than necessary.

**IMPORTANT:** Always remove the Air Tank before any disassembly of your marker. Do not remove the Valve Body (#ITP014) unless specific Valve Body repairs are needed. Do not remove the Valve Body with a screwdriver as it will damage the Valve Body and cause air leaks.

## TROUBLESHOOTING

ONE OR MORE OF THE FOLLOWING MAY CAUSE RE-COCKING RELATED ISSUES:

Need lubrication on the following o-ring # (ORGO01) (see Disassemble/Reassemble & Cleaning Internals).

The pressure in the tank is too low and possibly needs to be refilled.

Striker O-ring # (ORGO01) is damaged or missing. Replace with a new Kingman approved Striker O-ring. NOTE: The Striker O-ring can not be substituted with a black or urethane bottle o-ring.

Dirt or broken paint shell fragments in the receiver can cause the marker to have re-cocking issues. Using a squeegee thru the upper portion of the receiver will remove most of the dirt or broken shell fragments. Should this issue continue, (see disassemble/reassemble & cleaning internals) remove the markers internals for complete cleaning.

Using low quality paintballs can cause the marker to experience re-cocking issues because of the shape of the paintballs.

**HELPFUL TIP:** Paintballs have a shelf life and can become too fragile for use.

**HELPFUL TIP:** Paintballs can take a different shape over time, so it would be wise to size the paintball with your barrel.

## ELECTRONIC GRIP TROUBLESHOOTING

If your marker is not shooting it may be due to one of the following problems:

Battery may need to be recharged.

The Battery Wire Harness is not properly attached to the circuit board.

The Coil Set Harness is not properly attached to the circuit board.

The Touch Switch Harness is not properly attached to the circuit board.

**NOTE:** If the Markers Electronics have any dirt or paint, Kingman recommends using an aerosol can of air. Apply the can of air directly at the components that need cleaning.

## AIR LEAKS

**IMPORTANT:** Always remove the air tank before any disassembling of the marker.

Air leaking from the Lower Pressure Chamber means the O-ring (#ORGO02) will need to be oiled or replaced.

Air leaking from the Vertical Adapter means the O-ring (#ORGO02) will need to be oiled or replaced.

Air leaking down the barrel is usually caused by a worn or damaged cup seal # (#ITPO12). (see Cup Seal Access) should the cup seal need to be exchanged.

Never remove Valve Body (#ITPO14) unless specific repairs are needed.

A nick or scratch on the lip of the Valve Body can cause an internal air leak (see Cup seal Access). The Valve Body may need to be replaced.

Air leaking thru the Receiver and out of the Trigger Frame would indicate the Valve Body O-rings (#ORGO02) will need to be replaced.

If air is leaking thru the opposite end of the hose fittings, please check the following:

The Female end of the Hose must have a plastic washer (#HSFO04) installed inside the hose collar and be tightened properly.

The Male end of the Hose must have a hose o-ring (#ORGO04) at the end of the male side of the hose at all times.

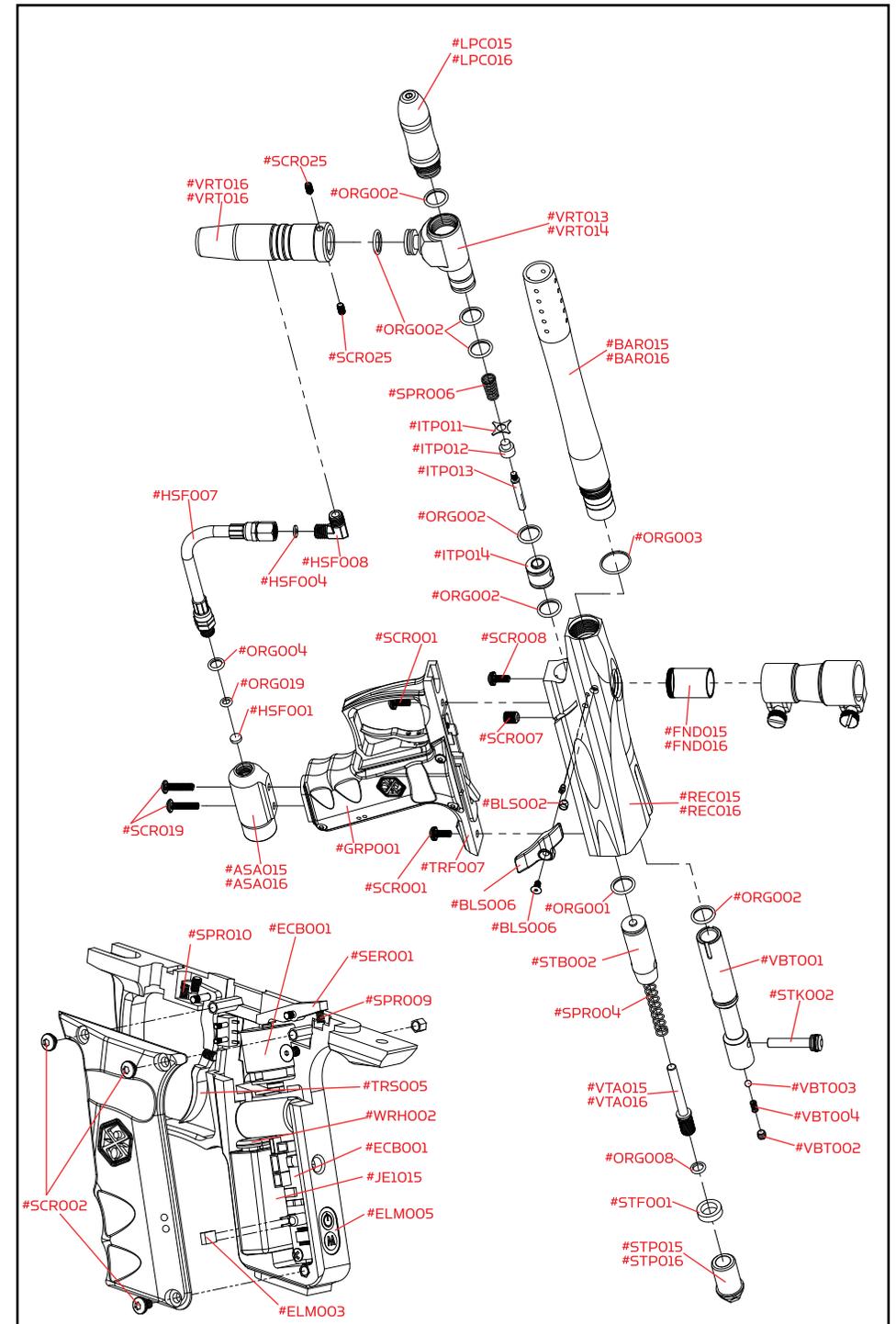
**IMPORTANT:** The hose line supplied has metric female and metric male ends. These will not install into American (NPT) threaded fittings. If installed incorrectly, it is possible to damage the attachment fittings and hose line.

**HELPFUL TIP:** To assure marker is assembled properly, follow the schematic drawing or position parts in order during disassembly. Parts assembled backwards or improper parts installed will / can cause the marker to malfunction.

## VS1 PARTS LIST / SCHEMATICS

ASA015	C/A Adapter SH (matte blue)	SCR019	C/A Adapter M5 x 28 Screw (A)
ASA016	C/A Adapter SH (matte olive grey)	SCR023	Eye Panel Screw (FA)
BAR015	9.5" Barrel (matte blue)	SCR025	Vertical Lock Screw (A)
BAR016	9.5" Barrel (matte olive grey)	SER001	Sear
BLS002	VS Ball Stopper	SPR004	Striker Spring
BLS006	VS1 Eye Panel Set (black)	SPR006	Valve Spring
ECB001	Circuit Board	SPR009	ESP Sear Spring
ELM001	Coil Set	SPR010	ESP Trigger Spring
ELM003	Tournament Lock Switch	STB002	Striker Bolt
ELM005	Touch Switch Membrane	STF001	Striker Buffer
FND015	Feed Neck (matte blue)	STK002	Top Cocking Knob
FND016	Feed Neck (matte olive grey)	STP015	Striker Plug (matte blue)
GRP001	VS Wrap Around Grip (black)	STP016	Striker Plug (matte olive grey)
GRP002	LED Lens	TRF007	Composite Trigger Frame
* HSE007	Disconnect Hose (6.0")	TR5005	2 Finger Trigger (m. black)
HSF001	Air Filter	VBTO01	Delrin Bolt w/ Locking Knob
HSF008	90d MALE TO MALE ADAPTER (STD x MET)	VBTO02	Venturi Bolt Locking Screw (F)
HSF004	Plastic Washer	VBTO03	Venturi Bolt Locking Bearing
ITP011	Cup Seal Guide	VBTO04	Venturi Bolt Locking Spring
ITP012	Cup Seal	VRT013	Vertical Expansion Chamber (matte blue)
ITP013	Valve Pin	VRT014	Vertical Expansion Chamber (matte olive grey)
ITP014	Valve Body	VRT015	Vertical Adapter (matte blue)
JE1015	Spyder 9.6v Rechargeable Battery	VRT016	Vertical Adapter (matte olive grey)
JE1029	Spyder LED A/C Charger	VTA015	Velocity Adjuster & Spring Guide (matte blue)
* LPC015	Low Pressure Chamber (matte blue)	VTA016	Velocity Adjuster & Spring Guide (matte olive grey)
LPC016	Low Pressure Chamber (matte olive grey)	* WRH001	Eye Wire Harness
ORG001	Striker O-ring	WRH002	Battery Harness
ORG002	O-ring #015 80D	WRH004	Touch Switch (3P)
ORG003	Barrel O-ring		
ORG008	#010 O-ring		
ORG019	#009 O-ring		
PAK003	Spare Parts Kit		
REC015	VS1 Receiver (matte blue)		
REC016	VS1 Receiver (matte olive grey)		
RPN001	Sear Roll Pin		
RPN002	Trigger/Touch Switch Roll Pin		
RPN004	ESP Trigger Roll Pin		
SCR001	Trigger Frame Screw (A)		
SCR002	M4 x 8 Head Screw (A)		
SCR003	Circuit Board Screw (+)		
SCR006	Trigger Screw (L)		
SCR007	Valve Body Screw (A)		
SCR008	Vertical Screw (A)		
SCR011	Coil Set Screw (A)		

\* Item Not Pictured



# KINGMAN

## WARRANTY STATEMENT

Kingman warrants the original retail purchaser that this product is free from defects in material and workmanship under normal use and service for a period of (1) year from the original date of purchase. Any Electronic Components in an Electronic Spyder marker are warranted for (5) months from the original date of purchase. Kingman agrees to repair or replace (at its discretion) any product within (a reasonable period of time). This warranty does not cover o-rings, cup seals, 9.6v rechargeable battery, charger, scratches, nicks, normal wear and tear of parts, any modifications, normal fading of anodizing and damage caused by dropping or hitting of products. This warranty shall not apply if it is shown by a Kingman Technician that the consumer caused the defect or malfunction because of misuse. This warranty only covers original factory parts. Any modifications or tampering of original factory parts will VOID warranty and liabilities from Kingman. Any damage caused by water will not be covered under warranty. Warranty repair can only be conducted by Kingman technician or Kingman authorized technician. For warranty to be effective, consumer must return the enclosed warranty registration card filled out, along with a copy of the purchase receipt, within (15) days of the original purchase date. This warranty is not transferable. Paintball markers are non-refundable. This warranty will not cover pick up, shipping, delivery, and/or house calls. If product needs repair, consumer will package it carefully and send together with your name, address, phone number and a brief description of the malfunction to:

### KINGMAN GROUP

Attn: Tech Department  
14010 Live Oak Avenue  
Baldwin Park, CA 91706 U.S.A.  
www.kingman.com

### FOR TECHNICAL SUPPORT

Our Technical Support Department is open Monday through Friday, from 8am to 5pm (PST), and can be reached at (626) 430-2300.

VIIIH



# KINGMAN

WARRANTY REGISTRATION ALSO AVAILABLE AT [WWW.SPYDER.TV](http://WWW.SPYDER.TV)

## WARRANTY REGISTRATION

PLEASE COMPLETE AND RETURN THIS FORM, ALONG WITH A COPY OF YOUR PURCHASE RECEIPT, WITHIN 15 DAYS OF PURCHASE SO THAT WE MAY VALIDATE YOUR 12 MONTH LIMITED WARRANTY.

NAME:

ADDRESS:

CITY:

STATE:

ZIP:

COUNTRY:

GENDER:

AGE:

JOB:

E-MAIL:

PHONE:

PRODUCT NAME AND SERIAL #:

WHAT OTHER BRAND(S) OF MARKERS DO YOU OWN?

WHERE WAS THIS KINGMAN PRODUCT PURCHASED?

WHAT IS THE NEXT PAINTBALL PRODUCT YOU INTEND TO BUY?

WHAT ARE YOUR HOBBIES (OTHER THAN PAINTBALL)?

WHAT ARE SOME PAINTBALL MAGAZINES YOU LIKE TO READ?

COMMENTS / SUGGESTIONS:

VIIIH

YES, I WOULD LIKE TO RECEIVE MORE INFO REGARDING NEW PRODUCTS, PROMOTIONS, AND SPECIAL OFFERS FROM KINGMAN.

MAIL TO:

KINGMAN GROUP 14010 LIVE OAK AVE. BALDWIN PARK, CA 91706 USA

**ENJOY YOUR FUTURE.**

