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1. Rules for Safe Marker Handling

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

- Treat every Marker as if it were loaded.
- Never look down the barrel of a paintball marker.
- Keep the Marker in “safe mode” until ready to shoot.
- Keep your finger off the trigger until ready to shoot.
- Never point the Marker at anything you don’t wish to shoot.
- Keep the barrel blocking device in/on the marker’s barrel when not shooting.
- Always remove paintballs and the air source before disassembly.
- After removing the air source, point Marker in safe direction and discharge until Marker is degassed.
- Store the Marker unloaded and degassed in a secure place.
- Follow warnings listed on the air source for handling and storage.
- Do not shoot at fragile objects such as windows.
- Every person within range must wear eye, face, and ear protection designed specifically to stop paintballs and meeting ASTM standard F1776.
- Always measure your marker’s velocity before playing paintball and never shoot at velocities in excess of 300 feet-per-second (91.44 meters-per-second).

Read this entire manual before loading, attaching a propellant source, or in any way attempting to operate the BT SA-17 marker.

**NOTE:** Eye protective devices designed specifically for paintball use must be worn by the operator and anyone within range.

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2. Introduction and Specifications

Congratulations on your selection of the BT SA-17 paintball marker. The SA-17 Marker is made to provide you with many years of reliable performance. We are honored that you have chosen the SA-17 as your Marker of choice and hope you enjoy using this high-quality product.

The SA-17 is precision engineered from aircraft-grade aluminum and composite materials. We expect you to play hard and play frequently and the SA-17 was built with this in mind.

BT SA-17 pistols come with a removable barrel and a .688" breech insert. The SA-17 operates on a single 12 Gram CO2 air cylinder and utilizes a quick change system for CO2 replacement.

**Marker Specifications**
- Model: SA-17
- Caliber: .68
- Mechanical Action: Semi-Automatic
- Air Source: 12 Gram CO2
- Main Body Material: Aluminum

**Included Items**
- Barrel Tip
- .688" Breech Insert
- Allen Wrenches
- Spare Parts Kit
- Barrel Blocking Device
- Feed Adapter and Feed Tube
- Manual
3. Getting Started
Safety and safe Marker handling are the most important aspects of paintball sports. Please practice each of the following steps with an unloaded Marker before attempting to operate your Marker with an air source and paintballs.

• Do not install an air source or load paintballs into your Marker until you have completely read and understood this manual and feel completely confident with your ability to handle your Marker safely.

• Always use ASTM approved paintball specific eye protection. Always wear eye protection when handling a paintball Marker and in any areas where paintball markers may be discharged. Remember that the ultimate safety device is you, the operator.

• 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 in safe mode.

• Always keep your Marker pointed in a safe direction and use a barrel blocking device.

Safety and Safe Mode
The Safety is a small mechanical slide on the left side of the Marker above the trigger. When the Safety is “Off”, a red dot is visible on the Marker (Fig. 3.1). When the Safety is “On”, no red dot will be visible and the Marker will not fire or de-cock (Fig. 3.2).

In this manual, you will see the term “Safe Mode”. In “Safe Mode”, the Safety should be set to “Safe” (red marking on safety will not be visible) and a barrel-blocking device should be used. Make sure your Marker is in “Safe Mode” when the Marker is not being fired or when indicated to do so.

Feed Adapter Installation
• Place the Feed Adapter on the front of the raised Picatinny rail on top of the Marker with the feed hole on the right side of the marker.
• Push and hold in the latch button while sliding the Feed Adapter along the Picatinny rail toward the rear of the marker.
• Just before the Feed Adapter covers the feed hole in the right side of the marker, release the latch button and continue sliding the Feed Adapter until the latch locks into the rail slot.
• When done correctly, the Feed Adapter will now be unable to slide forward or backward without holding in the latch button, and the feed hole on the right side of the Marker will not be visible from the sides of the Feed Adapter (Fig. 3.3).

Feed Adapter Plug
The Feed Adapter Plug can be installed in either side of the Feed Adapter, depending on which side the Feed Tube magazine is placed. The Feed Adapter Plug is used to direct paintballs into the magazine for loading and into the marker’s breech (Fig. 3.4).
• Position “A” will allow you to fill the Feed Tube Magazine.
Position "B" will feed paintballs into the marker's breech. Position "C" will lock the paintballs in the Feed Tube Magazine and will stop them from loading into the marker.

Feed Tube Magazine
The Feed Tube Magazine holds 10 paintballs which are fed into the Marker through the Feed Adapter. To install the magazine, simply slide the open end into either the front or the back of the Feed Adapter. Make sure it's fully seated into the Feed Adapter to prevent it coming loose (Fig. 3.5).

CO2 (12 Gram) Cylinder Installation
Consult the dealer from whom you purchased your BT Marker, or a recognized and competent air smith, for instruction in the safe handling of CO2 cylinders before purchasing or installing one into your BT Marker.

Before Pressurizing your Marker
- Set Marker to "Safe Mode".
- 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 an air source.
- Ensure you have a specifically designed barrel-blocking device in place.
- Make sure there are no paintballs in the marker.

WARNING: DO NOT OPEN THE DOOR WHILE THE MARKER IS PRESSURIZED! The 12 gram CO2 cylinder may shoot out by doing so. ALWAYS KEEP THE DOOR SHUT TIGHTLY WHEN THE CO2 CYLINDER IS IN THE MARKER!

Pressurizing your Marker
- While pointing the Marker in a safe direction, cock the Marker by pulling the Cocking Slide located on the back of the Marker back until it clicks and stops (Fig. 3.6).
- Release the Cocking Slide; the Marker is now cocked.
- Locate the CO2 door on bottom of the Marker and push the Door Locking Spring toward the rear of the Marker using your thumb.
- Then pull the door open by pulling on the small Picatinny rail on the back of the door.
- Position the BT Marker so that the CO2 door is pointed upwards while keeping the muzzle of the Marker pointed in a safe direction.
- Insert a 12 gram CO2 cylinder into the 12 gram retainer and gently slide it toward the puncture pin as pictured (Fig. 3.7).
- Close the CO2 door firmly, locking the door in place (Fig. 3.8).
- Your Marker is now pressurized.

Loading Paintballs
BT Markers use .68 Caliber, water-soluble paintballs, readily available at paintball pro-shops, commercial playing fields, and many sporting goods stores. The paintballs are fed from magazine through the Feed Adapter into the breech of the Marker (Fig. 3.9).
- Make sure the Marker is set to "Safe Mode".
4. Firing Your Marker

**Warning:** Always keep your Marker pointed in a safe direction! Everyone within firing range should always use paintball-approved eye and face protection in the presence of live paintball markers. Make sure the Marker is set to “Safe Mode” before following the steps below.

- Cock the Marker (Fig. 4.1).
- Install the 12 gram cylinder, pressurizing the marker.
- Put the paintballs into the magazine.
- Turn the Feed Adapter to position “B” to feed paintballs into the marker.
- Remove the barrel-blocking device.
- Aim the BT Marker in a safe direction.
- Set the Safety to the “Fire” position.

- Put on an eye protective device designed specifically for paintball and make sure that anyone within range of the Marker does the same.
- Turn the feed adapter plug to the “A” position and lock the feed tube plunger in the back position. (Fig. 3.10)
- Using a 10 round tube or manually inserting the paintballs fill the feed tube with quality .68 caliber paintballs.
- Turn the feed adapter plug to the “B” position to feed paintballs into the Marker or to position “C” to lock them within the feed tube.
- Release the feed tube plunger so it tensions the paintballs.
- Your Marker is now loaded.

5. Velocity Adjustment

Always check the velocity of the Marker prior to playing paintball. Different playing fields may have different maximum velocity limits. At no time should you shoot at velocities above 300 feet-per-second (91.44 meters-per-second).

- Put on an eye protective device designed specifically for paintball and make sure that anyone within range of the BT Marker does the same.
- While pointing the Marker in a safe direction, remove the barrel-blocking device.
- Point the BT Marker over a chronograph that will measure the velocity of the paintballs discharged by the marker.
- Set the Marker to “Fire” mode.
- Pull the trigger and check the reading on the chronograph.
- Locate the Velocity Adjuster screw on the back of the marker.
- Using a 3/16” Allen wrench, turn the screw inward or clockwise to increase the velocity, and outward or counterclockwise to lower the velocity of the paintballs discharged from the Marker (Fig. 5.1).
- In some cases a different hammer spring may be needed to achieve the desired velocity.

**DO NOT REMOVE THE VELOCITY ADJUSTMENT SCREW.**

6. Unloading Your Marker

- Put on an eye protective device designed specifically for paintball and make sure that anyone within range of the BT Marker does the same.
- Make sure the barrel blocking device is properly installed and the
Marker is set to “Safe Mode”.
• Remove the Feed Adapter and all paintballs.
• While pointing the BT Marker in a safe direction, remove the barrel-blocking device and pull the trigger several times to insure there are no balls remaining in the chamber or the barrel
• Properly re-install the barrel blocking device and set the Marker Safety to “Safe Mode”.

7. Removing 12 Gram Cylinder
• Put on an eye protective device designed specifically for paintball and make sure that anyone within range of the BT Marker does the same.
• Make sure the barrel-blocking device is properly installed on the marker.
• While pointing the BT Marker in a safe direction, disengage the Safety (set to “Fire”).
• Keeping the BT Marker pointed in a safe direction, pull the trigger until the remaining CO2 is expelled and it fails to re-cock.

WARNING: DO NOT OPEN THE DOOR WHILE THE MARKER IS PRESSURIZED! The 12 gram CO2 cylinder may shoot out by doing so. ALWAYS KEEP THE DOOR SHUT TIGHTLY WHEN THE CO2 CYLINDER IS IN THE MARKER!
• A small amount of air may remain in the 12 gram cylinder even if the Marker does not re-cock.
• Press the Door Locking Spring toward the rear of the marker.
• Slowly open the 12 gram door in a safe direction and remove the 12 gram cylinder from the marker.
• The Marker is now ready to be cleaned and put away for future use.

8. Maintenance and Lubrication
CAUTION: Before attempting to perform any maintenance operations, make sure that all paintballs and propellant sources have been removed from the marker. Install a barrel-blocking device. Marker must be unloaded, degassed, and un-cocked before any disassembly or maintenance. Follow Unloading Your Marker and Removing 12 Gram Cylinder steps.

Once your BT Marker is unloaded and the CO2 cylinder is removed, you can use a damp cloth to wipe off paint, dirt and debris from the outside of your marker. Once your Marker is clean and dry you can re-oil using a light, premium Marker oil. Do not use any petroleum-based or aerosol products on your marker. Petroleum-based and aerosol products can damage your markers o-rings.

Cleaning Barrel/Breech Insert and Breech of Marker
• Pull a paintball swab, like the BT Battle Swab, through the barrel, breech insert, and breech area to clean them.
• Clean the outside of each using a paper towel or towel, which can be dampened with warm water.
• Visually inspect each making sure they are clean and dry.

Lubricating the Bolt/Hammer Assembly
• Remove the Bolt/Hammer Assembly by removing the Quick Release Pin and pulling the assembly out the back of the marker.
• Gently wipe the parts clean and inspect the O-rings for damage or wear; replace if needed.
• Apply one drop of premium Marker oil to each of the O-rings on the bolt and hammer.
• When re-installing the Bolt/Hammer Assembly, press the Sear Release slide forward, which is located on the left side of the Trigger Frame, behind the grips (Fig. 8.1)

Replacing the 12 Gram Seal
Over time the 12 gram Seal may become worn or damaged. To replace the seal:
• Remove the puncture pin housing assembly from the markers body as described in the disassembly section of the manual.
• Using retaining ring pliers remove the large retaining ring from the back of the housing.
• Push the internal components out from the front, take notice of their position.
• Using retaining ring pliers remove the small retaining ring from the seal housing and remove the old seal.
• Replace the damaged seal with the new seal and install the small retaining ring making sure it is fully seated in the seal housing.
• Apply a light coating of paintball grease to the seal housing o-ring.
• Install the components into the puncture pin housing; refer to the diagram for proper alignment.
• Using the retaining ring pliers, install the large retaining ring into the back of the housing, making sure the ring is fully seated in the internal groove.
• Apply a light coating of paintball grease to the puncture pin housing o-ring.
• Install the puncture pin housing into the markers body and then the retaining screw.

9. Disassembly/Reassembly

CAUTION: Before attempting to perform any maintenance operations, make sure that all paintballs and propellant sources have been removed from the marker. Install a barrel-blocking device, Marker must be unloaded, degassed and un-cocked before any disassembly or maintenance. Follow the Unloading Your Marker and Removing 12 Gram Cylinder instructions.

Disassembly Tips
• Make sure you have a clean area to work on your marker.
• When removing parts for the first time, do so carefully, so you do not lose any.
• Visit PaintballSolutions.com for additional information.

Barrel Tip
• The barrel tip is removed by turning it counter-clockwise.
• If the barrel tip is difficult to remove, carefully insert a 1/8" Allen wrench into the porting on the front of the barrel, going through both sides and turn the Allen wrench in a counter-clockwise direction.

Breech Insert
• To remove the Breech Insert, first remove the barrel tip.
• Then using your forefinger, pull the breech insert out of the front of the marker.
• You can also use a paintball swab, like the BT Battle Swab, to remove the breech insert, by inserting it into the front of the marker’s body and then pulling the swab out with the insert.

Feed Adapter
• Push and hold in the latch button on the side of the adapter.
• While holding the button in, slide the Feed Adapter off of the marker.
• The feed tube and Feed Adapter Plug can be left in place when removing the Feed Adapter.

Ball Detent Assembly
• Using a 3/32” Allen wrench, turn the Ball Detent Cover counter-clockwise to remove the Ball Detent Assembly.
• Be careful not to lose the spring and detent.
• When re-installing the detent assembly do not over tighten the cover.

Bolt/Hammer Assembly (Fig. 9.1)
• Make sure the Marker is degassed, unloaded, and un-cocked.
• Remove the quick release pin.
• Pull the Bolt/Hammer Assembly out the back of the marker. Fig. 9.1

Trigger Frame Assembly
• Before removing the Trigger Frame, make sure the Marker is de-
cocker or remove the Bolt/Hammer Assembly first.
• Using a 1/8" Allen wrench, remove the two frame screws.
• Move the Trigger Frame away from the Marker body.

12 Gram Door Locking Spring
The Door Locking Spring is held in place by the Trigger Frame. To remove the locking spring, simply remove the Trigger Frame assembly as described above.

WARNING: DO NOT OPEN THE DOOR WHILE THE MARKER IS PRESSURIZED! The 12 gram CO2 cylinder may shoot out by doing so. ALWAYS KEEP THE DOOR SHUT TIGHTLY WHEN THE CO2 CYLINDER IS IN THE MARKER!

Note: It is recommended that you do not remove the grips from the Trigger Frame, as they hold the Safety Slide, Sear Slide, and the small safety spring and ball in place.

Puncture Pin Housing Assembly
It is recommended to not remove the Puncture Pin Housing Assembly, unless maintenance is needed.

• Hold the front of the Puncture Pin Housing in place with your finger as it will be under tension from the valve spring.
• Using a 3/32" Allen wrench, remove the Puncture Pin Housing set screw while holding the housing in place.
• Once the set screw is removed, slowly allow the housing to come forward and remove.

Cupseal Assembly
The Cupseal Assembly, which includes the Valve spring, and Cupseal assembly can be accessed once the puncture pin housing has been removed. It will simply slide out into the 12 gram compartment when the Marker is tilted forward. If it does not come out easily, gently tap the front of the Marker on a soft surface.

Valve
• To access the Valve, you must first remove the Bolt/Hammer Assembly, Trigger Frame, Puncture Pin Housing, and Cupseal Assembly.
• Using a flathead screwdriver, remove the brass Valve set screw located on the bottom side of the body.
• Using a paintball swab, like the BT Battle Swab, push the valve forward and into the 12 gram compartment and remove.

Note: If the valve is not installed correctly the Marker will not function.

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

When you are finished using your BT Marker it is important that you prepare it for storage. This will not only serve to increase the life of the marker, but will assure optimum performance on your next outing.

• The BT Marker must be clear of all paint and propellant when not being used.
• Be sure to have Marker de-cocked and in “Safe Mode” when not in use.
• Make sure a barrel-blocking device is in place.
• Store your BT Marker and propellant in cool dry place.
• Keep your BT Marker away from unsupervised children.
• Remove the 12 gram CO2 cylinder if the marker is not intended to be used.
• Your BT Marker must be free of all paint and not attached to a propellant source while being transported to and from the playing field.
• 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 local law enforcement.
• Always store the Marker in a secure location when not in use so as to prevent access by unauthorized persons.
### 11. PARTS LIST / DIAGRAMS

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## 12. TROUBLESHOOTING

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<td>Leaks down barrel</td>
<td>• Check front of cup seal where it touches the valve for wear or grooves. Replace if leak continues.</td>
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<td>Low velocity</td>
<td>• Adjust the velocity adjuster clockwise to raise the velocity.</td>
</tr>
<tr>
<td></td>
<td>• The 12 gram cylinder may be low on CO2. Replace and recheck.</td>
</tr>
<tr>
<td></td>
<td>• Remove the bolt/hammer assembly and clean it. Also clean the inside of the body and lubricate all the O-rings on the bolt assembly with paintball marker oil.</td>
</tr>
<tr>
<td>12 gram leaks when installed</td>
<td>• Inspect the condition of the 12 gram seal for wear. Replace seal if the face of the seal is damaged.</td>
</tr>
<tr>
<td>Marker breaks paint</td>
<td>• Check the ball detent and replace if necessary. Also check that the marker’s velocity is not above 300 fps.</td>
</tr>
<tr>
<td></td>
<td>• 12 gram cylinder is depleted, install a new one.</td>
</tr>
<tr>
<td>Safety does not work</td>
<td>• Take off the grips and check that the safety spring and ball are still in place. If they are missing, call paintball solutions immediately.</td>
</tr>
<tr>
<td>Paintballs not loading into Marker</td>
<td>• Check that the feed adapter plug is turned to allow paint to feed into the marker.</td>
</tr>
<tr>
<td></td>
<td>• Make sure the marker is in the cocked position.</td>
</tr>
<tr>
<td>Two paintballs shoot at a time</td>
<td>• Check that the ball detent assembly is in place.</td>
</tr>
<tr>
<td>Can not install the bolt/hammer assembly</td>
<td>• Press the sear slide forward and install the assembly.</td>
</tr>
<tr>
<td>Marker does not work out of the box</td>
<td>• Make sure the marker is cocked. Always cock the marker before airing it up.</td>
</tr>
<tr>
<td></td>
<td>• Check that the safety is turned off.</td>
</tr>
<tr>
<td>12 Gram door does not stay closed</td>
<td>• Replace the 12 gram door locking spring.</td>
</tr>
</tbody>
</table>

**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 BT Paintball to work in the SA-17, and they may be the cause of the problems. Do not contact PaintballSolutions until you have returned the SA-17 to factory stock condition and tested.
13. Limited Lifetime Warranty

LIMITED LIFETIME WARRANTY INFORMATION (ORIGINAL PURCHASE RECEIPT REQUIRED)
BT Paintball ("BT") 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. BT 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.

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

Purchaser should register product to activate warranty. Register your product by:
1. Online at www.paintballsolutions.com
2. Complete the product registration card (if applicable) and mail along with a copy of your receipt to Paintball Solutions, 570 Mantua Blvd., Sewell, NJ 08080.

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