Congratulations on your purchase of the DEFIANT 2 Paintball Marker. The DEFIANT 2 represents the latest in Paintball Marker technology at a very affordable price. Before operating your DEFIANT 2, please read the entire manual thoroughly.

**WARNING**

This Paintball Marker is not a toy. Misuse or mishandling can result in serious injury or death. Every person within range of a loaded Paintball Marker must wear eye protection specifically designed for Paintball. Recommended at least 18 years of age to purchase, 14 years old to use with adult supervision or 10 years old to use on Paintball fields meeting ASTM standards F1777-97. Be sure to read the entire instruction manual before operating your DEFIANT 2.

**SAFETY**

Please follow all local, state, and federal laws concerning the operation and use of Paintball Markers. By purchasing this Paintball Marker “YOU” assume all liability. B.L.A.S.T. assumes no liability for injury or death due to misuse or mishandling of this Marker.

**CAUTION**

*Never* point a Paintball Marker at anyone not wearing Paintball-Approved goggles. Even at the lowest possible operating velocity, a Paintball will cause serious injury should it hit someone in the eye area.

*Never* under any circumstances look down the barrel of your Marker. Even if wearing Paintball approved goggles, you should *Never* look down the barrel.

Before performing any maintenance on the Marker, ensure air source is disconnected and Marker has been degassed. Always ensure Marker is OFF whenever Marker is not operational.

Always insert barrel plug in barrel when Marker is not operational. Remove barrel plug only in designated operational areas.

Only play at commercial playing fields that have a chronograph, referees, and clearly marked safe areas. Chronograph your Marker before each game to ensure Marker is operating at a safe velocity. Safe velocity is considered to be 280 feet per second (fps).
Ramping Modes

is manual please call (925) 625-7929.

The Frenzy Board IS NOT Programmable via the trigger.

is a low pressure operating, open bolt, electronic Marker, featuring microchip
defiant 2 to propel the projectile (paintball) to its target.

will then strike the poppet, opening the main valve which releases high pressure regulated
chamber in front of the ram to the back chamber behind the ram. The forward shifting ram
as much less cocking recoil.

is pressurized to move the bolt backward. This allows for very low cycling pressure, as well
the rear). The back of the chamber is pressurized to move the bolt forward, and the front

activation, the solenoid redirects alternating pressure through the rear barbs, from the
in the lower tube of the body. The low pressure regulator supplies air through the lower tube
a dual pressurized sliding ram. This ram is held within the encapsulated ram sleeve located
and unique patented pending modular ram sleeve.

The field strippable pull pin bolt is connected to a slotted bolt receiver that is attached to a dual pressurized sliding ram. This ram is held within the encapsulated ram sleeve located in the lower tube of the body. The low pressure regulator supplies air through the lower tube of the body, through the valve, through the front barb, to the front barb of the solenoid. Upon activation, the solenoid redirects alternating pressure through the rear barbs, from the chamber in front of the ram to the back chamber behind the ram. The forward shifting ram will then strike the poppet, opening the main valve which releases high pressure regulated air up through the transfer port and into the upper tube of the body. The pull pin connected bolt pushes the paintball into the breech while simultaneously redirecting the charge of air to propel the projectile (paintball) to its target.

Always ensure Marker is not shooting at a dangerous velocity. Ensure all participants are wearing the proper Paintball safety equipment. You will be held liable if someone is injured by a Paintball fired from your Marker regardless of fault.

WARRANTY

B.L.A.S.T. warranties the DEFIANT 2 against damages in Manufacturing Defects only.

Electrical components are warranted for a period of 90 days. Solenoids are not warranted. When utilizing aftermarket Drop-Forwards ensure attachment bolts DO NOT protrude into internal grip assembly. When utilizing aftermarket grips ensure attachment bolts DO NOT protrude into internal grip assembly. Failure to do so may damage the internals and will result in void of warranty. Use of Teflon tape will void warranty. Aftermarket anodizing will result in void of warranty.

For questions concerning your DEFIANT 2 manual please call (925) 625-7929.

OPERATION

The DEFIANT 2 Marker is a solenoid controlled open-bolt design. The bolt is locked onto a slotted bolt receiver that is attached to a dual pressurized machined slider (RAM), and is controlled by the solenoid (An electronic 4-way valve control). The newly designed, encapsulated ram sleeve features two chambers (one toward the front and one toward the rear). The back of the chamber is pressurized to move the bolt forward, and the front is pressurized to move the bolt backward. This allows for very low cycling pressure, as well as much less cocking recoil.

GENERAL DESCRIPTION

The DEFIANT 2 is a low pressure operating, open bolt, electronic Marker, featuring microchip managed solenoid control, anti-chop eyes (ACE), dedicated low and high pressure regulators, and unique patented pending modular ram sleeve.

The DEFIANT 2 comes standard with a one piece, .689 Bore, 12-inch Assassin barrel.

Barrel threads for the DEFIANT 2 are Auto-cocker type.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>.DEFIANT 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caliber</td>
<td>.68</td>
</tr>
<tr>
<td>Action</td>
<td>Electro-Pneumatic</td>
</tr>
<tr>
<td>Air Source</td>
<td>Compressed Air/Nitrogen</td>
</tr>
<tr>
<td>Battery Type</td>
<td>9-Volt Battery</td>
</tr>
<tr>
<td>Cycle Rate</td>
<td>.15bps Capped and/or Unlimited</td>
</tr>
<tr>
<td>Firing Modes</td>
<td>Semi Auto and/or Ramping Modes</td>
</tr>
<tr>
<td>Effective Range</td>
<td>.150+ feet</td>
</tr>
<tr>
<td>Weight</td>
<td>(With 12” Assassin Barrel) 2lbs., 1oz.*</td>
</tr>
<tr>
<td>Length</td>
<td>(With 12” Assassin Barrel) 18.25 inches</td>
</tr>
<tr>
<td>Height</td>
<td>7.875 inches</td>
</tr>
</tbody>
</table>

*Weight of Marker without 12” Assassin Barrel is 1lbs., 13oz.

The DEFIANT 2 is controlled via the MEMBRANE PAD located on the rear of the Trigger Frame, as well as the Dip Switch Control Panel located on the front side of the Frenzy Board. All of the functions of the DEFIANT 2 can be easily accessed and changed by using both the Membrane Pad and Dip Switch Panel.

GETTING STARTED

To power up your DEFIANT 2, Press the ON/OFF button. To turn off your DEFIANT 2, press and hold the ON/OFF button for approximately 1 second until the LED turns Red and release. Buttons 1 and 2 allow the user to change the Eye Sensor’s operational mode. Once powered up, pressing Button 1 will change the Eye Sensor to Dry Fire Mode (also known as Simulation Mode), while Button 2 sets the Eye Sensor to Delay Mode. Every DEFIANT 2 is equipped with a 3-Color, Light Emitting Diode (LED), located on the side grip panel (left of the membrane pad) which allows the user to verify the current Eye Sensor Mode and/or Battery Status. A detailed description of each function can be found in the Board Operation section.

NOTE: The Frenzy Board IS NOT Programmable via the trigger.

TRIGGER ADJUSTMENT

The trigger is fully adjustable using the three screws within the trigger. The upper screw controls the return spring tension, the center screw adjusts micro-switch activation point and the lower screw adjusts the trigger stop point.

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<td>Air Source</td>
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<tr>
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<tr>
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<td>Semi Auto and/or Ramping Modes</td>
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</tr>
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<td>7.875 inches</td>
</tr>
</tbody>
</table>

*Weight of Marker without 12” Assassin Barrel is 1lbs., 13oz.
REGULATORS
Included with the DEFIANT 2 are 2 High-Flow Regulators. The Low Pressure Regulator (LPR) uses a standard 1/8 inch hex key for adjustment, while the High Pressure Regulator (HPR) uses a standard 3/16 inch hex key for adjustment. Turn the adjustment screw clockwise to increase pressure and counter-clockwise to decrease pressure.

LOW PRESSURE REGULATOR
The low pressure regulator is mounted towards the front of the Marker under the barrel. It controls the cycling pressure of the Marker. The ideal operating pressure should be between 85 – 95 PSI. NEVER EXCEED 100 PSI AS OVER-PRESSURIZING CAN DAMAGE SOLENOID. The low pressure regulator is not used for velocity adjustments but for cycling pressures only.

HIGH PRESSURE REGULATOR
The high pressure regulator (also called the inline regulator) is the vertical regulator that screws into the bottom of the ASA Receiver. All velocity adjustments are done with the High Pressure Regulator. Typically, pressures vary from 200 PSI to 280 PSI depending on chronograph speed.

AMMUNITION ASPECTS
The DEFIANT 2 requires a high feed rate of paintballs to make full use of its features. To satisfy this need, the use of a motorized loader is recommended.

GAS CONFIGURATIONS
Preset and Adjustable Tanks
A Compressed Air System also known as a Nitrogen Air System is the recommended propellant air source for operating the DEFIANT 2. If you are using an Adjustable Tank the output pressure should be set between 400 & 500 PSI, and Preset Tanks should be low pressure or 400 PSI output, however a high pressure system is acceptable.

Co2
Co2 IS NOT the recommended propellant for the DEFIANT 2. You should only use a Compressed Air System to operate your DEFIANT 2. When attaching air system hose fittings to your Marker, DO NOT USE TEFLO TAPE. Use a thread sealant such as Loctite 545 instead.

GETTING STARTED
Maintenance for the DEFIANT 2 is very simple.
The Bolt should be lubricated sparingly with TRI-FLOW. Lubricating once a day or when dirty will increase the life of the Ball Detents and also eliminate bolt drag.

The Ram or “Hammer” should be greased every 5000 shots with DOW 55. First degas your Marker. Next, remove Bolt and Encapsulated Ram Sleeve Assembly, then remove the E-clip securing the threaded Bolt Pin Receiver and Delrin Spacer and unscrew both. Next, unscrew the End Cap from the Encapsulated Ram Sleeve and Ram will slide out of the rear of the Sleeve. Clean inside of Ram Sleeve with a Q-tip and grease the internal O-ring located at the front end of the Ram Sleeve with DOW 55, grease the Rear Ram O-ring and reassemble.

The Low Pressure Regulator Piston and the High-Pressure Regulator Piston O-rings should be greased every 10,000 shots. Performing this simple maintenance will increase the life of the O-rings and keep the Marker performing at the highest level possible.

NOTE: Always ensure Air Source is disconnected and Marker is fully degassed BEFORE performing any/all maintenance, or when Marker is not operational.
BATTERY INFORMATION
The DEFiant 2 uses a standard 9v battery. To change the battery, remove the Left Rubber Grip Panel, then remove the 4 allen screws securing the two Trigger Frame halves. You’ll notice the battery fits into the bottom of the Trigger Frame. Disconnect the old battery and re-connect the new.

WARNING!
At this time it is good to verify screws are not protruding through the bottom of the grip and into the interior components. Failure to do so may result in damage to the battery and/or Circuit Board.

ANTI-CHOP EYES (ACE)
The DEFiant 2 incorporates a Break Beam, Anti-Chop Eye system, commonly referred to as the ACE system. The ACE system consists of a set of sensors mounted near the bottom of the breech to restrict firing until a ball is completely loaded into the breech. The Receiver Eye can be identified by the red and black wires and metal casing. The Transmitter Eye can be identified by the red and black wires and black plastic casing. Both Eyes run onto a single wiring harness. Always inspect ACE System wiring and harness upon removal to ensure there is no damage present. If there is damage to either the wiring and/or harness the Eyes should be replaced to ensure the ACE system does not fail during operation.

FACTORY SETTINGS
Standard factory FRENZy Board settings are as follows:

EYE ......................... Forced
DEBOUNCE ..................... 2ms
FIRING MODE .................. Semi-Auto
DWELL ............................. 8ms

A detailed description of each function is in the board operation section.

GETTING STARTED
Powering Up
1. To power up your DEFiant 2, press the ON/OFF Button. A Green Flashing Light indicates Standard Operation Mode. A more detailed description of Modes and their pertaining colors can be found below.
2. To turn off your DEFiant 2, press and hold ON/OFF Button for approximately 1 second until the LED turns Red, and Release. Your DEFiant 2 is now OFF.

Light Emitting Diode (LED)
The DEFiant 2 features a 3-Color LED that aluminates in either Green, Orange, or Red, and indicates the operational Status of the Marker. Once the Marker is powered up the LED will flash Green and can be seen through the Left Rubber Grip Panel. Upon Powering Up, the factory default Eye Sensor Mode is FORCED/SEMI-AUTO and is indicated by the flashing Green LED. Pressing Button 1 will change the Eye Sensor to DRY FIRE MODE, and is indicated by the flashing Orange LED. Pressing Button 2 will change the Eye Sensor to DELAY MODE, however this function WILL NOT change the color of the LED. For example: If the marker is set to FORCED and the LED is flashing Green, pressing Button 2 will change the Eye Sensor to DELAY MODE and the LED will continue to flash Green. A Red flashing LED indicates LOW BATTERY.

NOTE: The LED will also flash Orange to indicate an Eye Sensor Malfunction.

SELECTING FIRING MODES
The DEFiant 2 features 2 Firing Modes (Semi-Auto and Ramping) that are accessible via the Dip Switch panel located on the front side of the Frenzy Board. See Figure “B” on the following page

1. GREEN LED Indicates Normal Operation for Both Modes (Semi-Auto and Ramping). Upon Power-Up the Eye Sensor setting will always default to FORCED, regardless of Mode.

2. ORANGE LED Indicates EYE SENSOR MALFUNCTION and/or DRY FIRE Mode. (DRY FIRE Mode Formerly known as SIMULATION Mode, Demonstrates how the Marker should operate with an appropriate supply of paintballs and fully charged air system.)

3. RED LED Indicates LOW BATTERY and/or Powering OFF.

Below are views of each LED Color as well as the corresponding description(s) for each.

- Normal Operation/FORCED Mode
- Eye Sensor Malfunction/DRY FIRE Mode
- Battery Low/Power OFF
**MODE SELECTION** (Version 127.4T FRENZY only)
The LED FRENZY Board is driven via the Two-Button Membrane Pad on the rear of the Trigger Frame (figure “A”) as well as the On-Board Dip Switch Panel (figure “B”) located on the front side of the Frenzy Board and is accessed by removing the left trigger frame panel. Dip Switches 1 and 2 control DEBOUNCE, Dip Switch 3 controls CAPPED MODE, Dip Switch 4 controls FIRING MODE, and Dip Switches 5 and 6 control DWELL. Below are descriptions of the different modes and how they affect the Marker’s performance.

**DEBOUNCE** - Determines (in milli seconds) how long after each trigger pull, the board will ignore further trigger activity. (see figure “C” for details)

**CAPPED MODE** - Determines if marker operates at an unlimited rate of fire or under a 15bps Cap.

**FIRING MODE** - Determines which Firing Mode is selected. (see figure “C” for details)

**DWELL** - Determines how long the bolt remains in the forward position before repeating cycle.

Changing Dip Switch Settings is very simple. Sliding Switches UP sets them to the ON position, while Sliding Switches DOWN sets them to the OFF position. A small paper clip works well for toggling Dip Switches. The chart below illustrates how the Dip Switch Panel affects the settings. D indicates DOWN, while U indicates UP.

<table>
<thead>
<tr>
<th>DEBOUNCE</th>
<th>CAP MODE</th>
<th>FIRING MODE</th>
<th>DWELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>D D</td>
<td>U CAPPED</td>
<td>D RAMP MODE</td>
<td>D D 6mS</td>
</tr>
<tr>
<td>D U</td>
<td>5mS*</td>
<td>D UNCAPPED*</td>
<td>D U 8mS*</td>
</tr>
<tr>
<td>5mS</td>
<td>10mS</td>
<td>12mS</td>
<td></td>
</tr>
<tr>
<td>U U</td>
<td>50mS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: (*** ) Indicates the Factory Default Setting

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**COMPETITION LOCK** - With Competition Lock ON, Dwell and Debounce settings are locked and cannot be changed until Competition Lock is DISABLED. While in Competition Mode the Eye Sensor setting can be changed as normal to Dry Fire Mode or Delay Mode. When Competition Lock is active, the LED will aluminate Green as normal upon powering up. (Marker is not BPS capped while using competition lock)

**ACTIVATING COMPETITION LOCK:**

1. Turn Marker OFF.
2. Open up Trigger Frame to gain access to the Circuit Board.
3. Short out C and D Terminals (holes) at the top of the board. Paper clips work well for this. Bend the clip so that one end is touching the D and the other end is touching C.
4. Turn Marker ON.
5. Turn Marker OFF.
6. Disconnect the D and C short and leave off for at least 30 seconds.
7. Reassemble Trigger Frame.
8. Ready to use with COMPETITION LOCK.

To turn OFF Competition Lock follow the same procedure. When Competition Lock is active the marker will only operate in Semi-Auto Mode and Ramping Mode will be disabled.

For information and instructions regarding previous and/or future versions of the FRENZY Board (Other than version 127.4T), please refer to separate instructions sheet included in box.
GETTING STARTED

WHEN DISASSEMBLING THE DEFIANT 2 ALWAYS ENSURE THE MARKER IS DEGASSED.
The DISASSEMBLY portion of this manual will be divided into three sections.

I. Trigger Frame Disassembly
II. Regulator Disassembly
III. Body Disassembly

NOTE: When ASSEMBLING THE DEFIANT 2, perform the entire disassembly process in reverse order.

I. TRIGGER FRAME DISASSEMBLY
1. Remove left side LED Grip.
2. Remove 4 allens to separate Trigger Frame Halves, exposing circuit board.
3. Disconnect Battery.
4. Remove 2 Board retaining screws. (1-1/16 Allen Head screw and 1-Phillips Head screw)
5. Flip Board over towards left side to expose wiring.
6. Lift up on black LCD ribbon locks located on each side of membrane ribbon harness and remove complete membrane assembly from trigger frame.
7. Remove Battery and Solenoid Harness.

WARNING!
Ensure Air Source is disconnected and Marker is discharged before making any mechanical adjustments to Marker internals or electronics.

TRIGGER FRAME DISASSEMBLY (continued)
9. Remove Circuit Board.
10. Remove Shouldered Trigger Retaining Screw and lift out Trigger and Trigger Return Spring.
11. Loosen Front Frame Retaining Screw.
12. Remove Rear Frame Retaining Screw.
13. Lift Out Front Hose from Around Hose Guard. (A small allen wrench works well)
15. Remove Trigger Frame.

NOTE: Use care when removing airlines. Always inspect hoses after removal to ensure no tears or damage occurred during removal.
**II. REGULATOR DISASSEMBLY**

1. Remove High-Pressure Regulator to gain proper clearance to the LPR Retaining Screw.
2. Remove LPR Retaining Screw from Body.
3. Slide LPR Assembly from Body.
4. Remove Spring and Poppet Assembly.
5. Remove ASA Receiver Retaining Screw.

**NOTE:** The Transfer Hole Screw will only need to be removed if a leak is detected, or a great deal of debris is present.

---

**LOW-PRESSURE REGULATOR (LPR)**

1. Unscrew Allen Adjuster.
2. Unscrew LPR End Cap (Part 2) from Low-Pressure Regulator Base (Part 10).
3. Remove Regulator Spring Washer.
4. Remove Regulator Spring.
5. Remove Piston.
7. Remove Teflon Washer.
8. Remove Pin Valve.
9. Remove Spring from Upper Reg. Housing.
10. Low-Pressure Regulator Housing/LPR Base.

---

**HIGH-PRESSURE REGULATOR (HPR)**

1. Unscrew Allen Adjuster.
2. Unscrew Lower End of (HPR) High-Pressure Regulator Housing.
3. Remove Regulator Spring Washer.
4. Remove Regulator Spring.
5. Remove Piston.
7. Remove Teflon Washer.
8. Remove Pin Valve.
9. Remove Spring from Upper Reg. Housing.
10. Upper End of (HPR) High-Pressure Regulator Housing.

---

**NOTE:** At this time the Regulators are disassembled. Listed below are key elements to remember during assembly.

1. Piston: Ensure cupped end of Piston is facing towards Pin Valve.
2. Pin Valve: Ensure Pin Valve is not bent and seats in cupped end of Piston. Failure to do so will cause Regulators to function improperly.
3. Air Barb: Ensure fiber washer is on Air Barb base when installing. This will ensure Air Barb does not leak.
5. ASA Receiver: Place small portion of Loctite on Retaining Allen when installing. This will ensure ASA Receiver does not work itself loose during operation.
6. LPR Retaining Screw: Place small portion of Loctite on Retaining Allen when installing. This will ensure LPR (Low-Pressure Regulator) does not work itself loose during operation.
III. BODY DISASSEMBLY

First: Ensure Barrel of Marker is removed.
1. Remove both Eye Sensor Covers (one on each side) by removing Retaining Screw.
2. Remove both Eye Sensors (one on each side) by carefully pulling sensor heads from mounting holes.
3. Lift up on Bolt Retaining Pin and slide Bolt out of rear of Marker.
4a. Unscrew Encapsulated Ram Sleeve Assembly from Marker Body. (turn counter-clockwise)
4b. Remove Encapsulated Ram Sleeve Assembly by sliding it out from rear of Marker Body.
5. Remove E-clip from front of Ram.
6. Remove Slotted Bolt Pin Receiver. (turn counter-clockwise)
7. Remove Delrin Bolt Pin Receiver Spacer. (turn counter-clockwise)
8. Unscrew Ram Sleeve End Cap from Ram Sleeve.

NOTE: At this time the Body is disassembled. Listed on the following page are key points to remember during assembly.

NOTE: Before reinserting the Ram, be sure to clean the inside of the ram sleeve with a Q-tip and inspect the internal O-ring located toward the front of the Ram Sleeve. Check for excessive wear and/or damage. If the O-ring needs to be replaced, carefully remove it using a dental pick or the like, and replace. Be sure to lubricate the internal O-ring with Dow 55 before reinserting Ram.

9. Tilt front end of Encapsulated Ram Sleeve Up, and allow ram to slide out from rear.

10. Turn Body over to expose bottom of marker body and remove Valve Retaining Screw.

11. Remove the Valve through front end of the Marker Body.
   (Gently push the Valve from the rear with a barrel swab)

12. Remove Feedneck from Body.

Remove Eye Sensor Covers
Remove Eye Sensors
Lift Bolt Pin and Remove Bolt
Unscrew Ram Sleeve
Remove Ram Sleeve Assembly
Remove E-clip from Front of Ram
Remove Slotted Bolt Pin Receiver
Remove Valve through Front
Remove Feedneck from Body
Remove Delrin Bolt Pin Receiver Spacer
Remove End Cap from Ram Sleeve
Tilt Ram Sleeve Up and Remove Ram from Rear
Remove Valve Retaining Screw
ASSEMBLY TIPS

KEY ELEMENTS TO REMEMBER DURING ASSEMBLY.

O-Rings: LUBRICATE ALL O-RINGS UPON INSTALLATION.

Ram Sleeve O-rings: Always ensure all O-Rings are in good condition upon installation.

Air Barb: Ensure fiber washer is on Air Barb base prior to installation. This will ensure a proper seal.

LPR Retaining Allen: Use small amount of Loctite on LPR Retaining Allen when installing. Failure to do so may result in LPR sliding off the Marker Body, causing extreme damage to the Marker and/or possibly injuring the operator and others. A firm snug is all that is required to maintain a secure fit.

Poppet installation: Before installation, inspect Poppet thoroughly. If Poppet shows signs of excessive wear, it must be replaced in order to ensure a proper seal. Allow Poppet to slide into the Valve when installing. Once seated, tap on Poppet end to mate Poppet with Valve. Ensure small end of spring seats firmly on Poppet.

Valve Retaining Allen: Use small amount of Loctite on Valve Retaining Allen when installing. Failure to do so may result in Valve sliding within the Marker Body, causing extreme damage to the Marker and/or possibly injured the operator.

Eye Sensor Harness: Ensure Harness is seated in groove provided before attaching Eye Covers. Failure to do so may result in pinched wires and render the eyes inoperable.

Eye Covers: Ensure Ball Detents remain aligned and in Covers upon installation. Do not over tighten the cover screws. A firm snug is all that is required to maintain a secure fit.

Feedneck: Removal of the Feedneck may require the use of a Strap Wrench since it is firmly attached during initial assembly. Simply wrap the Strap around the Feedneck and turn counterclockwise. To Reinstall simply screw the Feedneck back onto the body and tighten firmly using a Strap Wrench.

NOTE: Once Marker is completely disassembled, carefully inspect all Screws, O-Rings, Ball Detents, Air Barbs, Hoses, Eye Sensors, Wiring, Electronics, Battery, Regulators, and Feedneck Threads, etc., for signs of premature or excessive wear, stripping and/or damage.

If ANY parts show signs of premature or excessive wear, stripping and/or damage, and you need to order them, please refer to the chart on the facing page for reference. A more detailed description of parts and/or the corresponding PART NUMBER(S) can be found in the COMPLETE PARTS CHECKLIST located on the inside back cover of the manual. Simply call B.L.A.S.T. at the number provided and a Customer Service Representative will assist you.

*PLEASE HAVE PART NUMBER(S) READY WHEN CALLING.

GENERAL MAINTENANCE

WARNING: NEVER use lightweight gun oil on Marker. Oil will destroy internals of Air Valve and O-rings.

Keep foreign obstructions out of Marker internals and Lubricate all O-rings within the Marker with a generous coat of Dow 55 Lubricant. The Ram requires Lubing every 5,000 rds. fired. Regulator O-rings should be Lubed every 10,000 rds. fired. Failure to do so will reduce recovery time of Regulators. Additionally, the Piston will wear a groove in the Regulator housing. Ensure the Pin Valve lines up with the Cupped End on the Piston during reassembly. This will eliminate the inadvertent bending of the pin.

Below is a list of the most common Consumable Components of the DEFIANT 2.

CONSUMABLE COMPONENTS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>QUANTITY</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ram Front O-ring (Inside Front of Sleeve)</td>
<td>1</td>
<td>012</td>
</tr>
<tr>
<td>Ram Rear O-ring</td>
<td>1</td>
<td>011</td>
</tr>
<tr>
<td>Ram Rear Bumper O-ring (Teflon)</td>
<td>1</td>
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</tr>
<tr>
<td>Pressurized Ram Sleeve O-ring</td>
<td>3</td>
<td>015</td>
</tr>
<tr>
<td>Sleeve End Cap O-ring</td>
<td>2</td>
<td>011</td>
</tr>
<tr>
<td>Regulator Assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPR Housing O-ring</td>
<td>1</td>
<td>016</td>
</tr>
<tr>
<td>HPR Piston O-ring</td>
<td>1</td>
<td>113</td>
</tr>
<tr>
<td>HPR Pin Valve Base Washer</td>
<td>1</td>
<td>010</td>
</tr>
<tr>
<td>HPR Pin Valve Washer (Teflon)</td>
<td>1</td>
<td>006</td>
</tr>
<tr>
<td>LPR Piston O-ring</td>
<td>2</td>
<td>011</td>
</tr>
<tr>
<td>LPR Pin Valve Base</td>
<td>1</td>
<td>010</td>
</tr>
<tr>
<td>LPR Pin Valve Washer (Teflon)</td>
<td>1</td>
<td>006</td>
</tr>
<tr>
<td>ASA Receiver Mounting O-ring</td>
<td>1</td>
<td>113</td>
</tr>
<tr>
<td>Trigger Assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airline</td>
<td>1 to front of body</td>
<td>5.0 in.</td>
</tr>
<tr>
<td>Airline</td>
<td>1 to middle of body</td>
<td>5.0 in.</td>
</tr>
<tr>
<td>Circuit Board</td>
<td>1</td>
<td>2.5 in.</td>
</tr>
<tr>
<td>Circuit Board</td>
<td>1</td>
<td>004</td>
</tr>
</tbody>
</table>
# Troubleshooting

**NOTE:** Refer to Assembly/Disassembly to perform repairs indicated below.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>DIAGNOSIS</th>
<th>REPAIR</th>
</tr>
</thead>
</table>
| Marker leaks down Barrel                     | 1. Poppet is not sealing  
2. Ram Sleeve O-rings are damaged                                     | 1. Replace Poppet  
2. Replace Ram Sleeve O-rings                                          |
| Marker leaks from inside Trigger Frame        | 1. Air Hose has become disconnected  
2. Hose Barb has come loose or is broken                                 | 1. Open Trigger Frame and reconnect Hose  
2. Tighten or Replace Air Barb                                          |
| Marker leaks from Solenoid                   | 1. Marker is over pressurized  
2. Foreign material has lodged inside Solenoid                           | 1. Check LPR Pressure. It should be between 85-95 PSI.  
2. It is not recommended to disassemble Solenoid, Call B.L.A.S.T. for assistance |
| Marker is pressurized and will not fire       | 1. Dwell is to low  
2. LPR too low  
3. Pinched Hose  
4. Debris in Solenoid  
5. Check the LED. If LED is not Flashing at time of Trigger Pull it is the Micro-Switch  
6. If LED is Flashing it is possible the Solenoid connector is disconnected or damaged | 1. Check Dwell and Reset to Factory Settings Via Dip Switch Panel  
2. Turn in LPR Set Screw. Pressure should be between 85-95 PSI  
3. Open Frame and check hoses  
4. Push Reset Button on Solenoid when Marker is pressurized. If Marker does not fire call B.L.A.S.T.  
5. Replace Microswitch. You may need to send in your Board for repair. Call B.L.A.S.T. for assistance  
6. Open Trigger Frame and check Solenoid connection/Wiring |
| Inconsistent Velocity                         | 1. High Pressure Regulator Piston is dry  
2. Dwell too low  
3. Large Ram O-ring (011) is worn.  
4. LPR Pressure too low  
5. Paint does not fit Barrel | 1. Lube Piston with DOW 55  
2. Check Dwell and set to Factory Settings  
3. Replace 011 O-Ring  
4. Check pressure and reset to 85-95 PSI  
5. Use appropriate size paintball. |
| LPR spikes                                   | 1. LPR Base O-rings are bad  
2. Regulator Seat is bad  
3. Brass Nut isn’t tight enough  
4. 010 O-ring on Brass Nut is worn or damaged | 1. Replace O-rings  
2. Replace Regulator Seat  
3. Tighten Brass Nut  
4. Replace O-ring |
| Marker fires with low first shot             | 1. Low dwell  
2. High-Pressure Regulator spiking over pressurizing valve chamber    | 1. Check Dwell and reset to Factory Settings  
2. Check output pressure of High-Pressure Regulator |
| Marker dies off with rapid fire              | 1. Preset tank pin valve is depressed too far or not enough, starving Marker of air  
2. LPR pressure too low | 1. Check depth of Pin Valve  
2. Check LPR pressure |
| Marker is Breaking paint                     | 1. Eyes are turned off and/or damaged  
2. Missing or worn ball detents  
3. Paint too large for barrel  
4. Using brittle paint in cold weather | 1. Check and make sure Eyes are ON and/or operational  
2. Replace Ball Detents  
3. Size paint for Barrel  
4. Use winter-fill paint in winter or heat your paint |
| Eyes fail when in delay                      | 1. Eyes misaligned  
2. Dirty Eyes  
3. Pinched or cut wires  
4. Bad Eye(s) | 1. Check Eye Alignment  
2. Clean Eyes  
3. Open and inspect Eye Wires and Harness  
4. Replace Bad Eye(s) |
| Marker fires on pull and release             | 1. Faulty Micro-Switch | 1. Call B.L.A.S.T. for assistance |

**PROBLEM DIAGNOSIS REPAIR**

**Defiant2**
### Technical Specifications

**Parts Identification**

#### O-ring Sizer/Identifier

<table>
<thead>
<tr>
<th>O-ring &amp; Size</th>
<th>Quantity</th>
<th>Description/Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>006 (Polyurethane)</td>
<td>2 Per Marker</td>
<td>Teflon Regulator Seat Washer</td>
</tr>
<tr>
<td>006 (Teflon)</td>
<td>1 Per Marker</td>
<td>Ram Bumper O-ring</td>
</tr>
<tr>
<td>010</td>
<td>2 Per Marker</td>
<td>Brass Nut O-ring for Low-Pressure Regulator &amp; High-Pressure Regulator (1 each)</td>
</tr>
<tr>
<td>011</td>
<td>5 Per Marker</td>
<td>1 - Ram REAR 2 - Ram Sleeve Cap 2 - LPR Piston (Low-Pressure Regulator)</td>
</tr>
<tr>
<td>012</td>
<td>1 Per Marker</td>
<td>FRONT Ram O-ring (Inside Front of Ram Sleeve)</td>
</tr>
<tr>
<td>112</td>
<td>2 Per Marker</td>
<td>FRONT Valve O-rings</td>
</tr>
</tbody>
</table>

#### O-ring & Size

<table>
<thead>
<tr>
<th>O-ring &amp; Size</th>
<th>Quantity</th>
<th>Description/Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>113</td>
<td>2 Per Marker</td>
<td>1 - ASA Receiver Mounting O-Ring 1 - HPR Piston O-ring (High-Pressure Regulator)</td>
</tr>
<tr>
<td>015</td>
<td>9 Per Marker</td>
<td>4 - LPR Housing O-rings 3 - Encapsulated Ram Sleeve O-rings 1 - Valve Base O-ring 1 - ASA Thread Base O-ring</td>
</tr>
<tr>
<td>118</td>
<td>1 Per Marker</td>
<td>HPR Lower End O-ring</td>
</tr>
</tbody>
</table>

**Note:** The number below each O-ring on the left column indicates the size of the O-ring. For instance if you need to purchase a Ram Bumper O-ring, you would ask for an O-ring size 006 Teflon.

**Note:** O-rings are shown in actual size.
**Technical Specifications**

**Parts Identification (continued)**

**Screw Sizer/Identifier**

<table>
<thead>
<tr>
<th>Screw &amp; Size</th>
<th>Quantity</th>
<th>Description/Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/32 x 3/16</td>
<td>4 Per Marker (Stainless Steel)</td>
<td>Rubber Grip Screws</td>
</tr>
</tbody>
</table>
| 4/40 x 1/4           | 6 Per Marker | 4 - Trigger Frame Screws  
|                      |          | 1 - Transfer Hole Screw                                     |
| 10/32 x 3/4          | 1 Per Marker (Stainless Steel) | FRONT Trigger Frame Mounting Screw                         |
| 10/32 x 5/8          | 1 Per Marker (Stainless Steel) | REAR Trigger Frame Mounting Screw                          |
| 4/40 x 1/4           | 1 Per Marker (Stainless Steel) | Trigger Frame Mounting Screw Washer                        |
| 0/80 x 3/8           | 1 Per Marker (Stainless Steel) | UPPER Circuit Board Retaining Screw                        |
| 4/40 x 1/4           | 1 Per Marker (Stainless Steel) | LOWER Circuit Board Retaining Screw                        |
| 8/32 x 1/4           | 1 Per Marker (Stainless Steel) | UPPER Trigger Adjustment Screw (Adjusts Return Spring Tension) |
| 6/32 x 1/2           | 1 Per Marker (Stainless Steel) | CENTER Trigger Adjustment Screw (Adjusts Micro-Switch Activation Point) |
| 6/32 x 3/16          | 1 Per Marker (Stainless Steel) | LOWER Trigger Adjustment Screw (Adjusts Trigger Travel Stop Point) |

**NOTE:** Screws are shown in actual size.

<table>
<thead>
<tr>
<th>Screw &amp; Size</th>
<th>Quantity</th>
<th>Description/Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/32 x 9/16</td>
<td>1 Per Marker (Stainless Steel)</td>
<td>Trigger Mounting Screw (Secures Trigger to frame)</td>
</tr>
<tr>
<td>2/56 x 3/8</td>
<td>2 Per Marker</td>
<td>Eye Cover Screws</td>
</tr>
<tr>
<td>5/16 x 18 x 5/16</td>
<td>1 Per Marker</td>
<td>Retaining Set Screw for Bolt Pull Pin</td>
</tr>
<tr>
<td>1/4 x 20 x 5/8</td>
<td>1 Per Marker</td>
<td>ASA Receiver Retaining Screw</td>
</tr>
<tr>
<td>3/8 x 24 x 3/8</td>
<td>1 Per Marker</td>
<td>Valve Retaining Screw</td>
</tr>
<tr>
<td>8/32 x 3/8</td>
<td>1 Per Marker</td>
<td>LPR Retaining Screw</td>
</tr>
<tr>
<td>1/4 x 20 x 1/4</td>
<td>1 Per Marker</td>
<td>LPR Pressure Adjustment Screw</td>
</tr>
<tr>
<td>3/8 x 24 x 3/8</td>
<td>1 Per Marker (Stainless Steel)</td>
<td>HPR Pressure Adjustment Screw</td>
</tr>
</tbody>
</table>

**NOTE:** The number below each Screw on the left column indicates the size of the Screw. For instance if you need to purchase a LOWER Circuit Board Retaining Screw, you would ask for a 4/40 x 1/4 LOWER Circuit Board Retaining Screw.
To order parts for your Defiant 2, please call (925) 625-7929. Please have part numbers ready.