5. Replace grips.

6. VERY IMPORTANT. Enter the programming menu and set your eye type (break-beam or reflective) before you use the marker. Please see the “programming” and “eye sensor operation” headers on how to do this.

7. Power on and play!

Features:

Designed from the ground up for both the Shocker SFT and Shocker NXT. The first ever paintball circuit board with a fully integrated wireless transceiver. Fully compatible with all SYMBO wireless products. Includes 22 firing modes including fully customizable ramp modes.

Compatible with both reflective and break-beam Shockers. Proprietary multi-tasking algorithms continuously monitor all trigger and eye events to ensure that all pulled shots register faster than the top-ranked competitor! This translates to 900,000 more operations per second than anyone else.

Gold plated leads ensure rock solid intra-circuit communication. Fully adjustable ABS features add to the marker’s dwell to eliminate that pesky first shot drop-off. Anti-mechanical bounce (AMB) algorithms solve the problem of physical switch bounce. No need to worry when the refs pull that old slow trigger pull trick on your gun. A “forced shot” feature allows the user to clear the marker of eye faults instantly. After all, you wanna play now! Instantaneous battery status.

TEN TIMES faster than the top-ranked competitor! This translates to 900,000 more operations per second than anyone else. Gold plated leads ensure rock solid intra-circuit communication. Fully adjustable ABS features add to the marker’s dwell to eliminate that pesky first shot drop-off. Anti-mechanical bounce (AMB) algorithms solve the problem of physical switch bounce. No need to worry when the refs pull that old slow trigger pull trick on your gun. A “forced shot” feature allows the user to clear the marker of eye faults instantly. After all, you wanna play now! Instantaneous battery status.

Tournament lock feature allows the user to “lock out” the programming mode in order to meet specific field/tournament guidelines.

Installation:

MAKE SURE THE MARKER IS NOT CONNECTED TO AN AIR SOURCE AND DOES NOT HAVE PAINTBALLS IN THE BREACH DURING INSTALLATION!!!!!!!

1. Remove the screws that secure the grips. This will expose the board.
2. Carefully remove the two pins behind the trigger. These pins go through the microswitch and mount the circuit board to the frame.
3. Unplug the battery and wiring harness from your old board.
4. Plug the wiring harness into your new HATRED board.
5. Carefully place the new HATRED board into your frame and reinsert the mounting pins through the microswitch.
6. Attach a fresh 9v battery and insert the battery into the frame. Make sure the leads from the battery are tucked away from the circuit board and towards the rear of the frame. Be very careful not to scratch the back of your circuit board with the battery. Circuit boards which are damaged due to incorrect installation are not covered under warranty.

LED’s:

The HATRED gun board has two LED’s. The button LED is a single color, blue LED that is seen through the Shocker’s rear button. The onboard LED is a multi-color LED that is physically mounted on the bottom of the HATRED Shocker board. We suggest using translucent grips so you can see the onboard LED as it makes the programming and operation of your marker much easier.

Power:

Power On: The HATRED board comes equipped with an Instant On feature. Simply press the power button and your marker will instantly power on. As long as the power button is depressed, you will see a flickering GREEN or RED led on the Onboard LED. The GREEN indicates a good battery and the RED means replace the battery as soon as possible. Regardless of GREEN/RED battery indication, your marker WILL REGISTER YOUR FIRST TRIGGER PULL! Please be careful!

Power Off: To turn the marker off, press and hold the button for two seconds. As the gun powers down, the onboard LED will go through a rainbow power down sequence. Please note that this particular rainbow LED sequence does not indicate that you’re entering the programming menu.

Programming:

The bottom dip switch must be in the OFF position in order to enter the programming menu. If the bottom dip switch is ON, “tournament lock” will be enabled and the user will be unable to program the marker.

To enter the programming menu, hold the trigger down and THEN turn the mark on. The onboard LED will inform the user that the programming mode has been accessed by flashing several colors rapidly.

To set the firing mode to PSP mode:

1. Tap the trigger until the LED turns blue.
2. Hold the trigger down; then turn the marker on. Once the LED flashes many colors, release the trigger.
3. Tap the trigger until the LED turns purple.
4. Hold down the trigger until the LED goes blank.
5. Tap the trigger two times.
6. Once the LED flashes many colors, turn the marker off.

To set the eye type to reflective:

1. Tap the trigger until the LED turns blue.
2. Hold the trigger down; then turn the marker on. Once the onboard LED flashes many colors, release the trigger.
3. Tap the trigger until the LED turns yellow.
4. Hold down the trigger until the LED goes blank.
5. Tap the trigger two times.
6. Once the LED flashes many colors, turn the marker off.

To set the max ROF to 15 bps:

1. Tap the trigger until the LED turns blue.
2. Hold the trigger down; then turn the marker on. Once the onboard LED flashes many colors, release the trigger.
3. Tap the trigger until the LED turns yellow.
4. Hold down the trigger until the LED goes blank.
5. Tap the trigger two times.
6. Once the LED flashes many colors, turn the marker off.

Dip Switch Settings:

<table>
<thead>
<tr>
<th>Switch</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (top)</td>
<td>ROF Cap ON</td>
<td>ROF Cap OFF</td>
</tr>
<tr>
<td>2 (bottom)</td>
<td>Tournament Lock</td>
<td>Programming Mode</td>
</tr>
</tbody>
</table>

Eye Sensor Operation:

1. Pulling and releasing the trigger will allow the user to toggle through the different programming options.
2. Once the desired setting/LED color is reached, pull and hold the trigger to select that setting. The onboard LED will then go blank.
3. Once the onboard LED goes blank, pull the trigger for the desired setting. For example, if the user wishes to set the debounce to 2, he or she must pull the trigger two times.
4. If the user wants to view their current value for a particular setting, he or she need only to continue holding the trigger in after the setting is selected from the menu. The software will then blink back the user’s current value for that particular setting.
5. The software will indicate that the new value has successfully been entered by blinking the value back to the user then rapidly flashing the LED through a spectrum of colors.
6. As the software blinks back the new setting, the user may abort this process by simply clicking the trigger once. The new settings will still be saved.
7. After a setting has been changed, the user may change another option or power the gun off to save the settings.

NOTE: All “programming clicks” correspond exactly to their settings. If you want to cap the ROF at 15, pull the trigger 15 times. If the user sets the value too low (2 cps ROF cap for example), the software will automatically default to the lowest accepted value. The inverse is also true for user inputs which are beyond the adjustable range.

Flickering

- Yellow
- Green
- Purple

<table>
<thead>
<tr>
<th>Color</th>
<th>Setting</th>
<th>Default Setting</th>
<th>Adjustable Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purple</td>
<td>Fire Mode</td>
<td>1</td>
<td>1-22</td>
</tr>
<tr>
<td>Green</td>
<td>Debounce</td>
<td>5 ms</td>
<td>1-50 ms</td>
</tr>
<tr>
<td>Red</td>
<td>Dwell</td>
<td>14 ms</td>
<td>5-35 ms</td>
</tr>
<tr>
<td>Blue</td>
<td>Max ROF</td>
<td>20 cps</td>
<td>10-35 cps</td>
</tr>
<tr>
<td>Teal</td>
<td>AMB</td>
<td>1 ms</td>
<td>1-60 ms</td>
</tr>
<tr>
<td>Yellow</td>
<td>Eye Delay</td>
<td>4 ms</td>
<td>1-20 ms</td>
</tr>
<tr>
<td>White</td>
<td>Wireless Address</td>
<td>1</td>
<td>1-32</td>
</tr>
<tr>
<td>Flickering Purple</td>
<td>ABS</td>
<td>10 ms</td>
<td>1-20 ms</td>
</tr>
<tr>
<td>Flickering Green</td>
<td>Ramp Activation</td>
<td>9 bps</td>
<td>6-15 bps</td>
</tr>
<tr>
<td>Flickering Red</td>
<td>Ramp Percent</td>
<td>10%</td>
<td>1-20 (10-200%)</td>
</tr>
<tr>
<td>Flickering</td>
<td>Reset</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Supplementary Information:

- 10 ms
- 50 ms
- 200 ms
- 10-200%
1. Semi Auto/NPL – 1 trigger pull = 1 shot fired.

2. PSP Mode – The first three shots are semi auto. On the 4\textsuperscript{th} shot, the gun will shoot in 3 shot bursts. This burst mode will continue as long as the trigger is being pulled. After a one second delay of trigger inactivity, the 3 shots semi-auto sequence will restart.

3. NXL – The first three shots are semi auto. On the 4\textsuperscript{th} shot, the user may hold in the trigger and the gun will shoot in full auto until the trigger is released. After a one second delay of trigger inactivity, the 3 shots semi-auto sequence will restart.


5. Ramping – Uses a linear ramping algorithm to increase your rate of fire. You can choose when you want your marker to start ramping and how fast your marker will ramp. The ramp deactivation is always 2 bps lower than the ramp activation.

6. PSP Style Ramping – The first three pulls are semi auto. On the 4\textsuperscript{th} shot, the marker will fire in ramping mode. After a one second delay of trigger inactivity, the three shot semi-auto will restart.

7. PSP Style Auto Response - The first three pulls are semi auto. On the 4\textsuperscript{th} shot, the marker will fire in Auto Response mode. After a one second delay of trigger inactivity, the three shot semi-auto will restart.

8. Semi/Ramping Transition – The first three shots are semi auto; the marker then converts to ramping mode.

9. Ramping/Semi Transition – For the first 300 pulls, the marker will be in ramping mode; after the 300\textsuperscript{th} pull, the marker will convert to semi auto.

10. Musket Ball Mode – This is essentially a dwell ramp mode. The user must hold in the trigger to “charge” their marker. The gun actually fires the trigger release. When the trigger is first pulled and held down, the software will start at the user set dwell (8 ms default) minus 10 ms. Over the course of five seconds, the software will add 2 ms of dwell up to the user set dwell for every second the trigger is continually depressed. After 5 seconds, the marker will be fully charged.

Definitions:

Debounce – The HATRED’s debounce algorithm assists in eliminating unwanted shots caused by “trigger noise,” while simultaneously ensuring that every pull is read. If the marker has intermittent or continuous “full auto” like fire, increase the debounce setting.

Dwell – Dwell is the amount of time that the solenoid is “charged.” A dwell that is too low will result in a gun that doesn’t fire, is inconsistent and/or has dropped off. If the dwell is set too high, the overall rate of fire will decrease and the marker may become less air efficient. The factory default of 14 ms should suffice for almost all Smart Parts markers.

Eye Delay – The eye delay is the amount of time the gun will pause after sensing a ball before it will fire. The stock eye delay of 4 ms is a conservative setting. On most guns, the Eye Delay can be lowered until the user experiences chopping. When using an agitated loader, the eye delay should be set to 5 ms or higher. The higher the eye delay, the slower the marker and less chance of paint breakage.

ABS – The Anti-Bolt Stick feature increases the dwell of the marker’s first shot after a period of inactivity. The ABS feature assists in eliminating first shot drop-off. The higher the ABS, the “harder” the marker’s first shot.

AMB – Anti-Mechanical Bounce feature assists the user in eliminating mechanical bounce. Mechanical bounce is caused by the marker recolling. Increasing the AMB will assist in tuning your marker to pass those pesky slow pull tests.

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