## **Hitmate** CWES2 Troubleshooting Guide

### INTRODUCTION

Wireless systems use a completely different method of detecting on-target and off-target hits to a traditional wired system. To maximise performance, equipment must be maintained to a higher standard than required for a wired system. We highly recommend checking your epee with the Hitmate Advanced Epee Analyser or Digital Multimeter (DMM) at the start of each session.

This section covers some of the more common problems you may encounter and provides a number of solutions for each. If you find your problem persists or is not on the list, then please get in contact with us and we will try our best to resolve it.

The connector on the epee comprises three 4mm sockets. Sockets 1 and 2 connect to two wires which run down the length of the blade to the tip switch. Socket 3 attaches the connector to the bracket, which in turn is clamped between the handle and guard.

#### TROUBLESHOOTING

Please follow all the instructions in the CWES2 Quick Start Guide before proceeding.

Problem 1. The Plugin red LED flashes and the buzzer sounds when I press the switch (box 1 in the CWES2 Quick Start Guide).

The red LED indicates the battery is running low and that there is less than 3 hours use remaining. Please follow the CWES2 Battery Charging Instructions.

Problem 2. The Plugin LEDs do not flash and the buzzer does not sound when I press the switch (box 2 in the CWES2 Quick Start Guide).

This is due to the Plugin battery being completely empty. Please follow the CWES2 Battery Charging Instructions.

Problem 3. The Plugin LEDs do not flash and the buzzer does not sound when it is inserted into an epee (box 3 in the CWES2 Quick Start Guide).

When the Plugin is switched on, it waits 5 seconds for it to be inserted into a epee. In order to detect the epee, the epee and Plugin must be in good condition. Follow the instructions in the order given below until one solution works.

**Solution 1**: Check the epee handle is not loose. Any small movement of the handle can cause a poor connection (several 10s of ohms) between the epee handle, guard and Plugin.

**Solution 2**: Check the epee connector is not loose on the bracket.

Solution 3: Check the two wires at the epee connector for breaks or loose terminal sockets.

**Solution 4:** After repeated insertions, the Plugin pins can wear causing poor contact between the Plugin pin and epee connector socket. Use the spare socket provided on the side of each CWES case to check each pin for wear. If the Plugin pin feels loose when inserted, it can be adjusted using a small flat bladed screwdriver. Each Plugin pin has four spring fingers running the length of the pin. Using a small flat bladed screwdriver, gently open the spring by a fraction of a millimetre.

**Solution 5:** After repeated insertions, the Plugin pins can break causing poor contact between the Plugin pin and epee connector socket. Visually check each pin for broken spring fingers, which run from the pin tip to the pin base. If any pins are broken replace them with with spares, which are provided in each set. Follow the Plugin Pin Replacement Instructions.

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# Problem 4. The Plugin buzzer does not sound when you hit your foot (box 4 in the CWES2 Quick Start Guide).

The epee has been detected by the Plugin, but hits are not being detected. This indicates there is no/poor connection between sockets 1 and 2 on the epee connector when the tip switch is pressed.

Using the Hitmate Advanced Epee Analyser or DMM, measure the resistance from the epee tip to socket 1 at the epee connector when the tip is fully pressed. Repeat for socket 2. Both readings should be below  $2\Omega$ . If one or both readings are above  $2\Omega$ , follow the instructions in the order given below until one solution works.

**Solution 1**: Replace the contact spring.

**Solution 2**: Check the wiring from inside the barrel to the connector sockets.

**Solution 3**: Replace the tip.

Problem 5. The Plugin red or green LEDs illuminate and the buzzer sounds when I hit my opponents guard.

Guard hits should not register if the Plugin and both fencers epees are fully working. If more than 1 in 20 guard hits register, then follow the instructions in the order given below until one solution works.

**Solution 1**: Ensure you are following the instructions in the CWES2 Quick Start Guide. In particular, wait until the LEDs turn off before inserting the Plugin and do not touch the Plugin pins. Failure to do either of these can upset the Plugin calibration cycle, which is performed when the LEDs are on.

**Solution 2**: Check the handle is not loose on both epees. Any small movement of the handle can cause a poor connection (several 10s of ohms) between the epee handle, guard and Plugin.

Solution 3: Check the epee connector is not loose on both epees.

Solution 4: Check the two wires at the epee connector for breaks or loose terminal sockets for both epees.

#### Problem 6. Hits to my opponents mask do not register.

This may occur if you hit an electrically conductive part of the mask. This occurs when the paint/enamel covering the wire mesh gets chipped off to expose bare metal. There are currently no solutions to this problem. Future software updates may eliminate this problem.