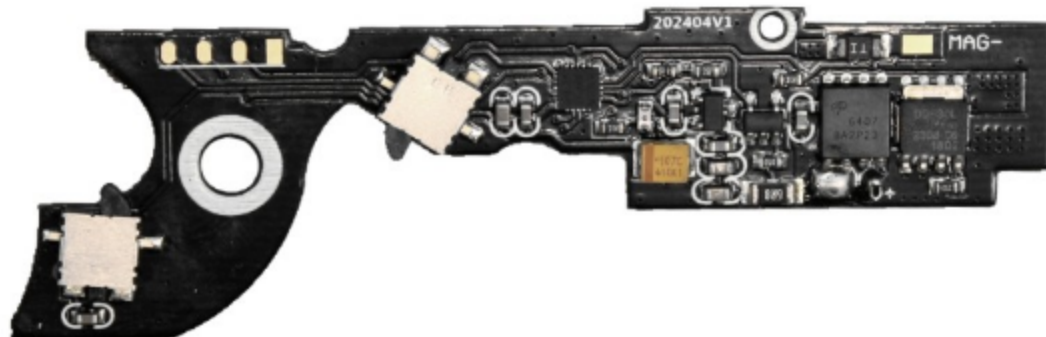
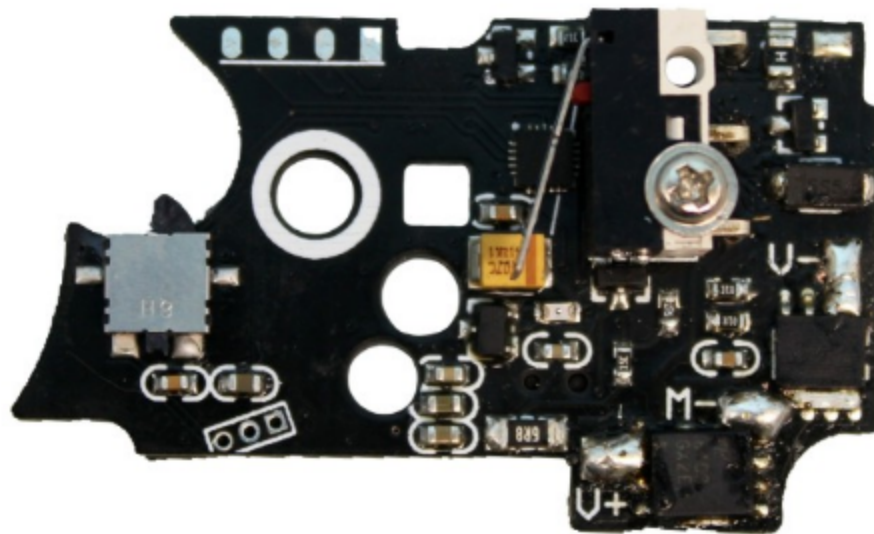
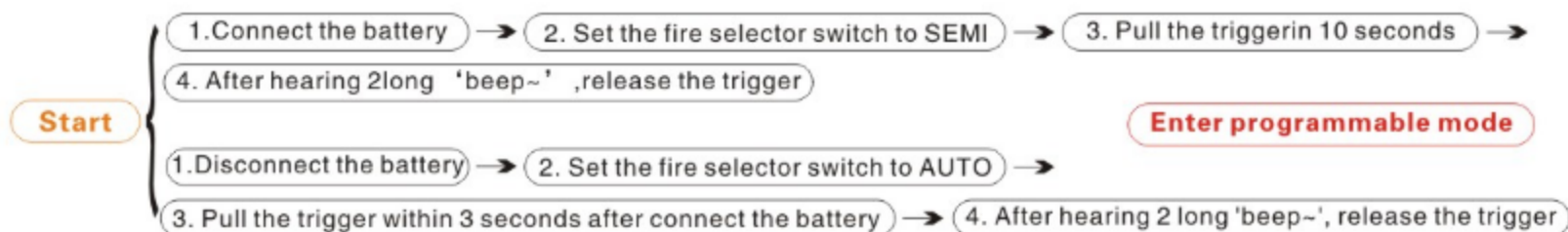




Electronic Trigger Unit (V2/V3 GEARBOX)



Programming Instruction



Programming

In the programmable mode, the motor emits short 'beep', the numbers of 'beep' means the serial number of the option. If you want to choose the option, pull and hold the trigger in 2 seconds after 'beep' s till a long 'beep', the module will be set to matched option. (The options and matched function/parameter are in the table below).

After setting to the selected option, the motor emits short 'beep' s, the number of 'beep' s means the different function/parameter of this option. If you want to program to set it to certain option or parameter, pull and hold the trigger in 2 second after 'beep' till 2 long 'beep', then will saving the programming setting.

If need to program other options, please repeat the above steps.

1	2	3	4	5	6	7
Low Battery Warning 1. 7.4V 2. 11.1V 3. 14.8V 4. 9.6V 5. OFF 6. RESET	Semi-auto mode 1. Semi 2. Binary trigger 3. round burst 4. round bursts 5. round bursts 6. round bursts	Full-auto mode 1. Auto 2. Semi 3. round bursts 4. round bursts 5. round bursts 6. round bursts	Pre-cocking control 1. The most front position 2-15: The larger the parameter is the further back the piston is. The certain position is related the strength of the spring.	Firing interval OFF 0.3s 0.6s 0.9s 1.2s 1.5s	Rate of fire 1. 100% 2. 80% 3. 70% 4. 60% 5. 50%	Auto-loading (for gel ball only) 3S 2.5S 2S 1.5S 1S 0.5S OFF

Warning Tone

- 3 short 'beep' : The ETU has entered shooting mode and initialization of ETU is successfully.
- 1 long 'beep' 3 short 'beep' : Trigger sensor is pulled because it is pressed by wires or other things and it can not reset. Please disassemble gearbox to check.
- 4 short 'beep' : Low battery voltage warning, please change a fully charged battery.
- 1 short 'beep' : ETU switch to Auto mode between Semi mode.

1 Low battery voltage protection

The default setting is 7.4V battery. Change the battery when hearing 'beep beep beep beep' 4 times low voltage warning sound.

3 Auto Modes

This mode can be programmed to implementing full-auto, 3-round burst, and 6-round burst, the default mode is Full-auto

5 Firing interval

① OFF ② 0.3s ③ 0.6s ④ 0.9s ⑤ 1.2s ⑥ 1.5s

7 Gel blater only

Auto-loading function is designed for gel ball blaster magazines with motor inside, when changing the magazine, the magazine motor will run automatically for a period of time, and the length of time can be programmed by 7th option

2 Semi Modes

This mode can be programmed to implementing semi-auto, double stroke single shot, 3-round burst to 6-roundburst, the default mode is semi auto.

4 Pre-cocking control

1. The most front position, 2-15: The larger the parameter is the further back the piston is. The certain position is related the strength of the spring.

6 Rate of fire

1. 100% 2. 80% 3. 70% 4. 60% 5. 50%

Troubleshooting list

Motor heating	Frequent motor heating is mainly caused by high start and shut current and frequent shut. Active Brake of ETU needs to transfer the kinetic energy to heat energy for brake. It is related to the performance of motor; heating of motor is normal phenomenon, and it is unavoidable.	Change the motor to high torque and low RPM ones can also reduce motor heating.
Battery heating	Critical battery heating is mainly caused by that the torque of motor is not enough for load or load is too large. Normally, it is because gears are too tight or the main spring is too strong; it could also be caused by discharge of battery is not enough or it is at overloading status for a long time	Battery with higher discharge rate and capacity is recommended. Investigate the tightness of gears, the strength of main spring and smoothness of gearbox. Change the motor to a high-torque one can relieve this issue.
Critical wire heating	Critical heating of wire is because torque of motor is not enough for load or the load is too much (Gears are too tight or main spring is too strong); It could also be the discharge rate of battery is not enough or the battery is at overload situation for a long time	Battery with higher discharge rate and capacity is recommended. Investigate the tightness of gears, the strength of main spring and smoothness of gearbox. Change the motor to a high-torque one can relieve this issue.
Firing instantly after battery is connected	ETU chip has damaged	Please investigate battery connectors and motor connectors are reversal or not. Please check is there a short circuit or damage on wires or circuit boards, Please contact after-sales for solution
ETU burn down instantly after battery is connected	Battery is connected reversely	Please check the connector of battery is reversal or not, Please contact after-sales for solution
ETU burn down instantly after trigger is pulled	Polarities of motor (Gearbox) are connected reversely short circuit occurs on the wire that connects motor	Please check connector of motor is reversal or not, is there a short circuit or damage in wire, Please contact after sales for solution.
No reaction after connecting the battery	The connection of motor or battery is abnormal	Please use battery which the voltage is higher than 7.4V , make sure battery and motor is functional, reconnect motor to make sure the circuit is closed then test the ETU with battery
1 long 'beep' following by 3 short 'beeps' after battery is connected, no reaction after the trigger is pulled	One long 'beep' following by 3 short 'beeps' indicate that DTU is entering 'quick' model, it means trigger is pulled while selector plate is at 'semi' position. If trigger is not pulled , it means trigger cannot block sensor while it is released , ETU detects that trigger is pulled.	Trigger sensor is pulled is because it is pressed by wires or other things and it cannot reset. Please disassemble gearbox to check
Only 3 short 'beeps' after battery is connected, no reaction after trigger is pulled	3 short 'beep' means the ETU has Entered shooting mode successfully, it means initialization of ETU is successful. No reaction after the trigger is pulled might be caused by that trigger sensor is blocked by wires or other things or the travel of trigger is not enough to reach the trigger sensor the end of trigger is too far away from the switch of trigger	Please investigate wires of gearbox; Since travel of trigger might not be enough, it is needed to modify the trigger limit of trigger on gearbox to make the trigger is able to reach the trigger sensor; If the trigger cannot reach the switch, please thicken the end of trigger until it can reach the switch

Troubleshooting list

4 short 'beep'	4 short 'beep' is the warning for low voltage warning , it means battery is out or the setting for battery protection is wrong	Fully charge battery , then set the first term to 5 before testing with battery
'semi' mode only	There is a 'beep' while changing Mode, if there is not, it means selector switch cannot detect selector plate at 'auto' position , it means the width of selector palate is not enough	Please make sure the linkage between selector plate and selector is normal and selector can move freely on gearbox. Thicken selector plate properly to make sure that it can press the selector switch well at 'auto' position.
'auto' mode only	There is a 'beep' while changing Mode, if there is not, it means selector switch cannot detect selector plate at 'semi' position, it means the selector plate is too wide and it press the selector switch at this position	Please make sure the linkage between selector plate and selector is normal, selector plate can move freely on gearbox. Then cut the selector plate properly to ensure that selector switch cannot be blocked by selector plate at 'semi' position
Long 'Beep' after Motor rotates few rounds	Long 'beep' is the alarm for motor stall , DTU detect gears are not rotating, it could be: 1. Motor does not drive gears rotating 2. Gear sensor is close to gear which it cannot reset smoothly 3. Gear sensor is down	Disassemble gearbox and check the gear switch can reset smoothly then enter the quick testing mode to check the reaction of gear switch. If the reaction of the switch is normal, it is recommended to modify gear or gear switch. If the lever of the gear switch is too long, it is suggested to cut the lever off for 1mm then test it again. If the lever is short, use glue and plastic piece to lengthen the lever
Only pre-loading function works	1.The connection of motor is abnormal 2. Fault of motor	Please confirm motor and gearbox are functional, reconnect motor then test the ETU with battery
Magazine keeps feeding after it is attached	For ETU with pre-loading function , circuit for pre-loading function maybe overload For ETU without pre-loading function, negative of magazine could be connected improperly	1. Automatic pre-loading function is disabled, please return it to retailer for repair 2. For DTU without pre-loading function, the negative wire of magazine should be connected to negative of motor instead of negative of battery
Magazine cannot feed Gel ball	Fault of magazine Fault of gearbox diameter of gel is improper Power supply wire of magazine anomaly	Please reconnect terminals for magazine, make sure the connection between magazine power supply and ETU is functional, then do troubleshooting for magazine/gearbox/ diameter of gel such external factors.

Warning:

This upgrade kit is designed for professional AIRSOFT/gel ball blaster player who can fully disassemble and assemble Automatic Electric Gun. The compatibility with all Gearboxes is not guaranteed, but it can fit into standard or common brand Gearboxes V2 without larger modification. Related Tools and skills is needed for installing the product.

Attention:

1. Protect the detection switch while installing, do not pull the trigger before finishing installation in case that the trigger breaks the detection switch.

2. Mind the positive and negative of the motor, do not reverse.

Gearbox, motor and grip is not functional before finishing installation. Please finish the installation at first.

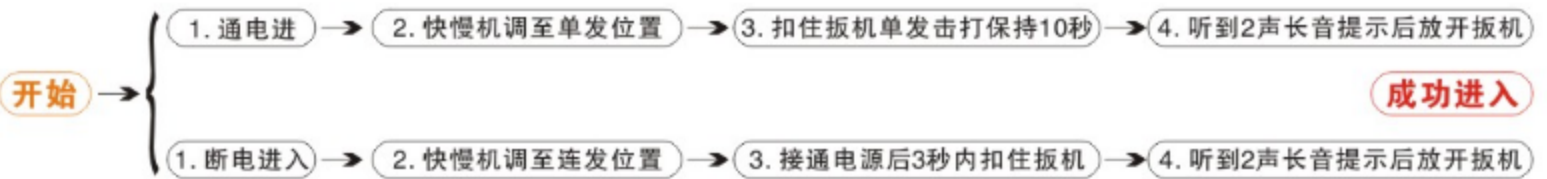
警告:

该升级套件专为可以完全拆卸和组装AEG的AIRSOFT及GEL BLASTER 专业玩家设计。与市面上所有的波箱兼容性是不能保证的，但它可以适合标准或通用品牌V2波箱，不用做较大修改。安装产品需要有相关的工具和技能。

注意:

1. 安装时保护好检测开关，在完成安装之前触发不要扣动扳机，以防触发损坏检测开关。
2. 注意电机正负极接线，切勿接反。
3. 在未完成安装之前波箱, 电机和握把是无法工作的。请先完成安装。

编程介绍



在编程模式下，电机发出短促的“嘟”声，“嘟”的数字代表选项的序列号。如果要选择选项，在“嘟”一声后2秒内扣动扳机，直到“嘟”一声长响，模块将被设置为匹配的选项。（选项及配套功能/参数如下表）。

设置所选选项后，电机会发出短促的“嘟”声，“嘟”的次数代表该选项的不同功能/参数。如果要编程将其设置为某些选项或参数，请在“嘟”声后2秒内扣动扳机，直到“嘟”两声长，然后将保存编程设置。

如果需要编程其他选择请重复以上步骤

1	2	3	4	5	6	7
电池电压保护 1. 7.4V 2. 11.1V 3. 14.8V 4. 9.6V 5. 关闭 6. 恢复出厂	SEMI 模式 1. 单发 2. 双行程单发 3. 三连发 4. 四连发 5. 五连发 6. 六连发	AUTO 模式 1. 连发 2. 单发 3. 三连发 4. 四连发 5. 五连发 6. 六连发	天梯位置 1. 最前位置 2-15档位 越高越往后 具体位置与 弹簧马达有关	单发扳机间隔 1. 无间隔 2. 0.3秒 3. 0.6秒 4. 0.9秒 5. 1.2秒 6. 1.5秒	连发射速 1. 100% 2. 80% 3. 70% 4. 60% 5. 50%	预供弹时间 (Gel blater only) 3S 2.5S 2S 1.5S 1S 0.5S OFF

报警提示音

●三声短笛：火控开机。火控开机自检通过,系统无异常。●一声长笛+三声短笛：检测模式,断电检查扳机开关是否安装正确。●四声短笛：请更换电池。●一声短笛：火控切换单连发设计模式。

1 电池低压保护

默认设置为7.4V电池。听到“嘟”声时请更换电池嘟嘟’4声低电压警告声。

3 (全自动)模式

该模式可以通过编程来实现全自动、3发连发、6发连发、默认模式为全自动

5 单发扳机间隔

①无间隔 ②0.3秒 ③0.6秒 ④0.9秒 ⑤1.2秒
⑥1.5秒

7 预供弹时间 (Gel blater only)

专为水弹发射器设计的水弹电机弹夹自动预供弹功能，更换弹匣时弹匣电机会自动运转一段时间，时间长度可以由第7个选项编程。

2 单发模式

该模式可以通过编程来实现半自动、双行程单发、3发连发,6发连发，默认模式为半自动

4 天梯位置

1. 最前位置 2. 5.档位 越高越往后。具体位置与弹簧马达有关。

6 连发射速

1. 100% 2. 80% 3. 70% 4. 60% 5. 50%

故障排查表

马达发热严重	频繁发热主要是启停电流大以及频繁刹车导致，火控刹车需要瞬间把电机动能转化为热能消耗掉，是引起马达发热的主要原因具体和马达性能有关，属于正常现象,无法避免。	可以通过编程第四项天梯位置到4以上，火控会降低甚至自动关闭刹车缓解马达发热，换转速相对慢磁性相对高的马达也可以缓解电机发热。
电池发热严重	电池发热严重一般是马达扭矩不足以支撑负载,或者负载太大，即齿轮太紧或老弹簧太硬;也可能是电池放电不够大，长时间处于超载输出状态。	建议更换更大放电倍率和容量电池，电池插头使用xt30和小田宫头，排查齿轮松紧度和弹簧硬度以及波箱配合顺畅度,换个更高扭矩的电机可以缓解。
线组发热严重	线组发热严重一般是马达扭矩不足以支撑负载，或者负载太大,即齿轮太紧或者弹簧太硬;也可能是电池放电不够大，长时间处于超载输出状态。	建议更换更大放电倍率和容量电池，电池插头使用xt30和小田宫头，排查齿轮松紧度和弹簧硬度以及波箱配合顺畅度，换个更高扭矩的电机可以缓解。
通电就击发	FET芯片已经损坏	建议排查电池接头是否接反、马达接头是否接反、接线是否有短路或破损漏掉现象,联系售后人员解决。
通电就烧毁	电池正负极接反	建议排查马达接头是否接反，并且联系售后人员解决。
扣扳机就烧毁	波箱马达插反/马达连接线有短路现象	建议排查马达接头是否接反,接线是否有短路或破损现象,并联系售后人员解决。
通电无任何反应	波箱马达或电池连接不正常	请更换有刷480马达和74V以上电池确保马达电池功能正常，重新连接马达确保线路连接正常再上电测试。
通电仅一声长笛加三声短笛，扣扳机无反应	一声长+三声短笛是火控进入快速模式提示音,导电片停留在单发位置并按不报机在服被得器，火控一直认为报机没有释放。	扳机归为挡不住传感器一般是扳机缺口过大或者扳机下表面离火控下片的扳机传感器距离太远，请按教程提示修改扳机形状，并加厚扳机下表面5-6毫米以贴近遮挡扳机传感器。

<p>通电仅三声短笛扣扳机无反应</p>	<p>三声短笛火控进入正常发射模式提示音说明火控顺利初始化，扣扳机无反应是布线或者杂物遮挡了扳机传感器，或者扳机角度不够大扣到底扔触发不了扳机传感器,或者上下片扳机传感器损坏</p>	<p>建议先排查一下布线情况,清理上下扳机传感器，扳机角度不够大，需要打磨修改波箱和扳机之间限位部分,使扳机活动角度增大能够触发扳机传感器。如果扳机表面无法观察到是否正常，可以拿掉扳机插上上片和电机，然后接上电池听提示音，如果是两声长笛或一声长笛加三声短笛，说明扳机传感器正常,否则扳机传感器故障。</p>
<p>四声短笛提示音</p>	<p>四声短笛是低压报警提示音，电池没电或电池保护设置错误。</p>	<p>建议充满电池，然后第一项设置5在通电测试。</p>
<p>仅有单发无连发</p>	<p>单连发位置之间切换有一声笛音提示音如果没有，说明在连发位置火控快慢机传感器没有检测到快慢机片，说明快慢机片不够靠后距离快慢机传感器太远。</p>	<p>请确保慢机板和选档杆之间的连杆正常，快慢机板可以在变速箱上自由移动。适当加厚快慢机板，确保它能在“自动”位置很好地按下快慢机感应器开关。</p>
<p>仅有连发无单发</p>	<p>单连发位置之间切换有一声笛音提示音如果没有，说明选择开关无法检测到处于单发位置的快慢机板，表示快慢机板太宽，并在该位置压住快慢机检测开关。</p>	<p>请确保慢机板和选档杆之间的连杆正常，快慢机板可以在波箱上自由移动。然后适当切割快慢机板，以确保快慢机感应器不会被处于单发位置时被快慢机板挡住。</p>
<p>扣扳机仅转几圈后发出一声长笛</p>	<p>长笛提示为火控堵转扫齿警报提示，检测不到齿轮转动/马达没带动齿轮转动齿轮传感器油污/火控上下片安装不正电池放电跟不上/齿轮传感器损坏。</p>	<p>请拆开擦干净上下齿轮传感器，可更换个大放电倍率电池（1100mah25c以上，检查并修改波箱内部凸起，防止影响火控上下片对准然后重启安装火控在测试。</p>
<p>仅预供弹起作用</p>	<p>波箱马达连接不正常或马达故障</p>	<p>请确保波箱马达正常,重新连接好马达电池在通电测试。</p>
<p>当插上弹夹后会不断供弹</p>	<p>对于带预供弹功能的ETU，预供弹电路可能过载 对于不带预供弹功能的ETU，弹夹电片可能连接不正确</p>	<p>1. 自动预供弹功能已禁用，请将其退还给零售商维修 2. 对于不带供弹功能的ETU，弹匣负极线连接到电机的负极而不是电池负极</p>
<p>弹匣不供弹</p>	<p>弹匣本身故障、波箱本身故障水弹直径异常、弹匣供电线有连接异常</p>	<p>请重新连接弹匣供电触点，确保弹匣供电和火控连接正常然后再逐个排查弹匣、波箱配合和水弹大小等外部因素引起的故障。</p>