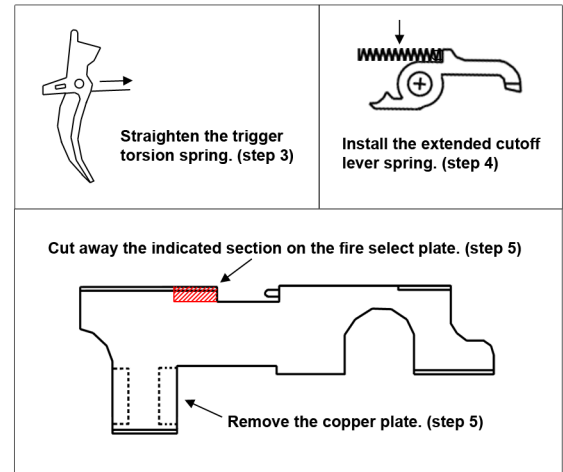
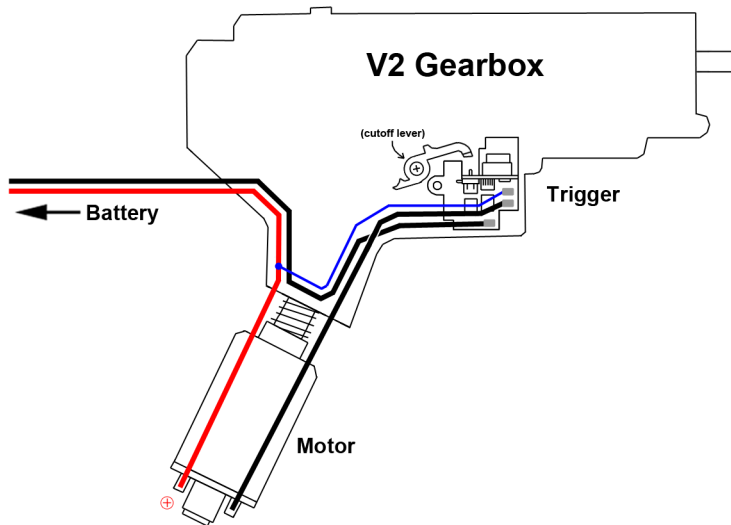


Raptor FET (V2-GB) Installation



INSTALLATION:

- 1) Remove the stock trigger assembly and wiring. Keep the cutoff lever.
- 2) Simply drop-in the Raptor FET in place of the stock trigger assembly.
- 3) Straighten the end of the trigger torsion spring so it does not scratch the FET.
- 4) Remove the stock cutoff lever spring and replace it with the extended spring included with the FET.
NOTE: Do NOT compress the extended spring during installation otherwise it could pop out. Give the spring enough time to break-in while inside the AEG's receiver first.
- 5) Perform the modifications shown in the fire select plate diagram above.
- 6) Properly shim the sector gear to prevent its bearing/bushing from getting loose. A loose bearing/bushing could end up jamming the cutoff lever.
- 7) Make sure the trigger's backside is able to hit the gearbox when pressed. If not, epoxy some material to the back of the trigger until it does. This prevents non-TM spec triggers from damaging the switch on the FET.

End of Installation!

Programming

To enter programming mode hold the trigger down while connecting the battery. When in programming mode, the user will be able to configure the controller by entering a sequence of 8 trigger presses. Each trigger press can either be a "short" or "long" tap (similar to Morse code) to represent OFF or ON. Once the user inputs the 8th trigger press, the settings will be written to the controller's memory, overwriting the previous settings. The AEG then exits programming mode and resumes normal firing.

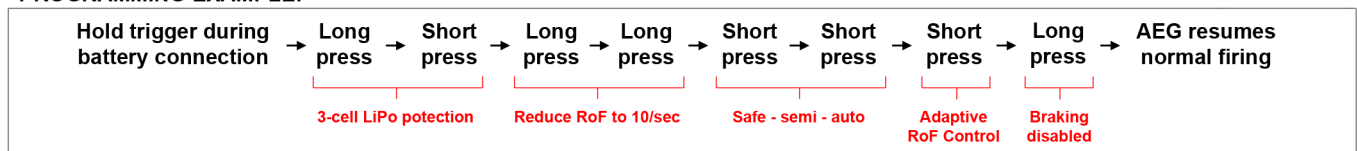
TRIGGER TIMING:

- | | |
|----------------------------|---|
| - Short press (< 1 second) | The motor will "buzz" after each trigger input. |
| - Long press (> 1 second) | |

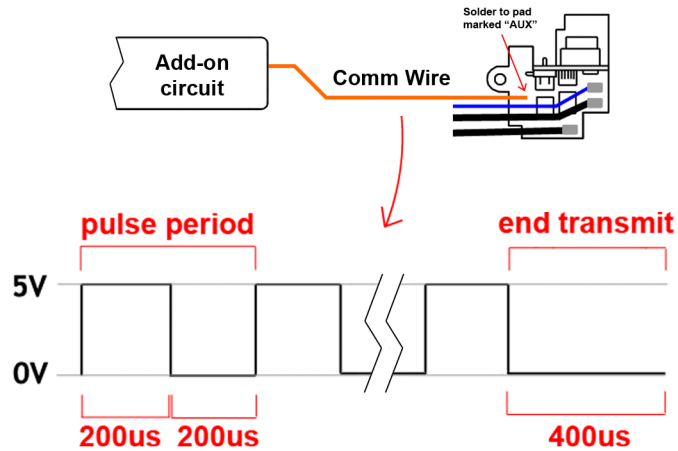
	Trigger Inputs 1 - 2	Inputs 3 - 4	Inputs 5 - 6
Short - Short	Ni-Cd / Ni-Mh	RoF at maximum	Safe - semi- auto
Short - Long	2-cell LiPo protection	Reduce RoF to 20/sec	Safe - semi - burst
Long - Short	3-cell LiPo protection	Reduce RoF to 15/sec	Safe - burst - auto
Long - Long	4-cell LiPo protection	Reduce RoF to 10/sec	Safe - semi - ^{semi} precock

	Input 7	Input 8
Short	Adaptive RoF Control	Braking enabled
Long	PWM RoF Control	Braking disabled

PROGRAMMING EXAMPLE:



Serial Comm Port



The comm port outputs a sequence of pulses to signal various events. These pulses are output at a frequency of 2.5KHz (400us per pulse period) at 50% duty cycle.

This port is a solder pad labeled "AUX" on the controller board, which can be found on the middle-left section of the controller.

Output	Event	Output	Event
1 pulse	shot fired	7 pulse	under volt
2 pulse		8 pulse	over current
3 pulse	trig press	9 pulse	over temp
4 pulse	trig release		
5 pulse			
6 pulse			

Troubleshooting

NEVER connect the battery in reverse polarity! Some China-made batteries have the connectors in reverse, check before plugging it in!

Problem	Solutions
No response when trigger is pressed.	<ul style="list-style-type: none"> - Check the battery and motor connections. - Make sure the battery is sufficiently charged. - Make sure the motor polarity is correct. - Check if the gearbox is jammed. - Check for shorts or tears in the wirings.
Piston not stopping at rest position.	<ul style="list-style-type: none"> - Make sure active braking was enabled during programming mode. - Clean the interior of the motor casing and motor shaft of any soot. - Replace the motor brushes if they are worn down.
AEG burst fires for 0.5s on semi mode.	<p>The cut-off lever is not making sufficient contact with the board's cut-off switch.</p> <ul style="list-style-type: none"> - Make sure the fire select plate is properly modified. The plate should never touch the cut-off lever.
AEG fires for 0.5s after trigger release on auto-mode	<ul style="list-style-type: none"> - Make sure the stock spring of the cut-off lever has been swapped for the extended spring. - Cutoff lever is off-spec. Add a drop of epoxy to the tip of the lever to increase it's reach.
AEG fires full auto on both semi and auto switch positions.	<p>Fire select plate is not properly pressing and releasing the board's fire select switch.</p> <ul style="list-style-type: none"> - Make sure the circular plate behind the fire select switch is properly aligned and not loose.
AEG fires semi only on both semi and auto switch positions.	<ul style="list-style-type: none"> - Fire select plate is off-spec. Modify it so it properly presses and releases the board's switch.