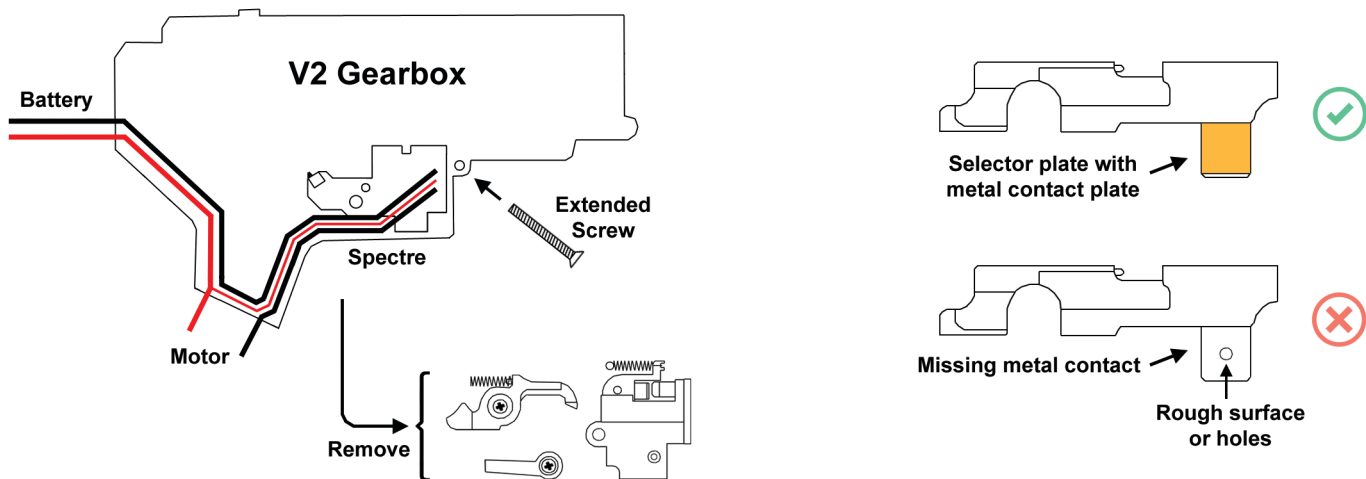


Spectre Mk.2 Installation



INSTALLATION:

- ① Open the gearbox and remove the original wiring, trigger switch, cutoff lever, and safety lever.
- ② Insert the Spectre FET into the gearbox and secure it tightly with the screw from the original trigger switch.
⚠ Do not include the screw from the cutoff lever as it will interfere with the sector gear.
- ③ For proper cycle detection, shim the sector gear as close as possible to the cycle detection switch underneath it. If the sector gear appears to be grinding against the housing of the switch then it is too close and needs to be shimmed a bit further incrementally.
⚠ Properly shim both sides of the sector gear to prevent it from sliding away from the switch and causing misreads.
- ④ Apply grease to the sector gear's cutoff cam to prevent wear on the cycle detection switch.
- ⑤ Route the battery and motor wires through the gearbox as shown in the above diagram.
⚠ Note the motor wires exiting the gearbox are now reverse of the original wiring, so the motor in the grip needs to be reversed too.
- ⑥ A full length selector plate with the metal contact is required to fully press the fire select switches. If the metal contact is missing or if the selector plate fails to fully press the switch, try wrapping the contact area in a few layers of tape to increase the thickness.
- ⑦ Close the gearbox and use the extended screw where shown on the above diagram. The tip of the screw should stick out 1-2mm on the other side of gearbox. This is to prevent the selector plate from slipping off the gearbox during maintenance.

OPTIONAL:

- ① Compatible with the AS ammo-sensing hopup and bolt catch microswitch. Simply plug those into the white connector on the front edge of the FET. The FET will automatically enable empty-mag cutoff functions when at least one shot is fired through the hopup or when the bolt catch is pressed at least once.
- ② To hardwire-lock the FET to semi-only operation, locate the area on the board with the marking "SEMI LOCK" or "SL". Using a soldering tool to bridge together the two solder pads will lock the AEG to semi-only regardless of the user's settings.

Programming & Stats App

WITH BLUETOOTH APP:

- ① Requires a smartphone or tablet which meets the following specs:
 - ↳ iPhone : 4S or newer models running at least iOS 7.0
 - ↳ Android : Models with Bluetooth 4.0 or above and running at least Android 4.3
- ② Download the official app by scanning the QR code on the right or searching for "AEG Stats" on the iPhone or Android app stores.
- ③ Fire a shot or reconnect the battery to wake up the FET's Bluetooth. Bluetooth will enter sleep state when idle for 10 minutes and will not appear on scans until awoken.
- ④ Hold the smartphone or tablet next to the AEG's grip or trigger to scan for and connect to the FET.
- ⑤ Once connected you can view the stats of the AEG and program the FET wirelessly. Any blue text in the app can be tapped to display additional info about it.



Scan to show
download links

WITH TRIGGER INPUTS:

- ① If the bluetooth app is unavailable the FET can be programmed via trigger inputs instead. The guide for this programming method is available at the BTC website or by scanning the QR code on the right.

Troubleshooting

Problem	Possible Cause and Solution
No response on trigger pull AND no motor buzz.	<p>Battery may be completely drained.</p> <ul style="list-style-type: none"> Try recharging or replacing the battery. <p>Selector plate not fully pressing down the fire select switches.</p> <ul style="list-style-type: none"> Try manually holding down the switch for SEMI and pull the trigger. If the gearbox cycles then refer to the installation section on how to correct the selector plate. <p>Possible short circuit in the wiring.</p> <ul style="list-style-type: none"> Try running the motor with the FET and wiring entirely outside the gearbox. Do this by manually holding down the selector switches and tapping the trigger switch. If the motor now runs then check for any tears in the wiring and insulate any that are found.
Only fires full auto AND continues firing for 0.5s after trigger is released.	<p>Sector gear not engaging the cycle detection switch.</p> <ul style="list-style-type: none"> Shim the sector gear closer to the switch. Make sure to shim both sides of the sector gear so it does not slide away from the switch.
Wrong firing mode on one or more selector positions.	<p>Wrong fire modes selected during programming mode.</p> <ul style="list-style-type: none"> Recheck the programmed settings using the app. <p>Selector plate not fully pressing down the fire select switches.</p> <ul style="list-style-type: none"> Try manually holding down the selector switches and pull the trigger. If the fire modes are correct then refer to the installation section on how to correct the selector plate.
Semi fire always cycles twice.	<p>If precock is ON: precock timing is set too high for your setup.</p> <ul style="list-style-type: none"> Lower the timing setting in programming mode. <p>If precock is OFF: the motor is taking too long to fully stop.</p> <ul style="list-style-type: none"> Try enabling or increasing the motor braking setting in programming mode. <p>If braking is already ON: the motor is in need of maintenance or replacement.</p> <ul style="list-style-type: none"> Clean the motor's internals and replace the motor brushes if they are worn down. Replacing the motor with a more powerful one will also improve the braking function.
Stops firing and/or motor begins to buzz repeatedly.	<p>1 buzz per second: low voltage / gearbox jam / torn wiring / poor wire connection</p> <ul style="list-style-type: none"> Try recharging the battery and make sure voltage monitoring is not set too high. Make sure the gearbox is not jammed and has sufficient torque to cycle the gearbox. Check wires for any torn insulation that might be shorting against the gearbox shell. Check battery and motor connectors for any broken solder joints. <p>2 quick buzzes: digital fuse tripped by high current draw (not due to short circuit)</p> <ul style="list-style-type: none"> Make sure the gears are not shimmed too tightly and motor height is not set too high, otherwise the increased load on the motor would also increase current draw. Increase digital fuse setting or use a higher torque gearset or motor. <p>3 quick buzzes: FET has overheated</p> <ul style="list-style-type: none"> Try disabling or decreasing the motor braking setting in programming mode. <p>4 quick buzzes: sector gear not engaging the cycle detection switch</p> <ul style="list-style-type: none"> Shim the sector gear closer to the switch. Make sure to shim both sides of the sector gear so it does not slide away from the switch.
Unable to connect with Bluetooth	<p>The FET is outside of scanning range</p> <ul style="list-style-type: none"> Scan right next to the AEG's grip or trigger. <p>Bluetooth has gone to sleep to save battery power</p> <ul style="list-style-type: none"> Fire a shot or reconnect the battery to wake up the Bluetooth. <p>(Android only) Location permission was denied for the app</p> <ul style="list-style-type: none"> Bluetooth on Android 6.0 and above requires location permission to be enabled. <p>If none of the above is working</p> <ul style="list-style-type: none"> Fully close the app by tapping the (x) in top-right corner and reopen. Unplug the battery for 5s to reboot the Bluetooth. Try another smartphone to check if it might be a device compatibility issue.
Performing a factory reset (and clearing the app passcode)	<ol style="list-style-type: none"> Disconnect the battery from the FET. Hold down the trigger and connect the battery. The motor will emit 4 quick buzzes indicating the FET entered programming mode. Do NOT release the trigger. Continue holding the trigger for 5 seconds until the motor emits a long buzz indicating a successful factory reset. Release the trigger and disconnect the battery to exit programming mode. <p>⚠ Additional trigger inputs without disconnecting the battery may result in accidental changes to the settings.</p>

Limited Warranty

COVERAGE: BlackTalon Concepts warrants for 3 years after the date of purchase that its products will be free from defects in material and workmanship. BTC will repair or replace any product which is found to be defective under normal use and service, without charge. BTC's obligation to repair or replace shall be the purchaser's sole and exclusive remedy under this warranty.

NOT COVERED: (a) Any alteration or modification of the product that is the direct cause of irreparable damage. (b) Any abuse, improper use, negligent use, or use exceeding the permitted limits of the product.

TRANSFER: The warranty provided by BTC is transferrable to any subsequent purchaser or any third parties for use of the remaining duration.