User Guide

NanoHARD

Last Update in 2015-06-25

www.gatee.eu

GATE

Notice

Information contained in this document is subject to updating without notice.

FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE INSTALLING THE CONTROLLER

Safety Summary

DO NOT DISMANTLE THE DEVICE

Device cover must not be removed by the user.

DO NOT OPERATE NEAR TO EXPLOSIVE MATERIALS

Do not operate the device in the presence of flammable gases or fumes.

DANGER!

Short-circuiting of battery packs. Caution is exercised to prevent short circuiting the battery as the consequences can be very dangerous.

FOR YOUR SAFETY

We recommend that this product should be installed by an experienced airsoft service.

WARNING: Before starting installation process, please ensure that your AEG is empty and there is no BB's inside.

WARNING: Always use a fuse between the battery and the controller.

WARNING: Incorrectly connecting positive and negative battery terminals will cause immediate damage to the unit and it can lead to fire.

WARNING: To use battery protection (p.6) it must be enabled before.

NOTE:

Please check you have downloaded the lastest manual from the **Technical Support** section of our website: **www.gatee.eu**.

The **Product Warranty Form** is also available on our website: **http://www.gatee.eu/en/rma-2**

In case you have any difficulties while installing or using this product, we recommend to email us at **support@gatee.eu**.

Table of Contents:

I. Overview

NanoHARD is a multifunctional programmable AEG Controller. It has 8 functions. Thanks to its special coating, it is resistant to atmospheric conditions (Military Specification MIL-V-173C). Battery protection supports: Li-Po 7.4V / 11.1V / 14.8V. You can also disable the protection and use other batteries.

Key functions:

ON/OFF ACTIVE BRAKE

ON/OFF ACTIVE BRAKE

This is the first controller that provides you with the possibility to turn off the Active Brake. You can enable or disable the Active Brake at any time.

SMART FUSE

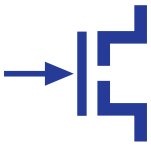
SMART FUSE

The new AEG Controller should never let you down on the battle field. It is the best electronic fuse that has ever been made. This is the first AEG Controller with a true current sensor. A combination of current, voltage and temperature measurements provides your AEG installation with the high reliability. If your rifle becomes jammed, it protects motor and battery against any damage. There is known way to destroy the controller by overheating, overloading or short-circuiting of the electrical system.

BUILT-IN SELF-TEST

BUILT-IN SELF-TEST

It allows you to quickly check whether the AEG Controller works properly. If you have problems with your AEG, the BUILT-IN SELF-TEST allows you to check that the problem is not caused by the controller.



MOSFET

MOSFET

Do you want to achieve a higher rate of fire and faster trigger response? Are you planning a power upgrade of your rifle? In that case, you need a MOSFET.

It targets the energy from the battery directly to the motor, bypassing the mechanical trigger contacts. As a result, you will gain a higher rate of fire of the rifle and a faster trigger response, and the contacts will be protected against burn out.

BATTERY PROTECTION

Protection against Over-Discharge of the Battery

Modern LiPoly batteries are very sensitive to over-discharge. If you do not want to damage the battery and you care about its service life, this protection is indispensable. The microprocessor constantly monitors the battery voltage. When it drops down to a critical level, it will not permit firing.

DEBOUNCING

Debouncing

This provides full compatibility with the micro-switches. It is fully resistant to contact bounce. You gain a bigger ROF, a faster trigger response and your MOSFET is less prone to heating.

3rd GEN MOSFET

3rd Generation MOSFET

The usage of modern transistors and microcontroller has enabled us to create the smallest and most reliable AEG Controller in the market.

Li-Po Ready

14.8V LI-PO READY

The system can be used with batteries up to LI-PO 14.8V. Minimum operating voltage is 3V and maximum voltage is 17V.

Included in the kit:

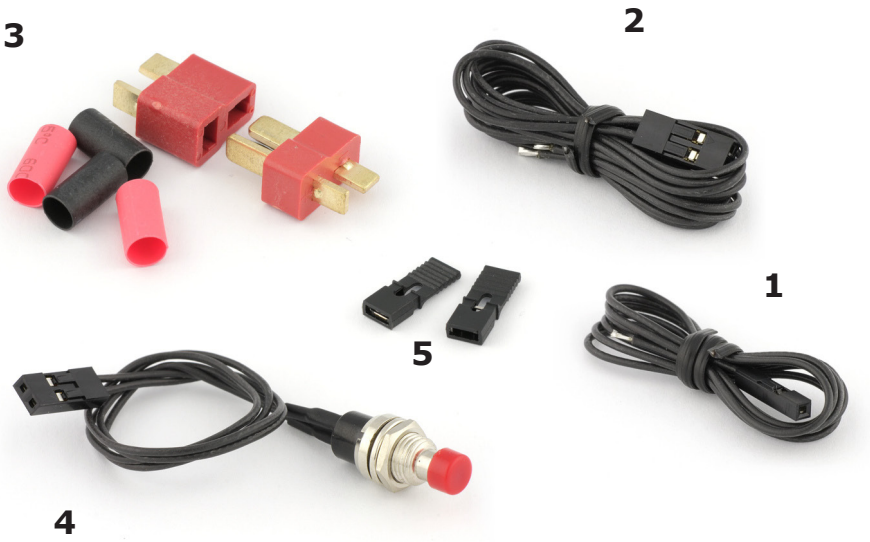
1. Single signal wire for trigger contacts

2. Dual signal wire for trigger contacts

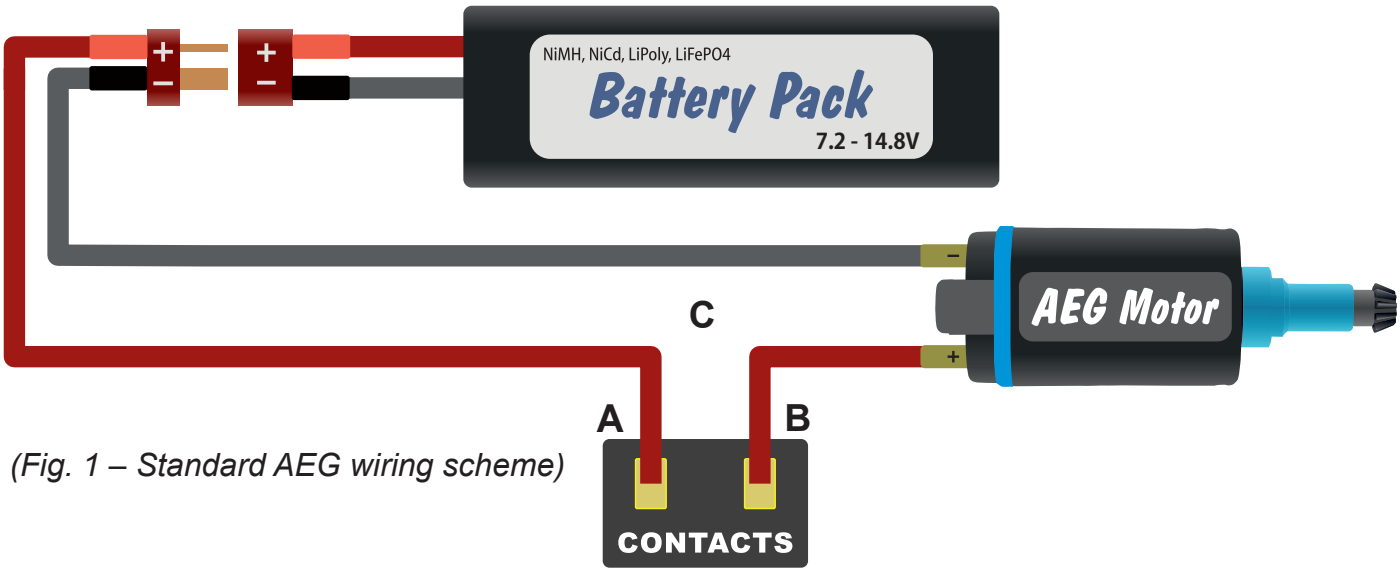
3. Deans-T Connectors [kit]

4. Programming button

5. Jumper [2pcs.]



II. Installation

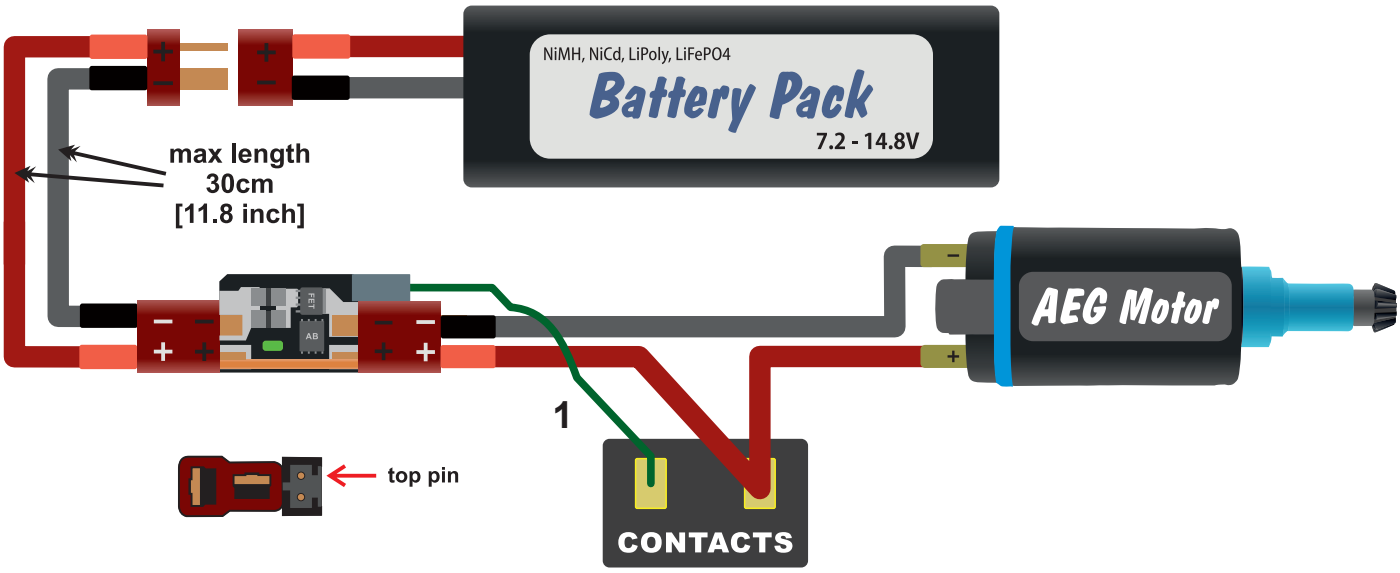


(Fig. 1 – Standard AEG wiring scheme)

To adapt the standard AEG installation to work with NanoHARD it is necessary to get to the trigger contacts. In the case of GB v2 contacts these are located inside a gearbox. With a version 3 gearbox, the installation will be easier because the contacts are on the outside of the gearbox. Please consult a local airsoft technician if you have never disassembled a gearbox before or if you have any installation concerns.

DANGER! Incorrectly connecting positive and negative battery terminals will cause immediate damage to the unit and it can lead to fire.

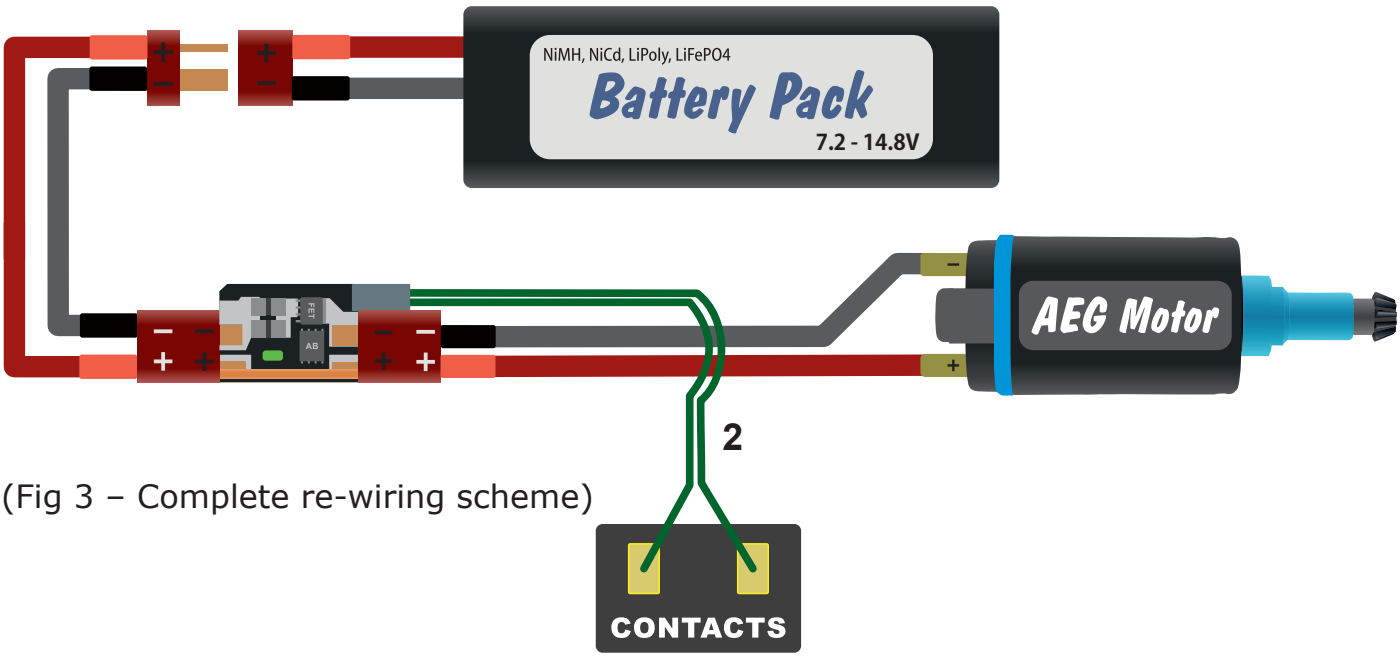
a) Installation of NanoHARD without replacement of wires. Using this method, the original wiring is kept intact, and the connections are modified. Referencing Fig. 1, de-solder **A** wire from the one of the trigger contacts and then solder it to the **B** wire. It does not matter which wire you disconnect from the trigger switches, just join the two wires together at one terminal. In the place of the **A** wire, solder the additional single signal wire (No. 1 – provided in the kit). The gate wire is very thin because it handles very low current and it is only used for switch-detection. Now connect the device between the battery and AEG. Do not forget about the signal wire. Connect it to the top pin.



(Fig 2 – Connection-modification scheme)

b) Installation of NanoHARD with replacement of wires.

Replacing the existing AEG wiring with high-quality, low-resistance wiring in conjunction with the installation of a MOSFET allows for the ultimate in system efficiency. 16 awg or thicker wire is recommended. Solder the dual signal wire (No. 2 – provided in the kit) to the trigger contacts. Connect the motor directly to the NanoHARD.

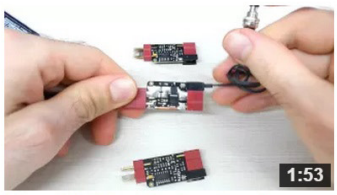


(Fig 3 – Complete re-wiring scheme)

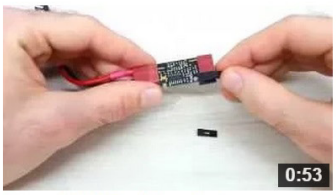
III. Programming

We invite you to watch videos about NanoHARD programming on our YouTube channel!:

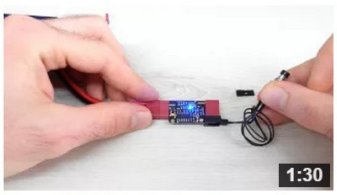
http://www.youtube.com/GateMovies



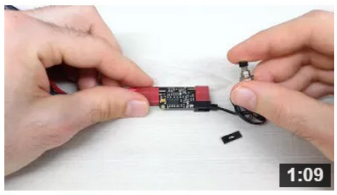
NanoHARD - Understanding green LED
15 wyświetleń • 2 godziny temu



NanoHARD - How to turn ON/OFF Active Brake
21 wyświetleń • 2 godziny temu



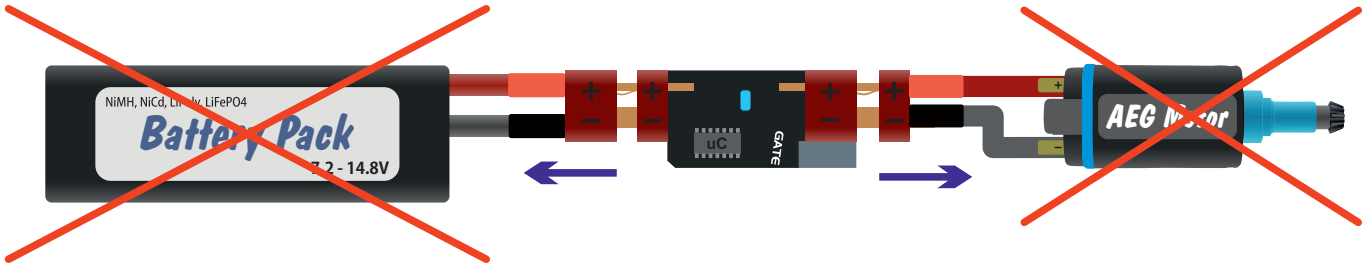
NanoHARD - Going through the entire configuration
32 wyświetlenia • 2 godziny temu



NanoHARD - How to program Li-Po battery...
23 wyświetlenia • 2 godziny temu
CC

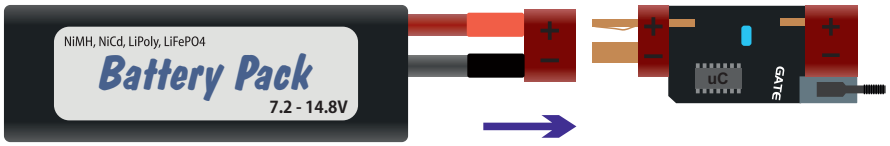
Battery Protection and Active Brake settings

Step 1. Disconnect BATTERY and MOTOR from NanoHARD.



Step 2. Connect JUMPER to NanoHARD.

Step 3. Connect BATTERY to NanoHARD

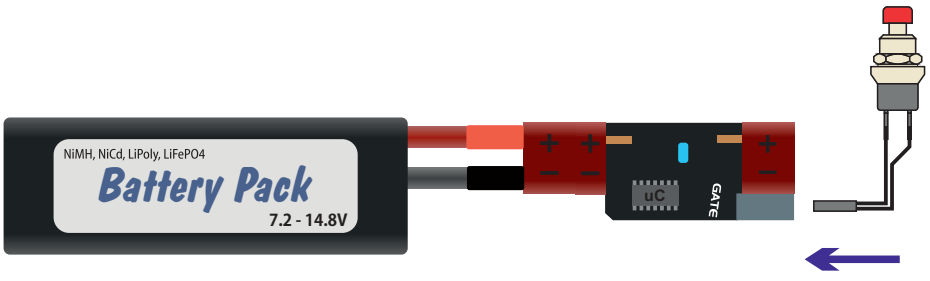


Blue LED
starts blinking

Step 4. When blue LED is OFF, disconnect JUMPER from NanoHARD.

*If you disconnect JUMPER when the blue **LED is ON**, get back to **Step 1***

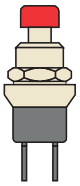
Step 5. You are in programming mode. Connect BUTTON to NanoHARD.



Blue LED
blinking

Step 6. Set battery protection. Count the number of flashes.

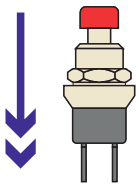
CLICK!



BATTERY PROTECTION			
SETTINGS		FLASH COUNTING	
1. OFF		⚡	- 1 time
2. LiPoly	7.4V	⚡⚡	- 2 times
3. LiPoly	11.1V	⚡⚡⚡	- 3 times
4. LiPoly	14.8V	⚡⚡⚡⚡	- 4 times

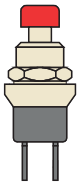
Step 7. Save and go to Active Brake settings.

CLICK & HOLD!



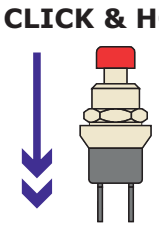
Step 8. Set Active Brake mode. Count the number of LONG and SHORT flashes.

CLICK!



Active Brake			
SETTINGS		FLASH COUNTING	
1. OFF		▬⚡	1 time long 1 time short
2. ON		▬⚡⚡	1 time long 2 times short

Step 9. Save and exit.



IV. GATE Limited Warranty Policy

GATE warrants that this product is free from manufacturing and material defects at the date of purchase and for a period of one (1) year from the date of purchase and it is not-extendable. This warranty is valid provided that the following terms and conditions are met:

1. This warranty is valid provided that the owner provides a proof of purchase and properly completed warranty form. Installing the product is not considered as a warranty repair.

2. The warranty form is available on our website:**http://www.gatee.eu/en/rma-2**

3. If the warranty form lacks a serial number, the warranty request cannot be approved. You can find the serial number on the original product packaging.

4. Requests for warranty are processed as soon as possible, not exceeding 7 working days.

5. This warranty is valid provided that the product is not damaged as a result of misinterpretation of the instructions.

6. All repairs and structural modifications made by the purchaser result in termination of the guarantee.

7. Lack of heatshrink tube on product results in the invalidity of the warranty.

8. The guarantee may be invalidated if product failure is the result of improper operation, installation, mechanical, thermal or chemical damage.