



INSTALLATION MANUAL

FOR GEARBOX V2

Leviathan - V2 parameters

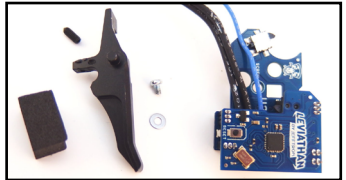
It is processor controlled mosfet with Bluetooth communication. Device is fully integrated inside the gearbox version 2 instead of the original trigger contacts, compatible with Tokyo Marui standard. Completely made wires with 30A mini fuse and deanT connector. It adds new shooting modes, controls RoF, pre-cocking, active braking, low battery indication, statistics... controls via app in the smartphone. Usable for battery with max. 17 volts.

Safety warning

- Installation of this device into the gearbox requires advanced technician skills!
- Please read these informations before installing your device to prevent any damage.
- Short circuit or incorrectly connected battery will cause immediate damage to the device which is not covered by the warranty. It can lead to fire or even battery explosion.
- Disconnect battery, when you aren't using the gun! Otherwise you will fully discharge the battery. Because the device drains small amount of current from it all the time.
- Don't connect battery when gun pointing towards you, another person or an animal.
- Don't modify, repair, put into any kind of liquids or thermal shock the Leviathan - V2.

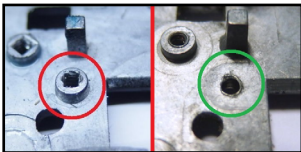
Package contents

- Leviathan - V2 drop-in module with wiring
- Screw with washer for securing device in the gearbox
- CNC trigger with hair trigger feature
- Screw for the trigger zero path adjustment
- Foam to keep device in place
- Installation manual



Insertion procedure of Leviathan-V2 into the gearbox

1. Remove and open the gearbox according to the normal gun disassembly procedure.
2. Take out all the internals from the gearbox and clean the vaseline, oils after them. Check the gearbox for edges. Grind for smooth surface to prevent Leviathan board damage.

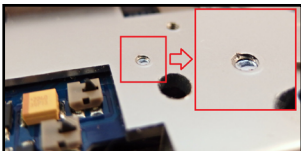
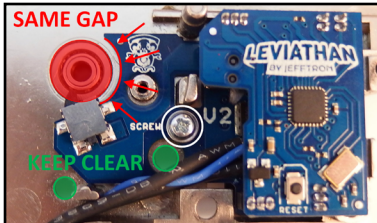


3. If your gearbox has high screw mounting, cut it off to flat surface.

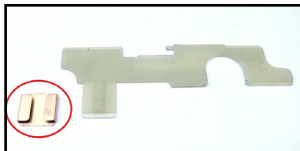


4. Take out these unnecessary parts out of the gearbox.

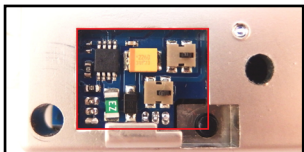
5. Insert Leviathan-V2 in the place of the original trigger contacts. Check if it is laid flat on the gearbox shell. Adjust the position of the Leviathan to same distance from bearing (arrows). Use screw with washer from package and screw device to the gearbox (white circle). Make sure the green areas are not covered by board or wires.



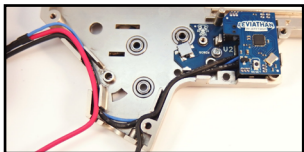
6. Make sure the screw doesn't stick out outside of the gearbox. If yes grind it.



7. Remove metal plate from the selector plate (if it has the metal plate)



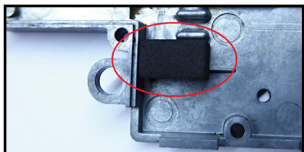
8. Check other side of gearbox, if there aren't any short circuits with gearbox.



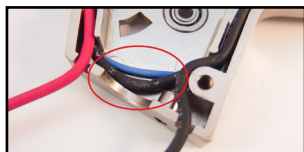
10. Place wires from the Leviathan-V2 in order: blue, -battery, -motor.



12. Use trigger from package.
If you want use your trigger, grind it by the red line on the picture.



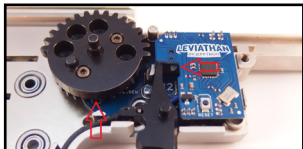
9. Stick the foam to the right gearbox shell (included in the package)



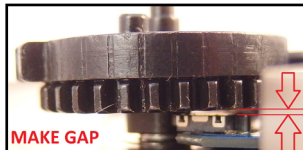
11. Wires under motor have to be stick on the wall.



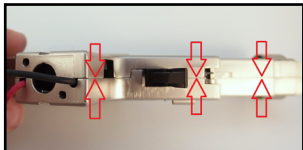
13. If you want shorter trigger path, insert screw into the trigger. After testing secure its position by super glue.



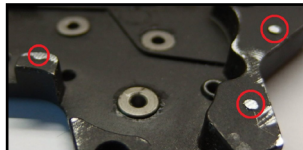
14. Insert into the gearbox sector gear and trigger from Leviathan package. (avoid micro switches break).



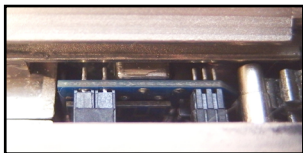
15. Make sure the sector gear does not touch micro switch on the Leviathan-V2



16. Put together the gearbox shell. Check if it fit together perfectly.



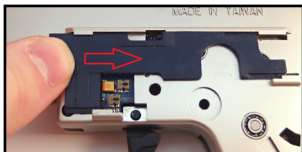
17. If necessary grind pins in red circles to fit wires into the gearbox.



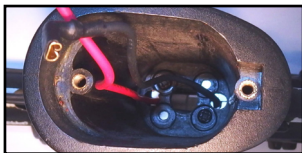
18. Check if the top board fits in the gearbox without any problems.



19. Secure the gearbox by 3 screws.



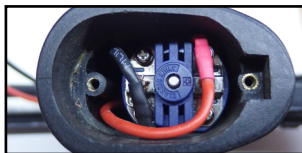
20. Insert selector plate, move it from front to back (avoid micro switch break)



22. Black wire bends back at the bottom and lead both wires back in the grip.



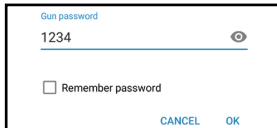
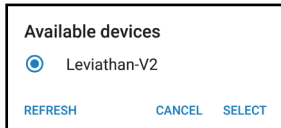
21. Put the gearbox into lower receiver, secure its position by pins and screws.

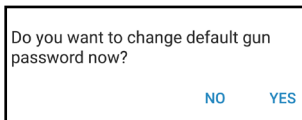


23. Connect the black wire first. Keep in mind right motor polarity.

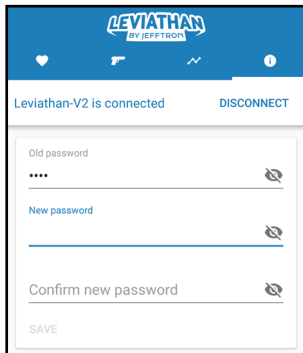
Testing micro switches

1. Install „**Leviathan by JeffTron**“ app from iOS store or Google play into your smartphone. You can also use link <https://www.jefftron.net/application>
2. Connect battery to Leviathan - V2 and pair smartphone with the password „**1234**“.





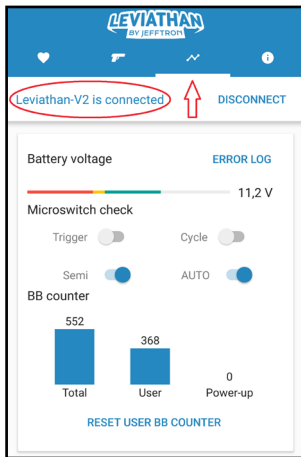
3. Change password to your 4 digit.



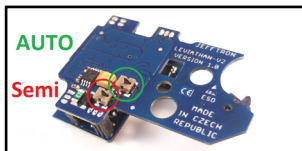
4. Set 2x new password and push SAVE.

Don't tell new password to anybody!

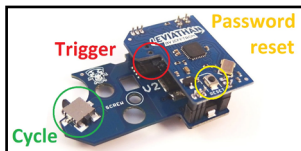
If you forgot your password, restore it by holding RESET button - see pic. 7. Battery has to be connected.



5. Check if every micro switch responding. They are displayed on picture 6 and 7. Grey color is OFF, blue is ON. There is delay about 1s because of BT communication. Move sector gear slowly to show „Cycle„ detection. With selector on auto are semi and auto detection ON (like on the picture).

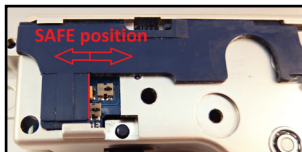


6. Micro switches positions in red and green circles. SAFE position is when these micro switches are OFF.



7. Yellow reset button hold for 2s, password is reset to **1234** after vibration from motor (settings is reset too).

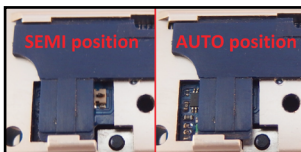
Microswitch troubleshooting



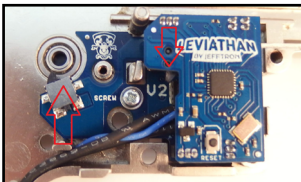
8. If is semi on safe, auto on semi move Leviathan-V2 to the left or grind selector plate on red line. Otherwise add metal plate or different material on it.

10. If cycle is not detected move Leviathan-V2 slightly higher to be micro switch closer to sector gear. If trigger doesn't press micro switch move Leviathan-V2 front slightly lower.

When everything works right insert rest parts into the gearbox and assembles the gun.



9. Demonstration right SEMI and AUTO selector plate position. On pic. 8. is SAFE



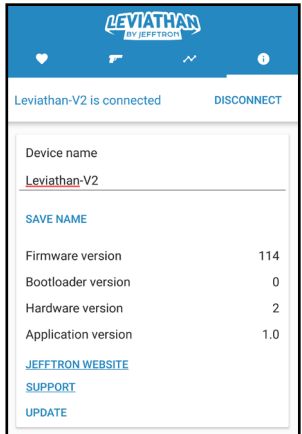
First time shooting

1. Connect battery, after 1s you will feel a short vibration. This means that the power-up self-test is complete and OK.
2. Put the gun into SAFE - nothing happen when is trigger pulled.
3. Put the gun into SEMI and it will fire once.
4. Put the gun into AUTO and pull the trigger shortly. Gun should fire a burst of 3 rounds. If you held down the trigger longer the gun will go to auto fire.
5. If everything works as described, congratulations for the correct installation the Leviathan-V2. If not, check what is written in the error log and the **12-14 pages in this manual**
6. Pair with the leviathan-V2 and update firmware to the newest version. Your smartphone has to be connected to the internet.

Have your application and firmware updated!

WARNING - Disconnect battery, when you don't use the gun! Otherwise it will lead to destroy battery or its fire. Because Leviathan - V2 drains small amount of current from it all the time.

- Change name visible on the Bluetooth list, max. 12 characters. After you save the name, Leviathan - V2 will be disconnected from phone.
- Info about application and firmware version. Bootloader and Hardware version is constant.
- If you have any questions or problems, please contact us at email support@jefftron.cz.
- Update fixes bugs and adds new features. It takes about 1minute to complete. It will end with successful message and short vibration.



Change parameters page 1/2

Orange stripe = not paired, **green stripe** = paired

Leviathan-V2 pair loads parameters from it.

Fire modes with **Selector on safe/semi/auto**:

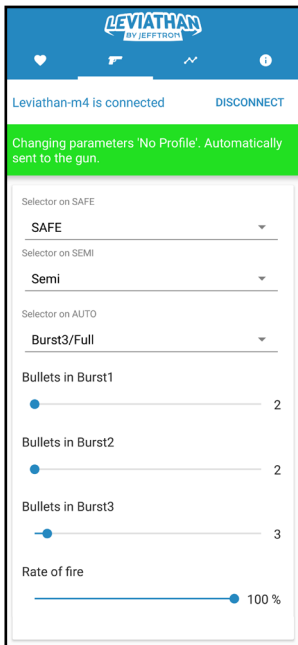
- **SAFE**: no responding on the trigger pull.
- **Semi**: it fires single shot per trigger pull.
- **Semi/BurstX**: short trigger pull fires single shot, long trigger pull fires burst.
- **Double trigger**: it fires single shot when trigger is pulled and another single shot when is released.
- **BurstX**: gun shoot burst per trigger pull.
- **BurstX/BurstY**: short trigger press fires burstX, long trigger press makes burstX+burstY fire.
- **BurstX/Full**: short trigger press fires burstX, long trigger press makes auto fire.
- **Full**: gun makes auto fire until releasing trigger.

Burst functions:

It enables you to shoot a set number of BBs on one trigger pull. It will always complete the burst. Every selector has its own Burst settings. You can choose between 2 - 20 fired bullets in the burst.

Rate of fire:

It is useful for solving problems with too high gun RoF. This function makes breaks between shots to reduce RoF. It gives you fast trigger response even with very low rate of fire, just like in a real gun.



Change parameters page 2/2

Active Brake:

It uses the excess energy from the motor to stop it. Lower braking intensity spares the motor coils. Spring is fully released, parts in gearbox aren't under strain. Higher power braking is suitable for weapons with high RoF. The effect is the most powerful with torque motor.

Pre-cocking:

The piston is partly compressed after fire on SEMI. Max. compression is about 70% intensity (depends on the gun setup). There isn't almost any delay between trigger pull and shot. Pre-cocking works only with active brake. If you hold the trigger after firing at least 3 seconds, gun shots again, but this time with a piston in a released position, use it before store the gun. Please note: using pre-cocking increases wear and tear on the gearbox.

Delay between shots:

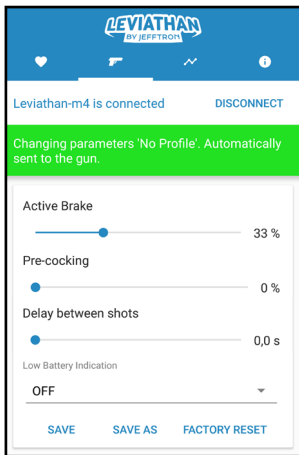
It is for simulation the delay from gun reload or recoil. In this time is not possible to shoot again. Motor vibrates shortly after pass time delay to notify the gun is ready for shooting.

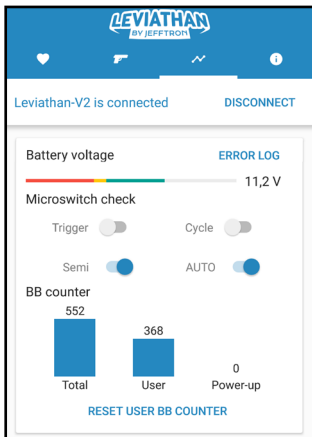
Low Battery Indication:

It is used for only Li-xx batteries. When is low battery voltage detected, gun vibrates after each shot. It is time to replace the battery at the nearest opportunity. When the battery is discharged the gun vibrates instead of fire. **WARNING: battery is still slowly discharged.**

SAVE: You can save these parameters under custom name into your smartphone.

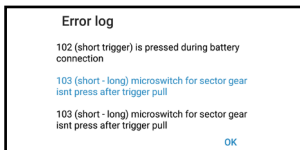
FACTORY RESET: It restores parameters to factory state (password is unchanged).



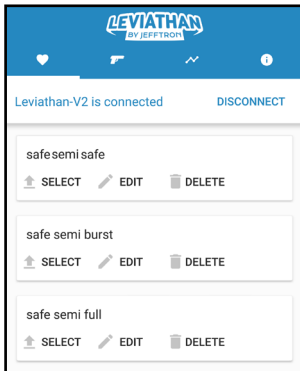


Battery voltage: It shows actual value. Red color line indicates when gun won't shoot. In yellow it will shoot with warning vibration. In green is everything OK and grey is discharge from 100% charge.

BB counter: They are shots counters.
 Total - count every shot during lifetime
 User - can be reset by user anytime
 Power-up - battery connection reset it



Error log: It shows errors made during the device life. Error at the top of the list is the last one. More info at page 12.



Profiles: At this page are saved profiles. „Select“ will upload settings to device.

Startup codes

After connecting battery Leviathan - V2 does a power up self check, which lasts a 1s. It results the motor vibration or error beeps with the error log record:

- 1 short vibration** - All systems are OK. This vibration is about half second long.
- 1 short beep** - Trigger is pressed during battery connection (E102)
- 2 short beeps** - High current flow the mosfet (E106)
- 3 short beeps** - High temperature on the mosfet (E104)
- 1 long beep** - Battery voltage is less than 5.5 volts (E107)
- 2 long beeps** - Battery voltage is more than 17.0 volts (E105)
- 3 long beeps** - High processor temperature (E108)
- long-short-long beep** - Nonfunctional application (E200)

Post firing codes

If any problem occurs during firing, it will be signaled by beeps with the error log record:

- 1 short beep** - Micro switch for sector gear is pressed after the motor stop (E100)
- short-long beep** - Micro switch for sector gear isn't pressed after the trigger pull (E103)
- 2 short and long beep** - Microswitch for auto is pressed, but for semi is not pressed (E101)
- 2 short beeps** - High current flow the mosfet (E106)
- 3 short beeps** - High temperature on the mosfet (E104)
- 1 long beep** - Battery voltage is less than 5.5 volts (E107)
- 3 long beeps** - High processor temperature (E108)
- 1 vibration after shot** - Battery voltage is low. If the battery drops much further, the gun will vibrate instead firing. Now it is a good time to change your battery for new one.
- 1 vibration instead of fire** - Battery is discharged. The gun vibrates on every trigger pull. change your battery for new one. **WARNING: battery still slowly discharging.**
- 1 vibration after some time** - When is delay between shot activated, it vibrates after the delay time ends. It is for notification the gun is ready for shooting.

Troubleshooting

ISSUE: Weapon doesn't react at all after battery connection.

SOLUTION: Check if the battery is properly connected and charged. Also check motor contacts and motor functionality. Check if the safety fuse hasn't been blown.

ISSUE: Weapon doesn't make shots after trigger pull (start-up vibration was made).

SOLUTION: Damaged or misplaced micro switch for trigger, check it's proper function.

ISSUE: Selector is set to semi but act like on SAFE or AUTO (or any other combination).

SOLUTION: Damaged or misplaced micro switch for selector plate, check its proper function through micro switch check page in the app and correct selector plate shape according page 7 in this manual.

ISSUE: Micro switch for sector gear is pressed after motor stop error (E100).

SOLUTION: Gun have too high rate of fire and piston make over spinning. Solve it by increasing active brake or reducing pre-cocking (if used) or reducing rate of fire or use battery with lower voltage or change gear ratio or use low speed high torque motor.

ISSUE: Micro switch for auto is pressed, but for semi is not pressed error (E101).

SOLUTION: Damaged or misplaced SEMI micro switch for selector plate, check its proper function through micro switch check in the app and correct selector plate shape.

ISSUE: Trigger is pressed during battery connection error (E102).

SOLUTION: Release the trigger and try again. Check for right trigger microswitch function.

ISSUE: The gun always shoots BURST with short-long beep after fire (E103).

SOLUTION: Cycle micro switch doesn't detect sector gear motion. Use micro switch check function to move cycle micro switch to the right position.

ISSUE: High temperature on the mosfet error (E104).

SOLUTION: Outside temperature is too high. Wait until temperature will be dropped down. Or mosfet is overloaded by too high motor amps change gearbox internals to drain less amperage.

Troubleshooting

ISSUE: Battery voltage is too high error (E105).

SOLUTION: Change battery with less voltage than 17.0 volts.

ISSUE: High current flow the mosfet error (E106).

SOLUTION: Check if motor or gears is damaged or jammed. Also check wires to motor for short circuits or exposed connections.

ISSUE: Battery voltage is too low error (E107).

SOLUTION: Change or charge battery to have more voltage than 5.5 volts.

ISSUE: High temperature on the processor error (E108).

SOLUTION: check for short circuits on the leviathan-V2 through the gearbox.

ISSUE: High temperature on the processor error (E108).

SOLUTION: check for shorts circuits on the leviathan through the gearbox.

ISSUE: Nonfunctional application error (E200).

SOLUTION: Program error in the Leviathan-V2. Update firmware to the newest version.

ISSUE: Gun suddenly stopped firing.

SOLUTION: Protection could be activated - check error log. Check battery charge. Check motor contacts and motor functionality. Check if the safety fuse hasn't been blown.

ISSUE: Leviathan-V2 is not visible in the device list in the application.

SOLUTION: Click to refresh button in the app. Check if it is charged and connected battery into the leviathan -V2. Enable Bluetooth in your smartphone. Restart mobile app.

ISSUE: You programmed Leviathan - V2, now it doesn't do what you wanted.

SOLUTION: Best way is to do **FACTORY RESET** and start again.

ISSUE: The gun does something strange or nothing.

SOLUTION: STOP! Release trigger, disconnect battery and search for the problem before something will be irreversibly damaged! Contact us at email support@jefftron.cz.

MANUFACTURER

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Made in Czech Republic



www.JeffTron.net

VERSION 3.19



Warranty does not cover: water immersion, defects or damage from accident, misuse, opposite battery polarity, abuse, damaged wires, wrong installation, bad handling, any modification by user, unusual physical, electrical or electromechanical stress.

Exclusion of liability: Manufacturer Ing. Filip Němec is not liable for any damages, injuries or accidents of any kind resulting from the use of this product in the airsoft gun.

