

**AIRSOFT SYSTEMS**

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# ASCU LITE

FOR GEARBOX VER. 2

**ATTENTION! PLEASE READ CAREFULLY THIS INSTRUCTION AND USER MANUAL BEFORE YOU PROCEED WITH THE INSTALLATION OF THE ASCU.**

# ASCU - AIRSOFT SMART CONTROL UNIT - LITE

**WARNING! Please read carefully this Instruction manual before proceeding with the installation. We strongly recommend that the ASCU to be installed by an experienced airsoft technician.**

The ASCU is a electronic module which when installed in an airsoft electric gun, drastically improves the way the gearbox cycles and the realism in imitating the functions of a real weapon.

The ASCU system monitors the operation of the AEG in any time, and no matter how fast you tap the trigger, the AEG will always complete the full cycle, no matter if you shoot in Semi or Full Auto mode.

The ASCU has an integrated Low Drain Protection. LiPo, NiMH, and NiCd batteries from 7,4 V to 12 V can be used safely. The ASCU automatically recognizes the battery type and voltage, even if the battery is not fully charged.



**The use of high quality motor with the ASCU is highly recommended.**  
**The use of high quality battery with the ASCU is highly recommended.**  
**Do not use old and damaged batteries!**  
**11.1V or 12V Battery is recommended!**  
**7.4V to 8.4V Battery to be used only with M90 up to M100 springs.**

The ASCU will stop the AEG firing if any mechanical problem occurs to the gears in the AEG, which protects the internals of the gearbox from further damage.

The ASCU LITE is easy to install in all AEGs with Ver.2 gearbox. In most of the models there is no need for any modification of the original parts of the airsoft rifle, nevertheless some models may need some minor and easy to do, modifications of some parts in order make the installation easier.

## **The ASCU kit includes:**

- ASCU LITE board with wires
- Selector Plate
- Internal Safety lever
- Wire guide tool

## **Tools needed:**

- Set of Philips screwdrivers.
- Set of allen keys

## ASCU INSTALLATION STEPS

**WARNING! If you are not familiar with the AEG's gearbox internals and you do not have good gearbox repair experience, please do not proceed with the installation and turn to your nearest airsoft service.**

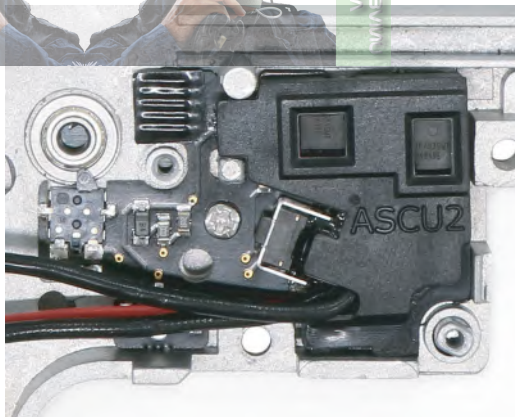
1. Remove the gearbox from your gun following the standard procedures for your model.
2. Open the gearbox and remove the cylinder together with the piston and the spring. Remove the gears and the anti-reversal latch, the trigger and the selector plate. Unscrew and remove both parts of the safety lever. Unscrew the switch assembly and remove it together with the wiring. Remove the cut-off lever.
3. At this point check the gearbox shell for any sharp edges in the way of the wires. If there are any, round them with a small file. Clean the gearbox shell from any dirt and grit. Check also the receiver for any sharp edges in the wires way, and if there are any, round them with a small file. All sharp edges in the wires way must be rounded because they can cut through the wires insulation and damage the ASCU.

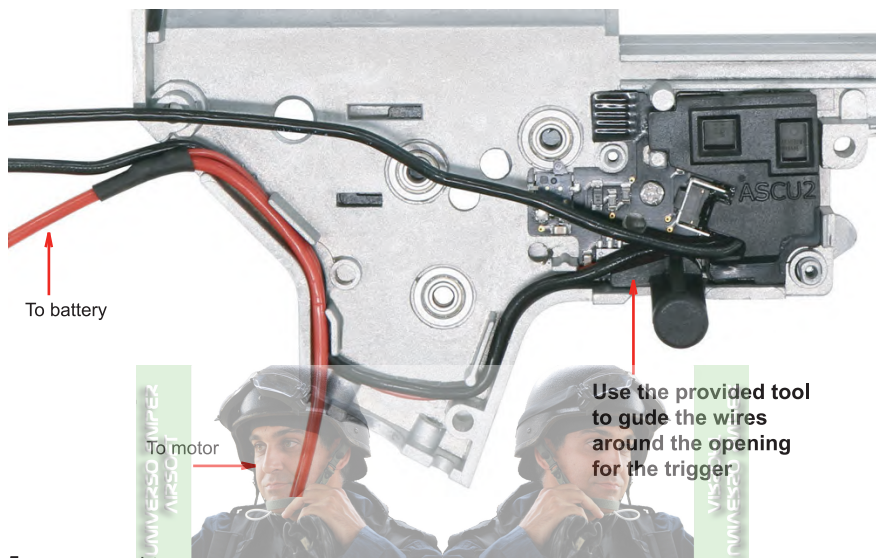
4. On the place of the original trigger switch, place the ASCU LITE board.

Press it in firmly as it is a very tight fit.

Make sure the board is lying well against the wall of the gearbox shell.

Fasten it with the screw used for the original trigger switch assembly

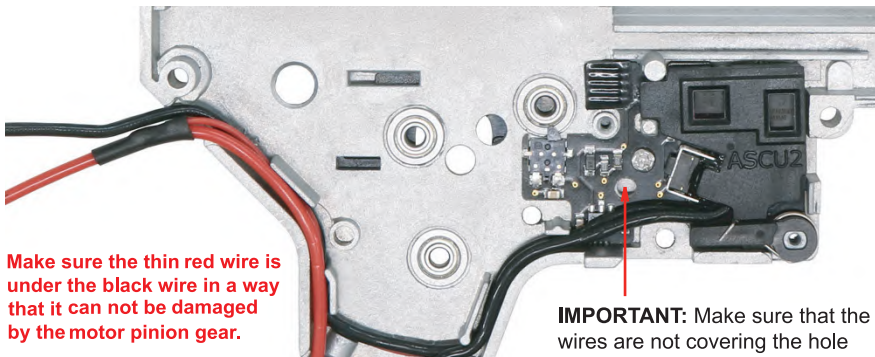




5. Place the thin wire in the wire channel in the gearbox shell exactly as shown on the picture.
6. Pick the Black wire connecting the ASCU to the battery connector, and place it in the wire channel of the gearbox shell, over the thin wire. Make sure that both wires are clear from the gearbox pin whole and the trigger area.
7. Place the Red wire in the wire channel over the Black wire as shown on the picture.

**\* Keep wires as close as possible to the gearbox wall in the area where the pinion (motor) gear sits.**





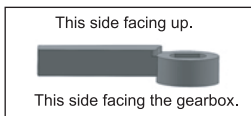
**Make sure the thin red wire is under the black wire in a way that it can not be damaged by the motor pinion gear.**

To motor →

**8.** Take the other Black wire that connects the ASCU to the Motor and place it in the wire channel of the gearbox shell as shown on the picture.

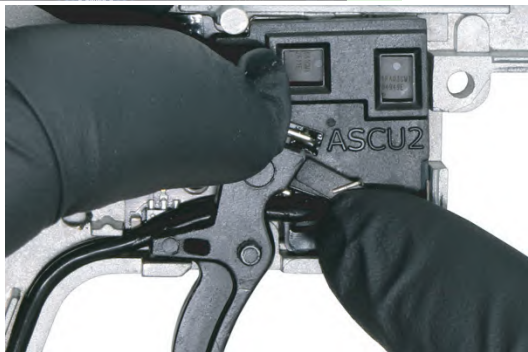
**9.** Install the provided Selector Plate.

**10.** Install the provided inner Safety Lever on the place of the original ones using the original spring and screw.



**11.** Carefully remove the wire guide tool after all the wires are in place.

**12.** Put the trigger in its place and test if the safety lever blocks the trigger before it activates the trigger switch on the ASCU.



13. Apply gear lubricant on the gears and instal them back in the gearbox .

**WARNING!** When installing the sector, gear make sure the cut-off cam on the back of the sector gear is facing up - towards the cylinder in order not to break the cut-off switch on the ASCU!



**NOTE:** If you are using a quality high torque motor with strong magnets, you do not need to reinstall the Anti-Reversal Latch (ARL).

**\*Anti-reversal latch may be reinstalled if a set-up of low power motor with low power spring, or High Speed motor with low power spring is used.**

14. Reinstall the cylinder assembly together with the piston and the tappet plate. Reconnect the tappet plate spring. Reinstall the trigger with its spring.

15. Insert the main spring and the spring guide. **Check again that all wires are in place and the hole for the receiver pin is clear.**

16. Close the gearbox.

17. Insert the gearbox in the lower receiver. **Check the opening for the gearbox pin for any obstructions and if it is properly aligned. Replace the gearbox pin.**

18. Install the grip and the motor.

**!!! Make sure you connect properly to (+) of the motor to the RED wire and the (-) of the motor to the BLACK wire.**

**!!! When closing the motor cap be careful not to damage the insulation of the wire plugs!**

**!!! Make sure to adjust the motor tension correctly.**

## **READ BEFORE USING YOUR AEG WITH ASCU!**

**ASCU LITE is designed with simplicity and functionality in mind. There is no need for any kind of program settings. It already has all the functions you really need and use with your Airsoft Electric Gun**

- 1. Set the fire selector to "SAFE", then connect the Battery.** After 3 seconds a single buzz signal will indicate that the battery is connected and the AEG is ready for use.
- 2. When the fire selector lever is on "SAFE" the AEG will not fire when the trigger is pulled.**
- 3. When the fire selector lever is on "SEMI" the AEG will fire a single shot each time the trigger is pulled.**
- 4. When the fire selector lever is on "AUTO" and the trigger is pulled the AEG will fire fully automatic until the trigger is released. If you only tap the trigger it will make a 3 round burst.**
- 5. When the battery is depleted, the AEG will stop firing and you will hear a double buzz signal. Change the battery with a charged one.**

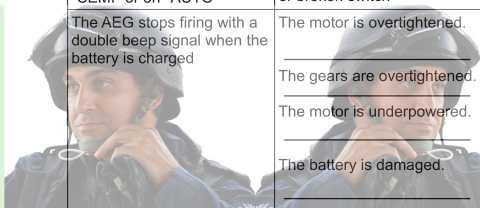
**Never leave your Airsoft Electric Gun with ASCU stored with the battery connected!  
Always disconnect the battery when the Airsoft gun is not used, stored or transported.**

**Comply to all Airsoft Safety Rules at all times!**

## TOUBLESHOOTING

The ASCU is designed to monitor the parameters in which your AEG works in. If by any reason mechanical or electrical failure the AEG does not work within the normal parameters, the ASCU will stop it and inform you for that with a double beep signal.

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Malfunction	Possible reason	What to do
When battery is connected there is no a beep signal.	Bad battery or AEG cable plug	Check the plugs.
	Bad or no connection of one of the wires with the motor	Check the motor connections with the black and red wires
	Short circuit of wires.	Check all wires. After the short-circuit is fixed the ASCU will resume normal function
When the fire selector is on "SEMI" or "AUTO" the AEG wont fire.	The trigger is not reaching the trigger switch. or Broken trigger switch	Check trigger installation.  Send to AS service.
The AEG makes only few automatic shots and stops, no matter if the selector is on "SEMI" or on "AUTO"	The sector gear cam is not activating the cut-off switch or broken switch	Check Sector gear shimming if it is not too high.  Send to AS service.
	The AEG stops firing with a double beep signal when the battery is charged	The motor is overtightened.  The gears are overtightened.  The motor is underpowered.  The battery is damaged.
The gears backspin after the shot.	A broken or worn gear.	Change the gear.
	Weak motor magnets.	Change the motor with one with stronger magnets.  If there is no option to change the motor, install back the anti-reversal latch.
The wires get hot during firing	Loose connection to motor or battery.	Check all wire connections.
	Bad battery.	Change the battery.
	Bad Motor.	Change the motor.

### Technical support at: [info@airsoftsystems.com](mailto:info@airsoftsystems.com)

For any other problems send your AEG to the nearest authorized service.

For complete list of authorized services check on [www.airsoftsystems.com](http://www.airsoftsystems.com)

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## ASCU LITE TEST PROGRAM:

**This version of ASCU has a test mode which can be used to diagnose if all of its components are working or there is a damaged component.**

1. To enter in this mode you must take the ASCU completely out of the gearbox.
2. Connect both boards to each other and then connect the motor. (hold the motor tight in hand to prevent jumping on rotation).
3. Now connect the battery. You have 3 seconds in which time you have to push up the lever of the cut-off sensor once. If you do this properly (and cut-off sensor works), you must hear a 3 long buzzes.
4. Now ASCU is in test mode and you can test its components:
5. Push cut-off switch , you have to hear buzz while holding; (no buzz means that switch is not working)
6. On the back of the ECU board you will find the fire-selector switch . Push the selector switch, you have to hear a buzz from the motor. (no buzz sound means the switch is not working)
7. press the trigger switch, the motor will start spinning until the trigger switch is released (no motor spinning means that trigger switch is not working).
- 8 . To exit of test mode just disconnect battery.

**If you detect a problem with your ASCU please contact Airsoft Systems Support at [info@airsoftsystems.com](mailto:info@airsoftsystems.com) and they will give you instructions how to proceed.**

# WARRANTY

The ASCU has a 36 months warranty for product defects from the date of the purchase. All ASCU with production defect will be replaced by Airsoft Systems.

Keep your invoice with as a proof of date of purchase.

**WARRANTY VOID IF:** the ASCU is:

- modified by the user, or any of its parts is damaged due to bad installation.
- wires are cut or with damaged insulation.
- has traces of bad handling,

## RETURN AND REPLACEMENT.

All defective units must be returned to Airsoft Systems or their distributor together with the purchase invoice.

Replacement units will be returned within 45 days from the date they are received in Airsoft Systems factory.

Airsoft Systems does not take any responsibility for delays and losses due to the post or courier services. Shipping back replacement units by mail / post service without insurance is free of charge. Shipping back replacement units by courier express service with insurance will be charged.

factory address:

AIRSOFT SYSTEMS LTD.  
4 Iliensko Shose  
1220 Sofia  
Bulgaria



**DISCLAIMER:**

Manufacturer / distributor assumes no liability or responsibility of any injury, damage of any type, third party liability, diminished value or any other type of claim raised by the user, their collaterals, assigns and or agents of this product. By using this product the user accepts all personal and legal liability of any type listed under the UCC and all state regulatory agencies where applicable.



This Product is manufactured in Bulgaria (EU)  
by Airsoft Systems Ltd.  
15 Kremikovsko Shose  
1839 Sofia  
Bulgaria.

