FOR VER.2 AEG GEARBOX

make it RUN!

3 YEARS WORLDWIDE WARRANTY

INSTALLATION AND USER MANUAL

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

ASCU PRO! AIRSOFT SMART CONTROL UNIT

The ASCU PRO is designed with focus to provide the highest durability on the field, and simplicity of install and use.

We designed the PRO with the same approach as real-steel guns are build. So no Bluetooth and smartphones here! You can't connect a real-steel M4 or AK to a USB or smartphone - they are operated only by the safety lever and the trigger, so we did the same with the ASCU-PRO! You can set any of its functions on the field without even taking your gloves off.

The ASCU PRO is the smallest unit on the market, and it packs all functions that will give you the complete realism in functionality of your AEG replica. With the PRO, we have added a smart self-calibrating Pre-Cocking function, that will automatically find the best stetting for your build.

Designed for all Version 2 gearboxes and ICS split gearbox.

- Single board control unit with processor and MOSFET
- Cycle detection with Active Brake- mechanical.
- Safe/Single/Auto (4 preset options)
- Pre-cocking: Self-calibrating to optimal setting for you setup.
- Extremly fast SEMI shots: 25 in 1 second.
- Safety: mechanical (provided with your AEG manufacturer)
- Short circuit protection: TSCP* (Total Short Circuit Protection)
- Maximum supply voltage: 15 V
- Max burst load: 240 A
- Battery compatibility: all DC batteries available up to 15V
- Battery connector: T-connector (new standard for airsoft)
- Wires 16 AWG with strong heat resistant PTFE insulation.

***TSCP will detect a short-circuit any time from the moment the battery is connected to the moment it is disconnected. The system checks for short-circuit: 1- on battery connection; 2- every time the trigger is pressed; 3-when motor spins. If short-circuit or overload is detected the system will immediately kill all processes and shut down the system. To reset the unit, the battery has to be disconnected and reconnected. ASCU will resume normal function once the short-circuit is fixed.**

All ASCU boards are designed and manufactured in EU with strict quality control.

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.

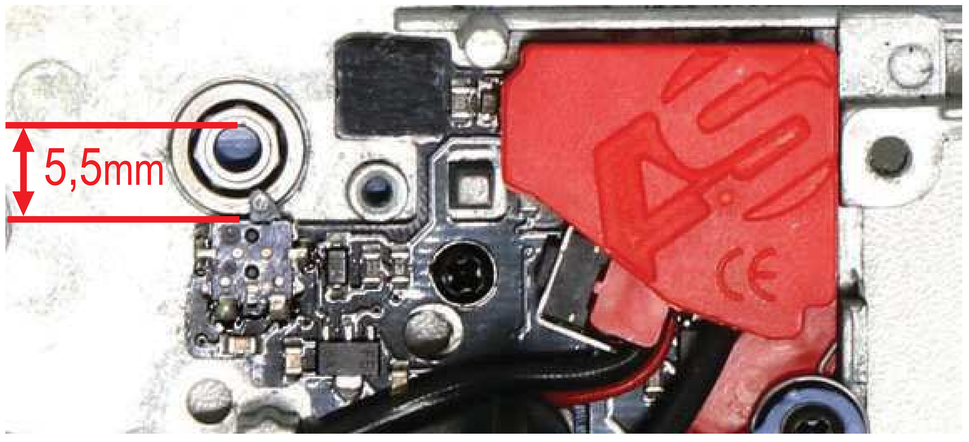
2. Open the gearbox and remove the cylinder together with the piston and the spring. Remove the gears, the anti-reversal latch and the trigger. Unscrew the switch assembly and remove it together with the wiring. Remove the cut-off lever.

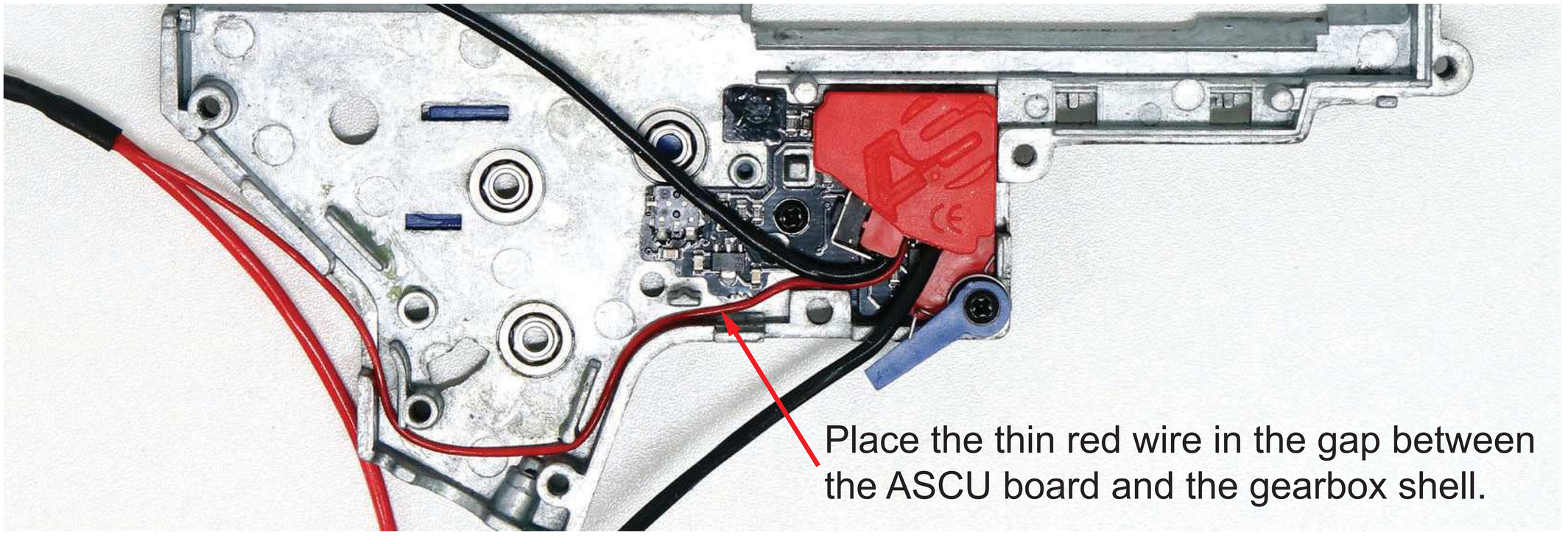
3. At this point check the gearbox shell for any sharp edges in the way of the wires. If there are any, round them with a small file. Clean the gearbox shell from any dirt and grit. Check also the receiver for any sharp edges in the wires way, and if there are any, round them with a small file. All sharp edges in the wires way must be rounded because they can cut through the wires insulation.

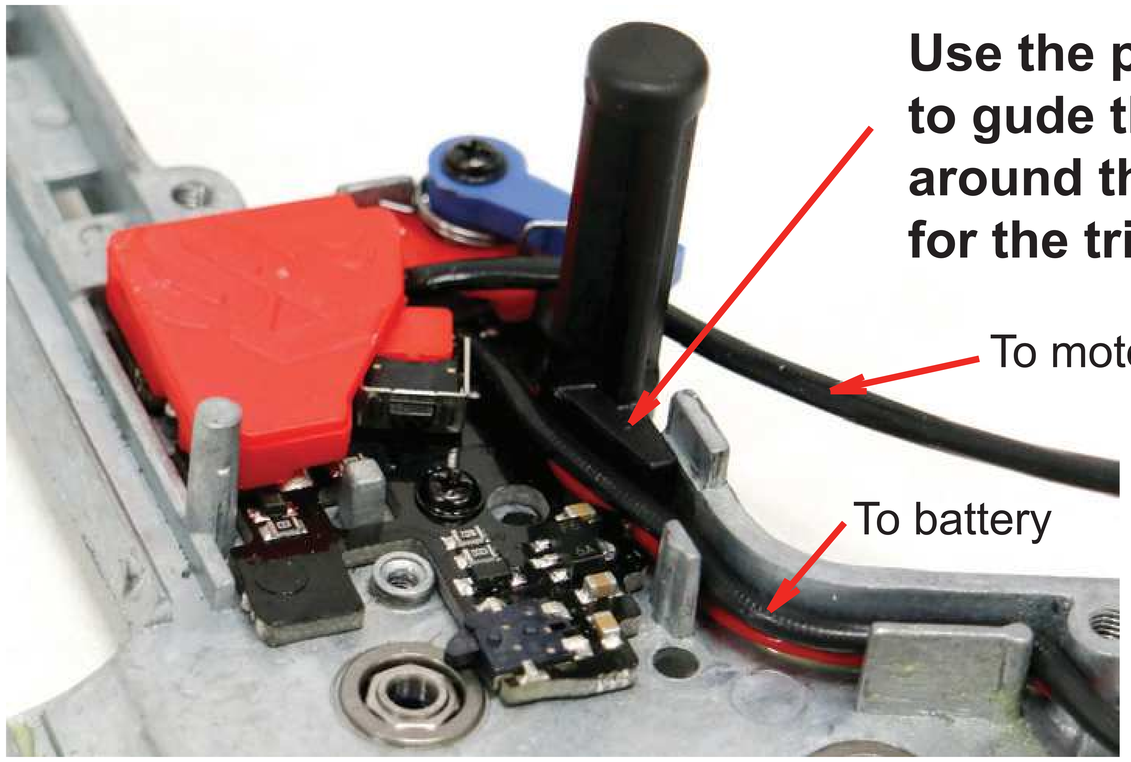
4. On the place of the original trigger switch, place the ASCU board.

5. Fix the board so that the cut-off switch sits 5,5 to 6 mm from the far end of the whole in the bushhing as shown on the picture.

Fasten using the screw from the original switch assembly.

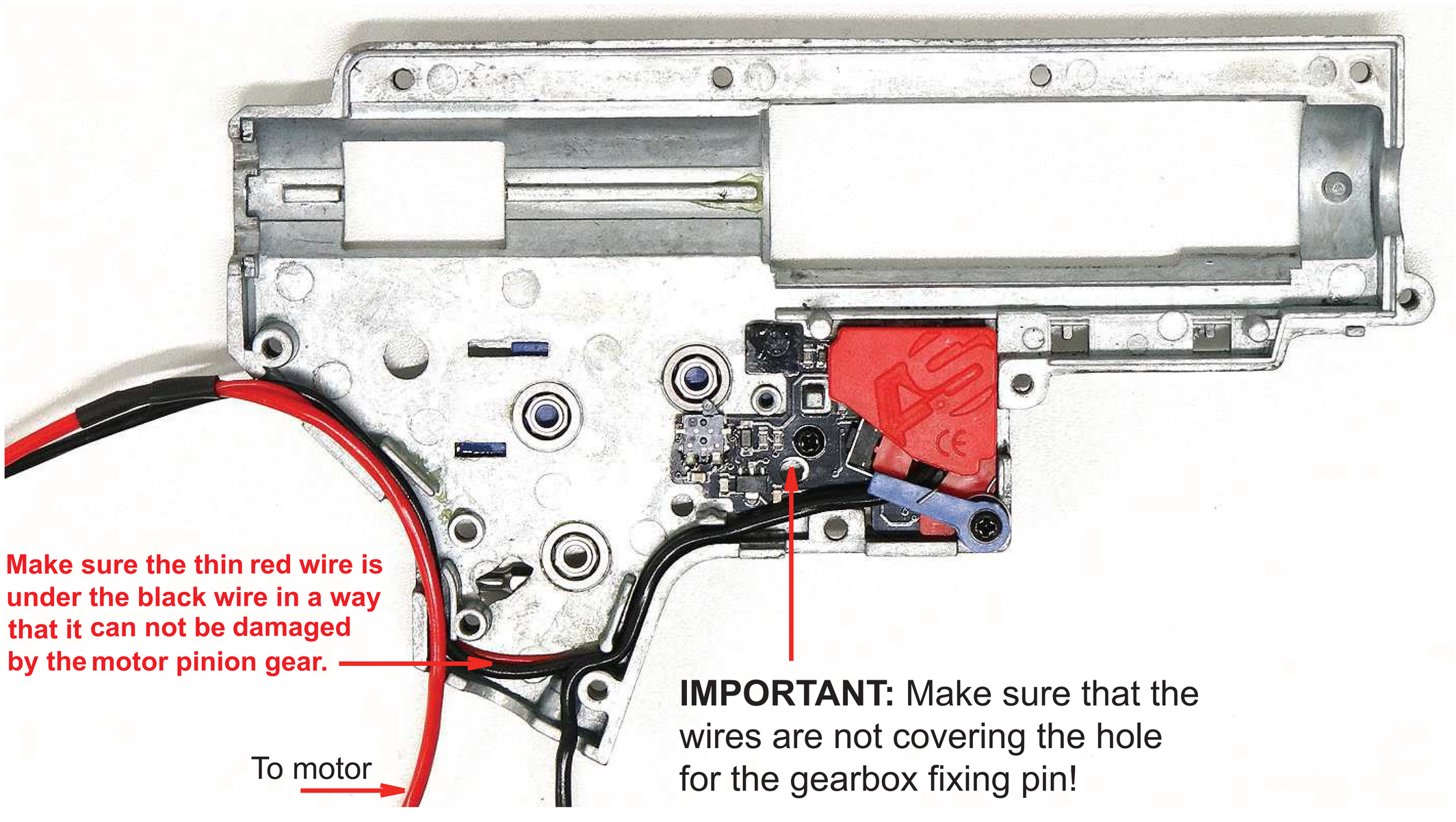


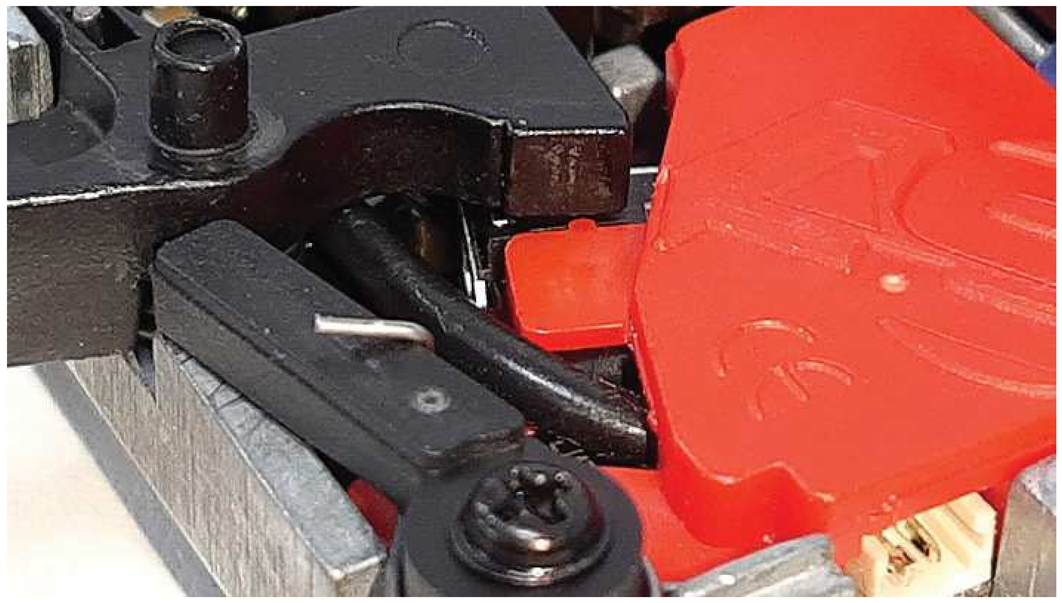




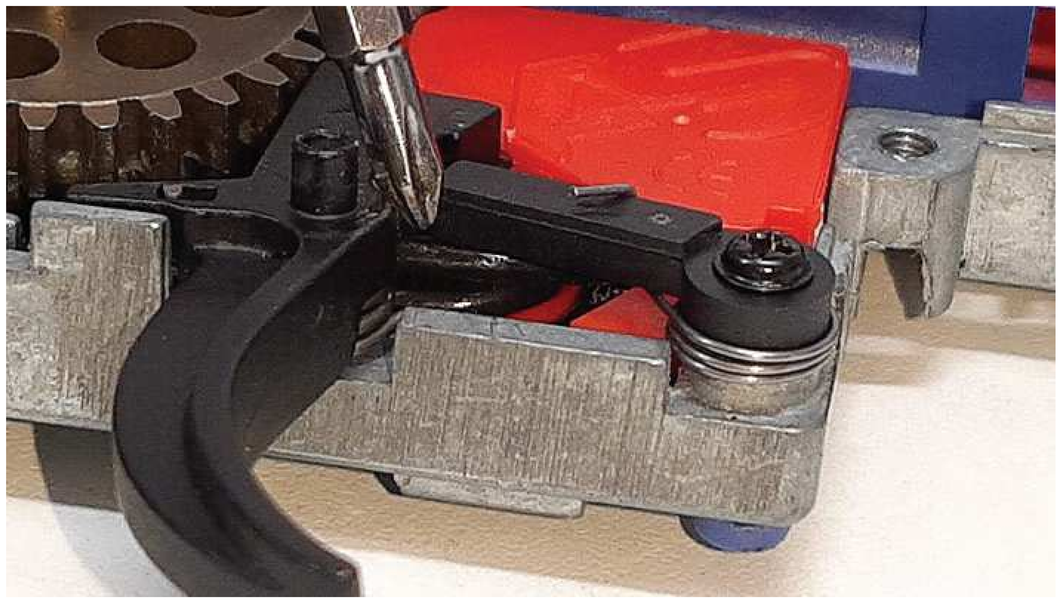
The wires must sit as low as possible in a way they do not stay on the way of the trigger or tha safety lever

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. Place the remaning wires as shown.





7. Install the trigger and check the wire clearence under the trigger. If needed push the wires down with a dull tool. The trigger has to move without rubbing into the wire.

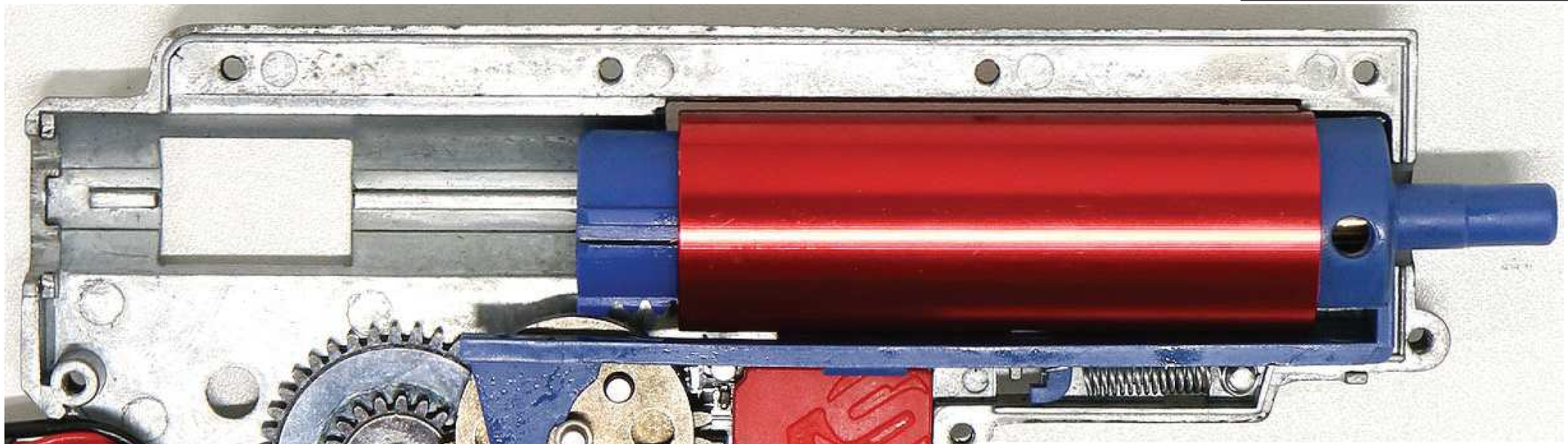


8. Check the clearence of the inner safety lever it has to moove freely. If needed change with the provided with the kit safety lever as it provides more clearence.

This side facing up.

This side facing the gearbox.

9. Test if the safety lever blocks the trigger properly when rised.
The trigger should not enagege the trigger switch on the ASCU when the safety lever is up.



10. Apply lube the gears and axis and install them back together with the ARL.

NOTE: Shimming under the sector gear should not be higher than 0.6 mm

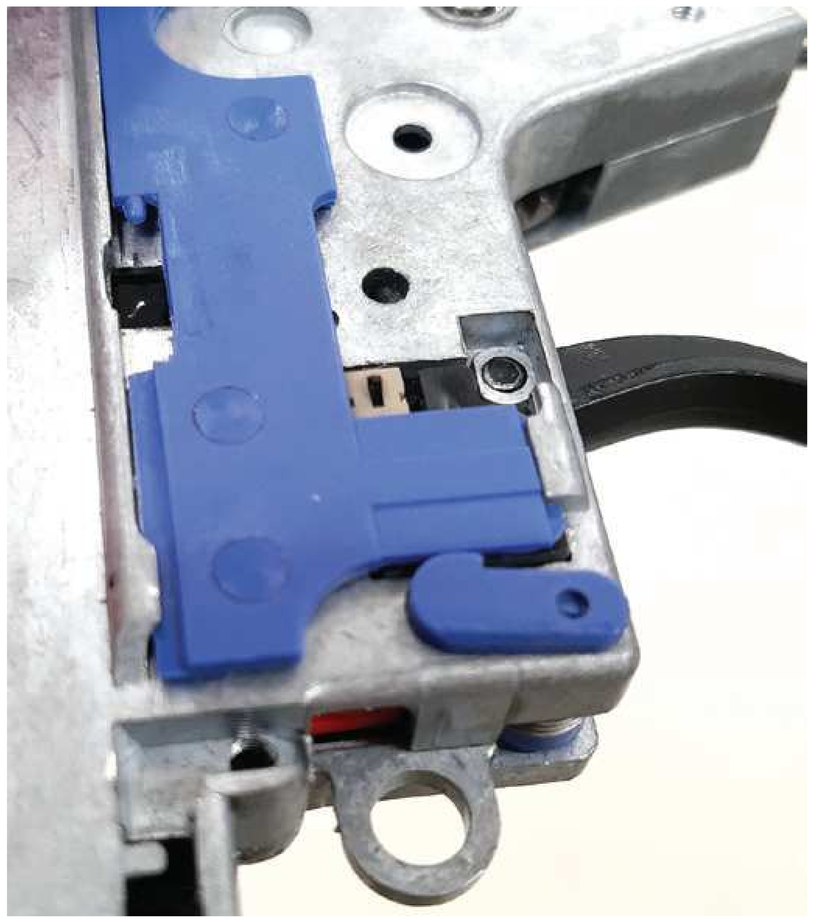
WARNING! When installing the sector gear make sure the cam is facing 12 o'clock. Otherwise it can damage the cut-off switch on installation.

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

12. 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.**

13. Close the gearbox.

14. Install the original selector plate or the one provided with your ASCU kit. Choose the one that works best with your AEG.



15. Move the selector plate forward and backward to check if it moves freely and if the trigger is blocked and released properly.

16. 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.

17. 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.

Connect the a battery to test the functionality of the AEG.
► Make sure motor height is optimal.
► Make sure the Safety works and no shot can be made when engaged.

READ BEFORE USING YOUR AEG WITH ASCU!

The ASCU has 4 selectable modes of function:
1. Single fire + Combined 3 round Burst and Full Auto. (Factory setting)
2. Single Fire + Full Auto
3. Single Fire + 3 round Burst
4. Single Fire only.

CHOOSING BETWEEN MODES:

Choosing Fire Mode:
Set the fire selector to FULL AUTO then connect the battery, and within 3 seconds pull the trigger. A long buzz will indicate that you are now in "Program mode".

A buzz sequence will start: one buzz for mode-**1**; two buzzes for mode-**2**; three buzzes for mode-**3** and four buzzes for mode-**4**.

Once you hear the number of buzzes for the desired mode, pull the trigger and the mode will be selected. A single buzz will indicate that the mode has been selected and the AEG is ready to operate

The ASCU will remember the last chosen mode and will keep it until another mode is selected. Disconnecting of the battery does not affect the selected mode.

PRE-COCKING:

With pre-cocking function the ASCU will leave the piston and main spring pre-loaded after each shot in when SEMI is selected. When the trigger is pressed the piston will be released instantly and after the shot they will be pre-cocked for the next shot. This gives a very realistic instant trigger reaction to your AEG. Pre-cocking works only on SEMI mode, FULL AUTO remains standard.

With ASCU PRO the optimal setting for pre-cocking position is self-calibrating to the best position for your gear-motor-spring-battery setup.

To switch-ON the pre-cocking function:
1. Make sure there is no magazine attached to your gun and no BB left in the hop-up chamber!
2. Disconnect the battery.
3. Set the Fire Selector to "SEMI"
4. Connect the battery and before 3 seconds run out pull and hold the trigger until the AEG makes a sequence of calibrating shots and stops. Then Release the trigger, a vibration from the motor will indicate the gun is set.
MAKE SURE THE GUN IS POINTED TO SAFE DIRECTION DURING THE PROCEDURE!

To switch-OFF the pre-cocking function:
1. Make sure there is no magazine attached to your gun and no BB left in the hop-up chamber!
2. Disconnect the battery.
3. Set the Fire Selector to "SEMI"
4. Connect the battery and before 3 seconds run out pull the trigger and release after it makes one shot, a vibration from the motor will indicate the gun is set.
MAKE SURE THE GUN IS POINTED TO SAFE DIRECTION DURING THE PROCEDURE!

Choosing Hop-Up Mode:

The ASCU is ready to work together with the ASHU with Empty Magazine Detecting function. The second program mode is used when the Hop-Up unit is installed in order to activate it. The ASCU is factory preset to work without it.

If you have the ASHU installed then you need to enter in the second program mode to activate it. **FOR instructions check the ASHU manual.**

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.

Malfunction	Possible reason	What to do
When battery is connected there is no a peep signal.	Bad battery or AEG cable plug Bad or no connection of one of the wires with the motor Short circuit of wires.	Check the plugs. Check the motor connections with the black and red 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 acctivating the cutt-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. A broken or worn gear.	Regulate the motor regulating screw Check the shimming. Change it with more powerful motor. Check with another charged battery. Change the gear.
The gears backspin after the shot.	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. Bad battery. Bad Motor.	Check all wire connections. Change the battery. Change the motor.

Technical support at: 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*

For updates and other information check on www.airsoftsystems.com

WARRANTY

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

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

WARRANTY VOID IF the ASCU is modified by the user, or any of its parts are damaged due to improper use or bad installation.

RETURN AND REPLACEMENT:
All defective units must be returned to Airsoft Systems or their distributor toghether with the purchaice 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

TEST PROGRAM:

This version of ASCU has a test mode which can be used to diagnose if all of its commponents 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 spinnig untill 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 and they will give you instructions how to proceed.

DISCLAMER:
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.

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CE

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