



## IES WRK Recoil Kit User Guide

# AK-47



Revision 1.0

**IES Interactive Training**

## Introduction

The purpose of the AK-47 recoil kit is to quickly convert a live rifle into an effective training weapon that is both realistic and safe. No live ammunition can be loaded into, or fired from, the weapon when the recoil kit is installed.

When the weapon is fired with the recoil kit installed, an infrared (non-visible) laser clamped to the front of the barrel is fired, allowing interaction with the IES simulator.

**ALL FIREARMS SAFETY RULES AND GUIDELINES SHOULD BE FOLLOWED AT ALL TIMES!**

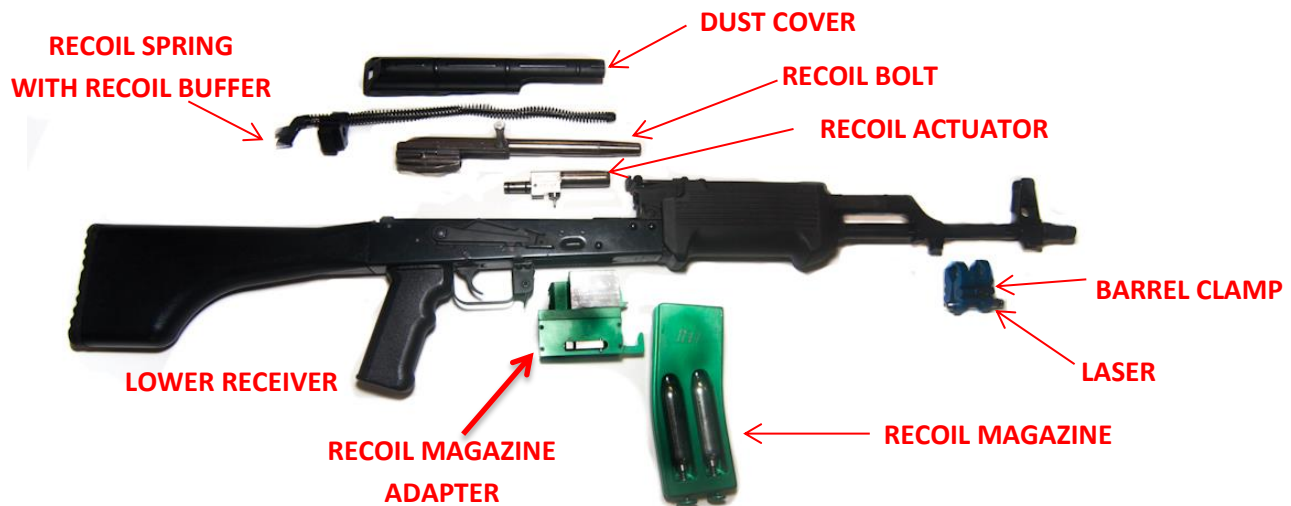


## User Guide Contents

Introduction .....	2
Parts & Components of the Weapon & Kit .....	3
Recoil Kit Installation .....	4
Laser Information.....	8
Maintenance .....	9
Troubleshooting.....	10

## Parts & Components of the Weapon & Kit

There are several parts of the original weapon needed, in addition to the recoil kit components, in order for proper operation.



The following original weapon components are used:

- Dust Cover and Lower Receiver (and all sub components)

The following recoil kit components are provided as part of the recoil kit:

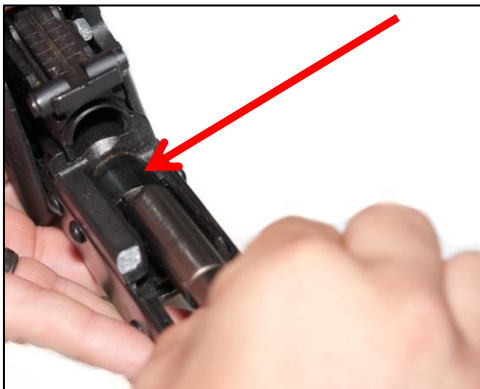
- Recoil Magazine (2): Takes the place of the weapon's original magazine.
- Recoil Bolt & Spring: Replaces original bolt/spring and provides recoil effect and motion.
- Recoil Actuator: Installs at forward end of recoil bolt and allows connection between recoil magazine and recoil bolt.
- Recoil Magazine Adapter: Allows proper connection between recoil actuator & recoil magazine.
- Barrel Mount Clamp: Attaches the laser to the forward end of the outside of the barrel.
- Laser: Installed using the barrel mount clamp. Mount on the outside of the front of the barrel to provide indication of shots fired on an IES simulator. Note the laser is infrared and is not normally visible. The laser is eye safe, but should never be pointed or fired at another person.
- Spare Parts & Tools:
  - Magazine top port gasket (2)
  - Magazine piercing nozzle gasket
  - Recoil Bolt Assembly Large replacement O-ring
  - Bolt Connector O-rings
  - Bolt Connector Installation Tool and Wrench
  - Bolt Oil & Magazine Grease

## Recoil Kit Installation

- 1) Remove the original magazine from the weapon and ensure that the weapon is clear and safe.
- 2) Remove the lower receiver following the normal AK-47 rifle disassembly method.
- 3) Remove the original bolt assembly from the receiver.
- 4) Ensure that the recoil bolt is lightly lubricated.



- 5) Install the recoil actuator and recoil bolt assembly as shown in the picture below. Be sure to have the inlet nipple on the recoil actuator facing down into the magazine well.
- 6) At this step you need to align the inlet nipple while inserting the air recoil magazine adapter.  
\*Please note that the air recoil magazine adapter installs the same as a normal AK-47 magazine.



- 7) Now install the recoil bolt assembly.



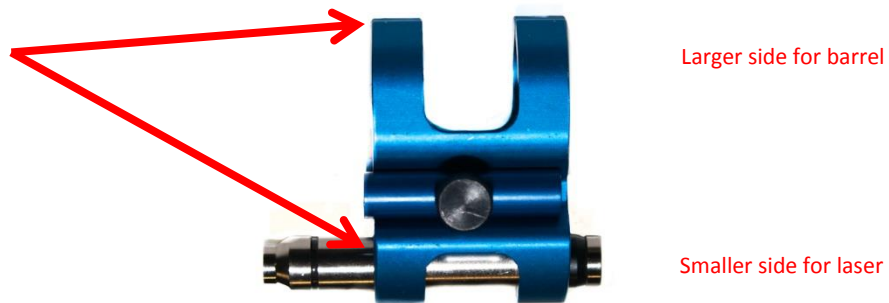
- 8) Now install the recoil spring, ensure that the recoil buffer is properly installed.



- 9) Reinstall the dust cover.



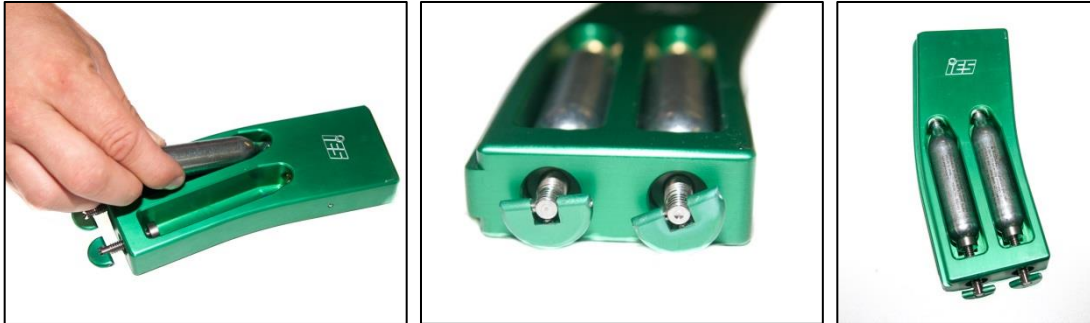
- 10) To install the laser to the weapons barrel you must attach it using the supplied barrel mount clamp. There is a clearly visible size difference on opposite ends of barrel mount clamp. Make sure that the laser is installed on the side with the smaller opening, and that the clamp is attached to the rifle barrel using the larger opening.



- 11) The image below shows how the barrel mount clamp should look installed on the barrel with the laser also installed. Note that it is recommended to mount it as shown, with the laser rested against the bayonet lug.



- 12) To install the CO2 cartridge to the magazine, place the smaller diameter portion of the cartridge into the magazine first and align it with the piercing nozzle at the top of the magazine. Then, firmly tighten the thumb screw at the bottom of the magazine to secure the CO2 cartridge in place and pierce it for use.



- 13) If charging of the slide is required for this weapon, do so. Test fire the recoil weapon.



## **Recoil Kit Removal**

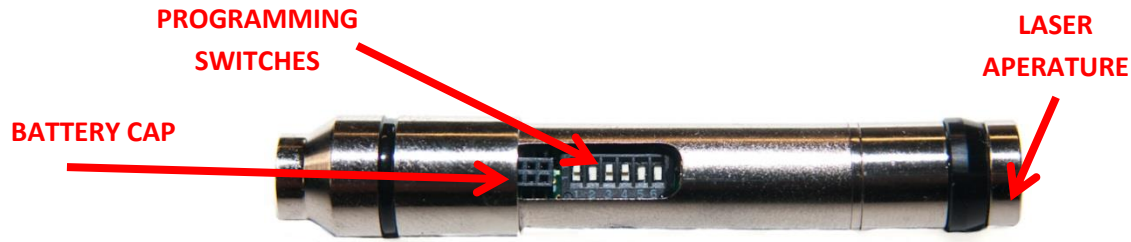
To remove the recoil kit, take out the magazine and fire the weapon once to ensure the recoil bolt is not charged. Note that some recoil kits may require you to release the magazine and manually pull on the magazine to release it.

- 1) Remove and separate the dust cover from the lower receiver.
- 2) Use the magazine release to remove the recoil magazine adapter.
- 3) Field strip as normal.
- 4) Remove the barrel mount clamp with laser by unscrewing the tension screw.

## Laser Information

An infrared (IR) laser insert module is provided with each recoil kit. The IR laser emits a pulse of light each time the weapon is fired. The pulse is not visible to the human eye. The laser pulse is detected by the IES simulator and is used to indicate the shot location.

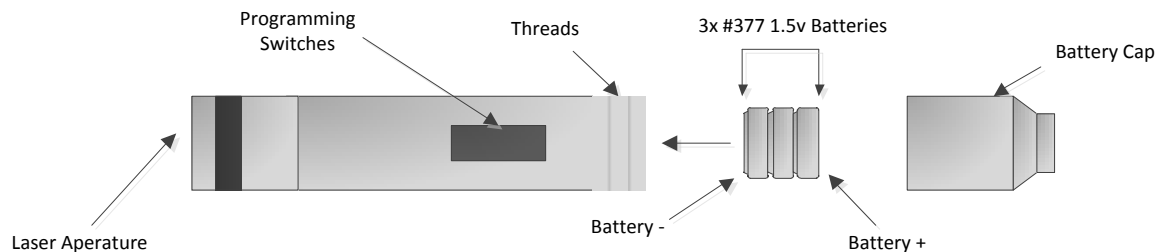
Recoil Rifles use standard IES Laser Insert.



**NOTE:** If you are setting up a laser for use with a recoil rifle for the first time, or need to change the ID of the laser, please see the IES Laser Programming Guide for proper dip switch settings.

## Laser Batteries

To power the laser, 3x #377 batteries are used. A set of batteries should last 100,000 shots or 6 months, whichever occurs first. The batteries should be installed with the negative (-) side facing into the laser.



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## Maintenance

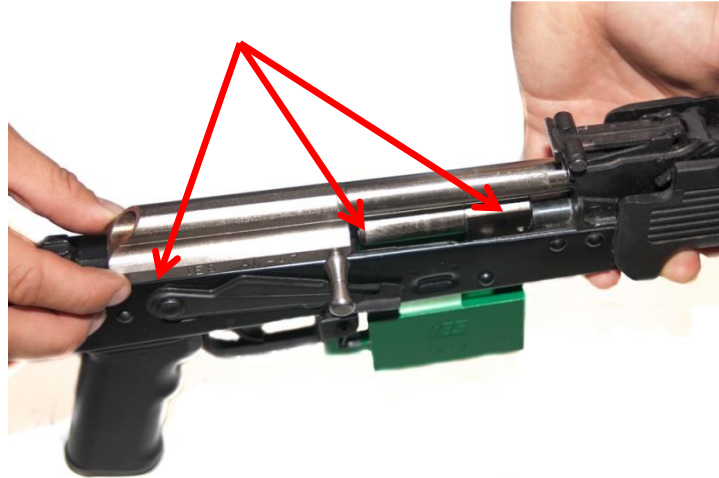
Every 5000 shots, or as needed, you should perform the following maintenance on the recoil kit:

### Lubrication of weapon

If your weapon normally requires lubrication on slide rails or elsewhere, be sure to apply it.

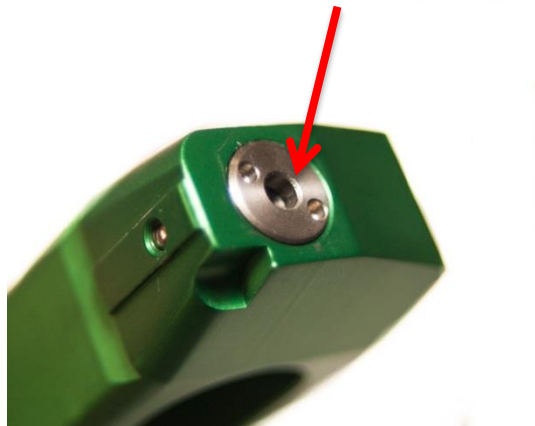
### Lubrication of recoil bolt

Place a few drops of oil or grease on the of the recoil bolt assembly.

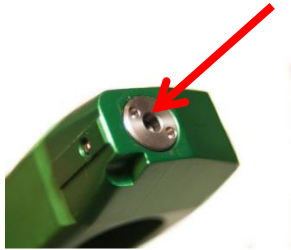


### Lubrication of magazine port:

Place a small amount of the green Teflon grease in the top port of the magazine

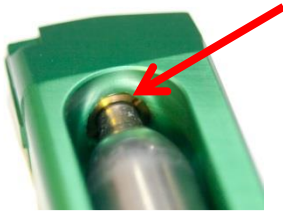


## Troubleshooting



### Air leak on top port of magazine when not in weapon

An air leak from the top port of a magazine that is not installed in a recoil weapon is an indication that the magazine itself has a worn gasket. Follow the repair guide for magazine gasket replacement. If the magazine continues to leak afterwards, contact IES Customer Service.



### Air leak at top of CO2 cartridge in magazine when not in weapon

An air leak from the top of the CO2 cartridge is an indication that the gasket around the piercing nozzle of the magazine is worn or missing. Follow the repair guide for piercing nozzle gasket replacement. If the magazine continues to leak afterwards, contact IES Customer Service.

## Repair Guide

### Magazine CO2 Port Gasket

- 1) Remove any CO2 cartridge in the magazine.
- 2) Hold the magazine and remove the coupler from the top of the magazine using the provided tool.



- 3) Pull the black gasket out of the magazine and discard it. Do not lose the ball bearing.
- 4) Verify that the ball bearing is still in the magazine.



- 5) Place a new gasket into the magazine and secure it firmly in place using the provided gasket installation tool. Make sure that it is seated fully in the recessed area.
- 6) Secure the coupler back onto the magazine.



- 7) Grease the opening at the top of the magazine.



#### **Magazine Piercing Nozzle Gasket**

- 1) Remove any CO2 cartridge in the magazine.
- 2) Hold the magazine upside down and pry out the piercing nozzle gasket.
- 3) Place a new gasket on the piercing nozzle and ensure that it is fully seated.

