



WRK Recoil Kit User Guide

Smith and Wesson

5946/5904/910



MILO Range Training Systems

Introduction

The purpose of the WRK recoil kit is to quickly convert a live pistol 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 at the front of the barrel is fired, allowing interaction with the MILO Range simulator.

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

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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:

- Slide
- Receiver
- Guide Rod & Spring: some recoil kit models may include an alternate/optional guide rod & spring

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

- Recoil Barrel: Takes the place of the weapon's original barrel.
- Recoil Magazine (2): Takes the place of the weapon's original magazine.
- Recoil Piston & Housing: The recoil piston and housing is captive inside the recoil barrel
- Transfer Tube: Connects CO2 from tail piece to barrel.
- Take Down Bar: Factory part that holds the slide to the frame
- Recoil Laser: Installed at the front of the recoil barrel to provide indication of shots fired on an MILO Range 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.
 - Size 50 MILO Recoil laser
- Spare Parts & Tools:
 - Magazine top port gasket (2)
 - Magazine piercing nozzle gasket
 - Laser installation wrench (adjustable wrench...OR 7/16" OR 11mm)
 - Barrel Oil & Magazine Grease

Recoil Kit Installation

- 1) Remove the original magazine from the weapon and ensure that then weapon is clear and safe.



- 2) Field strip the firearm per the manufacturer's directions.



- 3) Remove the original weapon barrel from the slide.



NOTE: Before proceeding, ensure that the weapon is properly cleaned to avoid live ammunition residue and excess weapon oil from entering the recoil kit components and causing degraded performance.

- 4) Replace the factory barrel with the WRK recoil barrel and re-install factory guide rod and spring



- 5) Re-install the slide to the frame with the WRK recoil barrel and factory guide rod/spring.



- 6) Ensure the transfer tube has the small black O-ring installed on the threaded end. With the O-ring in place, insert the non-threaded end into the wrench as shown in the pictures below.



- 7) Carefully insert the wrench, with the transfer tube installed from step 6, into the magazine well, and thread the transfer tube into the WRK recoil barrel.



- 8) 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.



- 9) Insert the magazine into the receiver and ensure that it is seated firmly in place.

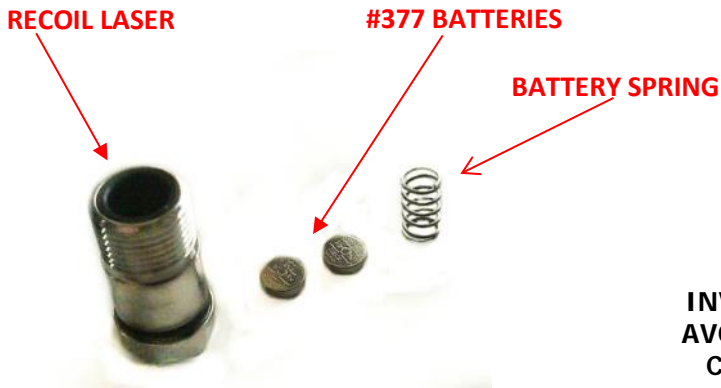


- 10) If charging of the slide is required for this weapon, do so.

- 11) Test fire the recoil weapon.

Recoil Laser Information

An infrared (IR) laser 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, but is detected by the MILO Range simulator.

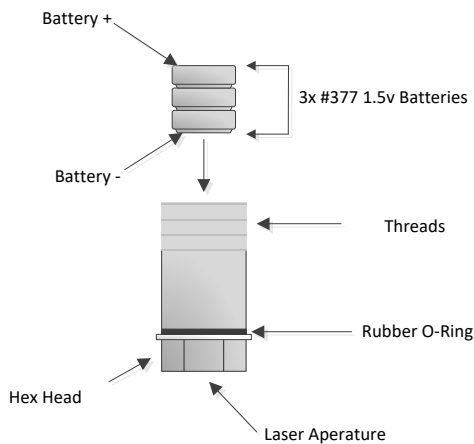


**INVISIBLE LASER RADIATION
AVOID DIRECT EYE EXPOSURE
CLASS 3R LASER PRODUCT**

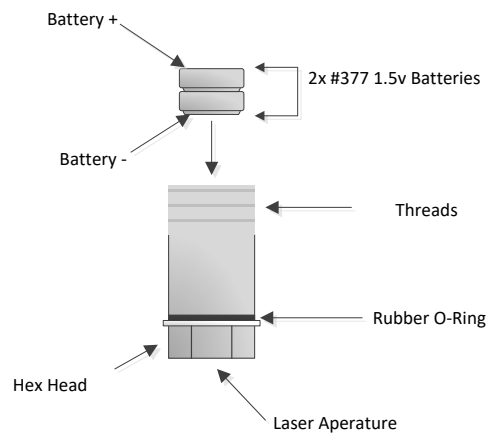
Laser Batteries

There are two models of recoil lasers; one model requires 2 batteries and the other requires 3 batteries. Both models use #377 batteries. Batteries must be installed with negative (-) side facing into the laser.

GEN1 thru GEN4 – Requires 3x #377 Battery



GEN5 – Requires 2x #377 Battery



Laser Installation & Removal

Battery Spring

For proper functioning, the laser requires that a battery spring be installed in the barrel. This spring completes the battery circuit, in order to energize the laser. Before installing a laser, and after removing a laser, check the recoil barrel to ensure that the battery spring is present and positioned correctly in the barrel. Typically this spring installed at the factory for you, but in some cases you may need to install it. Note that the battery spring should be fully seated in a recessed area of the barrel and therefore should stay in place when the barrel is pointed at the ground. If not, press the spring into the recess using a flat tool such as a pen cap.



Laser Installation

- 1) Verify that the recoil kit is installed in the weapon.
- 2) Verify the battery spring is in place in the recoil barrel according to the pictures above.
- 3) Verify that you have the proper quantity of batteries (either 2 or 3) properly installed in the laser.
- 4) Remove the magazine from the recoil weapon and fire the weapon once to ensure the recoil barrel is not charged.
- 5) Hold the recoil weapon pointing at the ground.
- 6) Insert the laser into the barrel, battery end first.
- 7) While continuing to hold the recoil weapon pointed at the ground, so that the batteries do not fall out of the laser, screw the laser into the barrel using clockwise motion.
- 8) Once the laser is tightened by hand, use an adjustable wrench (7/16" OR 11mm) with light torque to tighten the laser until it is completely mated to the barrel. **DO NOT OVERTIGHTEN THE LASER!**

Laser Removal

- 1) Remove the magazine from the recoil weapon and fire the weapon once to ensure the recoil barrel is not charged.
- 2) Aim the recoil weapon at the ground to prevent batteries from falling out during removal.
- 3) Unscrew the laser from the barrel using the use an adjustable wrench (7/16" OR 11mm) turning in a counter-clockwise motion.
- 4) Ensure that they battery recoil spring did not come out. If it did, place it back in the recoil barrel and use a screw driver or other tool to press it firmly into position.

Maintenance

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 barrel

Place a single drop of oil on the underside of the recoil barrel



Lubrication of magazine port:

Place a small amount of 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 loose coupler or a worn gasket. Tighten the coupler with the provided tool and if the leak persists, follow the repair guide for magazine gasket replacement. If the magazine continues to leak afterwards, contact 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 Customer Service.

Air leak in gun when magazine is installed in weapon

Depending upon the model of the weapon, there are several places that can leak due to worn O-rings or post-production tolerances being exceeded. In many cases, it is difficult to tell where the leak may be coming from, so the following list is provided in the order of most-likely. If you are unsure of where the leak is coming from, follow this list in order to resolve the leak.



Leak from barrel-to-tail piece tube: The small white tube that passes CO2 from the tail piece to the barrel can wear over time and/or become damaged during installation/removal. When this occurs, the CO2 can escape through a tear or hole in the white tube. Simply replace this tube according to the repair guide. If the transfer tube is secure, and a leak is still occurring, remove the transfer tube, and replace the small black O-ring shown in the picture to the left.

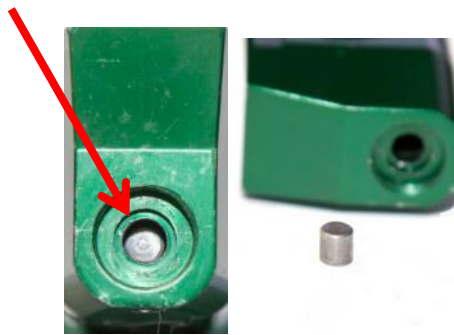
Repair Guide

Magazine CO2 Port Gasket

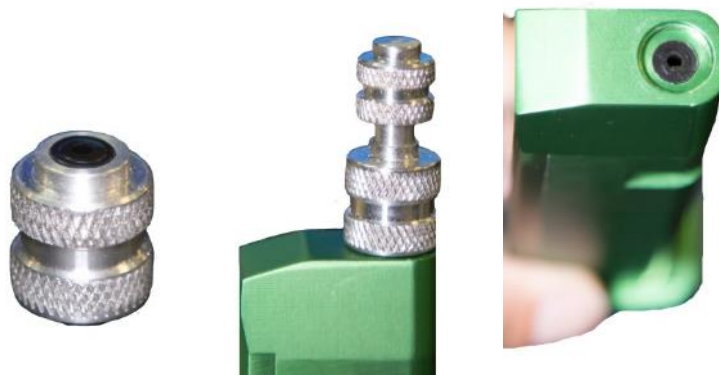
- 1) Remove any CO2 cartridge in the magazine.
- 2) Hold the magazine and remove the coupler from the top of the magazine using the provided tool.



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



- 5) Place a new gasket into the supplied jig, insert the wider end of the jig into the top port of the magazine, then take the plunger tool and press the gasket firmly in place. Make sure that it is seated fully in the recessed area.



- Secure the coupler back onto the magazine. The plunger, shown below, should insert into the seal easily, if there is resistance, then the seal is being pinched and this will cause a leak. **DO NOT OVERTIGHTEN THE COUPLER, DOING SO WILL CAUSE THE MAGAZINE TO LEAK AND YOU WILL HAVE TO REPEAT THE PROCESS**

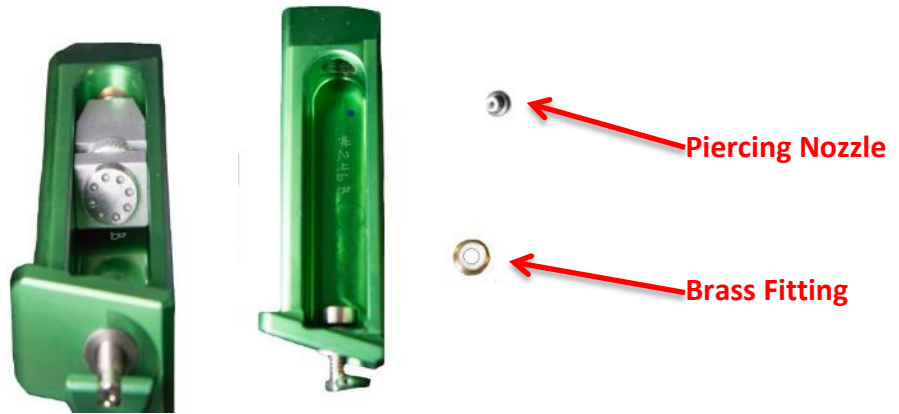


- 6) Grease the opening at the top of the magazine.



Magazine Piercing Nozzle Gasket

- 1) Remove any CO2 cartridge in the magazine.
- 2) Use the piercing nozzle removal tool with the recoil kit wrench that is supplied in the recoil armorer's kit. Align the "ears" of the nozzle removal tool with the brass fitting, once lined up, use the armorers wrench to turn the nozzle tool. The brass fitting will spin out. If needed there is a black o-ring on the back of the piercing nozzle itself, simply pull old one off with your fingers, and replace.



- 3) Place a new gasket on the back of the piercing nozzle and ensure that it is fully seated.



- 4) Place the piercing nozzle in first, then the brass fitting. Ensure the brass fitting is straight while screwing it back in place. Use the piercing nozzle removal tool to accomplish this.

