

Camper III

Assembly Guide

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CONTENTS

Section 1: Introduction	3
Section I1: Tools and Shopping List.....	4
Section III: Parts Kit Checklist	5
parts	5
Magazines and Accessories	6
Section IV: Assembly	7
Safety first.....	7
Preperation.....	8
Assemble and insert the bolt.....	9
Assemble the ejector.....	10
Assemble the safety	11
Assemble the fire control group.....	12
Install the magazine release and side-plate.....	14
Attach the grip	16
Assemble the barrel and complete the assembly	17
Function Check	19
Section V: Troubleshooting.....	20

SECTION I: INTRODUCTION

The Camper III is a new spin on the long-standing AR-7 design, which has largely been unchanged since it was released by Armalite-Fairchild in 1959.

The AR-7 was made by many previous manufacturers. Names such as Armalite-Fairchild, Survival Arms, AR-7 Industries LLC, and more recently Henry Repeating Arms have subtly improved the platform, which at its core is a survival rifle.

The Camper III (a play on the Explorer rifle and Explorer II pistol variant by Charter Arms), adds some novel features I pondered about. Not only is the Camper III printable (which adds another context to “survival” in terms of making your own), it includes an array of features found on modern (and esoteric) weapons.

With the Camper III, a MIL-STD-1913 picatinny rail on the rear was added so that you can add a 1913 stock or brace. The top of the receiver includes a rail as well for mounting optics- but if you wish to use just iron-sights, there is a gutter sight integrated in the rail.

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SECTION II: TOOLS AND SHOPPING LIST

To assemble this firearm, you will need the following tools:

- Gunsmithing Punch Set
- Stick Files
- Flathead screwdriver

You can check out a comprehensive shopping list for future projects too, at www.vinhstoolbox.com.

SECTION III: PARTS KIT CHECKLIST

In order to successfully build your Camper III, you will need the following parts that specifically pertain to the firearm.

PARTS

A complete parts kit should compose of the following:

- Barrel
- Safety
- Safety Detent Ball
- Safety E-Clip
- Hammer
- Hammer Pin
- Trigger
- Trigger Pin
- Hammer/Trigger Spring
- Hammer/Trigger Spring Retention Pin
- Magazine Release Lever
- Magazine Release Spring
- Ejector
- Ejector/Magazine Release Pin
- Bolt Assembly
- 2x Bolt Spring
- Bolt Spring Capture
- Side Plate
- AR-15 Grip
- AR-15 Grip Screw
- (*optional*) 1913 Brace or Stock

MAGAZINES AND ACCESSORIES

Don't forget you will also need:

- Magazine – *The extended magazine is to be disregarded- these have abysmal function rates!*



SECTION IV: ASSEMBLY

In this section, we will cover the settings you should print your frame and assembling it.

SAFETY FIRST

Putting a gun together is no joke. Firearms are dangerous tools that must be treated with care and respect. **You are responsible for your safety, and those surrounding you** when you work with or operate firearms. Fellow developers or engineers cannot be responsible or liable for what you do or don't do.

As a general reminder, here are some rules to keep in mind:

1. **Always treat a gun as if it is loaded.** Remove the magazine and check the chamber yourself to verify the gun is unloaded.
2. **Keep your firearm always pointed in a safe direction.** Never point your gun at anything you don't intend to destroy.
3. **Be aware of what is in front and behind of your target.**

But specifically, for working on your firearm, you should remember the following too:

1. **Keep live ammo away.** Use snap caps or dummy rounds to verify function of your firearm. Never keep live ammo around your workspace, and certainly never mix them with your dummy ammo.
2. **A clean gun is a safe gun.** Never leave your firearms uncared for to foul or dirty up. Debris can cause malfunctions, which can be dangerous.
3. **Always read and follow directions.** Don't ignore a warning or follow instructions out of order.
4. **Use prudent judgement.** If something doesn't add up- use common sense. Stop, inspect, and re-evaluate your previous actions and procedures.

PREPERATION



Remove any debris or support material from the frame.

Start by inspecting the bolt channel. You should remove any leftover support interfaces you see.



Take your time to remove the supports between the model as well.



A soldering iron can help smoothen and remove stringing from the receiver.

ASSEMBLE AND INSERT THE BOLT



Assemble the bolt

Insert the bolt springs into the bolt, then insert the bolt spring capture into the springs.



Insert the bolt assembly into the receiver, with the charging arm hole facing the right-hand side.

Be sure your springs remain straight in the receiver.



Insert the charging arm into the bolt to secure it to the receiver.

ASSEMBLE THE EJECTOR



Insert the ejector.



Getting the ejector into the slit machined out on the bolt is essential.

After which, you can align the hole onto the receiver.



Once the hole of the ejector is aligned, use the magazine release pin to secure it in place.

ASSEMBLE THE SAFETY



Flip the receiver over. Gather the detent ball, safety selector, and e-clip.



Place the detent ball onto the detent.



Place the safety through the hole, resting on the detent ball.



While holding the safety against the frame, flip the receiver over.

Use the e-clip to secure the safety to the frame.

ASSEMBLE THE FIRE CONTROL GROUP



Align the hammer/trigger spring onto the hammer.

You will want the “loop” on the back spine of the hammer.



Place the hammer retention pin on the left-hand side of the hammer



Insert the hammer up into the bolt.

Ensure the spring and the pin slot into the hammer spring retention geometry on the underside of the hammer.



The springs should sit outwards like so for the next step.



Insert the trigger pivot pin.



Using your thumb, lift both arms of the spring upwards.

Place the trigger onto the pivot pin.



While still holding the arms of the spring, insert the spring retention pin into the trigger.

The spring retention pin has slots on it for the arms of the spring to rest on.



Place the arms of the spring on the spring retention pin on the trigger.

Be sure the springs are not crossing.

INSTALL THE MAGAZINE RELEASE AND SIDE-PLATE



Place the magazine release spring into the slot.

Hold it in place with your finger.



While holding down the magazine release spring (to keep it from flying away), install the magazine release. Do not let go of the spring.



Place the housing plate over the assembly. Only remove your finger from the spring after the plate is over it.



Align the plate so it interfaces with the hammer pin...

... and the trigger pin.



Secure the plate against the receiver by installing the flathead screw.



Be sure not to over tighten.



ATTACH THE GRIP



Install the AR-15 grip by placing it on the receiver and screwing it in.



Be sure not to over tighten this either.

ASSEMBLE THE BARREL AND COMPLETE THE ASSEMBLY



Insert the barrel into the receiver, with the notch on the barrel engaging the receiver.

A rifle length barrel will have its notch facing upwards.



But a pistol-length barrel will have its notch on the bottom side.



Use the barrel nut to secure the barrel to the receiver.



Tighten the nut so that it holds the barrel snugly in place.



(optional) Install your desired 1913 brace or stock.

Be mindful of laws and ordinances with the configuration you create.



Insert the magazine and proceed to function check.

FUNCTION CHECK

Verify your firearm works by evaluating each of the following functions.

BE SURE YOUR GUN IS STILL UNLOADED.

Check that your chamber is empty, and that there are no rounds in the magazine.

- Safety and Trigger Break Operation:
 - o Charge the bolt.
 - o Put the safety lever into “Safe”.
 - o Pull the trigger. The hammer should not release.
 - o Put the safety lever into “Fire”
 - o Pull the trigger. The hammer should release.
- Trigger Reset:
 - o With the bolt in battery, and the trigger already fired, hold the trigger down, and charge the bolt. Gently release the trigger.
 - o The trigger should have a tactile or audible reset. *(The hammer should not drop on reset.)*

When you have completed the function check, the assembly process is complete.

Be sure to remove your magazine and store your firearm in a secure and safe place.

SECTION V: TROUBLESHOOTING

You may encounter certain problems with your firearm either during usage or assembly.

- Safety lever too stiff
 - Use a round-file to open the hole up ever so slightly.