



☒	Hardware Kit			
	Part #	Name	Description	Qty
	Nuts / Bolts			
☒	HW1	Trigger guard bolt	M5x15	2
☒	HW2	Magazine baseplate pillar bolt *	M5x20	1
☒	HW3	Magazine pillar bolt	M5x25	1
☒	HW4	Front receiver pillar bolt	M5x25	1
☒	HW5	Rear receiver pillar bolt	M5x40 socket head	1
☒	HW6	Dummy bolt stop	M5x40 flathead	1
☒	HW7	Front stock cap bolt (16" only)	1/4"-20 x 2.5"	1
☒	HW8	Buttplate screws	#10 x 2" flathead	2
☒	HW9	Bolt retainer set screw	M5 10mm	1
☒	HW10	Joint connector bolt	1/4"-20 x 1.57"	1
☒	HW11	Joint connector cap	1/4"-20 x 1/2"	1
☒	HW12	M5 nuts		2
	Pins / Rods			
☒	HW13	Threaded rod	M5, 100mm	1
☒	HW14	Dowels for joining stock	1/4" diameter, 12"	2
☒	HW15	Barrel gas port cover	Steel spacer, 1" OD, 3/4" ID, 1" long	1
☒	HW16	Trigger lever pin	3mm x 11mm	1
☒	HW17	Trigger sear pin	3mm x 17mm	1
☒	HW18	Rear sight blade pin	3mm x 22mm	1
☒	HW19	Front sight hood pin (16" only)	3mm x 23mm	1
☒	HW20	Receiver reinforcing rod	3mm x 120mm	2
☒	HW21	Bolt retainer pin	4mm x 13.5mm	1
	Springs			
☒	HW22	Rear sight spring *	3/16" OD x 0.02 WD x 0.75" long	1
☒	HW23	Rear sight detent spring, sear safety spring *	4mm OD x 0.3mm WD x 15mm long	2
☒	HW24	Sear spring *	1/4" OD x 0.023" WD x 1" long	1
☒	HW25	Striker spring	7/16" OD x 0.047"WD x 3" long	1
	Other			
☒	HW26	AR-15 bolt head	.223/5.56, Minus gas rings	1
☒	HW27	AR-15 firing pin		1
☒	HW28	AR-15 magazine spring *		1
☒	HW29	Gas Port Sleeve	3/4" ID, 1" OD, 1" long steel spacer	1

☐ 16" AR-15 (.223 / 5.56") barrel ☐ 20" AR-15 (.223 / 5.56") barrel ☐ 24" AR-15 (.223 / 5.56") barrel

Important Notes:

- **ATTENTION: PLEASE REVIEW IMPORTANT INSTRUCTIONS TO ENSURE SAFE ASSEMBLY ON THE BACK OF THIS BOM.**
- Some parts may require cutting to final length, fitting to your particular build, or other postprocessing
- Some part sizes may vary from nominal. In all cases, we have verified this variation to be acceptable for this particular part and build.
- In some cases, we may include extra quantity of parts for spares or backups
- Follow all documentation for this design when building with this kit
- Important supplemental documentation is available at <https://www.3dprintfreedom.com/downloads>. Please click "Supplement" under this kit's name.

Pack Date: _____

Packed By: _____

Thank you for your business!

IMPORTANT INSTRUCTIONS TO PREVENT POSSIBLE OUT-OF-BATTERIES

This kit contains a 3" long 7/16" OD striker spring.

If the VSG bolt is assembled with the spring **untrimmed**, this will result in the striker pressing against the firing pin even when the bolt is not cocked, which will cause the firing pin to protrude from the bolt face.

During normal cycling, when a round is picked up and pushed into the chamber, the round will press against the protruding firing pin and push it back against the striker spring pressure.

If the bolt is "slammed forward" with significant force, then the untrimmed striker spring pressure on the protruding firing pin may set off the round's primer, causing an OOB.

The documentation released with V1 of the VSG is unclear about the process of trimming your striker spring, which may lead some builders to not realize its importance.

HOW TO AVOID THIS ISSUE

1. Properly trim your striker spring:

Your spring is properly trimmed when the firing pin sits just below the bolt face surface when the bolt is rotated to the "open" position.

Here are tips on how to do this:

1. Assemble your bolt with an untrimmed spring first just to ensure it comes together okay
2. Disassemble the bolt and trim off a little bit of the striker spring (take it slow - trim off no more than one coil at a time)
3. Reassemble and rotate the bolt shroud like you were "opening" the bolt in the gun. This will draw the cocking piece and striker back a little.
 - a. If you find this hard to do by hand, you can install the bolt in the receiver to assist with opening it up.
4. Check the firing pin's protrusion out of the bolt. If it protrudes a little, press against it and see if there's any significant spring pressure resisting you pressing it flush.
5. Repeat steps 2 through 4 until the FP either naturally sits flush, or can be pressed flush with very little pressure

2. Don't slam the bolt

I recognize that you may want to do a "mad minute" with your VSG, but we recommend cycling the bolt in a controlled, even manner instead of a rapid, forceful manner.

If you don't "slam" the bolt, then even an untrimmed striker spring will likely not cause any safety issues. Similarly, slamming / madly cycling the bolt can introduce other issues as well, such as causing the cocking piece to slip off the sear.

You can avoid these problems simply by treating your printed bolt action rifle with care and not slamming the bolt.

FOLLOW THE ABOVE INSTRUCTIONS TO ENSURE SAFE HANDLING OF YOUR VSG