

Advanced Armoury
How to build an Assault Rifle

Download Pre-Alpha 0.0.11 for 1.7.10 (06/3/16 22:54 GMT)

[Discussion on the mod is in #flenix on esper](#) (click to join)

Building your first AA weapon can prove a daunting process as it can be a bit complicated and confusing. This log is being written during pre-alpha for my alpha testers to follow **if they can't figure it out in-game**. Try and guess it first, if you can't, use the guide (and tell me that you had to).

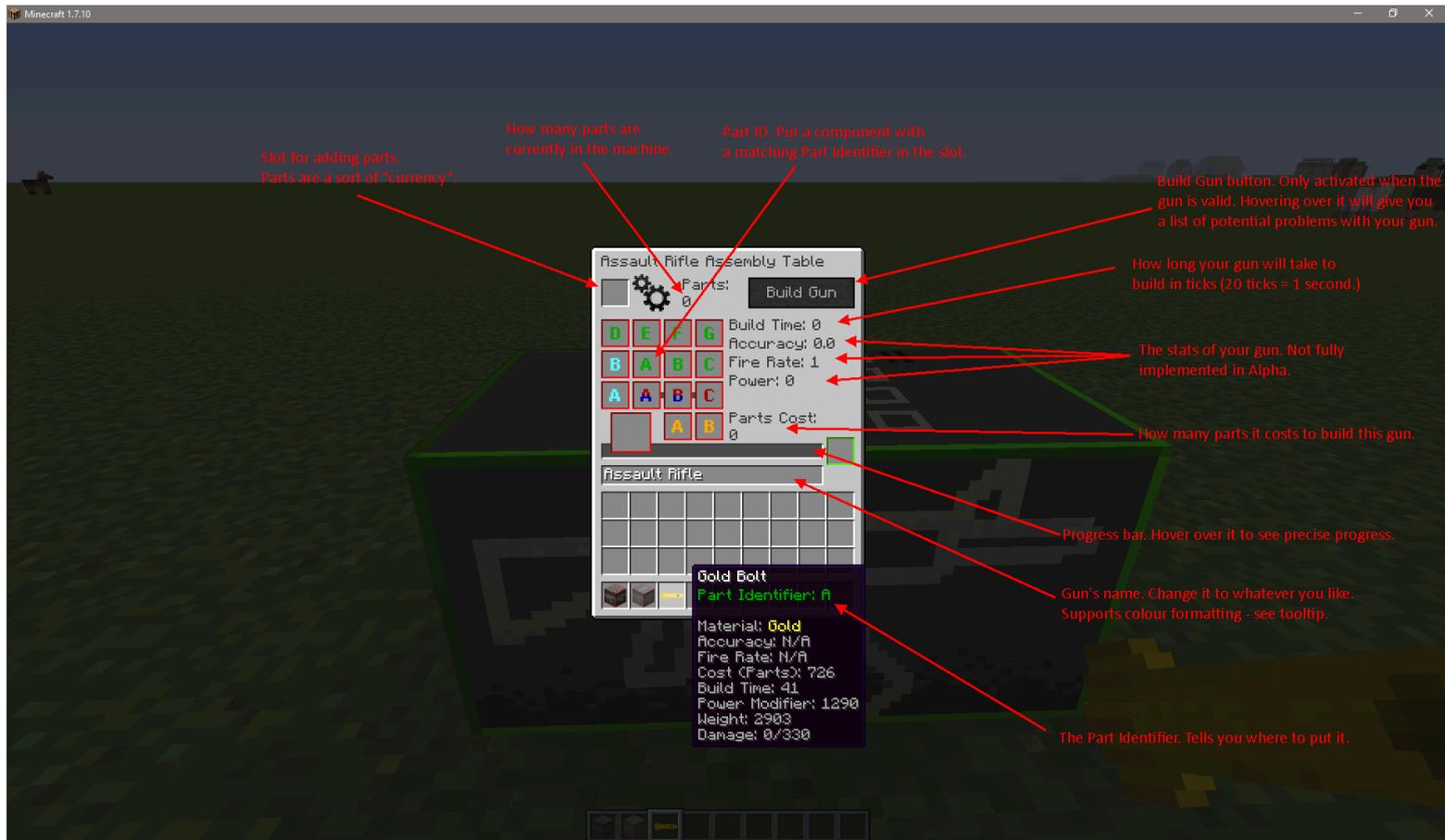
BEFORE WE GO ANY FURTHER, This guide is for alpha testers. A game/mod alpha is an early testing release for bug hunting, and is absolutely not for a released package. Do not put this in your existing worlds. **Do not put this in your existing worlds**. Yes I said it twice, it will very probably break stuff. Make a new world for testing with this mod. Absolutely **do not** put it in a modpack or something like that, you'd be stupid to do so - be patient, I'll allow it when I think it's stable enough.

Wait, I just wanna shoot stuff! Alright, skip down to the second screenshot, and read from the heading above it.

The first stage of building the assault rifle is to get yourself an Assault Rifle Assembly Table. Place two side by side - it's a multiblock.

For the sake of explaining stuff, give yourself a Gold Bolt. You'll have to spawn it - component recipes aren't added yet.

Open the GUI by right-clicking the block you placed a minute ago, and you'll get this GUI. The tooltip is from that gold bolt you've just spawned in:



This GUI is where the first stage of the magic happens - your guns internals.

The Assault Rifle requires at least 14 components to be built. The essentials are:

- Assault Rifle Frame
- Bolt*
- Bolt Carrier
- Charging Handle*
- Ejector
- Extractor
- Firing Pin
- Firing Pin Retainer Pin
- Chamber (Must match barrel in calibre)
- Barrel (Must match chamber in calibre)**
- Trigger*
- Fire Selector Switch*

*This part is rendered onto the gun - so your material will affect the final look.

**This is rendered and the length is scaled correctly. 10" (CQB style) or 15" (Standard style) recommended for the currently available assets.

As well as those, you need a firing system. You can either use direct impingement (gas) or the old fashioned piston way. They cannot be mixed! Your options are either to use the Gas Chamber and Gas Feed, or Piston, Spring and Piston Chamber.

Finally, you can optionally add a Modifier Core. There's only one right now (as a test) - the Simple Chamber Net. This goes in the bottom-right slot. There's currently around 100 Modifier Cores planned, but they'll come during Beta.

You'll notice as you add components, the box surrounding them turns green. This confirms your selection is valid - if you mix up your firing system or mismatch calibres, the boxes will turn red to tell you that.

Once you've got your components all added, you need to feed some parts into the machine. Parts are the sort of "currency" of the mod - you can make them, find them, steal them, get them from all over the place. Different types of parts are "worth" more, and higher spec guns cost more to build.

As we're in Creative, just grab a couple of stacks of Promethium Gears. Put one stack into the top-left slot of the GUI and that will cover the cost of your gun in most cases.

Your Build Gun box should now be active. If not, hover over it and it'll tell you what went wrong - else, click it! Make yourself a drink or something while that little red progress bar ticks over - building guns isn't quick (although it's no Steves Carts either.)

Once it finishes, all your components will vanish and you'll just have the gun frame. Take it out, it's time for Machine #2!

Assault Rifle Encasement Table

Now you've got a nice gun frame with a load of parts stuck onto it. It's time to case it up with the externals!

Externals are where this mod comes to life. There is a fully-blown asset system to add any sort of external you can think of to the game with zero coding knowledge - all you need is an .obj model and a texture.

For simplicity though, I've included a set of externals within the mod set to each of the default colours. You will now need four new components: The Receiver, the Stock, the Front End and (optionally) the Flash Hider. Grab yourself the Assault Rifle Encasement Table too, and if you need to, some more parts.

It's the same deal as before- two side by side will make a working multiblock.

The GUI is a similar style to before - This time, the text box will add a tag line to your gun (the first line of the gun's tooltip) for stuff like branding or just an amusing slogan. You have four red slots and one green, plus one slot for parts.

Put your gun frame in the big slot as before, and then your three essential externals in. Drop in some parts and you're ready to build - or you can optionally add a Flash Hider. Flash Hiders aren't essential and have no impact on the workings of the gun, but they look pretty (Note they're untextured in alpha for inventory only - they render just fine in the world/on your gun). Once you're ready, hit Build Gun again. Wait a bit once again, and your gun should appear!

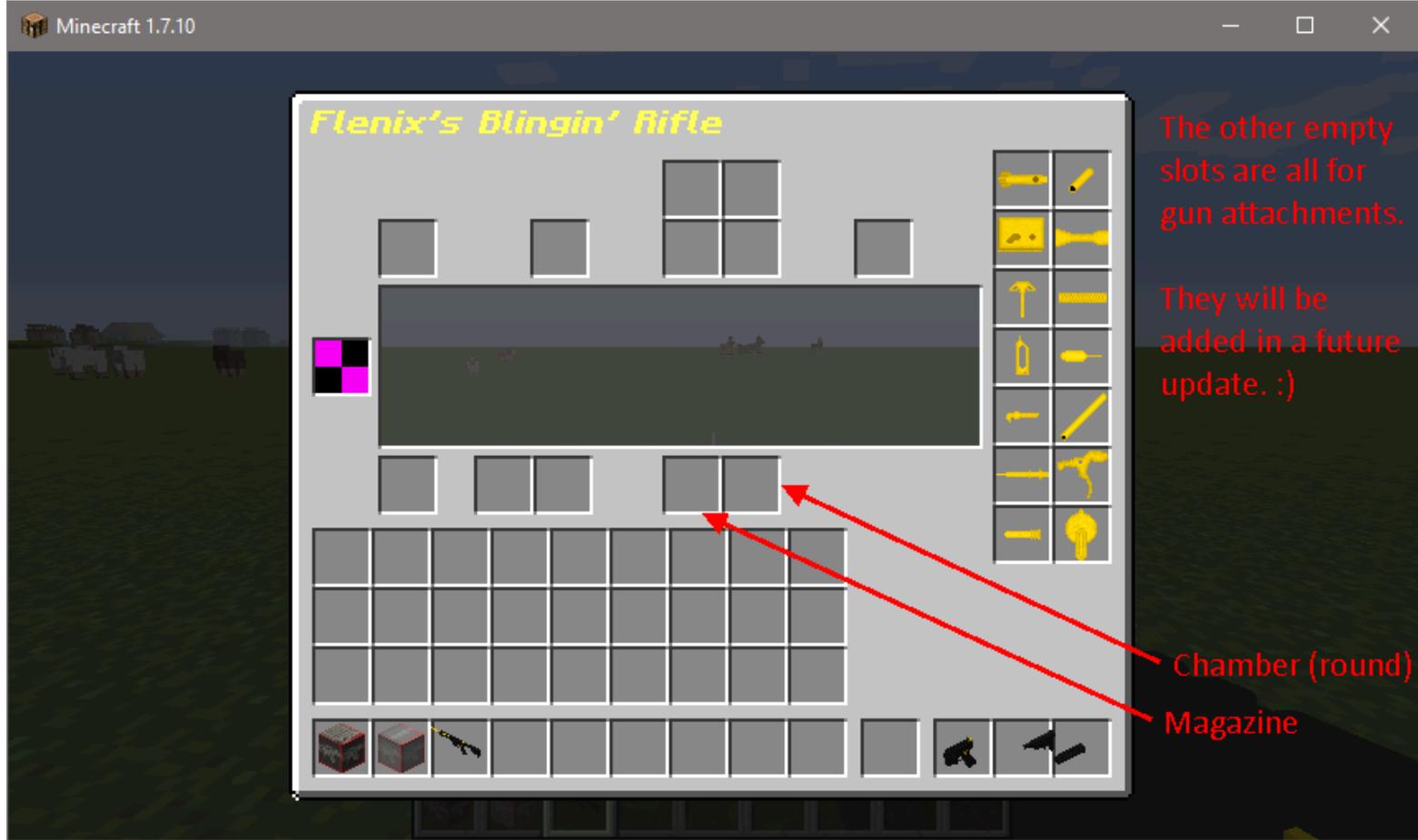
Now, when you take it out, you should notice it renders a nice 3D gun, looking all pretty and stuff. You're almost ready to go!

If you just wanna shoot stuff, this is where to begin. Spawn in a gun from the pre-built guns creative tab, and read on from here.

To fire, you need a magazine and some rounds. Grab both from creative - the round type and material doesn't matter, they're all identical in Alpha.

Right-click with the magazine in-hand to open the mag GUI. Fill it with rounds, you can just drag-click around the slots to fill it quickly. Once filled, select your gun so you have it in-hand, and press I. This opens the gun's inventory - you

should see all your lovely installed parts on the right-hand side:



Drop your new magazine into the slot marked above. You'll notice you can't click any of the other slots - this is intentional. Those parts are fixed to the gun, you can't just pull them off!

Press escape to close the GUI, and go find yourself a target. The range is currently capped at 50 blocks - this will vary depending on parts in the future but should be able to reach beyond render range for certain scenarios. If you have it open, watch the console as you fire - it should register and tell you what you've shot. Damage is currently also static, dealing I believe 10hp/5 hearts for every shot.

If you want to create assets, read on. If not skip to the Closing header.

Asset creation is -not- easy, and I won't go into depths here at all. It's something I'll make a guide for later, but for now if you're smart you can probably figure it out. I'm providing a default asset pack below - download it, and go to your .minecraft (or instance) folder (Where your mods folder is). If you've ran the mod once there'll be a folder in there called Advanced Armoury. Put the .zip file in there, load the game, and you'll have three new assets: a Silvanian front end, receiver and stock. The difference? There's a little decal of my logo on the receiver.

If you want to make your own, extract the contents of the .zip folder and read through them. Most of it should be pretty self-explanatory. Size is your .obj models size according to Blender - **note that Y and Z are inverted in blender!** so swap them. Partx/y/z (eg stockX) are the XYZ anchor points for parts to attach to. The receiver is central, and your parts will be placed there. When exporting a model for any other part, the 0,0,0 point will be used for this attachment, so make sure your align your model to that.

Finally, for the receiver, you need FOUR models. They must all be the exact same name, with `_bolt`, `_charginghandle` and `_fireselector` appended to three of them. Those parts should all align automatically in Blender and will be rendered as such, there's no anchor point system. This is simply so the game will render these parts as their correct material - as such those extra parts don't need a texture either. If you don't want them, simply make an empty model with those names, else the game will crash (that way they won't render but the game will be happy.)

[Download the example pack here.](#)

Closing

And that's it! The alpha of Advanced Armoury - a working concept to show what this mod will become. Imminent plans are to get durability, accuracy and range implemented, and then some worldgen factors. Once bugs are squished and we reach beta, I'll be adding more weapon types, more modifiers, more options for asset creators and of course any ideas suggested!

Thanks for testing the Alpha build. If you found any bugs, or something didn't seem right, or you got confused, let me know! Also, if anything was massively inaccurate facts-wise, I'm keen to know too. Firearms are illegal in my country so all my research was online-based, but I'm trying to make this the most realistic gun mod for Minecraft, so all you gun-toting Americans can certainly help with that ;)

If you want more info on future plans, [see the Bugs and Roadmap doc!](#)

If you wanna shoot your friends, there's a public server at 148.251.9.227:25575 running just the latest AA build for multiplayer testing.

Bugs found since tests began (Thanks guys!)

- ~~The multipart machines have independant storage per block, it should be uniform.~~ Solved 0.0.7
- ~~For some reason parts are misaligned — this is a new bug so must be something that changed.~~ Solved in 0.0.8

Changelog since first public release:

Pre-Alpha 0.0.7

- Added a dry fire sound when firing with no round in the chamber
- Fixed multipart storage-per-block bug

Pre-Alpha 0.0.8

- Fixed part misalignment
- Reimplemented asset creation system

Pre-Alpha 0.0.9

- Updated gun's render in-hand to be more realistic. Added player's arm to view
- Swapped controls to proper FPS style- left click is now shoot. Sorry if this confuses any Flan fans.
- Added visual aim-down-sights (right click). Would be better if we HAD sights, maybe soon... No function, just looks.
- Aim down sights is also animated, your gun moves up to position.
- Prevented left-click interactions with the gun entirely, you can't break blocks etc with your gun.
- Re-implemented melee code, assigned to middle click. (Middle click = punch with gun.). No animation yet.

Pre-Alpha 0.0.10

- Code for calculating a gun's weight and accuracy (unused right now, just displayed on a built gun)
- Health & damage modifiers applied to increase everything 10x. The damage multiplier means this should have no effect on any other mod and everything else should appear normal - except I get more freedom with gun damage ratios. The exception here is health mods such as WAILA, which will show the new multiplied mod (eg pigs will have 100HP instead of 10.)
Note the weird health bar is temporary and is the vanilla implementation. I'll switch it back to a 10-heart bar in a vanilla setting, but it will work more like a health BAR and not half-hearts. If you use my mod HUDWidgets (or similar HUD editing mods) then they should work correctly displaying your new 200 health.
Also, mods such as Tinkers Construct which can add to the player's overall health should still work side-by-side - however, their modifications are not multiplied, so they probably hold less value now (ie a heart canister will still only add 1HP, not 10). They will need to add checks for my mod to change this (I may fork it into Tinkers, tell me about other mods that do it and I'll look into it.)
- Overall attacks have a slight randomizer applied now thanks to the increased health. All attacks now (regardless of mod source) will have +/- 10% applied.
- **Please test alongside other mods and report any issues with damage. Damage stuff is temporarily logged to console, so keep an eye on it!**
- Finally, if you can safely BACK UP EXISTING WORLDS, then please do so and try an existing world. Check that you and any mobs have had your health boosted up 10x. I've not tested with WAILA so that may or may not report correctly, best bet for mobs is just punch them and see what the console says.

Pre-Alpha 0.0.11

- Started work on loot crates - admin-created/world-generated boxes which will give the player that uses it an item. They work in two ways - either they log the player name and give every using player the item, or they will regenerate over a configurable time. This means you can make locations much more interesting for every player, instead of just one. My randomly generated military bases will have these. (They will probably look like the lootables in Borderlands - fancy modernistic chests etc)
Note: you can't rotate them just yet!
- Began weapon accuracy system:
 - Gun parts have a base effect on accuracy. Accuracy is shown as a percentage on the gun's tooltip.
 - Aiming down sights will increase accuracy, as will sneaking.
 - Moving, taking damage, and firing will reduce accuracy
- Added a custom crosshair
 - Crosshair changes colours for nothing (white), passive mob (green), hostile (red) or unknown (yellow)
 - Crosshairs also move closer/further from one another to visually represent accuracy
- Reworked some gun code to make it cleaner and more efficient.
- You can now fire a gun in creative mode. If a round is in the chamber, it'll use that (without consuming it), else it'll create one with brass casing and a lead bullet and use it instantly.
- Fixed Xray shooting (Guns would totally ignore walls and shoot an entity clean through them.)
- Added VERY EARLY recoil system. The autoreset is a little slow, and there's no accelerator for multiple shots yet either, and the recoil is a flat rate (Will eventually be set based off the weight of parts and length of gun)

Alpha 0.1.0 (Unreleased)

- Switched to dynamic component generation system. You can now create an entire set of components for all guns by putting in a material with values in the config!

- Added RPGCore support. From this version onwards RPGCore will be a REQUIRED mod - however, if you don't want the levelling system I will add a config in later versions that will automatically boost players to lvl 1000 as soon as they join the game (effectively disabling the skill requirements and maxing out peoples abilities)
- Removed Ejector, Extractor and Firing Pin Retainer Pin to simplify building processes a little bit
- Removed Encasement table - guns are now built all in one stage (Assembly Table) instead of two stages. Makes things easier for both you and me. Costs, time etc are unaffected (Just all done in one longer expensive section now). Custom gun tooltip tags are now added in the Assembly Table, same as the name.
- Once built, all the components used are just removed and not shown in the GUI. Instead, the stats become a part of the gun, and a list of the components used (as well as repair information) can be achieved by holding ctrl while viewing tooltip.

To-do before next alpha release:

- Add new firerate system allowing players to shoot up to 100 rounds per second if their gun design allows for it
- Create new calculation system for gun stats which accounts for a players skill levels
 - Add values to the gun NBT on build based on skill level. Higher level reduces the range until it's zero.
 - Accuracy: float accBuildOffset
 - Power: int powerBuildOffset
 - Durability: int duraBuildOffset
 - Rate: int rateBuildOffset
- Finish Assault & Assault Crafting skills so they can be levelled, and things will require levels to be used.