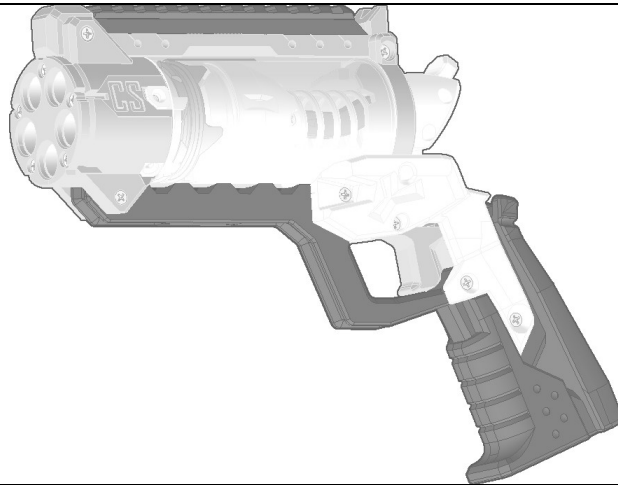


# YEHW ASSEMBLY INSTRUCTIONS



The YEHW is a Muzzle-Loading Five-Shot Homemade Nerf Blaster design released as a Non-Commercial license file set by Captain Slug (<http://www.captainslug.com>).

You are welcome to and encouraged to modify the files in any way you want. All of the parts can be printed with infill as low as 20% in PLA, but I would recommend printing in layers of 150 to 300 Microns. Also set the wall/perimeters to 1.5mm to 2mm thickness.

Hardware kits and Blaster kits are available for sale. I'm producing these myself in what remains of my free time.

<https://www.etsy.com/shop/CaptainSlug>

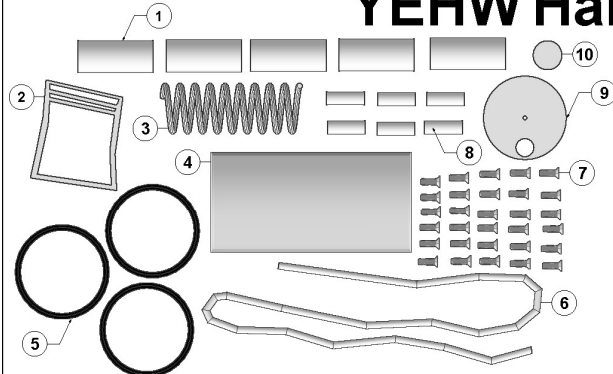


DO NOT STORE IN TEMPERATURES ABOVE 100F. Storing the blaster inside of a car in warmer months will cause the printed parts to distort or warp beyond their intended shape. If you need to store one in a vehicle temporarily, store it in the trunk.



DO NOT aim this blaster at faces. The muzzle velocities this design can reach are between 60fps and 100fps depending upon the darts used and the bands installed.

## YEHW Hardware Kit



3/17/21

| Item # | Quantity | Part Name        |
|--------|----------|------------------|
| 1      | 5        | Dart Barrel      |
| 2      | 1        | Silicone Oil     |
| 3      | 1        | 2.5" Main Spring |
| 4      | 1        | Plunger Tube     |
| 5      | 3        | Oesh 131 O-Ring  |
| 6      | 1        | 3/32" elastic    |
| 7      | 30       | 4-40 Screws      |
| 8      | 6        | Round Standoff   |
| 9      | 1        | Valve Gasket     |
| 10     | 1        | Bumper           |

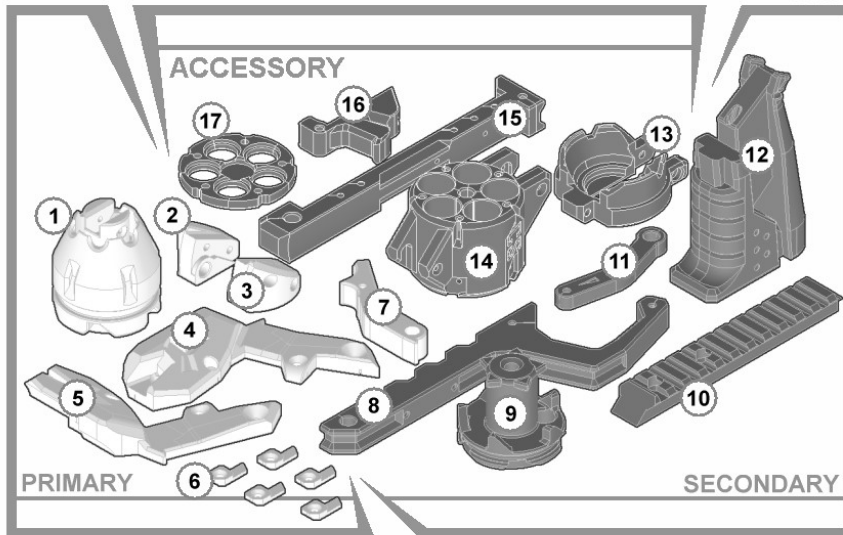
Printed Parts NOT included.  
Tools needed: Philips Screwdriver, Slotted Screwdriver,  
Round Needle File, Scissors.

CAPTAINSLUG.COM

For most of the above hardware list the quantities are the MINIMUM required for assembly. Easily-lost items will have several spares and I typically include extras of the majority of the items. Item #19 is not used in this build.

To assemble this blaster you will need a Small Philips Screwdriver, a Round Needle File, and a pair of scissors. The kit includes silicone o-ring for lubricating the plunger tube. NEVER USE SILICONE LUBRICANT FROM AN AEROSOL CAN. The propellants used in those are harmful to plastic parts.

3/18/21



| Item # | Quantity | Part Name  |
|--------|----------|------------|
| 1      | 1        | Plunger    |
| 2      | 1        | CammerL    |
| 3      | 1        | CammerR    |
| 4      | 1        | GripL      |
| 5      | 1        | GripR      |
| 6      | 5        | Clutch     |
| 7      | 1        | CammerM    |
| 8      | 1        | Wunderbar  |
| 9      | 1        | Valve      |
| 10     | 1        | rail_max   |
| 11     | 1        | Conrod     |
| 12     | 1        | Giddle     |
| 13     | 1        | Yoke       |
| 14     | 1        | Base       |
| 15     | 1        | TopRail    |
| 16     | 1        | Trigger    |
| 17     | 1        | MuzzleFlat |

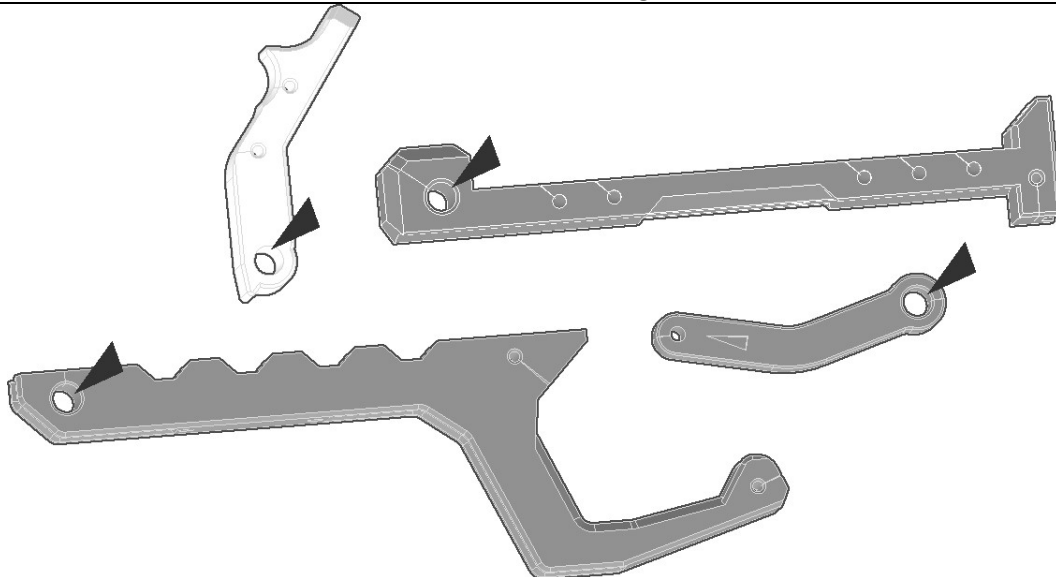
[illegible]

**Note:** Print layers should not be any larger than 200 microns. Parts were designed for PLA filament, but can be printed using ABS without issue. No support material is needed. Most of the parts should print to tolerance on their hole diameters, but results may vary so expect to have to touch up some of them with a round needle file

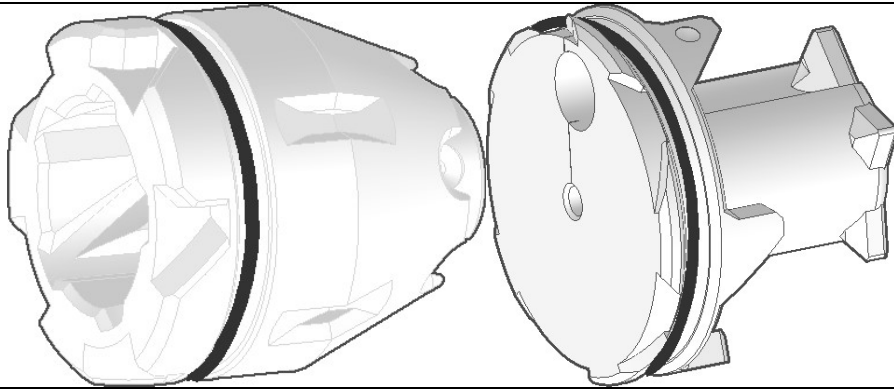
- Captain Slug

Assembly Instructions:  
<http://www.captainslug.com/nerf/YEHWAssembly1.pdf>

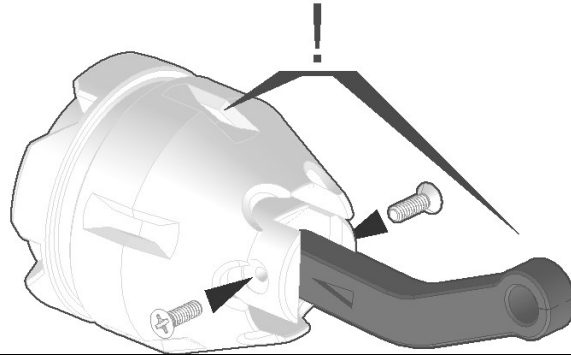
Above is a list of every printed part needed to assemble this blaster. The majority of the through holes should print to the required tolerance, but you will likely have one or two that may require minimal filing. Also make sure to trim off any burrs or oversized edges.



Check that a Nylon Spacer can easily fit into each of these holes in the printed parts. If it does not spin freely in each of them, touch them up with a round needle file until it does in each.

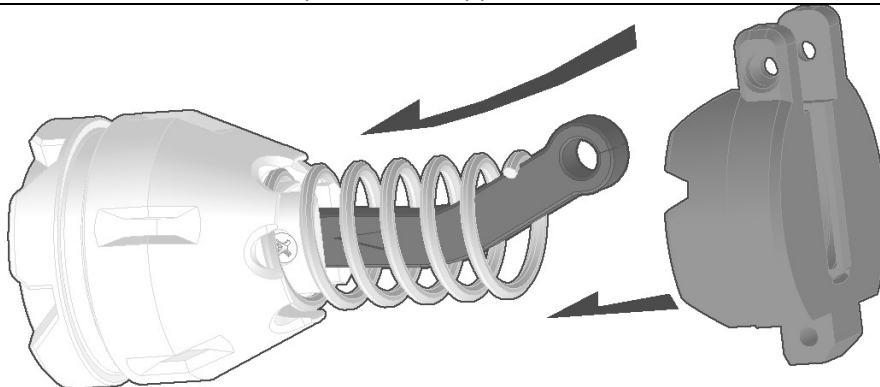


Add a 131 O-ring to the undercut on the Plunger Print. Do the same with the Valve print.

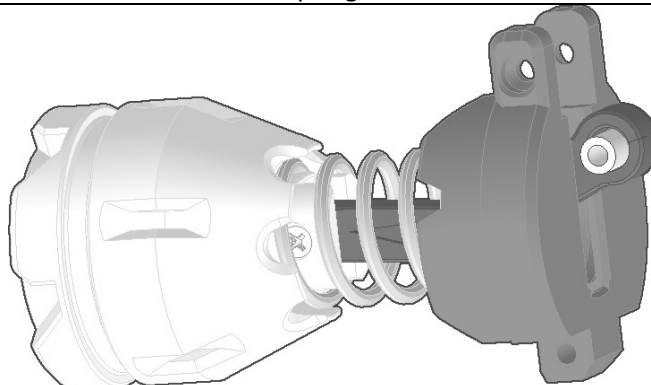


Slide the ConRod print into the slot in the back of the Plunger print. **MAKE SURE TO LINE UP** the upwardly bent part of the Conrod with the notch in the side of the Plunger print that lines up with the slot. If these are not oriented correctly the indexing valve system will not function correctly.

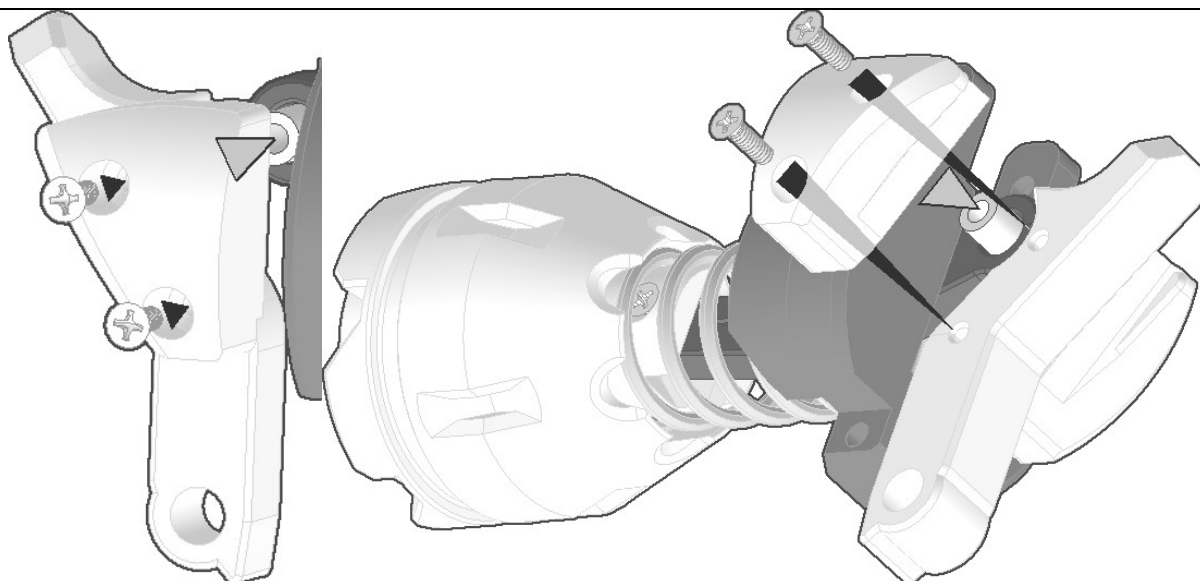
Drive a 4-40 screw into the side of the Plunger print until it pushes into the hole in the end of the conrod print. Then repeat on the opposite side.



Slide the Main Spring onto the Conrod

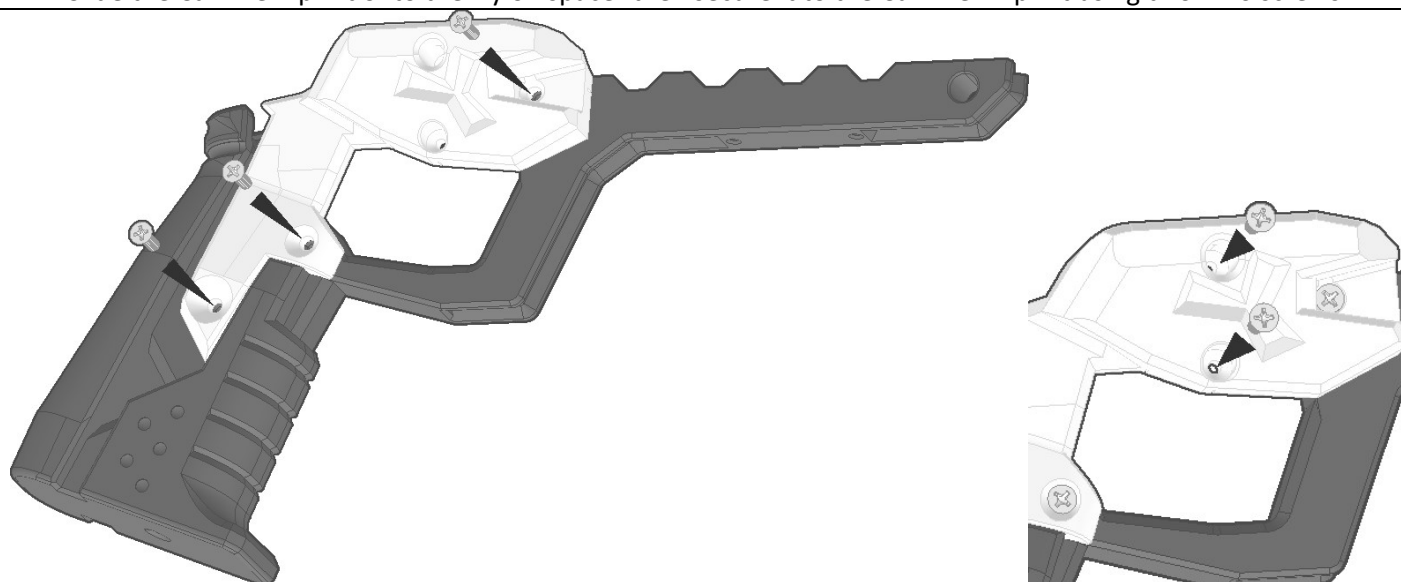


Slide the Yoke print over the Conrod print and against the main spring until you can get a Nylon Spacer through the hole in the Conrod print.



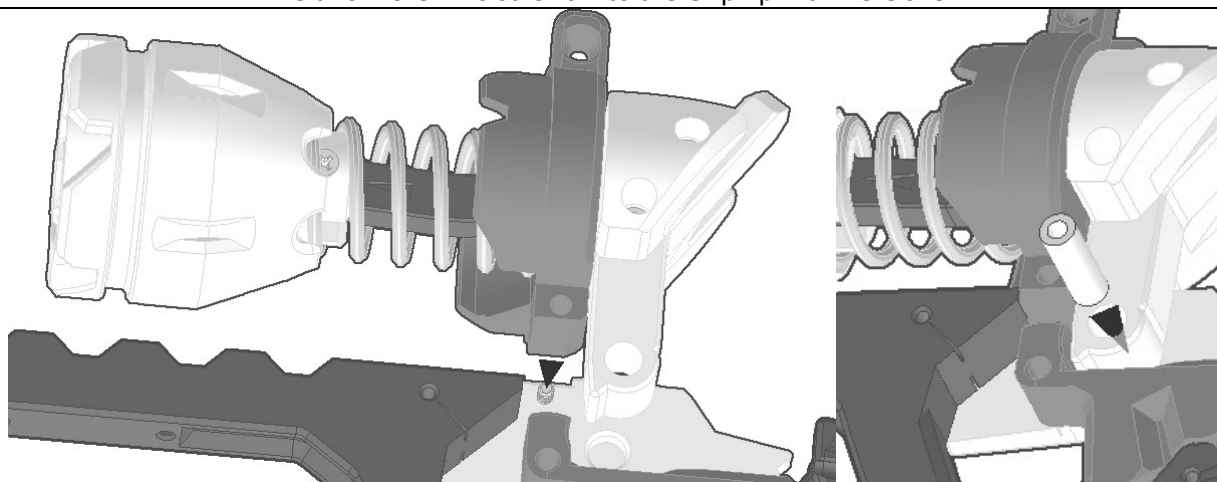
Use two 4-40 screws to secure the CammerR print to the CammerM print, then slide the hole in the CammerR print onto the Nylon Spacer.

Slide the CammerL print onto the Nylon spacer then secure it to the CammerM print using two 4-40 screws.



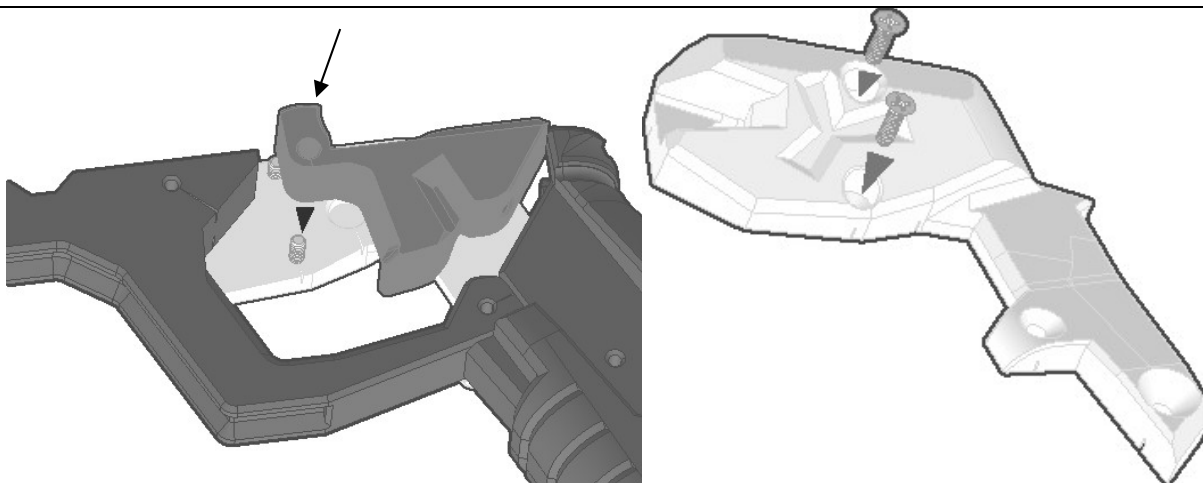
Use three 4-40 screws to secure the GripR print to the Griddle and Wunderbar prints.

Drive two more 4-40 screws into the GripR print where shown.

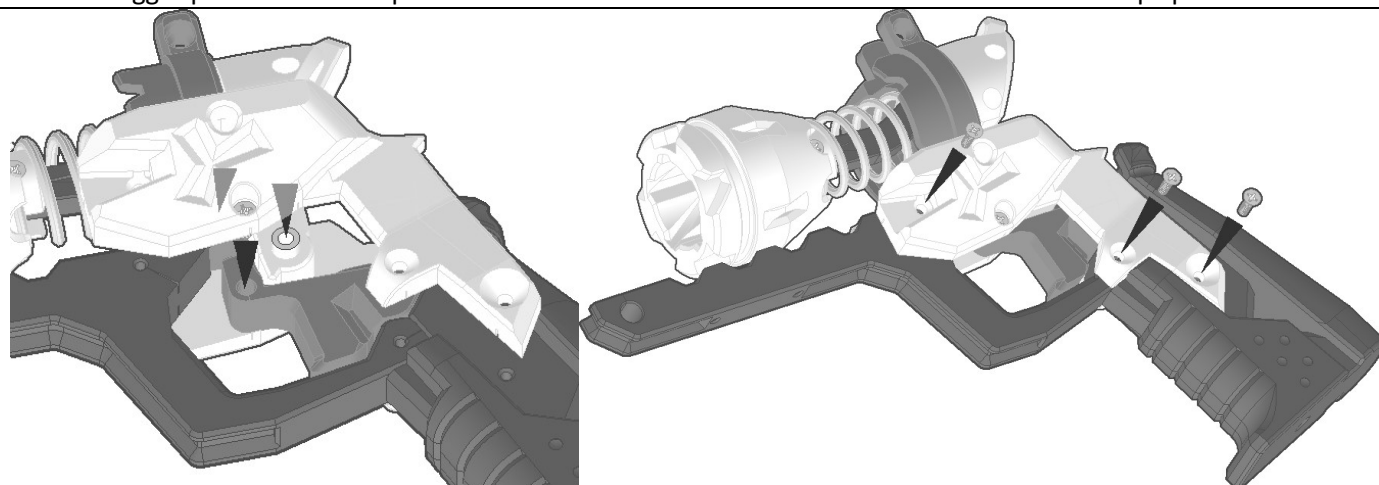


Slide the hole in the Yoke print over the exposed 4-40 screw in the Grip Assembly.

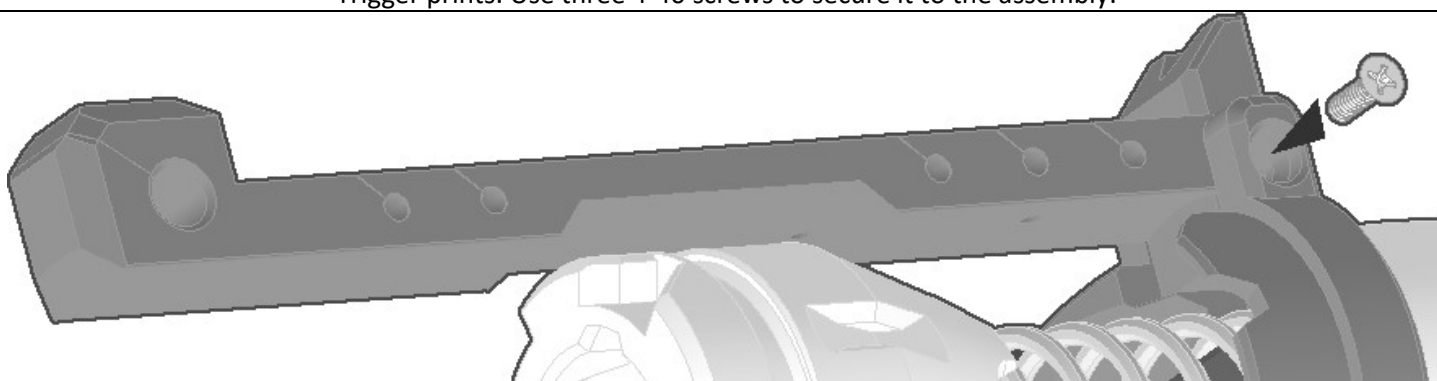
Slide a Nylon Spacer through the hole in the CammerM print and into the matching hole in the GripR print.



Use a file or sandpaper to touch up the top surface of the trigger print where indicated. Slide the Trigger print onto the exposed 4-40 screw indicated. Drive two 4-40 screws into the GripL print where shown.

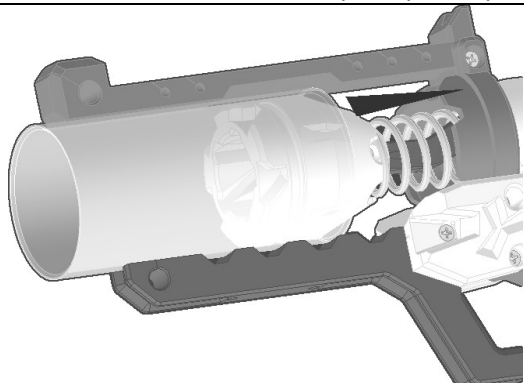


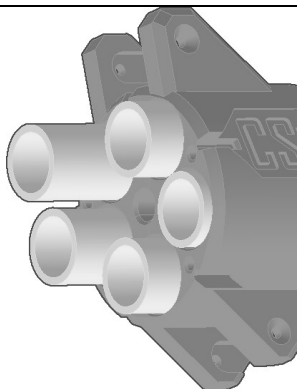
Guide the GripL print onto the nylon spacer, and the exposed screws sticking out of it into the holes in the Yoke and Trigger prints. Use three 4-40 screws to secure it to the assembly.



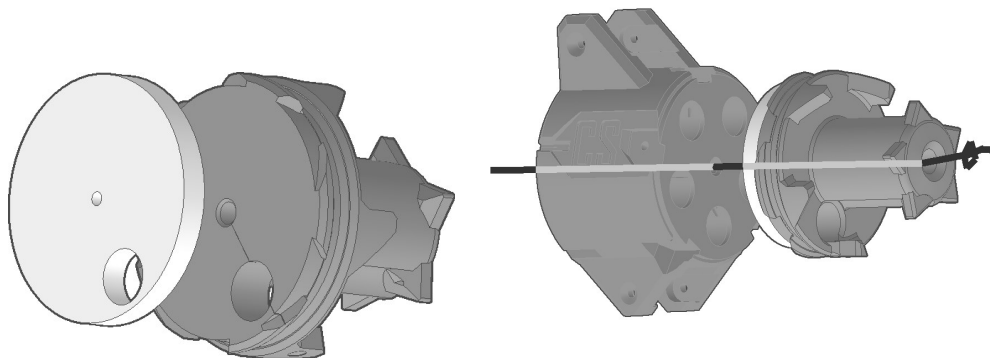
Line the back of the TopRail print up with the hole in the Yoke print and drive a 4-40 screw in from each side.

Lubricate the plunger tube with silicone oil and slide it over the plunger and onto the Yoke print.

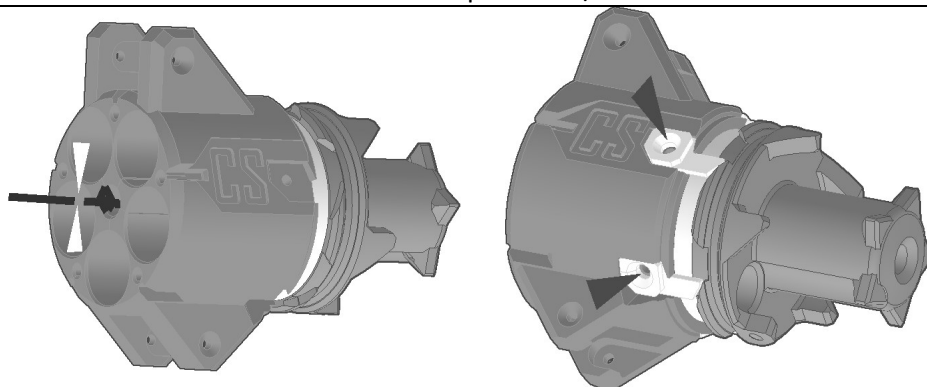




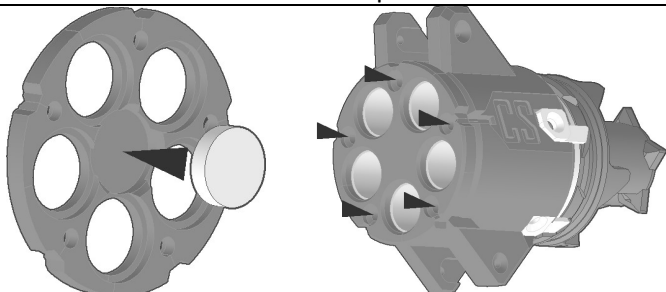
Press the barrels into the Base print. If they fit snugly use a vice to press them in. If you need to use a hammer to tap them in I recommend putting a block of wood or thick plastic against the barrel and hitting the block with the hammer to transfer the force instead of hitting the barrel directly.



Peel the backing off of the foam Valve Gasket and adhere it to the Valve print making sure to line up the holes in both. Tie a knot in one end of some 3/32" elastic then feed the free end through the back of the Valve print, through the gasket, and in through the center hole in the back of the Base print. If the elastic gets stuck, try trimming off the frayed end with scissors, or twisting while trying to push it through. If the elastic won't feed through any of the holes you will need to touch them up with a 1/8" drill bit.

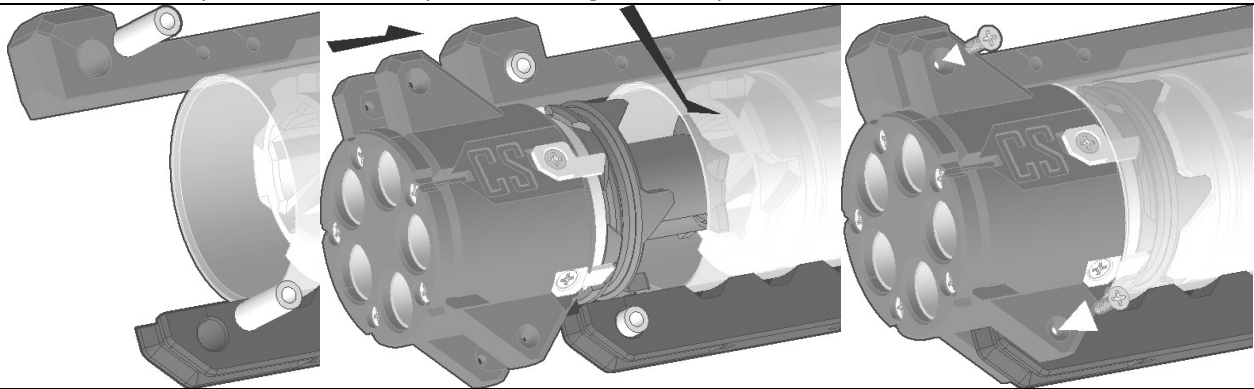


Pull the elastic taught then tie a knot as close as possible to the front of the Base print. Let the knot get pulled into the hole in the print and make sure that there is no slack between the two prints. Then trim off the excess with scissors. Insert a Clutch print into one of the sockets on the outside of the Base print and secure it with a 4-40 screw. Repeat the process with the remaining four Clutch prints.



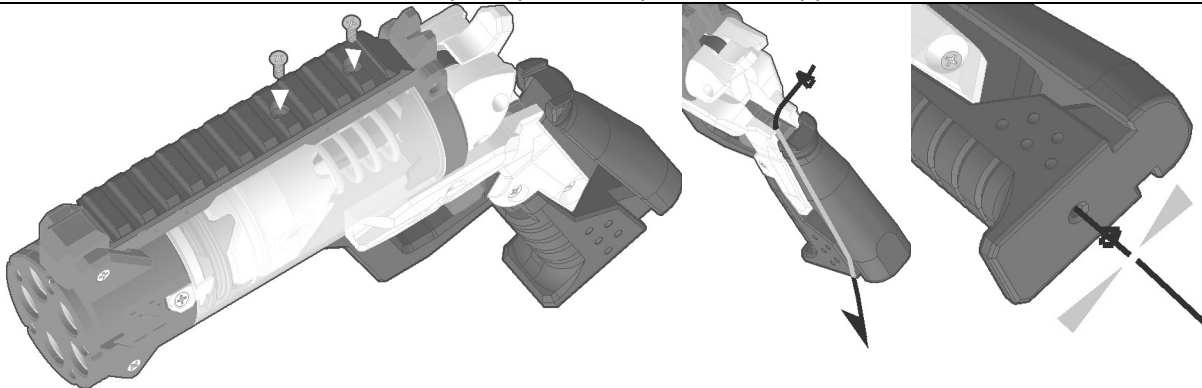
Force the 5 barrels into the front holes of the Base print. Peel the backing off of the rubber bumper and adhere it into the socket in the middle of the MuzzleFlat print (or MuzzleLong print if using longer barrels).

Secure the Muzzle print with the bumper-side facing the Base print, then drive five 4-40 screws in to secure it.



Slide a Nylon Spacer into the two holes in the Wunderbar and TopRail prints.

Slide the Base/Muzzle assembly in through the front of the blaster. Make sure the "Star" on the end of the Valve print correctly enters the keyways in the front of the plunger print. You will also need to make sure all five Clutch prints make it inside of the plunger tube. Continue feeding the assembly into the end of the blaster until the holes in the sides of the Base print line up with the Nylon Spacers. Drive two 4-40 screws in through the side of the Base print and into the center of the Nylon spacers. Repeat on the opposite side.



Install the rail\_max print on the top of the blaster and secure it with two 4-40 screws.

Tie a knot in the end of the 3/32" elastic. Feed the free end through the hole in the top of the trigger print and through the hole in the Griddle print until it comes out the bottom side of it.

Pull the elastic taught then tie a knot as close to the Griddle print as you can manage, then let it go. Trim off the excess with scissors.



When the hammer is primed the valve should rotate causing the hole in the print and gasket to line up with on the barrels. The hammer should also lock at the end of its travel. If the hammer does not lock at the end of its travel then either the main spring is slightly too long, or the topside of the front of the trigger print may need to be sanded. When all the barrels are loaded the currently indexed barrel can be determined by seeing which of the "teeth" on the back of the valve print has an indentation on it.