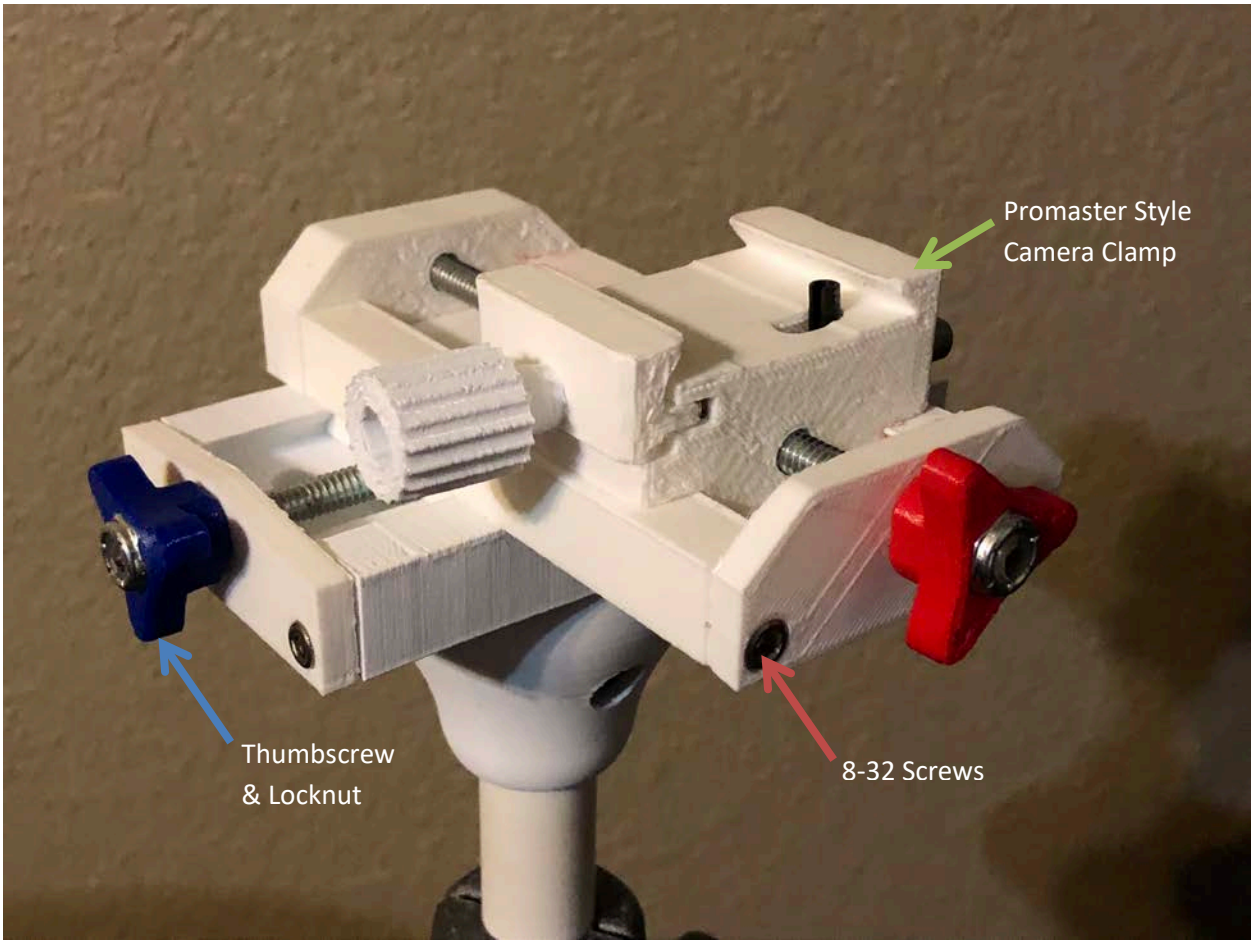
XY Head Assembly Instructions

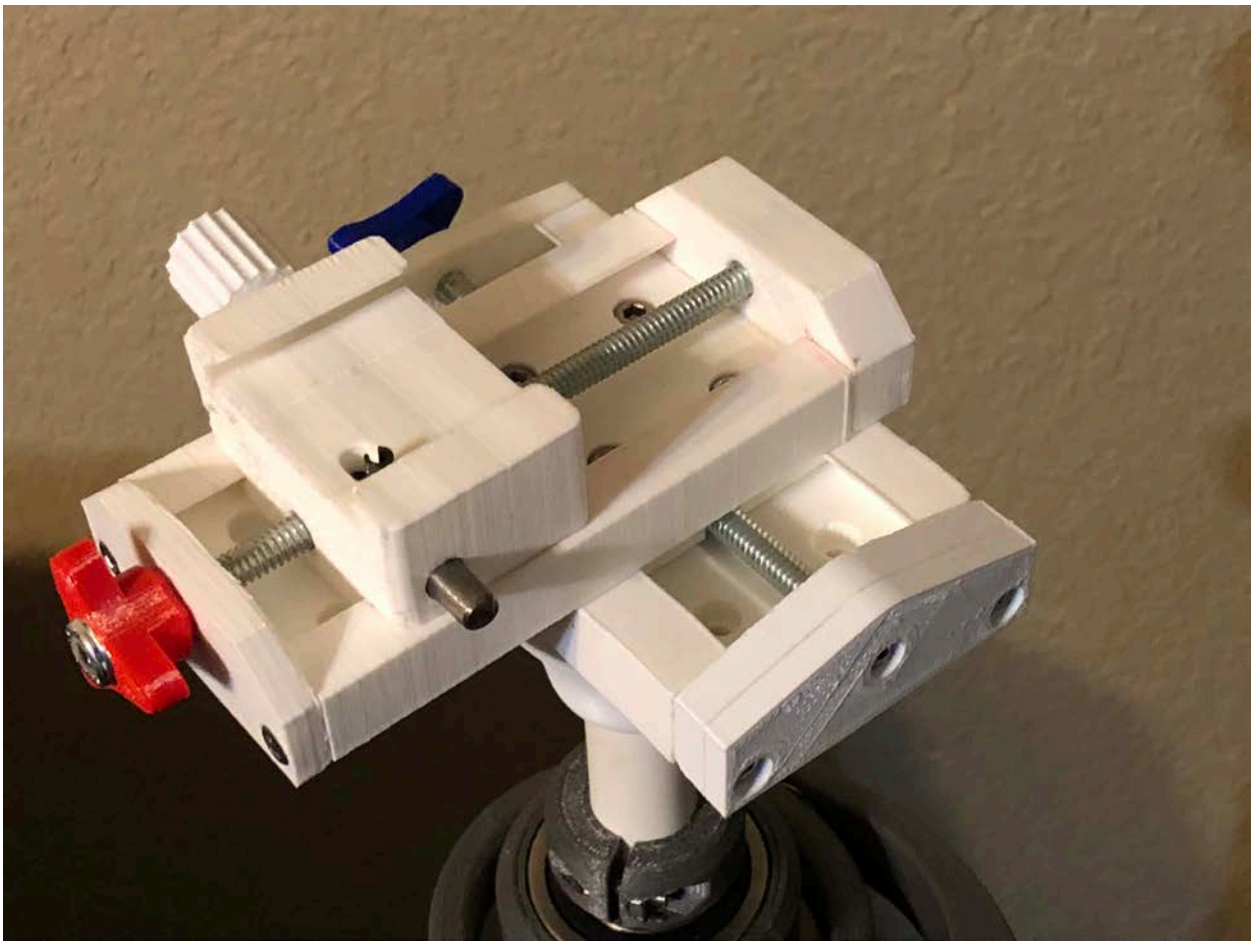


The XY Head is designed to be assembled primarily with 8-32x3/8” socket head screws. You will need a minimum of 12 to fully assemble the head. The counter-bored holes are designed to accommodate the heads of these screws and the holes for the threads are sized for auto-threading by the bolts as they are driven.

In addition to these socket head screws, you will need 4) ¼-20 locknuts and two ¼-20 threaded rods that are at least 5.375” long. You might want to get a 6” hex head bolt and use that, while cutting off the excess end, or you can use a threaded rod and put a locknut on one end as a substitute for a bolt head which goes inside the thumbscrew at the end of each axis. These locknuts and rods are what position the head accurately and allow it to translate along each axis.

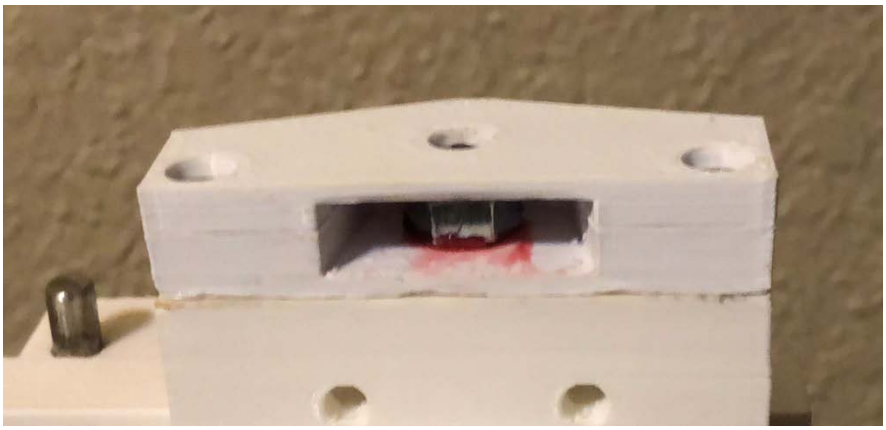
You can either use the camera clamp, or you can use the alternate head, which has holes in the top for attaching other objects to the XY head.

The alternate slide head is sized so that the ¼-20 rods will thread into it and form threads. I suggest putting your rod into a drill and driving it through, because it’s hard to do by hand. You should use a drill to drive all screws and rods, because all holes are undersized so they will form threads as you drive the screws.

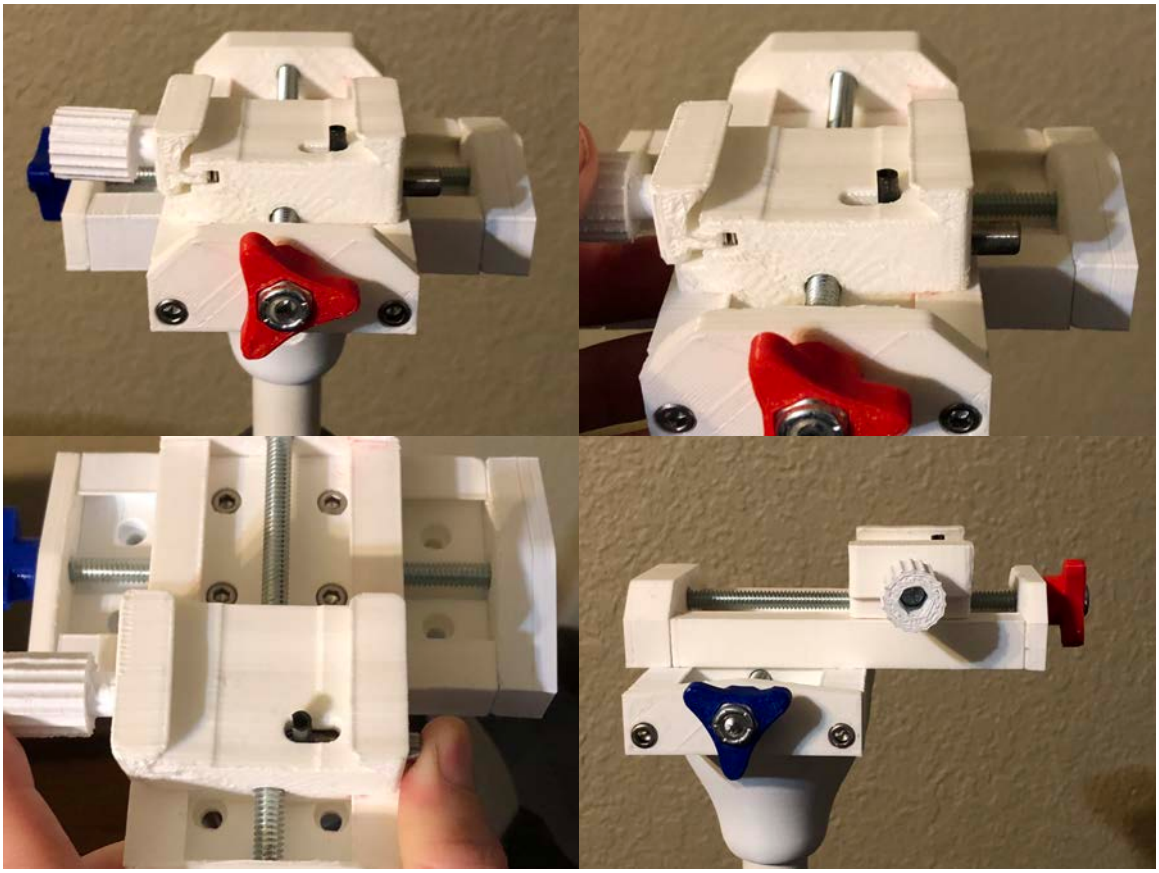


Once you have threaded the ¼-20 rods halfway onto the slides, you can assemble everything else.

If you're using a 6" bolt in place of the threaded rod, you have to put the thumbscrew on first, then the front cap can slide on. You can then thread the slide onto the bolt by pressing it hard as you turn the thumbscrew, or you can back the thumbscrew off the head, and chuck the bolt head in a drill and use a drill to form the threads more easily. Once the bolt is halfway through the slide, insert the slide in the rail and place a locknut inside the end cap with the o-ring toward the counterbored screw holes like the picture below. I put red grease on the nut to help it rotate, but this wasn't necessary. You can use the drill on the ¼-20 rod to thread the locknut on the end so that the rod doesn't come out the other end as shown. If you're using a threaded rod and locknut instead of a bolt, then you



insert the locknut on the rod first, so it functions as a bolt head. Assemble as shown in the pictures.



If using the Promaster Style camera clamp as shown in the pictures, then you'll also need a bolt and nut that will fit inside the locking knob and clamp body. I designed this for an M4x30, because that's what I had on hand, but an SAE bolt of similar size may work. You'll also need 2 springs that will fit inside the clamp tooth and one inside the clamp pin hole. A black roll-pin is inserted into the clamp pin as shown so that the spring returns the roll pin to the right when the clamp pin isn't depressed (lower left)

As mentioned earlier, you will need 12 8-32 socket head screws to fully assemble this, but you'll need several more if you intend to attach the XY head to something. It requires 4 more to attach it to the conical adapter for the camera stabilizer shown in the bottom right photo.

If you're just going to use it to position things, use the "Alternate Head". When you print dovetails, make sure to orient the dovetail profile in the XY plane so that the filament follows the function and path of stress. You don't want your camera to fall onto the floor because you printed a bad part. Check out the following link for my series on Design for 3D Printing:

https://www.youtube.com/watch?v=9PSkntKU2Qg&list=PLH9pob9yGvfXx4IdVwNxKVGqzOAMY-9oo