

# DIY Mechanical Backstop — Deployable Laser Axis

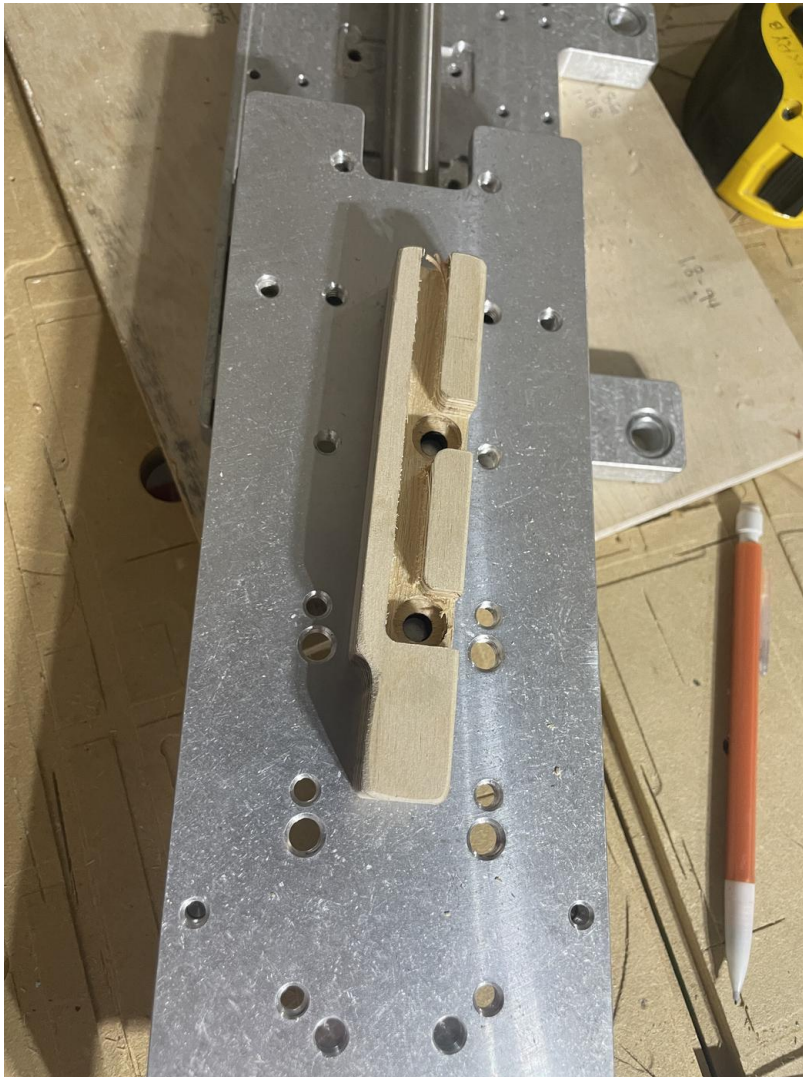
Avid CNC PRO4896 — Prototype positive stop, built to prevent repeat actuator rod failure

Photo 5564



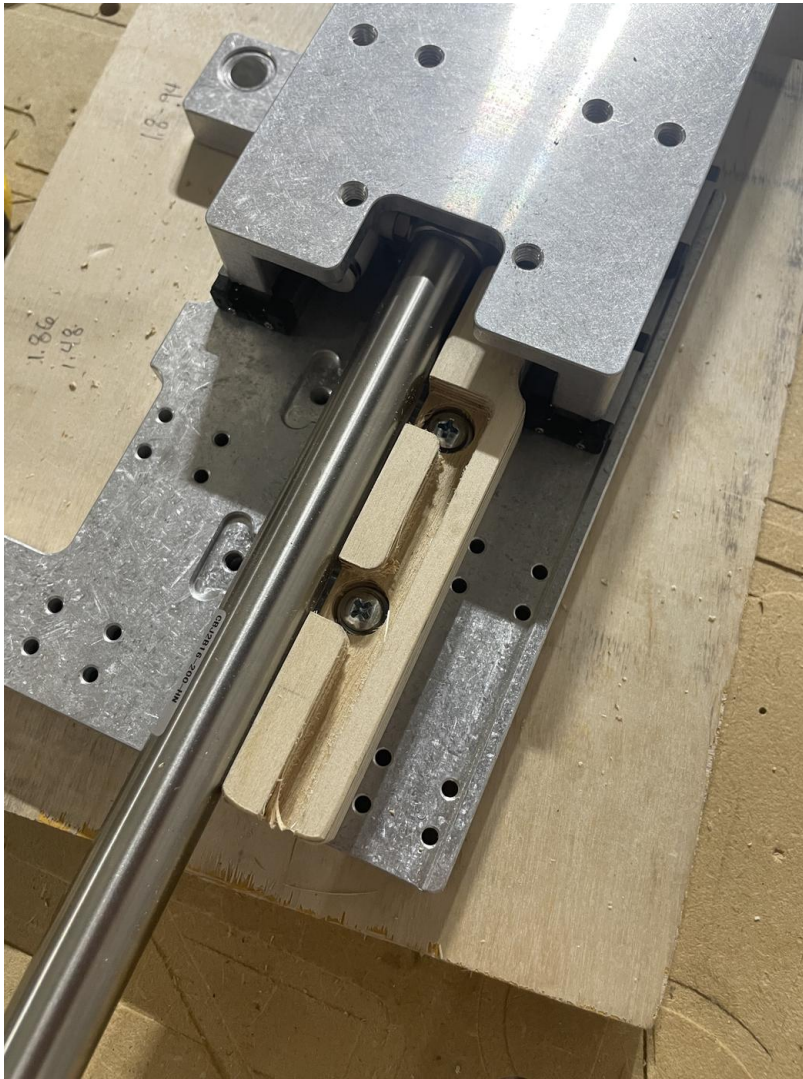
Prototype backstop cut from scrap 3/4" Baltic birch plywood.

Photo 5567



No CAD files were available for the slide axis assembly, so the part was iteratively hand-trimmed and test-fit to the actual hardware to get a proper fit.

Photo 5569



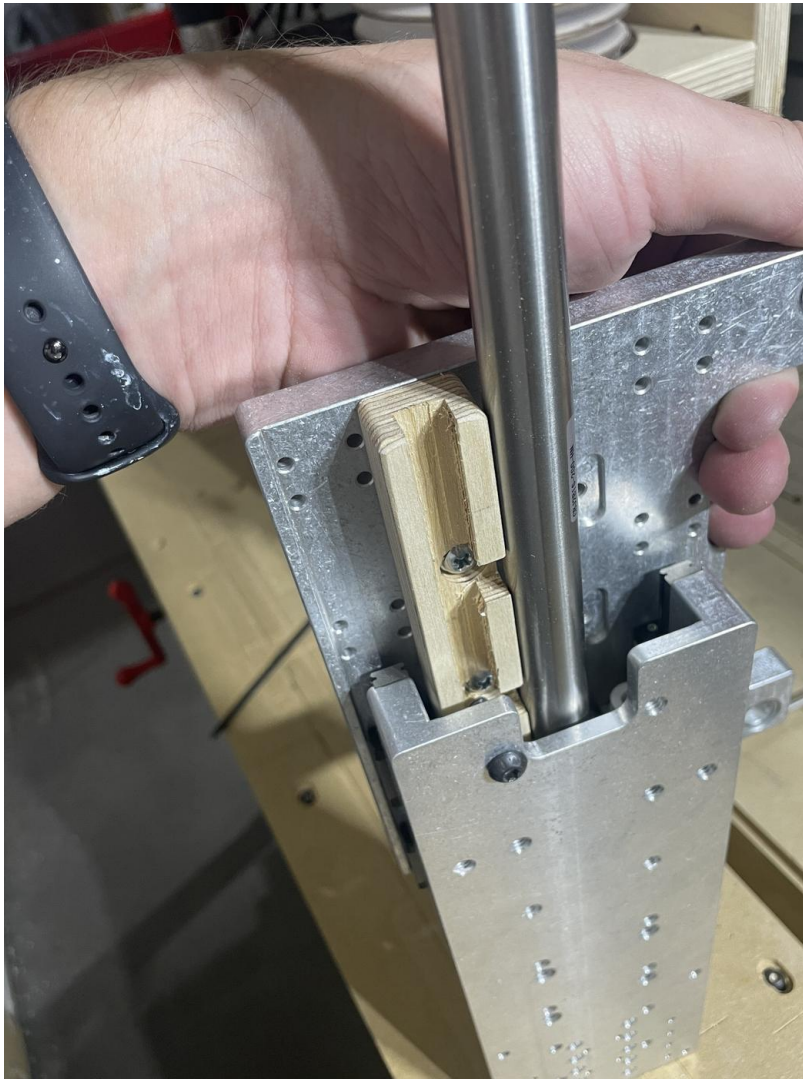
The backstop is positioned right along the pneumatic cylinder and anchored using the unused mounting holes for the upper and middle cylinder bracket positions. Switching to a different mounting height would require redesigning and repositioning the block.

Photo 5570



An additional screw was added into one of the unused pre-threaded holes on the front for extra anchoring. Screw length was chosen to maximize bearing surface in the wood while stopping short of contacting the heads of the screws mounting the block to the bottom plate.

Photo 5571 — Final Product



The completed backstop. It catches the deployable axis roughly 1/4"–1/2" before the cylinder would bottom out — a small loss of travel, but intended to prevent a repeat of the actuator rod failure. Plywood was chosen for the prototype; depending on how it holds up, it may be replaced with a milled HDPE or aluminum version with a rubber bumper.