



Ender 5 Pro Bowden Support / Strain Relief

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Summary

Snaps right into the extrusion profile and decouples the ptfe tube from the quick connect coupler making it last longer!

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This is it, no more Bowden related issues on the Ender 5 Pro!

Such a simple strain relief and yet so important, it removes the circular oscillation that ultimately damages the PC4-M6 coupling on the Ender 5 / Pro resulting in disastrous prints.

WHY SUCH A FUZZ: Because once the coupling breaks it will allow the PTFE tubing to move back and forth about 3 to 4mm on every retract, which translates to stringing and other printing issues. The coupling will ultimately fail releasing the tube mid-print which isn't good at all.

I've tried thicker locks, changing the PC4-M6 for another original one (didn't last very long), tried the "Beefy Bowden Coupling" with a fresh coupler and it seemed to work except the insert kept breaking after around 40hs so I realized all I had to do was to decouple the system and my problems would be gone...

Hence this snap-in support, give it a try and let me know it's just ~1.6 meters of filament, you could probably use your last meters for one.

This is obviously placed over the extruder, and it is meant for the Ender 5 and Ender 5 Pro (unsure about the Plus version) your mileage may vary, or not.

Print as-is unless you are on a hurry then you can cut the top part off and just print the lower portion as long as you leave 4mm or more in height it should work fine.

This is a great complement for the [Beefy Bowden coupling PC4-M6 \(V2.1\)](#). Which won't ever fail with this support installed.

INSTALLATION: You must first untighten the extruder mount screws and pass the Bowden tube through the part then place the thick portion of the support onto the aluminum extrusion and push flat until the thinner portion snaps into place. to remove push from the angled face (from the thickest portion) outward and it will release itself from the extrusion.

The ideal position is up against the top of the frame, tighten the extruder and make sure your PTFE tube is pushed in all the way, replace your lock/tab and that's it -- If you are already using the Beefy Coupling, you can keep it (notice I did on the photos) without the Beefy Coupling just make sure you leave no gap between the support and the coupling so no play can develop.

PLEASE NOTICE: The internal bore diameter for the PTFE tubing is for the original Capricorn and it will be a tight fit, you can ream the hole or just heat that portion of the part so the tube will slide easily (in case of PLA just raise the temperature of the hole area a bit and it'll soften right up).

WORD OF CAUTION: Try a thin cut slice first to see how it fits, my machine is dialed in quite well but yours may differ so just print a thin slice (3, 4mm) and figure out if you'll need to resize in one or many directions before slicing the entire model, then again this is a cheap print so no harm either way. The part should snap into place with relatively low force and once installed it shouldn't move on its own at all, pushing it up/down should require significant force which is to say it should stay in place by its own.

BONUS NACHOS: Print two and place the second one under the extruder to further guide the filament, you can insert a small portion of PTFE tubing or leave as-is, this would be the place to add a filament oiler/cleaner and sandwich it between the part and the bottom of the extruder so it doesn't move during retracts.

FOOT NOTE: While I've seen several strain-relief concepts none of them mounted onto the frame which is the ideal solution, mounting anything

onto the thin M6 thread makes me cringe, already the Beefy Coupler tries to solve one issue but the other remains, circular motion stresses either the insert or the coupler itself resulting in early failure either way unless you decouple the system onto the frame.

Model files



ender_5_bowden_support.stl

☐ No support needed, 0.20 layer height or less. PLA or PETG.

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