



Bowden 2-3-5 Way Splitters



TLA

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Summary

Split your bowden tube

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After many, many iterations I finally have a splitter I'm happy with. I primarily designed it as a 5 way splitter but it's mostly parametric so I was able to produce 2 and 3 way versions. 4, 6 and maybe 7 way splitters may be possible with a bit more tweaking, if there's interest let me know.

Here are the main features I aimed for:

- Angled inlets to minimize the number of curves the filament has to go through
- Built in PTFE connectors that do not reduce the diameter or deform the inside of the PTFE tube
- Prints without support

Here are the printing / installation instructions (PLEASE READ BEFORE USING):

- Print upright and use the smallest layer height your printer is capable of. I printed mine at .16mm
- If you have adhesion issues print with an outside brim

- This splitter is designed for PTFE tubes with 4mm OD and 2mm ID
- To make installation easier, each PTFE tube needs to have a thread cut into it
- For all tubes, make sure they are all cut square, and the openings are round, not squished, otherwise you'll have problems
- Using tape or a marker, from the end measure 15 mm for the outlet PTFE tube and 17mm for each of the inlet PTFE tubes
- Use the bottom, middle opening as a die to cut the thread into the PTFE tubes, use light force to push the PTFE tube as you turn it in, it should go in as far as the marking you made, 5 or 6 full turns should do it
- If you have trouble gripping the PTFE tube try wrapping it with masking tape
- Since the tubes are turned into place it's best if the other ends are unplugged during assembly
- Install the top tube until it bottoms out which is about 15mm
- Install the bottom tubes until you reach 17.5mm or until you feel it bottoming out. ONCE YOU DETECT THE BOTTOM DO NOT TIGHTEN ANY FURTHER. This is because the channel is tapered and it will squish the PTFE tube inward causing unwanted friction
- Test each filament path once assembled, you may need to screw in/out some of the PTFE tube as needed.

That's it, let me know if these work for you or not.

Model files



bowden-5-way-splitter.stl



bowden-3-way-splitter.stl



bowden-2-way-splitter.stl

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