

Filament Storage In-Stack Labels

Top labels name the column, side labels name the tray. This one names the change — the seam partway up a column.

No Supports

Five Legends, One Project

Pre-Configured 3MF



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A column takes six spools and almost nobody has six of the same thing. The bottom three are one material, the top three are another, and the only way to tell is to lift them. This arch sits in the stack at the boundary and marks it.

In the download

File	What it is
makerx-filament-storage-instack-label-all.3mf	Start here. One project, five plates — PLA, ASA, PET-G, TPU and Blank — each in the tested orientation with the tested profile traveling with it.
...-<name>.3mf and ...-<name>.stl	The same five, split out one per file, plus the raw meshes for your own slicer. Already oriented — no rotation needed. Read section 2 before slicing an STL.

1 · What the names mean

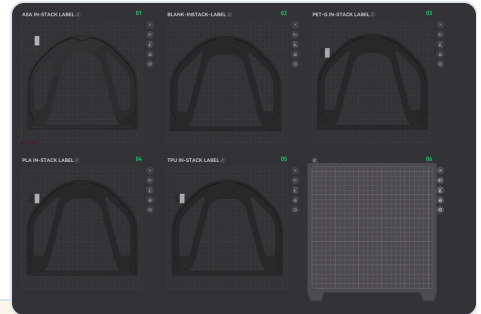
The name is what the label SAYS, not what to print it in

All five plates are sliced for **PLA** and differ only in the text on the face, so the "PET-G" label is the one you drop in above your PET-G. Print it in whatever you like.

It is **240 × 205 × 52 mm**, identical across all five, and it fixes to nothing — it rests on the shelf and the spools above it hold it there. Section 3 has what each plate costs to print.

2 • Slice it

- 1 Open the 3MF in Creality Print — or any slicer that imports 3MF project files.
- 2 When you are asked whether to load the project's print settings, **say yes** — that is the whole point of the 3MF.
- 3 Pick the plate whose legend you need, confirm your printer and filament, and slice.



Five plates in one project — ASA, Blank, PET-G, PLA and TPU. Pick one and slice.

★ This one is NOT printed face down

If you have printed the side, top or insert labels, **ignore that habit here**. Those go lettered-face-down for purge economy; this one stands the way the 3MF has it, which is the orientation that was print-tested. Turning it over is the one change that will cost you the print.

★ Multi-color: needs a CFS or an AMS

The four lettered plates are **two filaments** — in whatever two colors you load — and that needs a CFS, an AMS or another multi-material unit. The **3MF already carries the setup**, wipe tower included. An **STL carries no color**: select the part and use **Paint** in your slicer, or it slices in one color, which is why the text can look like it disappeared.

No multi-material unit? Print the Blank. It is a single filament, so it needs none of this — and it is the fast one.

3 • What each plate costs

Plate	Time	Filament	Changes
PLA	6 h 20 m	200.01 g	90
ASA	6 h 23 m	201.77 g	92
PET-G	6 h 26 m	201.88 g	92
TPU	6 h 23 m	201.76 g	92
Blank	3 h 17 m	121.99 g	0

The part is 121.92 g of that. Everything above it on a lettered plate — about 78 g — is purge and wipe tower, which is why the Blank at 121.99 g is the same object for 61 % of the filament.

The lettered plates are all the same print — the few minutes between them is the difference between three, four and five letters. The Blank is half the time on 61 % of the filament because it makes no tool changes: every swap to the lighter filament flushes **743 mm³**, and ninety of them is where the missing 78 g goes.

4 • The profile baked into the 3MF

Using your own profile? Match these — sliced and print-tested on a Creality Hi, 0.4 mm nozzle.

Quality	
Layer height	0.20 mm
Nozzle	0.4 mm
Walls	2 loops
Top / bottom	5 / 3 layers
Infill	9 % gyroid

Plate adhesion	
Supports	Off
Brim	Auto , 5 mm
Bed	Epoxy resin plate

Material & speed	
Filament	PLA (tested on Creality Hyper PLA)
Nozzle temp	220 °C
Bed temp	60 °C
Outer wall	150 mm/s
Infill	270 mm/s

Other materials

PLA is all a label needs indoors, and this one never carries load — the spools above it rest on the shelf, not on the arch. If the rack lives in a hot garage, PET-G or ASA will not soften on you.

5 • Before you hit print

- ☐ Supports confirmed **off** — the arch is self-supporting in this orientation, which is why it is oriented this way.
- ☐ Orientation left alone. It is a six-hour print; it is worth ten seconds checking you did not flip it out of habit.
- ☐ Printing two colors? The wipe tower is in the project — leave it there.
- ☐ Enough of both filaments loaded for 200 g, not 122 g. The purge is most of the difference.



One arch, 240 mm across, legend proud of the face. Nothing to assemble.

6 • Off the plate

It comes off the plate finished — one part, no assembly, nothing to glue. A minute of tidying is all it asks for.

- 1 Let the plate cool, then flex it and lift the label off.
- 2 Peel the brim away from the two feet. It is a 5 mm auto brim, so there is not much of it, and it should come off in one piece with a fingernail.
- 3 Check the lettering. If a filament change left a fine strand across the face, lift it off with tweezers rather than scraping — the text sits proud of the surface.
- 4 Sight along the bottom edge. It has to sit flat on a shelf, so knock off any first-layer whisker still hanging on under the feet.



Off the plate in one piece. The auto brim is the only thing to remove.

7 • Drop it in the stack

Lift the spools above the boundary, set the label on the shelf, put the spools back. That is the whole installation — there is nothing to fasten. A few things worth knowing:

- **Put it UNDER the material it names.** The label names what starts below it. A "PLA" label sitting inside a column whose top bar says PET-G is the product working, not a mistake — it is telling you the PET-G stops here.
- **The lettered face angles out.** That is deliberate: it stays readable when the column is above eye level or pushed back against a wall.
- **It carries nothing.** The arch spans the spool below rather than resting on it, and the spools above rest on the shelf. Nothing is loaded, which is why PLA is fine.
- **Moving stock is the normal case.** No adhesive and no clips means re-sorting a column costs you one lift, not a scraper and a bottle of alcohol.
- **Scaling.** If you scaled the storage shelf, scale this by the same amount in **X, Y and Z together** — it has to keep spanning the same opening.



The seam, marked. Green bar on top names the column; the label partway down names where it changes.

8 • Making it yours

The Blank plate is the point. Print it for anything the four names do not cover — PLA-CF, silk, wood fill, a color code, a project name.

Color it in. A fine acrylic paint pen wiped back flat picks raised text out cleanly, which turns the 3 h 17 m single-filament print into a lettered one.

Want another name as a proper plate? Leave a comment on the model listing. That is where these four came from.

Where precision meets the printer

Thanks for printing this one. If it saved you from lifting three spools to find out where the PLA stops, that is exactly what it was designed to do.

For years my design world existed entirely behind a screen. As a mechanical engineer I spent countless hours building complex CAD models, but there was always a missing link — the ability to hold an idea in my hands. That changed in January 2026, when I went headfirst into 3D printing. The moment that first layer stuck to the bed, the gap between concept and reality vanished.

Coming from a background where precision is everything, tolerances aren't suggestions to me — they are a religion. I didn't want to print trinkets; I wanted to apply industrial engineering discipline to desktop manufacturing. Every wall count, every layer height and every infill percentage in this guide is a deliberate decision backed by testing. If a part can't handle the environment it was built for, it goes back to the drawing board.

Three principles behind every print

01

Functional Engineering

High-utility, real-world solutions rather than purely decorative models. If it doesn't solve a practical problem, it doesn't leave the workstation.

02

Rigorous Tolerances

Designed in professional CAD with mechanical intent — press-fits that click and assemblies that work straight off the build plate. No sanding, no filing, no guesswork.

03

Bridging the Gap

Industrial structural integrity at maker speed. Proving a desktop printer can produce parts worthy of real engineering applications is what drives every release.

The workshop

Mechanical engineering degree · SolidWorks precision modeling · two Creality Hi printers · Virginia Beach, Virginia · every design free to download.

A note on sharing

I'm thrilled when people use and share these designs. I just ask that you respect the license shown on the model listing and give the required credit, so I can keep contributing to the collective workshop.

IF THIS ONE EARNED ITS SPOT

A **Like** or a **Favorite** on the model page takes a second and genuinely helps. A **Boost** helps more than either — it is what puts a design in front of makers who would never otherwise come across it. And if you **Follow** me, new models and updates land in your feed as they are released. However you choose to support it, thank you — it is what keeps everything here free to download.

This is one of five in the filament storage family — the shelf itself, top labels, side labels, insert labels and this one. Something they don't cover between them? Leave a comment on the model. That is where the next version starts.

Happy printing. — MakerX Designs · makerxdesigns.com · © 2026