



Drybox For Prusa XL / 3030 Extrusion



Extrutim

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Summary

A drybox for the Prusa XL, designed to quickly and easily change the filament spool or the desiccant!

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I've designed this drybox for the Prusa XL, of course it can be attached anywhere on 3030 aluminum extrusions.

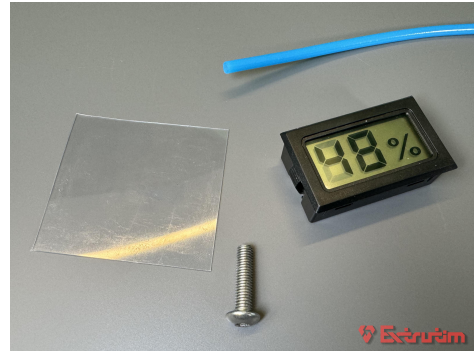
The drybox is opened via the red wheel with a 90° turn. It also holds the container for the desiccant, which could not be easier to reach thanks to its attachment to the wheel. The lid is also the spring that keeps the lid under tension.

The box has a window to be able to see how much filament is left on the

spool. There is also a version of the box that can hold a hygrometer, useful if you are using a desiccant without color indicator.

You will need the following for the Drybox:

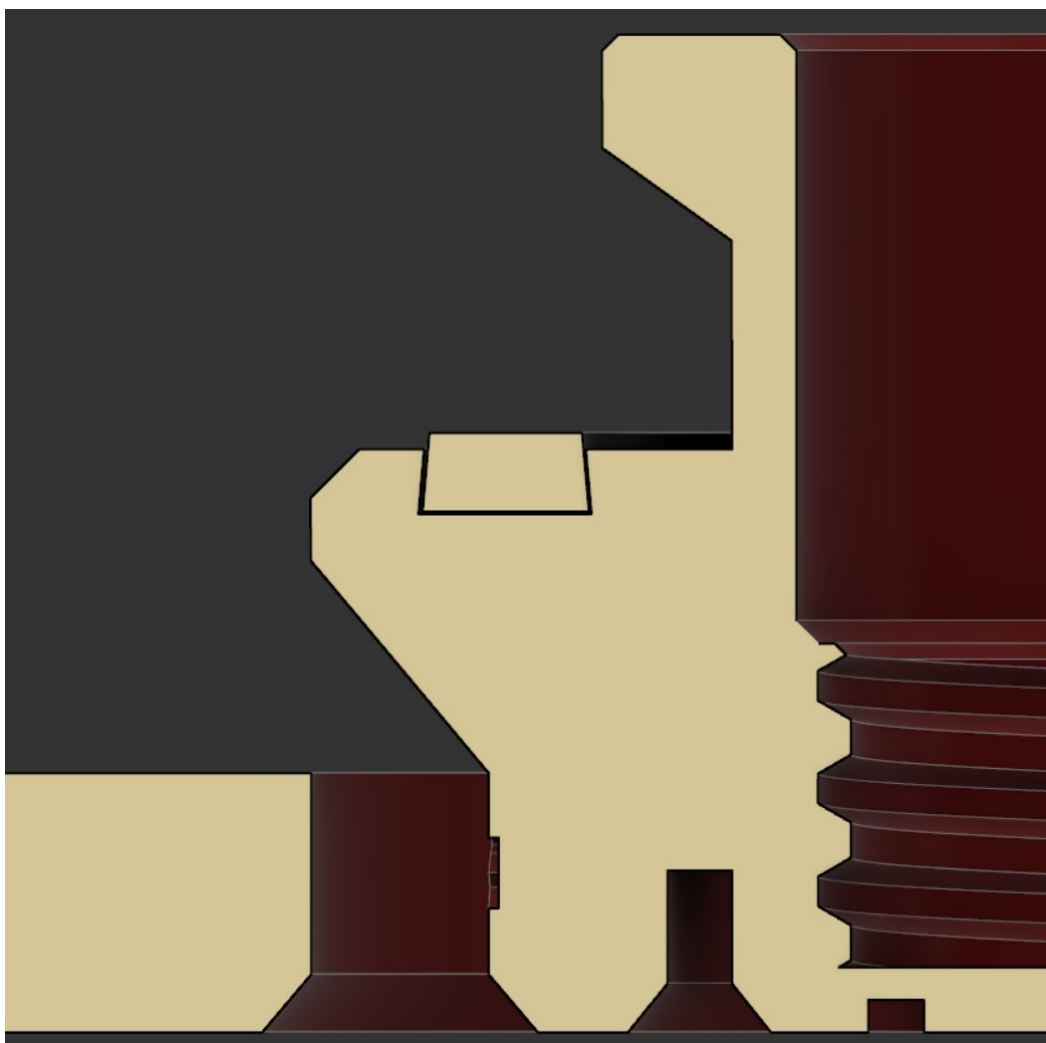
- PETG or another material (at least for the lid) that is not susceptible to material creep (otherwise the lid will lose its tension after a while). A GF or CF reinforced filament would be even better.
- Flex filament for the seals
- One M5x20mm screw
- PTFE tube standard 4mm
- A piece of clear plastic 55x50mm, e.g. from packaging for the window
- Optionally some clear filament for the desiccant container
- Optional a standard rectangular hygrometer



The drybox is designed so that it can be printed without supports. This also applies to the window and hygrometer cut-out as the bridges are straight. If you are unsure, you can of course use supports.

As mentioned, the lid should be printed from PETG or another material that is not susceptible to material creep so that the spring tension of the lid is maintained. PLA is not suitable for this.

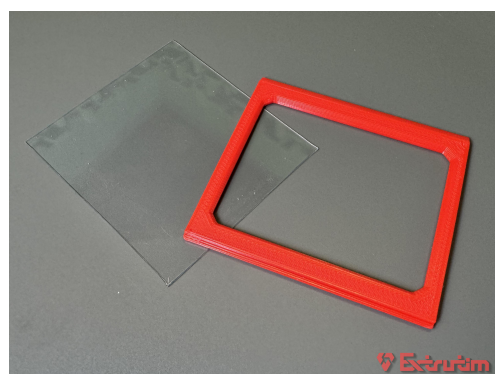
I recommend sticking some 1mm thick foam rubber to the back of the box on the contact surfaces to the printer to avoid vibrations.



By scaling the seal of the lid in Z, you can give the lid more or less tension. The standard thickness of the seal is 3 mm.

The seal of the wheel is trapezoidal. Print it as the file is aligned. The side that is on the bed is the top.

For the window you need a 55x50mm piece of clear plastic, which you can simply cut out of a package and attach to the box with the frame.



There are several holes on the back around the screw into which two pins are inserted to prevent the box from turning. Due to the small diameter of the pins, you may have to reduce the flow rate slightly so that they are not too tight.

Note:

The container is not 100% airtight, but sufficient for the desiccant to keep the moisture out of the filament.

Of course, loading the filament is a bit more fiddly. I pull out the PTFE tube at the filament sensor and push it at this position up to the extruder.



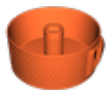
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Model files



Box Left Side

4 files



left-box-knurled.stl



left-box-knurled-hygrometer.stl



left-box-clean.stl



left-box-clean-hygrometer.stl



Box Right Side

4 files



right-box-knurled.stl



right-box-knurled-hygrometer.stl



right-box-clean.stl



right-box-clean-hygrometer.stl



Seals

2 files



seal-wheel.stl

☐ Print it with flex filament.



seal-lid.stl

☐ Print it with flex filament.



frame.stl

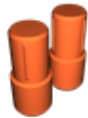


lid.stl

☐ Print it with PETG or similar material that isn't susceptible to material creep.



wheel.stl



pin.stl



container.stl

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