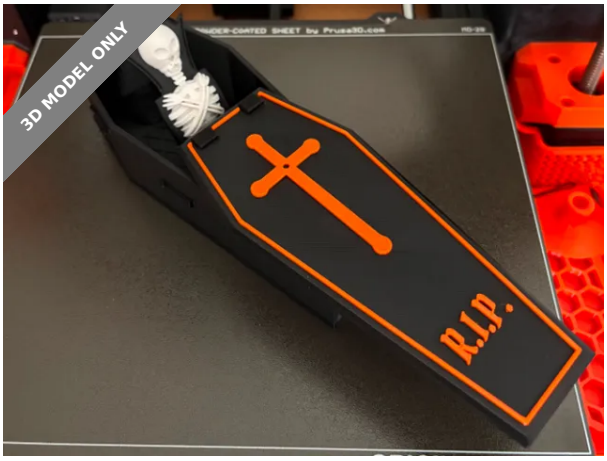
Printables by JOSEF PRUSA



Nosferatu's Coffin - slide the lid and the vampire sits up

a **amedeos**

VIEW IN BROWSER

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Summary

Pull the lid and the Count wakes up: he sits up and stares at you. Five parts, no supports, colour changes set.

Seasonal designs > Autumn & Halloween

Tags: toy halloween parametric mechanism movingparts skeleton vampire coffin nosupport dracula kinetic candybox colourchange build123d nosferatu

The idea

A classic six-sided coffin with a sliding lid. The vampire inside is fast asleep.

Pull the lid towards you. For the first half of the way nothing happens: the lid only uncovers his head. Then the vampire sits up, slowly and stiffly, like Count Orlok in Nosferatu (1922). At the end he looks straight at you over the lid. Push the lid back and he lies down again.

The black cape, the high collar and the fangs make it clear who he is. There is also a small candy stash at his feet, under the lid.

How it works

- **Hip joint.** The skeleton turns around his hips. Two stubs on the pelvis sit in a bearing block, with a bayonet fit: they only go in when he is half sitting up.
- **Levers.** Two levers stand up from the pelvis. The lid always covers them.
- **Coffin nails.** Two square nails go through the lid. Each nail has a pin underneath. When you pull the lid, the pins reach the levers after 54 mm and push them: the vampire sits up to 70°.
- **Gravity.** When you push the lid back, his own weight takes him back down.
- **Dovetail rail.** A straight rail at the foot end keeps the lid straight and holds it down, so it cannot tip over when it is open. There are hard stops at both ends.
- When the lid is closed, you can lift it off to reach the candy stash.

The pictures with a cut-away side show the nail pushing the lever.

Features

- **Printed and tested.** We printed the files on this page on a Prusa MK4 with Prusament PETG, assembled the coffin and tried the mechanism. The photos show that print.
- Five printed parts: coffin, lid, vampire and two nails. No glue is needed (a drop is fine for the nails).
- **No supports.** PrusaSlicer does not add any, even with automatic supports turned on.
- **Colour changes already set** in the 3MF files: the lid's cross and lettering turn orange, and the vampire has a black cape behind white bones. One extruder is enough.
- **Designed for 0.2 mm layers and 0.45 mm lines.** Every flat surface sits exactly on a layer, and the walls are a whole number of lines, so nothing gets rounded away.
- **Tolerance coupon** included: test the three fits in less than an hour before you print the real thing.
- **Fully parametric source code** (Python and build123d) with automatic tests for the mechanism, the print layers and the files.

Print settings

- **Printer:** Prusa MK4 (Input Shaper firmware). Any printer with a 165 × 70 mm bed area works.
- **Nozzle:** 0.4 mm
- **Profile:** 0.20mm STRUCTURAL (0.2 mm layers)
- **Material:** Prusament PETG (PLA also works)
- **Supports:** none

- **Sheet:** textured or satin (PETG sticks too much to smooth PEI)

Plates:

- **plate_1_black_box_and_nails:** coffin and 2 nails, black. 3 h 08 min, 68 g.
- **plate_2_lid_black_then_orange:** lid, black, then orange from 5.20 mm. 1 h 01 min, 28 g.
- **plate_3_vampire_black_then_white:** vampire, black, then white from 1.80 mm. 40 min, 9 g.
- **coupon_all_pieces** (optional): tolerance coupon, any single colour. 47 min, 12 g.
- **coupon_nail_gauge** (optional): nail gauge, any single colour. 14 min, 3 g.

The whole coffin takes about 4 h 50 min and 105 g of filament.

Which files to use

- **3MF files — easiest.** These are PrusaSlicer projects with the MK4 settings and the colour changes already loaded. Open, slice, print. With another printer, choose your own printer profile after you open them.
- **STL files.** One file per part, already in its print position. Add the colour changes yourself (see below).

Colour changes (only needed with the STL files)

In the PrusaSlicer preview, move the vertical slider to the layer and click the **+**:

- **Lid:** at **5.20 mm** (start black, then orange). The cross, the border and R.I.P. come out orange.
- **Vampire:** at **1.80 mm** (start black, then white). The cape and the collar stay black; the bones are white.

Before you print: the tolerance coupon

Printers and materials are all a bit different. The coupon pieces are cut from the real parts, so if they fit, the coffin fits.

1. **Hip joint.** Tilt the pelvis to about 45° and push the stubs into the slanted slot. Lay it down: it should stay in, turn freely and fall back on its own.
2. **Rail.** Slide the lid piece onto the rail from the wide end. It should slide smoothly and not lift off.
3. **Nail.** Press the nail into its hole. It should hold firmly. If it is too tight or too loose, print the nail gauge: four holes from 0.05 to 0.20 mm

per side, marked with 1 to 4 dots. The one that holds best gives you the clearance (0.10 mm, 2 dots, on our MK4 with Prusament PETG).

If a fit is too tight or too loose, the source code lets you change the clearances in one file (params.py).

Assembly

1. Hold the vampire half sitting up (about 45°). Push the hip stubs into the slanted slot, towards the feet and down. Lay him on the pillow: the bayonet locks him in.
2. Press the two nails into the holes at the head end of the lid, pins pointing inwards.
3. Put the lid on the coffin in the closed position, with the rail in the slot underneath.
4. Pull the lid towards you. After about 54 mm the vampire starts to sit up.

Tips:

- The front faces of the two levers print as an overhang. If they are rough, sand them lightly so the nails slide well.
- If a nail is loose, a drop of glue is fine.
- Open and close the lid slowly, and hold the coffin with your other hand. It is a light mechanism. The lid is not latched when it is closed (that is how you can lift it off to reach the candy stash), so it does not click shut.
- Keep the coffin level when you open it: gravity brings the vampire back.

Remix it

The model is written in Python with build123d. Every size and clearance is in one file. The tests check that nothing collides at 25 positions of the lid, that every layer rests on the one below, and that the colour changes are on the right layers.

Source code: https://github.com/amedeos/3d-halloween-2026

Credits

- Design and code: CC BY-SA 4.0.
- Lettering font: Pirata One by Rodrigo Fuenzalida and Nicolas Massi, SIL Open Font License.

Model files

plate_1_black_box_and_nails.3mf

plate_2_lid_black_then_orange.3mf

plate_3_vampire_black_then_white.3mf

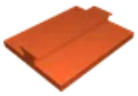
coupon_all_pieces.3mf

coupon_nail_gauge.3mf

box_black.stl

lid_black_m600_orange.stl

vampire_black_m600_white.stl



coupon_rail.stl

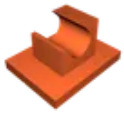
coupon_nail_gauge_nail.stl

nail_black_x2.stl

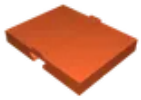
coupon_pelvis.stl

coupon_nail_gauge.stl

coupon_nail.stl



coupon_bearing.stl



coupon_lid_slide.stl

coupon_lid_nails.stl

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