

Jack-o-Cauldron Tea Light Print & Use Guide

A 75 mm cauldron with a carved face and a brew that bubbles over the top — and both of them glow.

Body + Diffuser + Brew

Three Separate 3MFs

2 h 41 m Total

Built by MakerX Designs · Virginia Beach, VA · makerxdesigns.com · © 2026

This is the third piece of a Halloween set, and it is the first two crossed. The Bubbling Brew Cauldron Lamp glows through a disc of printed bubbles. The Jack-o-Lantern glows through a carved face. This one does both at once, at a size that prints in an evening — all three parts together are **2 h 41 m and 30.80 g**, about a dollar of PLA.

In the download

File	What it is
makerx-jack-o-cauldron-body.3mf	Start here. The cauldron itself, with the tested profile and the support setup already in it. This is the only part that needs supports.
...-diffuser.3mf	Its own project with its own settings — vase mode, one wall, 0.2 mm layers. Do not merge it onto another plate.
...-bubbles.3mf	The Bubbling Brew disc that sits in the mouth. Fine layers and a concentric top, which is what keeps the domes smooth.
...-body.STL · ...-diffuser.STL · ...-bubbles.stl	The raw meshes, for your own slicer and your own profile.

Three files, three different profiles

These are not three plates of one project. Each part is its own 3MF because each wants a genuinely different print — 0.12 mm with tree supports, 0.2 mm in vase mode, and 0.08 mm with no supports at all. Slice them one at a time and let each project bring its own settings with it.

1 • What you need besides filament

One **LED tea light** — the flickering kind, not a real candle. It is not included, and it is the only thing you have to supply. No cord, no USB, nothing to hide: the light sits in the bottom of the pot and the printed parts stack over it.

Sizes that matter	
Assembled	75 mm across · just under 55 mm tall
Body	74.9 × 71.4 × 50.0 mm, handles included
Diffuser	57 mm across, 41.8 mm tall
Bubbling Brew disc	60.5 mm across, 6 mm thick
Your tea light	must fit under the diffuser — check it against that 57 mm before you print

No candles. Ever.

This is PLA. A real flame will soften it long before it looks like it is in trouble. The whole design is built around a battery LED, and the flickering ones look better through the diffuser than a steady light does anyway.

2 • What each part costs you

Sliced and print-tested on a Creality Hi, 0.4 mm nozzle, in PLA. Nothing here is estimated — every figure is read off the slicer's own G-code preview.

	Body	Diffuser	Brew disc	All three
Print time	1 h 43 m	29 m 30 s	28 m 41 s	2 h 41 m
Filament	22.47 g	4.71 g	3.62 g	30.80 g
Length	7.54 m	1.58 m	1.21 m	10.33 m
Cost	\$0.67	\$0.14	\$0.11	\$0.92
Supports	Yes — tree	No	No	

★ This is the cheap way into the same idea

The full-size Bubbling Brew Cauldron Lamp is 315 g and 21 h 31 m, and it runs on a mains-powered RGB puck light. This one is a thirtieth of the filament and an eighth of the time, on a battery tea light. Print a row of them down a mantel.

3 • Slice it

- 1 Open `makerx-jack-o-cauldron-body.3mf` in Creality Print, or any slicer that imports 3MF project files.
- 2 When it asks whether to load the project's print settings, **say yes** — that is the whole point of the 3MF, and it brings the support setup with it.
- 3 Then slice `...-diffuser.3mf` and `...-bubbles.3mf` on their own. **Do not combine them onto one plate** — vase mode cannot share a plate.

4 • The profiles baked into the 3MFs

Quality — the body	
Layer height	0.12 mm
Nozzle	0.4 mm
Walls	3 loops
Top / bottom	5 / 3 layers
Infill	9 % gyroid

Supports & adhesion — body only	
Supports	Tree, auto — required
Top Z distance	0.23 mm
Interface top layers	3
Brim	Auto, 5 mm

The diffuser is different	
Mode	Vase / spiral
Layer height	0.2 mm
Walls / infill	1 loop · 0 %
Supports	Off

The brew disc is different again	
Layer height	0.08 mm
Walls	2 loops
Infill	8 % lightning
Top surface	Concentric
Supports	Off

All three: **PLA** · 220 °C nozzle · 60 °C bed · 0.4 mm nozzle · epoxy resin plate.

Only the body gets supports — turn them OFF for the other two

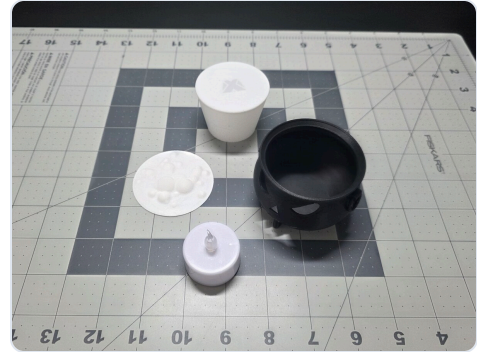
The face is cut clean through and the pot overhangs its own feet, so the body needs tree supports. The other two do not, and both ship with supports off. If your slicer offers to turn them on anyway, decline: supports inside a vase-mode cone ruin it, and supports under the brew disc print into the domes.

5 • Before you hit print

- ☐ Supports **on for the body, off for the other two**.
- ☐ Diffuser queued as its own vase-mode print.
- ☐ A light or translucent filament loaded for the diffuser and the disc.

6 • Off the plate

- 1 Let the plate cool, then flex it and lift the body away. Peel the brim off from one edge.
- 2 **Take the mouth supports out last, and slowly.** The teeth are the thinnest thing on the part. Work a fingernail or a pick under the interface layer and lift it away as one sheet rather than picking at it tooth by tooth.
- 3 Twist the remaining tree supports off the eyes, the nose and the feet. They should release with very little force — that is what the 0.23 mm gap buys you.
- 4 The diffuser and the disc come off clean. Neither has supports or a brim to remove.



Three printed parts and one battery tea light. The white cone is the diffuser; the disc of domes is the brew. The mat squares are one inch.

7 • Put it together

- 1 Switch the tea light on first — the slide switch is on its underside, next to the battery door.
- 2 Stand the light in the bottom of the pot.
- 3 Lower the diffuser over it, wide end down, so the cone surrounds the flame.
- 4 Rest the Bubbling Brew disc in the mouth. It seats on the rim and the domes stand proud, so the brew looks like it is about to boil over. That is the whole assembly — nothing clips, screws or glues.
- 5 To change the battery, lift the disc and the cone back out. You never have to turn the cauldron upside down.



The cone goes in mouth-up over the light. What you see filling the pot here is the top of the diffuser — the brew disc is still waiting on the mat.

★ Print the three parts in different colors, on purpose

This model wants a **dark body** and a **white or light translucent** diffuser and disc. The black body is what makes the carved face read as a silhouette, and the white brew is what carries the glow up out of the pot. Printing the disc in a dark filament will give you a face floating in a black pot — a fine look, just a different one.

Where precision meets the printer

Thanks for printing this one. My daughters are the reason it exists — they love fall, and Halloween most of all — so if it ends up glowing on your table in October, it has done 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. Every wall count, every layer height and every infill percentage in this guide is a deliberate decision backed by testing.

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.

This one is the third of a set. The **Bubbling Brew Cauldron Lamp** is the same brew at full size, and the **Jack-o-Lantern Tea Light** is the face that started it — with its own vase-mode diffuser and the whole pumpkin lit edge to edge.

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