



Print-in-Place Twisty Puzzle Box

 3D Printy

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Summary

A ready-to-solve twisty puzzle box. No glue, no hardware, and no assembly!

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A ready-to-solve twisty puzzle box. No glue, no hardware, and no assembly!

<https://youtu.be/FJXxZtWEMqw>

<https://youtu.be/qvjMhq8SCBg>

Printer Requirements

This is not a difficult print, but it does require a fair amount of accuracy.

All moving parts have a clearance of 0.5mm, so your printer must be accurate enough to avoid fusing together parts that are positioned close to each other.

All functionally important overhangs are limited to 45 degree angles. Your printer must be able to print these overhangs cleanly.

Any stringing or large surface imperfections may make this puzzle impossible to solve.

If the above requirements cannot be met, some parts of the puzzle can be printed separately - most obviously the outer case. Doing so will, of course, spoil the puzzle mechanism.

Options

- Small
- Medium
- Large
- **Remixes!**

Printing

- Do not print with supports
- Print at reasonable speeds
- Use filament that won't blob or string
- Make sure your print bed is prepped and cleaned for optimum bed adhesion
- If you add a fuzzy skin texture to the print, **ONLY** add it to the exterior of the outer shell.

Verify a Successful Print

After printing the main puzzle and the puzzle key, you should be able to tell if your puzzle is solvable by checking the following:

- The puzzle will rattle easily when shaken.
- Parts on the bottom of the puzzle will wiggle when lightly pushed.
- The largest concentric circle on the bottom of the puzzle can rotate by hand.
- The key will fit inside the key hole in the bottom of the puzzle.
- The key will be able to rotate after its inserted into the bottom of the puzzle.

Assembly

None!

Customization

Within Prusaslicer, you can use "Template - Puzzle Interior Negative Volume" to turn any large model with a flat bottom into a Print-in-place puzzle case!

There are three templates available

- Easy V1 (This is the maze used by the cylinder puzzle)
- Easy V2 (Same maze as above, but it locks into place when the indicator dot lines up with the core's latch holes. This way you don't need to add an indicator dot to your custom case design)
- Difficult

Note: this is a mirror of the standard puzzle. If you want the solution to your custom puzzle to match the standard one, re-mirror the negative volume within PrusaSlicer.

Spoiler Alert: Puzzle Solution

<https://www.youtube.com/shorts/yY4Uzi4Dof8>

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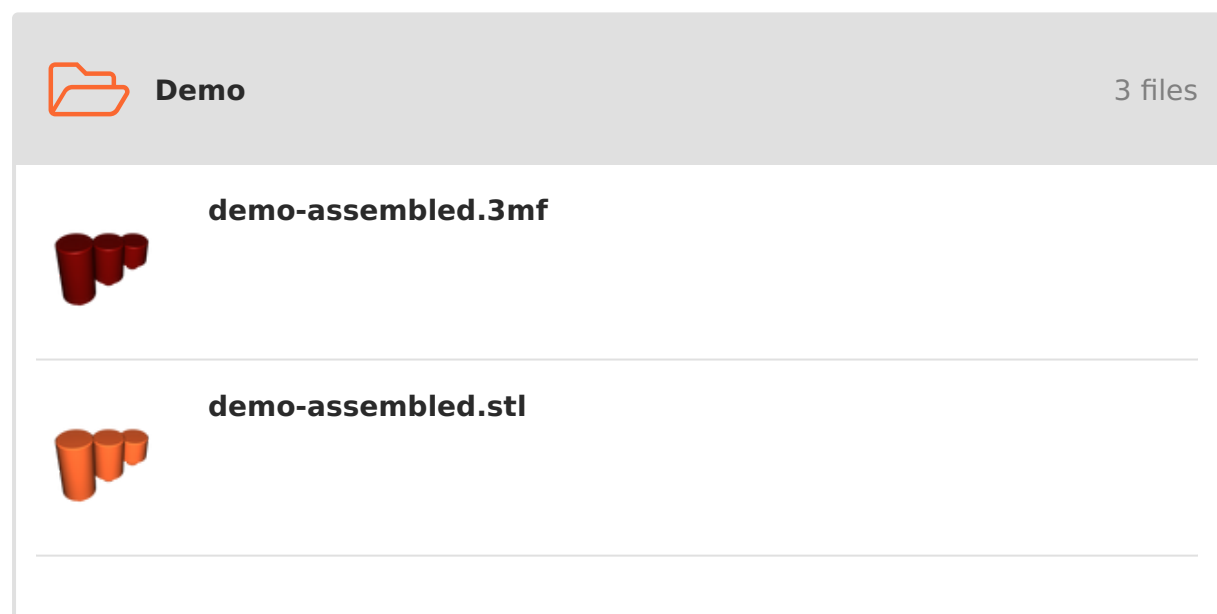
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Model files



demo-assembled.step



Print-in-Place

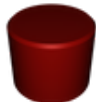
10 files



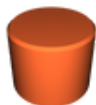
key.3mf



key.stl



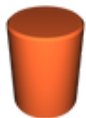
print-in-place-small.3mf



print-in-place-small.stl



print-in-place-medium.3mf



print-in-place-medium.stl



print-in-place-large.3mf



print-in-place-large.stl



key-lose.3mf



key-lose.stl



Cases

3 files



case-small.3mf



case-medium.3mf



case-large.3mf



Templates

7 files



template-puzzle-interior-negative-volume-easy-v1.3mf



template-puzzle-interior-negative-volume-easy-v2.3mf



template-puzzle-interior-negative-volume-difficult.3mf



template-puzzle-interior-negative-volume-easy-v1.stl



template-puzzle-interior-negative-volume-easy-v2.stl



template-puzzle-interior-negative-volume-difficult.stl

template-all-parts.step

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