



## Leave in Place Column for Johnson-Su Style Bioreactor

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### Summary

Johnson-Su bioreactors allow for a static compost pile while maintaining aerobic conditions

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Johnson-Su bioreactors allow for a static compost pile while maintaining aerobic conditions and promoting the growth of beneficial fungi. In the classic design, the columns are pulled out after a day or so to allow air to flow through the pile. With good fungal growth, the holes stay open for the duration of the composting process, but there are any number of things that can interfere with the air-flow through these holes and why bother taking the chance?

Ended up being simpler to print out a column rather than buy materials and modify, so that's what I did. I printed out seven sections for a four foot tall reactor and so far they seem to do the trick. These are designed so they may be removed from the pile as well.

The video below is Dr. Johnson's demonstration for building one of these reactors:

## Printing Instructions

These parts are designed to use a continuous and unbroken profile all the way up the part. Prusa and Slic3r call this vase mode, while Cura calls it spiralize. Cura hasn't really been able to slice more complex spiralized parts since 4.2, so I would recommend either using a 4.1 release or Prusa.

I over-extrude quite extensively for these parts to make them nice and sturdy. You will probably need to bump up your printing temperature by about 10°C depending on your wall speeds. I go with 30-40mm/s and that gets the parts nice and clean within a reasonable timeframe.

## Section

Update 20230615: I moved the little reinforcing divots a bit further out to improve the quality of the bridge across the vents.

Wall Width:

0.8mm

Bottom Layers:

0

Spiralize Outer Contour:

Yup

## Model files



**static-aeration-column-section.stl**

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