



Peristaltic Pump (simple & working) for an automated fertilizer

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Summary

Super easy to print, super easy to assemble, very few extra parts needed. Why else would we design one more pump?

		f	k	h		d
2.62 hrs	1 pcs	0.15 mm	0.40 mm	8	21.00 g	Prusa MK3/S/S+

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Plants need fertilizer. Manual dosing kept me doing too much or too little with results accordingly.

The pumps feed liquid fertilizer into the irrigation system while watering. Dosing can be adjusted on a very wide range.

A lot of peristaltic pumps can be found around. I tried a lot of them. Mostly I disliked the many parts needed and tolerances were not fitting for me. This thing consists of only three parts plus one optional mount bracket. To

complete this pump only one NEMA17 stepper motor, 6 ball bearings, and 4 screws are needed.

Full explanation on hackaday.io:

<https://hackaday.io/project/179235-fertilize-home-grow-the-engineering-way>

This pump prints super easily. Tolerances were spot on for me using a Prusa MK3 with any (even super cheap) PETG filament.

Additional parts:

- NEMA 17 Stepper motor, 45Ncm strong enough
- 6 Ball bearings 695, ZZ type recommended
- 4 M3 screws with allen key head
- Silicon pipe external diameter 5mm

Update:

Unfortuantely every NEMA motor is different. On some motors I have seen that the notch is not long enough. The ball bearing mount will not go far enough into the pump base. Placing the optional spacer between motor and pump base should do the trick.

Print Files (.gcode)

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peristaltic pump 0.15mm_PETG_MK3S_2

6.3 MB

updated 19. 4. 2021

⌚ 2.62 hrs f 0.15 mm k 0.40 mm h PET

⚖ 20.50 g d Prusa
MK3/S/S+



Model Files (.stl, .3mf, .obj, .amf)

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peristaltic lager v15.f3d

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7.1 MB



pump bearing plate bottom.stl

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81.4 KB



pump bearing plate top.stl

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81.4 KB

**pump mount.stl**

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187.6 KB

**pump base.stl**

updated 16. 4. 2021

539.9 KB

**peristaltic pump.3mf**

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227.9 KB

**peristaltic-pump-spacer.stl**

updated 21. 4. 2021

49.7 KB



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