



Hot Melt Injection Mold for Maker Faire Robot



LoboCNC

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updated 12. 4. 2022 | published 11. 2. 2022

Summary

Update (7/1/17): Turns out this design is nearly identical to an earlier design:...

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Tags: [makerfairerobot](#) [molds](#)

Update (7/1/17): Turns out this design is nearly identical to an earlier design: <https://www.thingiverse.com/thing:796654> which another user just brought to my attention. Check it out, too!

This is a test of a mold for hot melt glue injection molding. I'm not sure if it is good for anything, but I wanted to see if it is possible to injection mold hot melt glue in a PLA printed mold. (It is!) I started off with the iconic Maker Faire robot (the manos arriba version) and created a 2-part mold. I added an inlet port and outlet ports at the extremities. To keep from melting the input port with the hot melt glue gun nozzle, I also designed a small sacrificial input duct that does get a little melted, but it is easily replaced. I was worried that the hot melt glue would simply melt the mold, but even though I was using high-temp hot glue (the gun gets to about 220C) the mold survived fine.

The only use I can think of for this technique would be for over-molding/ potting of electronic components or small circuit boards.

Print Settings

Printer Brand:

MakerGear

Printer:

MakerGear M2

Rafts:

Doesn't Matter

Supports:

Doesn't Matter

Resolution:

0.2mm

Infill:

20%

Notes:

I printed this with zero solid bottom layers (as shown in the photo). This is because I wanted to dunk the filled mold in water to cool it off before the PLA melted, and the open mesh of the infill allows the cooling water to get right up next to the mold surface.

I printed the mold show in the photo at 150% scale, although I also did an earlier version at 100%.

Post-Printing

Using the Mold

First, I coated the inside of the mold very thoroughly with oil to act as a release agent. Then I clamped the two halves together in a vice and placed the sacrificial duct on top of the input port. Next, I jammed the tip of the hot melt glue gun into the tapered duct piece and injected glue until I saw it start to ooze out of the outlet ports. Finally, I dunked the whole mold in a tub of water for 15 min to make sure the glue had fully hardened.

To retrieve the molded object, I first pried the two mold halves apart with knife blade, and then also used the tip of the blade to pry the object out of

the mold. It takes a little patience because you don't want to rip his arms or legs off.

Category: Model Robots

Model files



make_robot_v6-front.stl

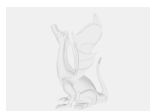


make_robot_v6-duct.stl



make_robot_v6-back.stl

Other files



sources.txt

[Find source .stl files on Thingiverse.com](#)

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