



Magnetic Cardboard Deflector for AC Vent

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Summary

A quick and temporary solution for blocking drafts caused by air conditioning vents.

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Tags: [parametric](#) [magnet](#) [magnetic](#) [vent](#) [deflector](#)
[cardboard](#) [hvac](#)

There's a vent in the hallway near my 3D printers, and I wanted to redirect some of the cold air away from them to make sure I didn't have any adhesion problems while printing! I could have obviously bought a vent deflector or even printed one of the larger ones that are available, but I have been learning Fusion 360 and I thought this would be a good opportunity to try modeling something myself from scratch. This is my first parametric model that I have created and shared, and I hope you find it useful!

I wanted something that I could just stick on the metal vent and remove whenever I wasn't printing, and thought cardboard would make for a decent panel. I used some cardboard from some small Amazon shipping boxes, the thickness is about 2.95mm. I have some 5x3mm magnets that I

used to affix the deflector, and I used two printed parts per each side of cardboard. I also added a small hole so you can poke out your magnet if you need to adjust the size or just want to save the magnets if you stop using this.

The model has several parameters that can be easily adjusted in Fusion 360 using the “Change Parameters” menu, including:

- Cardboard Thickness
- Total Height
- Total Length
- Magnet Depth
- Magnet Diameter

You will likely need to edit some of these to fit your cardboard or magnets properly, thankfully it is a small and fast print so there isn't much material waste on a couple iterations. You may wish to use something other than cardboard such as acrylic panels, or you could print panels if you wanted something more durable. I used cardboard because it is cheap, lightweight, readily available, and as I am using this as a temporary solution thought it would be adequate for the purpose.

It's also possible to use this as a small display or sign, as it will stick to anything metal and could be a good way to put up fun little pieces of information around your home or business!

IMPORTANT NOTE: I designed this to be used as a temporary solution and to be used for cold air conditioning only, please do not use this for heat! Some vents/registers can get very hot and while I don't know that it would be hot enough to ignite cardboard, I don't think it's worth the risk to try. You could use high-temp materials for the printed parts and panels or use some other high-temp material for the panels, but please do so at your own risk and keep an eye on it if you decide to try this.

Print Settings

I used PETG and fairly stock settings in PrusaSlicer (0.20 resolution, 15% infill, 2 perimeters, etc) but you could certainly make it more solid if you prefer. File is oriented on build plate with magnet hole on bottom, no supports are needed, but you may need to clean up the magnet hole if your printer is especially bad at overhangs (though I tried to design the hole with this in mind and added a slight angle to the end of the bore). Really any material should work fine for this, PLA may not love the temperature fluctuations but will probably be fine.

Please let me know if you have any feedback or if you find this useful!

Model files



cardboard-deflector.stl

|| Sized for 2.95mm cardboard and 5x3mm magnets

cardboard-deflector.step






cardboard-deflector.f3d

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