

Magnetic Letters - Refrigerator Alphabet Magnets



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Summary

These are letters designed with voids that can hold completely enclosed neodymium magnets, making these durable and fun!

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Tired of the cheap letters you find in stores that are weak and fall off, or made of foam and therefore impossible to properly clean? These letters are designed to be durable and super magnetic, strong enough to hold up paper notes, and won't scratch the fridge surface when slid around.

These letters have voids designed to fit 4x2mm and 8x2mm neodymium magnets. When slicing, be sure to put a pause command at the correct layer height so that you have a chance to insert the magnets. No super glue needed. The 3mf files include the pause statement at the right height. For inserting the magnets, it's easiest to use a stack of magnets to insert one, then slide the stack off the inserted magnet, leaving one behind inside the void. For the magnets that are close to the extruder, place one magnet on the top of some needle nose pliers (not gripping it), and use that to slide it into place.

I printed these in a variety of PETG and PLA with a 0.15 mm layer height, 15% infill using the [textured PEI sheet](#), [smooth sheet](#), and [powder-coated](#)

satin sheet. These print well with no glue stick needed (except if using PETG with the smooth sheet, then use a glue stick), just wash the sheet with dish soap and water, then give a wipe down with Isopropyl alcohol and a paper towel. The parts should stick just fine without a need for a brim.

Do not scale the model using the slicer, or the magnets won't fit into the voids. Consider enabling ironing to get a nice shiny surface on top.

Here are the magnets I used:

- 4x2mm <https://www.amazon.com/gp/product/B08NZS7WBK>
- 8x2mm <https://www.amazon.com/gp/product/B08C4SQSM3>

Materials Used

For each complete set of 44 letters, that means printing:

File Name	Total Letters	Letters included	Qty of Each	4x2mm	8x2mm	Filament
Roboto Top 6x3.3mf	18	A, E, I, N, R, T	3	74	0	108.69 g
Roboto Top 12x2.3mf	12	D, L, M, O, S, U	2	50	0	68.42 g
Roboto Rest 14x1.3mf	14	B, C, F, G H, J, K, P, Q, V, W, X, Y, Z	1	60	1	84.02 g
(total)	44	A-Z		184	1	261.13 g

On top of this, I'd recommend printing at least 2, possibly 3 of the above, so for two sets, you'd need a bit over a half kilogram of filament and nearly 400 of the 4x2mm magnets.

Warning:

Some of these letters may present a choking hazard to young children. In particular, the exclamation mark ("!"), heart ("♥"), seem to be the most hazardous.

Further, the use of magnets increase the risk for children if they were to become dislodged from inside the letters and swallowed. **Ingested magnets can cause serious intestinal injuries**, so please discard any letter that has become damaged.

Use at your own risk and discretion.

Edit 1 (4/6/2023):

I've added each individual letter to make it easier to slice only the letters you want. Previously, if you had tried to use Prusa Slicer to break the larger groups of letters into objects, the magnet voids would also get broken into their own objects.

I've also added the .3mf files with the pause print command in the correct location and removed the .gcode files. Using these over the old .gcode files allows you to more easily customize the printer selection and material or take advantage of modern slicer optimizations. I've grouped them by letter frequency, as suggested by @undoz.

Model files

letters-v51-a-l.stl



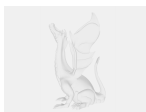
letters-v51-m-x.stl



letters-v51-y-z.stl



letters-v52.f3d



☐ the Fusion 360 working file used to create the letters

roboto-f.stl

roboto-i.stl

roboto-e.stl

roboto-h.stl

roboto-l.stl

roboto-x.stl

roboto-d.stl

roboto-y.stl

roboto-j.stl

roboto-k.stl

roboto-a.stl

roboto-g.stl

roboto-v.stl

roboto-q.stl

roboto-z.stl

roboto-m.stl

roboto-b.stl

roboto-s.stl

roboto-n.stl

roboto-t.stl

roboto-w.stl

roboto-p.stl

roboto-o.stl

roboto-r.stl

roboto-c.stl

roboto-u.stl

roboto-top-6x3.3mf

☐ The top 6 letters by usage frequency, 3 each

roboto-rest-14x1.3mf

☐ The remaining 14 letters, one each

roboto-top-12x2.3mf

☐ The next 6 top letters by usage frequency. With "Roboto Top 6x3.3mf", these are the top 12.

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