VERTEX BY MINT MOTIVE · GUIDE

The Gridfinity guide

The 42 mm spec and every dimension, heights, magnets and screws, baseplates and bins, print settings, materials and fixes.

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vertex.mintmotive.com.au/learn

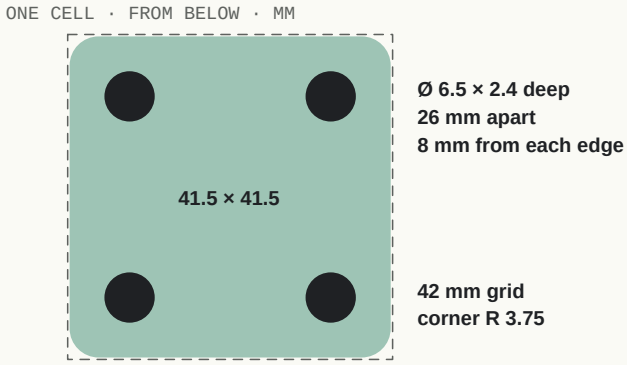
The basics

Gridfinity is an open, modular storage system designed by Zack Freedman. Everything sits on a square grid: baseplates have a pocket for every grid cell, and bins have feet that drop into those pockets. Because every part shares the same grid, any bin fits anywhere, and you can rearrange a drawer in seconds.

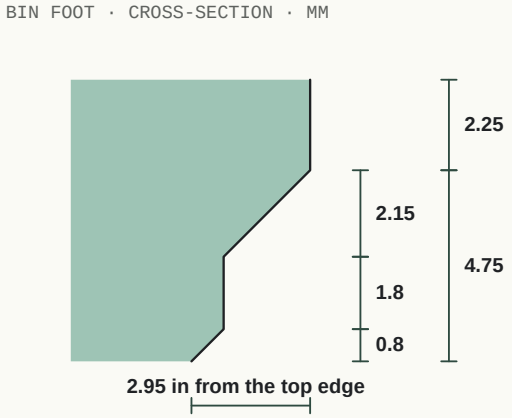
Sizes are written as width × depth × height in units, so a 2×1×6 bin is two cells wide, one deep and six height units (42 mm) tall.

Dimensions

These drawings are to scale. The profiles are what make parts from different designers fit each other, so every generator on this site follows them exactly.

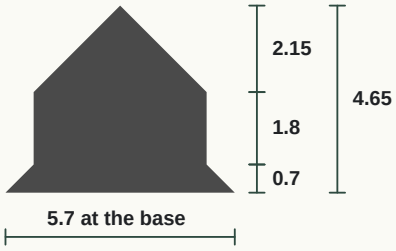


A 42 mm cell. The foot is 41.5 mm square with 3.75 mm corners, leaving 0.25 mm all round.



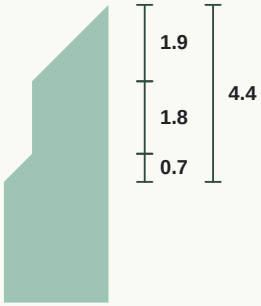
The foot: 0.8 mm at 45°, 1.8 mm straight, 2.15 mm at 45°. 4.75 mm of profile, then a bridge to the 7 mm floor.

BASEPLATE · WALL BETWEEN POCKETS · MM



The baseplate is the inverse: 0.7, 1.8 and 2.15 mm steps, 4.65 mm tall, meeting its neighbour in a sharp edge.

STACKING LIP · MM



The stacking lip copies the baseplate profile on top of a bin, so a bin can sit on another bin.

Part	Measurement	Value
Grid	Cell size	42 × 42 mm
Grid	Height unit	7 mm
Bin	Outside size	units × 42 - 0.5 mm
Bin	Corner radius (outside)	3.75 mm (7.5 mm diameter)
Bin	Foot profile height	4.75 mm
Bin	Floor (standard)	7 mm from the bottom
Bin	Foot bottom	35.6 mm square, 0.8 mm corners
Bin	Stacking lip	4.4 mm above the wall
Baseplate	Pocket depth	4.65 mm
Baseplate	Outer corner radius	4 mm (8 mm diameter)
Magnets	Hole	6.5 mm × 2.4 mm deep
Magnets	Position	8 mm in from each edge, 26 mm apart

Screws	Hole	M3, 3 mm × 6 mm deep
Weighted plate	Pocket	21.4 × 21.4 × 4 mm, 6.4 mm bottom

Heights

Height is counted in 7 mm units from the bottom of the feet to the top of the wall. The stacking lip sits on top and is not counted. To fit a drawer, allow for the baseplate too.

Magnets and screws

Holes in the feet let bins hold to a baseplate. They are optional; plain bins stay put under their own weight in most drawers.

- Magnets: 6 mm × 2 mm neodymium discs, four per cell, in 6.5 mm holes 2.4 mm deep. Put magnets in both the bins and a solid baseplate, or use a steel sheet under a frame plate.
- Polarity: set every magnet the same way up in bins, and every one the other way up in plates, so any bin sticks to any cell. A marker dot on one face helps.
- Crush ribs are small ridges inside the hole that squeeze the magnet so it stays without glue. Without ribs, a drop of superglue holds them.
- Screws: M3 holes 6 mm deep let you screw bins down, or add weight with bolts.
- Only corners: magnets in just the four outer corners of a bin save magnets and still hold.
- Weights: weighted plates have a 21.4 mm pocket under each cell for a steel weight or a stack of washers, so a plate on a bench does not slide.

Baseplate types

Frame Just the pockets. The fastest and lightest print. Bins rest on the drawer floor.

Lite lattice Pockets on a thin open lattice. Stiffer than a frame, still light, and it takes clips.

Solid Pockets on a solid bottom. Needed for magnets, weights and mounting holes.

Weighted A solid plate with pockets underneath for weights. For benches and desks.

Clip-together Tiles sized to your print bed, locked with printed bowtie clips. Covers drawers bigger than your printer.

Drawer fit Any plate padded out with a solid border so it cannot slide. The border can sit centred or against a side.

Bin types

Standard Walls, a floor at 7 mm and a stacking lip. Add dividers, scoops and label shelves.

Lite Hollow feet and a thin floor. About half the plastic.

Half-unit Sizes like 1.5 × 2. Feet on the half cells are half size, so it still fits a normal plate.

Half-grid Feet on a 21 mm grid, for half-grid baseplates.

Holders Rows of matching pockets for batteries, bits, cards or pens.

Divider slots Slots in the walls hold loose divider plates you can move later.

Board stands Slots that hold dev boards or breadboards on edge, or flat trays that stack.

Thin-wall holders A thin tube around each pocket in place of a solid block. The lightest holder.

Solid block No cavity. A blank to drill, carve or cut your own shapes into.

Vase mode A single-wall bin printed in spiral mode. Very fast; best for light parts.

Drawer planner

Measure the inside of the drawer at the narrowest point, then pick your printer.

Print beds

Pick your printer to see how big a single piece can be. For anything bigger, split the plate and join it with clips.

Printing

- Nozzle and layers: 0.4 mm nozzle, 0.2 mm layers. A 0.6 mm nozzle with 0.3 mm layers prints big plates much faster.
- Walls: 2–3 perimeters. Bins are mostly walls, so infill barely matters; 10–15% is plenty.
- Supports: none. Every part here prints flat on the bed as downloaded.
- First layer: slow it down and keep it clean. A squashed first layer (elephant's foot) is the most common reason bins fit tightly.
- Brims: usually not needed. For tall bins on a fast printer, a small brim stops corners lifting.
- Big plates: print tiles one per plate so a failure only costs one tile.
- Magnets: press them in after printing. Holes open to the underside need no pause.

Materials

Material	Good for	Watch out for
PLA	Almost everything. Easy, stiff, accurate.	Softens in hot cars and sheds (above ~55 °C).
PETG	Clips, workshop bins, anything that flexes.	Strings; print a little slower. Slightly less accurate.
ABS / ASA	Hot places, cars, garages, outdoors (ASA).	Needs an enclosure; warps on big plates.
PLA-CF / PETG-CF	Stiff, matte bins that hide layer lines.	Needs a hardened nozzle.
TPU	Soft liners and anti-slip pads.	Not for plates or bins that must hold shape.

Fixing fit problems

Bins too tight in the plate Usually elephant's foot. Lower first-layer flow or turn on elephant-foot compensation (about 0.1–0.2 mm). Check the plate too.

Bins loose or rocking Check the plate is flat and not warped. Magnets fix most wobble.

Bins won't stack Check the lip printed cleanly. Stringing or blobs on the lip catch the feet.

Clips too tight or loose Print clips in PETG. If they are tight, sand the edges lightly; if loose, a dab of glue fixes them.

Magnets fall out Use crush ribs, or a drop of superglue. Check the holes are 6.5 mm, not larger.

Plate slides in the drawer Fill the gap with a border, add weight pockets, or put anti-slip matting

underneath.

Glossary

Unit (u) One grid cell (42 mm) across, or one 7 mm step in height.

Pitch The grid spacing. 42 mm is standard; this site lets you change it.

Foot / base The stepped block under each cell of a bin that drops into a pocket.

Pocket The stepped hole in a baseplate that a foot sits in.

Stacking lip The stepped rim on top of a bin that lets another bin sit on it.

Scoop A curved inside edge that helps you slide small parts out.

Label shelf / tab A ledge at the back or front of a compartment for a label. Its underside is angled so it prints without supports.

Clip-on label A separate label that hooks over a wall or divider.

Divider A wall splitting a bin into compartments.

Half-grid Feet on a 21 mm grid for finer placement.

Lite Hollow or open versions of parts that use less plastic.

Crush ribs Ridges inside a magnet hole that grip the magnet.

Skeletonised A plate with material cut away underneath to save plastic.

Bowtie clip A small printed piece that locks two plate tiles together.

Elephant's foot A first layer squashed wider than the rest; the usual cause of tight fits.

Vase mode Printing a single continuous wall in a spiral.

Resources

- gridfinity.xyz: the community site with the specification.
- gridfinity-rebuilt-openscad: the open-source OpenSCAD library many generators use.
- Zack Freedman's original Gridfinity videos on YouTube, where it all started.
- Search “Gridfinity” on MakerWorld and Printables for thousands of ready-made bins.

Printed from VERTEX by Mint Motive. The online guide has the calculators, pictures and the latest changes.