

2-part magnetic rack (Malgorzata Cebrat)

Most of the magnetic racks available (both commercially as well as free DIY open source designs) consist of one part - this forces users to remove individual tubes for washing/vortexing steps. This design consists of two complementary parts – first is a standard rack for 1.5 ml eppendorf-type tubes, second – the magnetic stand. The tubes fit tightly into the rack which makes them impossible to move, rotate or fall out during shaking/vortexing; this way the tubes are always properly positioned when the rack is placed again in the magnetic stand. The tubes are removed from the rack only for drying in 50°C.

The magnetic rack is designed in 8x2 tube format consistent with the common usage of 8x12 plates or 8-tube PCR strips.

Both parts were designed in Google Sketchup and are available as .stl files. The parts presented below were printed using PLA (0.3 mm layers, 20% infill, 2 perimeters, 2 solid bottom and upper layers). The 1 mm gaps between the rack and the magnetic stand were designed to fit anti-slide silicon pads.

A pair of neodymium (10 x 4 x 1.5 mm [N50]) magnets were glued into each 10 x 8 mm space using two-component epoxy glue. The magnets extend beyond the surface purposely in order to enable close interaction with the MNPs.

