3D-CAD design files for "Scalable, high-throughput, and dynamic microfluidic separation of magnetic microparticles"

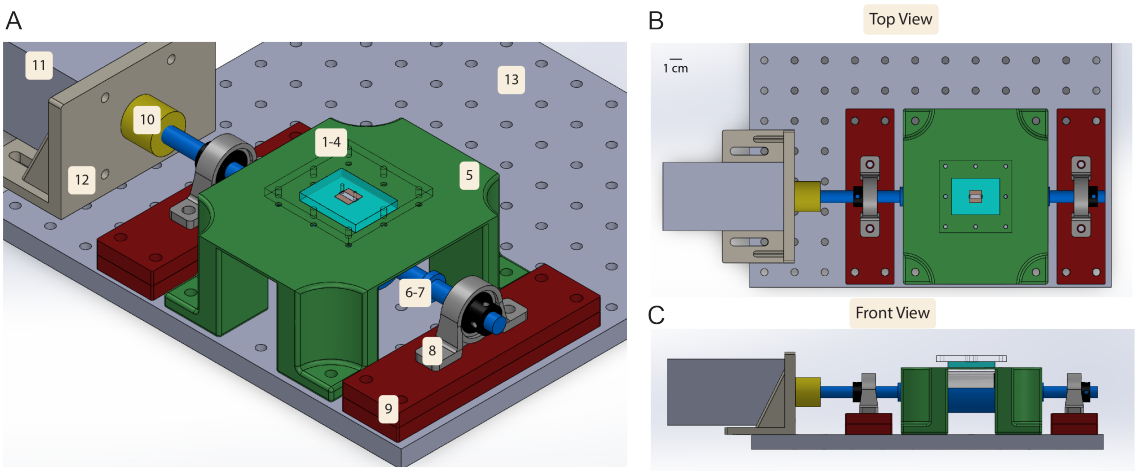

Figure 1: **3D-CAD design files of the experimental setup in Solidworks. A)**, Assembly drawing of the microfluidic particle separation device and the rotating magnet platform, with different components marked with numbers. **B)**, Top view of the assembled system. **C)**, Front view of the assembled system.

Table 1: List of 3D-CAD design files. Each component corresponds to the number marked in Fig. 1A.

File name	Objective
00 system setup fixed height.SLDASM	Assembly file of the system
01 Acrylic top v3 gauge16.SLDPRT	Acrylic top cover
02 Polyimide gasket v3 3mm.SLDPRT	Polyimide film (Thickness: 25.4 µm, McMaster-Carr, IL, USA)
03 magnetic chip.SLDPRT	Nickel micromagnet chip
04 PDMS base 465um.SLDPRT	PDMS base
05 device stabilizing holder.STL	3D-printed polycarbonate bottom holder
06 magnet cage shaft.STL	3D-printed polycarbonate cage with extention shaft for the permanent magnet
07 magnet cage lid.STL	3D-printed polycarbonate cage lid for the permanent magnet
08 bearing unit PBRSX10 5.SLDPRT	Bearing units (MISUMI pillow blocks, PBRSX10)
09 connector bearing2breadboard.SLDPRT	POM connector between the bearing unit and the breadboard
10 shaft coup 0635 1000.SLDPRT	Shaft coupling (SUNGIL, SJC-25C-GR-6X10)
11 ServoMotor PD4C.SLDPRT	Servo motor (Nanotec, PD4-C5918L4204-E-01)
12 motor stand PD4C.STL	3D-printed polycarbonate holder for the assembly of the servo motor
13 breadboard.SLDPRT	Breadboard (Thorlabs, MB3030/M)