

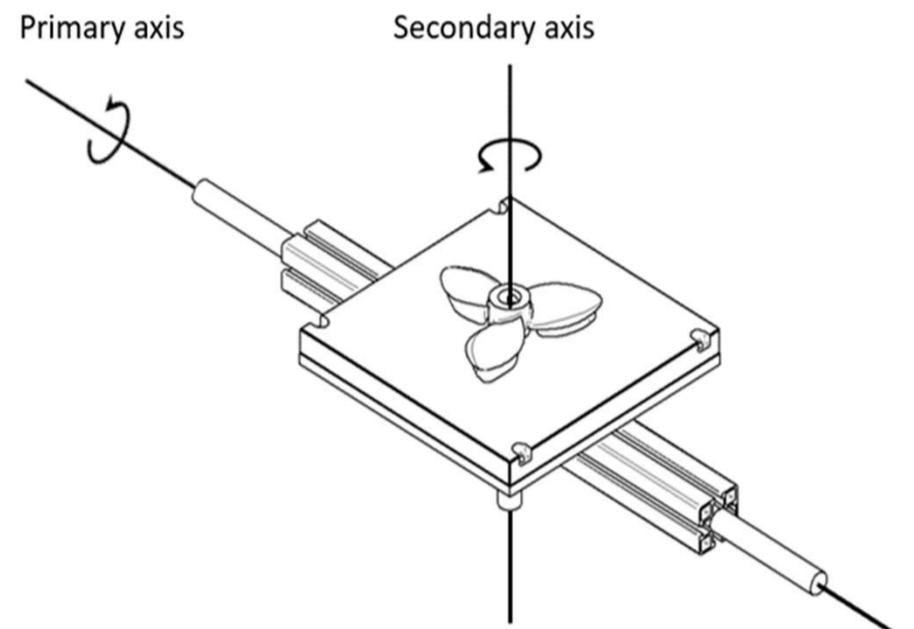
Powder Removal Device for Metal Additive Manufacturing

Background

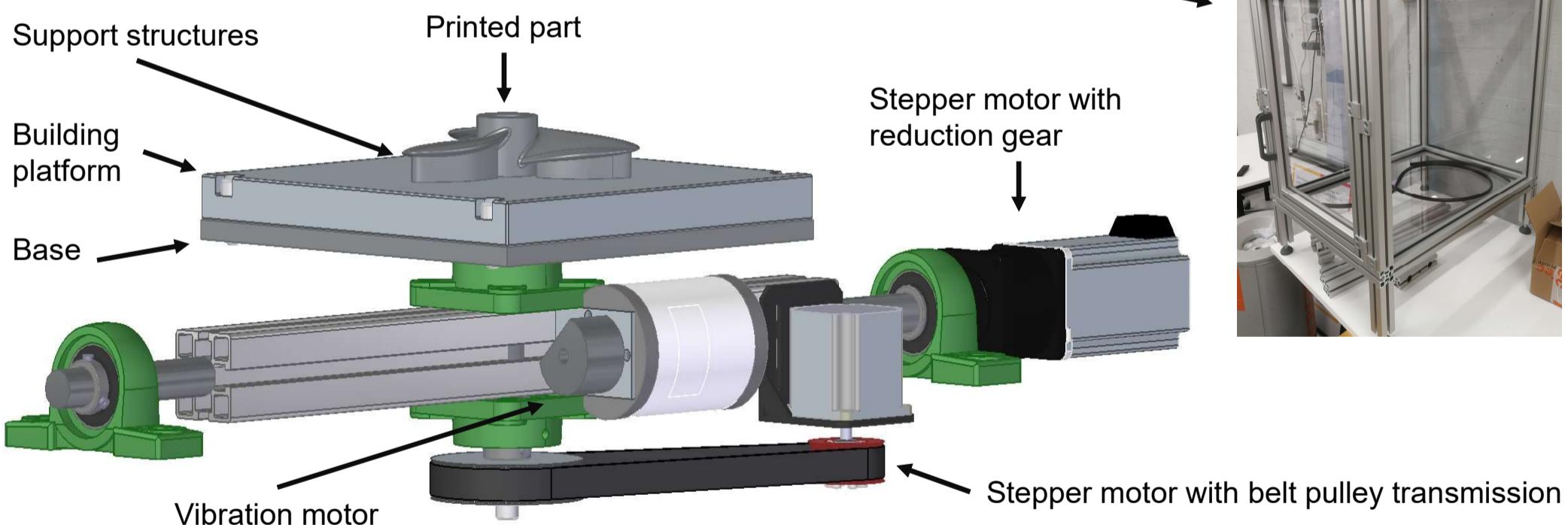
Metal powder is often trapped inside support structures. This poses health risks and explosion risk. Considering these, the device must be safe and simple to use.

Description of the device

- Isolated system in a sealed framework for safe removal of metal powder
- Effective automatic removal process provided by rotation around two axes and by constant vibration
- Suitable for different removal situations
 → vibration frequency and process time easy to modify via Arduino code



Main mechanism



Removal process

1. Device turns the workpiece around two axes enabling support structure cavities to open for the powder to flow out.
2. Workpiece is vibrated in order to get powder moving.

Technical details

Max workpiece height	325 mm
Building platform size (can be modified)	250 x 250 x 36 mm
Vibration motor power	120 W