



# Design for accuracy

## Design for HP MJF: Design guidelines

### Introduction

To avoid issues with parts and to achieve maximum accuracy when designing with HP Multi Jet Fusion (MJF) technology, there are certain specifications to bear in mind.

### Dimensional accuracy

When designing parts with HP Multi Jet Fusion technology, it is possible to achieve accuracy values of IT Grade 13, with Cpk values that rival those of plastic Injection Molding.

### Minimum specifications for parts

The minimum printable features in planes X, Y, and Z are as follows:

Minimum hole diameter at a thickness of 1 mm	0.5 mm
Minimum shaft diameter at a height of 10 mm	0.5 mm
Minimum printable font size for embossed or debossed letters or numbers	6 pt
Minimum printable features or details (width)	0.1 mm
Minimum clearance at thickness of 1 mm	0.5 mm
Minimum slit between walls/embossed details	0.5 mm

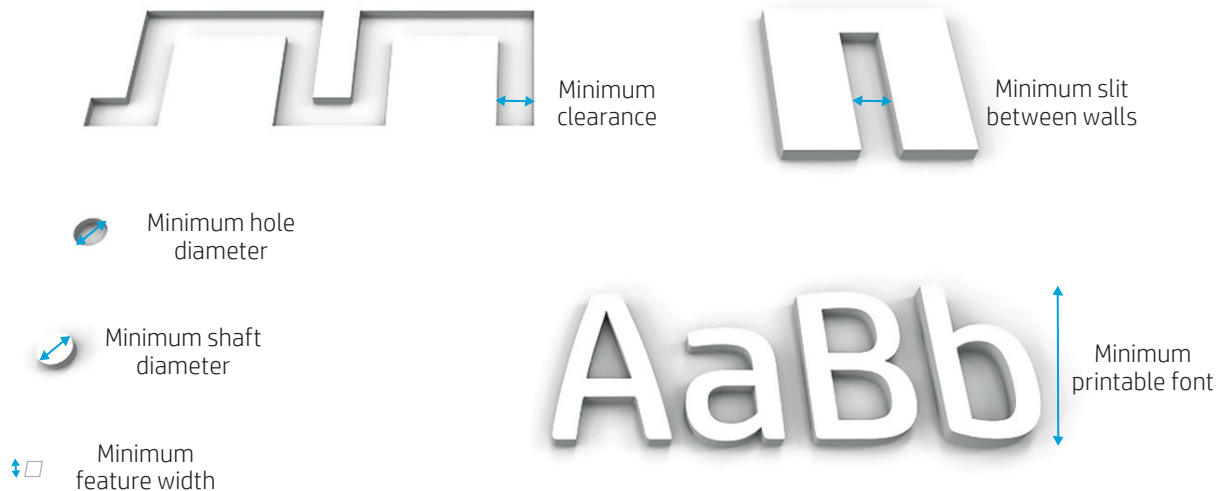
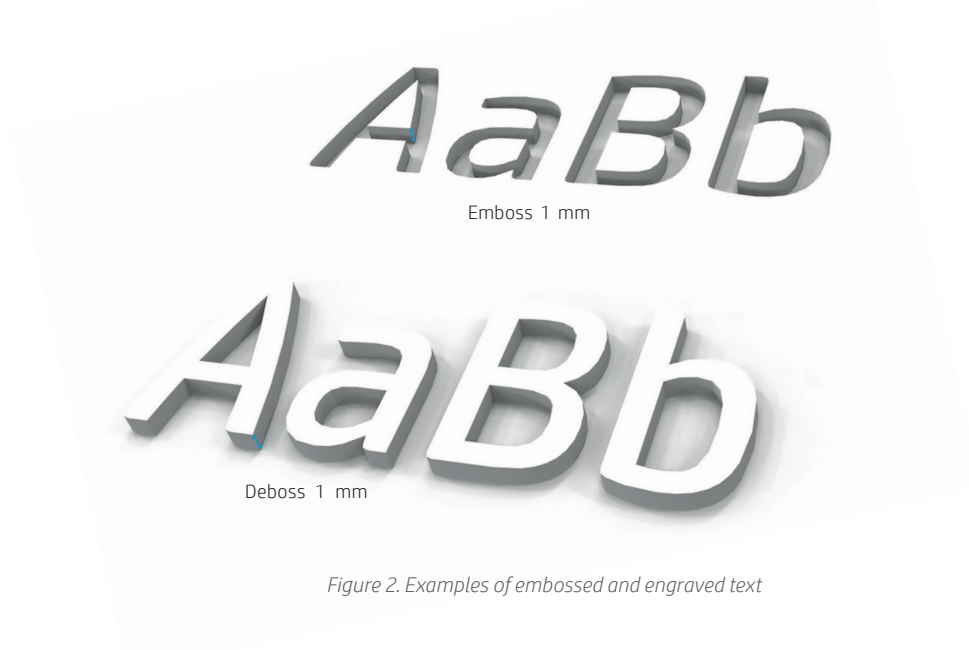


Figure 1. Minimum specification for parts

## Embossed and engraved details

HP Multi Jet Fusion technology allows users to print embossed and engraved details such as letters and drawings with very high resolutions and definitions.

For the best possible output, any text, number, or drawing included in a part should have a depth or height of at least 1 mm.



## Designing for accuracy guidelines

- When possible, place small features with critical dimensions—such as pins, holes, and raised texts—in the same plane.
- Design parts with a smooth cross-section transition.
- When possible, design lighter parts by hollowing them or adding internal lattices.
- Avoid long, thin, flat parts with an aspect ratio—length vs. width—higher than 10:1.
- Avoid design parts with predominantly long and thin curved segments.
- Avoid ridges and ribs on large, flat areas.