



A3D – 005 – HP MJF

Introduction

Welcome to another insightful guide from A3D Manufacturing, focusing on our cutting-edge HP Jet Fusion 3D Printing technology. Designed for superior resolution and durability, this guide aims to elucidate the capabilities, expectations, and limitations of this advanced printing method.

Technology Overview - How It Works

1. Powder Layering: The printer deposits thin layers of powder on the build plate.
2. Agent Jetting: Two agents—a fusing agent and a detailing agent—are jetted onto the print area.
3. Material Fusing: a series of fusing lamps heat the material, selectively enable fusing of powder materials where agents are applied within the X, Y, and Z axes.

Common Applications

- Functional rapid prototypes
- End-use parts
- Consumer goods and electronics
- Automotive components
- Customized prosthetics and orthotics
- Medical components

Material Options

Engineering-grade thermoplastics like PA 12, PA 12(White), TPU, PA 11, and PA 12 GB.

Expectations

Lead Time Standard: 5 – 8 days

Expedited: As early as the next day

Standard Accuracy:

X/Y Direction: +/- 0.305mm (.012”) or +/- .003 in/in, whichever is greater. Z Direction: +/- .508mm (.020”) or +/- .005 in/in, whichever is greater

Maximum Build Volume: 380 x 284 x 380 mm

Standard Layer Thickness: 110 microns

Color and Finishing The standard natural color is heather gray but can be readily dyed black.



Limitations and Minimum Specifications:

Wall Thickness: 1.00mm (.039") guaranteed.

Clearance for Assemblies: 0.508mm (0.020")

Feature Size: 0.762mm (0.030") (dependent on layer height)

Hole Diameter: 1.016mm (0.040")

Large Part Optimization: Dense and large parts may require optimization, like adding a shell or hollow feature of 2-3mm, to avoid surface defects.

HP Jet Fusion is a significant leap in 3D printing technology, catering to a wide range of applications and industries. While it offers high-quality and complex parts, understanding its limitations ensures that your project will meet your expectations.

Thank you for considering A3D Manufacturing for your advanced 3D printing needs.