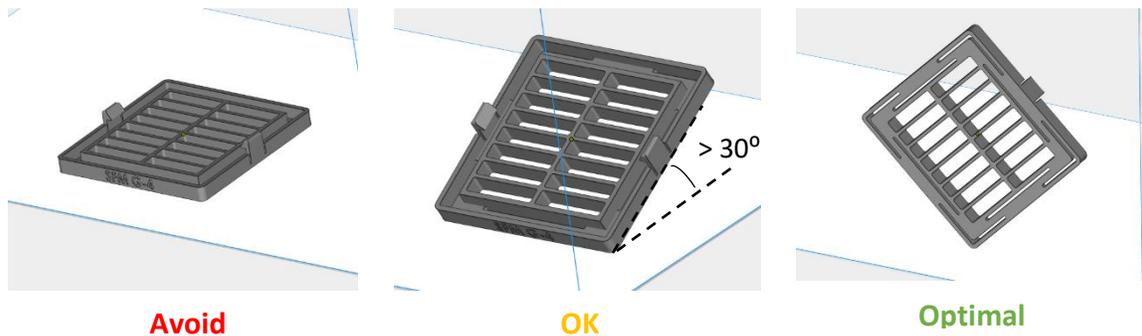


Manufacturing Guidance for 3D Printing Nylon Surgical Mask Body (Rev B) and Filter Cover (Rev G) with HP Multi Jet Fusion Printers (300/500 Series, 4200, or 5200 Series)

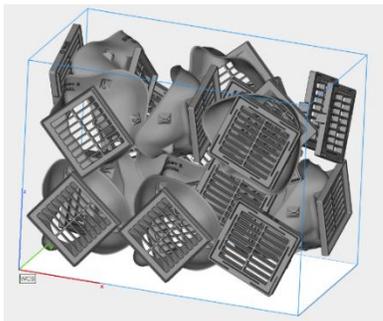
Build Orientation Guidelines

- To minimize part warpage due to thermal effects, it is generally recommended that no two surfaces be placed closer than 5mm apart. Additionally, parts should generally be placed no closer than 5mm to the side walls of the platform. Flat faces such as the filter side of the mask and the filter cover should be oriented at least 30° from horizontal to minimize stair-stepping effects.



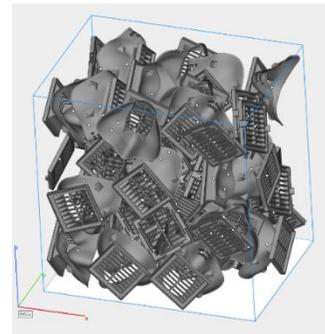
Optimizing Build Orientation

- Although it is recommended to follow the guidelines above when packing a build for the first time, more tightly packed build orientations have been found to produce acceptable quality parts. **Optimized .3mf files for multi-jet fusion printers can be found in the 'OTHER FILES' section of the 'DOWNLOAD' tab.** These files apply a 3-D packing optimization algorithm with a minimum distance between parts of 1.5mm and 1.0 mm to the side walls allowing packing densities of approximately 4%. The .3mf files merge every part into a single file which can be simply dragged into HP SmartStream 3D Build Manager and printed.



HP MJF 300/500 Series Optimized Build:

- 4 Small Rev B Mask Bodies
- 4 Medium Rev B Mask Bodies
- 4 Large Rev B Mask Bodies
- 12 Rev G Filter Covers



HP MJF 4200/5200 Series Optimized Build:

- 10 Small Rev B Mask Bodies
- 10 Medium Rev B Mask Bodies
- 10 Large Rev B Mask Bodies
- 30 Rev G Filter Covers

Machine Parameters

- The parameters below are recommended for HP 3D High Reusability (HR) Color Boost (CB) PA12 material on the HP MJF 580 color printer. Optimal settings on other MJF machines may vary and default settings should be used initially.

Material Blend Ratio	20% Fresh / 80% Recycled
Print Profile	Monochrome ¹
Cooling Profile	Fast cool and reclaim
Thermal Scaling Parameters	X: 3.5%, Y: 3.5%, Z: 2.3% (Default)

¹Printing in color may cause bleeding of the colorant during the disinfection process

Post Processing

- Remove parts from build chamber after cooling and reclamation (Build chamber may still be hot, use heat-resistant gloves).
- Lightly brush off excess powder.
- Blast parts with glass bead media to remove remaining nylon material.
- Finish cleaning parts by blasting with compressed air.
- Soak parts in isopropanol for 30 minutes (Only necessary if parts require disinfection before leaving the site of manufacturing)
- Rinse with water and let dry (Use deionized water if parts require disinfection before leaving the site of manufacturing)