

Slicing Software Parameter Tuning Guide

Parameter	Core Function	If Set Too High	If Set Too Low
Layer			
Layer Thickness	Thickness of each powder layer; determines print resolution and speed	Faster printing, but rougher surface and prone to delamination	Slower printing, finer surface finish, but prone to warping
Number of Contours	Number of outline scan passes; determines outer wall strength	Stronger, smoother outer walls; slower printing, edge overgrowth	Faster printing; thinner, rougher outer walls with lower strength
Contour Spacing	Distance between multiple outline passes	Gaps between contour lines; less dense outer walls	Too much line overlap; over-sintered edges and oversized dimensions
Speed			
Contour Speed	Laser scanning speed for outer walls	Insufficient sintering; undersized, weak outer walls	Over-sintered edges; edge bulging and oversized dimensions
Infill Speed	Laser scanning speed for internal infill	Incomplete internal sintering; weak parts prone to delamination	Excessive internal heat buildup; parts prone to warping
Laser (Do not modify unless necessary)			
Contour Scan Power	Laser energy output for outer wall scanning	Excessive energy; blurred edges, oversized parts, more powder adhesion	Insufficient energy; porous outer walls, undersized parts, prone to cracking
Infill Scan Power	Laser energy output for internal infill scanning	Over-sintered interior; part shrinkage, hard to depowder	Incomplete sintering; poor mechanical strength, prone to fracture
Infill (Do not modify infill angle & layer rotation unless necessary)			
Infill Spacing	Distance between internal scan lines	More internal porosity; lower strength	Denser lines; internal overheating & deformation, slower printing
Infill Angle	Orientation angle of internal scan lines	Inefficient scan paths, lower productivity; anisotropic strength	Too uniform a direction; parts break easily along the scan lines
Layer Rotation Angle	Rotation offset of scan lines between consecutive layers	Poor path alignment; local under-filling / voids	Too little offset; aligned layer patterns, weak Z-axis strength
Infill-Contour Gap	Distance between internal infill and outer contour	Poor bonding between infill and wall; prone to delamination	Too much overlap; edge heat buildup, dimensional bulging
Compensation			

Spot Compensation	Corrects dimensional deviation caused by laser beam diameter	Over-compensated; overall part dimensions too small	Under-compensated; overall part dimensions too large
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Process Parameter Notes

Parameter	Core Function	If Set Too High	If Set Too Low
Temperature			
Preheat Temperature	Base temperature of the powder bed before printing; reduces sintering temperature difference	Powder tends to cake, difficult to depowder	Large temperature gradient; parts prone to warping and delamination
Printing Temperature	Sustained powder bed temperature during printing; ensures sintering stability	More surface powder adhesion; unstable dimensions	Poor interlayer bonding; low strength, prone to cracking
Build Chamber Temperature	/	/	/
Overhang			
Preheat Overhang Layers	Number of layers to preheat powder before printing overhang structures	Slower printing; overhang area cakes prematurely	Insufficient overhang temperature; prone to collapse and fracture
Leading Overhang Layers	Transition layers to gradually adjust energy before entering overhang zones	Too long transition zone; heat buildup, prone to over-sintering deformation	Abrupt energy switch; delamination at overhang start points
Trailing Overhang Layers	Transition layers to gradually restore normal parameters after overhang zones	Slow recovery, reduced efficiency; subsequent solid area runs too hot	Rapid energy rebound; stress concentration & dimensional jump at overhang end
Overhang Dwell Time	Pause time before each overhang layer; allows temperature to stabilize	Significant productivity drop; powder ages under prolonged heat	Printing before temperature equalizes; uneven overhang sintering, prone to warping

*This table is for reference only. It is recommended not to adjust various parameters if you are not familiar with it.