Design Guide

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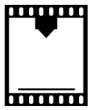
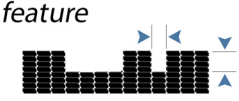
Dimensions

	Stereolithography (SLA)	SLS	Polyjet	DMLS
Minimum wall thickness 	0.030 in	0.030 in	0.024 in	0.012 in
Minimum detail size 	0.025 in	0.020 in	0.008 in	0.015 in
*Maximum part size** 	*l* = 19.5 in *L* = 19.5 in *h* = 11.5 in	*l* = 13 in *L* = 13 in *h* = 11 in	*l* = 19.3 in *L* = 15.4 in *h* = 7.9 in	*l* = 9.8 in *L* = 9.8 in *h* = 7.2 in
	** Parts exceeding the platform size of our machines can be printed in sections and assembled. Our programmers can take care of parting the pieces so as to assure the best possible results*			
Min size of a protruding feature 	0.025 in height and width			
Min size of an engraved feature 	0.025 in height and width *For better results, engraved texts are preferable*			
Minimum hole diameter 	d = 0.030 in	d = 0.039 in	d = 0.010 in	d = 0.020 in
	⚠ *If your part has internal channels, please let the sales team know about it*			

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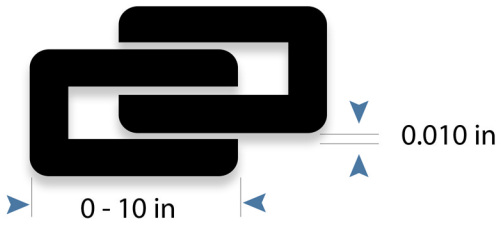
Assembly

Parts printed for assembly must allow for a clearance they connect

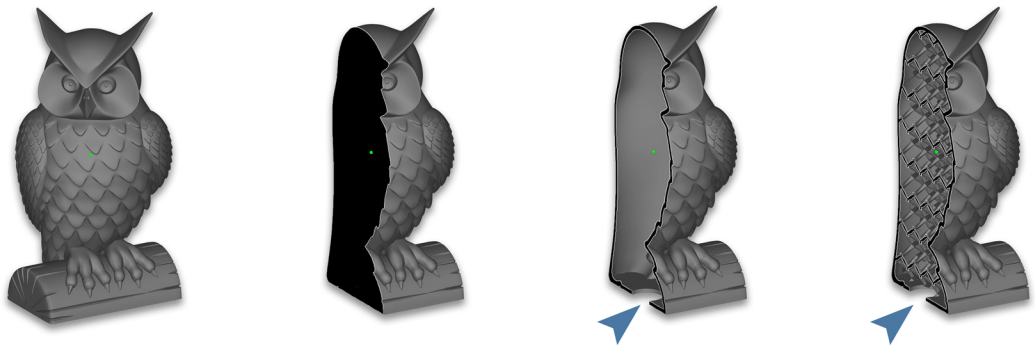
NB : For parts exeeding 10 inches in any direction, allow for a total clearance of 0.020 in



Hollowing solid parts

In order to reduce the amount of printed material, solid parts can be programmed as hollow with a wall thickness of your choice

In some cases, the walls of hollowed volumes can be reinforced using hidden internal supports called Tetrashell



Initial part in 3 dimensions

Section view of initial part (full)

Hollowed Part

Hollowed part with Tetrashell structure

After printing, hollowed parts still contain un-fused, and re-useable, printing material (resine or powder). In order to remove it the part is given a discreet drainage hole which is later plugged by our finishers using resin or glue.

NB : Not applicable to parts using Polyjet.

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Internal supports can be removed provided there is a minimum opening of 3 inches in diameter

NB : In order to gain access to internal supports with insufficient access (hole < 3 inch), we must print the part in sections

Exporting files

HD

If individual triangle or faceting are visible in the CAD file, then they also appear in the printed part. In this case, use a .stp file or a file with high resolution

When submitting an assembly for printing, please provide us with a file for each component (ideally in its assembled position)

We prefer you provide us with files in .stp format, although we accept a number of other formats : .stl, .igs, .sldprt, .obj, .X_T

Converting files can introduce subtle errors which can enhance the print. We advise that you use the free software MiniMagics in order to verify your files. Unfixed errors wil add delays on quoting and producing
http://software.materialise.com/minimagics