



HLH DESIGN GUIDE

CNC MACHINING

Address

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HLH Proto LTD

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High Quality Rapid Prototypes,
Rapid Injection Moldings and Rapid Parts

TIPS & TRICKS: Radius internal corners
Loosen tolerances where possible
Keep all features perpendicular to 6 sides
Reduce the number of setups
Keep it simple

MAX SIZE: 3000X1200X850MM

POPULAR MATERIALS:

Plastic: ABS, PC, Acrylic
Metal: SS304, 316, Aluminium 6061, 7075
Plus many more

SURFACE FINISHES:

Polishing
Sand blasting
Painting
Plating & more

ADVANTAGES:

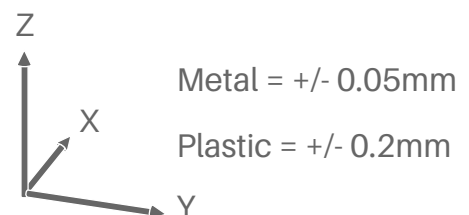
High speed
High dimensional accuracy
Great surface finish
Wide material selection
Suitable for high volume or one off prototypes

DRAWBACKS:

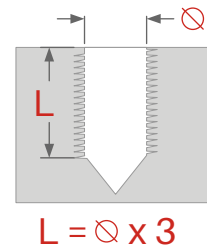
It can be expensive for complex parts and for larger parts.

TOLERANCES:

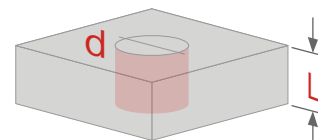
Tolerances according to ISO 2768-1.
The tightest tolerances as standard are
+/- 0.05mm for metals or +/- 0.2mm
for plastics, otherwise discussed per project.



THREADS: HLH can accommodate and cut metric threads, imperial UNC and UNF, pipe threads among others. All threads should be clearly marked on your 2D drawings. Thread length of 3x the hole diameter is recommended.

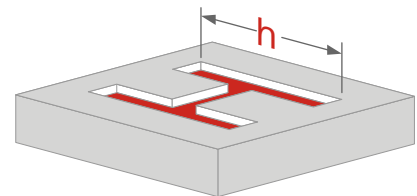


HOLES: All holes < 20mm diameter should accommodate standard drill bit sizes, metric if possible. Depth of the hole should be $\leq 10 \times$ diameter.



Suggested: $L < d \times 10$
Preferred: $L < d \times 5$

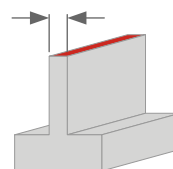
TEXT & LOGOS: Engraved text is better than embossed because less material is removed. Text $\geq 5\text{mm}$ high and $\geq 0.8\text{mm}$ deep with $\geq 0.5\text{mm}$ clearance between letters.



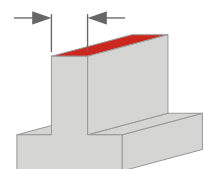
Sans Serif 20 Point $h \geq 5\text{mm}$

WALLS:
Thin walls risk warping and affecting the accuracy of the part.
HLH recommends:

Metal $> 0.8\text{mm}$



Plastic $> 1.5\text{mm}$



CAVITIES & POCKETS:
Will always have an internal radius.

