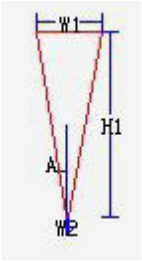
Common Tools and Application

Common cutting tools includes 3 types: Conical flat, End Mill, V-Bit Mill (for 3D working)
Through clicking any one selection elements of artcut software, like 2D, 3D, Cutting and step into it will finish the creation of engraving tools.

1. Conical flat



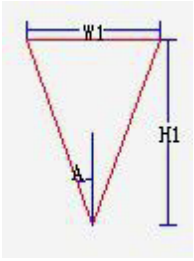
W1: Diameter of handle of cutting tools, commonly used : ∮3.175， ∮4， ∮6, etc
W2: Diameter of tool point, it affects the engraving result directly. So make it exactly when sets
A: half of the angle made by the two lines; if use 30°tools, A should be 15, by parity of reasoning.
Rules for tool using: use W2 type tool or smaller than it when engraving small letters and try to use bigger tool when engraving bigger letters in order to improve speed; choosing cutting tools depends on the thinnest line of the letter; if necessary, in the condition of not affecting letter effect, using "Node Edit" to modify the strokes is benefit to pass big tool path. 30 °angle tool is normally used in engraving badges cutting tools. if the letter is too small, change to single line to count path.
Materials for engraving: Double-layer plastic board, PVC board, Plexiglas, ABS board, etc.
Materials for cutting: Double layer plastic board, ABS board, etc

2. End Mill

W1: the width of tool front-end. Common tool holder diameter likes ∮3.175， ∮4， ∮6; if the cutting material thickness is less than 10 mm small words, we'd better use ∮3.175 tools. If the words become deformed, sometimes the tool holder diameter ∮2 or ∮1.5 can be used for cutting.
H1: refers to the cutting part; material thickness should be less than H1; common H1 length is different according to different material thickness, for example: - 34 Redsail Technology Co, Ltd
12mm: Cut less than 10mm thickness material
17mm: Cut less than 15mm thickness material
22mm: Cut 20mm thickness material (∮3.175 for PVC and ∮4 for acrylic)
Common engraving material: PVC, Plexiglas, wood, etc
Common cutting material: PVC, Plexiglas, wood, etc
Rules for using tools: we do not suggest cutting less than 10mm materials with 22mm tools, as it may

break the tools; when you want to cut 22mm material but without 22mm tools, we can use 17mm tool temporarily and finish it by different layers.

3. 3D (V-bit)



Such tools are different from those engraving tools we normally use which are made by a alloy material; it is made through welding processing to weld various tool heads under ϕ6 tool holder; it is used to engrave different kinds of special shapes files, so it is also called big-end bit or V-bit.

W1: the diameter of the big-end; random accessory is 32mm which is used to cut small 3D letters

A: half value of the angle made by the two lines of knife point; standard tool is 90 °, then A should be 45 °（like Conical Flat）

W2: width of the knife point; when calculate 3D path specifically, it is required to pass directly, so W2 means not too much, then normally we set it as 0.1 or 0.2.

Tools Application: three-dimension clearance angle word (calculate path with 3D function),

Engraving acrylic from backside, or the letters similar with the one made by writing brush---such letter looks like the tip of a writing brush

4. Other cutting tools: tools for relief carving, lace tools for making various lace, etc.

5. Tools Creation:

Ways for adding a cutting tool: we suggest deleting all default tools in Artcut software after installing well; then set up new tools according to detailed requirements.

We take a conical flat knife of 30 °×0.1 for example now

1) Choose 2D, 3D, or cut in Artcut software, then click “Tools Storage”

2) Click conical flat, then filling in tool parameters; W1=3.175 A=15 W2=0.1

3) Click tool preview add tool confirm---then we can add a new tool.