




METALLEX

ENGRAVING TIPS



Updated : 30/01/00

Metallex is made of ABS. It reproduces aluminium, gold or silver aspect perfectly. It is a supple, easy to engrave material.

 When engraving, always take care not to SCRATCH the plate.

CUTTING METALLEX




Use 'plastic' type table shears or a saw.
Made of 2 supple ABS layers, Metallex can be cut with a Stanley® knife, depending on the plate thickness.

| | |
|------------------------------|---|
| Table shears # 06 351 000 | Circular saw VA 1 : # 68 000 000 VA 11 : # 68 001 |
|------------------------------|---|

ENGRAVING METALLEX

Always work on a clean surface.

- **CLAMPING METALLEX** : It can be clamped, according to its shape and dimension, on a **clamping table** or a **vaccum table**, or in a **vice** with **celoron or aluminium jigs jigs** (for small pieces).
➔ **Carefully grip the piece** : enough so it is not ejected but not too much so it does not bend.
For batch production, use the mechanical stop located on the jigs.

 **Caution** : when you engrave several lines on a small 0.8 mm thick piece of material, the regulating nose can hit the sides of the jigs : thus the top part of the letters will not be engraved. **You must remember to turn the jigs on the side where the shoulder is the lowest (0.8 mm high).**

- **ENGRAVING WITH A CUTTER** : Preferably **without a regulating nose**
A standard spindle is used.
 - Engraving with a pantograph : You should not apply too strong a pressure on the tool-holder in order not to scratch the plate with the regulating nose.
 - Engraving with an electronic machine : Ensure that the spindle spring is tensed in order to obtain a regular engraving depth.



TOOLS

Cutter :

- steel
- carbide (more resistant in the long run)



| Grinding | |
|------------------|-----|
| Cutting angle | 40° |
| Half-taper angle | 18° |
| Tip angle | 7° |
| Clearance angle | 15° |

Warning : these parameters are only valid with Gravograph's standard cutters

| Type of tools | Steel | Carbide |
|-----------------|------------|------------|
| Ø 3.17 | 05 576 xxx | 05 410 xxx |
| Ø 4.36 | 58 106 xxx | 58 101 xxx |
| TwinCut® Insert | - | B7 300 xxx |

NB : The size of the tip depends on the engraving width you wish to obtain.

MACHINE PARAMETERS

| CUTTER | Speed (mm/s) | | | Dwelling time | Engraving depth |
|--------|--------------|-----|--------------------------------|---------------|-----------------|
| | Z | X-Y | Rotation (Revolution /mn) | | |
| | 35 | 35 | 18 to 20 000 | 0 | 0.1 mm |

Number of passes : 1

MATRIX

The Matrix function that is used for engraving and cutting plates produced in series (i.e. labels) is found in the Gravostyle'98 software (optional on the Discovery level and integrated in higher levels).

Special care :

For complete cutting : engraving - pause - cutting : 2 tools and 2 cutter settings are required.

- ❶ For the engraving cutter (see table of references above)
- ❷ For the cutting cutter (see table of references above ; for steel, use a 15°cutter : 58 106 015)

The method consists of :

- **Setting the tool** : screw the cutter knob (caution : left thread) and position the tool in the spindle in order to make contact with the material (check through the little opening of the regulating nose that the cutter has actually gone down) Save the position of the spindle (little pressure with Metallex). Validate the Z axis.
- **Selecting the engraving depth** by turning the micrometric vernier, knowing that :
4 scales = 0.1 mm thus **1 spin = 0.62 mm**
- **At the break** : select the cutting depth as previously.
It is necessary to add pressure at the beginning of the cutting operation.

Professional tips

If you wish to obtain a bevelled edge on a Matrix application, all you have to do is program a cutting depth (phase ❷) according to the aspect you want to obtain and finish by « breaking » the plates off manually. We advise you to set the bevel depth to 2/3 of the plate thickness.

| Cutting depth | Thickness | 0.8 | 1.5 | 2.4 |
|-------------------|-----------|-----|-----|-----|
| mm | | 0.5 | 1 | 1.6 |
| Vernier divisions | | 20 | 40 | 64 |

Recommended cutters :

- Steel : 58 106 045
- Carbide : 58 101 045
- TwinCut® : B7 315 345 (delivered by set of 3)

- With matrix, all you have to do is « break » the plates off manually.

FINISH

- ❖ **BEVELLING** : you can use the B4 or B6 machines to enhance the finish of the plate, to obtain different types of bevelling according to your requirement.

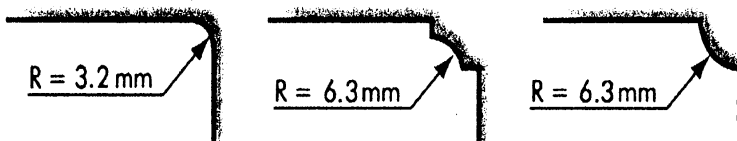
Examples :



For a better finish, we advise you to set the bevel depth to 2/3 of the plate thickness.

- ❖ **CORNER CUTTING** : if you want to cut special corners, we recommend that you use the corner table shears (CSC).

Examples of blades available :



Different measures exist for various radius and width.

B4 : # 00 014 001
B6 : # 00 014 101

CSC table shears
D4 000 000