



GRAVOPLY 1

ENGRAVING TIPS



Updated : 11/07/00

Gravoply 1 is notable for its resistance to scratches and chemical agents. This is a supple, easy to engrave material.



CUTTING GRAVOPLY 1

Use 'plastic' type table shears or a saw.
 Made of 2 supple ABS layers, gravoply 1 can be cut with a Stanley® knife.

Table shears # 06 351 000	Circular saw VA 1 : # 68 000 000 VA 11 : # 68 001 000
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ENGRAVING GRAVOPLY 1

Always work on a clean surface.

- **CLAMPING GRAVOPLY 1** : 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** (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 use **a regulating nose**
 You select the regulating nose according the engraving width, the tools and the letters to engrave.
 The use of a swarf extractor is advisable with Gravoply 1.
 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 released for the spindle to remain supple (by using strong pressure, the regulating nose may scratch the plate).

TOOLS

Cutter :

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



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

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

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

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

MACHINE PARAMETERS

Speed (mm/s)				Dwelling time	Engraving depth
CUTTER	<u>Z</u>	<u>X-Y</u>	<u>Rotation</u> (Revolution / mn) 18 to 20 000	0	0.3 mm
	35	35			

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 Gravoply 1). 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	1.6	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 sets 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.

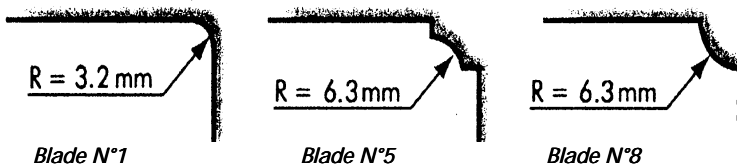
Examples :



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