



GRAVOGLAS 2 SUBSURFACE

ENGRAVING and COLORATION TIPS



Updated : 17/11/00

The Gravoglas 2 is made up of clear Poly Methyl Methacrylate layer (PMMA) over which is superimposed a layer of coloured opaque acrylic. It is available in matt and in glossy.

When engraving, always take care not to SCRATCH the plate.
(Methacrylate is very sensitive to scratches.)

CUTTING GRAVOGLAS 2 SUB-SURFACE



Use imperatively a **saw** for Gravoglas 2 sub-surface.
Be careful to check the **blade quality** and **not to move the saw carriage** too quickly in order to avoid chips.

Circular saw
VA 1 : # 68 000 000
VA 11 : # 68 001 000

ENGRAVING GRAVOGLAS 2 SUB-SURFACE

Keep the protective film on the side that will not be engraved during the engraving.

- **CLAMPING GRAVOGLAS 2** : It can be clamped according to its shape and dimensions on a **clamping table** or a **vaccum table** or else on a vice with **celoron or aluminium jigs** (for a small piece of material).
For batch production, use the mechanical stop located on the jigs.

- **ENGRAVING WITH A CUTTER** : This material is intended for a sub-surface engraving, the engraving depth depends on the character height and the colouring. It gives more or less relief depth to the text engraved.

The use of a **regulating nose** is recommended. The choice is done according to the engraving width, the tools and the letters to be engraved.

We advise you to use a swarf extractor with Gravoglas 2 sub-surface.
A standard spindle is used

- **engraving with a pantograph** : You should not apply strong pressure on the spindle in order not to scratch the plate with a **regulating nose**, but enough to ensure that you will get the depth you wish to obtain.

Remember to use a sub-surface font (use a mirror, direct it towards the line that you engraved to check your text).

- **engraving with an electronic machine** :
 - **With a regulating nose** : we advise you to release the spindle spring half way
 - **Without a regulating nose** : Ensure enough pressure is used in order to have a regular engraving depth.

Remember to selecting the reverse mode in the parameters of the engraving software used.

NB : You can use a collet spindle or high frequency spindle (but watch out for the spindle electric wire)

TOOLS

Cutter :

- In carbide (more resistant at use)
- In steel

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 301*xxx

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

* for best results

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



If you want to obtain a beautiful relief effect for single line (only), use a cutter with a round tip : # 58 106 9xx. (caution : character over 7mm high. The use of this cutter on multi-lines fonts is not advised as the engraved characters would show grooves as the bottom of the engraving).

MACHINE PARAMETERS :

Speed (mm/s)			Dwelling time	Engraving depth
CUTTER	<u>Z</u>	<u>X-Y</u>	0	0.25 to 0.3 mm
	20 to 35	< 20		
		<u>Rotation</u> (Revolution / mn)		
		18 to 20 000		

Number of passes : 2, one for the engraving and one to clean the bottom of the engraving.
 The 2 passes are necessary to have a polished aspect without facet (essential with the gold paint otherwise furrows are visibles)

COLOURING GRAVOGLAS 2 SUB-SURFACE

This Gravoglas is intended for sub-surface engraving. When applying paint on the engraving, colour will show on the surface through the clear layer.

VERY IMPORTANT : Remember to drive out the swarf with a little soft brush (the one delivered with the machines for instance).

❖ **Paint :** Apply it with a flat spatula that will not scratch (a piece of Gravoply or bristol) or fill the engraved characters using a syringe.

Never apply 2 coats

Clear away the excess with a clean spatula

Caution : check that the filling does not contain any air bubbles

Leave to dry for a few hours.



Gravolaque
.87 400 0xx

Diluant
.87 413

FINISH

❖ **BEVELLING :** we 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 :



❖ **CORNER CUTTING :** if you want to cut special corners, use the CSC table shear (only on 1.6mm material).

See examples bellow :



Blade N°1

Blade N°5

Blade N°8

Different measures exist for various radius and width.

❖ If you want a perfect presentation, stick down an equal size plate of 0,8 mm thick material or Gravofoil (Gravograph product) on the back of the engraved plate.

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

CSC Table shear
D4 000 000

