TroGlass Module 1
Cutting and engraving applications of TroGlass
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1 What is shown?

Use of TroGlass cast acrylic sheets

Useful information

2 What is required?

- TroGlass 3mm (in our example, TroGlass Frosted Mint Green and TroGlass Satins White)
- 1.5" lens

3 Which machine was used?

- Speedy 400
- 120Watt
- 1.5" Lens

<table>
<thead>
<tr>
<th>Description</th>
<th>1,5&quot; Linse Speedy 400 120 Watt</th>
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<tr>
<td>Color</td>
<td>Process</td>
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<tr>
<td>1</td>
<td>Engrave CO2</td>
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<tr>
<td>2</td>
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<td>3</td>
<td>Cut CO2</td>
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<td>4</td>
<td>Skip</td>
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<tr>
<td>5</td>
<td>Cut CO2</td>
</tr>
</tbody>
</table>
Pictures of finished graphic and finished workpiece
5 Step by step instructions

- Draw your desired cut graphic with as few anchor points as possible

⇒ With this material, too many anchor points impair the cut quality.

- Ensure that the starting point of the cut line is at a convenient point in the drawing. E.g. in a corner or in places where the starting point cannot be seen (e.g. a display in which the cut edge is hidden by a bracket)

- Click “Print” to open the print menu
• In the Trotec Engraver settings
  - Enter the dimensions of the graphic, +1mm in height and width
    - If "Minimize to job size" is selected, the range can be larger
  - Select the appropriate material from the material database
  - In process options:
    - Process type: Standard
    - Resolution: 500 or 600 dpi
      (In this range the material responds best and is perfect for engraving)
    - Cut line: none (is already incorporated into the graphic itself)
    - Scanning: Black/White or Color (both work in this application)
    - Select "Optimized geometries"
    - Select "Internal geometries first"

• Send job to JobControl by clicking the JC symbol

• Under "General" set the print area to "Selection", and reposition in "Layout": "on page center"

• If the print area was previously set too small, it will be visible in the preview window

• If "Minimize to job size" was previously enabled, the preview shows a print preview that is too large - the minimization is only implemented in JobControl

• Print
**TroGlass Tutorial**

- **Naming a job**
  - Only works if "Ask for job name" is selected in the General section of the Trotec Engraver properties
  - Otherwise, the job is automatically named according to the file

- **Positioning the sheet:** Start position at the bottom

```
Only works if "Ask for job name" is selected in the General section of the Trotec Engraver properties
```

- **To engrave, remove the protective film from the surface of the acrylic**

- **Place the acrylic on either the acrylic lamellae, the acrylic table or the acrylic spacer.**

  ➤ **This prevents back reflections from the metallic surface of the table back on to the material**

  ![Acrylic spacer](image)

*Acrylic spacer*
TroGlass Tutorial

- If a vacuum table is used, cover the rest of the table with paper or a film

- This increases the suction under the material to be cut, resulting in lower flammability and a nicer cut.

- If you are unsure whether the job has enough space on the material:
  - Place the job on the sheet in JC and right click to enable the "Outline job(s)" command. If the size fits, the command can be aborted in the meantime.

  ![Outline job(s) command](image)

- Focusing
- Starting
- Cleaning

- Do not use alcohol or cellulose thinners for cleaning. Water or glass cleaners are ideal for cleaning.

6 Basics for cutting and engraving TroGlass

- Engraving
  - Engrave from the bottom to the top to enhance the engraving quality. The removed material is suctioned across the material that is not yet engraved, thus it does not come into contact with the freshly engraved, still warm material.
  
  - For a white engraving: no Z-offset and Air Assist on
  
  - For a glossy-transparent engraving: Z-offset from 1mm and Air Assist off
Cutting

- Anchor points are immediately visible, so have as few as possible. The laser stops briefly at each anchor point so there should be as few as possible.

- Slow cutting enhances the cut quality and prevents chatter marks.

- For major differences in detail (e.g. outer cut straight, inner cut small and detailed), it is useful to use two cutting parameters by means of different process colors.

- In this case, too much Power was used, the edges and lines are rounded and contorted. To avoid this, use a parameter with less power.

- Switch the Air Assist on when cutting acrylic and use a large nozzle.

- Use a frequency of 5000Hz or higher.