

CAD-GRBL-generator (AutoLISP) – Manual :

Note:

When working with lasers there are only 2 types of operations: cutting or engraving.

Placing text or drawing lines (not cutting) is in essence the same: engraving.

Remark:

This program does not contain any movement optimization algorithms. It is intended for hobby use and the complexities would outweigh its intended use.

How does it work :

All logic is based on standard available CAD commands like OFFSET, Layers, transparency etc. This may seem complex but as you will see it is very logical.

CAD-elements like lines, circles etc. that have a transparency setting ‘By-Layer’ are considered OUTLINES or Contours of a part. And are therefore offset to the outside. (kerf-width)

CAD-elements that have a specific transparency-setting, instead of ‘By-Layer’ are considered contours that are within the outlines of a part. They are therefore offset to the inside. (kerf-width)

TEXT and other engravings: Have a specific color. These have their own settings in the material-definition-files.

Kerf-width:

The kerf-width is hardcoded in the file but can easily be changed using an Editor.

(The current value is for my laser. Feel free to adjust it to your needs.)

Using the toolbar:

The toolbar-buttons are organized for a smooth workflow (from left to right).

First of all:

The first 3 buttons can be used to assign what certain CAD-elements are: Outline, inside, text or drawing (engraving), should be used for.

After everything has been assigned (and double checked 😊) use the fourth button.
This is for loading a material-definition file.

Pleas examine the material-definition files and make new or change them!

Note!:

After loading a material-definition-file there is an additional question on the command-line!!

In some case answering YES might be beneficial.

For simple drawings it will normally be NO.

Explanation: It will trigger the command ‘OVERKILL’ with certain settings.

However! Using this option might cause tiny ‘gaps’ between CAD-elements that should have their endpoints-connected.

Please read the OVERKILL command explanation of your CAD platform.

It is now possible to generate the GEOMETRY for each type of operation using the buttons 5, 6, 7 and 8.

Important:

The buttons in the next section are for switching the visibility of the Layers.

This will allow you to interim visually check the geometry, that will be used to generate the GRBL code.

If all is checked and well. You can now save you GRBL code!!

Note:

Everything starts with a ‘UNDO – MARK’ and after the GRBL code has been generated, everything will be rolled back to the MARK !!!