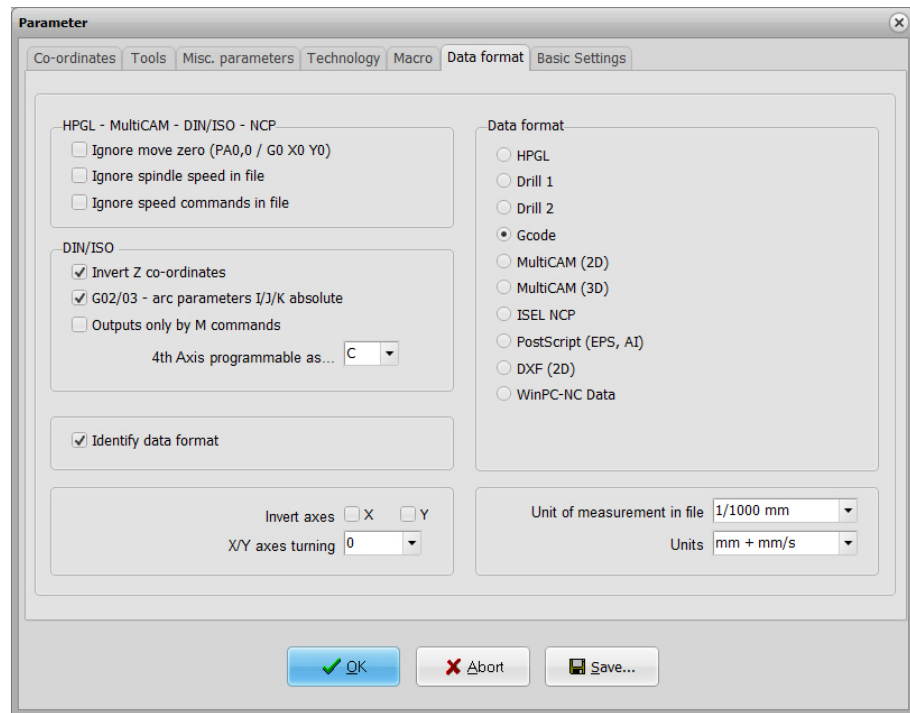


Data format

WinPC-NC understands various NC data formats, and is able to import these files, display them and perform the movements on the machine.



Parameter-Data formatt

At present, the commonly used plotter format HPGL, MultiCAM, two drilling formats, G code (DIN/ISO), DXF (2D) and ISEL NCP are possible. Furthermore WinPC-NC is able to recognize vector informations of postscript EPS and AI files, e. g. as created by various Adobe programs.

HPGL is from the well known plotters made by Hewlett Packard and is supported by almost every CAD or drawing program. MultiCAM (also referred to as Extended HPGL format) is very common in the USA and offers special 3D expansions for HPGL commands.

Plotting and drilling formats

The drilling formats are based on the following standards: Sieb&Maier1000, Sieb&Maier3000 and Excellon. In other words, it should be possible to process working files in these formats without any problems.

As a rule, industrial NC machines are programmed in the DIN/ISO format by G codards

The appendix contains a list and description of commands in the individual formats. In the event of problems during processing, for example if unknown commands or commands which cannot be interpreted are encountered, then the working file can be analysed using this description and revised with the editor.

WinPC-NC usually recognizes the format of the selected file automatically.

Automatic identification of the format

Usually most of the supporting NC formats are automatically recognized by **WinPC-NC** during file opening. It rarely happens that errors are produced in this way. If it should be the case they can be easily eliminated by switching off the identification function and by manual adjustment of the correct format.

Ignore movement to zero (PA0,0)

It is a feature of HPGL and Multicam files that there is usually a PA0,0 command at the end of the program to move to the coordinate zero point. This can be suppressed using this parameter if it is not required.

Ignore feed rate and spindle speeds

HPGL, MultiCAM and G code formats also contain commands to set the spindle speed and the feed rate. Activate these checkboxes if you want to use the values set in the parameters rather than the commands in the NC file.

Invert Z-axis

Many CAD programs generate negative coordinates for plunge movements of the Z-axis. Activating this checkbox inverts the coordinates of the Z-axis so that these NC files can also be read in and processed correctly.

G02/G03 - I/J/K relative

There are various dialects of G code programs. In some, the circle parameters I/J/K are specified as absolute values, while in others they are relative distances from the current position. This parameter enables you to distinguish between the types.

Output signals with M commands

In G code programs, it is possible to switch almost all outputs such as the spindle, cooling, etc. using M commands. This parameter prevents **WinPC-NC** from operating a signal automatically and forces it to utilize exclusively the M commands which are used.

Otherwise, **WinPC-NC** would automatically switch on the spindle at the start of the process and switch the cooling on and off when lifting and lowering the tool.

4. Axis 4 programmable as...

*Letter for
programming*

The 4th axis can be addressed in G code programs using various axis letters. Axes parallel to X, Y, Z are normally designated U, V, W, while rotational axes in the X, Y, Z direction are programmed with A, B or C.

Mirror/Invert axes

The X and Y-axes and their coordinates can be mirrored independently of one another for all formats. A changed parameter is immediately visible in the graphical display.

Rotation of X/Y axes

The NC data can be rotated around the zero point, e. g. for a better placement on the material. Rotation always happens in 90 degree steps.

Unit of measurement

Wide range of predefined units of measurement

The unit of measurement for working data must be defined using this parameter. All coordinate values in the working file are related to a particular dimension.

The possible units are millimeters and inches. HPGL files are usually in units of 1/40 mm or 1 mil, while drilling data are usually in 1/100mm or also 1 mil.

EPS and AI files are automatically set when opening the file. The same applies to HPGL and DXF.

Units in the NC program

The UNITS parameter defines the units for dimensions and speeds used in the graphical display and the parameters..

It is possible to select between three options :

- Millimeters and millimeter/second (mm and mm/s)
- Millimeters and millimeter/minute (mm and mm/min)
- Inch and inches/minute (inch and inch/min)