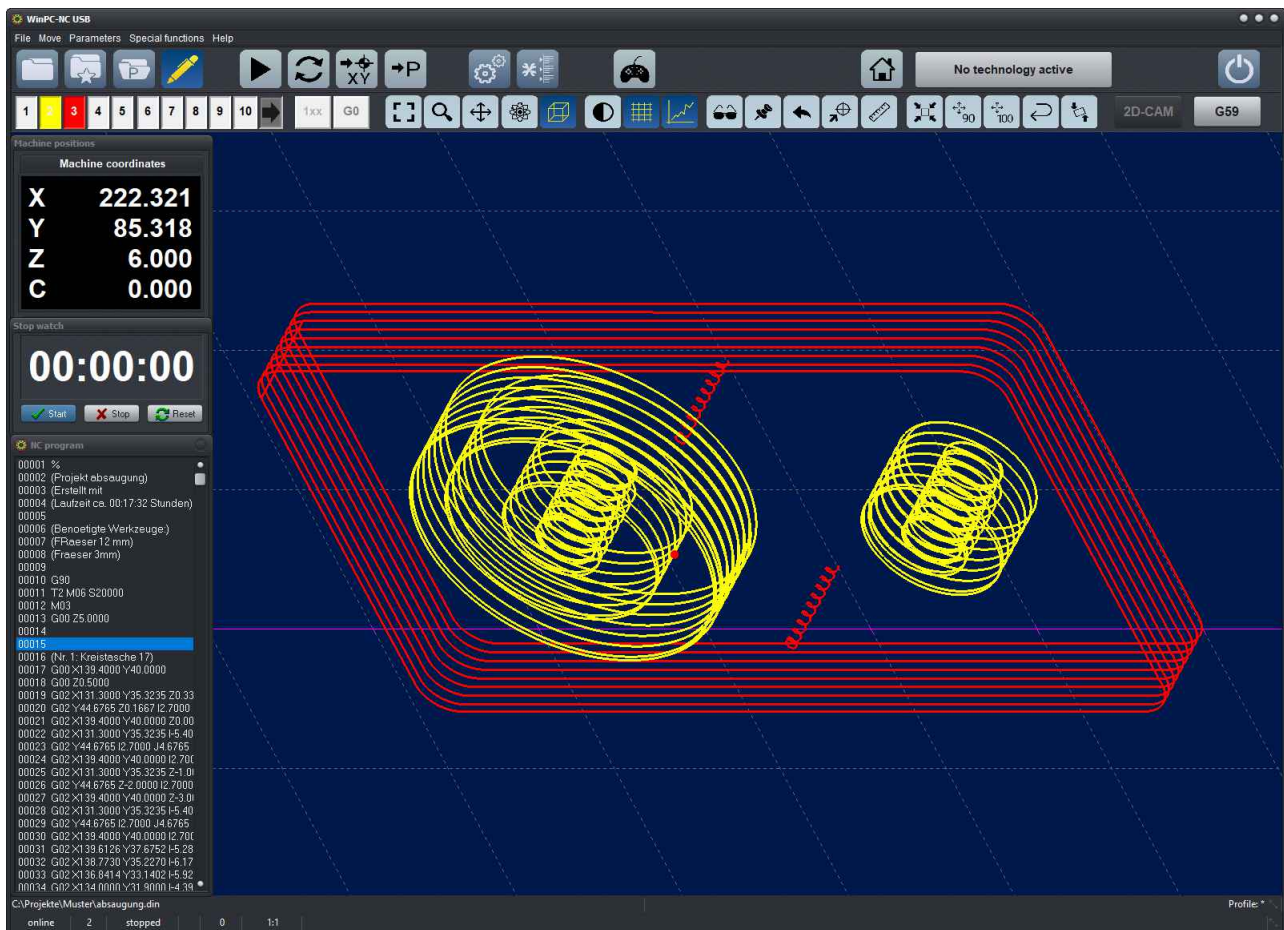# New version *WinPC-NC* V4

From the end of July 2021 the new version V4 of our stepper machine control program **WinPC-NC** is available. After over 2.5 years of intense development and many testings the different programs **WinPC-NC USB**, **WinPC-NC Light** and **WinPC-NC Professional** can be ordered with their new design and lot of new and enhanced features.

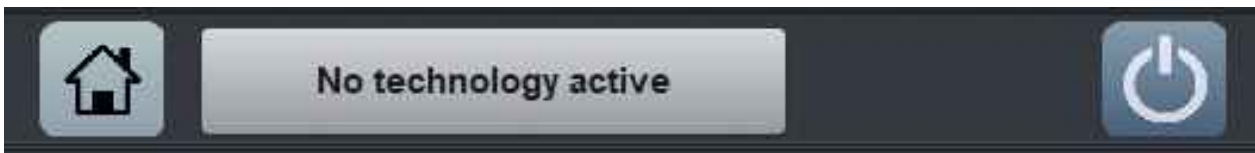The most important modifications are the following....

New buttons with simple and clear icons
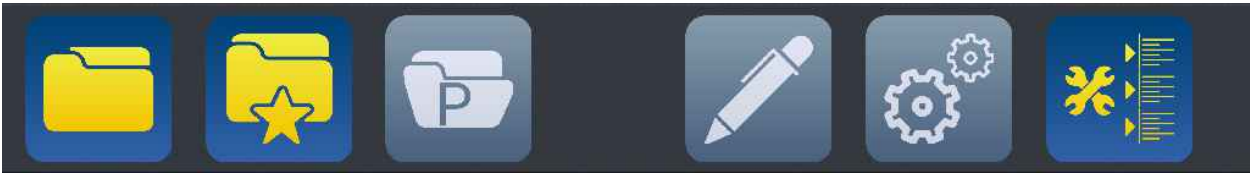
Two important buttons at right end

The very important buttons to start a homing movement and to exit *WinPC-NC* now are at the right end of the button line.

Different displays of main window

The default display of WinPC-NC is similar to the previous designs you know from version 3. In addition there is a permanently visible sidepanel for fast accessible manual movements and most important actions used in running jobs.

A completely new display is optimised for touch screens with big and easy to use buttons and action fields. All functions as well as the new designed file selection dialog is easier now to use and to operate with touch screens and follows professional machine controllers.

The well known color schemes can be used for both default displays, the new touch display has a complete dark color design.
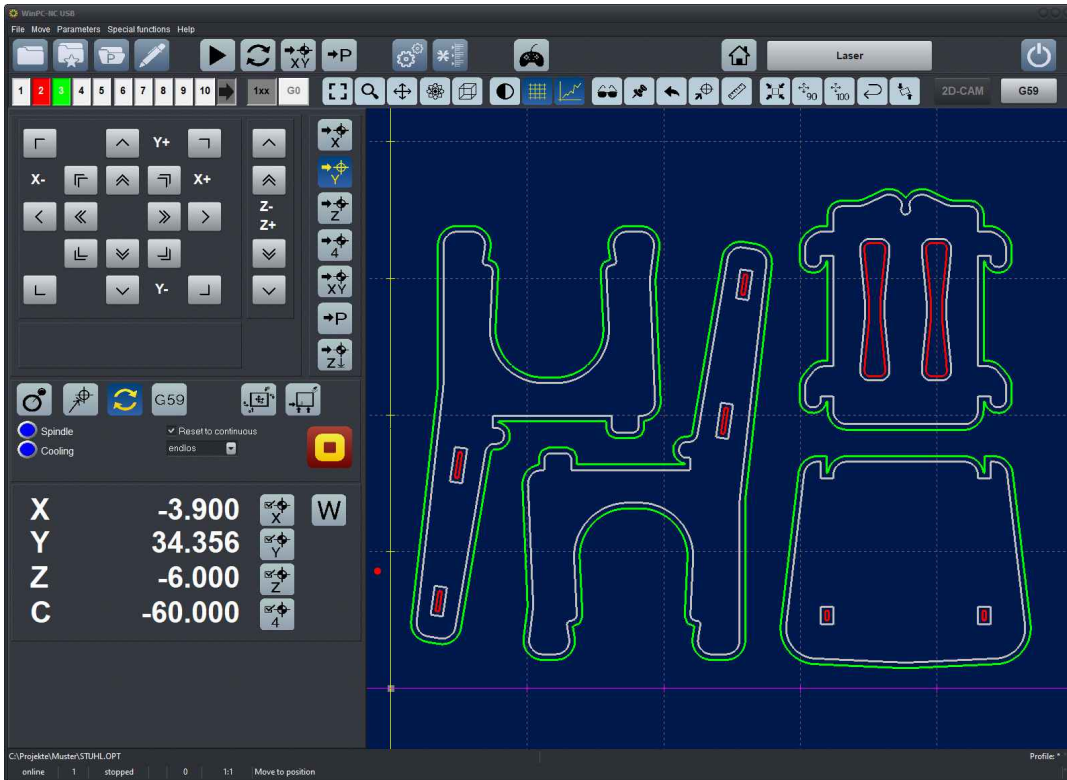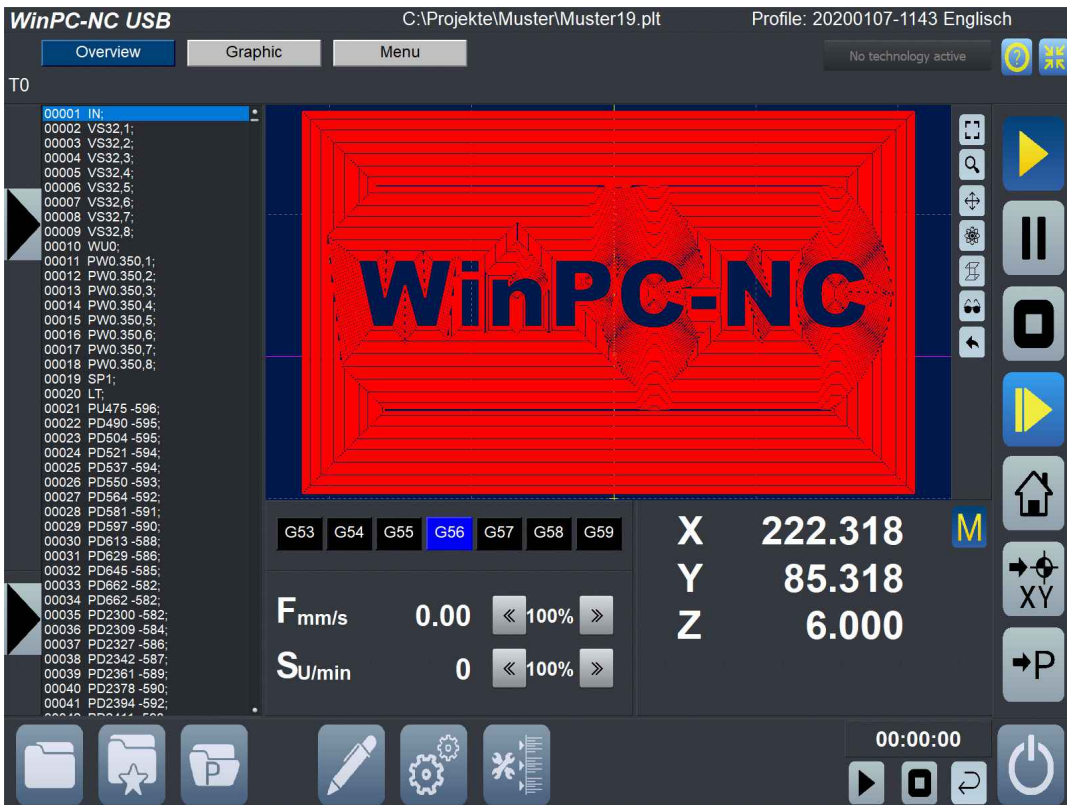
Default display with side panel

New touch optimised desplay

Favourite or last used NC files

WinPC-NC saves the ten last used project files and offers them in a selection menu for use.

2D-CAM functions, tool diameter compensation and moving in lines

The 2D-CAM functions that have long been integrated in **WinPC-NC** have been expanded by two points. In addition to the very reliable detection and sorting of contours and the high-precision calculation of tool diameter corrections now also available are approach routes to the contour and exit routes at the end of the contour.

Depending on the defined radius offset inside or outside, the approach routes are also correctly generated inwards or outwards. This means that starting end ending marks at the milled parts are easy to prevent.
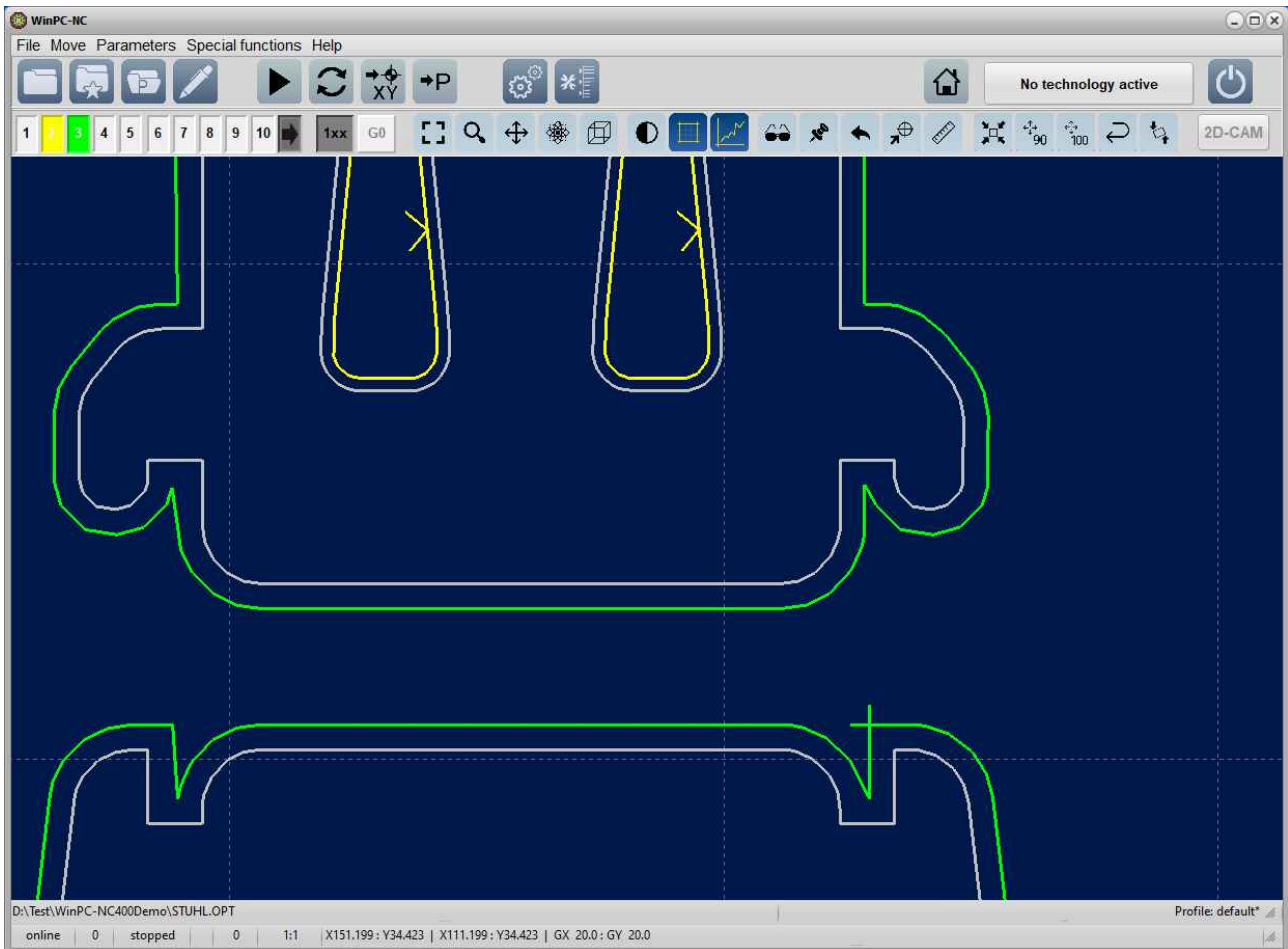
As a further function, the sorting of the contours and lines can be designed in such a way that in each case one element is first completely finished from the inside out before the next element begins. This is particularly advantageous when cutting with plasma.

Saving of last machine positions

WinPC-NC can save the last axes positions when being quitted and if the machine controller keeps switched on or the axes have enough self fixing power and will not move there is no need to perform a new homing or reference movement at next program start.

Realtime display with current feedrate and spindle speed

At all machine movements and during job operation the current feedrate and spindle speed or power control to a laser head is displayed in realtime conditions.
With simple mouse clicks to the arrow buttons you can use the overwrite function and increase or decrease speed or power on the fly.
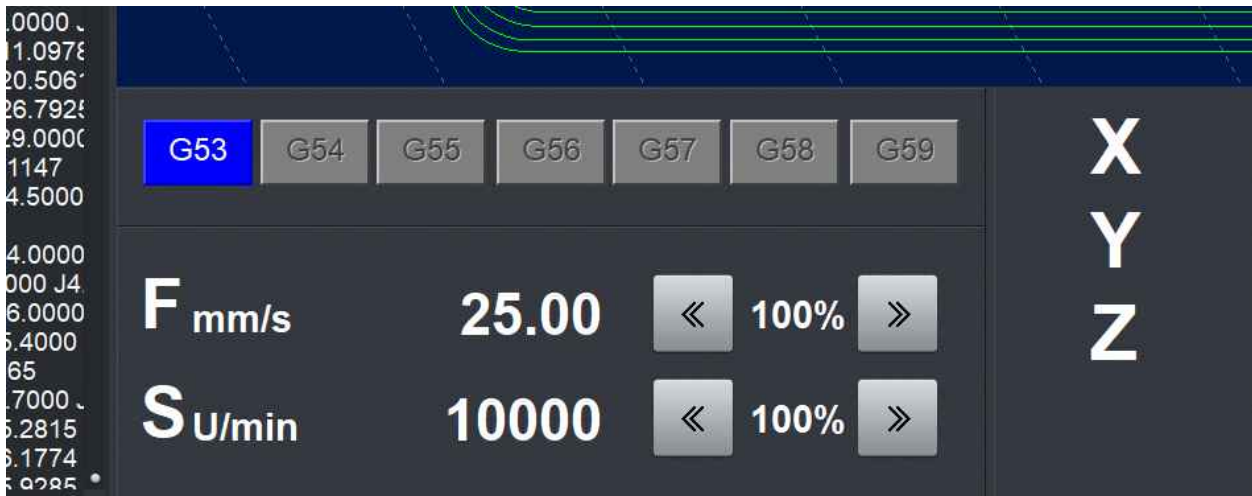
High acuracy initialisation

If you want to realise a high acuracy reference move you can use a cam on the toothwheel or beltdrive and detect it photoelectrically. In the new version of *WinPC-NC* it can detect even a small or short signal and can move reversed until the signal is detected again to start the second action for moving free from the reference switch. This will increase the acuracy while homing or initialising the machine.

Warming up function for spindles

To get best milling results the milling spindle in use should be at a certain operation temperature. **WinPC-NC** now offers a special function for warming up your spindle. You can define up to five different speeds and times to run it and the whole job can be started by one mouse click.

New and enhanced technology functions

To meet very special tasks **WinPC-NC** offers special technology functions which can be activated for each project. Examples for technologies are...

- Tangentional axis for oszillating knive or stamping wheel
- Laser engraving including special calibration of gray scales
- Laser cutting with testing functions
- Plasma cutting including surface probe and online height correction
- 3D printing with reduction of filament spending in small corners and edges
- Dispensing and special functions to avoid droping
- Circular axis engraving and unwinding of data to a cylindrical part
- Grey scale grinding of stone and marble

Technology functions for *Laser cutting and engraving* and *Plasma cutting* have been strongly enhanced.

Comprehensive manuals

The new and comprehensive manuals in english or german are includes as a PDF document in every installation and can be opend by Help-Manual menu item in your installed PDF reader. If you need a small and compatible PDF reader at your operating computer please have a look to SumatraDPF.

Printed examples of the manual can be ordered for a small fee.
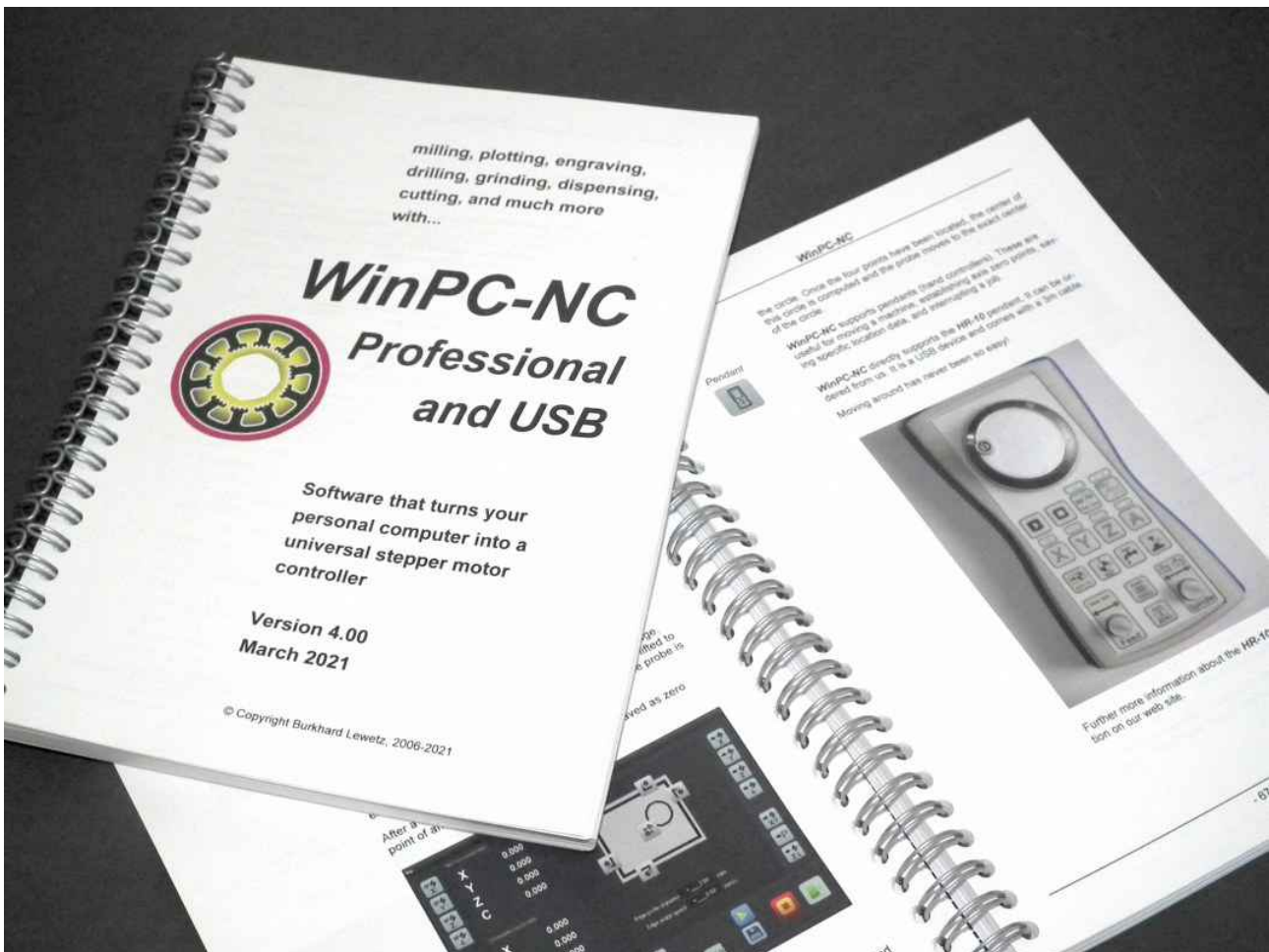
New online help system in english and german

The new designed online help which can be displayed in each dialog and function by pressing the F1 function key is available in english and german and will be installed with both languages. In this case an after install changing of language will cause the help pages in correct language to be shown.

WinPC-NC

What is new in version 4 ?

Automatic checking of a twisted work piece

By using a special testing plate and edge probe it is very easy to measure the edges and the twisted angle of a mounted work piece which is not exactly parallel to the axis. *WinPC-NC* can lead you through a special dialog to check and measure point to point and as a result calculates the angle or geometry of the part.
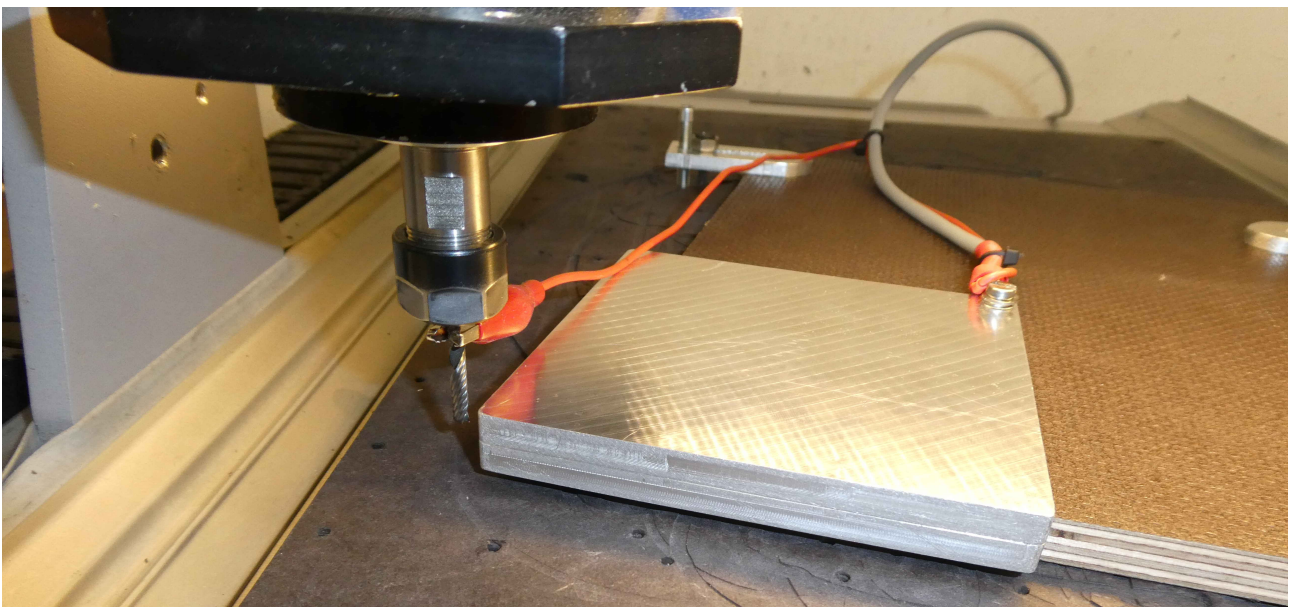
If you have no testing plate or edge probe you can use this function as well and can move to certain corners and edges of your workpiece and in an second step click with your mouse to the corresponding points in the graphical display.
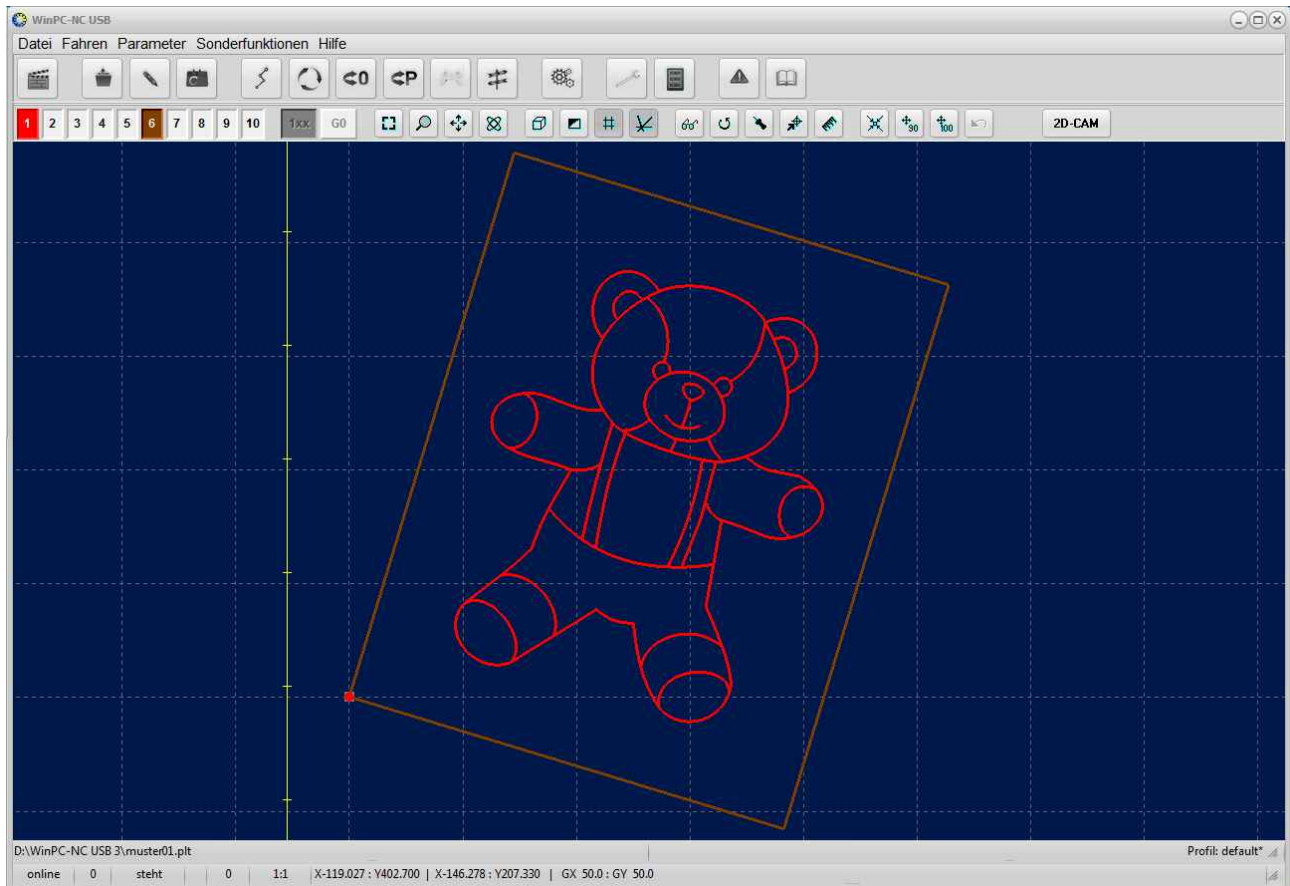
The new calculated angle is show instantly.

Optimised lookahead function

WinPC-NC V4 has a new and highly effective lookahead algorithm integrated and can move 2D or 3D movements more smoothly and faster than before. The new algortithm uses the defined maximum speed and ramp settings and the shape of the contours to move for its speed calculation. An additional factor setting can increase or decrease the speed reduction in small arcs and corners.

Speed related power control for laser and dispensing

For best results in controlling a laser the power can be reduced proportional to the moving speed. To avoid burned corners and edges the power of the PWM output signal will be reduced analog to the toolpath speed.

WinPC-NC

What is new in version 4 ?
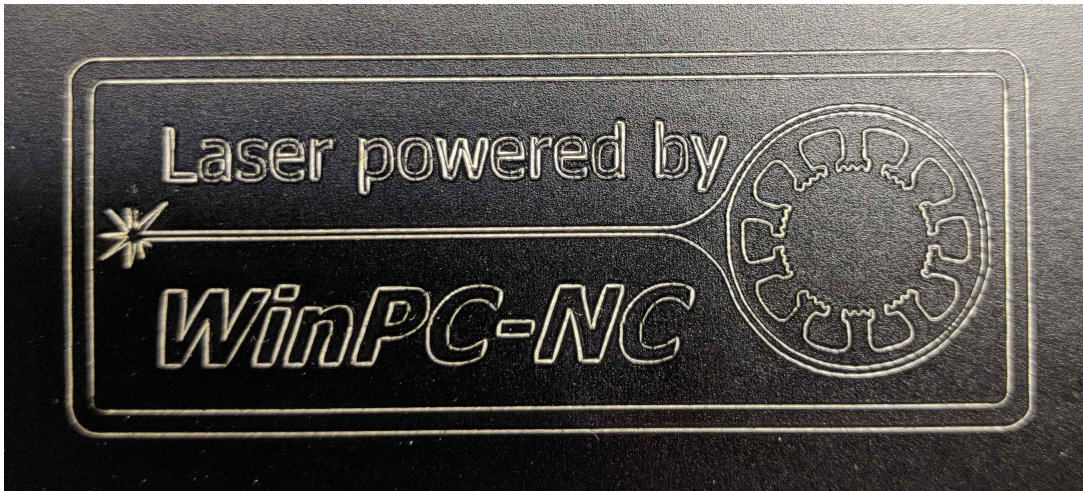
Dragging knife compensation
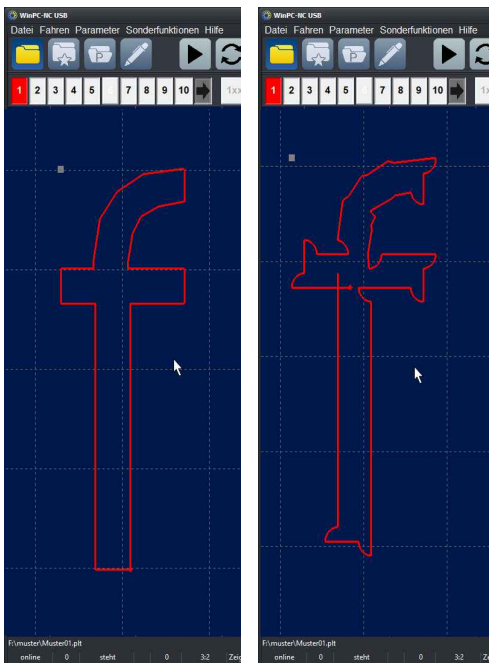
In new 2D-CAM functions you can activate an auto-matic compensation of the dragging knife geometry and the new toolpath will include all overcutting distances and compensation turns of the blade.

Enhancements in Gcode and DXF import filters

The import filters for the most commonly used nc file formats Gcode and DXF enhanced and now much more dialects and postprocessors can be used to create the loadable nc files.

For DXF files now also the elements SPLINES, BLOCKS, INSERT, POINT can be used and will be interpreted.

Camera display included for manual jogging

To simplify the exact movements and definition of zero points and other helping points **WinPC-NC** can display a camera window in parallel. You can define a certain offset distance from camera to axis of your tools and it will be compensated at every position save function.

Camera display can be activated from tast to task as well as a pilot laser or connected laser pointer.
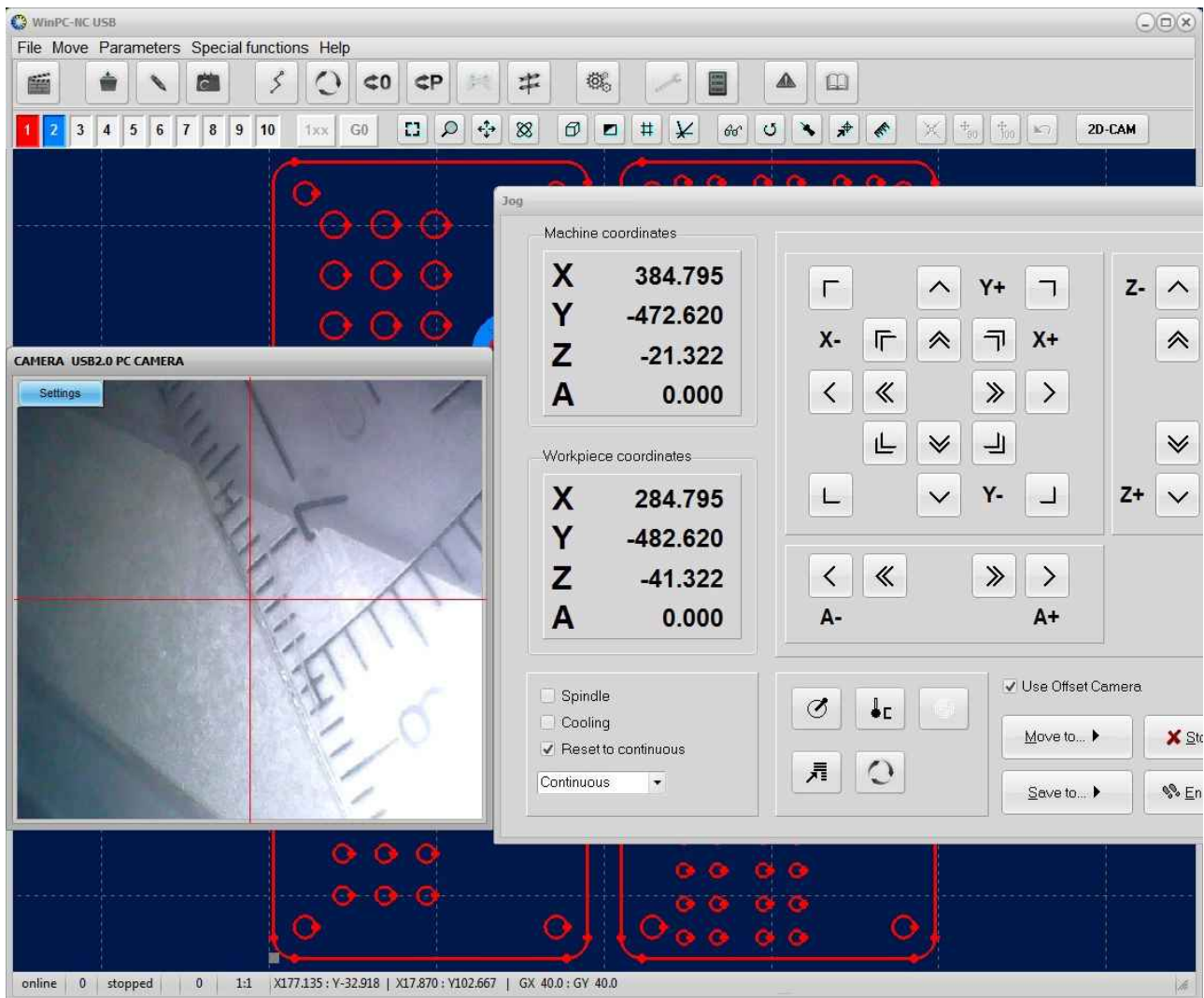
Stand alone job running with axes controller

WinPC-NC Professional and the included axes controller cpu can save a complete job for separated execution without the need of a running **WinPC-NC** program. This is a simple and easy way to run repeating jobs in extended mass production.

In initial tasks you setup the controller for saving the next transfered job and this will be stored in an internal memory for later use. The controller can perform a homing or reference move automatically at startup or triggered by an external signal. A job start signalt will run the job to the end and it can be started many times and for days or weeks.

Mass production has never before became so safe and easy.

More free definable input and output signals

WinPC-NC Professional has a lot of new free definable input/output signals which can be used in macro programming or in combination with new functions. You can use it to load up to 256 different job files or to display special warning messages for instance.

API programming and remote control interface

WinPC-NC can be remote controlled with the help of different mechanisms. You can use hardware input signals or communicate over Windows registry or different Windows messages. This is helpful to integrate ***WinPC-NC*** into a complex manufacturing environment with 3rd party host programs or PLC controllers.

The axes controller ***CNCCON*** delivered in combination with ***WinPC-NC Professional*** in addition has an API programming interface and can be controlled by any host program alternatively to the ***WinPC-NC*** program. This makes it easy to realise very special tasks in laboratories and for measurement applications and is used at numerouse organisations, institutes and companies already. A special programming manual is available on request.

date 20.7.2021   Lw