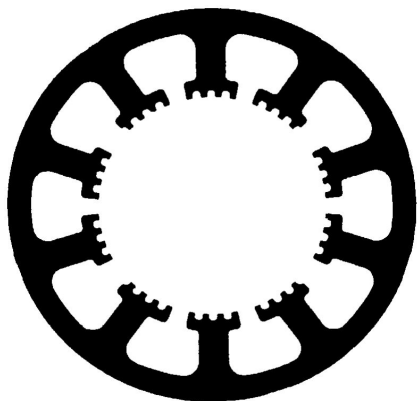


Milling, plotting, engraving, drilling, grinding, flame cutting, dispensing, bonding, 3D-printing, laser machining and much more besides with...



# WinPC-NC

...the software that turns your standard PC into a universal stepper motor NC unit.

**WinPC-NC** is a software program conceived for the current Windows versions and which turns any standard personal computer into a universal NC control system for up to four axes. Since 2000 **WinPC-NC** is globally used more than thirty thousand times. The technology is constantly refined, upgraded and improved. We always appreciate receiving any kind of proposals and requests of the users or clients concerning improvement activities. As a multilingual operating system with 20 different language versions **WinPC-NC** is used worldwide. Additional languages will be available soon.

## Different versions of WinPC-NC

Our lowcost program provides a direct LPT printer port output or USB control device with additional hardware and expert solutions with various intelligent axis controllers for a professional and specic use in the industrial sector.

By quoting individual and different prices we are able to offer various versions according to the specific requirements of our customers. The distinct versions are applicable not only for hobby users or manufacturing modelling parts, but also for industrial customers with higher demands and for very special applications.

With delivery our soft- and hardware components are already pre-configured and setup can easily and systematically be carried out.

Some of the **WinPC-NC** versions are subject to direct sales to mechanical engineers or sales persons and are available only in combination with the machine itself. Currently the following versions of WinPC-NC are available:

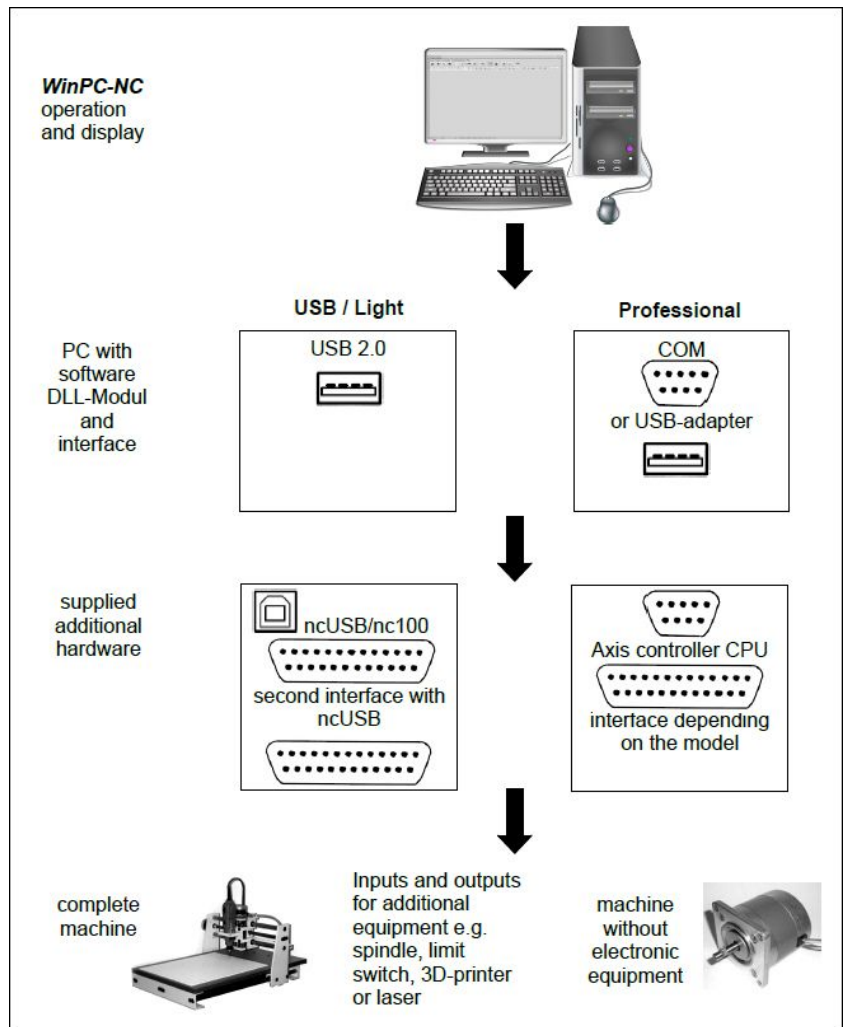
**WinPC-NC Starter**  
**WinPC-NC USB Light**  
**WinPC-NC USB**  
**WinPC-NC Professional**

### The basic principle of WinPC-NC

Each version of **WinPC-NC** uses the same operation mode. Control of drivers is made by identical terminals or pin layout. Upgrades and changing from one version to another can easily be effected without any trouble.

If you intend to construct a machine by yourself, we also provide stepper motor cards and drivers as well as a complete control device for various power classes. The same applies to modifications of installation kits.

For further information please contact us at [info@lewetz.de](mailto:info@lewetz.de).



# Benefits by using WinPC-NC

## Various versions

Differences concerning the individual versions depend on the specific features, number of possible axes, input and output factors as well as on delivered hardware. A brief description concerning the various versions is given later on.

## Machine control and additional components

Each version of **WinPC-NC** displays clock and directions signals. Additional input and output signals are also available, which are always issued by 25-pin LPT compatible connector upon the additional hardware or the PC. The signal level is conform to the standard 5V-TTL.

The interface structure is the same with all versions. Thus it is easy to change soft- and hardware as required.

## Import of many NC file formats

Each version of **WinPC-NC** is able to import, display and retract drawing information in HPGL, DXF 2D (R12, R14), drilling data and EPS/AI (V3, V8).

**WinPC-NC Economy, USB and Professional** are able to understand some 3D formats up to 4 axes as DIN/ISO, G-Codes, Multicam and ISEL-NCP.

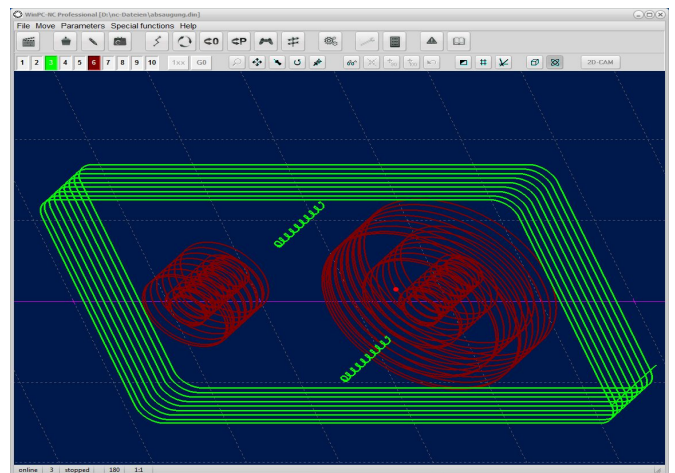
## Intelligent look-ahead system

**WinPC-NC** is designed as a real contouring system which always determines and sets the optimum speed by efficient and powerful look-ahead functions.

During an automatic job the machine runs uniformly by using the best possible speed. There is no break and travelling is optimally in conformity with the following contour.

## Graphical interface

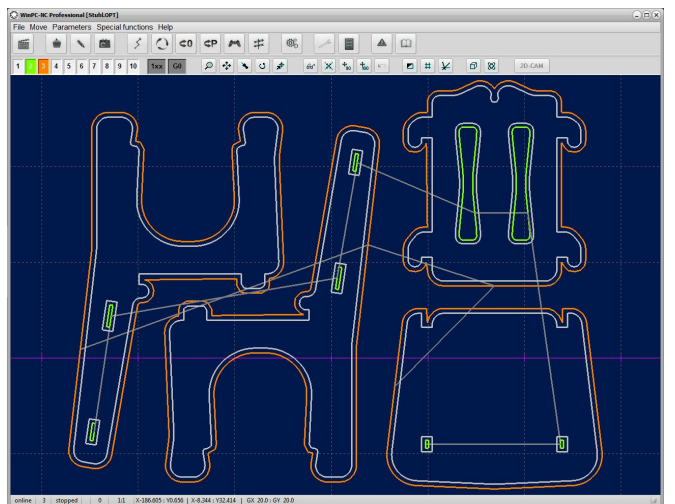
An integrated graphical interface which is suitable for 3D provides the ideal basis for machining 2,5 and 3D tasks. For a better and clear presentation the current machine position is directly displayed in real time during the complete job execution.



Via data some functions can be activated, e.g. hide or display individual tools or levels, positioning the tool as required and of course the tool can be zoomed and rotate in 3D for checking purposes.

## 2D CAM functions

Each version of **WinPC-NC** is equipped with 2D CAM function. Thus it is easy to execute tool diameter compensation, tool assignment and optimization of unproductive movements directly in the program.

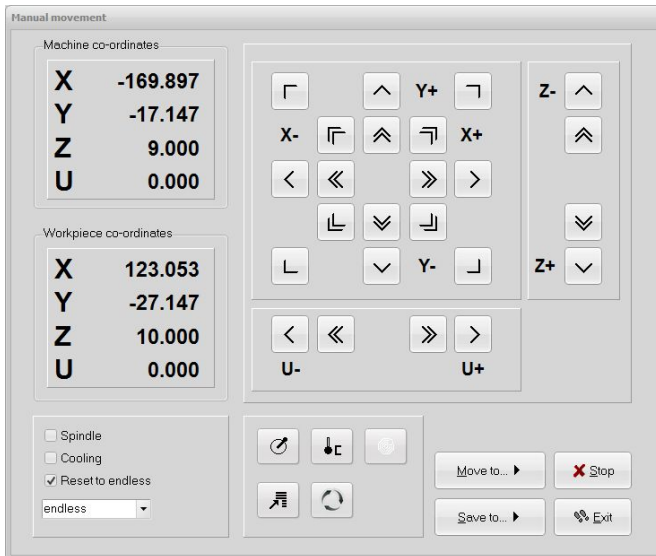


## Userfriendly machine operation

The various functions **in WinPC-NC** provide full control of the connected machine. JOG move is made in exact steps by keyboard, mousebuttons, joystick, 3D-mouse or hand-wheel.



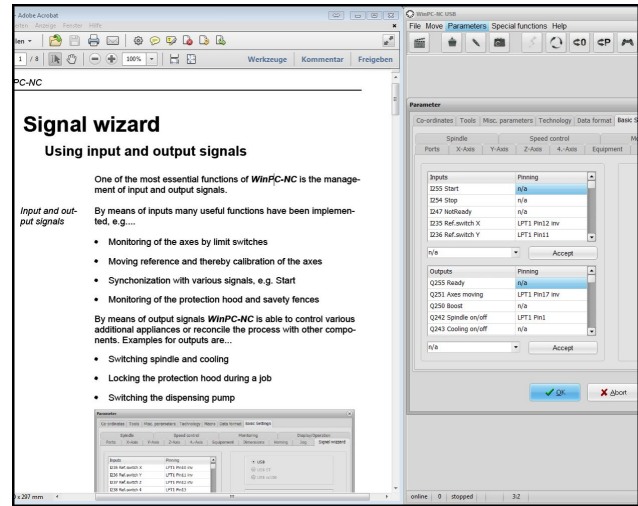
By using various test functions, parameters can be optimized, axis settings can be tuned or inputs and outputs can be checked.



## Intuitive help

**WinPC-NC** provides intuitive and customized help functions for a maximum of operational comfort. Depending on the activated pages or windows, the correct help function is always displayed for receiving a speedy and suitable solution.

The help function is upgraded with each new version and it is kept up to date on the latest technology. Furthermore you always receive our actual manual as pdf file which can easily be called up and displayed in the program.



## Adjustable layout

As from the version **WinPC-NC 3.0** it is as easy as possible for the user to create or select the required design or color by special conceived templates.

In the current version we focused on simplifying the parameter structure and grouped functions and components. This guarantees a better overview and facilitates the setup procedure.

Storable and loadable profiles are very useful for a quick changeover from one application to another one. The same applies to the machining of various materials with individual tools.

## Possible and realized technologies

- 2D and 3D milling with 3 or 4 axes
- Circular engraving of cylindrical objects
- Tangential cut by circular blades or oscillating knives
- Dispensing with special functions
- Digitizing of uneven surfaces
- Foil cutting with swivel knife
- Laser cutting and engraving
- Milling and drilling prototype circuit boards
- 3D printing with suitable print head
- Cam position for measuring setup
- Oxy and plasma cutting
- and much more besides...

## **WinPC-NC Starter and USB full-version for Stepcraft machines**

Unlike other versions, this software can only be acquired in combination with a machine provided by the company **Stepcraft** and is an addition for free, conceived for first steps and testing the machine setup. By two different tools it is possible to engrave tags, milling, PCB drilling and milling dimensional objects. The size of the objects is unlimited.

Upgrading **WinPC-NC Starter** to **WinPC-NC USB** full version means obtaining a CNC software of top quality. The only difference to a standard software is the used USB hardware.



**ncUSB**  
module



**nc100**  
Connector

## **WinPC-NC USB and USB Light**

Both versions are delivered with an additional hardware and a corresponding USB cable for PC connection. Our USB version is completely compatible to 3D and can control up to 4 axes. It is delivered together with our ncUSB module and has two LPT compatible outputs for connecting clock/direction and additional signals.

By using a supplementary hardware these versions are very stable and mostly independent of background processes in Windows, even with a reachable step rate up to 80kHz.

**WinPC-NC USB Light** is delivered together with our nc100 connector and is equipped with a LPT compatible interface. As a version which is less complex than the USB version, it can control up to 3 axes and is only compatible to 2D and 2.5D tasks. Nevertheless, an additional CAM software can be used for more comfort and thus ensures an unlimited operation.

**WinPC-NC USB Light** can easily be upgraded to **WinPC-NC USB** full version, with or without replacing any kind of hardware.

## **WinPC-NC Professional**

**WinPC-NC Professional** and **CNCCONS** controller is our solution on the subject axis controller. It meets the highest demands of all customers, both in the industrial sector or simply for ambitious projects.

By outsourcing all computationally intensive operations to the efficient CPU of the axis controller with realtime CNC operation system, the machine runs without any trouble, stable and constant and completely independent of background processes in Windows. Thus it is possible to execute additional tasks and to prepare the next drawing in CAD/CAM during the job process.



## Compatible to Windows

According to customers requirements we offer individual versions for specific applications including technical upgrades of our axis controller. For example, it is possible to upgrade digital in-/outputs with 24V logic or 0-10V analogous output for speed and power control. Even many functions concerning safety aspects, e.g. protection hood, liquid level, pressure air, positions and external components are constantly monitored and equipped with definable warning signals.

For the axis controller of **WinPC-NC Professional** we offer an API or program interface which is available for all users who intend to control the axes and machine movements with own host software. The clear text commands can easily be generated or transmitted by different software or PLC controllers. This is used by many clients for special handling or measuring tasks. The detailed programming manual can be provided on request.

Besides our standard versions we also provide complete solutions with motor power stages in casings. The advantage is a smooth and immediate interaction of all components. In this way no complex setup procedure or signal setting is required.

Actually our **WinPC-NC** versions require the following operating systems:

Version	USB Light Starter	Professional
Windows 95 / 98		x
2000		x
XP (32-Bit)	x	x
XP (64-Bit)	x	x
Vista (32-Bit)	x	x
Vista (64-Bit)	x	x
7 (32-Bit)	x	x
7 (64-Bit)	x	x
8 / 8.1 (32-Bit)	x	x
8 / 8.1 (64-Bit)	x	x
10 (32-Bit)	x	x
10 (64-Bit)	x	x

# Function matrix

The following table shows a detailed function comparison of the individual variants.

	<b>Starter</b>	<b>USBLight</b>	<b>USB</b>	<b>Profi</b>
<b>Input/output signals and machine controlling</b>				
Controlling the CNC machine	USB 2.0 machine	USB 2.0 conector	USB 2.0 small Box	Controller RS232/USB
Input signals for limit and homing switches	5	5	10	up to 256
Additional outputs for drill spindle, cooling, dispensing a.m.	2	4	8	up to 256
Motor currency by running signal, boost signal	-	√ / -	√ / -	√ / √
Inputs/outputs individual definable and assingable	-	√	√	√
Industrial conform 24V signals, optional	-	-	-	√
Optional converters and adapters for clock/direction signals	-	-	-	√
Analog output 0-10V for spindle speed	PWM	-	8Bit - PWM	0-10V PWM
Ready signal for safety control, toggle, chargepump 12.5kHz	√	√	√	√
Realtime ability with Windows	best	best	best	best
Dependant from background processes in Windows	no	no	no	no
Maximum step rate (kHz)	Mach.dep.	20	80	40
Controlled axes	3 (XYZ)	3 (XYZ)	4 (XYZ TABC)	4 (XYZ TABCUVW)
<b>Hardware and operating system requirements</b>				
Runs with Windows versions	XP – Win10	XP - Win10	XP - Win10	W95-Win10
Intel/AMD processors and min. clock frequency	>2GHz	>2GHz	>2GHz	>500MHz
Peripheral ports (onboard or ISA/PCI board)	USB 2.0	USB 2.0	USB 2.0	RS232/USB
<b>Parameter settings, adjustments to machine</b>				
Individual axes resolutions, steps and distance/revolution	-	√	√	√
Speeds, acceleration and deceleration ramps for each axis	√ / -	√ / √	√ / √	√ / √
Testing functions for mechanics and switches, motor tuning	- / - / √	√ / √ / √	√ / √ / √	√ / √ / √
Backlash compensation	√	√	√	√
Synchronisation to different input signals	-	-	√	√
Several predefined ramp profiles	-	-	√	√
<b>Data formats and import filters</b>				
HPGL, PLT	√	√	√	√
DXF (only 2D)	√	√	√	√
postscript, vector informations, EPS/AI	√	√	√	√
Common drilling formats, Excellon, Sieb&Meyer	√	√	√	√
G codes with subroutines and abs./rel. movements	-	-	√	√
Multicam 2D and 3D, extended HPGL	-	-	√	√
ISEL NCP	-	-	√	√
<b>Program functions</b>				
CAM functions for all 2D file formats (tool diameter compensation)	√	√	√	√
Intelligent lookahead for smooth movements w/o interruption	√	√	√	√
Automatic reload for NC file at modifications	√	√	√	√
Contour smoothing function for perfect edges	√	√	√	√
Tool lift for Z axis, savety clearance for rapid movements	√	√	√	√
Multi lingual, selectable after installation, 20 most important	√	√	√	√
Graphical display, zooming, turning and mirroring of data	√	√	√	√
Works with NC files in unlimited size	√	√	√	√
Machine positioning simply to a mouse click	√	√	√	√
Manual movements step by step or per defined distance	√	√	√	√
File origin and parking positions definable by teachin	√	√	√	√
Max. tools and different tool parameters	2 / √	10 / √	10 / √	10 / √
Automatic identification of NC data	√	√	√	√

