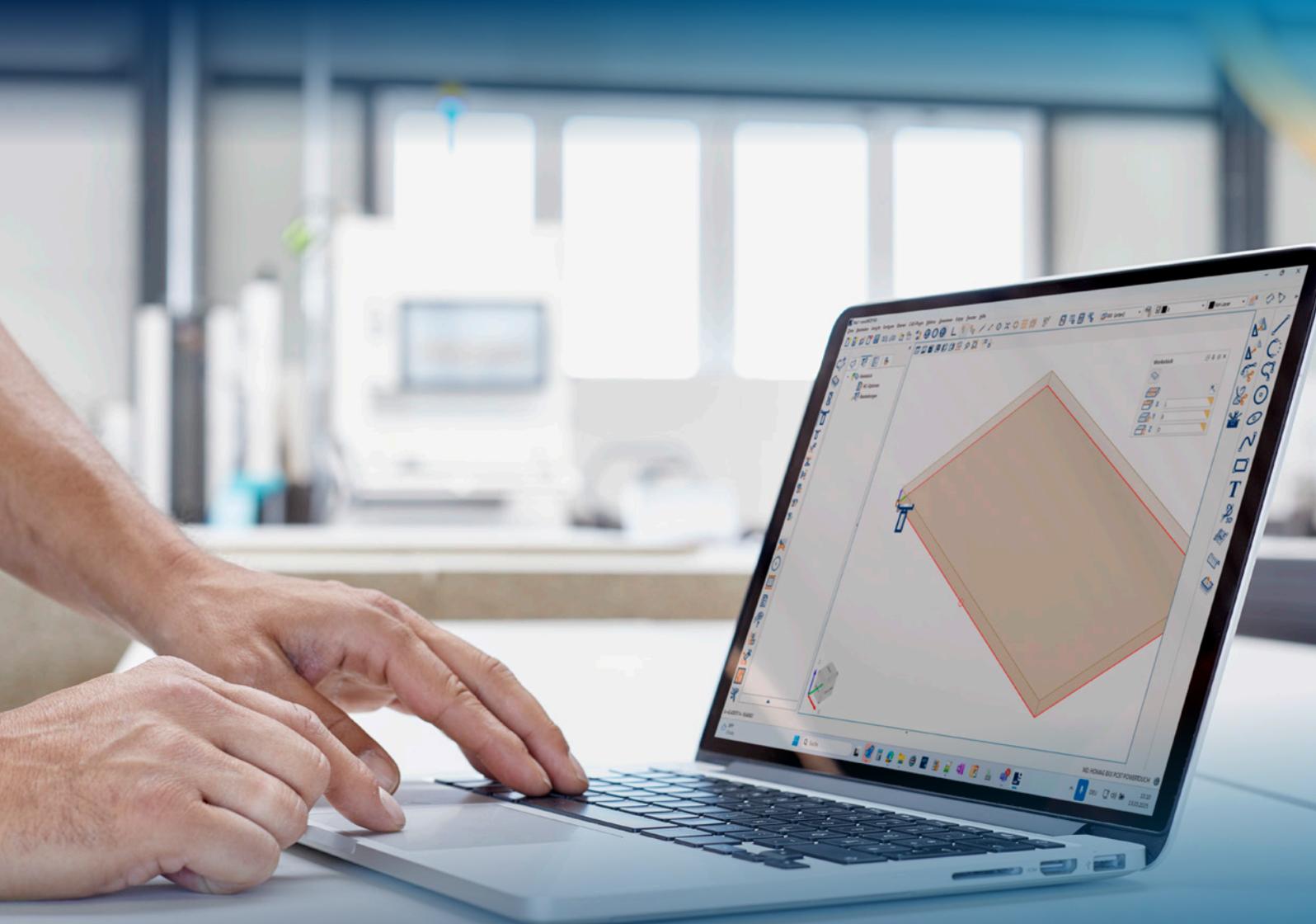


CNC software from HOMAG.

Keep everything under control with our CNC software.

CNC machines | woodWOP | Simulation | Optimization.





Integrated software.
Intuitive operation.
Individual modules.

Choose from an extensive array of software modules to create the optimum configuration to suit your needs. A version can be found on our website: www.homag.com

YOUR SOLUTION

CONTENTS

- 05 woodWOP
- 14 woodWOP DXF import
- 15 Simulation and time calculation
- 20 Nesting software
- 22 CNC edgeband management
- 23 woodWindows
- 24 powerTouch
- 25 powerControl PC87
- 26 ToolManager
- 27 MMR
- 28 License protection
- 29 SmartWOP
- 30 HOMAG iX
- 32 Apps & digital assistants
- 34 Life Cycle Services

woodWOP

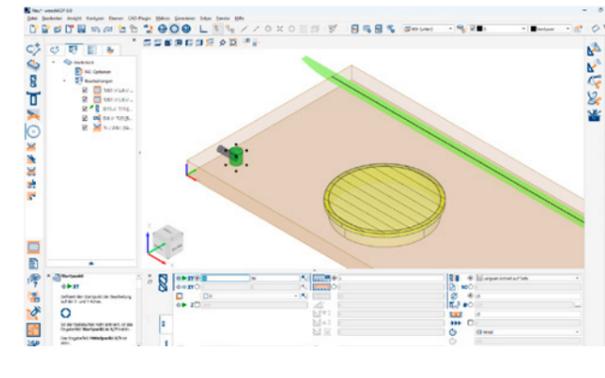
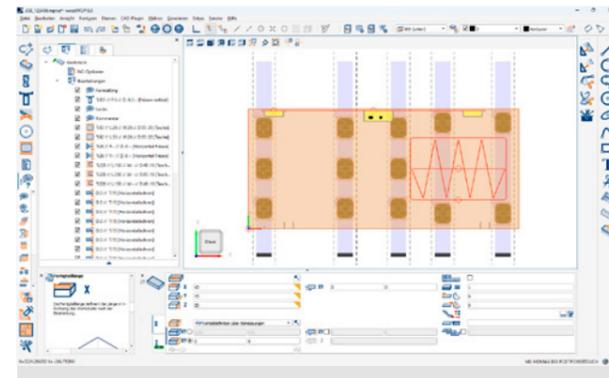
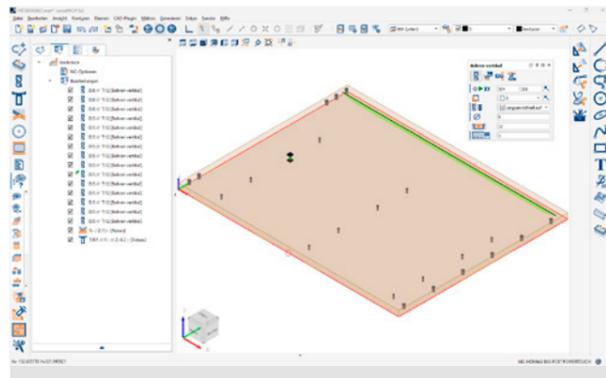
The CNC programming system from HOMAG

woodWOP is the CNC programming system from HOMAG. The innovative user interface centers on the large graphic area used for displaying workpieces in 3D. The processing diameters can be entered and realistically displayed in the graphic to program trimming and drilling operations and saw cuts quickly and simply. This ensures optimum programming

reliability and ongoing inspection throughout the programming process. Largest global forum on woodWOP:

forum.homag.com

Free woodWOP demo version and woodWOP components in the download area: www.homag.com

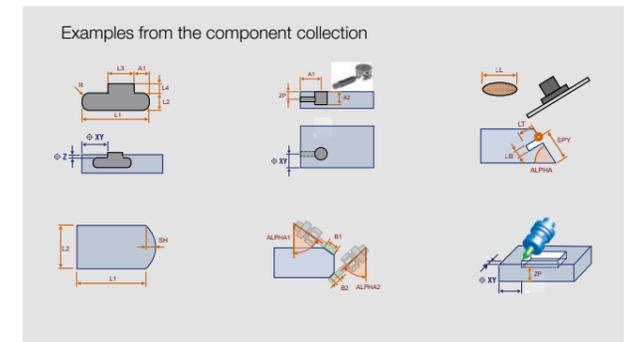


Components

The components can be used to combine and save processing steps, such as fixture processing, in individual modules. These modules can be used easily and flexibly in other woodWOP programs. This saves you time during work preparation and production.

Basic functions

Numerous standard processing steps such as bore holes, saw grooves and pocket routings enable fast and reliable programming.



BENEFITS:

- Increased programming reliability through 3D graphics of workpieces, processing and clamping equipment
- Increased user friendliness thanks to a modern user interface design, e.g. freely adjustable windows, multi-screen capability, pictorial input screens, help images, and much more.
- Fast programming with the favorites menu and drag&drop for processing steps

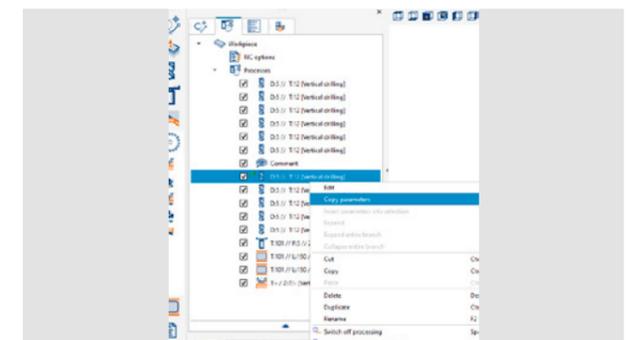
Variable programming

Parametric programs can be created quickly and easily using variables. The variety of functions (conditions, formulas, variable types, etc.) offers a solution for every application.

Multiple selection and mass changes of parameter values

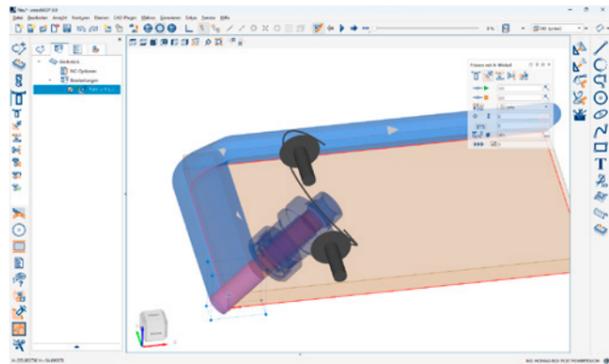
Selection of macros for deleting, copying, duplicating and moving. Change parameter values of several macros simultaneously.

Name	Wert	Kommentar
Maße // Dimensions		
L	600	Länge in X // Length in X
B	400	Breite in Y // Width in Y
D	800	Dicke in Z // Thickness in Z
Werkzeuge // Tools		
T_Format	101	Werkzeug Formatieren // Tool format...
T_Saage	141	Werkzeug Sägenut // Tool grooving
Sonstiges // Misc		
Bohr	<input checked="" type="checkbox"/>	Bohrung Ja/Nein // Drill yes/no
Tasche_Tiefe	10	Taschentiefe // Pocket depth



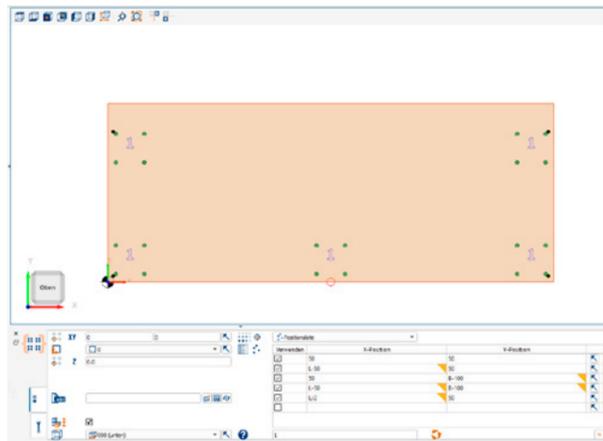
Adjusting axis programming

The fifth axis can easily be programmed as an adjusting axis in woodWOP. Tool preview and preview of the machining paths make programming easier and offer the programmer reliability.



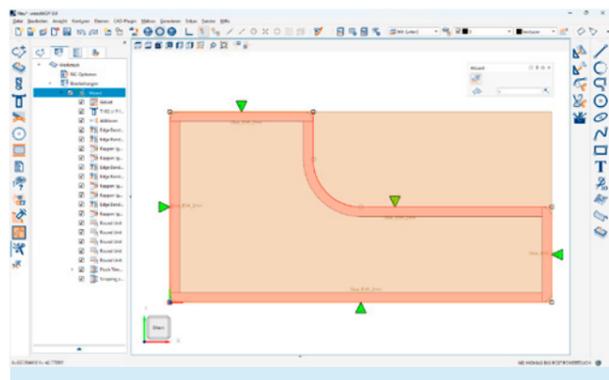
Block macro

The components or processing steps contained in the block macro can be multiplied in several ways: X/Y grid, position list, uneven row and circular row.



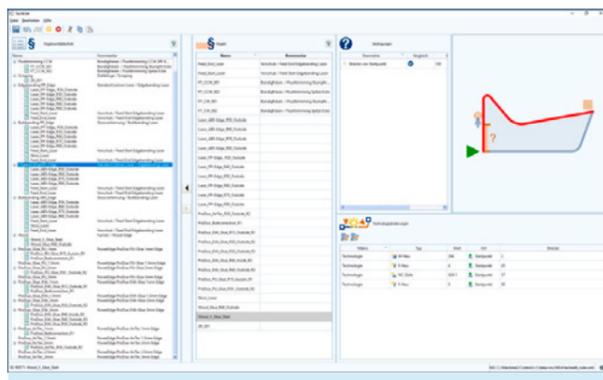
woodWOP Wizard

With the woodWOP Wizard, all processing steps for edge band application are automatically generated at the push of a button. Depending on a contour, an edging proposal is generated, which can be edited and adapted afterward. The result is displayed directly in woodWOP.



Technology database

Technical parameters are automatically changed and the woodWOP program is automatically adapted depending on the workpiece contour, e.g. 2-mm PVC edge: If the radius is smaller than 30 mm, reduce the feed and switch on the hot nozzle.



woodWOP CAD plugin

Integrated 2D CAD functions

The CAD plugin makes the creation of contour definitions quick and easy. Draw lines, arcs, circles, ellipses and splines interactively. Numerous change functions such as crop,

extend, round, chamfer and mirror are also available. Contour tracing is used to combine created drawing elements into a contour definition.

Drawing

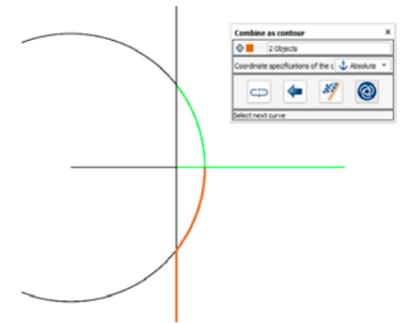
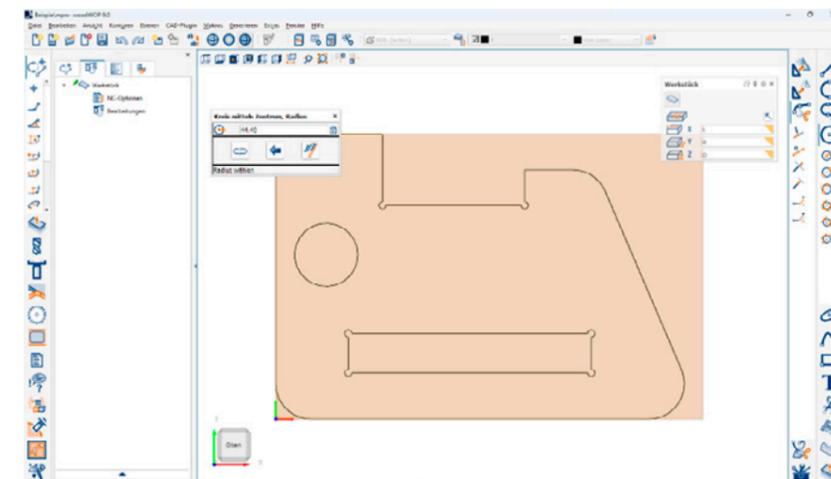
- Lines, arches, circles
- Ellipses, arches
- Splines
- Rectangle, n-gon
- Text

Processing

- Move, rotate, mirror
- Scaling
- Copy multiple times
- Push, rotate
- Trim, extend
- Round, chamfer
- Split, offset

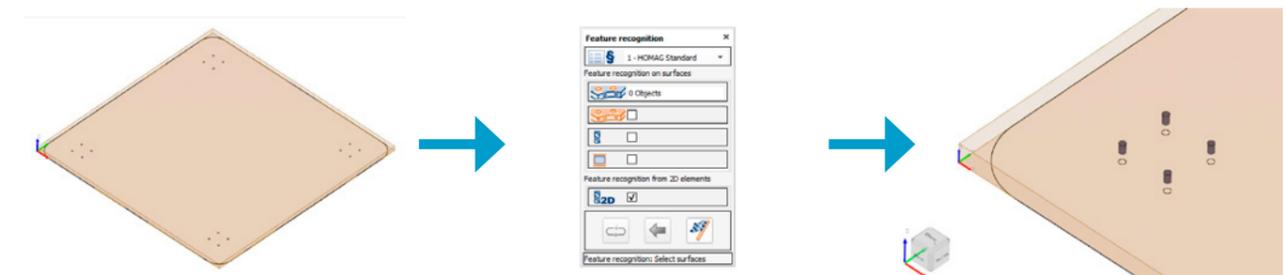
Creation of contour elements

By selecting a start point and specifying a direction, individual CAD elements are automatically connected to form a contiguous woodWOP contour definition. At intersections, the operator decides the further course by interactively selecting the elements in the graphic.



DXF import

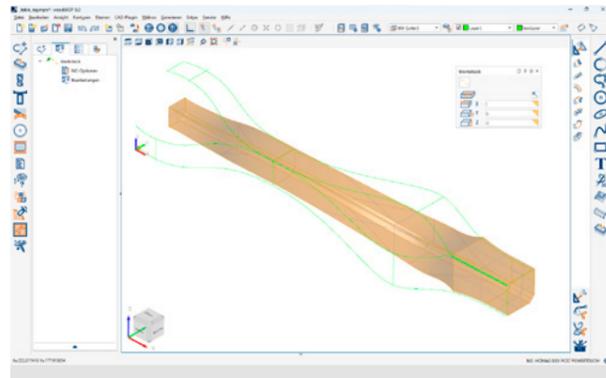
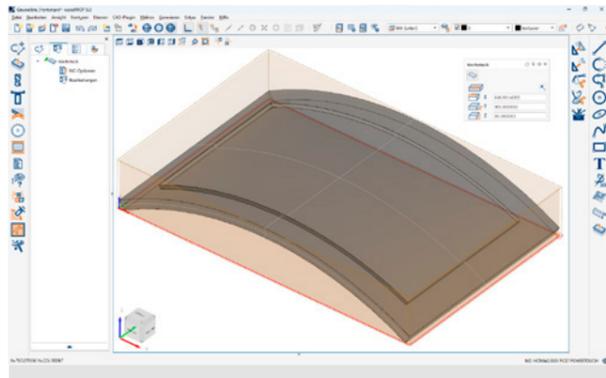
Existing CAD drawings in DXF format can be input and edited directly. No special layer assignment is required. The 2D feature recognition automatically converts circles into drilling macros.



woodWOP CAD plugin

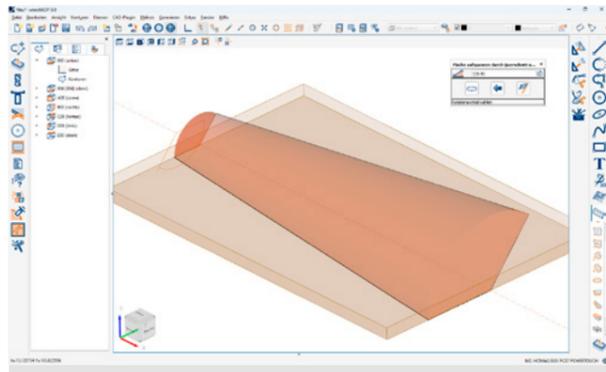
Direct 3D design

Design options are extended with 3D CAD functions. The operator can easily create 3D surfaces or open finished 3D models directly in woodWOP.



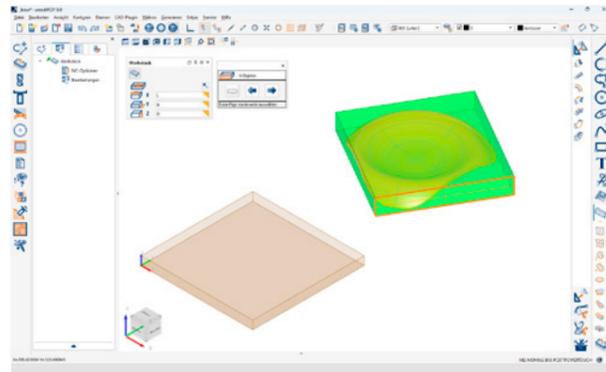
Design options

Design of surfaces by means of cross-sections, guide curves, boundary lines, rotation, extrusion, etc.



Import of 3D models

3D CAD drawings can be imported directly into woodWOP in the following standard formats: *.igs, *.stp, *.dxf (3D), *.stl, *.sat, *.wrl.



3D feature recognition of processing operations

- Automatic detection of bore holes, pockets and saw grooves in a 3D model
- Automatic creation of woodWOP macros
- Using further sets of rules, woodWOP components can also be added automatically



BENEFITS:

- CAD functions integrated directly into the woodWOP interface
- Intuitive operation and quick familiarization through a standardized look and feel
- Support in the design of step-by-step instructions

woodWOP CAM plugin Basic

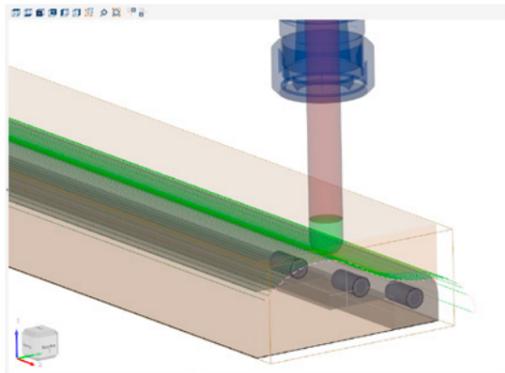
Processing of 3D surfaces with three axes

The woodWOP CAM plugin Basic is used to expand woodWOP with a wide range of options. The CAM plugin Basic enables surface-based programming. The milling paths are calculated automatically based on the defined parameters. The woodWOP CAM plugin Basic enhances woodWOP,

creating a real CAD/CAM system that lets you process 3D surfaces with three axes. With the CAM plugin Basic, the tools always work in a vertical position.

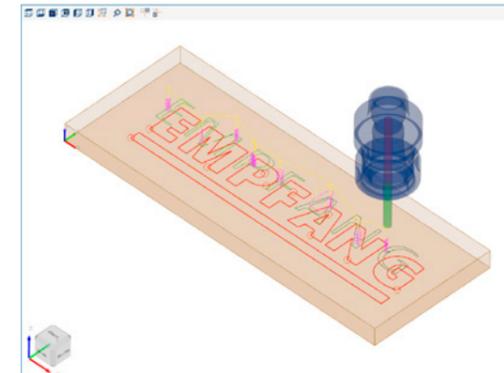
Three-axis processing operations

The roughing down and finishing processing macros make the programming of surface processing operations very easy. In conjunction with the appropriate tools, you can even process more complex curved surfaces with three axes. There are special processing macros for processing STL files.



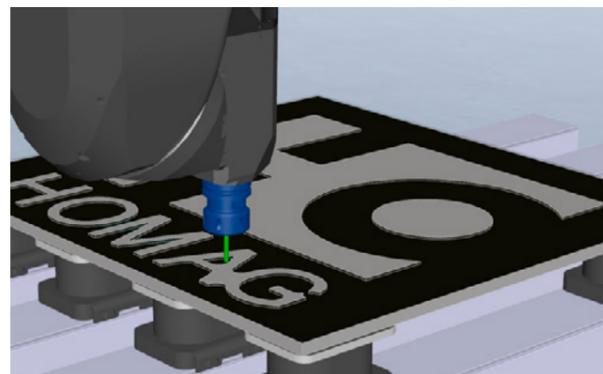
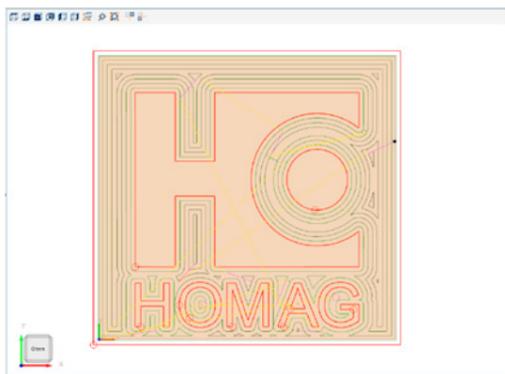
Engraving

Texts can be programmed very easily and quickly with the CAM plugin Basic



Pocket trimming with islands

Logos can be programmed very easily and quickly with the CAM plugin Basic.



woodWOP CAM plugin Professional

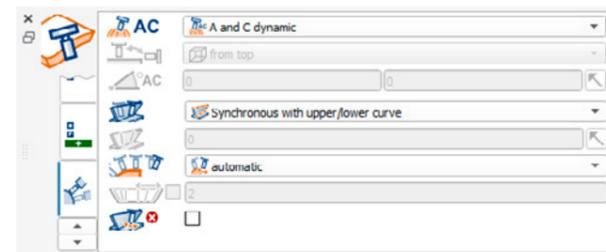
Processing of 3D surfaces with 3/4/5 axes

The woodWOP CAM plugin Professional is used to expand woodWOP with a wide range of options. The CAM plugin Professional enables surface-based programming. The milling paths are calculated automatically based on the

defined parameters. The woodWOP CAM plugin Professional enhances woodWOP, creating a real CAD/CAM system that lets you process 3D surfaces with interpolation of three, four and five axes.

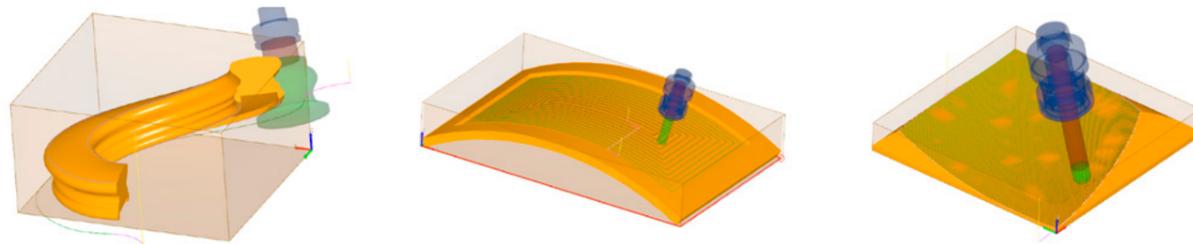
Up to five-axis processing

With the CAM plugin Professional, the orientation and positioning of the tools can be programmed individually and to match the workpiece during roughing down, finishing, circumferential milling, 3D curve milling, etc.



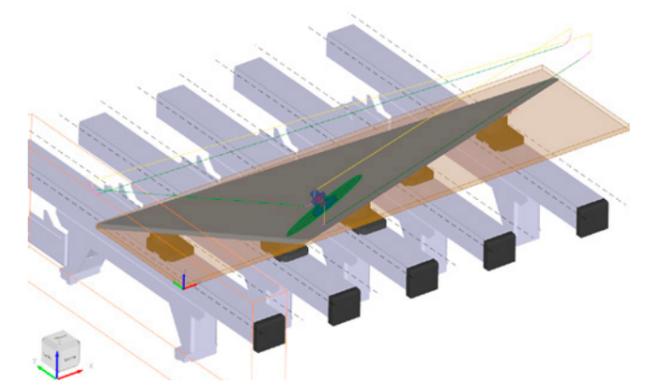
Processing of complex workpieces

Whether you are constructing a mold, prototype or one-off special order: the CAM plugin Professional enables you to program the most complex workpieces.



Sawing on surfaces

The "Sawing on surfaces" macro is available especially for sawing miter cuts on a 3D model. The CAM plugin automatically calculates the saw cuts including angles and approach and withdrawal cycles for one or more cuts simultaneously.



BENEFITS:

- CAD/CAM system fully integrated in woodWOP
- Processing of CAD data in standard exchange formats for the market: STEP, IGS, 3D-DXF, STL, SAT and WRL
- Generation of the milling paths of the three-axis to the interpolating five-axis processing for roughing down, finishing and formatting of 3D objects
- Automatic sawing on surfaces and automatic detection of bore holes in the 3D model

woodWOP DXF import

Directly from the CAD drawing to production

The widely used, independent DXF format for the exchange of CAD drawings is used as the basis for the generation of woodWOP programs. Once workpieces have been drawn,

they can be imported directly into woodWOP and transferred to the machine.

Preparation of the DXF file

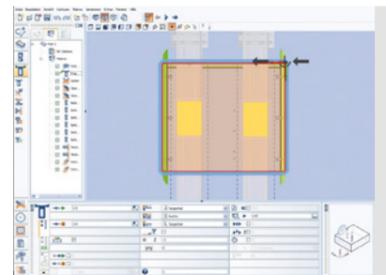
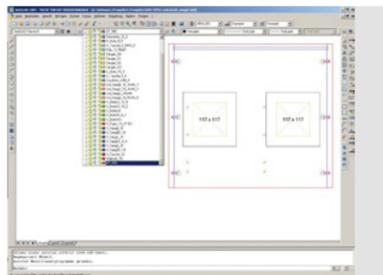
The individual layers (levels) of the drawings contain all relevant information for processing.

Conversion

With the aid of pre-set rules, all drawing elements from the DXF files can be converted into processing steps.

Output in woodWOP

The processes are then generated automatically when the data is imported.

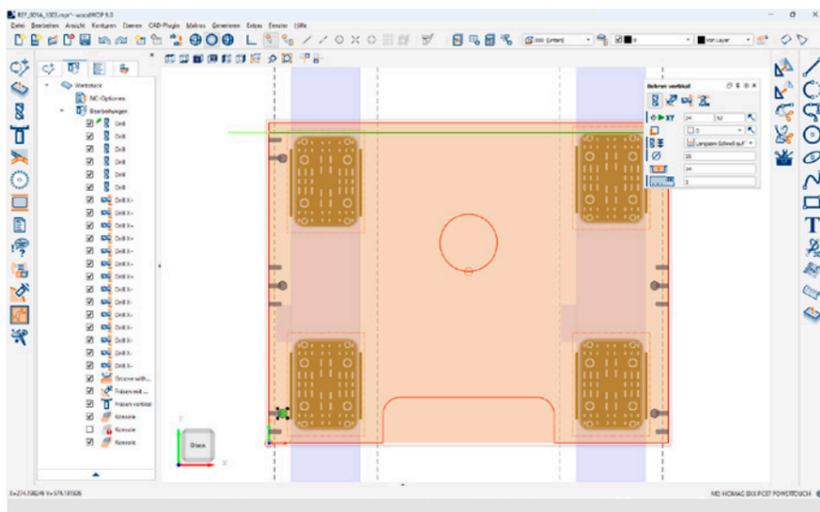


DXF-Import Professional including batch processing

Special applications can be expanded, and conversion rules can be flexibly expanded as required for each machining type. As a result, almost all possibilities can be covered by woodWOP. Batch processing can be used to convert any number of DXF files with a start process into woodWOP programs.

BENEFITS:

- Programming the workpiece all at once
- Direct path from the drawing to the machine
- No post-processing in woodWOP necessary



Simulation and time calculation

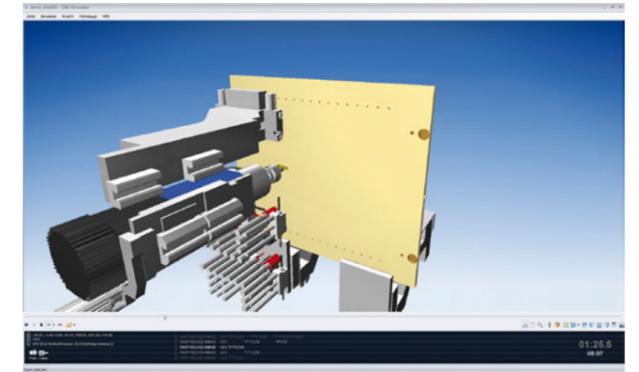
Software for the simulation of CNC programs

The program for simulation and time calculation makes it possible to simulate and calculate processing steps in the office and to check them for potential errors.

3D CNC simulator

An automatic routine determines the machine configuration and tools fitted. The positions of the clamping equipment in the NC program are displayed and checked for collisions during throughfeed processes.

SERIES: DRILLTEQ V-200 and H-600



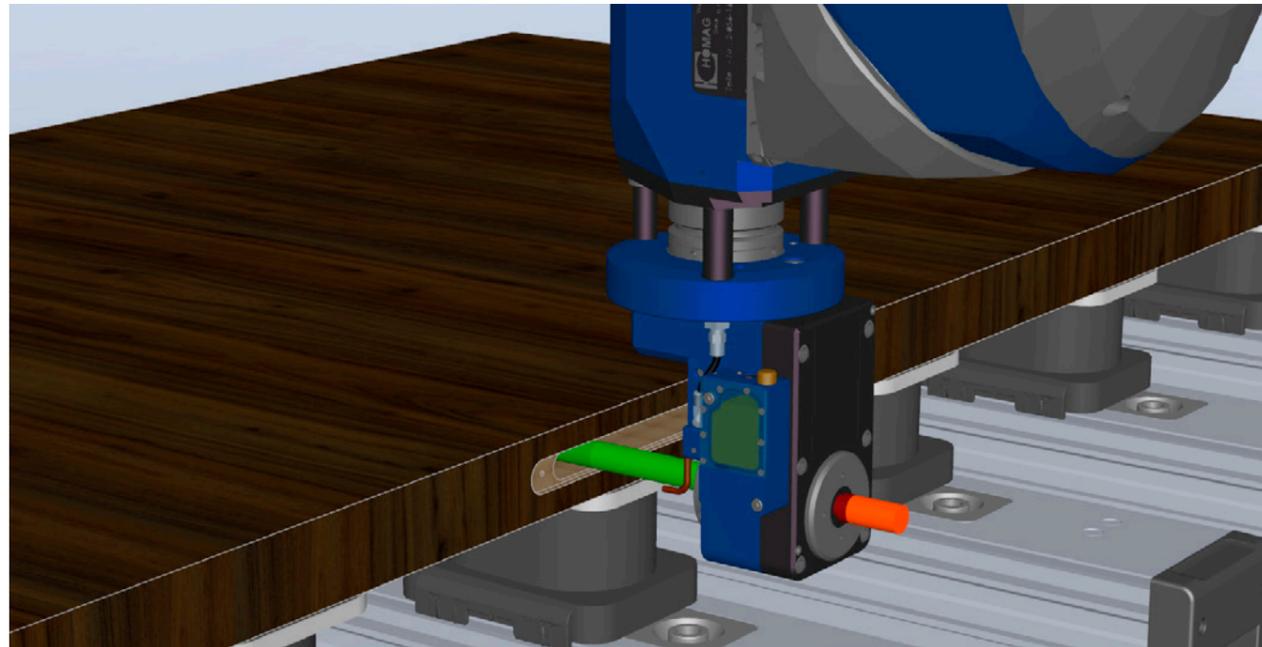
woodMotion

woodMotion simulates the work steps on the office PC or on the machine, providing graphic representations of the processing steps on the workpiece. This enables the programmer to check every processing step and to detect any potential collisions between tools and clamping equipment in advance. The exact processing time is also calculated. The simulation is based on a virtual machine with a real CNC core, which is controlled with the data of the respective customer machine.

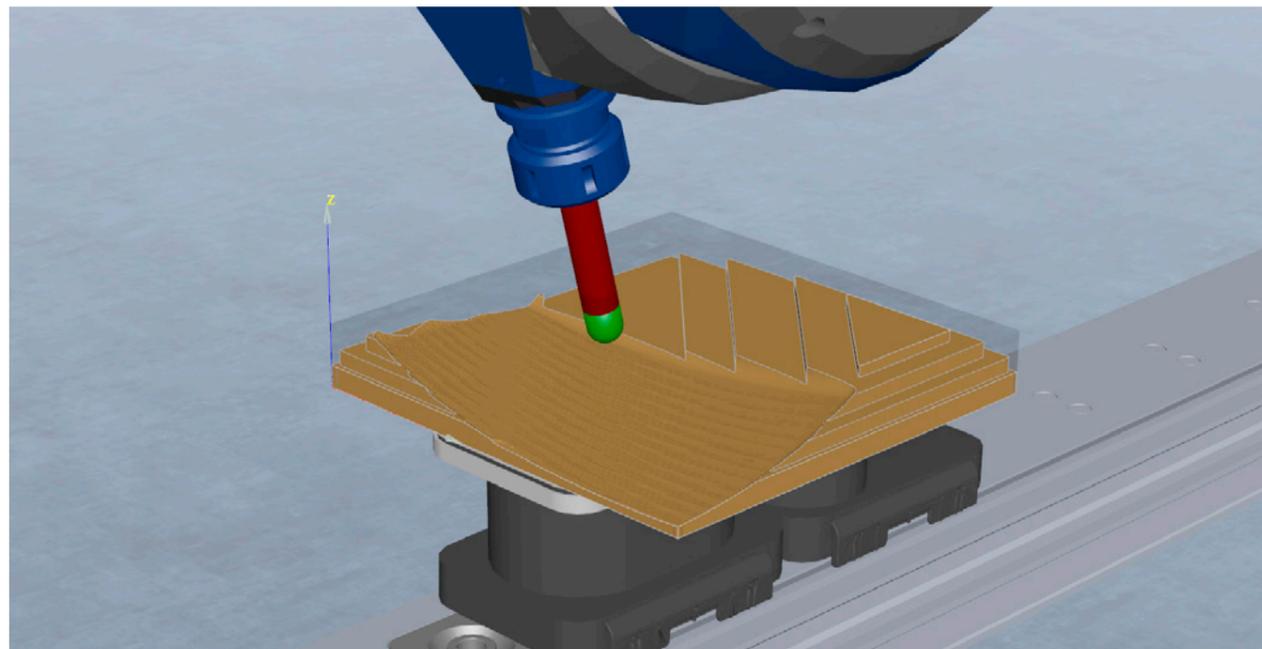
SERIES: DRILLTEQ V-310 | CENTATEQ N-210, N-510 and N-600 | CENTATEQ P-110, P-210, P/E-310, P/E-510, P-610 | CENTATEQ T-300, T-600, T-700 & E-700



Simulation on the machine PC



Display of units

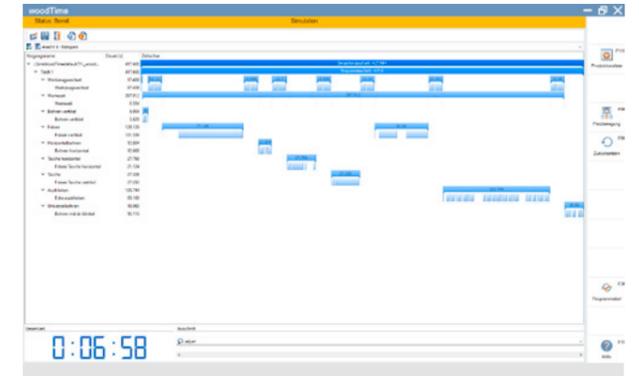


High level of detail, e.g. for material removal

Software for time calculation

woodTime

During the time calculation in woodTime, the processing steps and tool inserts are shown in detail and broken down in Gantt charts. This enables a precise analysis of the woodWOP program to identify potential for optimization. In woodTime, you can also determine the processing time of a production list.



CNC test suite

Based on woodTime or woodMotion, the CNC test suite enables you to check a complete batch of woodWOP programs, e.g. daily or weekly production. Early error detection and elimination prevent subsequent machine standstills. The user can set filters in the overview with the results and thus quickly determine faulty programs. The exact cause of the error is displayed for each faulty program. The results can be shared with external applications via CSV export.

Test ID	Program Name	Status	Start Time	End Time	Duration	Errors
1	woodWOP1	Pass	08:00:00	08:00:30	00:30	0
2	woodWOP2	Pass	08:00:30	08:01:00	00:30	0
3	woodWOP3	Fail	08:01:00	08:01:30	00:30	1
4	woodWOP4	Pass	08:01:30	08:02:00	00:30	0
5	woodWOP5	Fail	08:02:00	08:02:30	00:30	1
6	woodWOP6	Pass	08:02:30	08:03:00	00:30	0
7	woodWOP7	Pass	08:03:00	08:03:30	00:30	0
8	woodWOP8	Fail	08:03:30	08:04:00	00:30	1
9	woodWOP9	Pass	08:04:00	08:04:30	00:30	0
10	woodWOP10	Pass	08:04:30	08:05:00	00:30	0

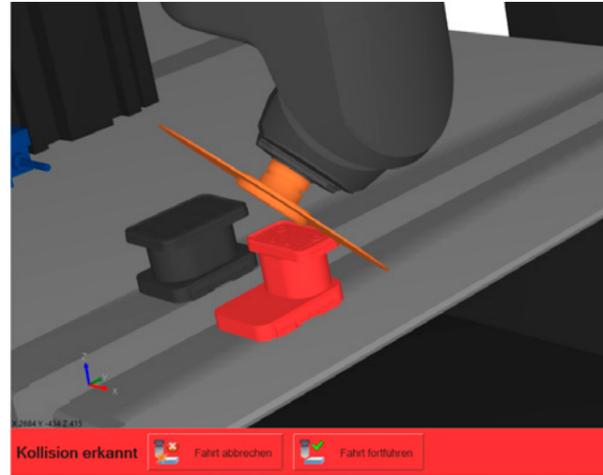


collisionControl

Collision monitoring on the machine

Increased process reliability

collisionControl increases process reliability by monitoring potential collisions of machine components during processing. In the event of an imminent crash situation, collisionControl stops the machine automatically. This ensures that expensive programming errors can be avoided at the last moment. All relevant machine components and tools are taken into account.

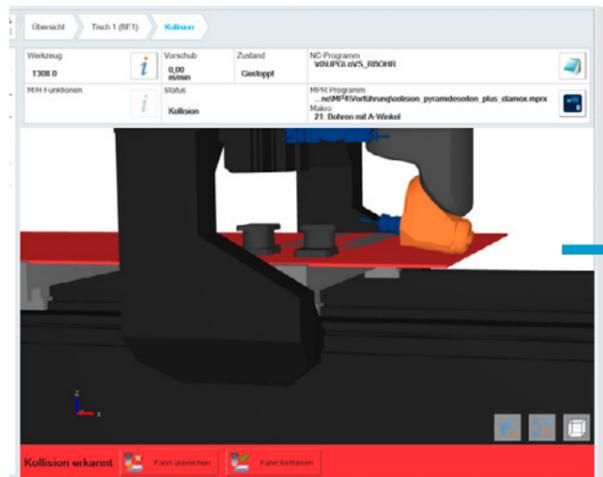


Collision detection between saw blade and vacuum suction unit

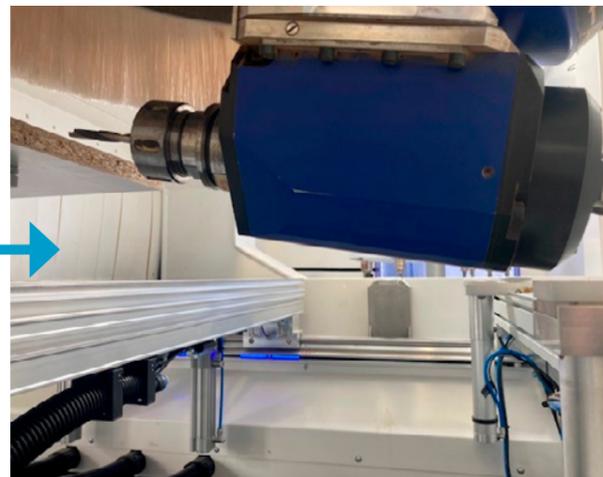


Collision detection on a DRILLTEQ V-310

Application example: collision detection between processing unit and table level



View in collisionControl



View on the machine



Nesting software

Optimization solutions for the nesting process

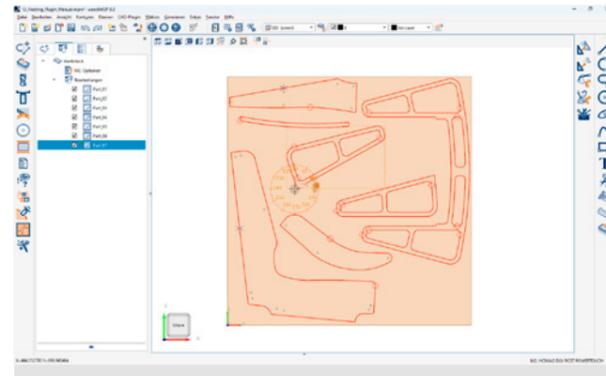
In the case of nesting technology, workpieces are "nested" to achieve a better material yield by optimizing cuts. Especially

with a large variety of shaped parts, nesting enables high material saving potential.

woodWOP Nesting plugin

The woodWOP nesting plugin enables you to manually nest several woodWOP programs into a nest. The functions are integrated in the woodWOP interface: access from workpiece variables, definition of edge distance and minimum part distance, formatting macro with different nesting strategies, etc.

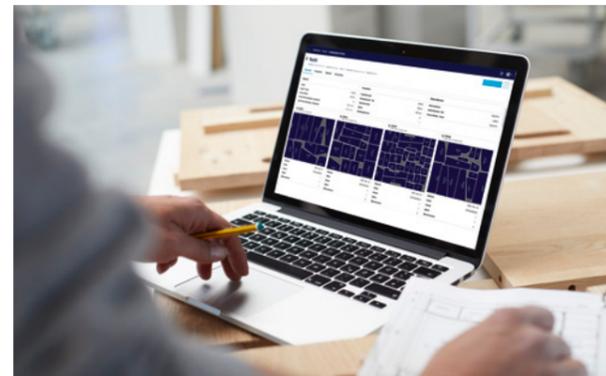
Automatic pre-positioning of single parts and automatic workpiece docking for rectangular workpieces simplify manual nesting in everyday work.



intelliDivide Nesting

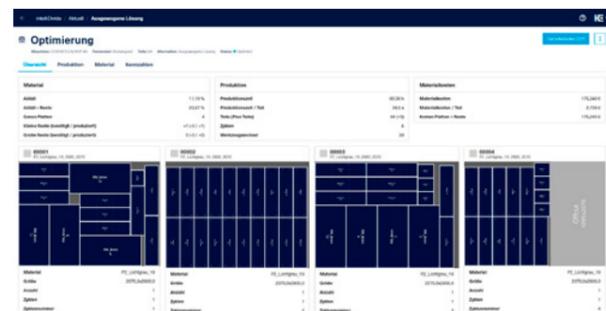
- Web-based nesting software
- Rectangular and free-form part optimization
- Intelligent import from CSV, XLS(X), PNX, MPR
- Part-in-part nesting
- Export function for storage control

Optionally available with expansion for label printing.



Nesting Production Set:

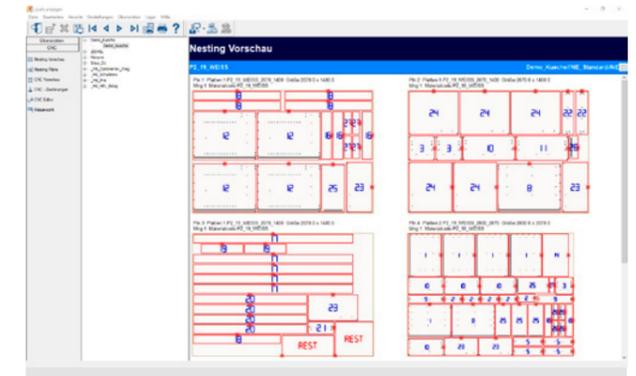
- **productionAssist Nesting** app for nesting plan selection and triggering label printing
- **materialManager** and "materialAssist" app for the management of unprocessed panels and the reuse of offcuts
- Plug & Play label printer



Cut Rite nesting

Cut Rite is used for dividing panels on saws and on nesting machines. Since the software is modular, users who already control their saw via Cut Rite can easily integrate the nesting module.

- Panel database and calculation of material costs
- Labeling in the office including layout editor
- Optionally, additional modules can be used, for example, for storage management



Edgeband management

Edge management for CNC machines with gluing

The "Edgeband Management Set" edgeband assistant helps you to keep a complete overview of all information about your edge material and your material inventory. You can find the

right edgeband quickly and easily at any time, eliminating the search for the right material.

Complete overview:

All edge information is available at a glance. The apps and the HOMAG edgeband rack offer a permanent overview of stock. The printer can also be used to create labels to identify each edge roll individually.



Easy management:

Clear management and unique identification of edges in the rack (incl. offcuts). The system documents edges that are put into and taken out of storage, indicating the storage position.

Saves time:

Reduced setup times thanks to a faster edge change and no longer having to search for edgebands.



Standardized solution:

The Edgeband Management Set is the solution for central edge management if you are using a HOMAG edge banding machine in addition to a CNC with gluing station.

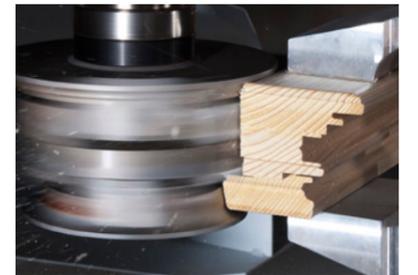
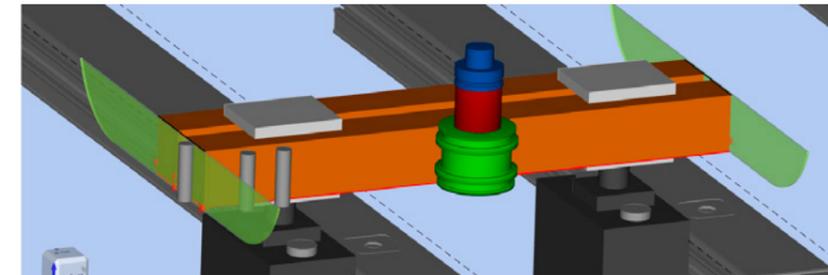
woodWindows

The quick path to CNC window production

From the MPR interface for windows to the "Professional" configuration of a complex manufacturing environment, woodWindows offers the ideal solution for every application,

as well as individual project support from HOMAG windows and software specialists:

- Project-related system integration
- Link to existing or new industry solutions
- Commissioning at HOMAG and on-site
- Custom expertise sharing
- Turnkey handover according to the defined scope of services
- Individual machine optimization
- Individual scope of services



MPR interface window	Professional
Connect industry solutions via the defined MPR format	Customer-specific programming of processing macros by HOMAG window specialists
	Connection via project file



BENEFITS:

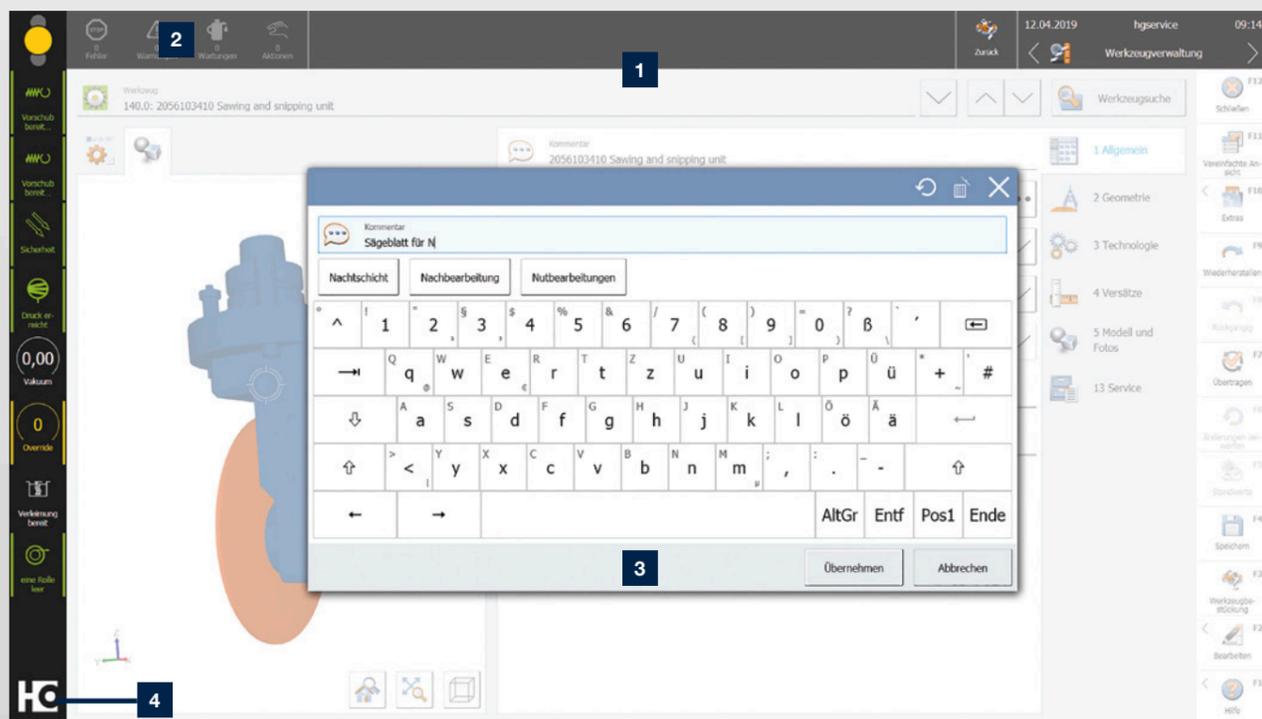
- Safety from the start thanks to a widely used system
- Minimal "plug and play" commissioning time thanks to predefined master data
- Rapid familiarization via simple processes
- Smooth handling via turnkey handover with defined interfaces

The next generation of powerTouch: powerTouch2

Faster, more comfortable, clearer: Enjoy the benefits of our further improved powerTouch user interface. We have optimized our standardized operating concept and further adapted it to our customers' requirements. Controlling your HOMAG machines is now even faster and more intuitive. The new, modern design has a clear structure. The innovative touch operation allows you to achieve the desired result easily and comfortably.

With the new powerTouch generation, you can enter information at your machine even more quickly. Compared to the previous version, you can achieve a time saving of up to 30%. This is possible thanks to new features, such as automatic word completion, a pop-up keyboard that can be kept open and Windows-like functions, such as the selection of common actions directly via the start button.

Our successful powerTouch philosophy – **standardized, simple, ergonomic, evolutionary** – consistently further developed.



1 The powerTouch2 screen is clearly structured. You can see all the important information at a glance, but you still have all the details.

3 A functional pop-up keyboard that can be kept open, including automatic word completion for faster entries (when you enter the first letters, frequently used applications are proposed and you can select them directly).

2 We have also improved the traffic light dialog further. You can now directly influence the machine's production readiness by selecting actions via the traffic light icon.

4 Enhanced "Start" menu with additional information displayed (e.g. an indication of how many messages are currently pending or status bars that show the progress of the application) and direct access to actions (e.g. confirmation of actions without having to jump to the application).

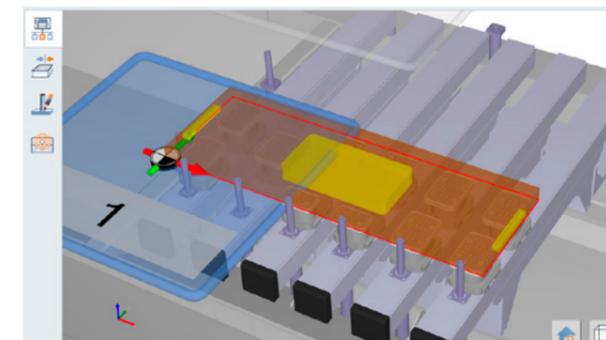
powerControl PC87 Machine control unit

Easy operation and so much more

PC87 is the latest generation of control systems for HOMAG CNC machines. It supports the machine operator with slot assignment and operation. PC87 combines a uniform operating concept across all series with the machine-specific functions that are required in everyday work.

Automatic clamping equipment recommendation:

PC87 has an automatic, slot-specific vacuum suction unit recommendation. Only the available clamping equipment is taken into account. The machine operator can adjust the recommendation if necessary. If several components are assigned, a recommendation for the entire table can be calculated.



The favorites bar

The machine operator can define individually which functions they want to have direct access to in the main menu. This saves time every time a specific function is required.

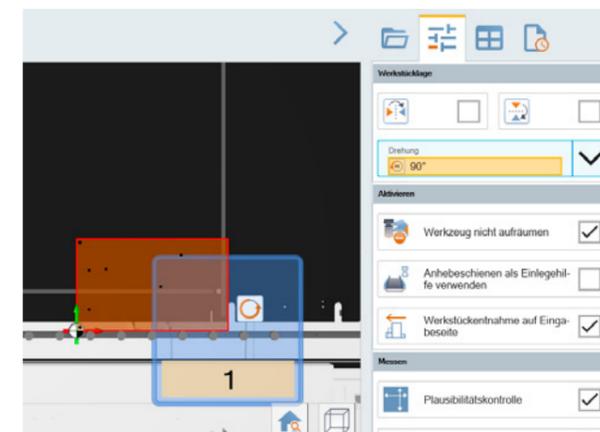


Save and load assignments

The "Save and load assignments" function allows the user to save a specific table configuration (assigned program, variable values, workpiece offset, suction unit position, etc.) and load it again later. For example, recurring jobs can be loaded immediately without having to configure the settings again or an empty slot assignment can be loaded with the default settings in a few clicks.

Rotation of a program in the assignment:

In the PC87 assignment, the machine operator can rotate a woodWOP program in 90° increments. If woodWOP programs with an unfavorable orientation make it to the machine, the machine operator can rotate the entire woodWOP program quickly and easily. This saves the need for reprogramming. For CNC machines with consoles and vacuum suction units, the suction unit recommendation is recalculated after rotation.

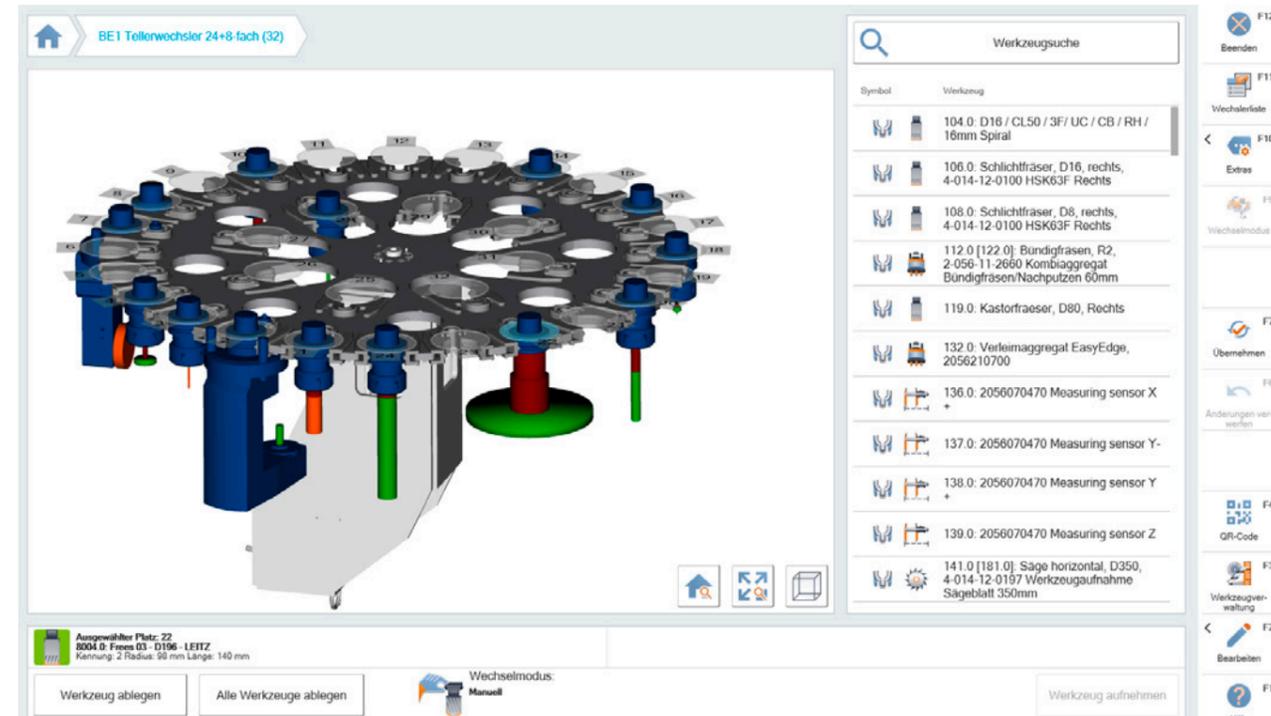


ToolManager

Tool management on the machine

Tool management

The machine operator manages all tools and units of the CNC machine in ToolManager. Important parameters such as feed, speed, length, etc. can be set here. The equipping of the tool change and the drilling gear is also defined precisely in ToolManager.



Tool life distance calculation

This software module monitors and documents the tool inserts. For each tool, a maximum tool life distance can be defined in running meters and a threshold value can be set for the pre-warning. The current tool life distances are shown in color in the tool service life overview.



NEW: central tool management in the cloud with twinio



twinio — manage, use and maintain tools



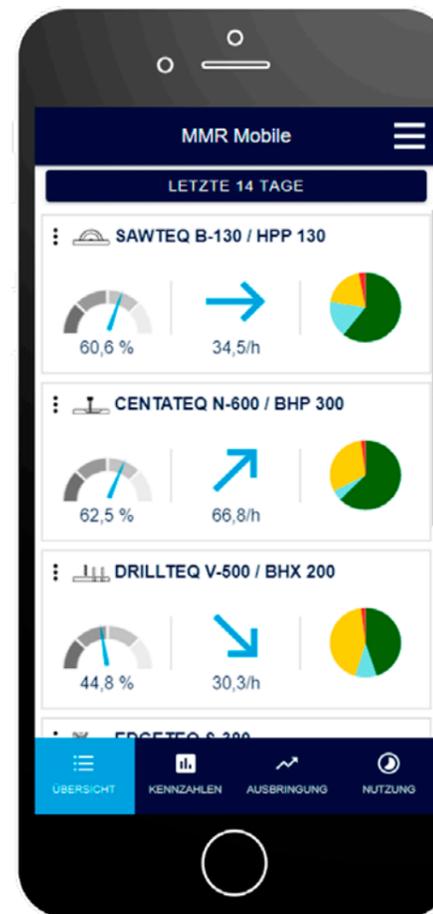
MMR

Your tool for efficiency in production

The MMR (Machine Monitoring & Reporting) software collects machine control unit and software data for you and makes it available to you for evaluation in the office, on a mobile phone or on the machine itself.

Get the data prepared from different perspectives and analyze it in a targeted way. Identify performance losses easily and quickly and take the appropriate actions to optimize or eliminate them completely.

With these evaluations, you will be able to get a better understanding of and continuously improve the current efficiency of your production.



MMR MOBILE

All machines in your pocket

- All machines at a glance
- Data is provided via the cloud
- Meaningful evaluations available quickly
- Available free of charge with each new machine

License protection

Your tool for efficiency in production

Software from HOMAG is license-protected.

Single user license: In the case of single-user licenses, each user receives a license for their workstation. If the software is to be installed on another workstation, another license must be purchased.

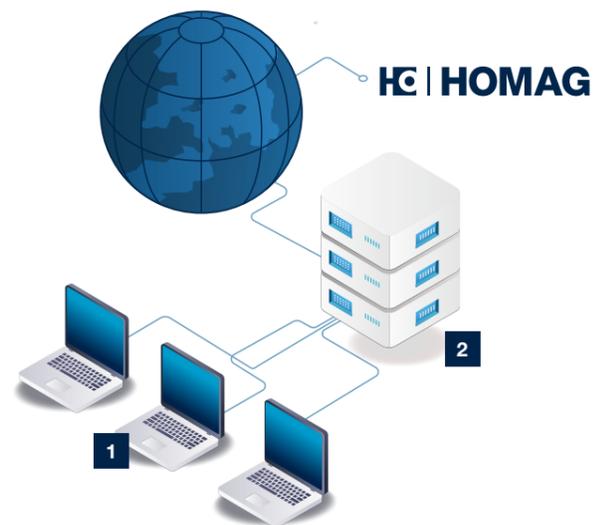
Floating license (network): Floating licenses enable the server to manage the software licenses for several users in a network.

For example, the software can be installed on six computers in a customer network, however, the license only allows three users to use the software at the same time. If, for example, a fourth user wants to log in, they receive a notification that there are no more licenses available. However, once a participant finishes using the software, this license is made available again.

Single workplace license



Floating license



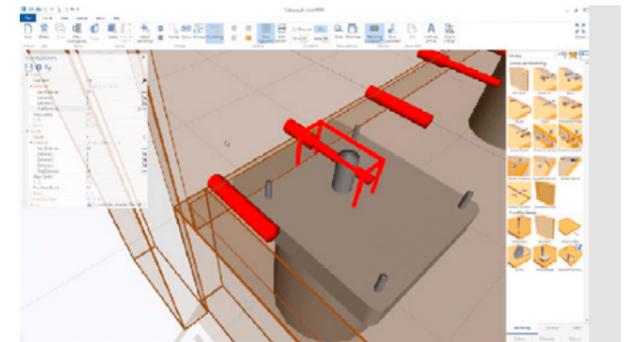
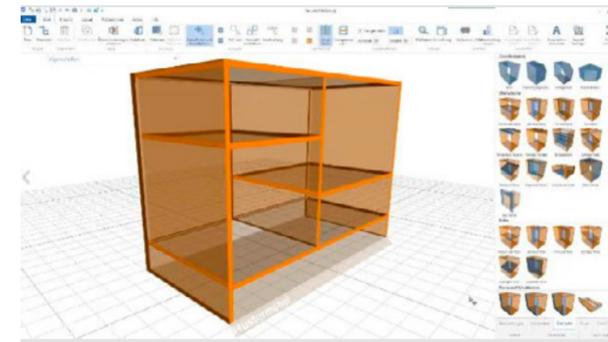
Floating license

- 1** Client
- 2** Server

SmartWOP

The clever design software for carpenters

- Intuitive, visual drag-and-drop customized furniture design — all without the need for CAD knowledge
- Integrated creation of complete furniture with all components included, in just one process step and automatically matched to each other
- Ideally suited to cabinet furniture and related structures in furniture construction, trade fair construction and other fields of application
- Accessory library with matching fixtures from the most popular manufacturers such as Blum, Hettich and Häfele
- Integrated board library that can be supplemented individually



BENEFITS:

- Clever, easy, fast
- Huge diversity of performance
- Ideal for producing single pieces and small series, which previously had to be programmed manually
- Automatic creation of material lists, parts lists and WOP programs for your CNC
- Creation of impressive, photo-realistic 3D presentations for your customers

HOMAG iX

3D CAD/CAM solution

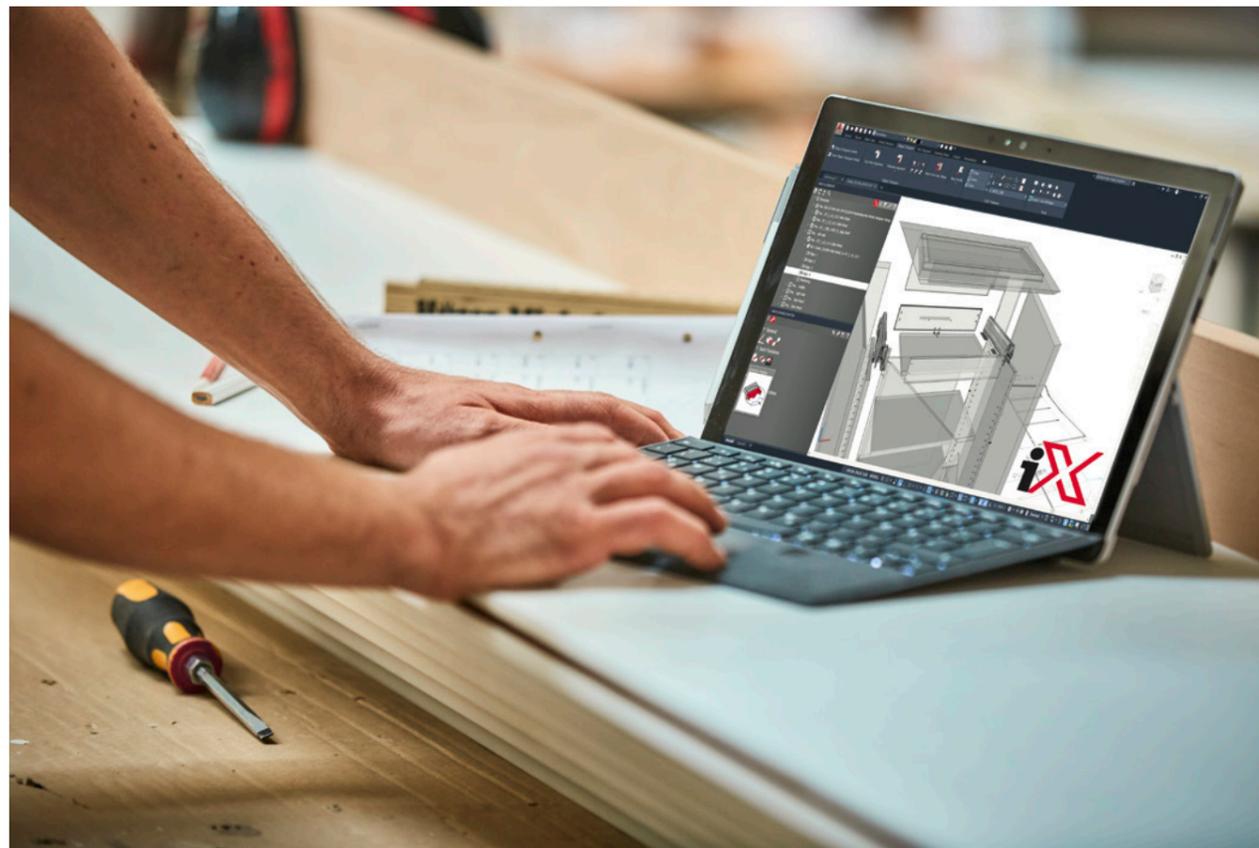
3D software for furniture design and interior fitting

Ever shorter delivery times? Increasingly individualized requests? With HOMAG iX 3D software, you can stay flexible and provide your customers with the high quality they demand. This is because a software solution can best support your work when it covers everything: planning and presentation, design and production. It must allow changes at any time, in order to react to new requirements during the process. Based on proven CAD/CAM technology, you can achieve a work preparation time saving of up to 70% with HOMAG iX.



BENEFITS:

- The order under control — from the end customer to the machine
- Uniform database for all iX applications
- Scalable and can be integrated
- Consistent and precise
- Coordinated and tested interfaces to woodWOP and Cut Rite (nesting and sawing) and the digital products from HOMAG



Apps and digital assistants.

Quick and easy support in your machine environment.

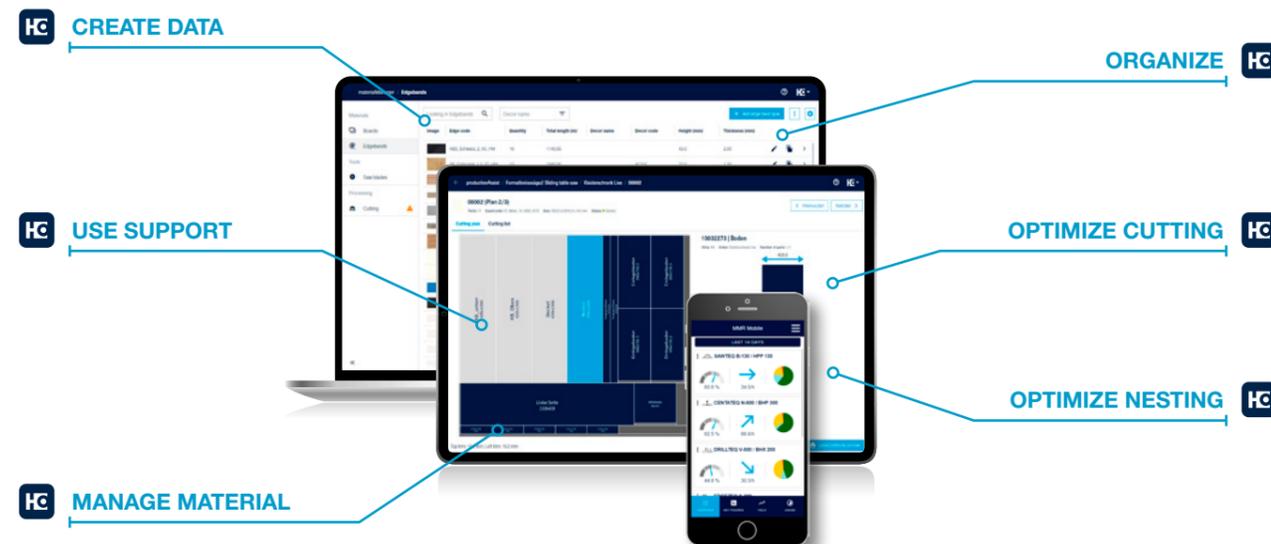
Some people still use pen and paper to create their cutting patterns. But they look at their smartphone if they want to know what the weather is like – instead of looking out of the window. We asked ourselves: why not combine the best of both? Our apps and digital solutions make your everyday work easier: machines, material, tools, cutting patterns, components – you always have everything in your pocket or on your desk.

EXCERPTS FROM YOUR FEEDBACK:

- Are there simple solutions that can eliminate various obstacles in my day-to-day work (e.g. when organizing materials or sorting parts)?
- Is there a way to slowly approach using digital assistants?
- Which tools can you try out simply and easily without having to invest huge sums of money straight away?

OUR ANSWER? SMART AND POWERFUL SOLUTIONS:

- ✓ Always low investment
- ✓ Always up to date (no updates necessary)
- ✓ Always easy to use (no complex software)
- ✓ Always helpful



THE ADVANTAGES AT A GLANCE

- No investment, update or maintenance costs
Low starting price, no unplanned financial expense
- Licenses are independent of the user
Any number of employees can use the application without incurring additional costs
- Independent of hardware and operating system
Can be used anywhere, anytime
- Open system – import possible from almost all systems (ERP, industry software, CAD/CAM, Excel, CSV)
No obligation to use specific software systems
- Simple, smart operation
Minimal training required
- More efficient production
Jobs completed more quickly, more safely and in higher quality



More information at digital.homag.com



Fast support:
94% resolution rate
via our hotline

Close to you:
1,350 service experts worldwide

We get things moving:
Over 1,000 worldwide spare parts
shipments each day

No one else has that:
Electronic documentation on over
150,000 machines, available in 28
languages

LIFE CYCLE SERVICES

Improved performance, more efficient processes, faster help, assurance of availability and smarter working

TEAM & COVERAGE

Largest global service network in the industry with over 1,350 personnel.

INSTALLATION & COMMISSIONING

For a smooth start, we only let proven experts manage your setup.

OPERATION & CONTROL

After teaching your personnel the intuitive control system, our clever apps help to make the operator's life much easier.

MAINTENANCE & SERVICING

To keep things running, we're happy to take a preventative approach. You decide how often and how intensively you want the support to be. As we all know, prevention is better than the cure.

eSHOP & ONLINE ADVANTAGE

A few clicks and it's fixed. Receive exclusive advantages by ordering spare parts online, depending on market availability. shop.homag.com

HOTLINE & READINESS

When there's an emergency, we're here. Direct by phone, digitally via app or video, or with on-site support. We are close to you with over 90 regional service organizations worldwide. With more than 35,000 spare parts immediately available, we can deliver 85% of your orders fast.

TRAINING & EDUCATION

With classroom, live online or eLearning training, we offer flexible options to help you get knowledge. We conduct over 4,000 customer training courses every year, and we even have our own training centers in 19 countries

MODERNIZATION & IMPROVEMENT

Our modernization program is tailored to your machines and processes. We can evaluate your data and situation and advise you on the next step.

ANALYSIS & SUSTAINABILITY

On request, we analyze all your processes with proven tools and procedures (LeanSixSigma). We have a large, certified team of experts for this purpose.

FINANCING & CONSULTING

We offer you tailor-made financing concepts worldwide. With more than 60 years of experience and a close partner network of prominent banks and insurance companies to help us to find the right solution for you, we're always transparent and reliable in processing.



HOMAG Group AG

info@homag.com
www.homag.com

YOUR SOLUTION