

numwood

**TOTAL SOLUTION
IN WOODWORKING**

www.num.com

num [®]
CNC HighEnd Applications

NUM Solutions and Systems

Established Worldwide

Outstanding solutions in machine automation have one thing in common: They are always the product of outstanding performance, exceptional technologies and a high degree of creativity!

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Worldwide at your Service

NUM has earned its exceptional reputation in the machinery and tools industry exactly with that. We develop **customized automation solutions** that ensure a high degree of added value both to the machine manufacturer and the user. With our expertise that we have developed over decades, we put our motto “NUM automation solutions provide machine builders with a competitive advantage” into practice. NUM had already developed the first CNC controller in 1961, i.e. 10 years before CNC- or NC control systems found a wide acceptance among users. With the launch in 1964, **NUM was one of the first CNC providers in the world.** Since then, we have maintained our position as a technology leader in this segment and are eager to expand it further. Today’s systems, with their flexibility and our expertise, enable us to automate a large variety of machinery. Our long, successful track record supports this finding in an impressive manner. We will continue to develop the **performance, functionalities and flexibility** of our systems in this direction and make the necessary investments in our products, our research & development, as well as in our staff

As an **international company** headquartered in Switzerland; we have sales, application development and service locations all over the world (see back cover) from which we operate worldwide. Our research and development departments are located in Switzerland, Italy and France. Our main production facility is located in Italy.

It is our clearly defined **vision** that we keep the **development and manufacture** of the core products in the CNC system, including the drives and motors, **under our control.** This enables us to adjust the performance, functionalities and flexibility of our systems to new market requirements very quickly and without delays.

The ready and flexible NUM automation systems combined with our locally available engineering expertise and the machine manufacturer, results in a uniquely flexible and powerful team.

Customized Projects

NUM tailors its support to your projects, ensuring it aligns perfectly with your business and infrastructure needs. Regardless of the specifics, our ultimate goal remains unchanged: collaboratively finding the most efficient solution for your project.



Project facilitation PRODESIGN

Efficient consulting for optimal application solutions

This model is ideal for companies with their own development teams and automation specialists. As an external partner, we provide our expertise and resources in field of CNC automation and take on an advisory role.

Project cooperation CODESIGN

Merging knowledge – potentiating results

Your development team will be combined with our team of specialists. Together we will realize the automation of your machine with clearly defined responsibilities. This form of cooperation has proven to be extremely efficient in many projects.

Total solutions ALLDESIGN

Delegating responsibility – controlling result

We assume the entire project management in the sense of a general contractor and are fully responsible for the successful implementation. Starting with the development of the requirements specification, over the development and commissioning, up to the support and service of the machine, and beyond

NUM Solutions and Systems

Intelligent and Creative

We have developed countless customer- and application-specific solutions for different industries as well as pioneering complete solutions for various industries, thus creating practical solutions for challenging applications and professional requirements.

All of our solutions are based on a wide range of perfectly matched proprietary products such as CNC, drive amplifiers and motors. The partnership with our customers in the evaluation, project and installation phase is further maintained by our training, support and other services even after commissioning. We attach importance to ensuring that our customers are served by our professionals with specific knowledge.



numroto

NUMROTO – successful trendsetter in high-precision tool grinding for many years

numspecial

NUMspecial – creative and practical solutions for your specific applications

numcut

NUMcut – a complete solution for advanced cutting machines

numgear

NUMgear – intelligent total solutions for new machines or as a retrofit in the field of gear machining

numtransfer

NUMtransfer – economical and flexible for all lot sizes for transfer, rotary transfer and multi-spindle machines

numhsc

NUMhsc – excellent quality at the highest speeds on machines with 5 or more axes

numgrind

NUMgrind – grinding and dressing cycles, with intuitive shop floor entry screens and 3D visual validation

nummill

NUMmill – flexible solution with a graphical interface for extensive milling cycles, including full 3D simulation

numwood

NUMwood – long tradition with powerful complete solutions in woodworking

numretrofit

NUMretrofit – rational extension of the service life of your machine by years

NUMwood – Powerful Complete Solution in wood processing

NUMwood – Your solution for the automation of woodworking machines

Woodworking has seen rapid development in recent years, with increasing demands for precision, efficiency, and networking. As technology advances and the need for precise woodwork grows, the automation of woodworking machines has become essential. NUM, a CNC technology pioneer for woodworking machines, has developed NUMwood, an ideal solution to elevate the automation of various machine types in the woodworking industry. NUMwood caters to the evolving requirements of the modern woodworking sector.

The versatility of NUMwood

NUMwood stands out as an extremely versatile solution, accommodating various types of woodworking machines. This includes joinery centers, machining centers, routers, lathes, gantry machines, and throughfeed machines, among others. Regardless of your woodworking range, NUMwood offers solutions to optimize your processes.

Woodworking often demands fast and efficient machine control. To meet these requirements, NUM provides CNC controls that fulfill even the most demanding specifications. For instance, with 5-axis interpolation, complex operations become easier.



Sample workpieces of a joinery machine

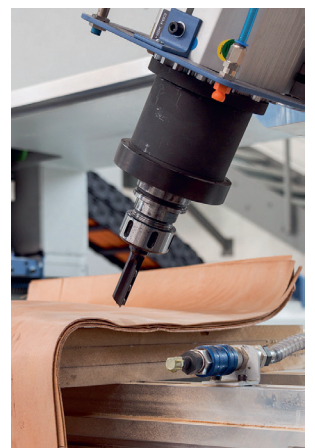


Innovative 17-axis milling machine for chair seats

The RTCP (Rotation Tool Center Point) function automatically compensates for displacements caused by rotation, ensuring precision in the manufacture of high-quality wood products.

A CNC allows machines to operate fully automatically, from material feed to product completion. This not only reduces operator effort significantly but also increases efficiency, optimizing workflows and shortening production times. In a connected world, NUMwood supports the Industrial Internet of Things (IIoT) or Industry 4.0, facilitating data exchange between machines and higher-level systems for better production control and timely responses to changes.

Flexium CNC control systems offer a wide range of communication options, including EtherCAT or CAN for horizontal integration, and OPC UA, MTConnect, and MQTT for vertical communication to SCADA, MES, and ERP systems. This ensures compatibility with Smart Factory concepts.



Chair seat production

NUMwood – Powerful Complete Solution in wood processing

Integrating NUMwood with higher-level CAD/CAM systems opens up new possibilities, enabling direct data transfer and reducing errors in design implementation. The seamless link between design and production becomes a key competitive advantage.



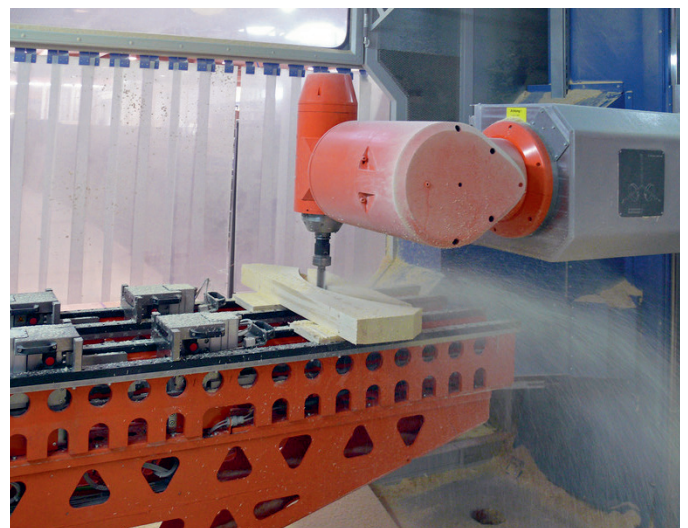
Production of roof structures directly from CAD/CAM

Knowing the exact position of the work piece on the machine is critical for precise manufacturing of wood. NUMwood provides an option for automatic measurement of the component position, ensuring precise operation for high-quality woodworking.

The efficiency of woodworking machines heavily depends on the user interface, and NUMwood excels in providing a user-friendly experience. Offering remarkable flexibility, NUMwood allows for the creation of a highly intuitive HMI tailored to specific requirements. Whether you need a user-friendly interface for the entire machine or customizations for specific projects, NUMwood is the solution.

Depending on your needs, you can personalize the standard HMI or create an entirely new one. Configuring the standard HMI is now more straightforward, even for users without in-depth technical knowledge. If standard configurations don't

suffice, you can effortlessly supplement them with custom HMI pages tailored to exact requirements, including the addition of buttons, status displays, specific controls, data displays, and more.



The components are designed 3-dimensionally with a CAD, from which the machine data are generated and manufactured fully automatically on the machine

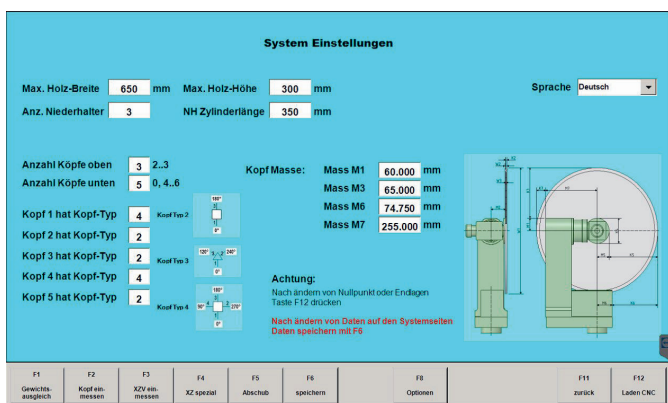
To streamline the process of creating custom HMIs, NUM offers prefabricated HMI components. Whether you choose to personalize the standard HMI or develop a completely new interface, NUM stands as your partner. If you prefer not to handle the customization yourself, there's no need to search for a third-party company. NUM ensures a seamless integration process, eliminating the need for external assistance. In today's complex machinery landscape, NUMwood provides a user interface that aligns with the evolving demands of woodworking professionals all around the world.

In today's rapidly advancing world of intricate machinery, the safety of individuals takes precedence, and NUMSafe plays a pivotal role in addressing this crucial aspect. This feature offers a comprehensive and easily integratable solution for ensuring personnel protection on woodworking equipment.



Machine with 64 axes for the production of window frames

NUMSafe seamlessly incorporates various personnel protection elements such as light curtains, safety mats, doors, emergency stop switches, and more. Given its software-based nature, NUMSafe stands out for its remarkable flexibility, allowing machines to operate safely at reduced speeds when workers need to be in potentially hazardous areas for setup.



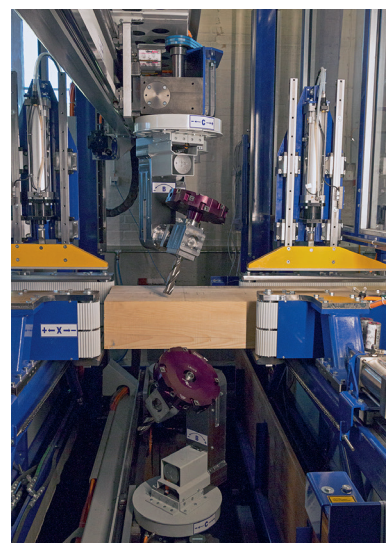
HMI of a woodworking machine

In many cases, large machines feature gantry axes, and the NUM CNC makes it feasible to effectively control machines with multiple gantry axes. The exceptional versatility of NUM's intelligent gantry control imparts significant advantages, particularly in the realm of woodworking where elevated flexibility is of paramount importance.

Designed with modularity in mind, compact in size, and boasting low power consumption, the NUM drive amplifiers (available in 1, 2, or 4-motor configurations) perfectly fulfill the needs of compact control cabinets. The minimal power consumption and the consequent low heat dissipation contribute to a reduced demand for cooling capacity in the control cabinets.

These NUM drive amplifiers exhibit the capability to regulate or control both synchronous and asynchronous motors (V/f mode), facilitating a consistent and uniform cabinet design.

NUM's comprehensive servo motor series offer an excellent volume/performance ratio, high dynamics and are suitable for almost all applications. See also page 10.



View into the heart of the CNC-controlled 28-axis woodworking center

NUMwood – Powerful Complete Solution in wood processing



Numerous machines demand the execution of processes in parallel and independently. The multi-channel function of the NUM control adeptly caters to this requirement, ensuring optimal support for parallel operations. Moreover, the system allows seamless synchronization of these operations and processes at specific intervals without any complications.

Nevertheless, it is crucial to pay special attention to collision monitoring in parallel workflows to guarantee smooth operation. In this aspect, the NUM control provides a range of options, spanning from „simple“ traverse range monitoring to comprehensive 3D simulation of the machine.



Woodworking machine mainly used for the operation of the walls of wooden houses

NUMwood stands as the all-encompassing solution tailored to meet the demands of the contemporary woodworking industry. Its versatility, precision, automation features, and seamless integration with higher-level systems collectively provide a comprehensive toolkit essential for success in this competitive market. You can rely on NUMwood to streamline and optimize your woodworking processes, elevating the overall quality of your products.



This 5 axis CNC woodworking machine has remote maintenance

NUM Motors

Perfect for all Applications

Excellent volume/performance ratio and great dynamics, so that our motors can satisfy almost all applications.

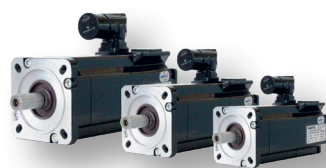
NUM has more than 50 years of experience developing servo and spindle motors. We pioneered the development and production of AC brushless servo motors, as well as synchronous spindle motors with flux weakening.

The comprehensive **servo-motor** series of NUM offer an excellent volume/output ratio, as well as first-class dynamic properties optimized for the machine tool industry. They, with perfect concentric run-out, give great performance even at very low speeds. The so-called "single cable" motors offer the advantage that the complete measuring system cable is eliminated. This simplifies the wiring of the machine significantly and thus saving time and money.

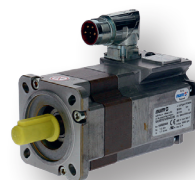
The **asynchronous motors** of the AMS series offer excellent quiet running at low speed, quick and accurate positioning and are ideally suited as a C-axis and for spindle indexing.

The TMX series **torque motors** have an extremely low cogging torque as well as a very high S_1 torque density. They are ideal for applications that require very smooth and precise motion, especially at low speeds. Typical applications are direct drive rotary tables or workhead axes of machine tools.

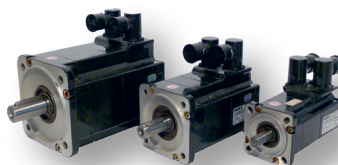
The NUM **LMX linear motors** are specially designed for machine tools. Among other features, they are characterized by a fully enclosed primary, a cooling circuit with large diameters to accommodate fluids with low specific heat capacity, a short pole pitch to increase the force density and reduce temperature, and many other interesting features.



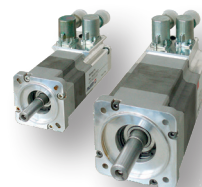
Motors of the series SPX "single cable"



Motors of the series SHX "single cable"



Motors of the BPX series



Motors of the BHX series



Motors of the AMS series



TMX torque motors



LMX linear motors

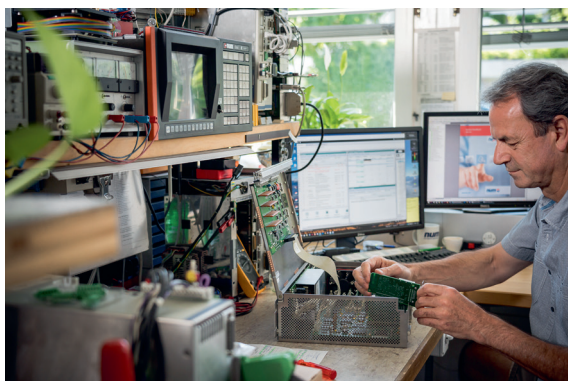
NUM Services

Worldwide at your Service

The decision for NUM is also the decision for a customer service that will support you long after the initial investment as on the first day – even after 20 years and on-site. Our specialists can ensure an extended life for your good (but old) machinery with NUM retrofits.

Worldwide support by experts

For professional analysis and trainings, a perfect infrastructure is available to our experts in all centers of excellence. So that we can assist you quickly and efficiently around the world, we also rely on the advantages of the most modern communication technologies, e.g. for remote maintenance. We can also offer on-site support and consultation services out of our regional branches



Comprehensive training offer

We orient our training to your individual needs – whether its operator training, maintenance, repair and service training, HMI; CNC or PLC programming, or adjustment of servo drives etc.

NUM provides a training offer matched to the customer needs:

- CNC operation
- CNC programming
- PLC programming
- Commissioning and servicing
- Creation of a custom HMI
- Customized customer training

Technically always up to date

Our team of specialists will actively inform you on the latest

hardware- and software developments and provide you with useful technical information.

Repair- and spare parts service

If an error unexpectedly occurs in your CNC system in spite of proper maintenance, you can trust that this will be fixed by dedicated service employees of our global network.



Customer service

For you and your markets, we have a worldwide service organization. The International customer service provides telephone consultation and deployment on site, even for machine installations that are many years old. With a retrofit from NUM, the operating time of an excellent machine can be extended by many years.

Our customer service is available and responsive to help even with cutting edge products and custom developments. We carry local inventory and have your materials and components in stock ready to meet your requirements for quality and delivery times.

Complete CNC Solutions Worldwide



NUM systems and solutions are used worldwide.

Our global network of sales and service locations guarantees professional service from the beginning of a project to its execution and for the complete life cycle of the machine.

NUM has service centers around the world. Visit our website for the current list of locations.

Follow us on our social media channels for the latest information on NUM CNC Applications.



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