'96 PASSION INNOVATION EXPERIENCE

SERON®
Professional CNC Machines

PROFESSIONAL MACHINES CNC MADE IN POLAND

FIBER LASER CUTTERS | MULTI-AXIS MILLING MACHINES | MILLING MACHINES | PLASMA CUTTERS | LASER ENGRAVERS & LASER MARKERS

Contents

About us

Driven by a passion for numerically controlled machines, we are constantly strengthening the position of the SERON brand in the CNC industry. The devices are designed and manufactured in the heart of the Central Industrial District - Stalowa Wola.

People are the foundation of our company. Their experience, openness, creativity and courage in ideas make us achieve such fast technological progress. We have our own research and development unit, and we also cooperate with research institutions. Thanks to this, we create precise, highly efficient and innovative devices on a global scale, adapted to the ever higher requirements of customers and international standards.

Every machine is configured according to the individual needs of the customer. We are convinced that the numerical machines we offer, built on the basis of the Industry 4.0 concept, are the future of many entrepreneurs, both from Poland and from abroad, because they enable the automation of production, reduction of its costs by shortening the processing time, repeatability and precision.

The goal of our activity is to take care of long-term relationships with the customer, so you can always count on the support of experienced programmers, technicians and service technicians.

Seron is...

DESIGN DEPARTMENT - OUR OWN KNOW HOW

All machines are designed and programmed by our specialists.

RESEARCH AND DEVELOPMENT DEPARTMENT

All solutions before implementation for production are subjected to demanding tests.

AUTOMATION DEPARTMENT

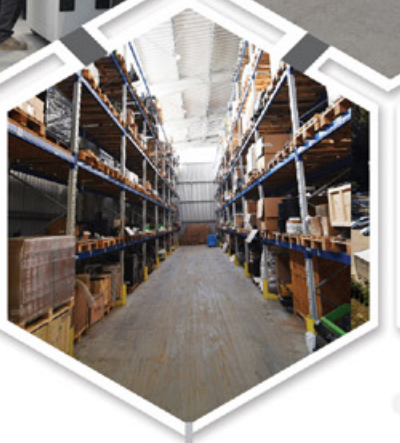
Automation department is made up of engineers with many years of experience. We use the highest quality components from reliable suppliers.

SERVICE

We have our own independent team of highly qualified service technicians and an extensive car fleet. Thanks to this, the service response time is maximally shortened.

AUTOMATED WELDING STATION

Automated welding station is the state-of-the-art robotic technology ensuring excellent quality and efficiency in the welding process.



PRODUCTION HALL

We have extensive technical facilities, allowing you to build machines from the base. Thanks to this, we are flexible and maintain the highest quality.

ASSEMBLY HALL

Each stage of production is close with a detailed quality audit. This ensures the highest precision and reliability of machines.

WAREHOUSE

We have a richly stocked warehouse. Thanks to this, we have minimized the waiting time for machines.

NEW PRODUCTION FACILITIES

We are continuously expanding our production, broadening capabilities, and refining manufacturing processes. We aim for continuous improvement of our standards to meet even the most demanding customer expectations.

Passion, innovation, experience

Vibration stress relief

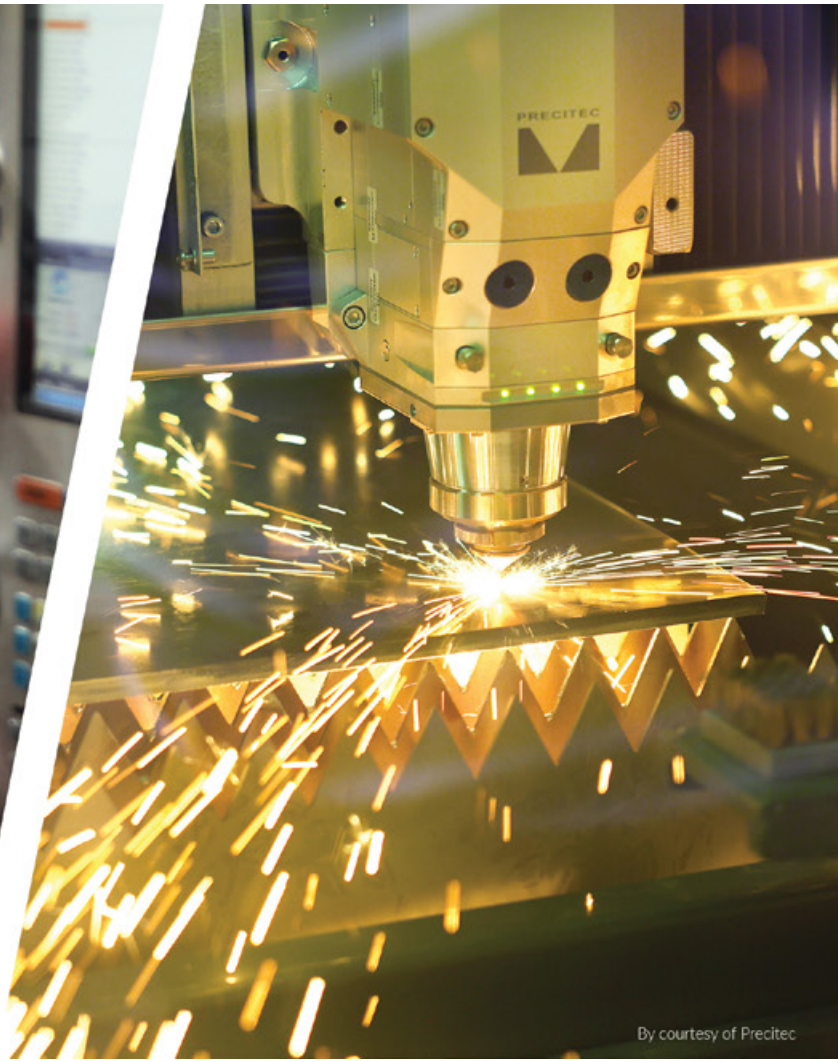
Shot blasting

Varnishing

Production

Temperature annealing

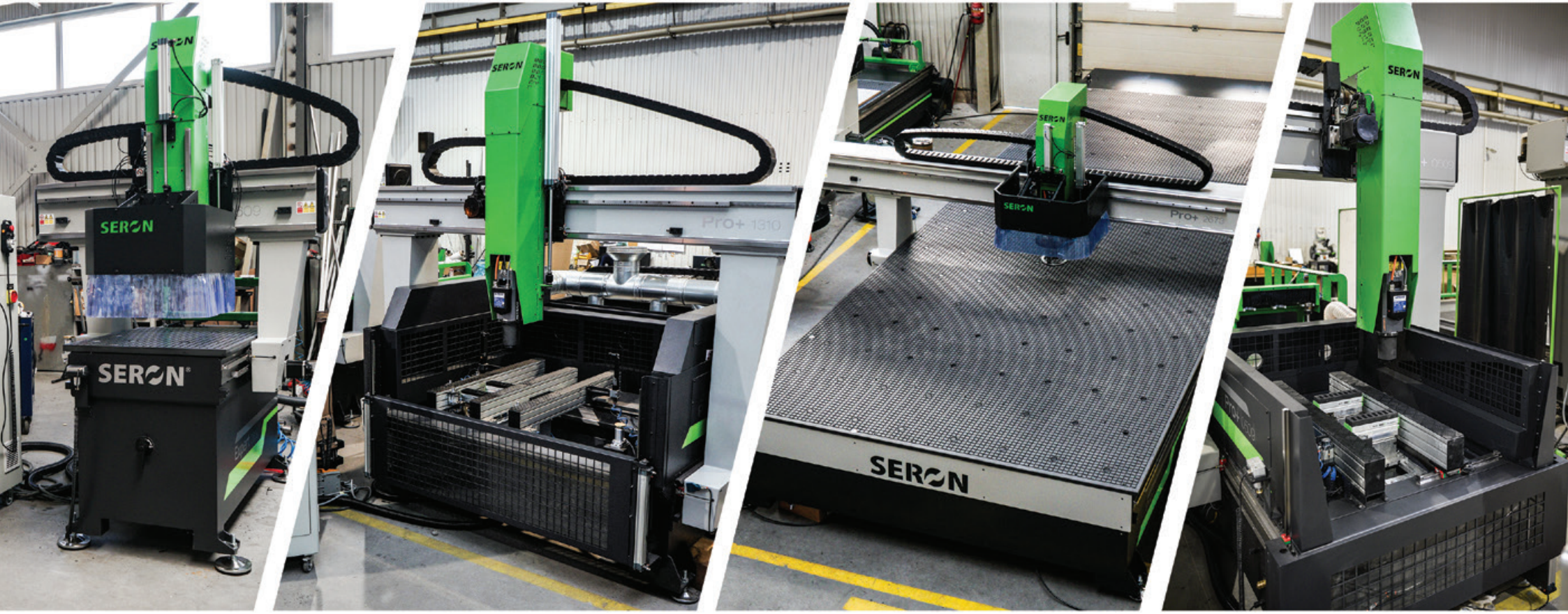
Mechanical processing



Laser cut

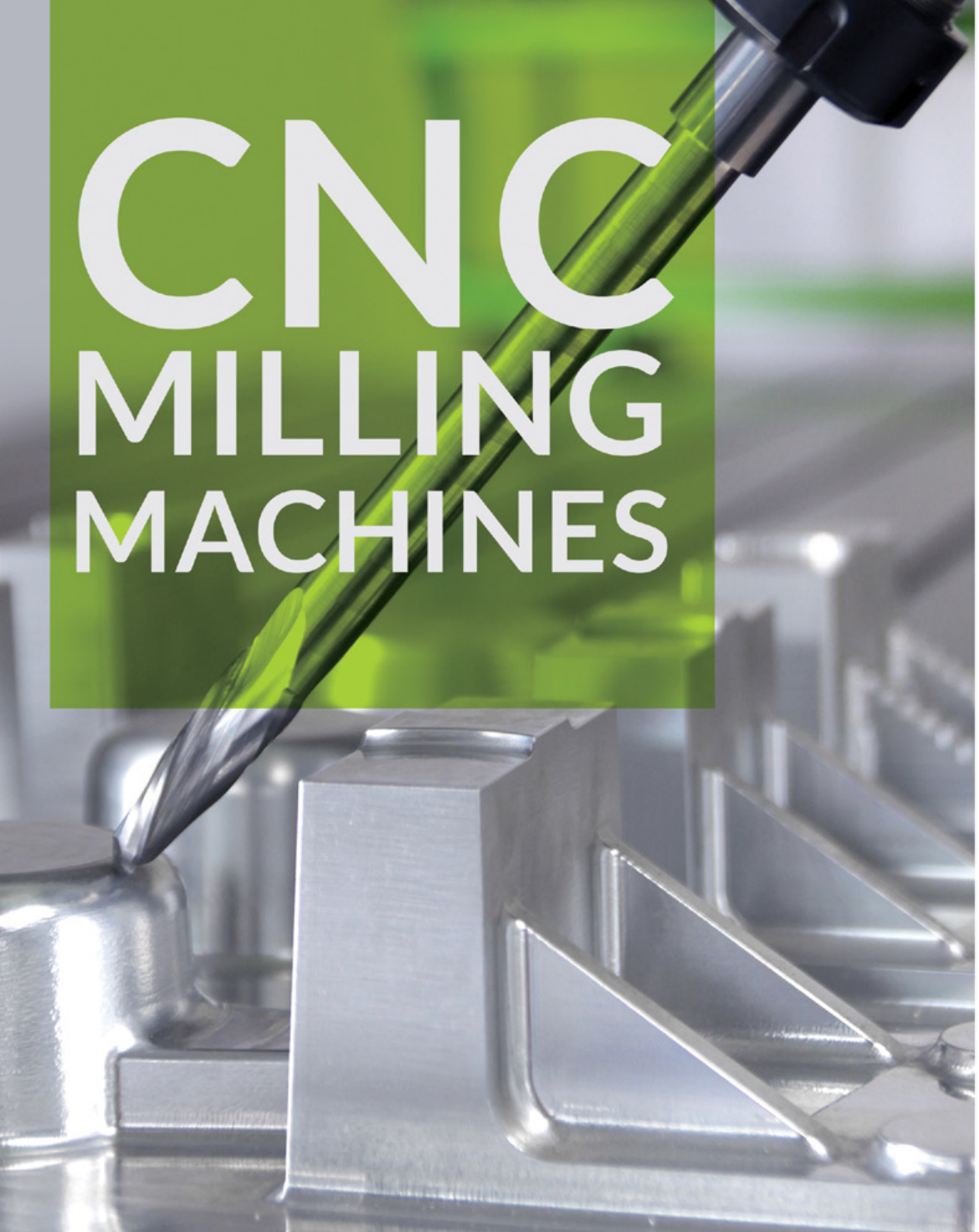
Custom machines

As a CNC machine manufacturer, we offer our clients the ability to customize machines to their unique needs. With our flexibility, we design and manufacture machines individually tailored to each client's production specifications. Regardless of the industry, we gladly take on challenges, creating bespoke solutions that effectively support unique manufacturing processes. Get in touch with us if you're seeking a personalized approach in CNC technology.



Custom machines

In our diverse portfolio, we offer solutions tailored to specific customer requirements. We provide machines with non-standard dimensions, ranging from compact workspaces to impressive lengths of up to 12 meters, machines with unique enclosures and worktables precisely tailored for processing personalized details, such as in the production of molds. Our solutions also include reinforced structures, specially designed for heavy-duty applications, ensuring reliability and durability in any working conditions. We also offer the option to customize the color scheme of machines according to the client's individual preferences, allowing for seamless integration into the plant environment.



CNC MILLING MACHINES

Specialist Machining Centers are machines dedicated to selected industries, such as industrial, furniture, carpentry, foundry and advertising. Have been configured based on many years of experience
in providing the best-suited solutions to various industries.

Why are our milling machining centers so durable? It is influenced by many factors, but the basis is the design.

Why are our milling machining centers so durable? It is influenced by many factors, but the basis is the design. The design of CNC machines was designed by experienced engineers in cooperation with academic expert research teams of the Rzeszów University of Technology and the AGH University of Science and Technology. The applied innovative solutions were subjected to demanding tests confirming the correctness of their use before they were implemented into serial production.

The key factor influencing the accuracy and durability of machines are their static properties. Our machines are based on a massive bed, which, in combination with ribbed moving parts, guarantee the highest work efficiency and excellent machining precision. This effect is influenced by many factors, ranging from the type and quality of the materials used, through the entire processing process and careful assembly. The welded, ribbed structure made of high-quality steel is stress-relieved by temperature and vibration methods, and then subjected to precise machining from a single clamping on large-format machining centers.

The combination of these processes ensures lifelong dimensional stability, even with intensive work. The durability of the varnish coat is increased by the shot-blasting process, which allows to prepare the elements for coating with the varnish coat by cleaning and unfolding it in advance.

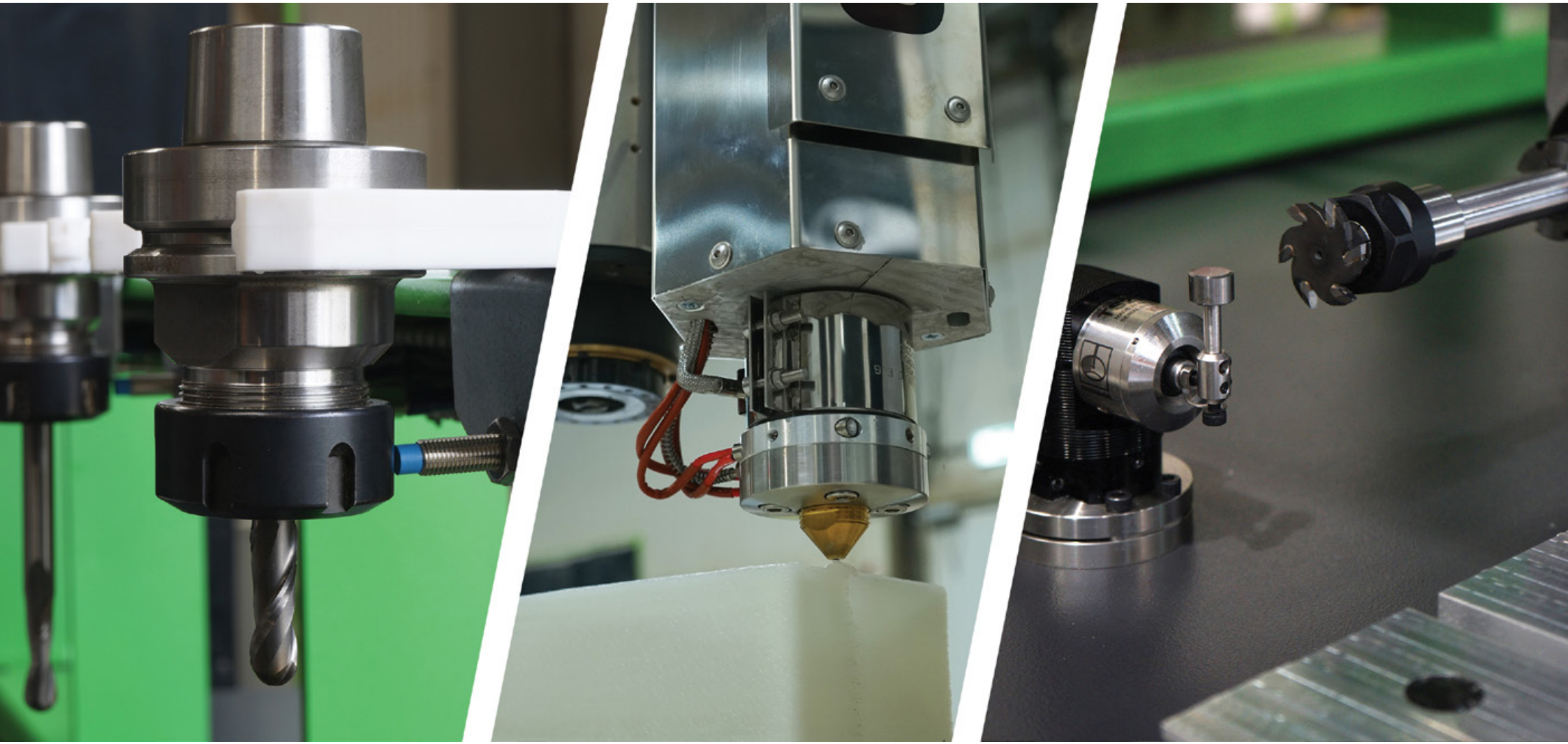
The heart of our machines - what is worth knowing about the control system we use.

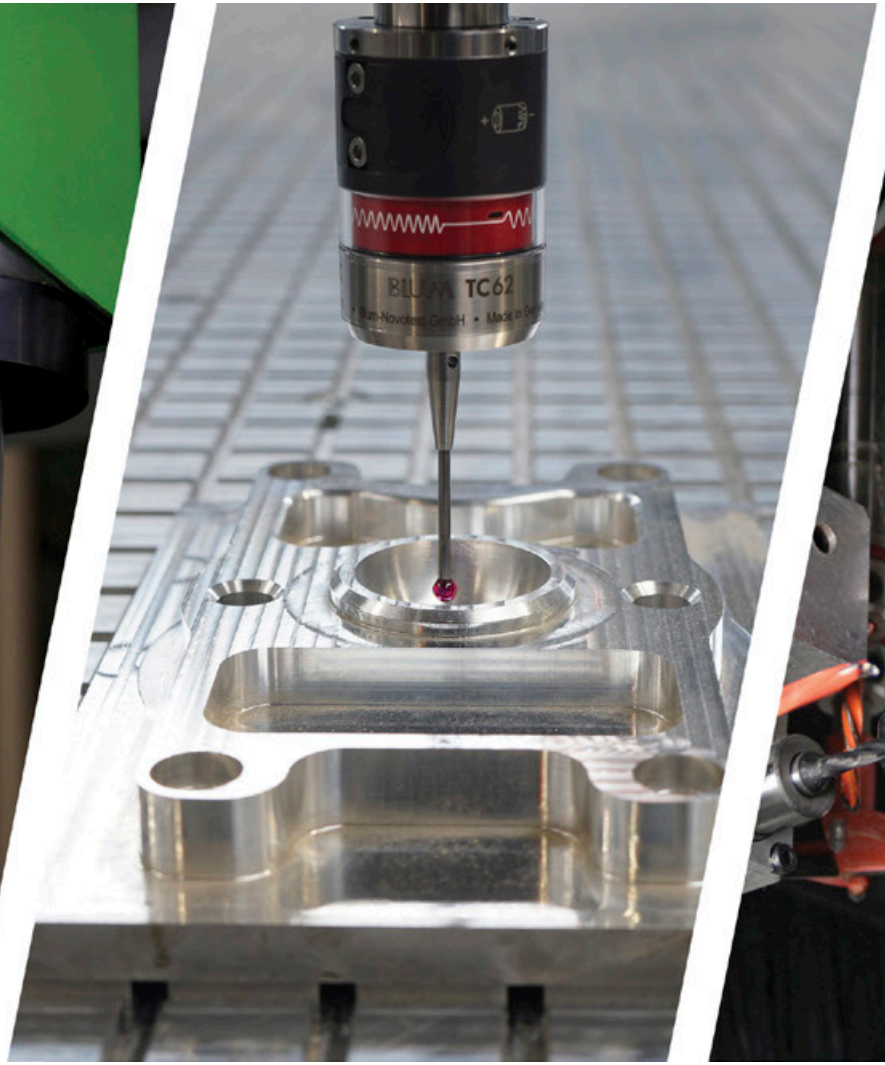
The industrial, professional CNC control used in our machining centers is characterized by excellent computing power with an interpolator cycle time of 1 ms.

The multitasking operating system is based on a real-time clock that prioritises controlling machine movements. The interpolator with the VFF management function - Velocity Feed Forward predicting the trajectory of movements accelerates the control response during machining by minimizing the lag error. This ensures smooth and stable operation even with complex shapes and dynamic changes in the direction of movement, and guarantees precise reproduction of even complex models. The solution works well both in HPM (High Performance Machining) and HSM (High Speed Machining) cycles.

Reliable communication with key components of the machine, such as servomotors, electrospindles or valve terminals, is ensured by the bi-directional and ultra-fast EtherCat protocol. The controller is equipped with a built-in PLC with an extensive library of individually configurable functions, so that all machine operations can be run from the generated G code. Integration with the internal LAN allows for immediate transfer of executive files to a network drive or directly to the control unit. The system ensures full compatibility with the external and internal CAD/CAM environment, which allows you to correct files as well as perform simple projects directly at the machine. Optional features such as RTCP (Tool End Control) and Offset Map enhance the machine's precision.

The integrated control system allows you to manage the machine park in the Industry 4.0 concept. Remote operator and service access enables the correction of machine parameters, component diagnostics or technical support anywhere in the world. Although the control has advanced functions, its operation remains simple and intuitive.

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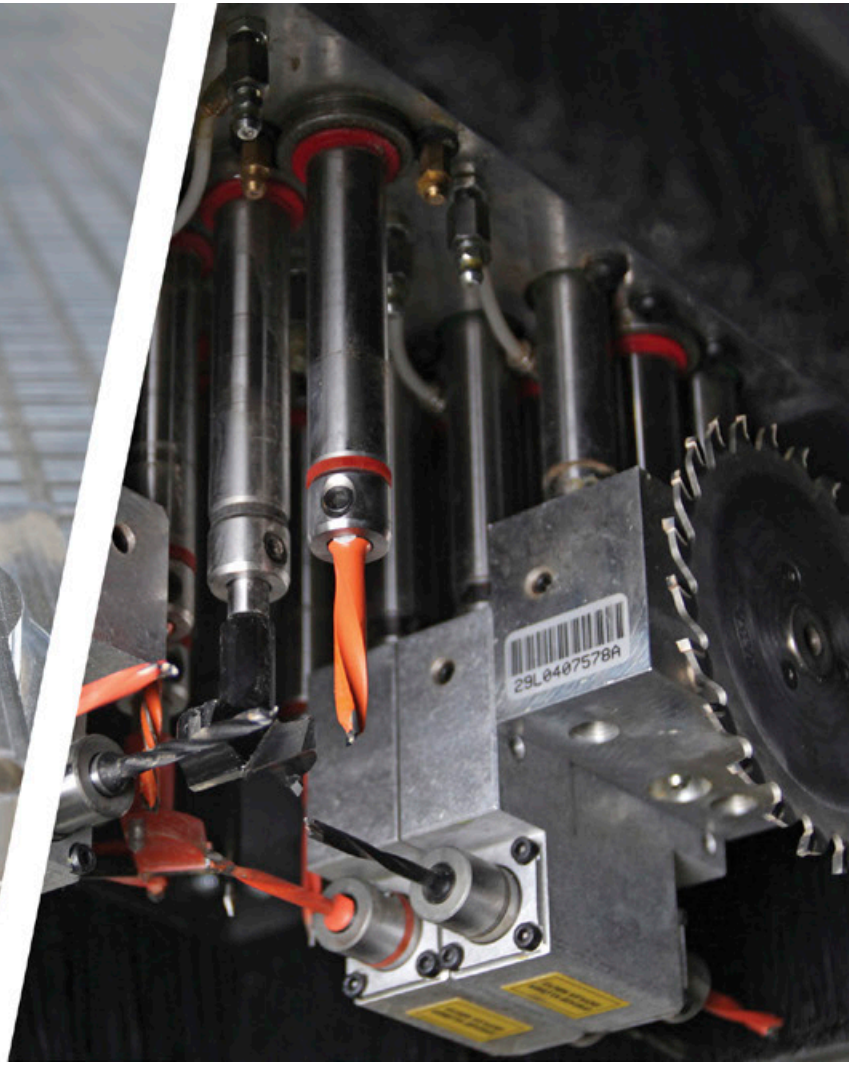
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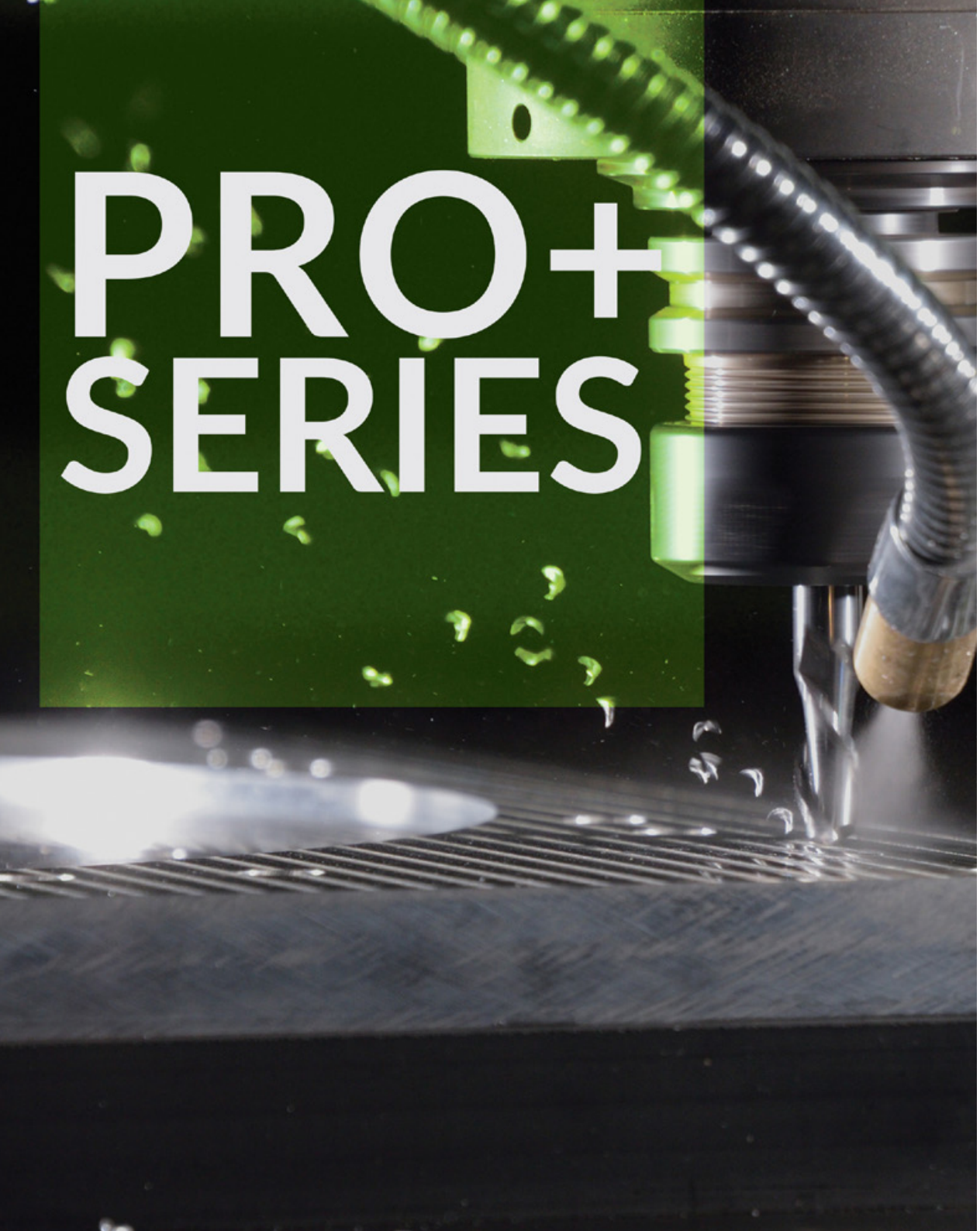


The Pro+ series machines are our flagship products characterized by the stiffest and heaviest construction, which is why they are chosen by the most demanding users. They are based on a user-friendly CNC control that allows for comprehensive management of key components. Each machine tool included in this line has a welded, ribbed steel body, enabling precise machining of demanding materials. This allows the use of powerful spindles and tools with large diameters.

The innovative drives used allow for dynamic work with high accuracy. All elements of the Pro+ series, from mechanical components to control electronics, have been carefully selected. Thanks to this, we gain fast, efficient and, above all, reliable machining centers with high positioning precision at the level of 0.01 mm. These machines offer great expansion possibilities. They can be optionally equipped with a drilling unit, a positioning camera, an active oscillating head with equipment, more axles and much more.

CNC milling machines

Pro+ Series

EXPERT SERIES

The Expert series are high-class CNC machining centers that will prove themselves as an element of equipment for production plants, prototype workshops, electronic factories, carpentry workshops, and advertising companies. Machines in this series allow for travel at speeds of up to 60 m/min, meeting the expectations of even the most demanding users. The friendly control system allows the device to be operated by both experienced and novice operators.

Expert series machines are built on the basis of a rigid welded, ribbed, steel structure, which is stress-relieved and processed from a single clamping on a large-scale machining center. The machine in its basic configuration is equipped with servo drives that ensure fast and precise processing. This series is dedicated to electrospindles with a power of up to 12 kW and rotational speeds of up to 50,000 rpm in the ISO30 or HSK63 tool mounting standard. They enable automatic tool changing, thanks to which the production of parts requiring the use of several tools becomes much faster. The machine has a high positioning precision of 0.01 mm.

CNC milling machine

Expert Series

STANDARD SERIES

The Standard series CNC milling plotter is a modern machines for precise processing of a wide range of materials. The structure of the machines is made of high-quality welded steel, then stress-relieved and subjected to precise machining in a large-format machining center. Each important structural element, such as the bed, gate supports, the Z axis, are ribbed, which ensures very high rigidity and resistance to machining resistance and excellent vibration damping.

Drives used in each axis ensure high speeds and dynamics of work. Standard series milling machines are equipped with professional, brushless milling spindles, cooled with air or liquid, powered by an inverter. Bearing with trapezoidal rails guarantees precision and failure-free operation. The industrial bearings used ensure low noise, even at high speeds, and are extremely durable. Positioning on a level 0.02 mm.

CNC milling machines

Standard Series

CNC milling machines

	PRO+	Expert+	Standard
Working area	600 x 900 mm to 3000 x 12000 mm	600 x 900 mm to 2550 x 12000 mm	600 x 900 mm to 2100 x 6100 mm
Control system	multi-axis real-time interpolator, with active trajectory forecasting, LAN communication, EtherCat, sampling time 2ms, opcjonalnie śledzenie końca, narzędzia RTCP, correction map	multi-axis real-time interpolator, with active trajectory forecasting, LAN communication, EtherCat, sampling time 2ms, opcjonalnie śledzenie końca narzędzia RTCP, correction map	multi-axis real-time interpolator, with active trajectory forecasting, LAN communication, EtherCat, sampling time 2ms,
Gate clearance and Z axis range	100 – 1000 mm	100 - 500 mm	200 - 300 mm
Drives	X, Y axes: helical hardened ground, class 6 (option class 5); Z axis: ball screw	X, Y axes: helical hardened ground, class 6 (option class 5); Z axis: ball screw	helical X, Y, Z axis: ball screw
Motors	servo AC, servo AC High Speed 24 bit	servo AC, servo AC High Speed 24 bit	servo AC
Linear bearing	Bosch Rexroth linear guidelines precision with preload, class H, size 25	Bosch Rexroth linear guidelines precision with preload, class H, size 25	TBC linear guidelines precision with preload, class H, size 20
Speed	up to 90 m/min	up to 60 m/min	up to 40 m/min
EtherCat	yes	yes	yes
Software resolution	0,001	0,001	0,001
Positioning accuracy	0,01 mm	0,01 mm	0,02 mm
Double-sided gate drive	yes	yes	yes
Power of electrospindle	up to 36 kW	up to 18 kW	up to 10 kW
Maximum rotation of the electrospindle	24000 rpm (option 6 000, 18 000, 40 000, 50 000)	24000 rpm (option 6 000, 18 000, 40 000, 50 000)	24000 rpm (option 6 000, 18 000, 40 000, 50 000)
Electrospindle inverter	yes	yes	yes
Brushless electrospindle	yes	yes	yes
Tool holders	HSK63 (option ISO30 ER32)	ISO30 ER32 (option HSK63)	ISO30 ER32 (option HSK63)
Construction	ribbed, steel, welded, stress-relieved, precisely machined	ribbed, steel, welded, stress-relieved, precisely machined	ribbed, steel, welded, stress-relieved, precisely machined
Tool magazine	up to 50 positions linear, revolver	up to 50 positions linear, revolver	option up to 24 positions linear
Tool height sensors	yes	yes	yes
Gear ratio	planetary gears	planetary gears	planetary gears
Knife head	oscillating knife, roller knife, drag knife, creasing knife, marker pen	oscillating knife, roller knife, drag knife, creasing knife, marker pen	oscillating knife, roller knife, drag knife, creasing knife, marker pen
Fastening the material	mechanical, T-slot, vacuum, hybrid	mechanical, T-slot, vacuum, hybrid	mechanical, T-slot, vacuum, hybrid
Power	400V, compressed air min. 8 bar/10 bar pressure booster	400V, compressed air min. 8 bar	400V, compressed air min. 8 bar

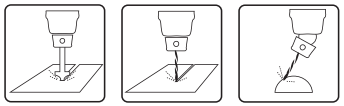
	PRO+	Expert	Standard
Any size of working area	✓	✓	✓
T-slot, vacuum, hybrid	✓	✓	✓
Positioning bases	✓	✓	✓
Solid steel (S), aluminum (A) or aluminum vacuum (AV) table	S, A, AV	S, A, AV	A, AV
Intelligent vacuum sections	✓	✓	
Tool magazines: revolver (R) or linear (L)	R, L	R, L	L
Drilling aggregate (option: vertical, horizontal tools, saw)	✓	✓	
Smooth C axis for angular aggregates (horizontal milling "from the side" or operations with a scoring saw)	✓	✓	
Tilting spindle	✓	✓	
Rotary axis on the table	✓	✓	
Feeding table	✓		
Receiving table	✓	✓	
Cleaning beam	✓		
Central lubrication system	✓	✓	✓
Automatic head of an active oscillating knife, disc knife, creaser, pen, etc.	✓	✓	✓
Video positioning system	✓	✓	✓
Probe	✓	✓	
Tool cooling in the form of oil mist, freezing nozzle	✓	✓	✓
Closed liquid cooling system	✓		
Positioning laser	✓	✓	✓
Label printer and barcode reader	✓	✓	✓
Scanner	✓	✓	✓
Monitoring of key components	✓	✓	✓
Chip extraction	✓	✓	✓

CNC milling machines

5 Axis Pro+ G

Control system	multi-axis real-time interpolator, with active trajectory prediction, LAN communication, EtherCat, nanosecond sampling time, RTCP, remote service access
Working area	X: 2000-27000 mm ; Y: 3000-50000 mm
Z axis clearance	up to 3000 mm
Drive system	Omron servo drives with EtherCat, X, Y, Z protocol, hardened, ground helical strips in accuracy class 6
Linear bearings	trapezoidal rails, Y axis quadruple guide size 35, X and Z axis triple guide size 25
Travel speed	X, Y up to 25 m/min; C, A up to 6000 deg/min
Software resolution	up to 0,0005 mm
Positioning accuracy	0,01 mm
Gate drive	double-sided master/slave with gate angle correction
Electrospindles	up to 50 kW
Tool holder	HSK63
Maximum electrospindle revolutions	24,000 rpm (option 6,000 - 40,000)
Construction	steel welded, annealed, precisely machined portal frame
Table	Modular T-shaped (steel, aluminum) separated from the main structure
Equipment options	- 3D printing head - tool cooling - linear or mobile linear revolver chain tool magazine - cutting saws - laser scanner - radio measurement probe - machining zone separators - correction map - roller shutter roof - vacuum table - extraction foot adapted to 5-axis heads - specialized CAD/CAM software

The 5X Pro+ G Large-Format Machining Center is the largest machine among the series of five-axis machining centers offered by Seron. Created especially for processing large-size details, including: for the production of boat molds, windmill blades, offering unrivaled performance in the yachting, energy, aerospace and vehicle manufacturing industries.



MILLING CUTTING SCULPTURING

- **Ergonomic design designed to the highest standards**
- **Advanced control for precise machining of large-sized details**
- **Full construction of the machine**

The structure designed according to the highest standards allows for precise work even in the most demanding materials. The machine support moves on rail guides. The gate and the Z axis are driven by two servo motors, which guarantees parallel movement (automatic gate angle correction function). The design of the machine, despite its large dimensions, guarantees stability. Machining accuracy is maintained at the highest level throughout the entire working space.

The 5X Pro+ G Machining Center offers not only impressive machining capabilities, but also advanced control. Equipped with a tilting/rotating spindle, the machine enables comprehensive processing of details from various perspectives. The use of tool magazines in the panel construction of the machine allows the use of a virtually unlimited number of tools. All these aspects make the 5X Pro+ G machine the undisputed leader in its class.

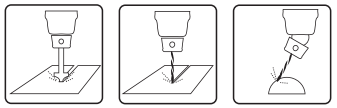
The use of absolute encoders eliminates the need to perform axis reference movement, which increases precision and saves time. Additionally, remote service access allows you to monitor and maintain the machine at the highest level of performance, which makes it not only a work tool, but also an investment in long-term production success.

In addition to the standard equipment, the 5X Pro+ G Machining Center offers a number of additional options, such as measurement probes, additional tool magazines, cooling system and even measuring straightedges. Loading doors at both ends of the housing and divided working space into several processing zones make the machine adaptable to various production needs, providing flexibility in the processing of materials such as composites, plastics, aluminum, wood or wood-based materials.

The 5X Pro+ G Machining Center not only raises efficiency standards in the processing of large-size details, but also redefines the standards of precision and quality in the entire production process. This is an innovative solution that sets higher requirements for material processing in industry.

CNC milling machines

5-Axis Pro+ H



Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 1ms, correction map, RTCP, remote service access,
Working area	X 1500-3000 x Y 2100-12000 mm
Z axis clearance	up to 1500 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical blades, hardened ground in accuracy class 6, Z axis ball screw with accuracy class 5, intelligent energy recovery
Linear bearing	Bosch Rexroth 35
Speed	X, Y to 25 m/min; C, A to 6000 degrees/min
Acceleration	up to 1G
Software resolution	up to 0,001 mm
Positioning accuracy	up to 0,01 mm
Gate drive	double-sided master / slave with gate angle correction
Electrospindles	up to 40 kW
Electrospindle inverter	yes
Maximum speed of electrospindles	up to 24 000 rpm
Construction	Steel welded
Cutter shank diameters	2 to 20 mm (option to 26 mm)
Tool holder	HSK63 ER32, ER40
Brushless electro-spindle	yes
Type of table	T-slot (option: vacuum, hybrid)
Equipment options	- tool cooling - linear or revolver tool magazine - rotary axis on the table - laser scanner - positioning bases - cutting saws - bathtub table - measuring probe

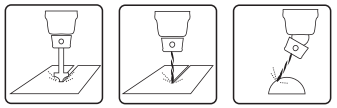
- **high rigidity of the construction**
- **active tool cooling system**
- **versatile use**
- **simultaneous processing**

The 5 Axis Pro+ H series of machines has been designed for enterprises implementing demanding projects. These machines are designed for processing large-size details, and thanks to the possibility of working in 5 axes, it provides almost unlimited possibilities in the production of complex 3D shapes. The 5 Axis Pro+ H series of machines is based on a body made of high-quality structural steel with increased mechanical properties. A specially designed gate with supports allows for transferring much greater mechanical loads. The ribbing made in modern technology ensures increased rigidity when processing demanding materials such as prolab, aluminum, non-ferrous metals, steel, etc. The Z axis is made of a ribbed thick-walled steel profile and structurally adapted to the assembly of high-power spindles up to 45 kW.

In order to maintain the rigidity and precision of machining more demanding materials, modifications were made to the 5 Axis Pro + series machines. Among other things, two additional pneumatic actuators were used to stabilize the movement in the Z axis. The gate also runs on linear guides with a larger cross-section and linear bearings with preload of rolling balls of high hardness. This allowed to eliminate even minimal mechanical clearances and to take higher loads. The table of the device can be made in a vacuum system or for mechanical fastening. The control system enables completely remote monitoring of machine operating parameters in order to optimize its operation, as well as reduce operating costs.

CNC milling machines

5-Axis Pro+



Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 1ms, correction map, RTCP, remote service access,
Working area	1500-3000 x 2100-12000 mm
Z axis clearance	500 -1500 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical blades, hardened ground in accuracy class 6, Z axis ball screw with accuracy class 5
Linear bearing	Bosch Rexroth 35
Speed	X, Y up to 45 m/min; C, A up to 6000 degrees/min
Acceleration	up to 1G
Software resolution	up to 0,0005 mm
Positioning accuracy	0,01 mm
Gate drive	double-sided master / slave with gate angle correction
Electrospindles	8 kW to 36 kW
Electrospindle inverter	yes
Maximum speed of electrospindles	24000 rpm (opcja 6 000, 40 000, 50 000)
Construction	steel welded, ribbed, stress relieved, precision machined
Type of table	vacuum, hybrid, steel, aluminum with M16 or M18 holes
Equipment options	- tool cooling - linear or revolver tool magazine - rotary axis on the table - laser scanner - positioning bases - oscillating aggregate - 5-axis software - closed system for cooling the electro-spindle with liquid - central lubrication system

- **correction map**
- **tool end point control in 5 axes**
- **possibility of simultaneous processing**

The series of 5-axis Pro+ machines are innovative solutions for companies that make models, molds for thermoforming, laminating, casting, sculptures and all kinds of 3D elements. Thanks to the work with the bi-rotary spindle, which gives us the ability to work in the A and C axes, the machine can perform complex details several times faster than 3 or 4-axis machines, and also implement projects impossible to be performed on simpler machines. The series of 5-axis machines is characterized by high precision, dynamics and speed of work. The ergonomic design, consisting of a fixed table and a movable gate, is perfect for the processing of complex, spatial blocks requiring high precision, used, for example, in the automotive or aviation industry.

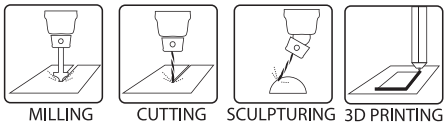
The high correctness of the machine geometry is guaranteed by precise machining from a single clamping, a previously stress-relieved structure weighing up to 30 tons. Active control of the end point of the tool in 5 axes (RTCP) or the possibility of simultaneous machining is possible thanks to the use of a modern real-time control system with dynamic trajectory analysis and an Ethernet connection, which allows for remote control of machine parameters. Despite the use of highly advanced solutions, the control is intuitive and user-friendly.

CNC milling machines

5X 3D Print

Control system	multi-axis real-time interpolator with active trajectory prediction. LAN communication, EtherCat, sampling time below 1ms, correction map, RTCP, remote service access
Working area	1500 – 3000 x 2100 – 12000 mm
Z axis clearance	500 – 1200 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y hardened helical strips, ground in accuracy class 6, Z axis, ball screw in accuracy class 5
Linear bearings	Bosch Rexroth 35
Travel speed	X, Y up to 45 m/min; C, A up to 6000 deg/min
Software resolution	0,0005 mm
Positioning accuracy	0,01 mm
Gate drive	double-sided master/slave with gate angle correction
Electrospindles	8 kW to 36 kW
Print heads	- capacity of up to 12 kg/h - capacity of up to 20 kg/h - capacity of up to 50 kg/h
Electrospindle inverter	yes
Maximum electrospindle revolutions	24,000 rpm (option 6000, 40,000 50,000)
Construction	welded, ribbed, annealed, precision machined steel
Type of table	vacuum, hybrid, T-slot steel, T-slot aluminum, aluminum vacuum
Possible additional options	- tool cooling - linear or revolver tool magazine - rotary axis on the table - laser scanner - positioning bases - oscillating unit - 5-axis software - central lubrication system

The 5X 3D Print machine series is a revolutionary approach, combining the functions of a 5-axis machining center with a large-format 3D printer. This hybrid machine allows you to efficiently print 3D models and then precisely mill them, achieving the required tolerances and accuracy within one CNC unit.



- **multifunctional device**
- **maximum process automation**
- **new technology**

Thanks to the tilting and rotating head, operating on the A and C axes, the machine is able to quickly produce complex details, exceeding the efficiency of traditional 3- or 4-axis machine tools.

The print head, moved by the axes of the CNC machine, allows for versatile use of the machine in 3-axis operations. The use of a combination of 3D printing and CNC milling significantly increases production efficiency and reduces company costs. This solution enables comprehensive production of components within the company, shortens order fulfillment time and optimizes production costs.

Depending on the print size and head efficiency, printing nozzles with diameters ranging from 4 to 25 mm are available. The heads we use can work with materials such as: PE, PP, ABS, PLA, PA, PC, PET, PPS, PEEK, PEKK, carbon fiber glass. The materials used for printing are ideal for mechanical processing, and after using the model, they can be reused, e.g. by a regranulation line.

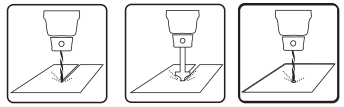
The technology used ensures not only high geometry accuracy thanks to single-mount machining, but also active control of the tool end point in 5 axes (RTCP) and the ability to perform simultaneous machining. A modern real-time control system with dynamic trajectory analysis and an Ethernet connection enable remote monitoring of machine parameters. Despite advanced solutions, the control remains intuitive and user-friendly. This innovative device ensures efficiency and versatility, making this series the undisputed leader in the field of processing and printing.

CNC milling machines

5-Axis Pro+ 4.0

Control system	multi-axis real-time interpolator with active prediction trajectory, LAN communication, EtherCat, sampling time below 1ms, correction map, RTCP, remote service access,
Working area	1300 - 3000 x 2100 - 12000 mm
Z axis clearance	400 -700 mm
Drive system	Omron servo drives with EtherCat, X, Y protocol hardened helical bars ground in accuracy class 6, Z axis ball screw in class accuracy 5
Linear bearing	trapezoidal rails, Bosch Rexroth 25
Speed	up to 60 m/min
Accelerations	up to 1G
Software resolution	up to 0,001 mm
Positioning accuracy	up to 0,01 mm
Gate drive	double-sided master/slave with gate angle correction
Electrospindle	up to 17 kW
Tool holder	HSK63F
Maximum rpm of the electrospindle	up to 24 000 rpm
Construction	steel welded, ribbed, stress relieved, precisely machined
Type of table	vacuum, pneumatic sections
Equipment options	- linear magazine with 3 positions - 16-position turret magazine with tool presence sensor - positioning bases and vacuum blocks - automatic central grease lubrication - pressure booster - security fence - intelligent vacuum sections - OPENWITP OSAI wireless keypad - sensor for measuring the length and diameter of the tool - positioning laser

The 5 AXIS PRO+ 4.0 machining center is an innovative machine created for entrepreneurs with a diverse production character. It was designed based on the design of the highest series machines, the PRO+ line. Body of the machine made of welded steel profiles is ribbed, subjected to the process of stress relief and machining from one clamping.



- **high structural rigidity**
- **active tool cooling system**
- **versatile use**

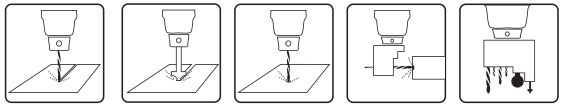
The innovative construction of the machine's support, based on a steel, ribbed structure, combined with elements made of light metals and composites, allows for high dynamics and working speeds and travel results in maximizing machine performance.

The 5 AXIS PRO+ 4.0 machining center has been equipped with an efficient swivel and tilt electrospindle. The high power of the electrospindle and efficient liquid cooling ensure effective work in the most demanding materials and types of machining. This is an innovative solution most often chosen by companies making models, stairs, doors, windows, molds, all kinds of 3D elements, as well as those producing furniture (furniture bodies and fronts or bent fronts). Thanks to working with a rotating spindle that gives us the ability to work in the A and C axes, the machine can perform complex details several times faster than 3 or 4-axis machine, as well as implement projects impossible to perform on simpler machines. The built-in multi-axis accelerometer allows you to capture overloads or dangerous resonant speeds and transmit the signal to the control, which automatically corrects the machining parameters or signals the need to the operator.

The 5AXIS PRO+ 4.0 automated machining center is a novelty in the SERON offer. It was developed in response to the needs of the carpentry industry. The configuration of the machine allows it to be implemented in an extensive, automated machine park managed in the Industry 4.0 concept, but it will also be an excellent equipment for a growing carpentry workshop.

CNC milling machines

ProNest



CUTTING | MILLING | DRILLING | AGGREGATE ANGULAR | AGGREGATE DRILLING

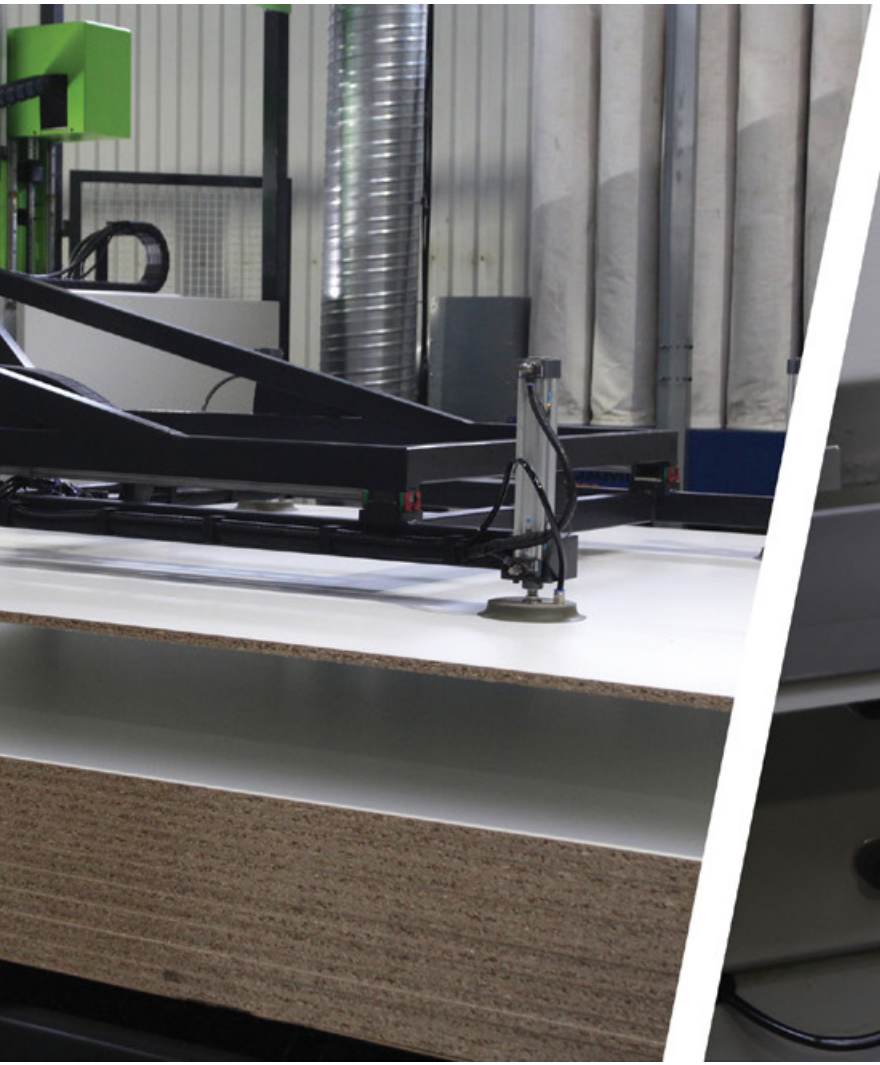
Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 2ms, correction map, RTCP, remote service access
Working area	2100x 3100 mm (option 2100×4100 mm)
Z axis clearance	100-300 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical blades, hardened ground in accuracy class 6, Z axis ball screw with accuracy class 5, intelligent energy recovery
Linear bearing	trapezoidal rails, Bosch Rexroth 25
Speed	up to 80 m/min
Acceleration	up to 1G
Software resolution	up to 0,001mm
Positioning accuracy	up to 0,01 mm
Gate drive	double-sided master / slave with gate angle correction
Electrospindle	8 kW to 36 kW powered by an inverter
Tool holder	HSK63F or ISO30
Maximum speed of electrospindle	24000 rpm
Construction	steel welded, ribbed, stress relieved, precision machined
Type of table	vacuum
Equipment options	- linear drives - positioning and correction of the material by means of a camera, laser, measuring probe - revolver tool magazine - cooling the tool with oil mist, chilled air - 3D laser or touch scanner - positioning bases - drilling units, angular - pneumatic sections - printer, code reader - CAD / CAM software for the design of furniture, bodies and fronts - automatic central lubrication system

- **maximum process automation**
- **possibility of feeding and positioning other formats**
- **operation of the machine by one operator**
- **possibility to process up to 3 raw chipboards**

ProNest automated machining center is dedicated to the furniture industry producing box and upholstered furniture. The machine with a feeding and receiving system is designed for cutting and drilling vertical wood-based panels. The efficient vacuum clamping system allows you to nest two boards simultaneously. In the standard configuration, the center has a working area of 2100 mm by 3100 mm, which has been adapted to the most popular size of furniture boards, which allows the material to be processed without additional cutting. However, we have developed a system that allows the loading of other predetermined material sizes.

ProNest starts working when the pallet of furniture boards goes to the feeder, then individually picked boards are transferred to the work table, where they are automatically positioned. After the operation is performed, the finished forms are transported to the receiving table. During this process, an automatic extraction system collects dust residues from the treatment process. The belt receiving system is equipped with a material sensor, which stops the conveyor belt in the right position, which allows the operator to freely mark the forms with labels and transfer them to the storage field. The machining center at this time performs operations on the next plate. This type of automation system allows the safe operation of the machine by one operator.

CNC milling machines



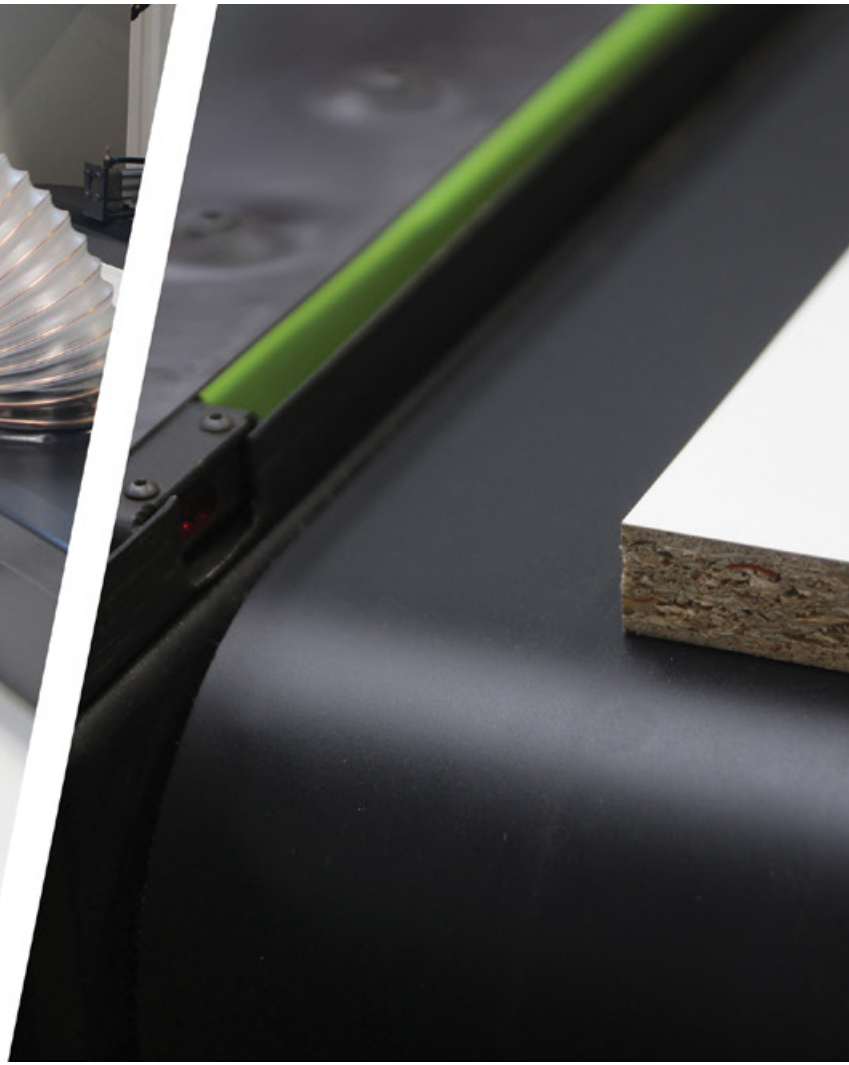
Sheet feeding system

Automatic positioning system

Automated parts labeling system

The process of nesting and drilling

Transporting to the receiving table



Material sensor that stops the conveyor belt

CNC milling machines

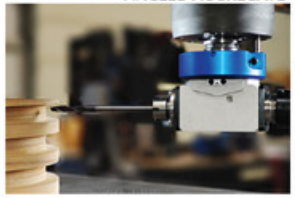
DRILL AGGREGATE

is a great tool for quickly making holes in the material, because each drill is controlled independently. This option works well in the carpentry and furniture industry, where the speed of drilling is the most important. The use of drilling aggregates significantly improves the hole making process - because it does not require the machine to travel to the tool magazine. Drill aggregate has up to 26 drill holders, in the "L" system, spacing of 32 mm, it is possible to equip the machine with drill units with a greater number of vertical and horizontal tools, can drills of various diameters and a circular saw for cutting furniture bodies in the axis X and Y.

REVOLVER TOOL MAGAZINE

Standardly placed on the plotter's gantry(it is possible to mount it together with the X axis). The advantage is the automation of the machining process, eliminating operator errors and speeding up the work. The tool change takes place faster than in the line magazine due to the shorter distance from the workplaces.

ANGLED AGGREGATE



We use angle aggregates from renowned manufacturers. The most popular tool in this category is a single-sided aggregate with a manually adjustable angle (or digital display), adapted for drilling operations and milling in the material from the side. It is possible to adapt the aggregate for assembly of saws. We offer a variety of aggregates: two-sided and four-sided. The aggregate can operate on machines equipped with a vacuum table with vacuum blocks.

SUSPENSION VESSELS

Vacuum blocks are used to attach the material on a raised surface for further processing with angle or drill chuck from the side. Depending on the details to be processed, we can choose their appropriate height and size.

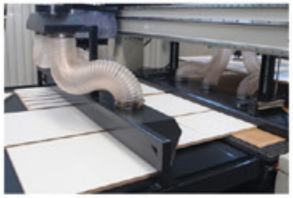
AUTONESTING

The selection of appropriate CAD / CAM software has a significant impact on the automation of production processes. We recommend dedicated software that improves the process of cutting boards. The functions included in the software provide a high level of control for individual types of operations. It enables immediate optimization of work.
The program includes, among others:
- nesting, which minimizes material waste and tools;
- ensures quick cutting of details; - a full set of 2D, 2,5D tools;
- control of directional line layers and design grids;
- text editing and single fonts for engraving;
- file import - DWG, DXF, EPS, AI and PDF;
- image import - BMP, JPG, TIF, GIF;
- the ability to add vectors to images;
- V-bit cutting / engraving;
- 2D profiling with interactive tabs, bridges and a ramping option;
- pocket cutting with multitools;
- drilling with the option of deep holes;
- preview of the tool path in many colors.

CONTROL SYSTEM

High-class CNC control system is an industrial real-time controller. The controller has advanced interpolation algorithms (dynamic coordinate analysis), ensuring the best quality of machining even in difficult conditions - guaranteeing stable and smooth operation of the machine even during untypical and complicated machining. The controller gives the possibility of using six working bases (G54-G59) and the function of ending the work started after the supply voltage failure. An additional advantage of the device is the option thanks to which the plotter is able to return to the starting point after each project. The control systems dedicated to the ProNest machine are intuitive and easy to use.

OUTFEED SYSTEM



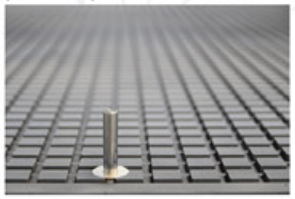
The system of the receiving conveyor belt along with the draw-dusting beams operates as follows:
- after performing the nesting and hole / bore operations, the beam pushes the elements onto the receiving table and at the same time dedusting them;
- the belt receiver takes ready-made items from the work table,then transports them to the end of the receiving table, making it easier for the operator to pick up the items for storage. A photocell placed at the end of the receiving table protects the parts from uncontrolled sliding;
- at the end of the receiving table there is a chute in the form of a hopper, to which we connect hose suction which ensures final chip removal;
- the receiving table fits the full dimension of the workpiece 2100 x 3100 mm on its surface, thanks to which the system releases the surface on the work table to place another processing plate on it.

DUST EXTRACTION SYSTEM

Dust extraction system is a solution that:
- at each stage of the machine operation will ensure efficient and effective collection of sawdust and dust. We offer a complete extraction system with intelligent control at the following machine modules:
- electrospindle (pneumatic extraction foot), ensures effective extraction when nesting,
- drill aggregate (suction foot), ensures effective extraction at bores and holes,
- cleaning and scraping beam , ensures effective removal of the material from the working field and cleans the space for the next wood-based board, - dedusting beam in front of the receiving table, ensures the extraction of dust before feeding the details to the receiving tape,
- chute at the end of the receiving tape, providing final dust removal.

INTELLIGENT VACUUM SUBSYSTEM (OPTIONAL)

The intelligent system reads the position of the spindle, which automatically opens the vacuum sections of the subsystem. This function is synchronized with the software and is especially recommended when machining small parts. The material is maintained at maximum efficiency by distributing the vacuum on the smaller surface area of the section.



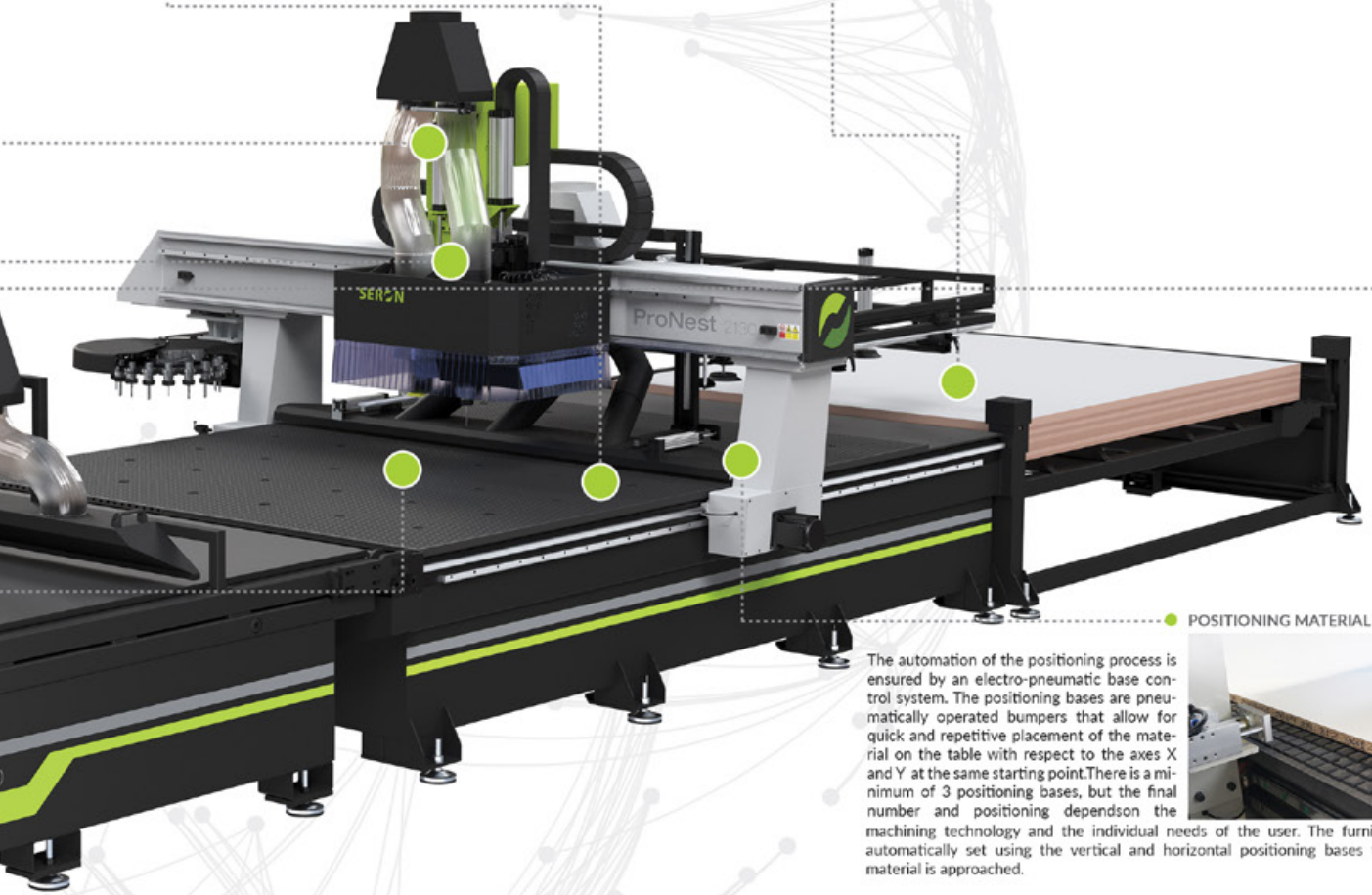
INFEEDING SYSTEM

Infeeding table with an automatic plate pickup system equipped with a positioning system on the work table:
enables easy loading of the entire pallet (e.g. MDF, chipboard) in a standard format (2070 x 2800 mm) using a forklift;
- load capacity of the feeding table up to 3000 kg;
- after loading, the plates are automatically positioned to the appropriate height, after which they are transferred to the work table by means of the plate pickup system.

SERON WOP SOFTWARE

Seron WOP software gives you the ability to create programs using predefined functions, macros, contours, milling and drilling. It is dedicated to 3 axis machining. It has the ability to import .dxf files and generate data to the postprocessor. The system enables machining such as milling, drilling, pocket milling, text milling, contour milling, tool administration.
This software allows graphic representation of the material and simulation of machining steps with tools assigned to the operation. In addition, it has a postprocessor to transform neutral FMC files into the required control format.
Seron WOP includes Nesting with the following features:
- Very fast, automatic generation of nesting results,
- Drag & Drop option from Microsoft Windows
- Optimization of rectangular and any shape elements on raw panels,
- Waste management,
- Grouping of items from the order by their thickness or type of material,
- The ability to manually edit nesting results,
- Calculating the number of raw boards needed,
- Automatic generation of CNC codes without manually adding paths,
- Automatic adding technology,
- Possibility of parametric editing of nesting elements dimensions,
- Individual settings for each nesting element, e.g. step of possible rotation angle or grain angle,
- The possibility of setting individual types of arrivals and departures of tools,
- The program adjusts the steps of arriving and departing from the tool,
- Adjustable in accordance with the requirements: distance between paths (cutter width), min./max. number, priority, grain direction, edge alignment, raw element contour, angle of rotation and stride length, min./max. element size.

The WOP Seron includes the Nesting import .xls / labels function:
- Dxf files import with automatic adding of machinings - drilling, milling,
- Import orders from ERP / PPS systems (import of Excel and Csv files),
- Printing bar codes (labels),
- Printing nesting lists (demand, summary)
- Feed speed depends on the type of material,

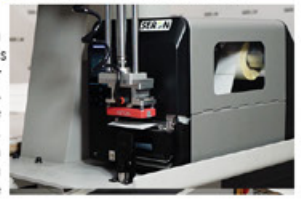


POSITIONING MATERIAL SYSTEM

The automation of the positioning process is ensured by an electro-pneumatic base control system. The positioning bases are pneumatically operated bumpers that allow for quick and repetitive placement of the material on the table with respect to the axes X and Y at the same starting point.There is a minimum of 3 positioning bases, but the final number and positioning dependson the machining technology and the individual needs of the user. The furniture panel is automatically set using the vertical and horizontal positioning bases to which the material is approached.

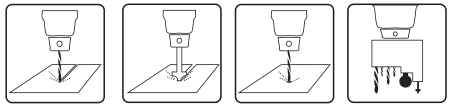
AUTOMATIC LABELING SYSTEM

The automatic labeling system is a component of automatic identification. It is used to print barcodes, markings, or information in the form of graphics or text, and automatically retrieve the label by the machine and place it on the specific part. This system greatly facilitates production organization. The label can be read using a scanner. Labels can be used to read a code that triggers a specific program.



CNC milling machines

Nesting



Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 2ms, correction map, RTCP, remote service access
Working area	2100x 3100 mm (option 2100×4100 mm)
Z axis clearance	100-300 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical blades, hardened ground in accuracy class 6, Z axis ball screw with accuracy class 5, intelligent energy recovery
Linear bearing	trapezoidal rails, Bosch Rexroth 25
Speed	up to 80 m/min
Acceleration	up to 1G
Software resolution	up to 0,001mm
Positioning accuracy	up to 0,01 mm
Gate drive	double-sided master / slave with gate angle correction
Electrospindle	8 kW to 36 kW powered by an inverter
Tool holder	ISO30 or HSK63F ER32
Maximum speed of electrospindle	24000 rpm
Construction	steel welded, ribbed, stress relieved, precision machined
Type of table	vacuum
Equipment options	- linear drives - positioning and correction of the material by means of a camera, laser, measuring probe - revolver tool magazine - cooling the tool with oil mist, chilled air - 3D laser or touch scanner - positioning bases - drilling units, angular - active oscillating knife, roller knife, drag knife, creaser, marker pen, pneumatic, electric knife - pneumatic sections - printer, code reader - CAD / CAM software for the design of furniture, bodies and fronts - automatic central lubrication system

- **intelligent suction sections**
- **belt system for collecting forms**
- **the possibility of comprehensive processing**

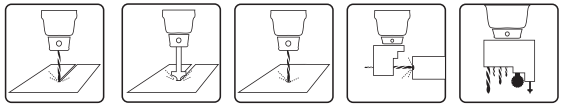
The nesting machining center is used in companies that start to automate the production of furniture. The machine tool is dedicated to cutting, as well as horizontal and vertical drilling and the production of furniture fronts. The machine is equipped with a raster vacuum table with pneumatic sections, thanks to which the clamping time of the material is limited to a minimum. The use of positioning bases makes it easier to arrange the material always in the same place in the working area. The scraper beam moving the processed details to the belt receiver is equipped with a dust removal module, which prepares the surface of the working table for placing the material for the next cutting.

The belt receiving table allows to shorten the time of unloading the finished details. When the finished forms are on the conveyor belt, you can easily place labels with appropriate codes on them. The machining center can be equipped with additional options, such as drilling or angular aggregates, which increases the level of its automation. Software dedicated to the machine for graphic design of furniture with its own library, enables automatic conversion of ready furniture pieces into files for cutting and nesting, taking into account bores and undercuts.

CNC milling machines

BeamCenter Pro

Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 2ms, correction map, RTCP tool end tracking, remote service access
Working area	X: 2500-12000 mm, Y: 1300mm, 1600mm, 1900mm
Z axis clearance	300-500 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical blades, hardened ground in accuracy class 6, Z axis ball screw with accuracy class 5
Linear bearing	trapezoidal rails, Bosch Rexroth 25
Speed	up to 80 m/min
Acceleration	up to 1G
Software resolution	up to 0,0001 mm
Positioning accuracy	0,01 mm
Gate drive	double-sided master / slave with gate angle correction
Electrospindle	8 kW to 20 kW powered by an inverter (optional: 5-axis)
Tool taper	ISO30 or HSK63 ER32
Maximum speed of electrospindle	24000 rpm
Construction	steel welded, ribbed, stress relieved, precision machined
Type of table	beam, vacuum
Opcje wyposażenia	- positioning and correction of the material with a laser, measuring probe - revolver tool magazine - cooling the tool with oil mist, chilled air - 3D laser or touch scanner - positioning bases - drilling units, angular - pneumatic clamping clamps - chip extraction installation - chip conveyor - integration with an industrial robot - label printer and code reader - CAD / CAM software for programming furniture, fronts, stairs, windows, doors - automatic central lubrication



- **versatile machining with electrospindle and aggregates**
- **beam table in any size**
- **ergonomic construction ensuring safety**

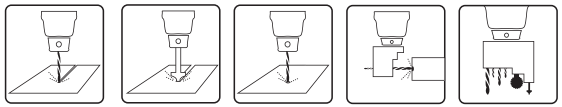
The Machining Center with a beam table is a solution designed and created in response to the requirements of the furniture industry, as well as any window or staircase joinery. The machine gate, made of composite materials, with a double-sided drive, allows for high dynamics and speed, while maintaining stability, which allows for the highest quality end pieces and excellent production efficiency.

Special construction and modern safety systems allow access to the machine during processing without any risk to the operator. The machine table is equipped with in universal movable beams with vacuum blocks, a laser for positioning the beams and extendable bases, which facilitate the correct positioning and assembly of the processed material. The tool magazine located in the gate housing allows for an immediate change of tools during the cabin passes. The center can optionally be equipped with a belt conveyor to remove chips and clippings, it also has suction feet for dust removal: the first one is located around the electro-spindle with operation, among others, angular aggregates and a suction foot for a drilling aggregate.

The beam processing center was designed and made in the Industry 4.0 concept, which allows for completely remote monitoring of the machine's operating status, in order to optimize its work, as well as reduce operating costs.

CNC milling machines

BeamCenter Expert



Control system	multi-axis real-time interpolator, with active trajectory forecasting, LAN communication, EtherCat, sampling time below 1ms, correction map, RTCP tool end tracking, remote service access
Working area	X: 3000 - 12000 mm; Y: 1000 - 1600 mm
Z axis clearance	300 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical strips, hardened, ground in accuracy class 6, Z axis, ball screw in accuracy class 6, planetary gears with angular clearance of 1'
Linear bearings	linear guides with preload, Bosch Rexroth 25 and 35
Travel speed	up to 50 m/min
Acceleration	up to 1G
Software resolution	up to 0,0001 mm
Positioning accuracy	0,01 mm
Electrospindle	15 kW, inverter powered, liquid cooled
Tool holder	HSKF63
Maximum electrospindle revolutions	up to 24,000 rpm
Construction	steel welded, ribbed, annealed, precisely machined from one mounting
Type of table	Beam, vacuum
Equipment	- revolver tool magazin + 2 linear magazine - advanced security system - positioning pins - drilling unit 12 vertical tools, 4 horizontal tools, 2x saw - Schmalz pneumatic and mechanical clamping clamps - double-circuit Schmalz beam system - preparation for chip extraction installation - chip conveyor - possibility of cooperation with CAD/CAM software for programming furniture, fronts, stairs, windows, doors and many other details - automatic central lubrication - air conditioning of the control cabinet - functions: correction map and intelligent energy recovery - possibility of dual-zone operation - remote service access, remote diagnostics - tool diameter and length measurement probe with diameter compensation via the control system - light laser for positioning details

- **comprehensive machining with electro-spindle and aggregates**
- **beam table**
- **ergonomic design ensuring safety**

The BeamCenter Expert Machining Center with a beam table is a solution designed and created in response to the requirements set in the furniture industry as well as in all kinds of doors and stair joinery. The structure is based on a solid steel body, welded and annealed, which can be made to any length of the working field.

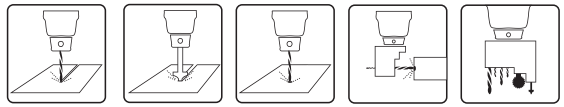
The machine gate is made of a high-quality ribbed steel beam, allowing for high dynamics while maintaining stability, which allows for obtaining the highest quality of final elements and excellent production efficiency.

Special construction and modern safety systems allow access to the machine during processing without risk to the operator. The tool magazine (16 positions) located in the gate structure allows for immediate tool change during head movements. Additionally, the center is equipped with 2 linear magazines, which will allow for effective work even in various machining strategies.

The EtherCat protocol enables fast two-way communication with key components, and a real-time multi-axis interpolator minimizes tracking error. The integrated CAD/CAM environment facilitates the operator's work by enabling file editing directly on the control unit.

CNC milling machines

ProFrame



Control system	multi-axis real-time interpolator, with active trajectory prediction, LAN communication, EtherCat, nanosecond sampling time, RTCP, remote service access
Working area	X: do 6300 mm Y: do 1100 mm
Z axis clearance	200 – 400 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y hardened helical strips ground in accuracy class 6, Z axis, ball screw in accuracy class 5
Linear bearings	trapezoidal rails, Y axis double guide size 35, X and Z axis double guide size 25
Travel speed	up to 60 m/min
Software resolution	up to 0,0001mm
Positioning accuracy	0,01 mm
Gate drive	single-track
Electrospindles	12 kW to 25 kW powered by an inverter
Tool holder	HSK63
Maximum electrospindle revolutions	24,000 rpm (option 6,000, 40,000, 50,000)
Construction	welded, ribbed, annealed, precision machined steel
Table	Console table, pneumatic vices
Equipment	- Tilt/rotatable head - additional angular/rotary axes - angle aggregates - positioning and correction of material using a camera, laser, measurement probes - revolver magazine - beams moved automatically or manually - vices sliding automatically or manually - pneumatic mounting clamps - cooling the tool with oil mist and a freezing nozzle - suction foot moved automatically - integration with an industrial robot - correction map - conveyor belt for chip removal - 3D CAD/CAM software

- **specialized machining center designed for processing profiles**
- **a machine that automates production processes**
- **for series and unit production**

The ProFrame Machining Center is a solution designed for precise machining of profiles. It is perfect for both serial and unit production, automating key production processes. This device enables effective processing of aluminum and steel profiles as well as plastic, composite and wood profiles.

The ProFrame machine was designed for flexibility and efficiency in production. The structure of the device is based on a welded, stress-relieved, ribbed steel structure. Equipped with a console table, designed to enable automatic and manual manipulation of beams, adjusting the appropriate spacing for a given production cycle. The beams can be mounted with vices, both automatic and manual, which ensures stable clamping of details. This solution makes it easier to place the material for processing and ensures the highest level of precision.

The machine gate is based on one arm, which significantly facilitates access to the processed elements on the machining table. The use of such a structure has a positive effect on work ergonomics and translates into increased efficiency. The possibility of processing from many sides, including from the bottom, allows the implementation of various projects.

The ProFrame Machining Center means not only precision in production, but also intuitive control. Dynamic servo drives enable quick positioning of the processing unit, reaching speeds of up to 60 m/min. Thanks to the use of a turret magazine in its design, the machine guarantees short tool change times, which translates into optimal machining cycles.

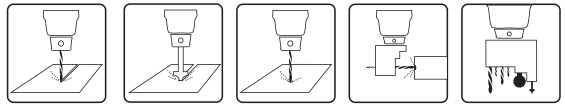
ProFrame series machines are equipped with an industrial control system. The EtherCat protocol enables fast two-way communication with key components, and a real-time multi-axis interpolator minimizes tracking error. The integrated CAD/CAM environment facilitates the operator's work by enabling file editing directly on the control unit.

The use of absolute encoders eliminates the need to perform axis reference movement, which increases precision and saves time. Additionally, remote service access allows you to monitor and maintain the machine at the highest level of performance, which makes it not only a work tool, but also an investment in long-term production success.

CNC milling machines

ProROBOTic 4.0

Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 2ms, correction map, RTCP, remote service access
Working area	X 600-3000mm Y 900-12000 mm
Z axis clearance	200-1000 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical blades, hardened ground in accuracy class 6, Z axis ball screw with accuracy class 5, intelligent energy recovery
Linear bearing	trapezoidal rails, Bosch Rexroth 25
Speed	up to 90 m/min
Acceleration	up to 1G
Software resolution	up to 0,001 mm
Positioning accuracy	up to 0,01 mm
Gate drive	double-sided master / slave with gate angle correction
Electrospindle	8 kW to 36 kW powered by an inverter
Tool holder	ISO30 or HSK63F ER32, ASK63F
Maximum speed of electrospindle	24000 rpm (option 6 000, 40 000, 50 000)
Construction	steel welded, ribbed, stress relieved, precision machined
Type of table	vacuum, hybrid, pneumatic sections
Equipment options	- linear drivers - positioning and correction of the material by means of a camera, laser, measuring probe - revolver tool magazine - cooling the tool with oil mist, chilled air - 3D laser or touch scanner - positioning bases - additional angular / rotary axes - drilling units, angular - active oscillating knife, roller knife, drag knife, creaser, pen - pneumatic clamping clamps - chip extraction installation - integration with an industrial robot



CUTTING MILLING DRILLING AGGREGATE ANGULAR AGGREGATE DRILLING

- **automated loading and unloading**
- **comprehensive monitoring of key components**
- **the highest work ergonomics**

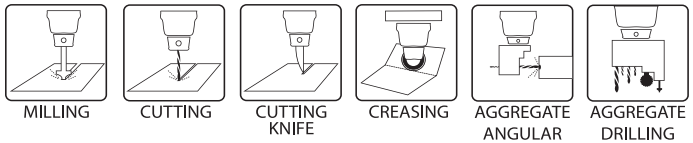
The ProROBOTic 4.0 Robotized Machining Center is a center built in accordance with the Industry 4.0 concept. The configuration of the machine makes it possible to implement it in an extensive, automated machine park, but it will also be an excellent equipment for a growing carpentry workshop. It guarantees efficient work supervised by a maximum of one operator, whose role is limited to delivering a pallet of details for processing to the place where the materials are collected by the robot and collecting ready-made, palletized products. The center allows for reducing the involvement of human resources, optimizing production costs and has a significant impact on improving the quality of products.

The machine control is equipped with intuitive solutions, which makes the operation easy, while the interface is friendly and clear. The operator can follow the progress of the process in real time and correct machining parameters. The used communication protocols enable remote software update as well as service access and parameter correction not only of the main control, but also of all key components of the machine, such as electrospindle, inverters or valve terminals. In addition, technicians have the ability to monitor the condition of the main components in real time and have access to reporting history. This enables the reduction of service visits by as much as 70%, which also reduces the downtime of the machine.

CNC milling machines

AdMaker

Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 2ms, correction map, RTCP, remote service access,
Working area	X: 1500 - 3000 mm; Y: 2000 - 12000 mm
Z axis clearance	200-700 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical blades, hardened ground in accuracy class 6, Z axis ball screw with accuracy class 5, intelligent energy recovery
Linear bearing	trapezoidal rails, Bosch Rexroth 25
Speed	up to 80 m/min
Brushless electrospindle	yes
Software resolution	up to 0,001
Positioning accuracy	up to 0,01 mm
Double-sided gate drive	yes
Electrospindles	8 - 15 kW, pneumatic oscillating knife, circular knife, trailing knife, creaser, marker
Camera	yes with positioning option
Maximum speed of electrospindle	24000 rpm
Construction	steel welded, ribbed, stripped, precision machined
Type of table	vacuum, hybrid
Equipment options	- linear drivers - tool cooling - scanner - positioning bases - angle aggregate - central lubrication system - positioning the material with a laser, measuring probe, camera - chip extraction installation



- **gold medal in The Price for Innovation competition**
- **versatile use**
- **high dynamics of work**

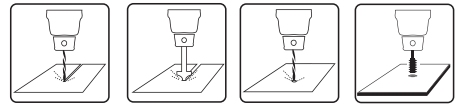
AdMaker is a multifunctional machining center dedicated to companies in the advertising industry that focus on automation and minimization of production costs. The machine is designed for processing materials used, among others in the production of 3D letters, advertising pylons, decorative elements, packaging, gaskets, casting molds and for cutting textiles.

The machine tool was built on the basis of the Expert series, so it can be equipped universally enough to meet the implementation of the most complex projects in a wide range of materials. Top-class tools, such as the oscillating knife module or the industrial electrospindle, which the AdMaker is equipped with, allow for high-performance materials, leaving clean and smooth edges. The positioning camera and the possibility of simple and quick fixing of the material on the vacuum table facilitate precise processing of small formats. Thanks to all the tools that AdMaker is equipped with, we obtain a multifunctional device that gives great machining possibilities.

CNC milling machines

HeavyLine

Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 2ms, correction map, RTCP, remote service access,
Working area	1300x1000 or 1300x1500 mm
Z axis clearance	up to 500 mm
Drive system	magnetic linear drives, measuring rulers
Linear bearing	Bosch Rexroth 35
Speed	up to 30 m/min
Acceleration	up to 1G
Software resolution	up to 0,0005 mm
Positioning accuracy	0,001 mm
Gate drive	double-sided master / slave with gate angle correction
Electrospindle	8 kW to 67 kW
Number of tools in stock	up to 27
Electrospindle inverter	yes
Construction	steel welded
Tool holder	HSK63, ER32
Brushless electrospindle	yes
Equipment options	- steel T-slot bathtub table - closed tool cooling circuit - tool cooling - chain tool magazine - chip conveyor - laser measurement of the tool - touch probe - more tools in stock as an option



- **precise dynamic machining**
- **measuring rulers integrated with guides**
- **possibility of threading**
- **ergonomic housing**

The HeavyLine series of machines has been designed for the most demanding users. These are industrial machine tools designed for precise serial production in hard materials such as steel, non-ferrous metals and their alloys. Machining centers of this series are perfect for industrial sectors such as: automotive and aerospace, production of machine components, injection molds.

Movable, on both sides, driven gate, running on a steel, welded and stress-relieved body, was built of steel and composite materials. Thanks to this structure, these machines are characterized by high dynamics of work while maintaining precision. HeavyLine CNC machining centers are equipped with full, ergonomic construction, which ensures safe working conditions. At the same time, it enables the observation of the processing process through the use of tempered glass windows.

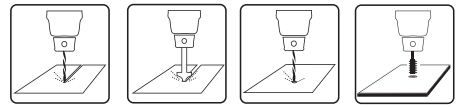
The HeavyLine series is equipped with a chain magazine with a maximum number of tools for up to 27 positions, which allows for even more effective implementation of complex projects. The machine table is made of solid steel in a T-slot system for mechanical clamping of details. The manual chip removal system allows the output tank to be emptied using an overhead crane. It is also possible to expand the machine with an automatic - screw or belt - chip conveyor.

The control allows you to integrate the machine with a machine park managed in the Industry 4.0 concept. Thanks to this, it is possible to completely remotely monitor the machine's operating parameters in order to optimize its operation, as well as reduce operating costs.

CNC milling machines

HardLine+

Control system	multi-axis real-time interpolator, with active trajectory prediction, LAN communication, EtherCat, nanosecond sampling time, RTCP, remote service access
Working area	X: 600 - 2000 mm; Y: 900-3000 mm (other working sizes on request)
Z axis clearance	up to 700 mm (higher on request)
Drive system	Bosch Rexroth drives, Bosch Rexroth measuring scales Hardened and ground helical strips in accuracy class 6, Z axis, ball screw in class accuracy 5
Linear bearings	trapezoidal rails, Y axis quadruple guide size 25, X axis triple guide size 25 and Z axis triple guide size 25
Travel speed	up to 25 m/min
Acceleration	up to 0,0001mm
Software resolution	0,01 mm
Positioning accuracy	double-sided master/slave with gate angle correction
Gate drive	up to 25 kW
Electrospindles	HSK63, ISO40
Maximum electrospindle revolutions	24000, 13000, 6000 rpm
Construction	welded steel
Table	T-shaped steel, aluminum
Equipment	- HSM function - measuring rulers - material positioning and correction using a laser, measurement probe (optical, radio) - coolant collection table - cooling of the tool through the electrospindle - automated liquid cooling system - cooling spray tools, - coolant tank 200 L - linear tool magazine for 30 items - 3D laser or touch scanner - additional angular/rotary axes/dividing head - pneumatic mounting clamps - integration with an industrial robot - correction map - automatic central lubrication - complete construction of the machine - interior lighting - specialized CAD/CAM software - remote service diagnostics



- **Massive and stable structure ensuring dimensional stability**
- **Full machine closure**
- **Industrial nanosecond control system with HSM processing; sampling time less than 1 ms**

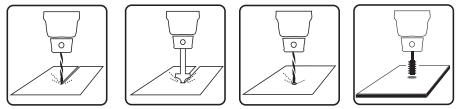
The HardLine+ machining center is an innovative line of machines designed for the industrial sector to process the most demanding materials, such as steel, non-ferrous metals and composites. These high-performance machine tools fit perfectly into the Industry 4.0 concept, ensuring precision, repeatability and efficiency. HardLine+ series machines have a massive structure, which guarantees lasting dimensional precision and machine stability. The steel, welded and ribbed structure is adapted to high-efficiency and precise machining of demanding materials. Kinematic properties ensure high quality of processed surfaces. Stress relief and machining processes from a single fixture on large-format milling centers ensure the lasting precision of the presented machine. The table is made of high-quality steel and allows for mechanical mounting, which ensures stabilization of the elements, which is especially important when processing precision details. The machine is standardly equipped with measuring rulers, ensuring positioning accuracy of 0.0005 mm.

Additionally, the HardLine+ series features a full machine structure. The construction combined with a solid construction makes the HardLine+ Machining Center ready to meet the most demanding working conditions, while ensuring safety and maintaining the highest quality of machining. This solution is another step towards a comprehensive approach to efficiency, durability and precision in the machining industry. HardLine+ series machines are equipped with an industrial control system. The EtherCat protocol enables fast two-way communication with key components, and a real-time multi-axis interpolator minimizes tracking error. The integrated CAD/CAM environment facilitates the operator's work by enabling file editing directly on the control unit.m The use of absolute encoders eliminates the need to perform axis reference movement, which increases precision and saves time. Additionally, remote service access allows you to monitor and maintain the machine at the highest level of performance, which makes it not only a work tool, but also an investment in long-term production success. The HardLine+ series provides precise HSM machining with maximum dynamics, gaining recognition among operators in various industries. It offers effective work even with the most complex and precise details, while maintaining economic production.

CNC milling machines

HardLine

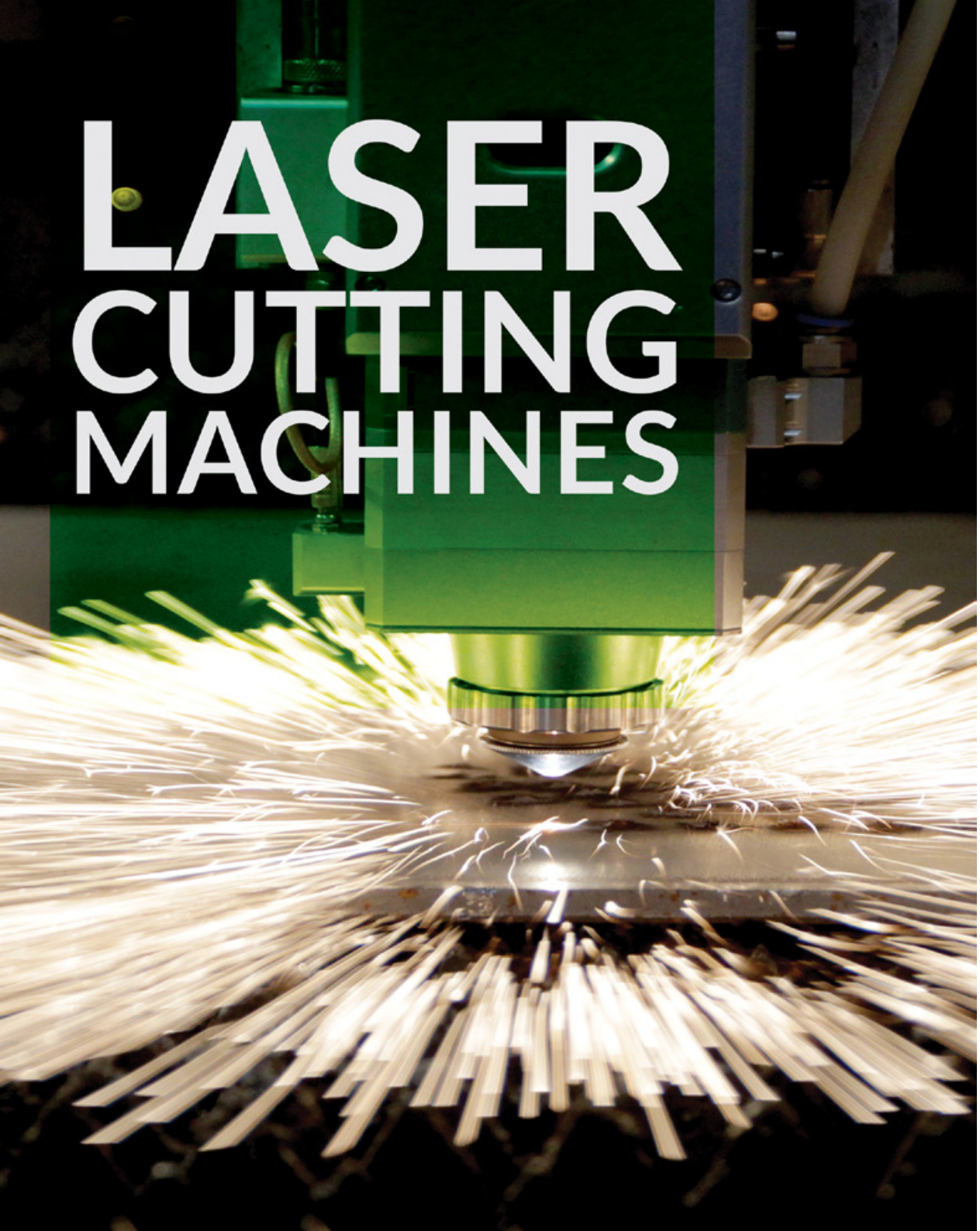
Control system	multi-axis real-time interpolator, with active forecasting trajectory, LAN communication, EtherCat, sampling time less than 2ms, correction map, RTCP tool end tracking, remote service access
Working area	X 600-2100mm Y 900-6000 mm
Z axis clearance	200-500 mm
Drive system	Omron servo drives with EtherCat protocol, X, Y helical blades, hardened ground in accuracy class 6, Z axis ball screw with accuracy class 5, intelligent energy recovery
Linear bearing	trapezoidal rails, Bosch Rexroth 25
Speed	up to 80 m/min
Acceleration	up to 1G
Software resolution	up to 0,001 mm
Positioning accuracy	up to 0,01 mm
Gate drive	double-sided master / slave with gate angle correction
Electrospindle	8 kW to 36 kW powered by an inverter
Tool holder	ISO30 or HSK63 ER32
Maximum speed of electrospindle	24000 rpm (option 6 000, 40 000, 50 000)
Construction	steel welded, ribbed, stress relieved, precision machined
Type of table	T-slot aluminum, solid aluminum, solid steel
Equipment options	- linear drives - positioning and correction of material by means of a camera, laser, measuring probes - linear, revolver tool magazine - cooling the tool with oil mist, chilled air - 3D laser or touch scanner - positioning bases - additional angular / rotary axes - drilling units, angular - pneumatic clamping clamps - integration with an industrial robot - software CAD/CAM 3D - automatic central lubrication - automated liquid cooling system



- **steel ribbed construction with high damping coefficient vibration**
- **solid steel or aluminum T-table**
- **threading option**

HardLine series are professional devices intended for companies producing, among others: casting molds, injection molds, pressure molds, model plates, prototypes, plastic details, stamps, blanking dies, etc. Rigid construction with a high damping coefficient vibrations and top-class components ensure high performance and long-term, trouble-free operation. The T-slot table made of solid steel or aluminum ensures stable and precise clamping of the element, which is especially important for precise machining of demanding materials.

HardLine machines can be equipped with a module for threading steel and aluminum. Depending on the nature of production, these machines can also be expanded with functionalities such as: a bathtub table, a closed liquid cooling system, cooling with oil mist or freezing nozzles, which will have a significant impact on its efficiency.



LASER CUTTING MACHINES

The Seron FiberCut laser machines are machines designed for fast, precise cutting of elements from various types of sheets, pipes and profiles. The fiber laser cutters are working with high accuracy and repeatability, guaranteeing the highest quality of the cut edge.

Laser cutting machines

FiberCut

Innovativeness of the construction solutions used in FiberCut fiber cutters.

The construction of FiberCut was designed by experienced engineers in cooperation with academic expert research teams of the Rzeszów University of Technology and the AGH University of Science and Technology.

Laser FiberCut are innovative machines designed for fast, precise cutting of sheet metal, pipes and profiles. The construction of the machine is based on a classic monolithic steel body, which is subjected to the process of stress relief and machining
from one mount. The combination of these processes ensures lifelong dimensional stability, even under intensive use. The durability of the paint coating is increased by the shot-blasting process, which allows you to prepare the elements for coating with the paint coating by cleaning and developing it beforehand.

The construction of this type used by us guarantees long-term, highest precision of the cutters operation. The rolling support of the machine is made of a combination of light metals and composite materials, which in turn allows for high dynamics and operating and travel speeds, resulting in higher machine efficiency. The modular design of the FiberCut enabled the implementation of a positioner for cutting closed profiles and pipes.

The safety housing integrated with the construction of the machine is ergonomic, has the highest safety certificate, thanks to which the device works in class 1, i.e. completely safe for the operator. It enables safe observation of the working area through built-in windows with a special filter or optionally using a monitor.

Reliable solutions used in the control system of FiberCut.

The demands for industrial solutions are now higher than ever. High efficiency, dynamism, low energy consumption, precision of work - these are just some examples that Polish entrepreneurs rely on.

Laser FiberCut perfectly fit into the concept of modern industry thanks to an intuitive, modern real-time control system with dynamic trajectory analysis and a reliable Ethernet connection that enables comprehensive management of the machine park. It allows for remote analysis of the machine condition and control of operating parameters in order to obtain the best machining effect. The control is equipped with a number of advanced functions such as sheet autodetection, position angle correction, autonesting, material database or parameter library available from the operator level. These functionalities affect the high efficiency of the machine, time and material savings. Such an innovative solution will work for entrepreneurs who put emphasis on innovative management concepts and increasing production efficiency.

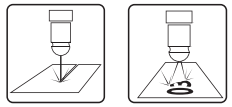
Seron lasers FiberCut are equipped with a professional Bosch Rexroth control system.
The Bosch Rexroth control has many technical solutions to improve production, e.g. changing the operating mode of the laser cutter, visual representation of the cutting trajectory, cutting speed adjustment and the ability to recover energy. The energy recovery system installed in the fiber cutter allows you to recover part of the energy when the machine is stopped by braking motors. Thanks to this solution, excess energy is transferred to other motors and not taken from the outside. This makes the machine more energy efficient and it is more economical for users to maintain.

Fiber lasers are equipped with dynamic control of the height of the laser head above the material with an accuracy of 0.005 mm and system of shielding gases, which significantly affects the quality and speed of cutting. Remote diagnostic access, both operator and service, enables correction of machine parameters, access to components, remote viewing of the image from the monitoring of the work table and technical support from anywhere in the world. The Bosch Rexroth control system, despite its advancement, is at the same time intuitive and very user-friendly.

Fiber LinearCut

Control system	Bosch Rexroth, real-time interpolator with active trajectory prediction, Sercos communication protocol, remote access service, touch screen, visual cutting trajectory, built-in macro library (shapes), speed adjustment, system operation mode laser cutting, the ability to transfer files via LAN.
Working area	X: 1550, 2050 mm; Y: 3050, 4050, 6050 mm
Max. speed	up to 340 m/min
Power	1–20 kW
Acceleration	up to 4,2 G
Positioning repeatability	up to 0,001 mm
Automatic height adjustment	yes
Head variable focal length (zoom)	autofocus
Table load capacity	265 kg/m^2
Equipment options	- rotary axis - sheet metal warehouse - sheet metal scrap management

Fiber Linear Cut FLC laser cutters are highly efficient machines dedicated to cutting steel and non-ferrous metals with a fiber laser. A characteristic feature of these devices is the high dynamics of movements, thanks to which it is possible to shorten the material processing time and obtain excellent quality of the cut edge, even with complex shapes.



- **failure-free precision device**
- **top-class magnetic linear drives**
- **dynamic and ultra-fast cutting**

In order to maintain high rigidity of the machine structure, a monolithic welded steel bed has been designed, which is subjected to stress relief processes and precise machining from one fastening. The X-axis beam is made of composite materials and aluminum.
The dynamics of FLC cutters translates into high quality of cut materials and huge savings in labor time and costs. In order to achieve high speeds and accelerations, but also to make full use of laser cutting technology, top-class magnetic linear drives with Bosch Rexroth measuring scales were used. Thanks to this, the machines in this series have the ability to achieve speeds of up to 340 m/min and accelerations of up to 4.2 G.
The advantage of using linear drives is obtaining much higher accelerations in relation to rotary drives, as a result, the machine reaches the set feed speed much faster, and at the same time it has a much higher value. This is achieved by eliminating the moment of inertia of the rotating elements. By using magnetic linear drives, we eliminate the phenomenon of backlash, because the movement is contactless through the magnetic field. Using this technology, the machine achieves an accuracy of 0.001 mm.
The FLC series machines are characterized by a long service life, because the magnetic elements of the drive do not come into contact with each other, and thus there is no wear.


Rexroth
IndraDrive C
WARNING !
Rexroth
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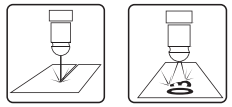
precitec

Control system	Bosch Rexroth, real-time interpolator with active trajectory forecasting, Secros communication protocol, remote service access, touch screen, visual trajectory cuts, built-in macro (shapes) library, adjustment speed, operating mode of the laser cutting system, the ability to transfer files via LAN.
Working area	X: 1550, 2050 mm; Y: 3050, 4050, 6050 mm
Max. speed	up to 210 m/min
Power	1–12 kW
Acceleration	up to 2G
Positioning repeatability	0,01 mm
Automatic height adjustment	yes
Adjustable head length (zoom)	autofocus
The load capacity of the table	265 kg/m^2
Equipment options	- rotator for pipes and profiles - sheet metal warehouse - sheet scrap management

Fiber laser cutters are characterized by simplification of optics in relation to CO2 or YAG cutters. The lack of mirrors transmitting the laser beam (transmitted inside the fiber to the laser head) allows to minimize transmission losses. Another significant advantage of the Fiber laser source is its greater efficiency compared to CO2 laser sources, resulting in lower electricity consumption by about 70%. Due to the fact that the laser beam is sent to the head with practically no losses, the energy is concentrated to a high density on a very small diameter, the cutting speed of particularly thin sheets is several times higher than when using a CO2 laser, the consumption of process gases is also much lower.



- **energy-saving modern technology**
- **monitoring of key components**
- **top-class reliable components**

The series of Seron FiberCut machines are machines designed for fast, precise cutting of elements from various types of sheets, pipes and profiles. Fiber cutters work with high accuracy and dimensional repeatability, guaranteeing the highest quality of the cut edge. The machine bed is a monolithic body subjected to the annealing process and machining from one clamping. The mobile support of the machine allows for high working and driving speeds. Intuitive, modern real-time control system with dynamic trajectory analysis and a reliable Sercos link. The use of advanced functions such as: sheet autodetection, position angle correction, autonesting, material base or parameter library, affects the high precision, dynamics and efficiency of the machine.

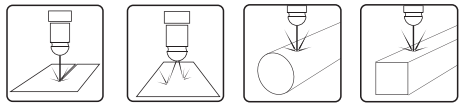
FiberCut lasers are equipped with autofocus - smooth change of focal length and dynamic control of the height of the laser head position above the material, and a shielding gas system. The combination of a solid structure with top-class components guarantees many years of reliable operation. The CNC control system is intuitive and very user-friendly at the same time. The FiberCut machine guarantees a stable cutting process without the need for frequent maintenance or replacement of consumables.


SERON

Fiber RotaryCut

Control system	Bosch Rexroth, real-time interpolator with active trajectory prediction, Sercos communication protocol, remote access service, touch screen, visual cutting trajectory, built-in macro library (shapes), speed adjustment, system operation mode laser cutting, the ability to transfer files via LAN.
Working area	X: 1550, 2050 mm; Y: 3050, 4050, 6050 mm
Profile length	up to 6 000 mm / 12 000 optional
Pipe diameter	up to 240 mm
Profile (rectangle)	up to 240 mm
Max. speed	up to 210 m/min
Power	1–20 kW
Acceleration	up to 2G
Positioning repeatability	up to 0,01 mm
Automatic height adjustment	yes
Head variable focal length (zoom)	autofocus
Table load capacity	265 kg/m^2
Equipment options	- sheet metal warehouse - pipe and profile warehouse - feeder, receiver of pipes and profiles - sheet metal scrap management

Fiber Rotary Cut FRC laser cutters are specialized devices for cutting flat sheets, which enable extending the functionality of production processes by cutting pipes and profiles. Designed on the basis of proven design and technical solutions, the FRC series was created for entrepreneurs who require compact solutions. These cutters allow for multifunctional production with one device while saving space in production halls.



CUTTING | MARKING | PIPES CUTTING | SQUARE PROFILES CUTTING

- **multifunctional device for cutting metal**
- **innovative technological solutions**
- **solid ergonomic design - ensuring safety**

The construction of the machine has been designed to work with pipes with a diameter of 20 mm to 240 mm and square profiles up to 240 mm, length 6000 mm and weight up to 250 kg.

The rotator enables cutting and punching of pipes and profiles using innovative laser technology. The FRC series devices are characterized by high accuracy, repeatability and the possibility of positioning details relative to each other. Thanks to this, these cutters are perfect for homing details in relation to each other in welding processes and plants with robotic welding stations.

FRC series machines are characterized by high precision and accuracy even when using high speeds and cutting complex shapes. These cutters successfully displace other devices for cutting profiles in production processes.

Laser cutters FiberCut dedicated to cutting pipes and profiles are equipped with, among others: in the latest generation of fiber optic sources and modern laser heads with the Auto-Focus function.

Advanced control system with built-in nesting option allows you to optimize and control production costs. In standard equipment, the device also has touch control. The user interface is simple, intuitive and allows you to view machining processes in real time.


PRECITEC

Fiber laser cutting machines

LASER FIBER IPG SOURCE

YLS and YLR series are a new generation of diode-pumped laser sources with a wavelength range of 1070nm. They are characterized by a unique combination of high power, excellent quality of the laser beam and high efficiency of beam transmission through the optical fiber. The light sources in this series offer low amplitude distortion, high stability and a very long lifetime of the diode pump. Compared to CO2 lasers, the IPG source consumes about 70% less electricity. No moving optics, no need to adjust the mirrors or replace them. No resonator gases.

LASER HEAD PRECITEC

Precitec heads work perfectly with FiberCut Seron laser cutters. Thanks to the use of the head, we can cut stainless steel, aluminum, carbon steel with very good quality of the side edges. The completely enclosed laser beam is protected against any external contamination. These heads are equipped with an anti-collision system, which reduces the possibility of damage. The air cleaning system provides perfect protection of the optical elements of the head. These heads ensure: constant, high cutting speed at any temperature, very fast change of focal length. The beam is completely protected against micro-dust and the sensor instantly detects damage and too large splinters on the protective lens. The head has a function of constant temperature monitoring, which protects against damage to the optical fiber by measuring radiation and automatic focal length measurement.

INDUSTRIAL REAL-TIME CONTROL SYSTEM BOSCH REXROTH

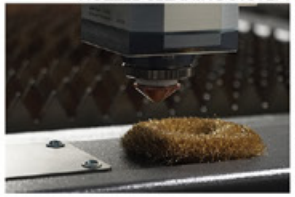
Control system BOSCH REXROTH has panel with a 21-inch monitor, which has a graphic visualization of the cutting trajectory and the Secros industrial protocol. The built-in touch screen and macro (shapes) library allows you to easily start cutting on the machine from the control level. A useful function for determining parameters, which gives us the opportunity to create a material base with assigned cutting parameters.

The control also allows you to adjust the speed and operating mode of the laser cutting system. The ability to transfer files over the LAN.

CHILLER

Professional, industrial liquid cooler designed for active cooling sources and Fiber heads. Thanks to the use of an active cooling unit with the function of controlling two circuits, the chiller maintains the liquid temperature at the set level. It provides optimal working conditions for the laser source and the laser head itself, effectively securing the device as well as stabilizing the beam power.

NOZZLE CLEANING SYSTEM



A solution that significantly enhances machine efficiency by minimizing downtimes associated with clogged nozzles. The system operates fully automatically, eliminating the need for manual intervention by the operator. Through effective cleaning, the system reduces the amount of material waste in the cutting process. This is beneficial both for the environment and for production costs.

FULLY CLOSER OF THE MACHINE

The ergonomic protective casing provides full protection of the working area of Fiber cutters and effectively blocks all laser radiation by fencing off the danger zone, which guarantees the safety of the operator and people in the vicinity of the machine's operation. Its equipment includes a mechanical installation with certified sensors, an electric lock and a supervisory system. The offered construction meets requirements and directives of the EU regarding the rules of work safety, thanks to which we can observe the processing process through the glazing without any risk.

VISION SYSTEM FOR THE FIBER LASER

The vision system enables a real preview of the laser operation. The system consists of cameras monitoring the working area of the machine and the working area of the pallet exchange system along with recording on a 120 GB disc. The system also includes a 24 inch screen monitor. In addition to recording and live viewing, the system allows remote access to cameras in the cloud from any place and device in the world.

ROTARY AXIS FOR PROFILES AND PIPES

Rotary axis enables cutting and perforating pipes and profiles with the use of innovative laser technology. Thanks to this, FiberCut is perfect for the production of pipelines, the erection of buildings and halls with the use of profiles of various cross-sections, the production of chimneys, pre-grooves, etc. Diameter of processed pipes from 50 mm to 200 mm, length of processed pipes up to 6000 mm and weight up to 250 kg.

LASER SAFETY CURTAINS

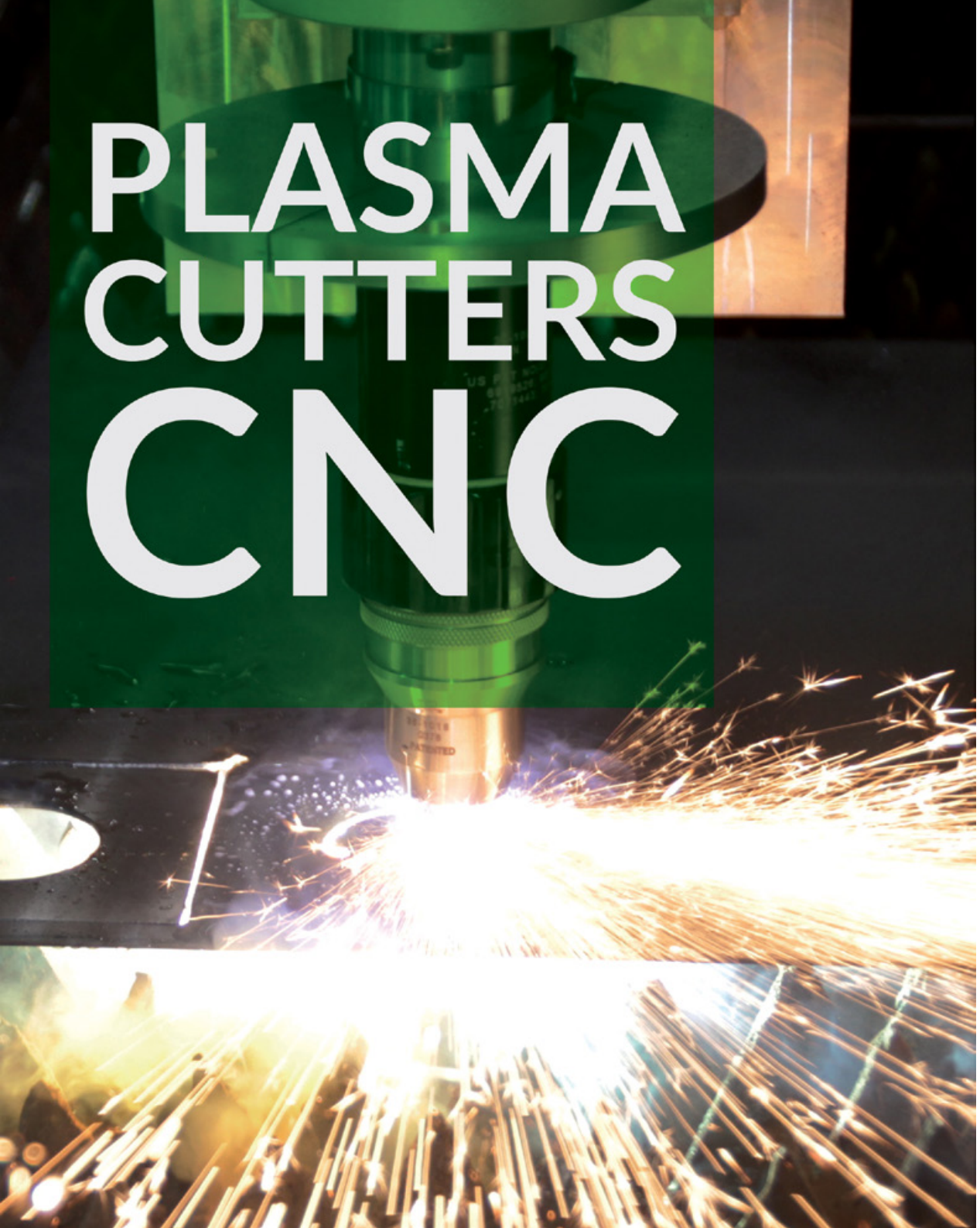
SICK deTem4 Core multi-beam safety barriers, using 2, 3 or 4 beams based on the transceiver principle, easily and reliably protect access to hazardous areas of the machine. The safety system in the form of laser curtains ensures work safety at the highest level

SHEET METAL WAREHOUSE

This solution enables automatic loading and unloading of sheet metal, as well as their efficient and organized storage, ensuring precise and rapid material retrieval for cutting machines. Equipped with modern technologies, the warehouse supports a smooth production process, increasing efficiency and minimizing downtime. There is the possibility of connecting several Fiber cutters to the sheet metal warehouse, maximizing the automation of production processes.

PALLET CHANGE SYSTEM

Equipping the machine with a pallet exchange system automates and speeds up the production process. When cutting sheet metal, the replacement work table is located outside the device housing, thanks to which the operator has safe access to it. During this time, he can prepare the working area for processing another sheet of metal or unload the previously cut material. After the processing is finished, the tables are changed automatically, the duration of which is only 10-12 seconds.

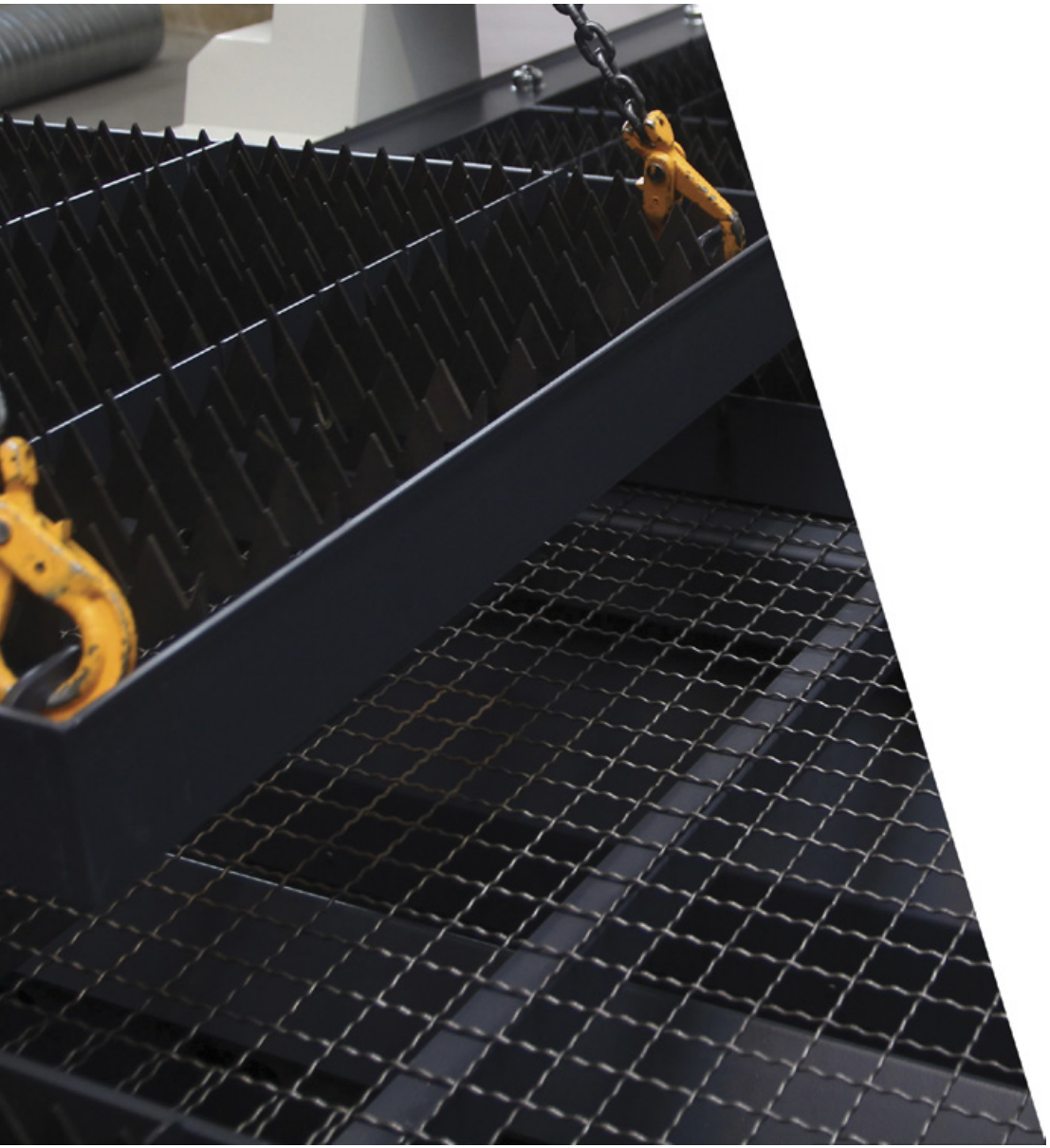


PLASMA CUTTERS CNC

SERON CNC plasma cutters are characterized by a solid structure and user-friendly control. Innovative CNC plasma cutters are used in the construction, machine and even decoration industries.

Plasma cutters

PlasmaCut



The solid construction of plasma cutters gives a guarantee of many years of dimensional stability.

PlasmaCut plasma cutters are professional CNC machine tools for the industrial industry for cutting sheet metal, and optionally also pipes and profiles. Solid construction combined with functional control are a guarantee of many years of reliability.

Designs of plasma plotters are made of welded steel technology with ribbing of individual elements, which allows for high kinematic parameters. The dimensional accuracy of the machine is guaranteed by the machining process from a single clamping and subsequent stress relieving processes.

Depending on the selected configuration, the design of the table may vary. We offer both a water table and an extraction table. Each of them uses ball guides to facilitate the loading of the material. Additionally, regardless of the selected type of table for cutting flat sheets, the cutter can be equipped with a turntable for cutting pipes and profiles and an engraving tool.

Types of sources

Available plasma aggregates:	Source power	Use of gases technical	Technology HD	Plasma marking
Hypertherm Powermax SYNC	65A,85A,105A	no	no	no
Hypertherm Powermax	125A	no	no	no
Hypertherm MaxPro	200A	yes	no	no
Thermal Dynamics A-Series	60A, 80A, 120A	no	no	no
Thermal Dynamics AutoCut	200A, 300A	yes	no	no
Thermal Dynamics UltraCut	130A, 200A, 300A	yes	yes	yes
Formica For Cut	133A, 163A, 203A, 263A	yes	no	no
Kjellberg Smart Focus	130A, 200A	yes	yes	yes

Professional control system to ensure high ergonomics and work efficiency.

Professional industrial control, on which we have based the plasma cutters, allows for efficient and stable operation. A number of built-in functions automate the preparation process as well as the processing itself. One of them is the option to identify the sheet metal position. Thanks to it, you can easily correct the angle of the material before starting the cutting process, minimizing the possible risk of moving the project relative to the form and thus creating costly waste. This operation is facilitated by the laser torch position indicator.

The material detection system allows you to set the speed and height parameters of probing the material. The measurement is based on the resistance principle, which enables effective work even with thin sheets of metal. This hybrid sounding system works dynamically and is protected so that in the case of corroded materials and lack of good conduction, the contact detection system will work.

Another important function is to resume operation from the last position of the burner, which is useful in the event of a power failure. Thanks to this, you can easily finish a project that has been interrupted unexpectedly. The extensive voltage system of the torch height control actively corrects the working position, thanks to which the cut material does not have to have a perfectly flat surface. The possibility of manual cutting is also useful
with active, automatic parameter control. This allows for the express preparation of simple elements that do not require a precise size, without the need to generate a program. It is also possible to implement macros of the most frequently repeated operations, which can be invoked by the operator from the control level.

The machine is equipped with a magnetic anti-collision system that will stop the machine from operating when the torch is breached from any side. This eliminates the risk of its damage and potential machine downtime.

Portal plasma cutter

ProCut

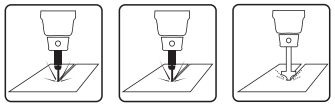
Portal plasma cutter ProCut

Working length	do 40000 mm
Working width	1500 - 4500 mm
Gate clearance	up to 500 mm
Speed	up to 40 m/min
Drives	servo 33 bit; X,Y toothed racks, Z ball screw
Table type	Modular, extraction
Table load capacity	up to 2500 kg/m^2
Cut quality	PN-EN ISO 9013
Additional options	- cross laser torch position indicator - rotary axis for pipes and profiles - marking module - plasma routing - 3D plasma head - filterventilation

The ProCut portal cutter by SERON is an industrial solution for metal cutting. This device is characterized by a multi-burner construction with the use of plasma and oxygen burners. This design allows the use of several torches for simultaneous cutting of the same details. The ProCut cutter is characterized by a solid construction with a track length of up to 12 m in one section and user-friendly controls. Innovative plasma-oxygen cutters are used in the shipbuilding, railway, service and construction industries.

Thanks to the use of a portal structure with a driving system isolated from the work table, the impact of high temperature on the driving track is minimized. This construction makes these devices.

The basis of the structure is a steel rail, which is characterized by high rigidity and high precision. The design solutions used guarantee stability and perfect geometry of the machine, which does not change even after years of intensive use.



OXYGEN CUTTING | PLASMA CUTTER | GROOVE

- **precise and repeatable cutting of steel of various thicknesses**
- **plasma and oxygen cutting**
- **portal construction - separated track**

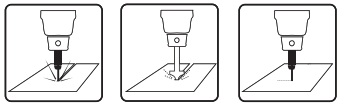
Extraction sectioning table has been designed to effectively eliminate dust generated during the cutting process. The structure of the table consists of a frame on which a replaceable grate is placed, under which there is a waste tub. Extraction of dust from the cutting area is carried out using an intelligent, automatic sectioning system and built-in exhaust ducts.

In the construction of the machine, a replaceable plasma and oxygen cutting system was implemented using replaceable heads. This allows you to cut materials up to 90 mm thick using a plasma cutting system and up to 300 mm using an oxygen torch. The professional control system is intuitive and easy to use, it has a wide range of built-in functions that automate the preparation process as well as the machining itself. The option to identify the position of the sheet metal allows you to easily correct the angle of the material position before starting the cutting process. This minimizes the risk of moving the project relative to the form. The material detection system allows you to set the parameters of the speed and height of probing the material. An extremely important function is to resume operation from the last position of the burner, which is useful in the event of a power failure.

Plasma-oxygen cutters from the PROCut series are equipped with an anti-collision system that protects each of the torches against the risk of damage and the resulting machine downtime. The applied solutions allow to increase the automation and stability of production.

Plasma cutters with extraction table sectional PlasmaCut Exhaust

Industry 4.0



Available accessories

- turntable for processing pipes and profiles with a working area length
- extended support that allows you to work outside the work table
- filtering system

Section extraction table

- table load capacity up to 500 kg/m2
- enables effective dust extraction from the cutting site
- less risk of corrosion at cut edges
- clean and friendly working environment for the operator
- sectional structure of the table for easy cleaning
- extraction only from the place of smoking

Model	Size of working area [mm]		Gate clearance [mm]	Max speed up to [m/min]	Servo drives AC	Weigh min. [kg]*	Dimensions w/l/h [mm] * **
	X	Y	Z				
1530	1550	3050	200 (option 300)	60	yes	2400	2500 x 4050 x 2100
2040	2050	4050	200 (option 300)	60	yes	3200	3000 x 5050 x 2100
2060	2050	6050	200 (option 300)	60	yes	4200	3000 x 7050 x 2100

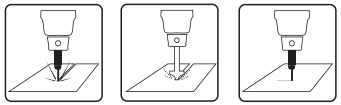
* may differ depending on the equipment options ** the dimension does not include the control cabinet

Plasma cutters with water table PlasmaCut Water

Industry 4.0

Accessories available:

- rotary axis for processing pipes and profiles with a working area length
- extended support that allows you to work outside the work table



Water table:

- table load capacity up to 500 kg/m2
- stainless steel tub
- ensures a clean cut, cools the material and reduces emissions harmful gases during processing
- enables the so-called cutting on the water surface, so we get and additional benefits: a quieter cut and a better surface material being cut
- the fluid with which they are filled has an effective function filtering ventilation
- cheaper in operation than traditional systems filtering and ventilation
- the use of a water table allows for significant reduction of deformation of fired details, especially those with small thicknesses
- modular table structure for easy cleaning

Model	Size of working area [mm]		Gate clearance [mm]	Max speed up to [m/min]	Servo drives AC	Weigh min. [kg]*	Dimensions w/l/h [mm] * **
	X	Y	Z				
1530	1550	3050	200 (option 300)	60	yes	1800	2500 x 4050 x 2100
2040	2050	4050	200 (option 300)	60	yes	2400	3000 x 5050 x 2100
2060	2050	6050	200 (option 300)	60	yes	2900	3000 x 7050 x 2100

* may differ depending on the equipment options ** the dimension does not include the control cabinet

Plasma cutters with extended portal and rotator PlasmaCut Rotary

Industry 4.0

Available accessories:

- a water table or a sectional extraction table with a load capacity up to 500 kg/m2
- adapter for square profiles
- filtering system

Rotary axis for pipes:

- allows not only pipe cutting, but also cutting irregular holes with the use of technology plasma
- diameter of processed pipes from 50 mm to 350 mm, length processed pipes up to 3000 mm, weight up to 500 kg

Portal:

- extends the machining capabilities of the machine with cutting large-size details set up in an extended field (next to the machine)
- processing outside the working area of the cutting machine can be realized with a turntable or other material fastening system
- the length of the workpieces is limited only by the possibility of longitudinal travel the carriage of the machine

Model	Size of working area [mm] X	Y	Z axis [mm] Z	Max speed of trips [m/min]	AC Servo Motors	Weight [kg]*	Dimensions [mm] * **
1530	1550 (+1000)	3050	200 (option 300)	60	yes	3100	3500 x 4050 x 2100
2040	2050 (+1000)	4050	200 (option 300)	60	yes	3900	4000 x 5050 x 2100
2060	2050 (+1000)	6050	200 (option 300)	60	yes	4900	4000 x 7050 x 2100

* may vary depending on the equipment options ** dimension does not include control cabinet

CO2 laser plotters are one of the most universal machines.
They are successfully used in almost every industry, from automotive, through aviation, to advertising or paper.

CO2 and Fiber laser markers are technologically advanced devices designed for precise and fast marking, as well as for plunge engraving. They are used wherever marking speed matters
and the highest quality.

Plotery i znakowarki laserowe

Plotery SLX, FlatBed
Znakowarki Fiber, CO2

Laser plotters

SLX Series

CUTTING ENGRAVING

ENGRAVING / MARKING

CO2 laser plotters are one of the most universal machines that are successfully used in many industries. Seron laser plotters are designed for cutting and engraving such materials as: plywood, plexiglass, leather, wood, paper, textiles, rubber, cork, engraving laminates, etc. CO2 laser plotters allow for precise processing, therefore they are perfect for engraving small elements, e.g. . stamps or nameplates. The devices have been equipped with an ergonomic casing with a reinforced structure, and their operation is very intuitive. The plotters have been designed from scratch by our engineers, are assembled in Poland and are also subject to continuous improvement.

SPECIFICATION:

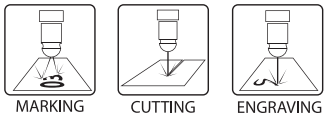
Interface:	USB/LAN/optional WiFi	**Lens:**	silicon plus coating with Zinc Selenium Si + ZnSe, fi20mm
Compressor:	yes	**Mirrors:**	metal plus Molybdenum coating Mo , fi 25mm
Extraction of fumes:	yes	**Table type:**	vacuum ventilated, overlays: honeycomb or knife
CAM software:	yes, en, pl version	**Red point:**	yes, transmitted by mirrors
Resonator cooling:	yes, chiller	**Through table:**	yes, it allows machining of materials longer than the Y axis working area
Air Assist:	yes	**It features:**	autofocus
Working area lighting:	yes	**Additional options:**	- rotary adapter - filtroventilation - active Cam

Laser plotters	Size of the working area [mm]		Z axis [mm]	Positioning accuracy [mm]	Type of laser resonator	Resonator power	Power supply voltage [V]	Max power consumption [W]	Weight [kg]*	Dimensions W x L x H [mm]*
	X	Y	Z						M	
SLX 0503	500	300	200	0,02	glass	40-50	230	1500	110	950 x 800 x 750
SLX 0906	900	600	300	0,02	glass	60-100	230	2500	250	1440 x 1090 x 960
SLX 1309	1300	900	300	0,02	glass	90-130	230	2500	285	1840 x 1390 x 960
SLX 1612	1600	1200	300	0,02	glass	90-130	230	3000	500	2210 x 1680 x 1090
SLX 1620	1600	2000	300	0,02	glass	90-130	230	3500	700	2150 x 2580 x 1080

FlatBed Series

CUTTING ENGRAVING

ENGRAVING / MARKING



The Flatbed series of CO2 laser plotters are machines with a large-format, outdoor work area. They have all the typical features of CO2 plotters. They are one of the most versatile machines that are successfully used in many industries. The open working field makes it easier to stack and remove the material, which is a real advantage of these devices. This allows you to work efficiently in a production environment where machining large flat surfaces is important. Ribbed and welded steel structure was designed and made by our engineers. The technology used is characterized by high rigidity and precision. The plotters are equipped with a high-efficiency gas suction system, implemented by several fans, which are responsible for exhaust extraction to the outside.

SPECIFICATION:

Interface:	USB/LAN/optional WiFi	**Lens:**	silicon plus coating with Zinc Selenium Si + ZnSe, fi20mm
Compressor:	yes	**Mirrors:**	metal plus Molybdenum coating Mo , fi 25mm
Extraction of fumes:	yes	**Table type:**	vacuum ventilated, overlays: honeycomb or knife
CAM software:	yes, en, pl version	**Red point:**	yes, transmitted by mirrors
Resonator cooling:	yes, chiller	**Through table:**	yes, it allows machining of materials longer than the Y axis working area
Air Assist:	yes	**It features:**	autofocus
Working area lighting:	yes	**Additional options:**	- filtroventilation - active Cam

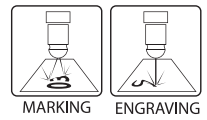
Laser plotters	Size of the working area [mm]		Z axis [mm]	Positioning accuracy [mm]	Type of laser resonator	Resonator power	Power supply voltage [V]	Max power consumption [W]	Weight [kg]*	Dimensions W x L x H [mm]*
	X	Y	Z						M	
FlatBed 1625	1600	2500	20	0,03 / 0,02	glass	90-130	400	4000	1500	2100 x 3100 x 1240
FlatBed 2131	2100	3100	20	0,04 / 0,03	glass	90-130	400	4500	1650	2600 x 3750 x 1240

Laser markers

Fiber

- technologically advanced Fiber laser marking machine
- precise, fast, deep engraving and marking
- dedicated to metals and their alloys, including rare, precious and coated
- mobile marking head
- ultra-fast precision galvo scanner
- marking on the fly
- bar code generation, serial numbers

*doesn't apply to transparent plexiglass



Laser markers with a Fiber laser source are technologically advanced devices designed for precise and fast engraving, also in depth. Fiber markers can be used in many industries, including the automotive, electronics, machinery, advertising and decorative industries. Thanks to the small dimensions, the devices are suitable for mobile work. The markers use the latest Fiber optic-fiber technology with high durability and advanced optics: ultra-fast galvo scanner and F-theta lens for beam direction.
This technology provides even more accurate and more efficient work compared to other such machines available on the market.

Available accessories:

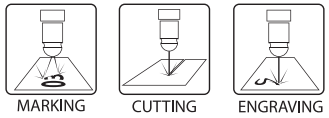
- object feeder (linear, disk type)
- rotary axis (tilting)
- mobile head

	MARKERS	Size of the working area [mm] X	Y	Max height of the item [mm] Z	Max marking speed [mm/s]	Diameter of the spot [mm]	Depth of marking [mm]	Max resolution [dpi]	Resonator power	Chiller	Max power consumption [W]
FIBER	**ZF 0101**	110	110	200	to 7000	0,01	to 0,5 *	3000x3000	20W / 30W / 50W	air-cooled resonator	1000
	ZF 0202	200	200	50	to 7000	0,02	to 0,5 *	1500x1500	20W / 30W / 50W	air-cooled resonator	1000
CO_2	**ZC 0101**	100	100	550	to 5000	0,07	do 2	2500x2500	30-120 W	yes	2000
	ZC 0202	200	200	400	to 5000	0,14	do 2	1250x1250	30-120 W	yes	2000

* - depends on the type of material

CO2

- fast precise galvo scanner
- dedicated to the application of logos, graphics, serial numbers, bar codes
- high efficiency and high precision and marking resolution
- metal or glass resonators



CO2 markers are technologically advanced devices designed for fast and precise engraving. Seron markers are used in companies from the industrial, food, advertising, electronic, automotive and decorative industries. The advantage of the devices is high efficiency, high quality of the laser beam, high speed, precision and resolution of marking. Marker components are characterized by long life, which results in many years of trouble-free operation of the device.

Available accessories:

- object feeder (linear, disk type)
- rotary axis (tilting)

Comparison

		wood derivatives	stone	aluminum anodized	metals	paper	glass	textiles	plastic artificial
CUTTING	LASER SLX SERIES	✓				✓		✓	✓
	LASER FLATBED SERIES	✓				✓		✓	✓
	CO2 MARKER					✓		✓	
ENGRAVING	LASER SLX SERIES	✓	✓	✓	✓*	✓	✓	✓	✓
	LASER FLATBED SERIES	✓	✓	✓	✓*	✓	✓	✓	✓
	FIBER MARKER			✓	✓				✓**
	CO2 MARKER	✓	✓	✓	✓*	✓	✓	✓	✓
MARKING	FIBER MARKER			✓	✓				✓**
	CO2 MARKER	✓	✓	✓	✓*	✓	✓	✓	✓

* - the use of engraving paste is required; ** - excluding transparent plexiglass

WHY US?

POLISH CNC MACHINE MANUFACTURER

Based on Polish creativity, we design and implement designs in Stalowa Wola city.

EXPERIENCE

We translate more than 20 years of experience into the quality of our products.

INNOVATION

We develop new technologies and develop current achievements.

WE FOCUS ON THE HIGHEST QUALITY

We take care of every detail of our machine tools, guaranteeing many years of trouble-free operation.

GUARANTEE

It's the customers who decide on the length of the warranty under the supervision of our specialists.

FAST SERVICE

Immediate assistance is ensured thanks to the extensive service grid.

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