

MAT ERIA LD

HIGH-PERFORMANCE
MULTI-PURPOSE 5-AXIS
PROCESSING CENTRE



 Biesse

HIGH SPEED AND POWER



THE MARKET REQUESTS

a change in manufacturing processes that enables companies to **accept the largest possible number of orders**. This is coupled with the need to maintain high quality standards whilst offering product customisation with quick and defined delivery times.

BIESSE RESPONDS

with innovative technological solutions for processing technological materials.

The **Materia LD** is an extremely versatile 5-axis gantry processing centre with mobile crossbar, designed to meet the most varied high-speed machining requirements in the field of plastic and composite double edge trimming, high-speed milling of resin or aluminium models, and the prototyping of moulds.

Particularly recommended for the automobile, aerospace, nautical, motor-sport and moulding sectors.



MATERIA_{LD}

- ✓ OPTIMUM RELIABILITY THANKS TO A ROBUST STRUCTURE
- ✓ SPEED COMBINED WITH ACCURACY
- ✓ EXCELLENT CLEANING OF THE PRODUCT AND THE WORK AREA

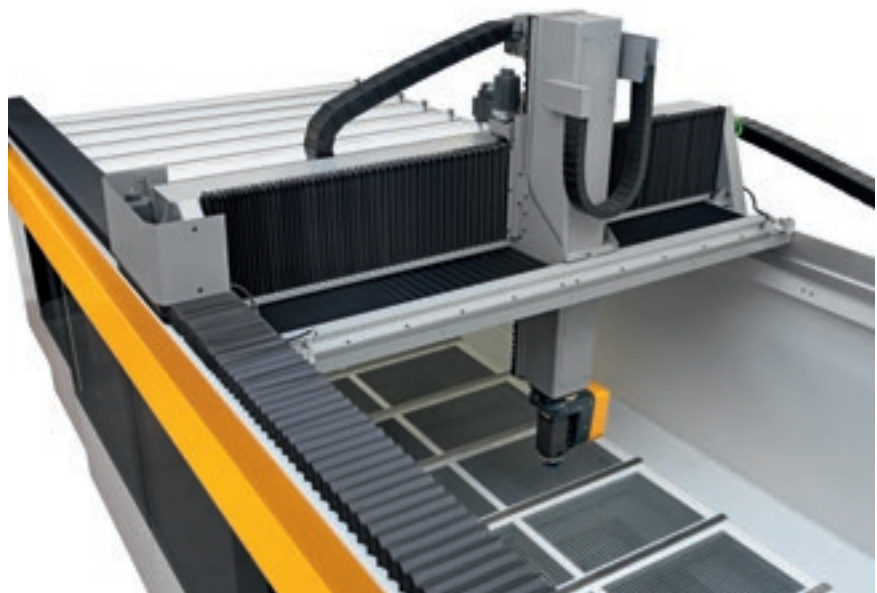
SUPERB RELIABILITY AND PRECISION OVER TIME



The robust load-bearing structure in electro-welded steel, the linear guides and precision bearings, and the direct couplings between the pinion and rack provide the necessary rigidity of the structural elements to guarantee optimum finish quality and machining precision.

The X, Y and Z axes are all designed to slide on rectified guides and ball blocks, providing the machine with the maximum stability and accuracy.

THE FULLY CLOSED
STRUCTURE, AND
THE KINEMATIC
MECHANISMS ALL
IN THE UPPER PART
OF THE MACHINE,
ENSURE CLEANLINESS
AND LONG-LASTING
RELIABILITY.





HIGH POWER

The high-performance electrospindles allow a host of different materials (plastic, resin, compound) to be machined.

Orthogonal single-shoulder bi-rotary head with high torque and power. The liquid-cooled electrospindles are fitted with an antistatic brush and an encoder. Pneumatic brakes can be mounted as an optional, to lock the rotary axes and direct encoders and thereby improve precision. In addition, on the most powerful version (22 kW) the flow - whether air or spray mist - can be directed via the tool.



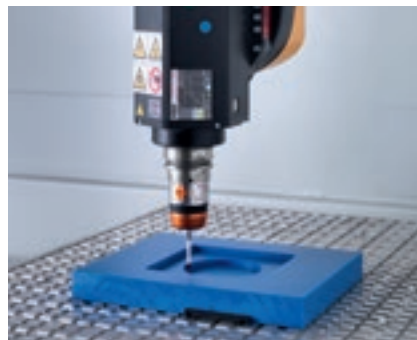
Maximum power thanks to orthogonal liquid-cooled electrospindles (15-18 kw).

The machine can be fitted with one, two or three under-beam tool magazines, each holding 8 tools, or a 16-place wheel magazine.

REDUCED TOOL CHANGE TIME



Materia LD can be equipped with a contact thickness tracer or a laser probe for tool pre-setting, and a radio frequency thickness tracer for acquiring the piece coordinates and dimensions.



The tool magazine is located underneath the gantry bridge to reduce the tool change time.



The machine can also be equipped with a rotating magazine (holding up to 16 tools) on the right-hand side to facilitate tooling operations



Tools are easy to load thanks to the ability to fill the magazine via an external access door, ensuring maximum safety for the operator.

TECH NOLO GY

CREATIVE TECHNOLOGY

Versatility, precision and dynamism are the strengths of the Materia range. Numerical control processing centres that can handle very diverse plastics and composites, guaranteeing precision and constant reliability.

High-quality and accurate electrospindles, numerous optional and standard systems (on the basis of the material being machined), three numerical control systems (Osai OPENprime, Siemens SINUMERIK 840D or e Heidenhain TNC 640, particularly requested in the automotive sector), a robust structure and the perfect combination of speed and precision. A variety of models to match every production need.



MACHINE PERSONALISATION TO SUIT A WIDE VARIETY OF PRODUCTION NEEDS

Materia LD can be configured with five different work tables: open grid, stratified phenolic resin grid, gridded aluminium, gridded aluminium with "T" slots obtained from steel plates, or with cast iron tables.



The grid surface allows the operator to insert the gasket in any configuration, creating a specific vacuum area. An internal chamber ensures the even distribution of the vacuum all over the work table. Each area is controlled by a piece locking button, an area selection button, and a start button.

PENDULAR FUNCTION AND MOTORISED MOBILE SHEETS



A removable partition can be installed in the working area to permit pendular machining.

The operator can load/unload a piece while the machine carries on working. The electric sensors inside the machine guarantee the safety of the operator. The partition has an aluminium structure with transparent polycarbonate panels to provide the best possible visibility of the working area. The machine can be fitted with one, two or three under-beam tool magazines, each holding 8 tools, or a 16-place wheel magazine.



Piece loading/unloading without stopping the machine, in complete safety.

EXCELLENT CLEANING OF THE PRODUCT AND THE WORK AREA

The Materia LD can be connected to an efficient suction system to remove machining dust, and an upper closure system that completely encloses the machine.



Depending on the type of machining operation to be carried out, Materia LD can be fitted with a spray mist lubrication/cooling system outside the spindle, or simply with compressed air.



OPTIMUM SAFETY GUARANTEED BY MANUAL OR AUTOMATIC DOORS OPENED FROM THE FRONT AND FITTED WITH LARGE INSPECTION WINDOWS.

In its standard configuration, **Materia LD** is supplied with protective bellows that cover the Z axis guides. For even greater protection, bellows can also be fitted on the guides of the X and Y axes too.

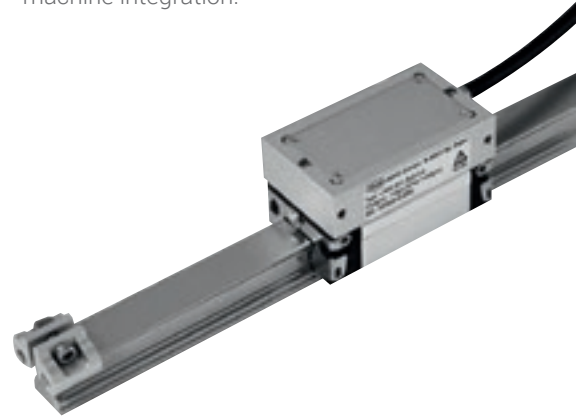
The **ceiling-mounted bellows** guarantee a safe work environment for the operator, especially when machining materials that produce large amounts of dust. The automatic opening allows the piece to be loaded by means of a bridge crane.

USER FRIENDLY



New console with a touch interface (on Siemens and Heidenhain NC) fully integrated with the machine (no obstruction on the ground). Simple and intuitive.

HT2 mobile terminal for optimum man/machine integration.



Machine precision and repeatability can be improved thanks to the possibility to install direct encoders on the rotary axes (all machines) and the linear axes (only on Siemens and Heidenhain NC).



MATERIA LD IS AVAILABLE WITH THREE DIFFERENT TYPES OF NUMERICAL CONTROL - OSAI, SIEMENS AND HEIDENHAIN - TO MEET ALL THE NEEDS OF THE MARKET.



OSAI ITP

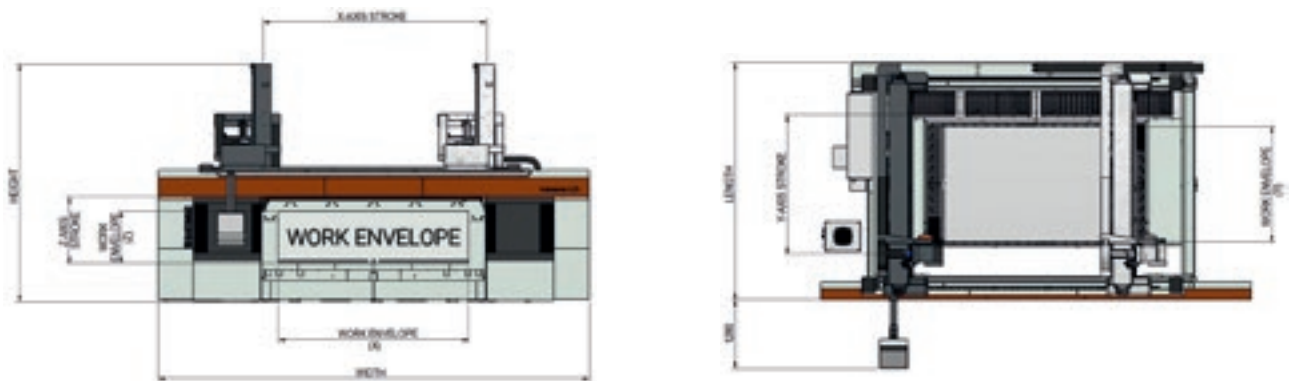


SIEMENS HT2

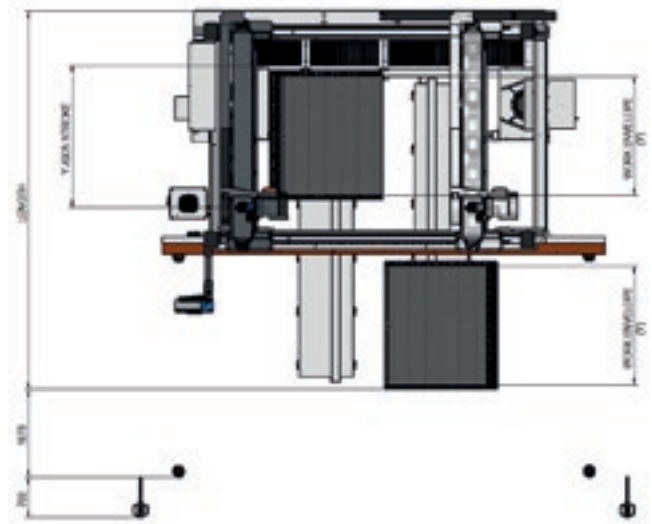
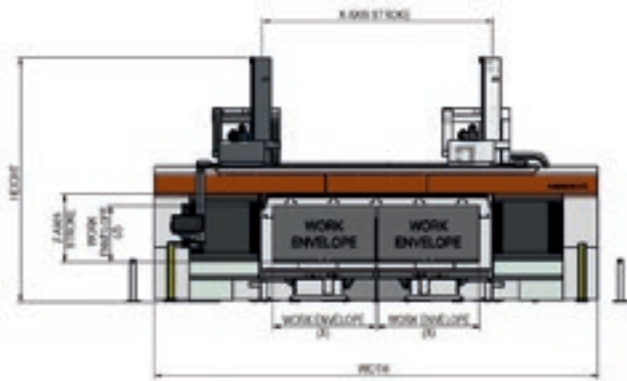


HEIDENHAIN

TECHNICAL DATA



MATERIA LD		LD 4020	LD 5020	LD 6020	LD 4026	LD 5026	LD 6026	
Machine dimensions (without accessories)								
Width	inch/mm	323/8200	362/9200	10200	8200	9200	10200	
Length	inch/mm	153/3900	153/3900	3900	4500	4500	4500	
Height	inch/mm	177/4500	177/4500	4500	4500	4500	4500	
Weight	kg	8800	9100	9900	9300	9700	10900	
Linear axis stroke								
X axes	inch/mm	165/4190	204/5190	244/6190	4190	5190	244/6190	
Y axes	inch/mm	79/2000	79/2000	79/2000	102/2600	102/2600	102/2600	
Z axes	inch/mm	47/1200	47/1200	47/1200	47/1200	47/1200	47/1200	
Linear axis speed								
X axes	ft/min	279	279	279	279	279	279	
	m/min	85	85	85	85	85	85	
Y axes	ft/min	197	197	197	197	197	197	
	m/min	60	60	60	60	60	60	
Z axes	ft/min	197	197	197	197	197	197	
	m/min	60	60	60	60	60	60	
Machine in operation - Head HS673 15 KW								
Pivot	inch/mm	7/185	7/185	7/185	7/185	7/185	7/185	
Volume of work (spindle nose)	inch/mm	X	150/3820	190/4820	229/5820	190/4820	229/5820	229/5820
		Y	64/1630	64/1630	64/1630	88/2230	88/2230	88/2230
		Z	1015	1015	1015	1015	1015	1015
Machine in operation - Head HS673 22 kW								
Pivot	inch/mm	8/215	8/215	8/215	8/215	8/215	8/215	
Volume of work (spindle nose)	inch/mm	X	148/3760	187/4760	227/5760	148/3760	187/4760	227/5760
		Y	1570	1570	1570	2170	2170	2170
		Z	39/985	39/985	39/985	39/985	39/985	39/985



MATERIA LD TT

LD 4026 TT

Machine dimensions (without accessories)			
Width	inch/mm	3237/8200	
Length	inch/mm	339/8600	
Height	inch/mm	177/4500	
Weight	kg	12750	
Linear axis stroke			
X axes	inch/mm	165/4190	
Y axes	inch/mm	102/2600	
Z axes	inch/mm	47/1200	
Linear axis speed			
X axes	ft/min	279	
	m/min	85	
Y axes	ft/min	197	
	m/min	60	
Z axes	ft/min	197	
	m/min	60	
Machine in operation - Head HS673 15 kW			
Pivot	inch/mm	185	
Volume of work (spindle nose)	inch/mm	X (SX)	1960
		X (DX)	1860
		Y	2230
		Z	1015
Machine in operation - Head HS673 22 kW			
Pivot	inch/mm	215	
Volume of work (spindle nose)	inch/mm	X (SX)	1860
		X (DX)	1860
		Y	2170
		Z	985

The technical specifications and drawings are non-binding. Some photos may show machines equipped with optional features. Biesse Spa reserves the right to carry out modifications without prior notice.

Machining a 92 mm thick piece of alder. A-weighted surface sound pressure level A (LpA) 83 dB (A). A-weighted surface sound pressure level A (LwA) 106 dB (A). Machining a 19 mm thick MDF workpiece. A-weighted surface sound pressure level A (LpA) 79 dB (A). A-weighted surface sound pressure level A (LwA) 79 dB (A).

Uncertainty factor K = 4 dB. Reference standards: EN ISO 3746 - EN ISO 11202. The noise levels shown are emission levels and do not necessarily correspond to safe operation levels. Despite the fact that there is a relationship between emission and exposure levels, this may not be used in a reliable manner to establish whether further measures need to be taken. The factors determining the exposure level for the workforce include length of exposure, work environment characteristics, other sources of dust and noise, etc. i.e. the number of other adjoining machines and processes. At any rate, the above information will enable the operator to better evaluate dangers and risks.

CUSTOMER CARE IS WHO WE ARE

SERVICES is a new experience for our customers, to offer not just excellent technology but the added value of an increasingly direct connection with the company, the professionals who work there and the experience they embody.



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Digital channels for remote interaction online 24/7. Always ready to intervene on-site seven days a week.



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39 branch offices, over 300 certified agents, retailers in 120 countries, and spare parts warehouses in America, Europe and the Far East.



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Identification, shipping and delivery of spare parts for every need.



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A wide range of services and software packages to help our customers achieve continuous improvements in performance.

AN EXCELLENT LEVEL OF SERVICE

+550

HIGHLY SPECIALISED
TECHNICIANS AROUND
THE WORLD, READY TO HELP
CUSTOMERS WITH EVERY
NEED

90%

OF MACHINE DOWN CASES
WITH RESPONSE TIME
UNDER 1 HOUR

+100

EXPERTS IN DIRECT
CONTACT THROUGH
REMOTE CONNECTIONS
AND TELESERVICE

92%

OF SPARE PARTS ORDERS
FOR MACHINE DOWNTIME
PROCESSED WITHIN 24
HOURS

+50.000

ITEMS IN STOCK IN THE
SPARE PARTS WAREHOUSES

+5.000

PREVENTIVE MAINTENANCE
VISITS

80%

OF SUPPORT REQUESTS
SOLVED ONLINE

96%

OF SPARE PARTS ORDERS
DELIVERED IN FULL ON TIME

88%

OF CASES SOLVED WITH
THE FIRST ON-SITE VISIT

MADE WITH BIESSE

CREATIVITY AND TECHNOLOGY IN THE AUTOMOTIVE SECTOR, FOR POLYCARBONATE WINDOWS IN A THOUSAND SHAPES

Today, 3P Glazing Solutions is a point of reference in the field of encapsulated glass and polycarbonate windows for car manufacturers and car glazing producers all over the world.

Specialising in the manufacture of **high-performance solutions for car glazing applications**, the company from Settimo Torinese boasts over twenty years of experience, during which it has gained a wealth of experience in the field, improving its expertise and building specific skills in the production of **polycarbonate glass and windows**. 3P Glazing Solutions has 17 employees and a production facility spanning 2400 square metres, entirely dedicated to the design of car windows, the production of encapsulated and super-light glass and windows for small series (or special series) production, as well as the creation of prototypes of encapsulated windows and super-light windows in plastic material. "We specialise in the development of transparent products, encapsulated glass and glazing and thermoplastics within the automotive sector. The goal that we have set ourselves is to understand what our customers want; we al-

ways place their needs - and the product they want to create - at the heart of everything we do", explains **Francesco Romano, Owner and Sales Director of 3P Glazing Solutions**.

The Turin-based company is particularly aware of the environmental impact of its activities, and has more than 1700 square metres of solar panels. This photovoltaic system, which is installed in two of the production plants, is capable of delivering 100 Kw of power, enabling the plants to be fully independent in terms of the electricity they consume. The company's focus on the environment is also reflected in the choice of materials used in the production process, which are always selected with great care: "We are very careful to use products that do not damage the environment," confirms Romano.

3P Glazing Solutions is distinguished by the fact that every phase of the product manufacturing process is carried out internally: from the design of the product and the creation of the mould to the manufacture of prototypes and series-produced pieces. "The strengths that set the company apart lie in its high levels of specialisation, supported by

the experienced workforce and the in-depth knowledge of materials and technologies for the moulding of polyurethane and thermoplastics, which enables 3P Glazing Solutions to create products of the very highest quality. "Our polycarbonate products have extremely complex shapes: we work with **Ferrari, Lamborghini, Aston Martin and Bentley**, and clients like these require a very high quality final product", continues Francesco Sartore. "In Biesse, we have found a partner that allows us to produce different types of milled products with optimal quality standards, with production times that are extremely favourable from an industrial perspective, and at a price that is consistent with the type of product - all thanks to the use of the company's five-axis high-speed machinery". 3P Glazing Solutions is equipped with three Biesse technologies: two **Materia CL** five-axis machining centres and one Professional machining centre. "Our partnership with Biesse, a relationship characterised by continuous technical assistance and support, enables us to improve on a daily basis, and to boost the performance of the technologies we use", concludes Sartore.

OUR PARTNERSHIP WITH BIESSE, A RELATIONSHIP CHARACTERISED BY CONTINUOUS TECHNICAL ASSISTANCE AND SUPPORT, ENABLES US TO IMPROVE ON A DAILY BASIS, AND TO BOOST THE PERFORMANCE OF THE TECHNOLOGIES WE USE.



Francesco Romano
Owner and Sales Director

3P-ITALY.COM

Founded in Italy,
international native.

We are an international company that manufactures integrated lines and machines to process wood, glass, stone, plastic and composite materials and what will come next.

Thanks to our rooted competence nurtured by an ever-growing worldwide network, we support your business evolution – empowering your imagination.

Master of materials, since 1969.

We simplify your
manufacturing
process to make
the potential of
any material
shine.



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