HIGH-SPEED 5-AXIS MACHINING CENTRE
THE MARKET DEMANDS

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 clearly-defined delivery times.

BIESSE RESPONDS

with high-tech, innovative solutions for processing advanced technological materials. The Materia FC is the 5-axis machining centre with mobile “overhead gantry” architecture, designed to perform high-speed machining operations on advanced materials and aluminium in complex shapes that require enhanced accuracy and the constant interpolation of the axes. Materia FC was created in order to meet the entire spectrum of requirements in the mould manufacturing, aerospace, automotive and motor sport sectors.

MAXIMUM PRECISION AND EFFICIENCY
MATERIA FC

- MAXIMUM RELIABILITY AND ROBUSTNESS
- HIGH LEVELS OF PRECISION AND QUALITY
- OPTIMISED CLEANING OF MACHINED COMPONENT AND WORK AREA.
MAXIMUM RELIABILITY AND ROBUSTNESS

The strong electro-welded steel structure of the machine is the result of a series of detailed analyses of each of the finished elements, designed to deliver dynamic performance without sacrificing the rigidity and precision necessary in order to ensure the superior finish quality of the product being machined.

The X, Y and Z axes are all constructed to slide on ground linear guides and roller runner blocks which are protected by specially-designed bellows, providing the machine with 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.
At the base of the working area, the machine is equipped with a robust cast-iron plate, featuring transverse T-shaped recesses for reference and for securing the work pieces in position.

The compact dimensions of the machine render it ideal for any production environment, as well as enabling a large volume of work to be completed.
HIGH LEVELS OF PRECISION AND QUALITY

The machining centre is equipped with a bi-rotary head for continuous 5-axis machining of three-dimensional pieces. With reduced overall dimensions, the heads provide excellent structural rigidity and vibration damping.

THE MACHINE CAN BE EQUIPPED WITH OPTICAL SCALES WHICH CORRESPOND WITH THE LINEAR GUIDES, SIGNIFICANTLY INCREASING THE ACCURACY OF THE MACHINE.

Materia FC can be provided with a laser probe for tool pre-setting, along with a radio-frequency part probe which enables the operator to acquire the precise position and size of the work piece. In accordance with the type of machining operation in question, the Materia FC can be fitted with a lubricating-cooling spray system on the outside of the spindle, or alternatively, with a simple compressed air system.
The multi-tool magazine, which travels with the gantry structure, is protected during machining.

HIGH PERFORMANCE
22 KW ELECTROSPINDLE
CREATIVE TECHNOLOGY

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

High-quality and accurate electrospindles, numerous optional and standard systems (on the basis of the material being machined), two numerical control systems (Heidenhain TNC 640 or Siemens SINUMERIK 840D sl, 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.
OPTIMISED CLEANING OF MACHINED COMPONENT AND WORK AREA

The Materia FC can be fitted with an efficient suction system for removing machining dust, as well as a roof protection cover which prevents fumes, dust and chips from escaping the machining area.

Carriage to collect chipboard for ultimate cleanliness.

Overhead console on the machine with ergonomic control dashboard for managing the NC.

THE MATERIA FC IS AVAILABLE WITH TWO DIFFERENT TYPES OF NUMERICAL CONTROL SYSTEM - SIEMENS SINUMERIK 840D SL OR WITH HEIDENHAIN TNC 640- ENABLING THIS MACHINE TO BE ADAPTED TO THE VARYING MARKET REQUIREMENTS.
TECHNICAL SPECIFICATIONS

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.

A-weighted sound pressure level (LpA) when working in the operator position on machine without vacuum pumps: LpA = 86 dB (A), LWA = 92 dB (A).

The measurement was carried out in compliance with UNI EN 848-3:2007, UNI EN ISO 3746: 2009 (sound power) and UNI EN ISO 11202: 2009 (sound pressure levels at workstation) during panel machining. 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.

### AXES STROKE

<table>
<thead>
<tr>
<th></th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm/inch</td>
<td>mm/inch</td>
<td>mm/inch</td>
</tr>
<tr>
<td>Materia FC 1526</td>
<td>1500/59,05</td>
<td>2600/102,36</td>
<td>1200/47,24</td>
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</table>

### MACHINE DIMENSIONS

<table>
<thead>
<tr>
<th></th>
<th>W mm/inch</th>
<th>L mm/inch</th>
<th>H mm/inch</th>
<th>Weight kg</th>
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<tbody>
<tr>
<td>Materia FC 1526</td>
<td>6000/236,22</td>
<td>3600/141,73</td>
<td>4500/177,16</td>
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### AXES SEED

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<tr>
<th></th>
<th>X m/min</th>
<th>ft/min</th>
<th>Y m/min</th>
<th>ft/min</th>
<th>Z m/min</th>
<th>ft/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materia FC</td>
<td>50</td>
<td>164,04</td>
<td>50</td>
<td>164,04</td>
<td>30</td>
<td>98,42</td>
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### MACHINE IN OPERATION - HEAD HS678

<table>
<thead>
<tr>
<th></th>
<th>mm/inch</th>
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</thead>
<tbody>
<tr>
<td>Distance from spindle nose to work table</td>
<td>1260/49,6</td>
</tr>
<tr>
<td>Pivot</td>
<td>250/9,8</td>
</tr>
<tr>
<td>Volume of work (spindle nose)</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>1000/39,3</td>
</tr>
<tr>
<td>Y</td>
<td>2100/82,6</td>
</tr>
<tr>
<td>Z</td>
<td>950/37,4</td>
</tr>
</tbody>
</table>
Direct, seamless co-ordination of service requests between Service and Parts. Support for key customers from specific Biesse personnel, in-house and/or at the customer’s site.

BIESSE SERVICE

- Installation and start-up of machines and systems.
- Training centre for Biesse Field technicians, branch and dealer personnel, and training directly at customer’s site.
- Overhaul, upgrade, repair and maintenance.
- Remote diagnostics and troubleshooting.
- Software upgrade.

500
Biesse Field engineers in Italy and worldwide.

50
Biesse engineers manning a Teleservice Centre.

550
certified Dealer engineers.

120
training courses in a variety of languages every year.
The Biesse Group promotes, nurtures and develops close and constructive relationships with customers in order to better understand their needs and improve products and after-sales service through two dedicated areas: Biesse Service and Biesse Parts. With its global network and highly specialised team, the company offers technical service and machine/component spares anywhere in the world on-site and 24/7 on-line.

**BIESSE PARTS**

- Original Biesse spare parts and spare kits tailored to each machine model.
- Spare part identification support.
- Offices of DHL, UPS and GLS logistics partners located within the Biesse spare part warehouse, with multiple daily pick-ups.
- Order fulfillment times optimised thanks to a global distribution network with delocalised, automated warehouses.

- **92%** of downtime machine orders fulfilled within 24 hours.
- **96%** of orders delivered in full on time.
- **100** spare part staff in Italy and worldwide.
- **500** orders processed every day.
Matthew Gualdi is the commercial director of Upm, the Modena-based company that has been operating for over seventy years in the visual communications and illuminated sign sector, as well as more recently in the general contractor industry. “We are able,” states Gualdi “to offer turnkey solutions, from concept to finished product, tailored to the needs of our customers. We manage all design, technical, bureaucratic and logistics aspects with a winning combination of highly-qualified technical and graphics staff, who work with advanced tools, cutting-edge technologies and innovative materials.” Biesse has played a decisive role in transforming Upm’s commitment to innovation into a reality. “We had always used machines that could be defined as slightly ‘niche’. Then, we decided to equip ourselves with a more technologically-advanced and powerful machine; and we found the perfect solution with Biesse Group.”
Interconnected technologies and advanced services that maximise efficiency and productivity, generating new skills to serve better our customer.

LIVE THE BIESSE GROUP EXPERIENCE AT OUR CAMPUSES ACROSS THE WORLD.