



In the machining segment of the composite world, there is growing interest in the Asian market. One example is the producer of CNC machining centres Belotti. With a focus on composite material machining, the company is setting its sights on Asia.

Umberto Belotti, the owner of the company, said: "We are opening a HQ in Shanghai at the end of 2013 to be closer to our agents and our customers in Asia." He revealed that the Asia HQ will start off with an office but the possibilities are boundless.

When asked if the setup would eventually expand into a showroom and production facility, he said it "can be" an option for the company after "some years." The key point according to him is to provide local customer care and in the Asian market, which he has trust in.

His trust stems from the encouraging enquiries he

## Belotti Eyes Asia Market

Possessing machines suitable for machining composite materials and a healthy appetite for growth, a machine builder hopes to gain a larger share of the composite industry pie in Asia. By **Joson Ng**

received from the region. "In Asia, enquiries are increasing from 30 to 35 percent every year. Asia takes up some 20 percent of our business. I think in the future, it can be 40 to 50 percent. Asia is a region that has a consistent kind of growth."

### Primed For Composites

"Our machines are suitable for all composite materials," said Mr Belotti. Although there are many different types of

composite materials in the market today, he is confident that his machines are up to the task. We asked what the pertinent differences between a machining centre for the composite material are to one that machines metal.

"The main difference is the torque of the spindle and the rpm of the spindle. It is faster. Another difference is the size of the machine. The dimension of the metalworking (machine)

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*- Umberto Belotti*

is normally small with a small table. The machines for composite (materials) are very big, up to 40 m long," he said.

Another difference is the options available to the machine. He said an important application for the composite market is a dust extraction system.

"While the machine is working, there is a lot of dust inside the machine. For the customer, it is very important to reduce the level of the dust around the workshop. As such, you can see the machines for composite materials have total enclosure and an extraction system with a filter," he said.

**Enquiry No. 1602**

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## Composites In Asia



We look at interesting happenings in the world of composites.

Like it or not, composite materials are gaining a major foothold in today's manufacturing environment, especially in the aerospace and automotive industries, whereby the material's much spoke about attributes such as its light weight and toughness are often the main motivation behind their usage.

Unlike conventional materials like cast iron or steel, composite materials are a totally different animal. Its idiosyncrasies have a certain amount of ramifications on various processes like machining, cutting and even automation. At the Innovative Composites Summit held alongside JEC Asia in Singapore in 2013, these issues were brought to a sharp focus.

### Expert Opinions

In the area of automation, Tan Meng Ho, senior sales manager of Kuka talked about how shelf mounted robots can help reduce floor space and minimise interference with work flow. He also touched on the issue of synchronisation. He said with proper synchronised movements between the robot and the fabricating machine, production times can be reduced.

Another presenter, Klaus Drechsler, director institute of carbon composite of TU Munich, explored the possibility of technology transfer from aerospace to the automotive industry. According to him, weight reduction is very important in the aerospace industry. For example, in the A380 aircraft, composite parts can be found in floor beams for the upper deck, outer flaps, vertical tail plane, wing ribs and centre wing box, among others.

In conclusion, he said the possibilities for technology transfer between the two industries are high for both ways in terms of design and simulation. However, in automation technologies, the automotive industry has the potential to transfer know-hows to the aerospace industry. As for repair, automotive can benefit from the aerospace sector.

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*A reliable workholding system is essential for machining composite materials.*

## Holding On

The machining of composite materials can be a complex process and sometimes requires a combination of machining technologies to get the job done. Therefore, it is not surprising to see a part go through waterjet cutting and milling. In order to facilitate these types of multi process machining, a flexible workholding system has been developed by the company.

According to Mr Belotti, the Universal Vacuum Fixtures (UVF) system, an automatic fixing system, took about 8 to 12 months to develop. The system is designed to clamp shaped metal and/or composite parts by vacuum for several machining operations.

The system, with its automated independent flexible holding supports, can hold parts that may otherwise be difficult to hold because of their complexity in curvature. As such, production time is reduced. He added the system can be incorporated into the larger machines in his company's portfolio like the MDL series of high-speed five-axis machining centre.

Finally, he shared that for the aerospace industry in particular, where composite machining is common, there is a need for combination machines. He added that **waterjet cutting** is preferred for composite materials, while in hole drilling, a **milling machine** is preferred.

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