

Market leader in the manufacture of large moulds

Dae Kwang Tech Co. Ltd. is an innovative Korean company specialising in the manufacture of injection moulds for the automotive industry. With the help of Blum-Novotest, the company has been able to gain the trust of new customers and achieve a breakthrough in the competitive Japanese market.

Dae Kwang Tech was founded in 1990 and specialises in the manufacture of injection and die casting moulds as well as die plates for car body tools. The company is proud of its machinery portfolio, which enables it to manufacture moulds of almost every shape and size for automotive parts as well as circuit boards for household appliances and semiconductor boards.

Expansion into the Japanese market began about ten years ago. Due to the slump in the semiconductor market and decreasing domestic demand, some tough decisions had to be made. The company invested in modern technologies, transformed the business into a 'smart factory' and expanded its product portfolio to include large moulds for car body tools, casting moulds and other moulds, which all led to Dae Kwang Tech also producing moulds for car doors, bumpers and interior fittings for Japanese car makers such as TOYOTA, MAZDA and SUZUKI. Today, more than 90 % of the moulds are exported to Japan.

Factory Manager Seongsu Cho explains: "To begin with, we only supplied small moulds. The customers were very impressed with our technology and quality, thus allowing us to expand our offerings step-by-step towards larger moulds for the automotive industry. Needless to say, it's not just the incredibly complex shapes that are adapted to the customer wishes, but also the delivery periods."

Success with measurement technology from BLUM

Many Korean tool and mould makers struggle to gain a foothold in foreign markets. But this does not apply to Dae Kwang Tech: Thanks to ongoing investments and an elaborate quality management system, the company was able to enter the Japanese market very quickly. Dae Kwang Tech invested in automated machining centres and equipped them with modern production measurement technology. Factory Manager Seongsu Cho says proudly: "Our production facility is equipped with cutting-edge systems, for instance with 5-axis machining centres, wire EDMs and 3D coordinate measuring machines. With the help of this equipment, we are now able to meet every conceivable customer demand."



Seongsu Cho, factory director of Dae Kwang Tech Co. Ltd.

When it comes to tool and workpiece measurement in its machining centres, Dae Kwang Tech relies on measuring systems from Blum-Novotest. They are the key to maximum efficiency and increase the reliability and precision of the machines. The measurement solutions are a fundamental component for detecting faulty parts in the production process, increasing productivity and providing data to optimise processes. Ultimately, this is also reflected in the high product quality of the mould-making company.

Dae Kwang Tech uses the measurement software FormControl from BLUM in its machines. It enables ultra-precise workpiece measurements directly in the machining centre. Especially with very large components, assessing the dimensional accuracy often demands a considerable amount of effort. Prior to implementing FormControl, the workpieces always had to be transported to a coordinate measuring machine for inspection. If errors were detected, it was very difficult to rework them. Thanks to FormControl, any deviations are detected in the original set-up, making reworking quick and easy. On the one hand, this results in significant time savings and, on the other hand, product quality is increased massively. Manufacturing processes can, therefore, be accelerated and simplified, while transport and storage periods between the machining centre and the measuring machine are completely eliminated. Yet another advantage of the software is the possibility to create a measuring report, which is always supplied together with the tool mould to underline its quality – a requirement that many customers make today.

Laser measuring systems increase quality

Blum-Novotest's high-precision laser measuring systems also work on the large machining centres. The systems were developed for non-contact measurement, breakage detection and the monitoring of cutting tools. For example, they can be used to detect and compensate tool wear during the manufacturing process. A further advantage of machine-integrated measurements using a laser measuring system is that the tools are measured at nominal spindle rpm and in the actual clamping situation. As a result, clamping errors are, e.g., detected or negative impacts, such as temperature-related spindle misalignment, are captured and compensated.

"We specialise in large moulds, meaning we also use large 5-face machining centres. However, it is difficult to measure the length and diameter of the tool automatically, as these machines are equipped with special angle heads. Due to the resulting changes in axis directions, we initially doubted whether measurements using laser measuring systems would be possible at all. But the BLUM engineers also had a solution to this problem, namely a measuring cycle specially developed for angle heads," explains Manager Cho.

Production of small moulds

However, Dae Kwang Tech not only manufactures large casting moulds. Smaller moulds are also being increasingly produced. Therefore, new machines have been purchased for the production of these products, e.g. an ALZMETALL GS700 and an XF6300 from Hyundai VVia. The new machines have also been equipped with laser measuring systems, the TC50 probe and the FormControl software from BLUM.

"We use the systems extensively, from workpiece set-up and tool measurement to workpiece checks after machining, thereby automating the cutting process. The biggest competitive advantage of our company is the rapid production of high-quality moulds. The BLUM systems enabled us to improve our machining efficiency significantly. Further, it's not just the product quality of the measurement technology manufacturer that is outstanding, we are also extremely satisfied with the overall service provided by BLUM. We are now able to work more productively, while reducing throughput times and delivering first class quality."