

Aluminium parts for the global electric vehicle industry



Mr Lee, Deputy Head of Department at Kodaco Ltd.

> > > www.kodaco.co.kr

Many believe that the future of transportation lies in electromobility. Reducing weights while increasing stability are particularly important here. Korean company Kodaco Ltd. is a leader in the field of high-quality high-pressure die-cast parts made of aluminium thanks to its use of state-of-the-art technologies, and has increasingly focused on the development of products for electric cars in recent years. Measuring systems from Blum-Novotest make the production of automotive parts highly efficient and provide long-term assurances for quality.

Kodaco Ltd. is a leading manufacturer of parts for the global automotive industry. The company is a specialist in the production of products made using high-pressure die casting and is celebrating its 20th anniversary this year. Over 150 different parts are produced by the company, including for engines, steering systems, suspensions, compressors and gearboxes. As a supplier for Hanon Systems, Hyundai Power Tech, Mando, LG Electronics and Hyundai Mobis, the company delivers products to automobile manufacturers such as Hyundai, Kia, Korea GM etc. as well as global automotive suppliers such as BorgWarner and AAM.

The company is also active in the electric vehicle sector, a business with considerable future promise. Through customers such as LG Electronics, Hanon Systems and Mando, etc., air conditioning system components are shipped to companies such as GM for projects such as the “Volt” electric car and also to other North American electric car manufacturers. Since 2013, there has also been a partnership in effect with the Automotive division of LG Electronics, in which customers such as Mercedes-Benz North America among others have been supplied with battery casings. Parts for steering systems have been shipped through the supplier Mando, while components for air conditioning systems have also been delivered to manufacturers through Hanon Systems.

“BLUM” – the key factor

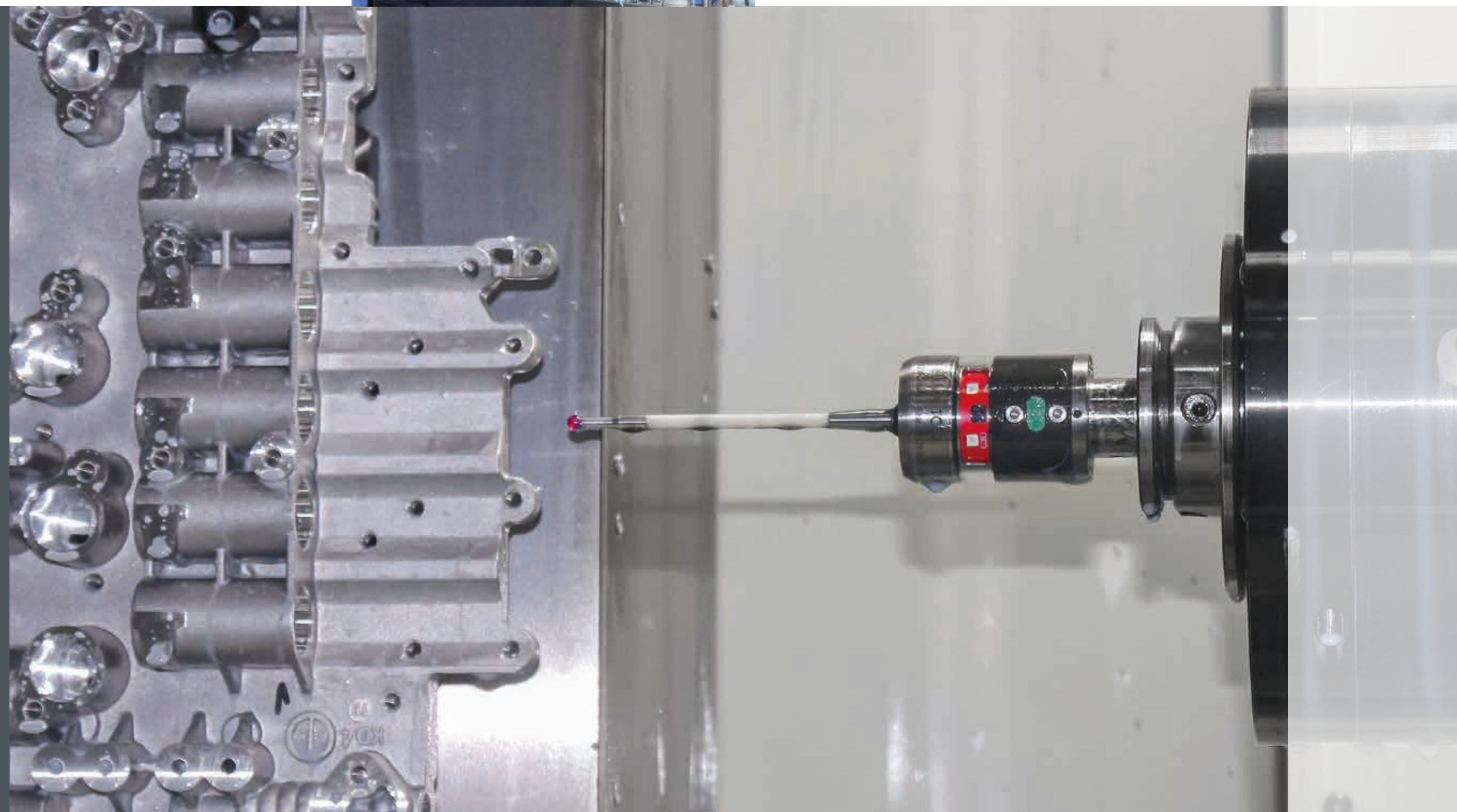
Today, the company uses HPDC technology (high-pressure die casting), a special method in which it is an authority in Korea.

“With this comprehensive method, many parts can be cast in a very short time,” explained Deputy Head of Department Mr. Lee. “This has provided us with a genuine competitive advantage in terms of costs. Another benefit is that we can use this technology to produce parts both for vehicles with combustion engine and for electric cars.”

In the past, Kodaco would occasionally experience problems producing cast parts with the necessary quality. This was solved using high-quality process technology, by ensuring the quality of the cast material, and by using high-precision machining centres equipped with BLUM’s high-end production measurement technology. The production facilities have high-quality automated production lines and a well-developed system of quality management. Assuming inspiration from the idea of a “smart factory”, the Korean company has also installed a real-time monitoring and data management system which monitors and analyses the data, thus helping to minimise the number of errors.

“We ask ourselves how errors can be found in serial production before they can become a problem. Our key customers had particular trust in solutions from Blum-Novotest. When we mentioned to our customers that we almost exclusively used BLUM products to monitor our production quality, we had gained our customers’ trust immediately.”

BLUM’s measurement expertise is especially valuable with serial production machinery where quality and efficiency are key.



Thanks to the measurement solutions, throughput times are reduced, shutdown times are minimised and in-process reliability is enhanced. For workpiece measurement and workpiece referencing, for example, the company trusts in the TC62 touch probe. “The use of the touch probe not only has a positive effect on the quality of the produced parts, but also massively increases the productivity of the machinery by drastically reducing the reject rates,” said Lee.

Monitoring processes

The advantage of high-pressure die casting is that it eliminates the need for corrective machining of the parts. Assembled units that would normally have to be built from two or more components in a different procedure can be created here in a single step. With very complex moulded parts, however, it may still be necessary to perform corrective machining, for which very small cutting tools are often used. “We also wanted to monitor these tools during the process, which is why we were looking for suitable solutions,” explained Lee. “It is almost natural to encounter the products of this German measurement technology manufacturer. Using the laser measuring systems, we were able to measure all cutting tools, detect wear and breakage in the process, and identify problems in the cutting process.”

“Currently, over 40 BLUM measuring systems are in use at our production facilities. Thanks to these systems, our employees

understand the processes much better than before, which enables them to continuously optimise them. BLUM also continuously develops its solutions further and makes new applications possible. I wonder what innovative ideas will yet come from this process.”

State-of-the-art technologies

The trend towards reducing the weight of vehicles is a perfect match for the company’s strategy. For example, they plan to be the first company in Korea to manufacture high-pressure die-cast parts from magnesium. Magnesium offers genuine benefits – after all, compared to aluminium, it is much more stable and even lighter. With the increasing use of high-quality machinery and costly materials, the partnership with BLUM will also continue to deepen. “The more difficult, the more complicated machining becomes, the more important the partnership with BLUM will be, because if productivity is supported by a market-leading technology, it too can become even better.”

BLUM’s products have significantly increased the company’s productivity and have since become a key component in relation to in-process reliability and precision at Kodaco. “We made a conscious choice for Blum-Novotest’s products. On the basis of a fruitful collaborative effort, a deep partnership has since been established. We also appreciate the reliable service from start to finish – it’s something that you can just depend on,” concluded Lee.