

Case Story.

Georg Fischer.



Case Story.

“A dependable partner”

For years, GF Automotive AG has used Bühler two-platen die casting technology for manufacturing car components of aluminum and magnesium. The latest example is a complete Carat 200 Compact die casting cell for the Georg Fischer factory in Altenmarkt.

Georg Fischer Automotive AG (GF Automotive) is an autonomous corporate entity within the international Georg Fischer Group. It focuses on the development and production of high-strength cast components for the automotive industry and its vendors. GF Automotive operates 12 production sites in Germany, Austria, and China with about 5500 employees. In 2010, the Automotive sector of Georg Fischer generated sales revenues of 1.55 billion Swiss francs.

Proven capabilities

GF Automotive possesses proven capabilities which have been internationally distinguished several times in the sand casting, gravity casting, and die casting processes for quantity production, as well as the processing of iron, aluminum, and magnesium as engineering materials. Its twelve factories manufacture about 500,000 metric tons of cast products a year. In Europe, GF Automotive is the acknowledged technology and market leader in numerous fields. Its principal markets are Europe and China. In addition, supplies also go to Japan and America. GF Automotive develops and manufactures products for almost all reputed carmakers and a number of well-known commercial vehicle producers. 80 % of its output consists of die cast products of aluminium and magnesium. Engine blocks, gearboxes and clutch housings, oil sumps, steering columns, consoles, and structural body elements are just a few examples of products that are made of aluminum and magnesium. In Europe, GF Automotive is one of the five largest vendors of die cast parts to the automotive industry.

Research and development

The success of Georg Fischer as a specialist in the various casting processes resides in its great research and development efforts. The R&D competencies of GF Automotive are concentrated in Schaffhausen, Switzerland and Suzhou, China. Some 70 specialists are employed in the centralized research and development function. GF Automotive spends about three percent of its total sales a year on research and development.

Significant development activities include component design, computer-aided calculations, analyses, and simulations in addition to efficiency of manufacturing processes. Other areas include materials and process development plus materials and component testing.

Bühler as a technology partner

In the international automotive engineering industry, a strong trend exists to use structural components for car bodies. Carmakers are also increasingly using such components in the manufacture of volume models, cars made in large production lots. Die casting offers clear advantages over other processes. To take advantage of the die casting process, GF Automotive has for years partnered with Bühler. “Bühler is doubtlessly a trendsetter in the field of die casting and is at the forefront of this technology with its carefully thought-out systems and processes,” explains Ueli Forrer, Head of Die & Gravity Casting at Georg Fischer Automotive AG. “With Bühler, it is possible to exchange views on a wide diversity of issues and projects also at the R&D level. We greatly appreciate that.” GF Automotive and Bühler are currently aligning their standards and defining joint standards. Ueli Forrer: “It would be nice to standardize production to the point that we could relocate it as required to any of our different factories.”

Thrilled by two-platen technology

What inspires Ueli Forrer most is the two-platen technology developed by Bühler. “I do not doubt for a moment that two-platen technology faces a very bright future. Fewer components on the die closing unit lead to fewer failures, which has a positive impact on uptime.” It is therefore not surprising that various Bühler Carat two-platen die casting machines are already in service in different plants of GF Automotive. Thus, in the years 2009 and 2010, two Carat 280 Compact die casting cells went on stream in the factory in Werdohl, Germany, and another two in the foundry in Suzhou, China, in 2010. In September, Bühler supplied a Carat 220 Compact die casting cell to GF Automotive’s factory in Altenmarkt in Austria. And today, two additional Carat installations are being built in Suzhou.

In addition to high operating reliability, the low space requirement of the Carat is also an advantage. This is a decisive criterion in existing foundries in Europe, for instead of a 1300-ton machine, it may be possible to install a 2800-ton system. This boosts output per surface



The new die casting system of GF Automotive in Altenmarkt, Austria.

unit and meets the requirement for producing larger cast components.

Personal contact

But GF Automotive relies on Bühler for more than just its engineering qualities. "For such a business relationship, other factors are also important to us. They include an extensive range of products and services, consistent performance in the long run, support throughout the life cycle of a system, high dependability, and a high service level including spare parts supplies. Another important point is the global set-up of Bühler. Also personal contacts and short communication paths are essential."

New Carat 200 Compact in Altenmarkt

The latest project handled by Bühler for GF Automotive is a new Carat 220 Compact for the Georg Fischer factory in Altenmarkt in Austria. Altenmarkt is located northwest of Graz, Europe's Cultural Capital in 2003. The manufacturing facility in Altenmarkt is one of a total of five Georg Fischer plants in Austria. It is part of the Light Alloy Die Casting Unit and employs some 500 people who work in multiple shifts. Here, cast aluminum and magnesium components are manufactured for the automotive industry. Dashboard supports, inner door components, consoles, paneling parts, hood compartment lids, and steering column sections made of magnesium. The project comprises a complete Carat 220 Compact die casting system. It has been designed for the production of suspension strut supports and simple structural components. Operation of the peripherals is integrated in the centralized control system. In addition, the control system saves all the casting parameters and all the quality data of each component. This ensures the retraceability of parts production. The new die casting

system of GF Automotive was started up in record time, not least thanks to the reliable preparatory jobs done by the Georg Fischer employees. Supplied in August 2011, intensive training of all the operators and final start-up were completed as of the end of September 2011. Ueli Forrer: "This is further proof of the outstanding service that we receive from Bühler as our partner."

Ueli Forrer
Head of Die & Gravity
Casting, Georg Fischer
Automotive AG



"I am certain that we have a partner in Bühler that is a trendsetter in our industry and that I can fully rely on whatever and wherever it may happen in the world."



Georg Fischer

Georg Fischer is an international industrial leader that specializes in three core business fields: GF Piping Systems, GF Automotive, and GF AgieCharmilles. Governed by its philosophy “Adding Quality to People’s Lives,” the company with its products aims at helping enhance the quality of life and satisfying the need for mobility, comfort, and precision. Founded in 1802, the company is headquartered in Schaffhausen in Switzerland and operates over 130 affiliates around the world. Of these, 50 are production sites. The company’s roughly 13,000 employees generate annual sales of about 3.5 billion Swiss francs.

Bühler AG
CH-9240 Uzwil, Switzerland
T +41 71 955 12 12
F +41 71 955 25 88
die-casting.info@buhlergroup.com
www.buhlergroup.com/die-casting

