

AMF clamping technology supports production at pioneering Hungarian supplier

“There is one of our parts in almost every car”

It is well known that Eastern Europe has excelled in metalworking for a long time. However, one supplier in Hungary stands out above the rest. A manufacturer of aluminium die-cast parts for major OEMs in the automotive and large-scale industries processes these parts into important components. A complete system for workpiece clamping on the machine table is created from a clever fixture construction and efficient zero-point clamping technology from Andreas Maier GmbH & Co. KG (AMF). It is so flexible that the machines can be set up quickly for both mass production and small-series production. Even the most prestigious customers are impressed.

“Through consistent investments in top-class machining and manufacturing technologies, in the past few years Fémalk has developed into one of the most in-demand manufacturers in the processing of aluminium die-cast parts in Eastern Europe”, Samuel Netzer, AMF sales engineer for Northern and Eastern Europe, reports. The company is proud of how its business has developed since 1989. The engaged and qualified employees produce castings weighing from 30 g to 5,500 g in the modern factories, thanks in no small part to the modern clamping technology from AMF. It is not hard to believe the company spokesperson when he says that “almost every car in Europe has at least one of our parts in it.”

Cycle times can only be achieved with modern clamping technology

In order to achieve this, Fémalk invested not only in buildings, machines and employees, but also in highly efficient clamping technology. What began with individual pilot projects and simple hydraulic clamping elements from AMF has been expanded in recent years into effective clamping technology with automation and zero-point clamping technology. This has reduced setup times so significantly that machine utilisation

has soared. This is all thanks to a clever in-house design engineer. Gábor Soós, who is responsible for fixture construction. He has always thought ahead and, together with AMF representatives, searched for optimisation potential. The clamping technology is now so flexible, as well as partly automated, that the machines can be setup just as efficiently for small quantities, such as for a Bentley, as for mass production for VW. In addition, the company has equipped 15 processing centres with the most modern zero-point clamping technology from AMF. It started in 2015 with a simple angle clamp, but they now have a range of around 200 fixtures that are equipped with bolts for the zero-point clamping interface. The specially developed fixtures include a base plate with pull-studs for each machine, which are held by the zero-point clamping modules. The consultants at AMF were able to provide efficient support with many tips and a wide range of products. The products the company uses include swing clamps, clamp arms, stop valves and pressure accumulators, in addition to quick-release couplings, pressure gauges,

vertical clamps or support elements and lines, as well as coupling nipples for media ducts.

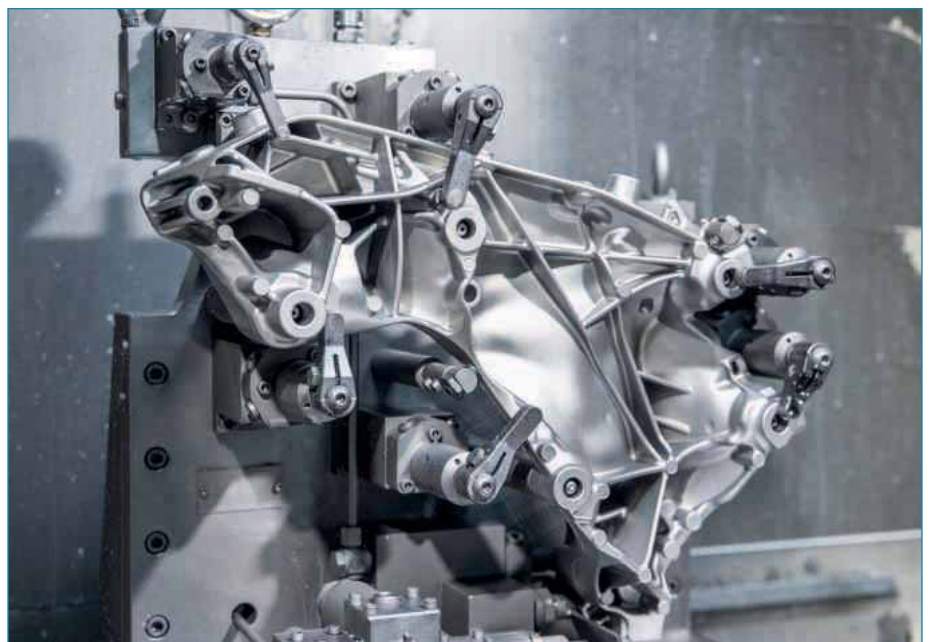
“The fact that one supplier has so many products in its range has been very helpful for us and has greatly simplified procurement.” emphasises Gábor Soós.

Wide product range from AMF simplifies procurement

Four fixture variants with pressure-regulating valves and multiple media ducts on the base plates ensure maximum flexibility. “This means that, for example, all consumer circuits can be controlled with different pressure levels and, as an extra feature, they can also be controlled with a delay”, Samuel Netzer points out. This solution means that the support element can first be extended to hold a workpiece and then the clamping fixtures can be closed.

Setting up during operation

The base plates each come equipped with four K 10 zero-point clamping modules. With a force of ten kilonewton each, they reliably pull in the pull-studs on the base plate with a



repetition accuracy of 5 µm, close it securely and hold it tightly with a force of 25 kN. The modules are opened hydraulically with an operating pressure of 50 to 60 bar. Because the pressure lines are mechanically closed using spring force after clamping, they can then be disconnected at any time afterwards.

The fixtures are loaded outside of the machine with the aid of a pressure accumulator. This means that the next machining operation can be prepared outside the engine room, while production continues. The components are clamped before being transferred into the machine. This is the only way to keep setup times to a minimum, so that the parts, which the 42 die-casting machines cast mostly fully automatically, can be processed without any major delays. The series production must handle both small- and large-scale batches, with quantities of between ten and 15,000 units per week.

Gábor Soós explains: "Small-series production requires a quick

change of fixtures to maintain a high level of machine utilisation, particularly at the start-up phase of a new product."

The parts are used in many major OEM plants around the world

The company process an incredible 4,000 tonnes of aluminium into die-cast parts every month. Further processing sees these parts turned into a range of products including chassis parts, engine and gear bearings and electrical circuit housing, as well as complex air-conditioning compressor parts and headlight or thermostat housings. It delivers these to many OEM plants worldwide, including, for example, BMW, Bentley and Porsche, as well as VW, BASF and Boge. Fémalék ranks as a 1st-tier supplier to most of these companies.

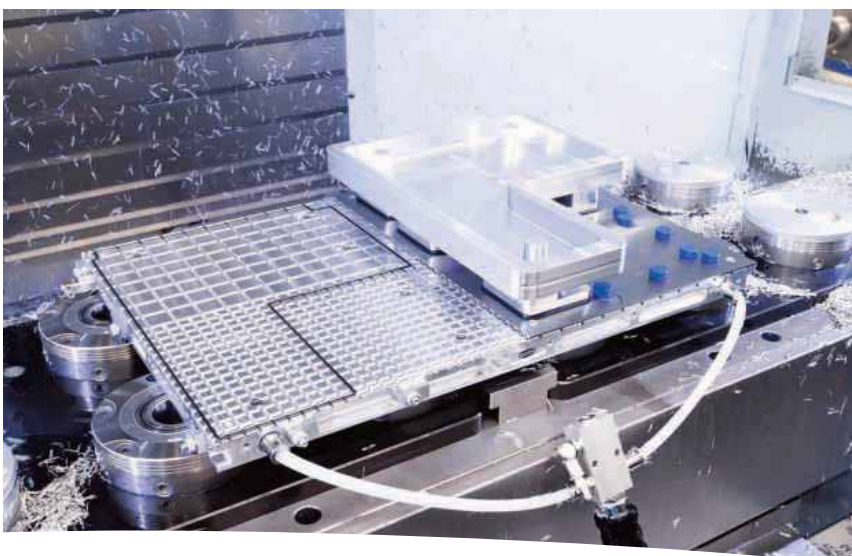
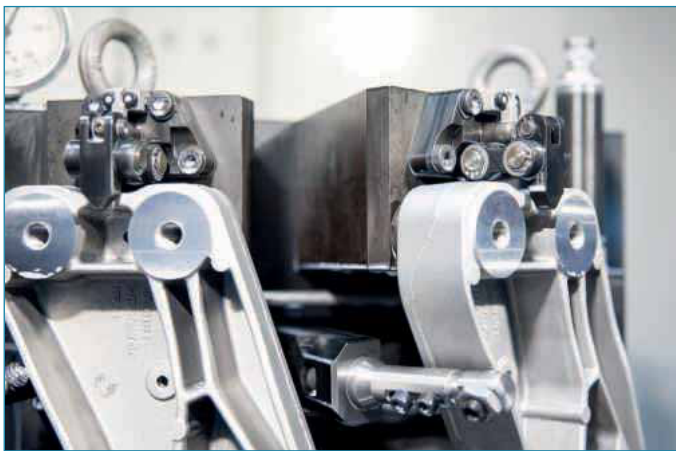
With well-trained, committed and motivated employees and through dynamic growth, the company has developed a significant position in the European supply industry. In addition to the die-casting machines and processing centres, the company also has a wide-ranging manufacturing system that includes six CNC lathes, four washing machines and drilling and thread-cutting machines, along with special press-in machines, blasting machines or mass finishing machines. The close relationship with the clamping technology experts at AMF has been producing efficient solutions for over ten years. As a result, the zero-point clamping technology from the Fellbach-based company is a firm favourite with the Hungarians and is always included in the planning for each new processing centre.

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