



## HAI Commissions New Press Line for Automotive Components in Ranshofen

**H**ammerer Aluminium Industries (HAI) inaugurated its new P61 extrusion line and logistics center at its headquarters in Ranshofen, Austria, on June 12, 2024. The company welcomed guests from the local government and businesses to the event, which not only celebrated the opening of the new press line, but also recognized the completion of an €125 million investment package launched by the HAI Group in 2022.

The new press line expands capacity, while also enabling the production of highly complex aluminum profiles for the automotive sector. “We have become the technology leader in lightweight aluminum components for the transport sector at the Ranshofen site,” said Rob van Gils, CEO of HAI (Figure 1). “With the new P61 and the entire upstream and downstream processes, we can produce highly complex aluminum profiles with excellent crash properties for Europe’s renowned OEMs. This step was strategically important and today’s inauguration fills us with pride.”



Figure 1. Rob van Gils, CEO.

### Company Background

HAI is a family-owned, internationally active group of companies with a total of nine facilities across Europe, including its headquarters in Ranshofen, Austria, and eight other locations in Germany, Poland, and Romania. This includes casting, extrusion, fabrication, and finishing operations, which are able to manufacture high quality components for a variety of industries, including construction, automotive, transport, and electrical engineering sectors. The company currently employs around 2,100 personnel and achieved a turnover of €890 million in 2023.

Since its founding in 2007, HAI has focused on ensuring the sustainability of its operations and products through circular economy and recycling initiatives. In 2019, the company set a goal to reduce group-wide emissions by 25% by 2025, which the company was able to surpass even earlier in 2022. Further, HAI extends its sustainability strategy to the raw materials it uses in the operations, enabling it to launch the low carbon products, SustainAl 2.0 (containing a high recycled content up to 80%) and SustainAl 4.0 (made from certified primary aluminum produced with renewable energy).

The recently completed €125 million investment package included a wide variety of projects. In Romania, HAI started up a new Hertwich multi-chamber melting furnace at its Santana plant in early 2022, followed by the installation of a 40 MN extrusion press line at its Chisineu-Cris facility in 2024. At the Soest site in Germany, the company added a 2,600 sq m production hall in 2024 to provide additional fabrication capacity, including modern CNC and assembly systems to produce ready-to-install components. The company also installed two 60 MN extrusion press lines in Ranshofen, with the first one being installed in 2022 and the second being the most recent project completed in June 2024, as well as updating the logistics area.

With this investment plan completed, HAI now operates 13 extrusion lines across its European facilities, bringing total production capacity up to 125,000 tonnes per year. This is in addition to the company’s 250,000 tonnes of recycling and casting capacity per year, which helps to secure supply for the company’s extrusion operations. This combined capacity positions HAI as a leader in the European aluminum extrusion industry.

### New Press Line in Austria

Although HAI launched in 2007, the Ranshofen facility has been in existence as an extrusion plant since the 1950s. With the startup of its latest P61 extrusion line, the

site now has three modern 12 inch presses and one 10 inch press, which primarily process billet from the company's SustainAl line of low-carbon alloys.

Prior to installing the P61 extrusion line, HAI realigned its Ranshofen facility, including relocating a 25 MN extrusion line to the Chisineu-Cris facility in Romania and moving the previous logistics area to the newly built logistics center. This made space within the facility for the construction and installation of the new extrusion line.

In order to rapidly set up the new P61 press line, the company opted to copy the design of the P60 line installed in 2022. As a result, the new line uses equipment from the same suppliers, including Presezzi Extrusion Group, extrutec GmbH, SPS Technik GmbH, and Reisch Maschinenbau GmbH.

"The process for planning the line and selecting the equipment suppliers was actually very simple," said John van den Nieuwelaar, technical managing director of extrusion at HAI Group (Figure 2). "We started operation of the P60 12 inch press about a year and a half ago and put a lot of energy into it to make it run perfectly. By ordering the same press we could reduce the startup time of P61 to only one month, with it running at the same productivity as P60."



Figure 2. John van den Nieuwelaar, HAI Group.

Van den Nieuwelaar noted that implementing a duplicate press line also provides operational efficiencies. "The main reason for ordering two of the same presses is that the same dies can run on both presses," he said. "We can also easily exchange operators and make it much easier for maintenance to have standardized equipment."

The P61 line features a 60 MN, 12 inch, front-loading press from Presezzi Extrusion capable of processing billet from 600 mm to 1,750 mm in length. Built entirely in Italy, the new press offers high extrusion speeds and operational flexibility, while providing excellent energy savings and reduced maintenance. The Presezzi Extrusion Energy Saving System (PE.E.S.S.) only activates the hydraulic pumps when required during the extrusion process to improve efficiency.

The press also features a modern automation system, technological packages, advanced sensors, and software to enable the press operators and maintenance personnel to be proactive in their approach of managing the press. This includes Presezzi's PE software package, which is an advanced web-based telemetry system designed to collect data to support and optimize production and maintenance and analyze potential problems. The system is able to automatically collect samples at a rate of up to 20 microseconds.

"Quality testing at the press is mainly in the form of checking the dimensional and surface of the profiles," said van den Nieuwelaar. "In addition, a huge amount of samples need to be cut for offline laboratory testing, as many customers require tensile testing, crush testing, bend testing, flair testing, etch testing, and microstructural testing. Due to these large amount of samples, we automated some of the testing, including fully robotized tensile testing and automated sample preparation for microstructure testing. It's also important to be able to collect data from process parameters to correlate it with the quality results from the samples. For this, we installed an advanced process computer that handles the recipes and is collecting all process data—from how the billet is heated up to cooling parameters, etc."

The log handling and press feed systems ahead of the P61 press were supplied by extrutec. The vertical log storage unit is outfitted with 28 storage slots that hold 12 logs each (12 inches in diameter) for a total capacity of 336 logs, along with a 2-axis crane for transporting the logs to the preparation area. Log pre-heating occurs with the Eco Shower Unit (ESU), a patented hot-water log pre-heating system that is able to increase throughput, while also reducing the energy consumption by up to 17%. A high-pressure log washer (3,000 PSI) is integrated into the ESU to remove any surface contaminants. Two furnaces provide heating of the logs, including a log furnace and a standalone induction furnace. The log furnace consists of a 15 ft high-velocity convection pre-heating section and a 30 ft gas-fired direct flame impingement section for a throughput of 23,800 lbs/h. The induction furnace includes a friction free clamping system, water-cooled coil, field extender, and 5-zone IGBT-converter with 1,400 kVA (Figure 3). The log heating area also includes a billet taper quench, a hot saw with a chip shredder and exhaust (5 mm kerf), and an overhead manipulator designed to transport the billet through the preparation area to the press loader. In addition, extrutec supplied an electrical, chest-style oven for preheating the bolsters and an electrical eight-chamber die oven with automatic charging shuttle.

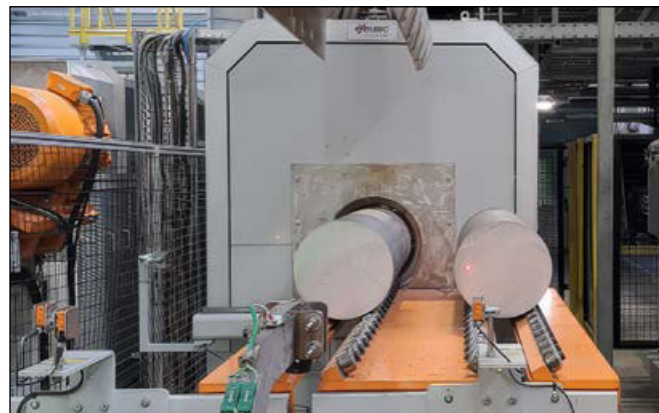


Figure 3. The induction furnace provides efficient heating of logs.

After extrusion is completed, the profiles are removed from the press using a single puller and flying saw puller from Reisch Maschinenbau, who also supplied the lead out and runout tables. The profiles are cooled with an  $\alpha$ -flex soft-cooling quench from extrutec (Figure 4), in which all of the nozzle stocks are adjustable by  $\pm 30^\circ$  to allow for more targeted cooling. The parameters set for the quench (angle and pressure) can be determined via a simulation using the actual profile geometry.

A high-velocity extrutec air cooling duct system (10,000 ft/min) was installed at the cooling tables, which carry the profiles to the 200-ton stretcher and final-cut saw supplied by SPS Technik. The stretcher offers precise force and path control for more accurate stretching, while the final saw features advanced drive concepts that significantly reduce cycle times.

The automated stackers, cranes, floor conveyors and packing systems were also supplied by SPS Technik, with the basket handling and aging being performed without any people or forklifts. The system also includes a state-of-the-art labeling system that marks aluminum profiles immediately after quenching to ensure complete traceability and quality assurance of raw materials. It also includes scrap markings and sample identifications to help HAI in meeting industry standards.

From start to finish, the new press line features a high level of automation and advanced safety controls, such





Figure 4. The new quench provides precise cooling of the profiles to meet strict automotive and other industry standards.

as machine guarding, a safety PLC, and a blasting screen at the front of the press. “Automation is important as we want to have a production process that is as steady as possible and need to reduce headcount to be competitive, due to working in a high-cost country,” noted van den Nieuwelaar. “The whole line from log storage to aged profiles basically can be operated by two people—one at the press and one person operating the automatic stretcher, the saw, and the profile stacker.”

The new press line provides the necessary speed and flexibility to extrude about 15,000 tons of advanced automotive profiles per year, depending on the product mix. This brings the total capacity for extruded products at the Ranshofen plant to approximately 50,000 tonnes (and 125,000 tonnes for the entire HAI Group). “The main feature of the P61 press line is its ability to produce complex automotive shapes with a high level of automation and process control,” noted van den Nieuwelaar. “This

starts with the line’s advanced billet heating system and a best in class press and a runout with advanced cooling, stretching, and stacking.”

### Updated Logistics Center

In addition to the new press line, HAI updated the logistics area of its Ranshofen site, which was overcrowded. The company constructed a 14,000 sq m logistics center comprised of an ultra-modern warehouse and loading area, allowing several lorries to be loaded and unloaded in parallel. The state-of-the-art center includes an automated, high bay racking system supplied by SIBA System Integration GmbH with 2,220 storage locations for customer load carriers, in which storage and retrieval of customer pallets can be carried out automatically.

### Future Growth

The completion of HAI’s European investment plan puts the company in an excellent position to respond to demand for low-carbon, high quality extruded aluminum products in the automotive and other industries. With this achievement, HAI is now shifting its focus to its first business based outside of Europe. The company formed an agreement with LS Cable & System to establish a joint venture in South Korea, with the aim of producing highly complex extruded aluminum components for the electric vehicle production in the local market. In April 2024, the two companies broke ground on a €46 million project in Gumi. The 13,800 sq m production hall will include a 60 MN extrusion line, which will be identical to the P60 and P61 lines recently completed in Ranshofen (including the same equipment suppliers). The new production hall is expected to start operation in 2025. ■

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