

Case Study.

Stanzwerk AG

A new plant leads to lean production structures.



Stanzwerk AG.

A new plant with lean production structures.

Modern automobiles are equipped with a multitude of accessories that make cars more comfortable and safer. Up to 180 electrical drives control air conditioners and windshield wipers, help to adjust the seats or side mirrors and reduce the effort it takes to steer the car. Electrical motors of all types and sizes are integral parts of these accessories. An important component of these small drives is manufactured by Stanzwerk AG: rotors that are produced with modern casting cells from Buhler.

Functional, cool, a modern concrete structure – that is how the new production plant 2 of Stanzwerk AG is seen in the Swiss town of Unterefelden, an hour's drive west of Zürich.

After having welcomed us warmly, Hans Soltermann, Project Manager, explained that “the constantly increasing demand for our high-quality products required that we expand our capacity, leading to the construction of this new facility”. He continued: “Planning for a new production plant from scratch provided a unique opportunity for us to reconsider our manufacturing process in its entirety. This included adjusting the production as well as logistics and the casting process to current and future conditions.”

The systematic planning process is evident as soon as you enter the new workshops. The entire rotor and stator manufacturing area is set up in production lines. On one end, the electrical steel sheet are delivered on rolls, and on the other end, you can see the rotors already packed.

The plant is fully automated for the most part. Not many operators are around. Fast-moving eccentric presses stamp about 300 rotor laminations per minute out of the ferrous strips. You can barely see the stamping process, that's how fast the electrical steel sheets shoot through the press. The individual stamped laminations are piled on top of each other and bound into packs. Conveyor belts and manipulators collect the rotor packs and move them into buffer zones, where they are stored for the next step in the process.

After that, if you enter the die casting workshop, you will immediately notice the light, clean and considerably less noisy atmosphere. The new casting cells are separate from the stamping area. Conveying belts continuously carry the rotor packs directly to the inserting station of the casting cell through small openings in the wall. Here, too, you will immediately notice how the manufacturing process has been optimized. Process steps that were previously downstream have now been combined to allow for the finished product to be delivered straight from the casting cell.



Fully automatic casting cells with Buhler Evolution 66 compact



Visual check prior to shipping

“Thanks to this casting cell, we have been able to attain a technical level that we could not imagine possible before” said Hans Soltermann, proudly pointing to the new Buhler die casting system. “The air gap is a good example: the distance between the inside diameter of the stator and the outside diameter of the rotor is an important attribute for electrical motors. The smaller the distance, the better the efficiency of the motor. Highly sophisticated technology is needed to ensure that the required degree of quality is also cost-effective. Thanks to the revised manufacturing concept and the new casting cell, we have taken a decisive step forward.”

Buhler Project Engineer Urban Ehret added the following: “This order was a challenging one. It was not easy to achieve the ambitious goals asked of us. However, thanks to our partnership with the customer and the trust they placed in us, we were able to reach a successful conclusion to our work. We are most grateful to the customer and staff for that.”

The result of the joint effort is quite impressive. The Buhler Evolution 66 compact, a die casting machine with a locking force of 660 tons, is at the center of the die casting cell. An extraction robot simultaneously used for inserting the rotor packs into the six-fold die and for all of the handling involved with the cooling, stamping, calibrating, inserting the mandrels and depositing the parts.

A Reis stamping press is provided for stamping and calibrating. A Wollin device is used for spraying. The metal supply is handled by a Westomat. A KMA exhaust hood, Regloplas tempering devices and a sheet metal pack sorting and supply station provided by the Marti Company complete the system. In order to simplify handling, the controls for the sprayer, the dosing furnace and the robot have been integrated directly into the operating system of the die casting machine. This makes it possible to operate the devices using the casting machine controls which saves time and also money.



Main Entrance to Plant 2

Compelling Professionalism

Stanzwerk AG is very satisfied with the new plant. They were able to increase productivity as planned. The quality of the cast parts was improved and the rejection rate is marginal.

The Project Manager commented: “The new Buhler die casting cell works flawlessly. The close collaboration with competent specialists contributed significantly to the success and the achievement of objectives. The experience of Buhler in the conception of such complex systems and the professionalism brought to the project planning and implementation impressed us greatly. The coordination with the sub-suppliers was also included in Buhler’s service package. This made it possible for us to minimize our time and any risks. We will call upon the same partner for our next casting cell. After all, we now have room for additional systems in our new Plant No. 2.”

Stanzwerk AG

Stanzwerk AG was founded as a stamping facility in Suhr, in northwestern Switzerland, in 1961. Since then, the company has developed into a renowned competency center for stamping and stacking of laminations.

This international company has around 250 employees and supplies its unique products to well-known customers within the electric and automobile industry.

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