

NEWSLETTER

Information for partners and customers

Issue 1-2019



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Batch annealing furnace and ORC unit operational: Implementation of rolling concept on schedule

Focusing on the future is important for us and our partners if we are to remain competitive and profitable in the global markets in the long term. With the investments in our fully automatic batch annealing furnace, we are ready for the next step: the commissioning of our new wide rolling unit in autumn 2019. By doing so we do not only focus on the future – we shape it.

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HUGO VOGELSANG's specialization strategy: Setting a course for the future

Being well positioned internationally in the technological high-end market for strip steel is an attractive perspective for the specialists among our customers. Challenge us!

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Setting trends with BILFLEX® and BILCUT®

Breaking new ground in cold-rolled strip technology. This is the goal of our Tailor Rolled Solutions. Interested in walking the path with us?

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Batch annealing furnace and ORC unit operational:

Implementation of rolling concept on schedule

The implementation of the new roller technology is going to plan with the completion of the fully automatic batch annealing furnace and ORC (Organic Rankine Cycle) unit.

Efficient and sustainable: At the Hagen-Hohenlimburg site in Germany, we are creating one of the most modern plants for cold rolling solutions in the world. The BILSTEIN GROUP has opted for a new rolling concept aimed at processing wide coils of 1,350 mm each and is investing in new units. This includes the expansion fully automatic batch annealing machine, a wide reversing stand, and a new wide slitting line. With a focus on the environment and energy-saving, the ORC (Organic Rankine Cycle) unit – which received an award at the Klima-Expo.NRW – is particularly interesting: it will allow the heat energy produced during batch annealing to be channeled back into the production process. This solution, conceived and implemented by the BILSTEIN GROUP, is the first of its kind in the world. And because it's the kind of unit that can be installed for every heat-generating industrial process, its impact will be felt far beyond the Hagen-Hohenlimburg region and the cold rolling industry.

Innovative use of resources

The energy saving possibilities offered by the ORC unit are enormous. The waste heat generated in the batch annealing furnace will be used to generate electricity and for applications like heating the production hall. This means that the electricity and heat generated within the unit will be routed directly back into the plant's supply networks, significantly reducing the total amount of CO₂ emissions and making the whole production process more sustainable. For comparison: the heat energy being generated for production could heat about 1,000 apartments in Germany for a year, and the electricity generated could supply 220 two-person households for the same period. BILSTEIN now

flexibly recovers energy via the ORC unit, without restricting the production process. That's good for the budget and the environment.

Lighthouse project

The development work was supported by the Federal Ministry for the Environment, which had become very interested in the pioneering work involved in developing and building such an ORC unit as part of its climate strategy. Up till now, many industrial organizations have been reluctant to take on an innovation like this because of the challenges and risks involved. And so, on November 13, 2018, a high-level delegation including members of different parliamentary groups of the German Bundestag, representatives of the Federal Economic Ministry, Federal Ministry for the Environment, and Federal Environment Agency, came to the BILSTEIN site Hagen-Hohenlimburg to see the ORC unit first hand.

Step by step installation

Several years went by between the idea first being floated in 2010 and the start of operation of the ORC unit integrated in the batch annealing furnace. The fully automatic batch annealing furnace sets international standards in terms of process safety and product quality – this should of course also be ensured when integrating the ORC unit into the process chain. To ensure the fully automatic batch annealing furnace was not disrupted during operation, the assembly of the ORC unit was carried out during maintenance intervals and interruption periods. It was therefore carried out in stages between 2012 and 2015. After this period the ORC unit was finetuned, 2017





the team carried out further optimization work. An evaluation period followed where data was collected and analyzed during live operation. In 2018, the third assembly phase was completed and the fully automatic batch annealing furnace with the integrated ORC unit has been in service since then.

Custom-made single piece

The challenging thing during the development phase was how the process was controlled in order for both the batch annealing furnace and the ORC unit to function fully automatically. The self-regulating energy recapture and electricity generation solution was created entirely by our specialists and IT experts in house as there were no references to go by. The whole electronic control system has a highly customized design, to implement the energy concept as planned. The energy recapture and electricity generation unit is already set up for the higher annealing workload planned for when the new roller technology comes in. This also marks the successful completion of the first step in the implementation of the new rolling concept.

Looking to the future

The next step is already coming up: the new slitting line for wide rolls is already being built. In autumn this year, the large reversing stand will come into service in the newly built hall and the first 1,350 mm wide material will roll off the unit. The plant also has the benefit of experience as the BILSTEIN GROUP has invested in almost exactly the same model of reversing roll stand in the US at BILSTEIN COLD ROLLED STEEL (BCRS). The process has already been running for nearly two years and American customers have already qualified the material for use in very demanding applications. The experiences with BCRS in North America regarding the qualification of products with clients show that the BILSTEIN GROUP is on the right track with its wide roll technology. The aim now is to establish the wide rolling process on the German market as well. ■



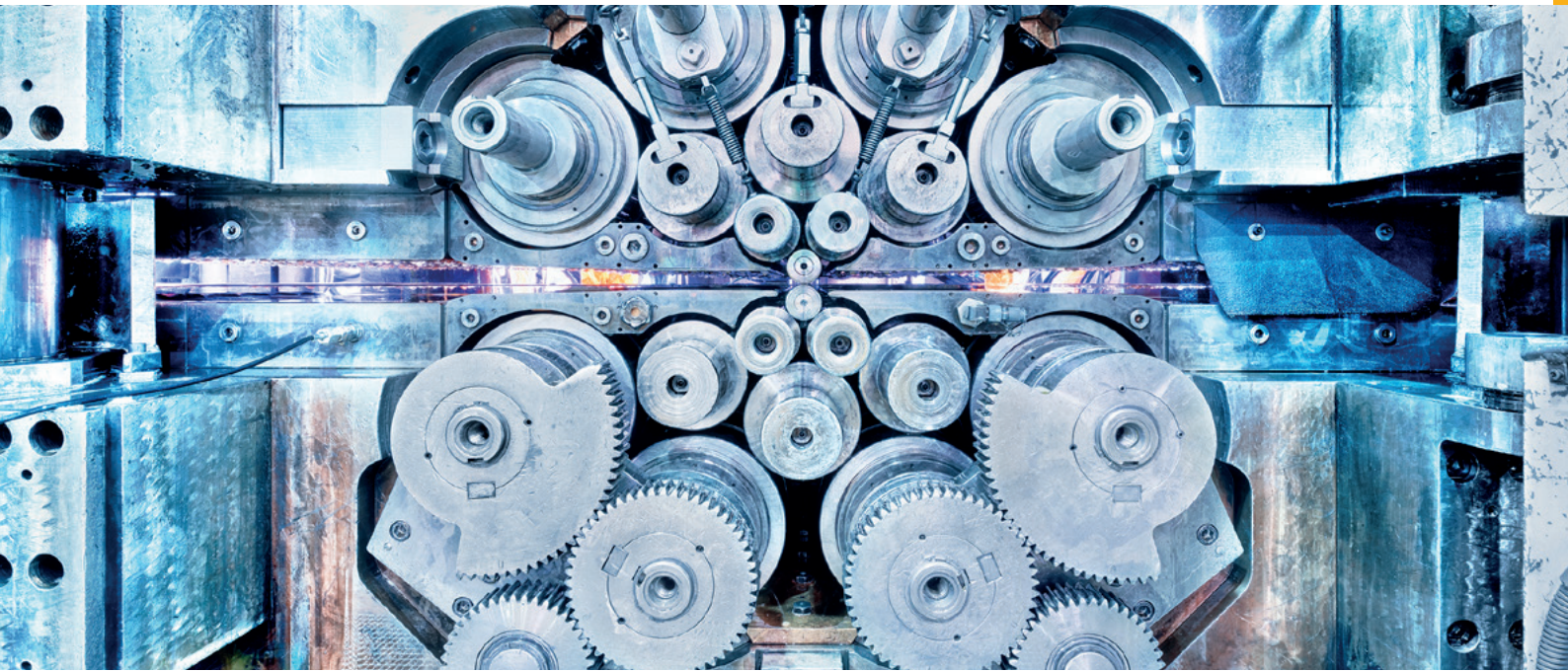
The heart of the ORC unit – a 12-cylinder electricity generation engine



Christian Hagenkord in conversation with the visitors – on-site at the plant



The delegation from Berlin were in good spirits, impressed by the new batch annealing plant



HUGO VOGELSANG's specialization strategy:

Setting a course for the future

Because of its strength in the cutting and sawing sector, having HUGO VOGELSANG as a partner enables the BILSTEIN GROUP to be a full-range provider of cold rolled products, serving a very important strategic niche. To work even more effectively, HUGO VOGELSANG has a new strategic direction. The company's new specialization strategy is based on three pillars.

HUGO VOGELSANG is widely known as a technological pioneer in this challenging sector and has established a very good reputation worldwide. Investment in the new roller technology of the BILSTEIN GROUP (see on pages 2 and 3) will lead to even greater harmonization between the plants in Hohenlimburg and Lennetal: HUGO VOGELSANG is an integral part of the new roller concept and supports production with its reliable order volumes. To chart a course for future growth HUGO VOGELSANG has adapted its specialization strategy. It is really important for the whole BILSTEIN GROUP to build this specialty goods business into an important pillar of our company. In doing so, the company concentrates on objectives which, in addition to maintaining its core business, also include active control of the production mix. These objectives are supported and driven by three strategies – a plant strategy, a semifinished products strategy, and a sales strategy.

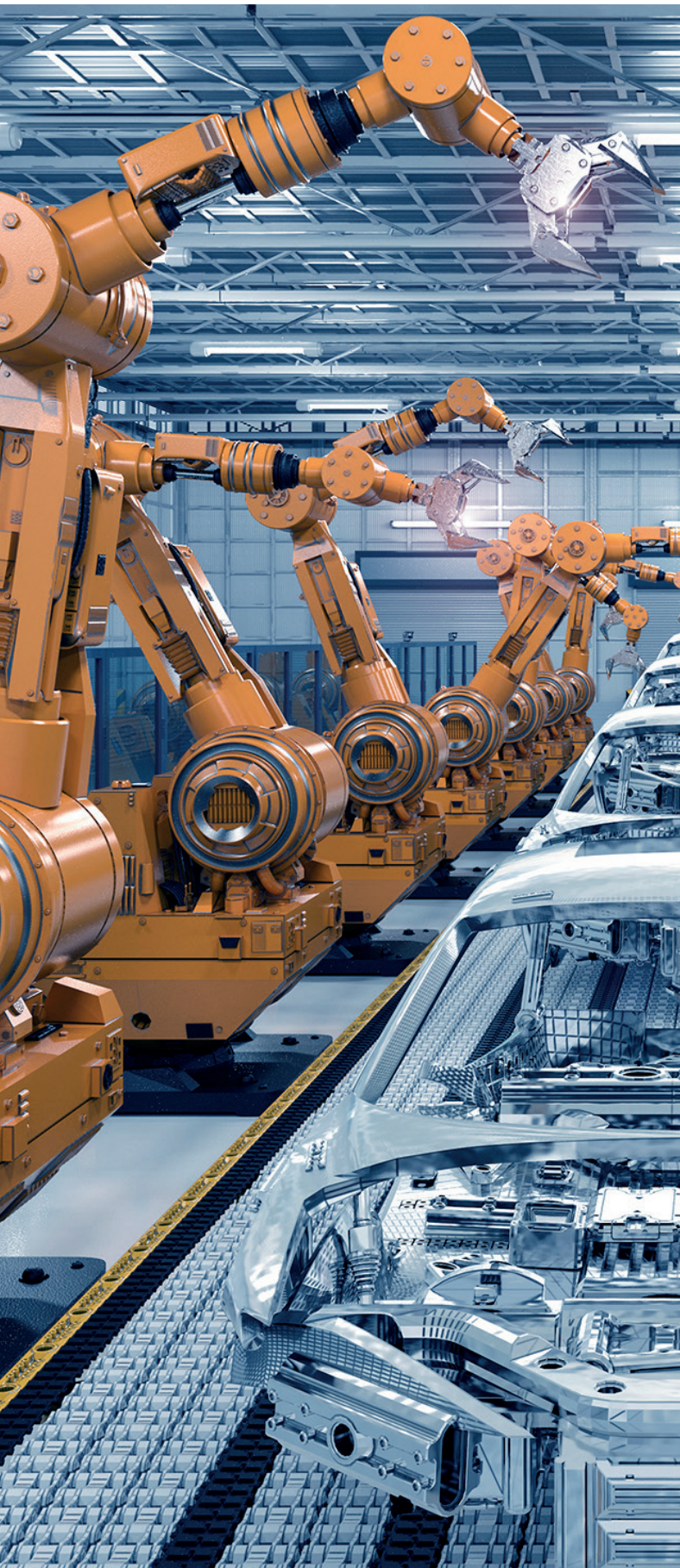
New plant and semifinished products strategy

As part of the plant strategy, there will be regular investments to improve both product quality and productivity. The goal: modern plants and machinery as a basic requirement to achieve best results. The new semifinished product strategy is the second pillar. Analyses have shown that the procurement of semi-

finished materials can be made even more efficient, while the quality of the products remains unchanged at a high level.

Sales strategy with an order processing center

The third pillar is a new sales strategy that consists of a variety of different measures: Portfolio analysis has revealed which product groups achieved the strongest results and show the most promise – and therefore which ones should be better represented in the product mix. This applies to the European market and also at a global level. At a global level, HUGO VOGELSANG will optimize the regional mix and actively seek out customers that offer the potential for shared strategic growth. There are some highly attractive players around, particularly in Asia. Since 2018, the company has had an order processing center that serves as a new and important interface between production and sales. Because of the enormous complexity of the specialist parts business, this function will play a critical role in the company's success. The order processing center helps tailor production precisely to suit the customer's requirements – thereby actively supporting their product strategies. The next goal at HUGO VOGELSANG is now to apply the new processes and tools in the order processing center in order to sustainably increase customer benefit. ■



TWIP 900 – an innovation for the automobile industry

At the end of October last year, the BILSTEIN GROUP unveiled the TWIP 900 innovation at EuroBLECH 2018 in Hannover for the first time – and we received a deluge of requests for samples.

The steel technology itself isn't new, but the fact that it has been cold rolled using a batch annealing furnace is a genuine milestone. Until now, you could only achieve comparable material properties by utilizing a continuous annealing line.

Working with our semifinished materials suppliers the BILSTEIN GROUP managed to modify our analysis tool so that TWIP 900 can be produced with cold rolling or batch annealing in a reliable process.

TWIP 900 is of particular interest to the automobile industry, because with this product the BILSTEIN GROUP is able to offer a material that is perfect for designing new products and reducing costs. With a tensile strength of approximately 920 MPa, as well as 40 percent elongation at fracture, this lighter material can streamline workflows by eliminating the need for specific components. Despite its lighter weight, its forming properties enable completely new safety and crash management systems to be designed. And that makes TWIP 900 an exciting product, especially because lightweight construction is the major new trend in the automobile sector. ■



Setting trends with BILFLEX® and BILCUT®

With BILFLEX® and the new roller machine for flexible cold rolling technology, the BILSTEIN GROUP successfully deployed new cold and hot rolling techniques in the market for Tailor Rolled Solutions. This means that we are halfway toward creating an innovative, comprehensive solution.

BILFLEX® Blanks are customized plates that can be made to any thickness, with per pass reductions of up to 60 percent. They are suitable for manufacturing crash management structures in automobile chassis, but suit any application that requires tailor-made materials and a lightweight construction. BILFLEX® Blanks will be particularly useful in the automobile industry due to increasingly stringent environmental and safety standards: European authorities have decided that the CO₂ emissions of new cars will have to be gradually reduced by 35 percent between 2021 and 2030. Reducing chassis weight will play an important role in meeting these ambitious targets. And because it retains its excellent forming, stability, and crash behavior properties at different thicknesses, BILFLEX® is the ultimate material to help automobile designers go lightweight.

Flexible rolling with BILFLEX®

In order to begin production on BILFLEX® Blanks, the BILSTEIN GROUP has been working with a plant equipment manufacturer specializing in roller machines. With flexible rolling, the rollers are adjusted/controlled to produce different thicknesses – according to the client's needs – over the length of a single strip. Strips can be produced that are up to 60 percent thinner, and at comparatively fast speeds. To achieve this, an own rolling

technology free of any existing trademarks was developed over several years. Meanwhile, we are already able to produce test prototypes on a sampling machine.

Flexible cutting with BILCUT®

BILFLEX® is designed to work hand in hand with BILCUT® high-speed laser cutting. Combining flexible rolling with BILCUT® is a new concept in the market. With high-speed laser cutting the BILSTEIN GROUP is able the only way to offer the client a high degree of flexibility in their plate designs. What's more, the shape can be constantly changed and optimized – and we know that customization is playing an increasingly important role in the automobile industry. With conventional die cutters, however, the cutting tools cannot be changed, so there's really no comparison in terms of flexibility.

While laser cutting steel isn't a breakthrough idea, the high speeds that the BILSTEIN GROUP is trying to achieve – with a view to scaling up production – certainly are. In fact, the technology that BILSTEIN is currently developing with Fraunhofer ILT is likely to be the first of its kind in the world. ■



Reconciling work and family life:

Live better, work better

Being able to balance work and family life is a big challenge that many employees struggle with on a daily basis. The BILSTEIN GROUP offers its employees a comprehensive range of support services since the beginning of the year.

There are situations in private life that can really put a working person's organizational skills to the test. If, for example, a relative suddenly needs care there are a thousand different questions that have to be answered and decisions have to be made fast. But even less dramatic events demand the energy of employees: School vacations are great for the kids, but they can be highly stressful for parents. With an average of 63 days of vacation to "bridge" per year, what kids see as fun time can be an organizational nightmare for mom and dad. For example, looking after them during a normal working day is almost impossible.

These are just two examples where companies can offer their employees different types of support to help them reconcile work and family life. The BILSTEIN GROUP is also aware of the fact that the health of its employees is a valuable asset. For this reason, the company has come up with a concept for its German locations to help employees quickly and easily in challenging situations. Our cooperation partner is BUK Family Service with its comprehensive range of services in daily childcare, holiday care, care of relatives and confidential employee counselling. We think it's important to offer the services of an external provider so that employees can really feel free to open up. The BILSTEIN GROUP knows that reconciling work and family life is becoming an increasingly important social asset and is consciously taking responsibility. Because only happy employees with clear minds can deliver top performance.

Want to know what BUK Family Service has to offer?

Go to www.buk-familien-service.de for more detailed information. ■

1. Childcare

Personalized advice about types and availability of childcare, parental allowances and leave, childcare costs, and support for any contractual queries, etc.

2. Vacation cover within Germany

Select and search for qualified regular and temporary childcare, provision of au-pairs and babysitters, homework assistance, or emergency childcare, BUK vacation program, etc.

3. Care of relatives

Personalized care advice: healthcare proxies, care packages, care costs and claiming for costs, organizing care. Provision of help and care services across Germany, communicating with local organizations, etc.

4. External employee consulting

Confidential advice regarding health at work, career, personal matters, mental health, addiction, and dependency. Expert service for HR managers, advice on additional help resources, etc.



BILSTEIN GROUP joins the donor register:

Standing together against blood cancer

Saving lives with a cheek swab sounds ridiculously easy, but in fact that's all there is to it. The cheek swab, or to put it correctly, buccal smear is the first step towards stem cell or bone marrow donation. Over 100 BILSTEIN GROUP employees will now help when help is needed. In November of last year, they followed the donor registration campaign that the BILSTEIN GROUP called for at staff meetings at BILSTEIN, HUGO VOGELSANG and BILSTEIN SERVICE and registered as potential donors.

There are plenty of ways to be typed for registration: at your family doctor's, at a blood donation appointment or during a typing campaign. With the Knochenmarkspenderzentrale (KMSZ), the German bone marrow donor center, the BILSTEIN GROUP has found a committed, non-commercial partner for typing campaigns at the individual locations in Germany.

Every 16 minutes someone in Germany is diagnosed with a type of blood cancer. Registering with the Central Bone Marrow Donor Registry for the Federal Republic of Germany (Zentrale Knochenmarkspender-Register für die Bundesrepublik Deutschland, ZKRD) takes only little time and can make a huge difference. Initially, only one tissue sample is required for typing. For this purpose, a cotton swab is applied along the inside of the cheek. This sample – together with the required personal information on health and contact details – is the first step for a stem cell or bone marrow donation. During the constant global search for a match, or "genetic twin," there's a chance of one happening at any time. If a match is found for a blood cancer patient, the KMSZ contacts the donor and takes things from there. In 80 percent of cases, it is sufficient to take stem cells from the peripheral blood, i.e. by giving blood. This requires that the number of stem cells in the blood is first increased, which is achieved by medication. More rarely, bone marrow, i.e. haematopoietic tissue, is removed by puncturing the iliac crest.

For more detailed information go to www.kmsz.de. ■

LEGAL INFORMATION

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