www.joest.com December 2017





JOEST OPENS NEW **OFFICE IN KOREA**

KOREA. In August 2017 "JOEST Korea Limited" became the newest member of the JOEST group.

With the opening of JOEST Korea, the JOEST group is strengthening its presence in Asia with the aim of providing increased sales and service support for customers in the region.



THE YEAR 2017

Dear customers, dear employees,

The media are reporting a healthy economic situation in Germany. Contrary to our expectations, we have also benefited from this positive trend in 2017.

However, this development was not primarily due to domestic orders, but rather to orders received from customers outside Western Europe. Overall, it is evident that our international companies in the USA, Australia and China in particular have achieved above-average sales and earnings. This confirms once again that our overseas expansion has been the correct strategic approach. While it is trade and consumption that largely underpin economic growth in Germany, the capital goods industry is the main growth driver outside Europe. The JOEST group will enter 2018 with a healthy order backlog, enabling us to start the new year with a positive outlook.

in Korea and South-East Asia for over 20 years. Our new presence there with local staff will enable even better customer service and response times, which are essential for our further expansion.

In addition to the other Asian countries, Korea is an important component in terms of expanding the JOEST group's global market share as a leading international supplier of vibration technology.

We wish you and your families a successful and healthy start to 2018 and look forward to continuing our positive and constructive partnership in the New Year.

Dr. Hans Moormann, Dr. Marcus Wirtz

Visit us next year at our booths.





SOLIDS (Dortmund) November 07 - 08, 2018 Hall 4 Booth D13-4

CONVEYORS DESIGNED FOR THE TRANSPORT OF INCINERATOR ASH

GERMANY. JOEST is the only manufacturer in the world that builds mass-compensated resonance conveyors (FSM) for the transport and coarse separation of incinerator ash.



This year, JOEST once again sold several FSM conveyors that were specifically designed for the transport of incinerator ash. Among others, the customer MVR Rugenberger Damm in Hamburg has chosen our company's expertise. On the one hand, MVR was faced with the problem that the existing conveyor which was supplied by a competitor was emitting excessively high noise levels. Furthermore, broken springs were causing frequent unplanned downtimes, resulting in significant disruption to the workflow at the plant. easily bridge interfering components, such as conveyor belts and pipelines.

Based on many years of experience with waste incineration plants and waste slag handling, special operating parameters



JOEST carried out tests for MVR at its in-house technical centre with regard to the noise level and was easily able to meet the requirements. Decisive factors in the customer's purchasing decision included the sturdy design and short maintenance times of the JOEST machine.

Due to its modular structure as well as the possibility of combining several process steps in one machine (material conveying and coarse particle separation with adjustable split grates), the JOEST FSM can be individually tailored to the customer's application.

Even with very limited space available on site, the resonance conveyor can be installed on a customer-specific basis and can

have been developed to process this product, which is difficult to transport — in this area, it tends to be moist and prone to caking, as well as bulky, chemically aggressive and abrasive.

The low dynamic restoring forces of the machine are another advantage that has a positive effect in terms of the vibrations transferred to the system's peripheral devices. FSM conveyors can easily be built with a length of 80 metres and have impressed customers for decades with their low energy consumption, clean material handling and short repair times.

For new construction projects and renovations, JOEST handles all planning for the replacement of the old machine right up to the commissioning. Mass-compensated vibration systems have proven themselves as the ideal technology for use in waste incineration plants.

UNIQUE FEATURE MAKES JOEST THE FAVOURITE IN WASTE INCINERATION

ENGLAND. At the end of 2017, JOEST will supply four resonance conveyors to Hitachi for a waste-to-energy plant.

In the north of England, an existing power plant is currently being expanded to include a second waste incineration plant for household and industrial waste. Mass-compensated resonance conveyors (FSM) from JOEST will be used to separate the coarse and fine waste slag. The expanded Ferrybridge waste-to-energy plant near Manchester will incinerate around 566,000 tons of waste each year and convert it into energy. To transport the waste, four FSMs from JOEST are being installed to carry out the initial separation of the coarse and fine waste slag in order to protect the conveyor belts.

Two conveyor belts, which are stored below the conveyors, can be fed by the two split grates that are installed in each resonance conveyor. Since the belts do not run in parallel due to the distribution of the waste, it was necessary to ensure that only one is constantly being fed, and that the changeover between the two conveyor belts can take place within a very short time. For this reason, JOEST has developed special cover plates that make it possible to complete the changeover on all four machines with a system downtime of just 20 minutes.

During the development phase, particular attention was paid to the high demands placed on the welding technology, as well as the painting and coating of the system. In terms of the welding results, it was important to ensure a robust design, as sometimes larger parts are transported on the resonance conveyor. The waste slag is also chemically aggressive, which is why it was essential to apply a durable coating. The on-site conditions presented an additional problem — it was not possible to attach the motor and crank drive in series underneath the machine due to a lack of space. As a result, the machine had to be redesigned so that the motor could be attached vertically to the machine, underneath the drive unit.

When it comes to mass-compensated resonance conveyors, JOEST has an absolute unique selling point. Its machines are able to transport the waste slag and separate the coarse and fine material while conducting only a minimum of their vibrations into the ground. Many customers of the JOEST group have depended on this feature for several decades.

LARGE BRAZILIAN SUGAR COMPANY

EXPANDING PROCESSING LINE

BRAZIL. JOEST*Mavi* important manufacturer for sugar industry.

JOEST*Mavi* has delivered this September 2017 a giant Revitran conveyor, as well as a set of two Vibrapen sugar screens, for wet and dry operation.

Brazil is a large sugar producer, maybe the largest in the world. Over 350 modern sugar factories operate all over the country. JOEST*Mavi* has been supplying Vibrapen screens, Velocan tubular conveyors and over 2,5 km of Revitran wet sugar conveyors to all these companies.

The modern Revitran conveyors are now equipped with simple counterbalancing frames but with a variable waterair cushion system. This way a better vibration isolation is achieved. It means no special foundations or concrete supports are needed. Despite its slightly higher value, counterbalanced Revitran conveyors are easy to install and operate.



ADVANTAGES OF THE JOEST DOUBLE-SHAFT SCREEN

GERMANY. Linear and elliptical motion combined in one screen.



JOEST has developed a double-shaft screen for challenging screening applications. The screen allows a changeover from a linear motion to an elliptical motion in order to optimize the screening process for the actual consistency of the product.

In the actual project in question, around 270 t/h of wet gravel and sand with a grain size of 0–120 mm were screened. This material is highly abrasive, sharp-edged and thus prone to clogging. Due to the twin-deck design, it is possible to produce gravel sizes of 0–4 mm, 4–22 mm and >22 mm. The special feature of this screen is that it can be operated both as a linear motion as well as an elliptical motion screen. This is made possible by a JOEST electronic control system in combination with the proven, overhead JOEST double-shaft drive.

In addition, the new system with electronic control can variably adjust the angle of attack and the formation of the ellipse. The screen can therefore be precisely adjusted to suit the customer's screening requirements. Conveyed material with a tendency to clogging is screened primarily with an elliptical vibrator. To ensure clear screen cuts, it makes sense to switch to a linear vibrator.

The speed and vibration angle can be changed without stopping the machine. This results in different transport speeds and accelerations on each screen deck, which enables optimisations during the ongoing screening process.

When selecting the screening system to be used, JOEST accommodates the customer's requirements and wishes, thus ensuring that all common screen covering systems can be used. Customers can also choose between oil or grease-lubricated drive units.

AROUND THE WORLD WITH JOEST

FRANCE. AUSTRALIA. DUELMEN.

Yannik Zahlten's time at JOEST began well before the start of his training.

Our apprentice Yannik Zahlten had already taken the opportunity to visit our subsidiaries in France and Australia before starting his apprenticeship.

While still at school, Mr. Zahlten decided on a voluntary internship at JOEST, and was able to gain his first insights into the workflow at our Duelmen plant.

When required to undertake a three-week compulsory internship as part of his school leaving examinations (Abitur), our young colleague wanted to return to JOEST. After graduation, he applied successfully for a training position as an industrial clerk at JOEST in Duelmen. However, he first wanted to travel for ten months and explore Australia through work and travel. When JOEST offered him a job for three months at our subsidiary in Perth, Mr. Zahlten was thrilled. He was therefore able to discover Australia and at the same time perform commercial tasks for the company.

"I still remember the special hospitality and warmth with which I was welcomed," he says.



He had learned French at school for many years — so why come back to Germany? In fact, Mr Zahlten wanted to work for JOEST in France. He was the only member of his class to complete his internship abroad.

So it was no wonder that, in the summer of 2017, he once again spent his holiday in Perth with JOEST employees.





JOEST US – YOUR PARTNER FOR FOUNDRY INDUSTRY

USA. JOEST US adapts to Bell Foundry's shake out needs.

When Bell Foundry in California (www.bfco.com) began their recent modernization they were looking for a partner who could satisfy their technical requirements for a new shake out. They also wanted a partner that could build a high quality solution since the shake out will be at the heart of their process. Since this was a retrofit of a very old machine, it meant that the new shake out had to fit in the exact same footprint as the old one. Because of the age, drawings of the existing machine, structural supports and foundations were questionable.

The primary challenge was that the existing machine used overhead mounted, water-cooled exciters. This is an extremely high temperature location above the hot castings and sand. The old drives were problematic because the cooling was not sufficient and running the water itself over the shake out reduced the water's cooling capacity. In addition, the maintenance of the oil in the exciters was an additional issue Bell wanted to avoid. Due to space constraints, the new shakeout machine still had to be designed with overhead mounted drives. So how to solve these seemingly conflicting requirements?

Since JOEST has been manufacturing its own drives for almost 100 years, we have the knowledge, experience and flexibility to optimize the drive selection for any application. As a custom equipment manufacturer we can adapt our designs to meeting the customer's ideal needs. Combining these two abilities, JOEST decided to build the shakeout machine with overhead drives, but use oil-free, unbalanced motors instead of exciters.

Using unbalanced motors satisfied the customer's needs but required JOEST US to design and build the largest unbalanced motor-driven shake out. But not having been done before doesn't mean it can't be done. JOEST has proven time and time again to safely and reliably elevate the bar to meet the customer's and market's increasing demands such as when JOEST US designed and manufactured one of the largest mining screens in North America. "When we first saw the application we could clearly see the struggles Bell was having keeping this under-performing piece of existing equipment held together and operating" explained Steve Rowland, P.E., General Manager of JOEST US. "Our foundry engineering experts from all over the world formed a team that was able to work closely together with JOEST US to confirm the engineering and performance calculations, as well as validate the final shake out design."



An additional challenge was making sure the shake out fit the existing space while still providing increased performance. This meant that JOEST couldn't just build a bigger shake out. It meant that we had to closely analyze every characteristic of the castings, sand and shake out looking for multiple areas of improvement that would add up to a large overall increase in performance. The fact that increasing the size of unbalanced motor driven shake out offerings was a significant step increase

in JOEST's capabilities and provides the market place with a new and innovative solution stole the headlines. However, the incremental improvements were also important for the shake out to still fit in the space proved while increasing performance. This showed that small improvements are equally important. Thanks to excellent on-site dimensional analysis, tight manufacturing tolerances and solid engineering, the shake out was dropped right in place and performed to the customer's expectations right away.

Since this design was new, a Finite Element Analyses (FEA) needed to be done using JOEST's existing software and in-house analysis tools. This in-depth review is performed by JOEST on all vibratory equipment that approaches the limits of the company's existing design standards and whenever a new design threshold needs to be developed. These tools along with personal expertise of in-house industry experts allows JOEST to raise performance levels, create new industry standards and help set JOEST apart from the competition.



SPAX RELIES ON DIETERLE TECHNOLOGY ONCE AGAIN

GERMANY. Feeding systems at SPAX International are being repaired by DIETERLE.



To improve handling and speed, SPAX replaced its previously used screw containers with around 8,500 new, larger containers. At the SPAX production facility, this resulted in new logistical requirements which had to be adapted accordingly. In mid-2016, the gradual replacement of the company's tried-and-tested lifting and tipping devices began.

As usual, DIETERLE was able to meet both the technical and productionrelated challenges and developed an optimum solution for the customer.

With a speed of 12m/min, the containers, which weigh up to one ton each, are lifted and their contents poured onto a high-volume conveyor. The highquality SPAX screws are conveyed to the packaging system via the subsequent transfer channel.

Due to the specific conveying behaviour of the SPAX screws, a special system was developed to optimally transfer the screws to the subsequent process step. This included adding a durable outer material to the load-handling attachment in order to protect the screws, which are up to 140 mm long, during transfer. In addition, a special seal on the load-handling attachment serves to empty the entire contents of the containers, thus preventing any mixing of parts.

Despite the challenging conveying behaviour, a Stop & Go system with an unbalanced resonance conveyor was successfully installed.

DIETERLE supplies both individual machines and complex plant systems for this type of container. The conclusively functionning systems are based on state-of-the-art technology. The company SPAX is implementing the "Industry 4.0" concept by means of a digital remote maintenance solution, among others.

The use of DIETERLE products and services ensures that SPAX can live up to its desired high quality promise of "Made in Germany".

FURNACE LOADER FOR CAR BATTERIES

RECYCLING SYSTEM

BRAZIL. JOESTMavi convinced by experience.

This August 2017, Brazil's second largest car battery manufacturer received an automated furnace loader type Vical-T 850 x 5.100 mm, complete with charging hopper for 20 tons used or discarded batteries and a mobile supporting frame.

This time the customer chose a vibratory cell type E-4600 drive for its durability and a speed inverter for the precise feeding control of the furnace. The 25 HP electric motor and a 20 HP moto-reducer for the frame are included. JOESTMavi has some experience with mobile furnace loaders for batteries and this customer chose us for this specific reason.



EXHIBITIONS 2017 WORLDWIDE





ISRI, USA April 22, 2017



Oesterreichische Gießereitagung, Austria April 27 - 28, 2017



Aufbereitungstechnisches Seminar, Austria January 26 - 27, 2017



SOLIDS, Germany May 10 - 12, 2017



Australasian Waste & Recycling Expo August 23 - 24, 2017



RWM, England September 12 - 14, 2017



JOEST - POWTECH, Germany September 19 - 21, 2017



DIETERLE - POWTECH, Germany September 19 - 21, 2017



Pollutec, Morocco October 24 - 27 2017



VracTech BulkTech, France November 28 - 30, 2017



GENERATIONAL CHANGE AFTER MORE THAN 40 YEARS AT DIETERLE

DUELMEN. After the change at the top of the JOEST group in 2015, the next change is planned for the beginning of 2018.

Bernd Peitz has worked for DIETER-LE GmbH & Co. KG for more than 40 years. After completing his studies, he started his career at DIETERLE in 1973, initially as a designer and later as sales manager. In 2006 DIETERLE was taken over by the JOEST group and Mr Peitz was henceforth appointed as Managing Director of the lifting and tipping technology division.

From 1st January 2018, Dr. Christoph Stephany will take over the position of managing director at DIETERLE. Dr. Stephany has worked for the SMS group since 2005, most recently as head of the company's competence centre for conveying and processing equipment for raw materials, alloying agents and residual materials. His previous roles within the SMS group included procedural commissioning and project management. His education included studies in mining engineering, metallurgy and general management at RWTH Aachen University and UBC Vancouver.

To ensure a seamless transition, Mr. Peitz will initially assist Dr. Stephany in a consultancy role. We would like to thank Mr Peitz for his successful work and loyal collaboration, and wish him all the very best for the future. At the same time, we would like to welcome Dr. Stephany into the JOEST group team and wish him a successful start in his new role.





ALWAYS ONE STEP AHEAD

DUELMEN. Electric filling station installed on company premises. The innovative strength of our engineers is a trademark of our long-standing company history. This innovative spirit is now also reflected in our own electric filling station, which was installed on our company premises in summer 2017. For a small fee, it allows our customers to charge their car in preparation for their onward journey while they visit us. Our own fleet will also be upgraded in the future to include an increasing number of electric vehicles.

To protect the environment, JOEST has been successfully using electric forklift trucks since the end of 2014. We are proud to be planning for the future in such an innovative and resource-efficient way.







INTEGRATION OF REFUGEES

SOMALIA. GUINEA. DUELMEN. This year, JOEST is once again participating in a program organised by the association for vocational training and education (Gesellschaft für Berufsförderung und Ausbildung (GEBA)) to assist the integration of refugees. Anale Ali-Salat from Somalia and Kalilou Doukoure from Guinea have been given the opportunity to complete a one-month internship at our company. Two years ago, the 28-year-old Mr. Salat fled from Somalia and travelled by ship to Italy via Libya. From there, he travelled to the Netherlands by train. Anale Ali-Salat has been in Germany since April and lives by himself in an apartment in Duelmen. Starting in October this year, he was able to

Imprint

gain some insights into the further processing of supply parts and paint preparation at JOEST. He previously learned mechanical skills in Somalia, where he worked for a tractor manufacturer. In February 2017, Mr. Doukoure also travelled to Italy via Mali, Algeria and Libya. The 22-year-old has lived in Coesfeld since May 2017 and first visited our company in October. Having worked as a taxi driver in Guinea, Mr. Doukore's internship at JOEST will provide him with a new experience. Mr. Ali-Salat and Mr. Doukoure accompanied the masters of prefabrication and final assembly, who were very satisfied with the interest and commitment shown by both gentlemen.

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Dr. Marcus Wirtz

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