

JOESTimes

A product of the
JOEST® group

#01 | 2022



JOEST delivers one of the
worldwide largest Vibrating Screens
for the aggregate industry



#**JOEST**eam

Corporate Communications



The JOESTimes has grown enormously in the recent years – and this year there are once again numerous exciting projects, articles from around the world and insights into our global subsidiaries as well as reports and impressions from the #JOESTeam.

The year is coming to an end quickly and a lot has happened behind the scenes of Corporate Communications: Many new things have been introduced and implemented, some are still in the pipeline and on the agenda for the coming year. With the introduction of an internal information platform, the J-NET, we created a better and faster overview of internal topics and news at the beginning of the year. A large part of the J-NET is also an extensive page on which the entire #JOESTeam is introduced with a photo and further information. The colleagues from our sub-

sidaries are also featured there. This completes a comprehensive project, which is now being successively expanded.

After a long break, a new trade fair year finally started at JOEST – with a new concept and fresh content, we were in Munich at IFAT, POWTECH in Nuremberg and SOLIDS in Dortmund. After these successful participations, we will continue next year with the GIFA in Duesseldorf and the POWTECH in Nuremberg again.

What else? In order to give all the articles an appropriate space, our JOEST blog will be launched soon. As a company blog, it replaces our news section and provides an overview of various topics through various filter options.

The next big project is already around

the corner for 2023: the relaunch of our website. It will get a modern design and fresh coat of paint with a new layout and design as well as revised content. Stay tuned!

Detailed and further information can be found on the following pages. We hope you enjoy this year's edition as much as we do. – Enjoy reading!

Rebecca Riedel & Mandy Radojkovic

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#JOESTeam

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MERRY
Christmas

The Year 2022

Dear clients,
Dear employees,

We wish you
and your families
a merry and peaceful
Christmas season and
good health, happiness
and success for
the year 2023!

With a large-scale vaccination campaign and additional supporting measures, we did not defeat the virus, but successfully contained its negative effects to a large extent. Economic support by the government and low-cost loans by the "Kreditanstalt für Wiederaufbau" have enabled many companies to emerge somewhat unharmed from this crisis.

After the pandemic, we thought it was all over. On February 24th, 2022, we were overrun by the horrific news of the Russian War against Ukraine. This brutal attack is not only claiming countless lives but is also leading to extreme shortages in energy and numerous other products. The result is a massive disruption of supply chains. This situation is accompanied by rapidly rising prices that result in an inflation that is nearly in the double digits. We have reached the highest inflation rate Germany had to experience since World War 2. Simultaneously, the production costs of industrial products are at a record high, rising by 49 % compared to December 2020. The increasingly

challenging position of the western world towards China is yet another factor. Many companies in our industry are rethinking their engagement with and in China.

The challenging circumstances that have faced us in 2022 will surely result in a recession next year. Nevertheless, we hope to navigate these challenges together with our employees as well as our suppliers and clients, to be continuously perceived as a reliable partner in an overcasting environment. – We can do this.

Sincerely,

Dr. Hans Moormann Dr. Marcus Wirtz

JOEST delivers one of the world-wide largest Vibrating Screens for the aggregate industry

NORWAY. JOEST Motion Screen for Norsk Stein.



Back in 2008 and 2009, JOEST delivered a total of eight large, 3,070 x 7,000 mm, Linear Vibrating Screens to their client Norsk Stein in Jelsa. Norsk Stein is Norway's leading producer of gravel and stone materials, producing more than 15 million tons of aggregates for the entire European market.

The JOEST Screens equip the secondary crushing plants with two parallel production lines for extremely abrasive granite. At a total capacity of 3,000 t/h, the material is classified from 125 mm down to 5 mm. In 2014, the plant was modified to focus more on the production of armourstone. An increased feed grain size and screen cuts of up to

220 mm became necessary. To achieve these new demands, one Linear Vibrating Screen was exchanged for a Double-Shaft Elliptical Motion Screen.

The positive experience with previous deliveries and the collaboration with the #JOESTeam as well as an increased demand for armourstone led to a new project. Last year, JOEST received the order to modify the second production line as well. An optimal concept for the exchange of the two machines was developed in close collaboration with the client.

Because the larger screen cuts of the first stage increased the material



throughput, the following screen also had to be exchanged. Under the given parameters on site, the largest possible screening surface was implemented. An additional challenge was to modify the existing support structure, adjust all material transitions and create an installation concept.

Building on the experience gained from the first Elliptical Motion Screen, the new first stage machine was further improved. Wear liners on the side walls, feed and discharge ends as well as the traverse beams were optimized to ensure longer runtimes and quick and easy maintenance. The screen deck consists of extremely heavy, wear

resistant rubber panels. Despite the large screen cuts, the machine runs nearly without pegging.

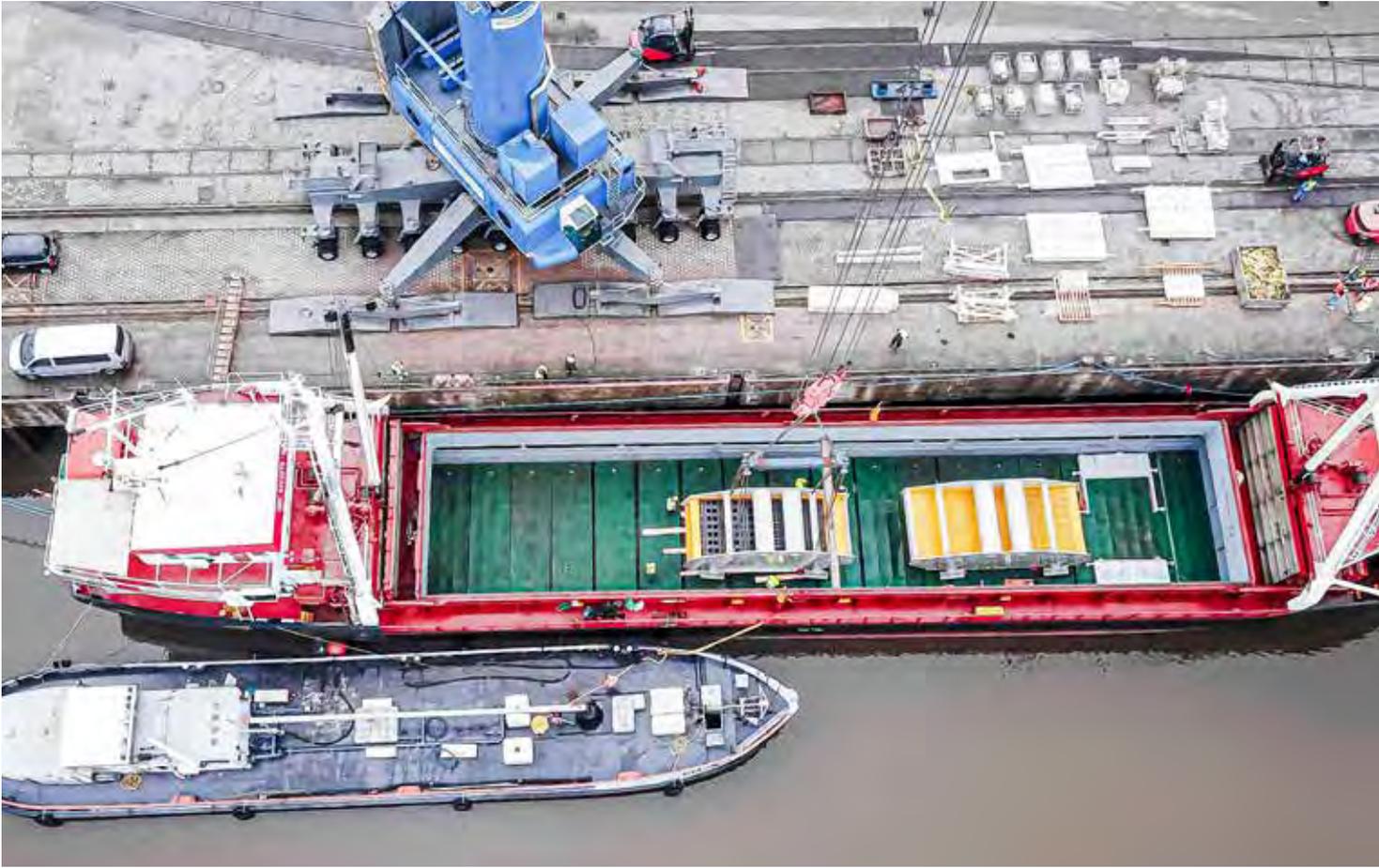
The challenge with the second screen was to meet classification standards even at higher throughput rates for the screen cuts 16 and 5 mm. Especially the fine fraction tends to clog the screen. With the solution designed by JOEST, one of the worlds largest Elliptical Motion Screens measuring 3,500 x 7,000 mm was manufactured and delivered. The acceleration rates of the screen are above average and in combination with flexible PU screen mats on the lower deck, a high screening quality is achieved. Manually cleaning the





Due to the weight and size of both machines, shipping and transport were another challenge.

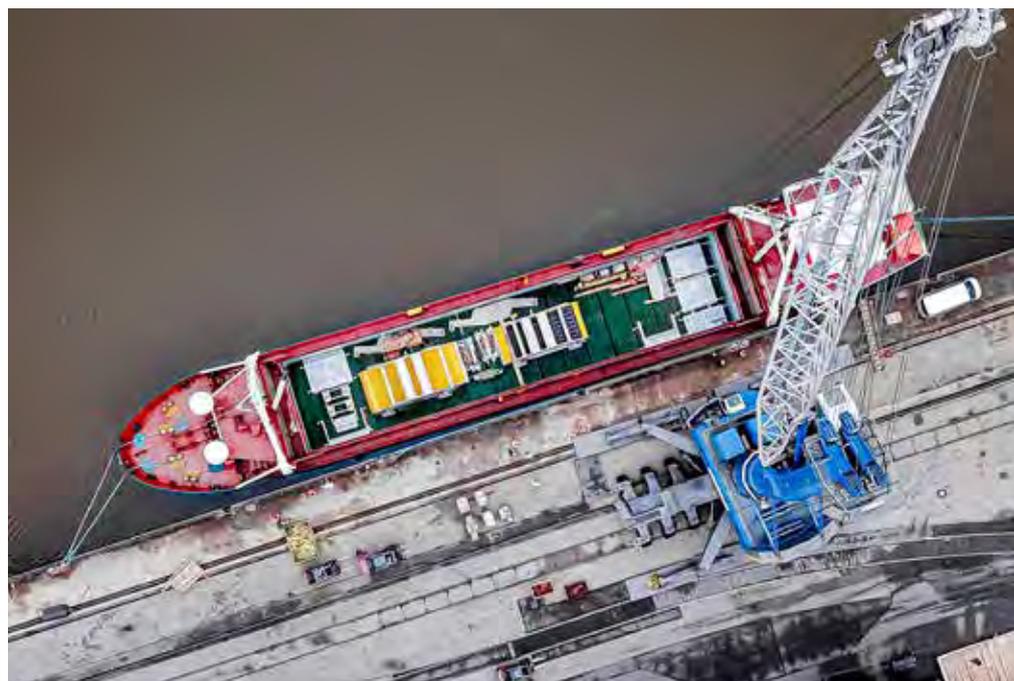


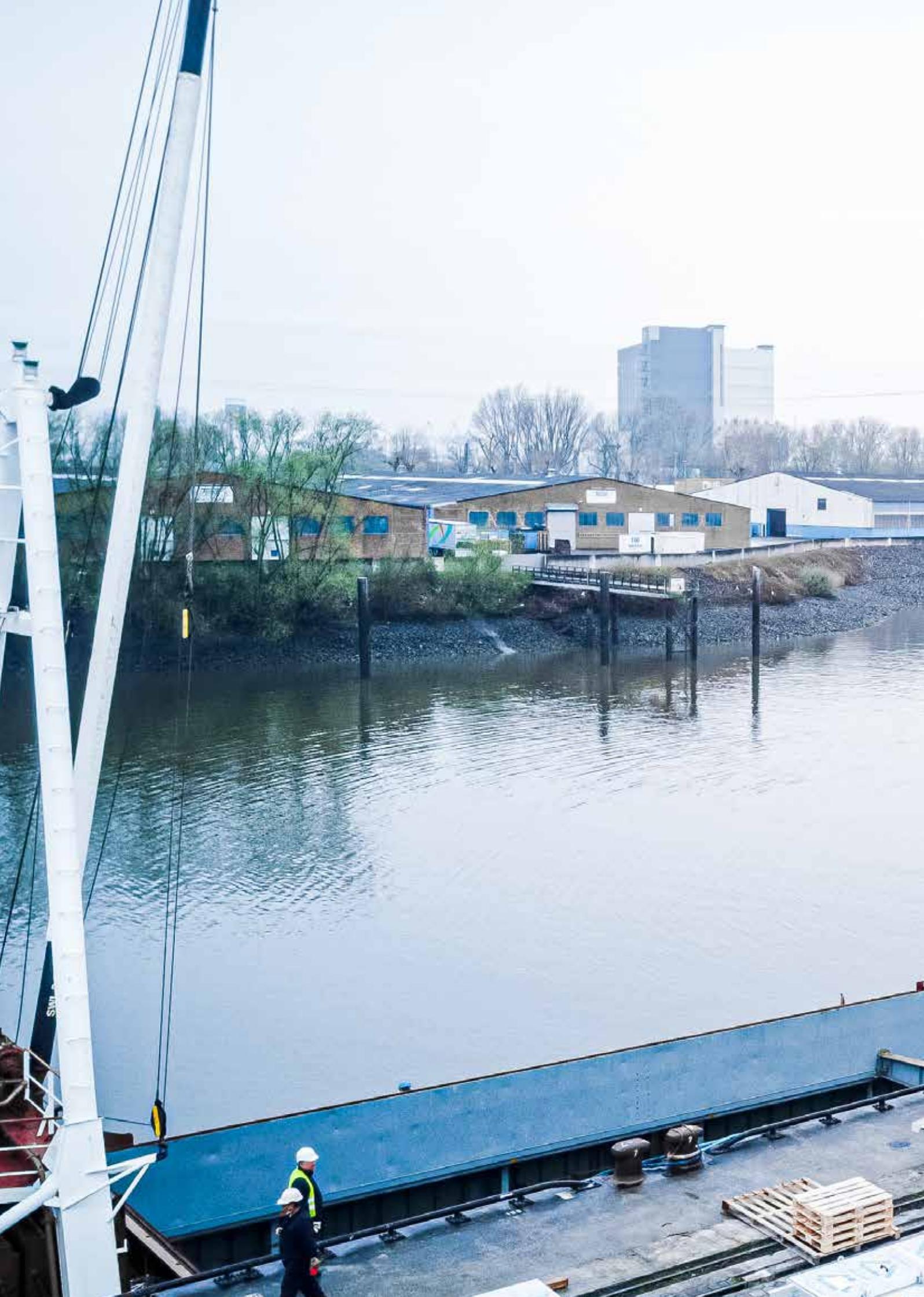


screen is no longer necessary thanks to the self-cleaning effect, resulting in a significant cost reduction whilst maintaining the same high quality.

Both screens have a vibratory weight of more than 30 tons and are mounted to isolation frames of 18 tons. Each are driven by two oil-lubricated circular exciter cells that enable effective screen widths beyond the previously known limit of 3,000 mm for circular motion screens.

Due to the weight and size of both machines, shipping and transport were another challenge. After successfully loading on trucks at JOEST, the







JOEST

SCREENING TECHNOLOGY

LOGISTONAUT
DIE LOGISTIK-GESTALTER

JOEST



30
TONS

machines were loaded onto chartered cargo ships at Hamburg Harbor. Since End of May, the machines are operating.

The client's expectations regarding performance, efficiency and availability were exceeded. Particularly the very good project management was underlined.



I'm glad to tell you that
the screens have been
running very good.
Production so far is at
an all time high!"

Simen Midthun, Project Engineer at Norsk Stein





JOEST Shakeout with Counter Frame

ITALY. Plant for cast/sand separation of foundry casts.



JOEST delivered an entire plant for the separation of cold-resin bounded sand and casting parts from a lost-foam process to a foundry in Italy this year.

The main component is a Shakeout designed specifically for the foundry industry and is surrounded by a sand collection funnel. Additionally, the project included JOEST Vibrating Feeders to discharge and convey the used sand. The electrical cabinet and electronics are also a product of JOEST. For other parts of the plant, such as the ventilation system, JOEST provided the engineering technology.

The Shakeout measuring 5,850 x 3,550 mm is installed on top of the sand collection funnel. To reduce the dynamic forces, both the shakeout and the funnel rest on a counter frame suspended on rubber buffers. Furthermore, the funnel is equipped with two volume sensors to prevent the sand from overflowing. An on-site crane places the cast on the shakeout, where the sand is separated from the metal part by vibrations and

falls through the screen, into the funnel. The maximal load the shakeout can handle is 50 t.

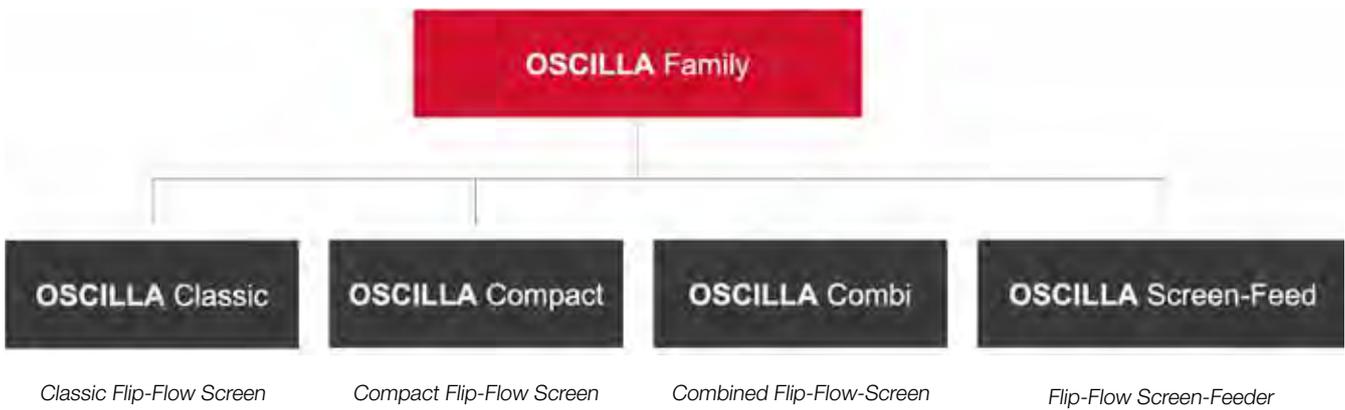
Both Vibrating Feeders in charge of the sand discharge and conveying process are installed in the basement, underneath the sand funnel. This way the used sand is extracted from the funnel and transported to the downstream bucket conveyor. The sand feeders are equipped with vibration sensors to monitor the machines oscillations. They also have a temperature sensor that measures the heat of the sand.

The entire plant, including the on-site machines, is operated through the control unit provided by JOEST. In addition to the main electrical cabinet, there are three on-site operation points. The plant can be operated manually or automatically, although the Shakeout must always be turned on and off by hand.



The OSCILLA Family

WORLDWIDE. The Family of the Flip-Flow Screens at a glance.



What is needed to screen challenging, inhomogeneous material? A special screening technology.

This is what the OSCILLA Family does. Through nearly clog-free operation, products are loosened up enough to separate a fine fraction. Traditional screens are usually not capable of doing this, which is why JOEST Flip Flow Screens from the OSCILLA Family are used for these challenging applications. Typical separation cuts lie between 0.5 and 40 mm.

These systems are based on the principle of resonance. The internal screening frame reacts to the directly excited external frame in a relative motion. When resonating, the polyurethane screens constantly experience tension and relaxation since they are attached to the internal and external

frame with one side each. This principle achieves acceleration rates of up to 50 G on the screen deck.

Redesigned vibroblocs combined with aluminum beams allow for larger oscillation amplitudes and acceleration rates than traditional Flip Flow Screens. Moreover, this design allows for multi-deck configurations, combining flip flow screens with conventional screens in the upper deck. All available screens from wire mesh and perforated plates to rod screens and PU click systems can be used to fit the application at hand.





OSCILLA Classic



OSCILLA Compact



OSCILLA Combi



OSCILLA Screen-Feed



The OSCILLA Family for Plastic Recycling



OSCILLA Classic – The classic within the Flip-Flow Screen Family

For products with grain sizes up to 100 mm and fractions up to 40 mm, the OSCILLA Classic is available.

During operation, the base frame is set into a circular motion that excites the inner frame and creates an overlapping vibration. This introduces an additional accelerating force to the material, enhancing its transportation. Even if the machine were to be overloaded, it would be capable of working its way free thanks to these effects. The decline angle is adjustable and can be reduced all the way down to 10 degrees. Furthermore, the drive for the Flip Flow

Screen can be either grease or oil lubricated.

The areas of application range from plastics, domestic and industrial waste, shredder scraps, compost or rocks, minerals to ores and coal.



OSCILLA Combi – The Combined Flip-Flow Screen

The **OSCILLA Combi** is the combination of the **OSCILLA Classic** with every conventional screening deck.

It is used to take some load off the flip flow screen deck as a pre-selector with larger separation cuts or to limit the maximal grain size. There is also the option of adding an additional separation cut that is not suited for the Flip Flow screen deck. As a condition for this to work, the coarser grain material must have a granulate structure.

The frequent combination with the Finger Cascade Screen TopSpin, which performs great even with heterogeneous materials due to its self-cleaning effect, is often used.

This Flip Flow Screen is also equipped with a shaft drive and thus functions as a circular oscillator. The required base amplitude is set to the screen deck, since the OSCILLA Classic deck can be adjusted accordingly.

The main application areas are widespread but mainly focus on processing recycling material such as domestic and industrial waste, shredder scraps, slag, plastics, packaging or shredder light fraction (ASR).



OSCILLA Classic

+



**Finger Cascade Screen
TopSpin**

=



OSCILLA Combi



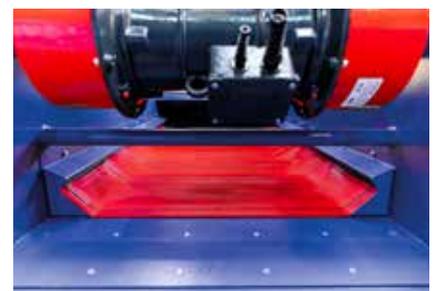
OSCILLA Screen-Feed – JOEST Linear Oscillator with JX Unbalanced Motor

The OSCILLA Screen-Feed is optimal for products up to a grain size of 100 mm and fractions up to 40 mm.

For this purpose, a connection of a feeding unit and a screen deck is used. The OSCILLA Screen Feed guarantees that downstream sorting machines work efficiently and with high precision, especially with challenging materials.

Products are either pre-classified at high speeds or cleaned. Still, they are evenly passed on to the next machine. The OSCILLA Screen-Feed is driven by the well proven JX Unbalanced

Motor and operates as a linear oscillator, serving applications such as plastic and glass recycling, domestic and industrial waste as well as slag and shredder light fraction (ASR).





OSCILLA Compact – Low Machine Weight and Multi-Deck-Design

The OSCILLA Compact can also be used for products with a grain size of up to 100 mm and fractions up to 40 mm.

For the OSCILLA Compact JOEST chose a slider crank drive that drives the inner frame with the machine chassis acting as a counterweight. An additional vertical component is added to the screen deck through the slanted orientation of the vibroblocks.

When is this system used? Its main application is in use when dynamic reset

forces need to be minimized, limiting the design of the support frame.

The OSCILLA Classic is used in a wide range of applications including plastic and glass recycling, construction rubble, foundry slag or scrap metal processing.



JOEST Spiral Crusher with Shakeout for Bosch Rexroth

GERMANY. Plant for casting-sand separation and recovery.

The cooperation between Bosch Rexroth and JOEST has proven itself well for many years. JOEST machines and plants can be found in many areas and compliment the production lines at Bosch Rexroth.

Bosch Rexroth is modernizing its existing process of emptying die-casting molds by implementing a new casting-sand separation and recovery plant. Once the casts are freed from their molds, they are separated from the sand which is processed and re-used.

The task for JOEST was very complex. The focus was on the emptying process of the molds and to break down the sand and clean it. The sand is then returned to the casting process. On site, the machines will be placed in a space that was previously occupied by a furnace. A large chamber in which the furnace used to stand, connects the factory floor to the basement.

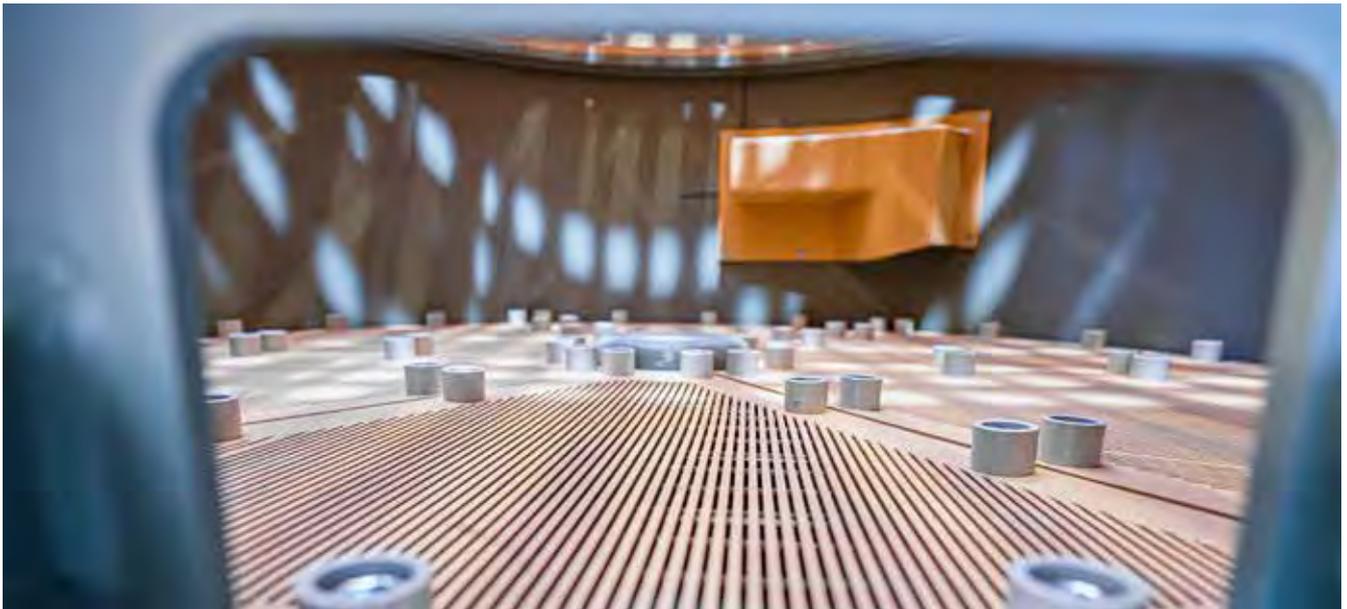
To optimize space usage, JOEST chose the well proven Spiral Crusher as the main element of the plant. The Spiral Crusher with a throughput of 5 t/h is lowered into the chamber and fixed to a mounting frame on the basement floor. The entire area is closed off by a sound isolating cabinet. While emptying, the Spiral Crusher begins to perform a

radial vibration. Sand and cast are separated, and the sand lumps are broken down. The sand lumps fall through the holes of the shakeout, onto the Spiral Crusher where they are broken down further. Non-decomposable parts and larger iron pieces can be skimmed at this point. The sand is discharged from the crusher pot and screened over multiple different surfaces.

The recovered and processed sand can now be reused in the foundry process. Casts on the shakeout that are now free from sand go on to further processing and a new cycle can begin. Sensors constantly monitor the entire process, giving the operators the ability to always run the plant safely.

The compact design of the Spiral Crusher enables applications with limited space and eliminates the need for additional steel construction such as maintenance platforms and rails. The Spiral Crusher combines tasks (emptying and separating, breaking down, screening, conveying) that are traditionally performed by multiple ma-



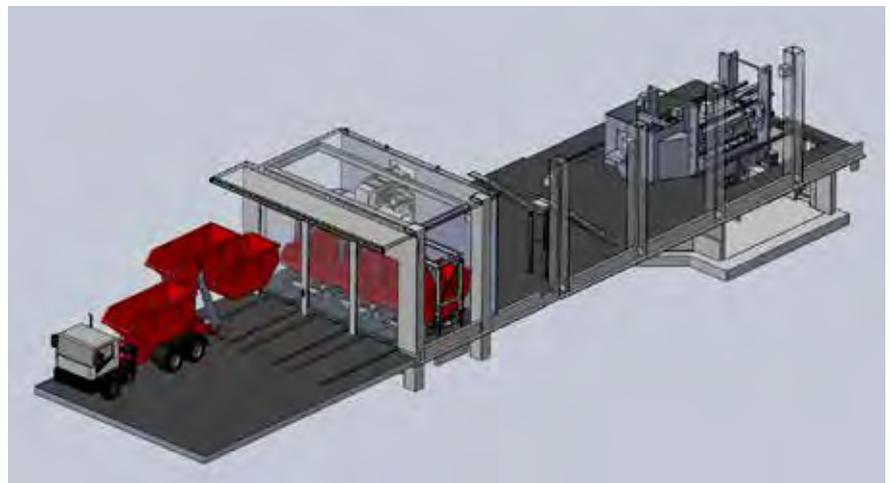


achines and provides easy control. Furthermore, the implemented components are very low maintenance.



Scrap disposal with three movable containers

GERMANY. GOESSLING Conveying Technology for stamping scrap in chassis manufacturing.



This year in September, the division GOESSLING delivered a customized conveying solution to a long-term client that once again relied on the high quality and positive user experience.

When manufacturing chassis parts, stamping scrap occurs beneath the stamping press. These scrap parts must be disposed in containers. Using their experience in GOESSLING conveying technology, JOEST was able to offer the client a robust solution with excellent service.

The special challenge of this project was that the stamping scrap is charged over a special chute system in the basement onto a Double-Z-Conveyor with an

effective width of 625 mm. The scrap is then transferred on a reversible conveyor with the same effective width. At the transitions, the reversible conveyor has pivoting chutes. The both pivoting slides enable the oily scraps to be distributed into three displaceable containers.

The conveying system, made from aluminum, steel, stainless-steel and galvanized sheet metal is low-maintenance and is delivered in an oil-tight configuration. Stamping scrap can be conveyed at a throughput of four to six tons per hour.



Drying system for extruded proteins

NETHERLANDS. Driessen places order with JOEST for a Fluidized Bed Dryer.



The food manufacturer Driessen Food Extrusion located in Deurne, Netherlands processes mixed, powdered, plant-based proteins to high quality ingredients for the food industry. In order to modernize their production and increase productivity, Driessen Food Extrusion is planning to build a new production line.

JOEST received a contract last month to provide large parts of this new production line. For the processing of extruded proteins and the production of high quality coatings, the #JOESTeam will design and manufacture a complete drying plant. The planned drying system consists of a Fluidized Bed Dryer with processing-, heating-, cooling- and used-air systems as well as a Spiral Conveyor. The system will be delivered in spring 2023.

The biggest challenge is the different shapes and sizes of the materials. Depending on the product type, the drying

time varies significantly. This determines the overall size of the plant. The system dries granules, flakes, crumbs and other textures with a throughput of up to two tones per hour and a moisture content of roughly 5%.

Since the Food Industry has highest standards towards machines, JOEST provides an according configuration that meets those needs. Cleaning is quick and easy and enables customers to achieve their allergenic goals.



driessen  **food extrusion**

JOEST cooling system with used water heating

GERMANY. Energy-efficient fluidized bed for cooling plastic granulate.

The solution:
service water
heating.

For several years, JOEST has been working on the optimization of thermal treatment plants with regard to energy consumption.

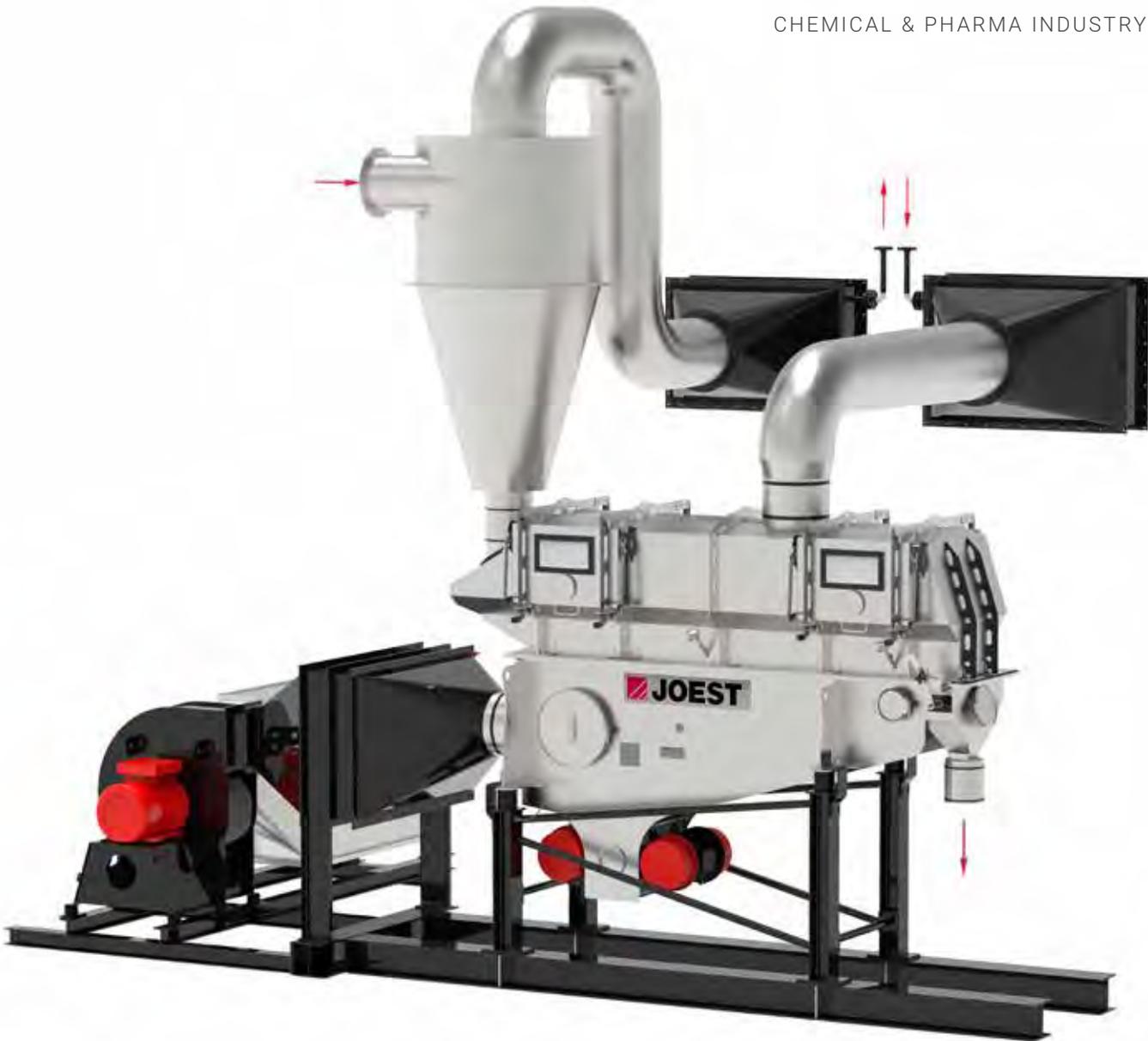
The optimization of energy consumption is the main focus in thermal treatment. The JOEST Fluidized Bed Dryer is already equipped with an exhaust air heat exchanger to preheat the process air. In specific cases, the drying systems can be designed with exhaust air recirculation. In this case, the exhaust air is partially returned to the drying system after being cleaned by a filter or cyclone. This reduces the energy consumption by more than 40 %. Such measures were previously not available for the JOEST Fluidized Bed Cooler, as the warm exhaust air cannot be recycled in the cooling process itself.

For the customer VEKA Recycling, an energy-efficient concept for cooling plastic granulate has now been developed by additionally focusing on the upstream and downstream systems. VEKA also focuses on environmental considerations when it comes to purchasing new machinery. VEKA's

environmental awareness is served through the new process water heating system.

Basically, the JOEST Fluidized Bed Cooler transfers thermal energy through convection, i.e. direct heat transfer, so that the heat transfer medium comes into direct contact with the product. Conveying within the cooler is done by micro-throwing movements, which are well-known in conveyors using vibration technology. The vibrations are set individually for the application and machine type by adjusting the amplitude, frequency and angle of attack.

The hot plastic granulate is transported to the fluidized bed by pneumatic conveying and releases its heat into the surrounding air. This is passed through an air/water heat exchanger and thus heats the process water. In the further course, the plastic granulate transfers the heat to the cooled air, which is then passed through the second heat exchanger, further heating the used water. This can then be used at approx. 55 to 60°C in other process steps that require hot water or used to heat factories and



offices. The investment costs for a heat exchange system are often covered after just one year by corresponding energy savings elsewhere.

After the engineering is complete, the machines will be manufactured at JOEST and delivered to the customer in mid-2023.



JOEST System Solution for dry ice dosing

SWITZERLAND. Individually adjustable load bearing device and product hopper for dry ice pellets.



To dose dry ice pellets from their transportation boxes into special isolation containers, JOEST delivered a system solution to the global specialist ASCO Carbon Dioxide this year. Realistic tests at the JOEST Test Center gave insight to the handling of dry ice at extremely low temperatures – at standard pressure -78°C – and the effects it has on the equipment. This data was analyzed by product specialists at JOEST and implemented in the details of the engineering design.

The client's demand was to dose the dry ice pellets with high precision, but without destroying them. A big challenge was the large difference in temperature between the product and the environment. Varying transportation boxes on the feed end, adjustable batch sizes and intermediate storage of the box volume





Realistic tests at the JOEST Test Center gave insight to the handling of dry ice at extremely low temperatures – at standard pressure -78°C – and the effects it has on the equipment.

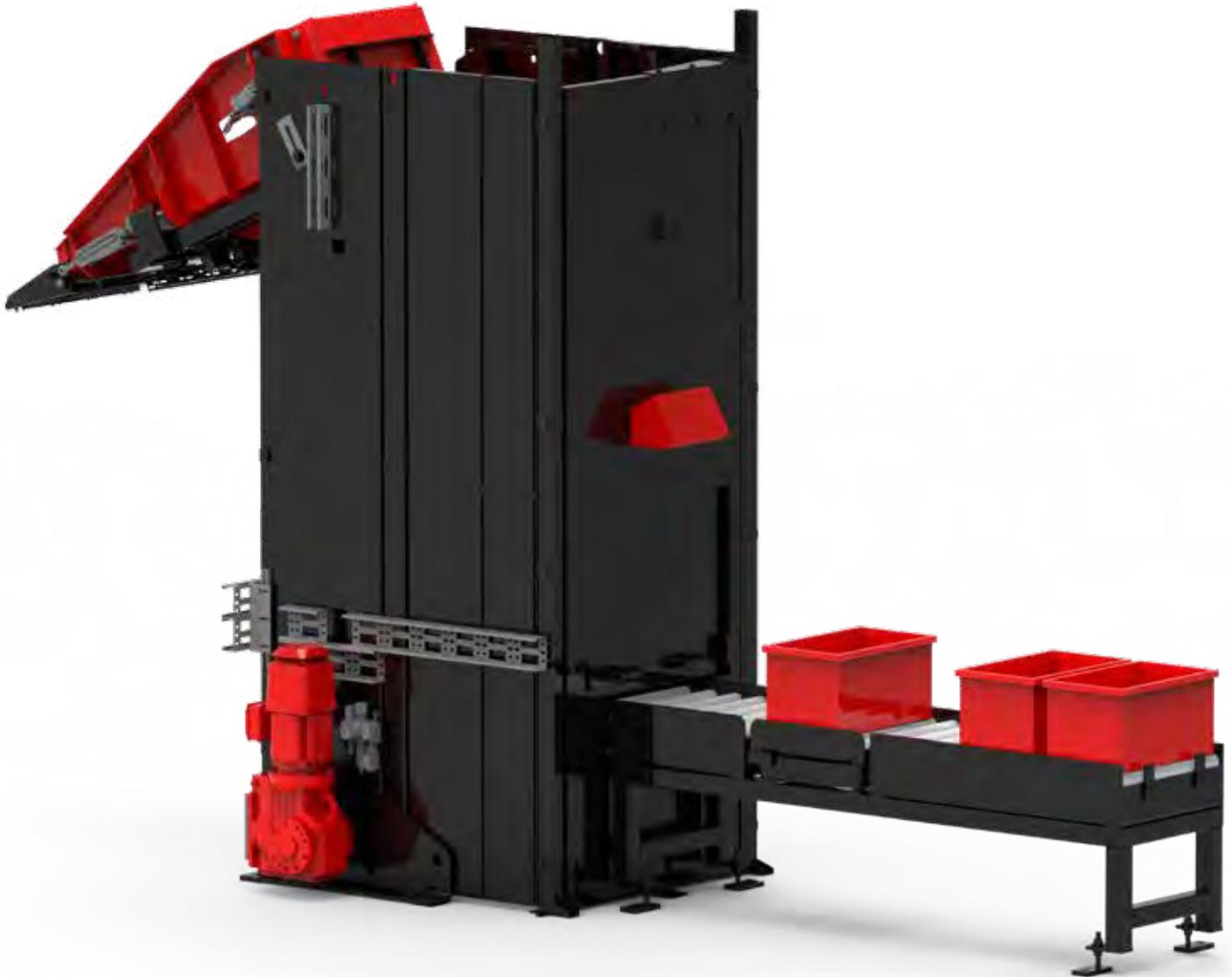


were additional features demanded for the system solution.

JOEST designed and manufactured an individually adjustable load bearing device as well as a product hopper for the dry ice pellets. The hopper discharge and dosing are performed by JOEST Vibrating Feeders. All temperature sensitive areas are shielded off accordingly. For maximum flexibility, an extractable discharge slide is built in. The entire system is operated by an intelligent control using Doselogic 2.0.

The system solution has been delivered to the client and installed by the #JOESTeam. Commissioning is scheduled for early next year.





The latest Lifting and Tipping Devices can be fitted with an integrated dosing feeder.

Lifting and Tipping Device with integrated Dosing Feeder for container intake

GERMANY. Gently dosed product extraction directly from the container.

In conventional applications, the Lifting and Tipping Device empties the bulk material in one gush, e.g. into downstream feeders. During the tipping process, blockages or damage to sensitive products can occur, due to the drop height.

The latest Lifting and Tipping Devices can be fitted with an integrated dosing feeder. The feeder acts as a load pick-up for the container. During the tipping process, the container empties its content slowly onto the feeder. Once the discharge position is reached, the vibratory drive is turned on to gently convey

the bulk material into the downstream process.

This type of feeding technique can be used for galvanized drums, sand blasting plants, packaging machines and many other applications.



Quiet and gentle conveying technology for a long-term customer

GERMANY. KAMAX receives CE-conform system solution from division GOESSLING.

GOESSLING has worked with their client KAMAX in Hessen even prior to the acquisition by JOEST group. The KAMAX group is a leading supplier for heavy duty fasteners for the transportation industry and others. Through several projects in the past, a strong cooperation has been built.

Once more, the division GOESSLING was able to convince with the right machines and its expertise and received another order. The client's demand was to handle the discharge of screws from a thread roller into the client's containers in a quiet and gentle fashion. An automated operation and complying to space restrictions on site were additional demands.

As a solution, GOESSLING designed and manufactured an L-shaped Hinged-Belt

Conveyor with an adjustable incline. The machine has an effective width of 400 mm and an axle-base of 2.400 mm with an incline of 35 degrees. This conveyor feeds the screws into a discharge slide with a special coating. Using an automated flap, the slide can store material. When opened, the screws slide onto an automatic horizontal load pusher. The starting position of the load pusher is at the bottom of the client's container. As the content in the container rises, so does the level of the load pusher. The incline is also adjusted according to the fill level of the container. Thanks to the mobile nature of the machine, a gentle and quiet conveying process is guaranteed.

When a container has been filled, it is moved with a Hinged-Belt-Chain Conveyor and the next container takes its



place. In the charge and discharge bays, the containers are moved manually by forklifts.

There is a special feature included in the electronics. Each screw type has an individual machine setting pre-programmed to optimize the material flow and filling process. The successful commissioning took place in July.





Dr. Ing. C. Schilling
Manufacturing





As a solution, GOESSLING designed and manufactured an L-shaped Hinged-Belt Conveyor with an adjustable incline. The machine has an effective width of 400 mm and an axle-base of 2.400 mm with an incline of 35 degrees.



Grizzly Screen Design Developments

AUSTRALIA. JOEST Australia develops a new version with extra-heavy-duty design.

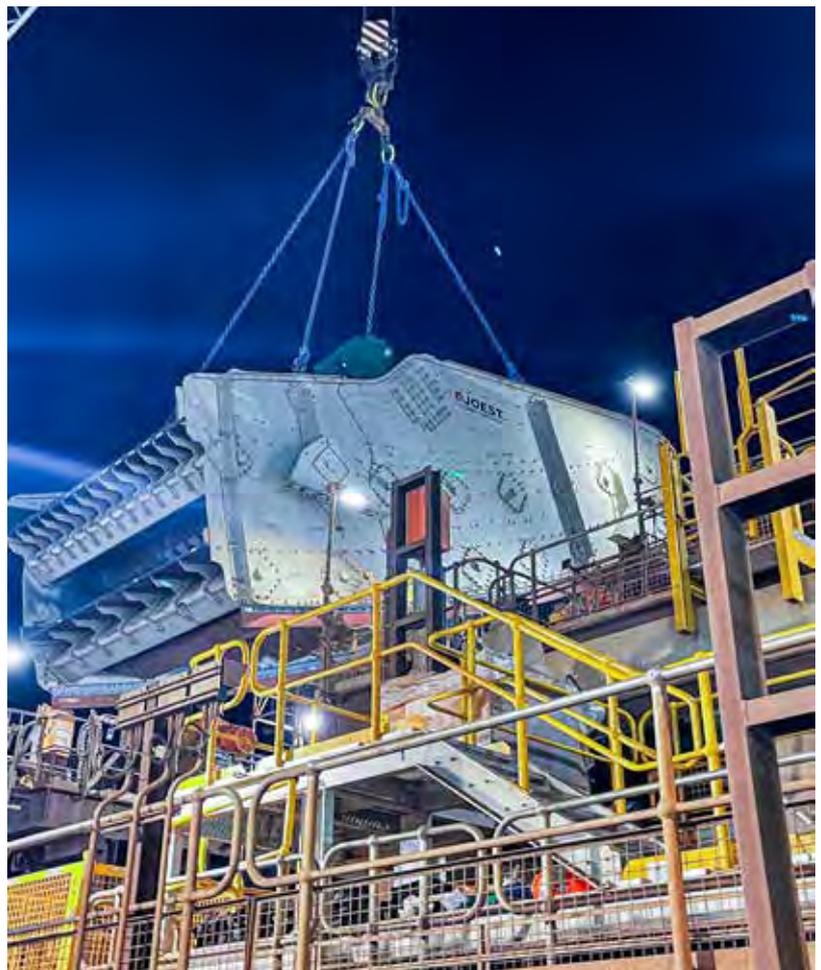
In a further reflection of JOEST Australia's commitment to continuous improvement, the company has now established a solid reputation in the bulk mining/scalping application as the premier Grizzly Screen manufacturer.

Once again, the collaborative approach utilised by JOEST Australia personnel to address operational issues has evolved an already successful Extra Heavy Duty JOEST design to successfully screen material, with an increased feed rate from 4,000 tph to the average of 5,500 tph, and surge loads up to 6,000 tph.

In addition to enhancing the machine design to process an additional 30 % feed, JOEST Australia personnel have engineered a cassette arrangement that has delivered a 57 % improvement in wear life, along with efficiency improvements required to handle the increased tonnages.



GRIZZLY screens are used as a primary separator for the preliminary separation of material in front of jaw crushers.



Lithium Process Equipment

AUSTRALA. Expansion of the activity in the field of battery metals.



In recent years, JOEST Australia has increased its footprint within the Australian battery metals industry.

JOEST Australia has delivered a package of 20 new machines comprising 18 different sizes and configurations, from dry scalping and sizing through to wet screening applications, to process the spodumene ore used in the conversion process to yield lithium hydroxide for the expanding battery industry.

Due to the project's specific requirements, JOEST Australia personnel worked in close collaboration with the customer's process design team to optimise the feeding and screening equipment used in this latest landmark greenfield project.





Technically most modern iron ore mine worldwide

AUSTRALIA. Delivery of seven double-deck screening machines and vibrating feeders.

Recently, JOEST Australia has successfully supplied and commissioned its largest single package of machines, under contract to a major iron ore supplier.

This contract comprised seven double deck multi-slope screens and vibrating feeders. The customer's iron ore processing facility is purported to be one of

the most technically advanced iron ore mines in operation. The collaboration of JOEST Australia personnel with the customer's Engineering Procurement Contract Managers (EPCM) enabled the condition monitoring for the equipment package to be integrated into the plant process control.

Four-way travelling JOEST Charging Vehicle for Bosch Rexroth

GERMANY. Extension of the automatic charging system for furnace 6.

For the optimization of the foundry and to improve the production process, the Bosch Rexroth AG in “Lohr am Main” is adding a third furnace to its automatic charging system which currently features two furnaces. For this project, a new furnace platform is being built in the neighboring building.

Not an easy task for JOEST: The existing feed equipment for the furnace Charging Vehicles should be reused. The vehicles are fed with metal scraps and additive materials needed for the melting process, both of which are bound to their original location.

JOEST engineers designed a concept

with a four-way displaceable Charging Vehicle and a mobile belt conveyor. The Charging Vehicle uses its hydraulically lowered wheels to move forwards and backwards to the furnace and laterally to the two filling stations (for metal scraps and additives). The existing workshop crane is equipped with a circular magnet (10 t lifting capacity) and fills the scrap hopper on the Charging Vehicle. Then, the vehicle moves to the additives filling position. They are fed into the Charging Vehicle using the belt conveyor.

The additives are selected and mixed at the ground level and then placed in a container which is lifted upwards by an



electric pulley and moved laterally along a steel beam on a monorail. The additives are discharged into the feed funnel of the belt conveyor, which conveys the material into the additives-hopper on the Charging Vehicle. The Charging Vehicle can now move to the furnace and discharge the material for the melting process.

The Charging Vehicle has a hopper volume of 9.75 m³ for metal scrap and an additive container volume of around 0.5 m³. Its heavy-duty design makes it robust towards high wear, large drop heights, high temperatures and a dusty environment that are typical for a foundry environment.

The belt conveyor features a total length of 8 Meters and a conveying capacity of 340 Liters per minute. Its feed funnel fits 400 Liters of material. A control cabinet for supplying power to the actuator and sensor systems travels along on the charging vehicle. Due to the large number of electrical elements, signals are exchanged with the control cabinet „on land“ not via a separate cable drum, but with a field-proven industrial WLAN communication.

The Charging Vehicles at the two existing furnaces were also supplied by JOEST, installed in 2003. With runtimes of almost 20 years, the wear resistant design and usage of high-quality com-







JOEST

JOEST
Halle 3
Arbeitsplatz 7





Bosch Rexroth AG has been successfully working with JOEST for many years now. They have several foundry machines such as casting coolers, shakeouts, sorting conveyors, etc. in operation.





ponents have proven themselves well. Bosch Rexroth appreciates the operational safety and high availability of the machines. Designing the new Charging Vehicle brought up new synergies, as hydraulic components (aggregate, valves, cylinders) by Bosch Rexroth were used in the design. Technical demands were exchanged in a close collaboration

between the two companies and components could be provided quickly and at a low price.



Energy Efficiency: Thermal Treatment of high purity plastic granulate

CHINA. Delivery of a Fluidized Bed Cooler and Heater with Air Processing System.

In collaboration with the subsidiary JOEST China based in Peking, JOEST designed and manufactured a Vibrating Fluidized Bed Heater and Cooler for thermal processing of highly pure plastic granulate this year. Both machines fulfil different tasks and are located at different stages of the overall process. In the production process from LDPE to XLPE, granules must be heated in one processing step and cooled down in another.

The Vibrating Fluidized Bed Heater with 6 m² of surface area is discontinuously operated (batch operation) and is equipped with an energy efficient recirculating Air Processing System. The recirculated air is tempered by an electric heater, freed from dust after running through the Fluidized Bed Heater and recirculated in the process. The

product is brought to a temperature of 80-85°C at a throughput rate of 4.000 kg per hour in two batches, before being passed on to the next processing step.

After the chemical process that follows the Fluidized Bed Heater, the resulting XLPE-granulate is cooled back down by the JOEST Vibrating Fluidized Bed Cooler with 4 m² surface area, using fresh air. The cooler is divided into two zones for energy efficiency and is operated in a continuous process. Ambient air is used in the first zone and conditioned cold air is used for the second zone. The used air is freed of dust and discarded into the environment. By dividing the cooler into two different zones, an optimal cooling efficiency is achieved, since the amount of conditioned cold air is reduced to the bare minimum.







The plastic granules underlie very high purity standards, setting high demands for the heater and cooler, as well as the processed air. Every contamination with foreign particles is to be avoided.



The plastic granules underlie very high purity standards, setting high demands for the heater and cooler, as well as the processed air. Every contamination with foreign particles is to be avoided. Therefore, both the cooler and heater are engineered without dead spaces in an ultra-clean design with a surface roughness of $Ra < 0.4 \mu\text{m}$ on parts in contact with the product.

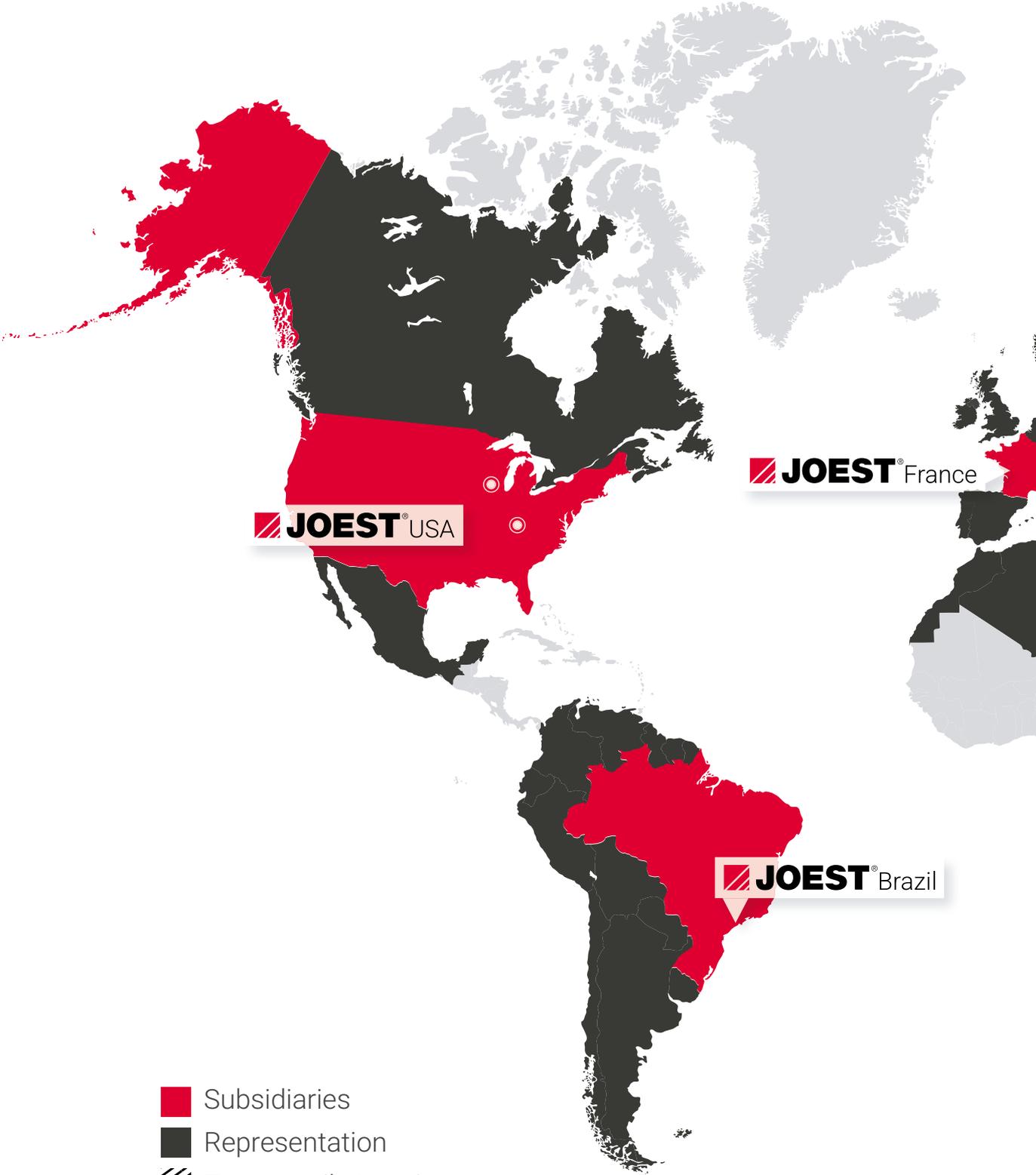
The machines are each powered by two unbalanced motors that can be controlled through the JOEST frequency controller. The Fluidized Bed Heater and Cooler and the Air Processing System are designed and manufactured by JOEST in Germany.

In addition to engineering and manufacturing both Fluidized Bed Machines, JOEST designed a Vibrating Screen

measuring 600 x 1,500 mm for the downstream process. Manufacturing and delivery of the screen were done by the JOEST subsidiary in China. The products were completed and shipped in mid 2022.



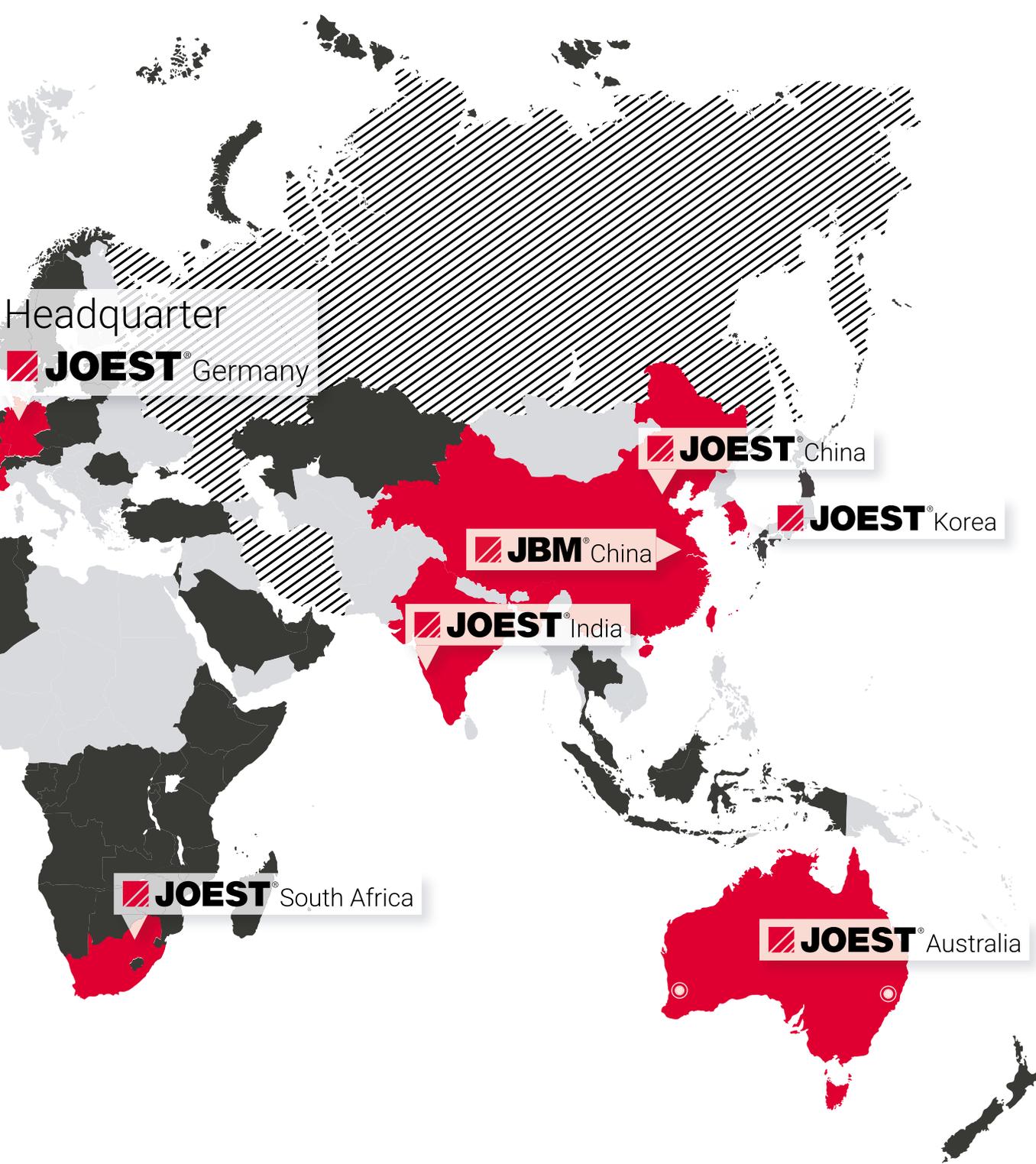
JOEST[®] group



 **JOEST[®] USA**

 **JOEST[®] France**

 **JOEST[®] Brazil**



Headquarter
JOEST Germany

JOEST China

JOEST Korea

JBM China

JOEST India

JOEST South Africa

JOEST Australia



Founded in:
30.09.2009

Employees: 197

Area:
600 m² Production
30 m² Offices





Namasté from India

INDIA. A different time zone and a tropical climate: Dr. Marcus Wirtz visited our subsidiary in India during the summer.

 **JOEST**[®] India

Namasté – indian Hello

Mumbai is the headquarters of our Indian company, where we started a very successful joint venture with Elektromag in 2009.

Our manufacturing site is located in Vapi, roughly four hours by car north of Mumbai. A total of 200 employees use the JOEST technologies and adapt them for the local market. In addition to employees in the workshops, design engineers in Vapi work on direct implementations of technical changes.

The entire machine manufacturing takes place in Vapi. Everything is based on the technology from Germany. During our last visit on-site, an FSM was being manufactured for the sugar

industry, as well as Charging Feeders and Screens. Exciters and Unbalanced Motors are manufactured in the main office in Mumbai. This is also where the engineers work, who cooperate closely with our technology team at the headquarters in Germany.

JOEST India was able to secure the biggest order in the company's history. The contract signed in the summer of 2022 amounts to more than 1 Mio. €.



Annyeong-haseyo from Korea

KOREA. Dr. Marcus Wirtz visited JOEST Korea during the summer.



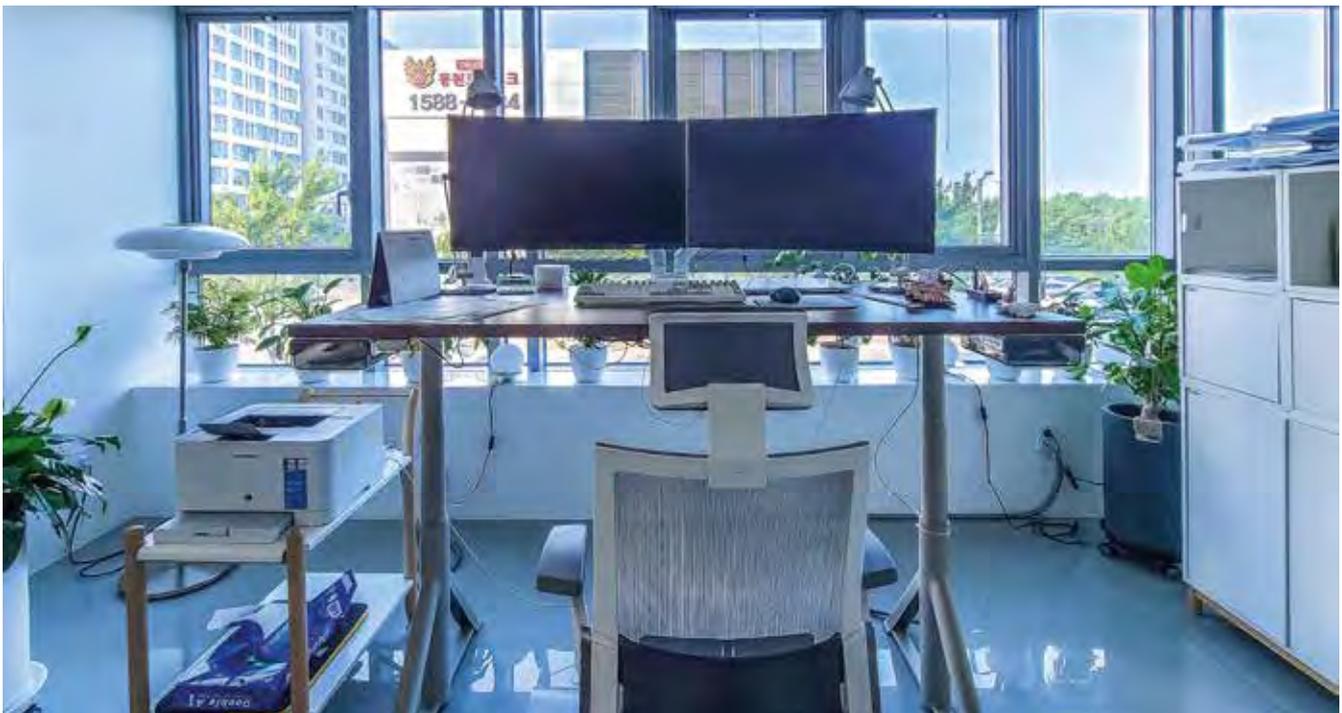
Annyeong-haseyo – korean Hello

Korea is a strategically important area for JOEST. One main reason are the large clients in the sand blasting and foundry industry, as well as global plant manufacturers.

subcontractors is closely supervised by German employees from production, final assembly and quality control. This fosters a long-term, high-quality cooperation with the Korean manufacturers.

In 2017, we founded our subsidiary in Korea, which has developed nicely. The Korean headquarters is in Incheon, a peninsula near Seoul, from where we focus on the markets in Korea, Japan, Taiwan, Indonesia and the Philippines. The main industries are foundries and steel mills, as well as recycling.

Although most of the machines are manufactured in Germany, the demand for local production is increasing. So that times and transport costs are reduced. The production using local





Founded in:
31.08.2017

Employees: 2-4

Area:
30 m² Warehouse
40 m² Offices



Trade Fairs 2022

GERMANY. A successful trade fair year for the JOEST group. A new and modern trade fair concept forms the red thread on the exhibition stands of JOEST.





After a long break, trade fairs finally took place again this year. A personal exchange, informative discussions and numerous new contacts could be won at the IFAT in Munich, the SOLIDS in Dortmund and the POWTECH in Nuernberg. The new trade fair concept and the presentation of new products were successfully accepted.

We look back on a successful trade fair year 2022 and would like to thank all visitors.

Technical Management Meeting

GERMANY. After two years, a personal meeting took finally place again.



The international engineering and development team.



Managing directors of JOEST subsidiaries with the owners.

In July 2022, we were finally able to welcome our subsidiaries in person to our yearly technical management meeting in Germany.

A great exchange of expertise, new developments and innovations in the field of construction and technology were the main focus of the two-day meeting. This has once again shown that personal meetings make communication easier and especially strengthen the sense of togetherness as well as our guiding principle.

ONE GROUP. ONE TEAM. WORLDWIDE.



Works Meeting

GERMANY. First works meeting after two years.

In mid-November, all employees of JOEST from the company locations Duellen and Schermbeck were invited by the worker's council to the works meeting.

managing partners Dr. Hans Moormann and Dr. Marcus Wirtz reported on the past fiscal year and the plans for 2023.

After an introduction by the chairwoman of the worker's council Anna Riering and her representative Frank Geilmann, the

JOEST® *can do* Award Ceremony

GERMANY. The JOEST Can Do Award was presented for the first time in November 2022.

Based on the original company suggestion scheme, the JOEST Can Do Award was introduced for all JOEST employees.

JOEST has had a company suggestion scheme for many years. Somewhat outdated and hardly used, this has now been replaced by the JOEST Can Do Award. The award enables employees to actively shape the success of the company and to be recognized accordingly. The entire workforce has the opportunity to nominate colleagues or entire teams for the award. In particular, we consider implemented improvements and/or outstanding achievements of individual employees or teams. Places 1 to 3 will be selected by the Can Do Award committee. This consists of independent employees from various departments and is reassembled after two years.

In November, the time had come: The first Can Do Award winners were announced at the works meeting. From numerous nominations, a project team was chosen in **third place**. The cross-divisional and goal-oriented cooperation of almost all business areas at JOEST was thus rewarded. Project manager Dominik Radsak gratefully accepted the voucher for a joint breakfast of the entire team.

Second place went to Dirk Hoffmann, who not only works for JOEST in the field of logistics, but also as a Red Cross leader at the German Red Cross in Buldern. His outstanding commitment and selfless help during the pandemic for the entire JOEST workforce was rewarded with a cheque worth € 300.00.

The **winner** Rainer Kersting impressed with his special welding device for spiral blanks, which not only results in high welding quality, but also enormous time savings. During a weekend for two in the beautiful Sauerland, Mr. Kersting can relax and enjoy his victory.

Congratulations to all winners!

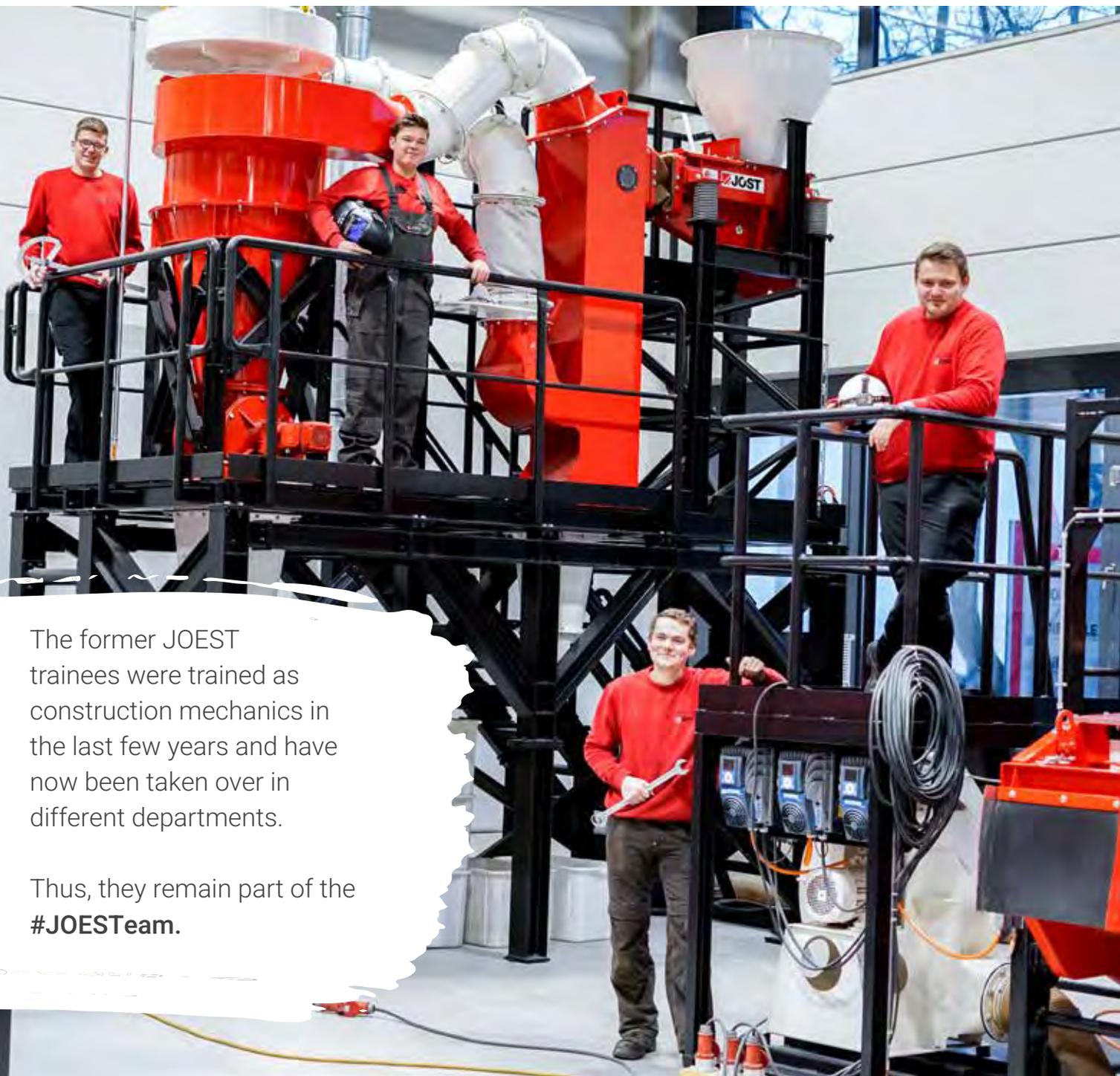


The entire #JOESTeam congratulates the first **JOEST Can Do Award winners** and wishes them lots of fun with the prizes.



Successful graduation of our Construction Mechanics

GERMANY. We congratulate Jan Jasper, Sebastian Krevert, Sandor Heiß and Jannis Flossbach on successfully finishing their apprenticeship!



The former JOEST trainees were trained as construction mechanics in the last few years and have now been taken over in different departments.

Thus, they remain part of the **#JOESTeam.**

Welcome to the #JOESTeam

GERMANY. JOEST welcomes new apprentices.



As usual, the new training year starts on August, 1st and the #JOESTeam is happy to warmly welcome eight apprentices this year.

The day started in the morning with a guided tour of the factory premises and an introduction to the operational processes. This was followed by a first safety briefing for the newcomers.

Exciting years are now beginning for the new apprentices, as they will be passing through different departments in the

coming months to get to know the different divisions of the JOEST group as best as possible.

JOEST wishes the aspiring industrial clerks, construction mechanics, product designers and dual students a successful start to their professional lives!



Apprenticeship as an Industrial Clerk at JOEST

GERMANY. Challenging tasks and independent working.



My name is Leonie, and I started my apprenticeship as an Industrial Clerk with JOEST in August 2019. After the first few formalities, I started my training at the reception. Here I built my first connections with various departments and learned about the correspondence with national and international clients, in written form and via telephone.

During my apprenticeship I passed through different departments such as Accounting, HR, Sales, Marketing, Purchasing and many more. They gave me deep insight into the different processes and how they overlap. From the first day on, I received challenging

tasks that I could work on by myself. If I ever had any questions, I could always count on my colleagues.

After my apprenticeship I was hired in sales and am now responsible for key account clients. I enjoy the work here, because I always receive new demanding tasks that allow me to improve and grow.

Apprenticeship as an Industrial Clerk at JOEST

GERMANY. Large variety and exciting insights.



Hello, my name is Jonas Leufke, I am 22 years old and completed my 3-year apprenticeship as an Industrial Clerk at JOEST this year. After my apprenticeship I was hired by JOEST and am now part of the accounting team.

An apprenticeship at JOEST offers a large variety of everything! I got to know 14 different departments on my way to becoming an Industrial Clerk. This gives you complete insight into an entire company and its processes from storage to controlling. A great help is the trust put forward by the colleagues: You don't only scratch the surface. Instead, you look deep into specialized tasks of a department by yourself.

To make sure free time doesn't fall short, the working week is designed at 35h and you have 30 days of vacation every year. That also helps when you want to prepare for an exam at school after work. In addition to the operational skills in the company, you also learn about theoretical frameworks at the Richard-von-Weizsäcker vocational school in Luedinghausen. You go to school every week (apart from school breaks) throughout the 3 years of your apprenticeship.



My Apprenticeship at JOEST

GERMANY. As an apprentice as Industrial Clerk, I get to know the most different areas in the company and pass through several departments.

I am Simon Eigen, 21 years old and I started my apprenticeship as an Industrial Clerk at JOEST in Buldern in August 2021.



I have been with JOEST for one and a half years now and had the chance to experience various departments and their workflows.

After my first day of getting to know the company with a tour of the headquarters, I started my apprenticeship in the registry. After 2 months of organizing folder traffic throughout the company, I was reassigned to the reception. This was ideal to get to know my colleagues and their jurisdictions in the company.

Having learned about the basic workflows, I then went on to the sales department for foundries. Besides writing offers and order confirmations, I had the opportunity to work on an experiment with aluminum dross

at the JOEST Test Center. This was very interesting and gave me the chance to see JOEST machines in action. The two months here passed by very quickly and were followed by the storage facility and quality control on the shop floor.

Back in the office, I was tasked to implement my knowledge from foundry sales in the JVM sales team. To start off the second year of my apprenticeship, I got to work in IT. The extensive task of renovating the second floor of House 3 was on the agenda for IT at the time.

Next, I was sent to marketing where I was fortunate enough to join the department "Chemical & Food" at the trade fair POWTECH in Nuernberg. It was amazing to see the amount of time and effort that goes into organizing

such an event. We spent five days together in Nuernberg, where the team grew together nicely after hours. Furthermore, I helped plan and execute a #JOESTeam day with the marketing team. Like last year, we set up a small Oktoberfest to say thank you to all the employees, serving Bavarian specialties like "Weißwurst" and "Leberkaes".

So far, I have gathered exciting insights at JOEST that taught me the fundamentals of an Industrial Clerk whilst creating a healthy balance between office work and other interesting activities. In addition to working in many different depart-

ments, there are numerous advantages of an apprenticeship at JOEST. These include flexible working hours that are almost entirely customizable and a lot of vacation days. The result is a rounded and more than satisfactory package.



That's what my fellow apprentices & colleagues say:



“ I am Pia-Sophie Gahlen and I like working at JOEST, because in a team you can improve yourself and your skills and get a broader view and insight. ”



“ I am Benito Geisert and I like working at JOEST, because we have flexible working hours and can work independently. ”



“ My name is Tanja Grewe. I like working at JOEST, because you pass through all the departments which helps you identify better with the company. Moreover, the flexible working hours and 35h working week help a lot when planning your leisure time. ”



JOEST Apprentices have voted

GERMANY. In November 2022 a new board for the JOEST Youth and Trainee Representation was elected.

Every two years, the Youth and Trainee Representation is elected.

With the goal of representing the rights and interests of trainees and young people in the company vis-à-vis the management and department heads, three members are elected for the next two years: **Leonie Scheffler** as chairwoman supported by **Simon Eigen** and **Jonas Oppermann**. The office was gratefully accepted by them

all. With motivation and ambition, the team wants to represent the interests of their colleagues in the coming years.

New Work Council at JOEST

GERMANY. JOEST employees have elected a new Work Council at JOEST.



Eleven members, all JOEST employees, now form the new Work Council.

From now on, they will represent the interests of your colleagues in front of the management. The collaboration on and drafting of work agreements as well as their coordination are also among the tasks of the Work Council team. The whole #JOESTeam wishes you a lot of success in the execution and implementation of the new tasks and thanks for the commitment.

Anna Riering – Chairwoman
Frank Geilmann – Member
Patrick Hesker – Member
Frank Tegelkamp – Member
Uwe Klerbaum – Member
Hoai vu Lam – Member
Andreas Laudenschach – Member
Niklas Riering – Member
Alexander Zukovski – Member
Helmut Wessel – Member
Lisa Kerse – Member (parental leave)
Kristin Drastig – Deputy member

Potato Pancakes & Applesauce: Second **#JOESTeam** *day*

GERMANY. Delicious potato pancakes, fresh air and a good mood for the whole #JOESTeam.



Fresh potato pancakes, applesauce and cool drinks for the #JOESTeam:

Our second #JOESTeam day was a complete success. A nice gesture by our managing directors Dr. Hans Moormann and Dr. Marcus Wirtz, to thank all employees for their daily commitment, dedication and team spirit.





O'zapft is: Third #JOESTeam *day*

GERMANY. JOEST celebrates small Oktoberfest.



On the occasion of our third #JOESTeam day we celebrated a small Oktoberfest this week in Duermen and Schermbeck.

Dr. Hans Moormann and Dr. Marcus Wirtz did not miss the opportunity to thank the employees personally and to hand out pretzels, veal sausage and Leberkase.



My Internship at JOEST

GERMANY. Two weeks in the marketing department.

Hello!

My name is Anna Bettinger, I am 14 years old and I go to the Clemens-Brentano Gymnasium in Duellen. I did my two-week internship here at JOEST from January 17 to 28, 2022.



I really enjoyed the internship, because I kept learning new things and so I never got bored. I chose this internship, because I wanted to know what an office day in marketing looks like and what kind of tasks you have there.

I was also interested in how to edit and design websites or how to create flyers or logos, for example. At the beginning, it was quite exhausting to sit all day in front of a screen, but with time I got used to it.

My tasks were very diversified and I really enjoyed them. My tasks included,

for example, designing a flyer to recruit apprentices or editing websites. I had also the chance to help cutting and editing a video.

In general, this internship helped me a lot with my future career choice, because I got a very good insight into the office life and routine.



Anniversary Run Muenster-Marathon

GERMANY. #JOESTeam takes part in the 20th anniversary run in Muenster.

On Sunday, September 11th 2022, more than 9,000 runners from 45 nations gathered in front of the "Schloss Muenster" for the annual Volksbank-Muenster-Marathon. This year, more than 1,500 relay teams participated.

JOEST was also represented again by a total of eight runners. The two relay teams consisted of employees from all sorts of departments – from Sales and Apprentices to Supply Chain and Manufacturing. Both teams reached the finish line with a smile after 03:38:23 and 03:48:17 of running. For many, running

is an individual's sport, but it is even more fun with a team.

The two relay teams show how important teamwork is and how motivated our colleagues in Muenster have represented the #JOESTeam.

Unforgettable

The entire #JOESTeam will always keep both colleagues in special memory and wishes the families all the best and lots of strength.



Reinhard Pannenbäcker had been working for us as a project manager since 2018. He has managed many projects domestically and abroad during these years and brought them to success through his open and friendly, but also consistent manner. His sense of responsibility for his projects was a driving force for him.

Even in the most difficult situations, he remained outwardly calm and captivated with his unmistakable good-natured smile.

Thank you for the time together, for the mutual trust and for the numerous successful joint projects as a team.

YOU NEVER LEAVE



Jochen Wankmiller was employed as a sales manager at JOEST for over 20 years. His exceptional competence in the field of foundries, his modesty and approachability were highly appreciated throughout the company.

Many foundry customers first associate JOEST with his name. His long-standing, deep footprints will always remain,

and so will the many positive memories of all colleagues.

We say thank you, for sharing the incredible knowledge that has shaped and continues to drive the company, the valuable training videos and the numerous, exciting years together, which we will deeply treasure.

WE COMPLETELY

What's Coming Next?

GERMANY. The year 2023 brings a lot of new things.

Construction on "Gewerbstrasse": The starting signal was given in fall 2022 with the demolition of the old office building and the new building is already underway. The special feature: The in-house cafeteria will receive larger facilities and it also opens its doors to external visitors under the name "JOEST bistro".

Relaunch of the JOEST website: In the coming year, the current website of JOEST will receive a new coat of paint and will be launched with updated content and a fresh design.

JOEST Apprenticeship Information Day: For interested students, JOEST will open its doors in spring to inform about the numerous training opportunities. Further information will be available on our website soon.



Trade Fairs 2023



June, 12th -16th
Duesseldorf

POWTECH 2023

September, 26th - 29th
Nuremberg



JOEST goes **Social Media**

GERMANY. Like, share, comment – do you follow our social media channels?

Spreading news, the maintenance of contacts and the expansion of a strong network: JOEST wants to achieve exactly this through strong social media platforms.

In times of digital change, social media has become an important part of corporate communication to the outside world. JOEST is also active here and regularly shares interesting posts

about projects and employee campaigns.

On LinkedIn, for example, the #machinemonday was launched to present a JOEST machine every Monday. Informative videos with detailed demonstrations and exciting topics can be found on our own YouTube channel.

#FOLLOWUS #LINKEDIN #INSTAGRAM #YOUTUBE #NEWS
#INFOS #JOESTGROUP #ALWAYSUPTODATE #JOESTBACKSTAGE



LinkedIn



Instagram



YouTube



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