

Flip-Flow-Screen OSCILLA – always a great success story



In March 2016 JOEST delivered one of the biggest OSCILLA screens so far. The JOEST flip-flow-screen OSCILLA is the ideal solution for sticky and difficult to screen materials with a typically particle size between 0 - 100 mm (0 - 4 inches).

In the actual project approx. 80 t/h green yard waste have to be screened. A mixture of branches, leaves, grass, soil and sand with particle sizes between 0 and 30 mm are fed onto the screen. This is not yet the peak performance of the screen. The customer has the possibility to increase the capacity significantly.

Since the green waste decomposes rapidly and thus the product properties are changing, the material must be processed promptly and the screen must be flexible. The fractions between 0 and 10 mm are screened from the material mixture mentioned above. This fraction will be used for the preparation of potting soil later.

The material properties are a special challenge in this application: green yard waste is very inhomogeneous, sticky and easily blinds any screen deck. Therefore OSCILLA is the perfect solution.

This OSCILLA screen is considered a large JOEST flip-flow-screen with a width of 2.400 mm, a length of 10.000 mm and a weight of approx. 12.000 kg. OSCILLA is a vibratory screen based on a resonance system.

The inner frame of the screen is set in motion as a result of the motion of the screen body putting the screen panels in a high vertical motion. The linear or circular motion of the screen is producing an acceleration of the screen deck which can be higher than any other screen before (> 50g).

This leads to a tensioning and release of the elastic screen coverings. This causes the material to be thrown up vertically to the screen area and loosened. The screen mats have perforations through which material with smaller dimensions falls. The fine material falls out of the machine.

The screening machine OSCILLA offers further advantages like quick and easy exchange of screen mats and a reduced construction height.

The JOEST patented leaf-springs enable significantly higher strokes and acceleration values than conventional flip-flow-screens.

JOEST is proud, that the latest flip-flow-screen generation OSCILLA is successfully used at many satisfied customers around the world.



The new JOEST website: Modern, custo- mer-oriented and user-friendly

Beginning of June the new designed JOEST website was launched. The structure of the site has been optimized, new features were added and the design is more modern.

The aim of the redesign was a more appealing and clear structure for the visitors and to offer better and more detailed information. Especially the product descriptions have been significantly increased and provide more useful information about the wide JOEST product portfolio.

Particular attention has been paid to create a new website that can easily be used on any device, especially smart phones and tablets.

The online presence of DIETERLE, JVM, JOEST USA, JOEST France and JVT South Africa are currently under construction as well and will be launched in the coming weeks.

JOEST machines are customer- and solution-oriented and can be found in a variety of industries. With the new website icons were introduced for these industries. The icons can be found anywhere on the page and they will show you which machine is suitable for which application.

Visit the redesigned website and convince yourself from better functionality and the modern design.

www.joest.com

International Exhibitions: Come and visit us!

RWM (Birmingham, England)
13. - 15. September 2016

METAL (Kielce, Poland)
20. - 22. September 2016

ANKIROS (Istanbul, Turkey)
29.09. - 01.10.2016

IRAN METAFO (Theran, Iran)
24. - 27. November 2016

POLLUTEC (Lyon, France)
29.11. - 02.12.2016

Full Screening Power at the Arctic Circle in Norway



Scandinavia's biggest producer of iron ore is relying on JOEST screening technology. The project comprises of a new, turnkey screening and conveying system to prepare iron ore pellets for shipping.

Kiruna, the northernmost city of Sweden, is home to an iron ore mine of the same name, which processes and stores pellets. These iron ore pellets are transported from Sweden to Norway for shipping.

In 1902, a train line was built all the way to Narvik for this purpose. At the time this was the most northern train line in the world. The trains using this route pull up to 68 rail carts and transport around 33 million tons of iron ore per year. A special automated unloading station can unload one of these carts in only 5 seconds.

Narvik is situated at the Ofotfjord, north of the Arctic Circle, and has an average annual temperature of around 4° C. Thanks to these temperatures, which are influenced by the Gulf Stream, the fjord remains free of ice almost all year round. These weather conditions have made Narvik one of the most important ports for shipping iron ore.

This is where the processing plant of Scandinavia's biggest iron ore producer is located, with a facility for direct loading of iron ore pellets onto ships. The existing plant has a processing rate of 6,000 t/h, and a new plant with a processing rate of an additional 9,000 t/h had to be added. The reason for this expansion is to ensure safe and flexible supply of iron ore pellets for the coming decades.

In close cooperation with the customer, JOEST developed a new processing plant for the screening of iron ore pellets and a conveying system for the loading onto ships.

The new screening plant system consists of a storage bunker system, six large double-deck vibrating screens with chutes, various connecting belt conveyors as well as a crusher.

The scope of delivery also included the entire steel structure, detailed planning, project management as well as installation and start-up. Throughout the planning and implementation phase, the project team was always on site in order to discuss and manage the current status of the project in close cooperation with the customer.

Storage Bunker System

The storage bunker dimensions are 19 x 11 x 13 m and allow the customer to store 1,600 m³ of iron ore pellets. The 11-16 mm pellets can be transported to the bunker using three different belts from different storage systems. A special design ensures that the bunker is filled evenly in the best possible way.

The steel bunker, which weighs approx. 350 t, is split into six equal segments. Another special design was developed to make sure that the pellets are transported as carefully as possible to avoid loss of product. Each part of the bunker consists of two hydraulic needle gates, which serve as an emergency shut off systems.

Bunker Discharge Feeder

Underneath each of the six bunker segments a large exciter driven JOEST feeder is discharging the material onto the vibrating screens. The special design avoids any material blockages and ensures very high discharge volumes of up to





9,000 tons of iron ore pellets per hour.

Vibrating Screens

The heart of the screening plant are the six double-deck vibrating screens, each with a width of 3,000 mm and a length of 9,200 mm. The screening plant has an impressive size of 41 x 26 x 42 m using more than 1,700 tons of steel for the construction.

The screens are arranged in a back-to-back position for the best material distribution. In terms of maintenance and new installations, it was very important for the customer to be able to exchange the screens separately for maintenance purposes. Two removal positions were set up for this purpose.

Each screen can handle a maximum capacity of 1,500 t/h and has an effective screening area of 27.6 m² per deck. This results in an impressive total screening area of approx. 332 m², comparable to the size of a lot for a single-family house with a small garden.

The screens classify the input materials into pellets, finer and larger material particles. The pellets are moved directly onto the belt for loading onto ships. The finer material, with a size range of 0 – 6 mm, is transported separately into a fines hopper and converted back into pellets in a separate process. The larger material ranging from 20 – 50 mm is conveyed to the Oversize Material Handling.

Oversize Material Handling

The larger material (approx. 1-2%) that got screened out is broken down by a crusher and then returned to the fine material belt conveyor. This way, all of the customer's material stays in the process and can be sold.





Belt Conveyor

The entire plant contains 12 conveyor belts with a total length of 410 meters. The conveyor belt widths range between 800, 1000, 1600 and 2000 mm.

The belts move the material at up to 3 m/s. The belt conveyor also fully met the customer's high quality requirement and design guidelines.

Bypass

The customer has the option to bypass the entire plant and to transport all of the material directly for loading onto a ship using a 23 m bypass. The bypass also has the task of moving up to 11,000 tons of fine ore per hour which this does not need to be screened and thus can be moved directly to the ship.

Benefits

Any incorporated moving components, such as screens and hoppers, are attached to a separate steel substructure which is not connected to the screening plant, thereby minimizing the transmission of vibrations.

All screening equipment and bunker discharge feeder are further equipped with an isolation frame. These reduce the remaining dynamic forces into the steel construction using also an additional shock absorber. The result is an optimized mass ratio between the vibrating equipment and the isolation frame. Therefore, the effective degree of isolation exceeds 90%.

The large standard AC motors of the screening equipment in the old plant are using V-belts, which must be

replaced at regular intervals. In order to keep the maintenance costs of the new plant as low as possible, the customer followed the JOEST recommendation and decided for a direct drive with a frequency converter.

All conveyor belts have a hydraulic tensioning device. The longer, rising belts also have an inbuilt brake, which prevents the belt from moving backwards and emptying itself.

Training

The training at the plant following the installation was part of the scope of supply. JOEST experts trained the customer's operators and maintenance people on site in both in theory and practice. The theoretical part focused on knowledge relating to maintenance and cleaning of the plant. The practical part, e.g. an exchange of a belt drum or screen cover so that the employees would be able to carry out this work quickly and without problems themselves.

Installation and Start-up

After an extensive I/O check, which e.g. determined whether all the cabling had been laid correctly and all electrical signals were correct, cold start-up took place for each individual machine. To achieve this, each machine was switched on and tested separately without material. These successful individual tests formed the basis of cold start-up of the entire equipment for automatic operations. Checks e.g. included whether the switch-off intervals between the machines were set correctly. After warm start-up, settings were checked once again and a final performance test was carried out.

Special Challenges

The special challenges of this project consisted of the customer's high requirements, especially in terms of the quality of the equipment, screening efficiency, high durability, ease of maintenance, and a high level of automation. The outer shell of the screening plant was closed just in time for the cold weather and short days of the Scandinavian winter at the end of last year, in spite of the tight schedule.

How it all began

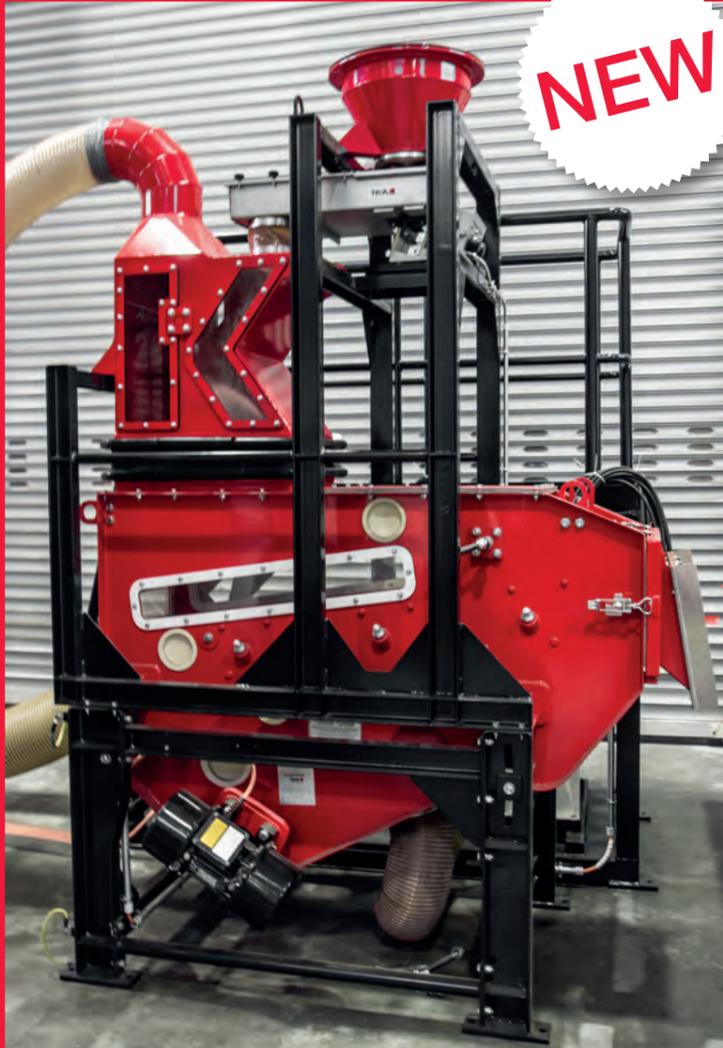
A successful project in 2012 was the foundation for one of the biggest orders in the company's history. JOEST already delivered a similarly large double-deck screen with movable hopper discharge feeder to the same customer. During this first project, the customer already specified the requirements for the new expansion plant.

The installation into the existing, very narrow screening plant in 2012 was very difficult but JOEST solved this challenge without problems. Once the customer had been convinced of the precise, efficient solution and technical expertise of JOEST, the company was chosen as the supplier for the current large-scale project.

www.iron-ore-processing.com



The new K-Sifter



As international leader in the field of Vibration and Air Separation Technology it is very important for JOEST to have the finger on the pulse of time.

Through the creativity and innovation of our engineers new product developments are regularly added to our machine programme. This summer it is a new solution in the field of sorting and separating technology. The K-Sifter is an innovation combining Vibration and Air Separation Technology. The feeding material is conveyed by a vibrating dosing feeder to the sifter. The vibration feeder spreads the product over the whole width of the sifter.

The product mixture enters the separation zone and will be separated into heavy and light fractions by cross flow and counter current flow separation processes. The ultra-light fraction is exhausted at an aspiration socket. The heavy fraction arrives at the air table zone and will again be separated into heavy and light fraction.

Due to a unique concept using one recirculating air flow and its compact design the K-Sifter can be integrated into existing and new plants easily and economically while striking with unprecedented separation results.

The new K-Sifter is especially used as a complete solution for the recycling of construction waste, electronic waste, tires or ASR.



IFAT 2016

IFAT in Munich is the world leading recycling trade fair which took place from **May 30 until June 3rd** this year again.

JOEST presented a new development again, the K-Sifter a vibrating air separator for fine particles.

The feedback from German and international clients was overwhelming.

Thank you for your visit.



JOEST used sand cooler for perfect preparation of homogenous foundry sand

JOEST Used Sand Coolers Type DWFA are used for the cooling and reconditioning of hot foundry sand. The used sand cooler is a complete solution consisting of a vibrating conveyor with a special perforated plate bottom, a stationary exhaust hood, a moisturizing unit, a fan and a control unit.

The sand is cooled under optimum heat transfer conditions in the fluidized bed by evaporation of water. The final moisture level is adjusted by the precisely controlled addition of water according to the temperature and throughput.

All worldwide leading foundries count on this leading JOEST technology. Over the last 30 years JOEST never stopped optimizing this technology to perfection. In over 100 installations worldwide it was proven that the JOEST solution is much better than other competing technologies. The processed sand has perfectly homogenous properties regarding temperature and moisture.

Beginning 2016 JOEST has delivered a DWFA used sand cooler to a Japanese customer. 100 t/h amount of sand are given to the sand cooler with an inlet temperature of 100°C. Within minutes the sand is cooled down to a temperature of 40°C.



POWTECH 2016

JOEST and DIETERLE – Your strong partners for solutions in the field of powder, granulates and bulk material handling

The exhibition year 2016 has begun and JOEST GmbH + Co. KG and DIETERLE GmbH & Co. KG were exhibitors at the most important trade fair in the field of powder, granule and bulk solids technologies. JOEST, one of the leading manufacturer of vibrating machines and DIETERLE, expert for lifting- and tipping equipment, presented at the POWTECH 2016, 19. – 21. April in Nuremberg, an interesting overview of their large product range.

JOEST vibrating machines and vibratory systems for the chemical and food industry undergo continuous developments to realize new applications that meet the innovative challenges of the customers. At booth 145 in hall 1 you could experience a spiral cooler in action. The company JOEST showed the processes, machines and new technologies which are designed for drying, screening, dosing and thermal processing.

The company DIETERLE looks back on over 65 years' experience of construction and manufacturing of lifting- and tipping equipment and conveying equipment. At stand 143 in hall 1, vis-à-vis the JOEST stand, the company DIETERLE shows a „Mucki“, also in action, as an example of the method of lifting and tipping devices. Other applications and complex system solutions are clearly illustrated multimedia-based.

The exhibition was a huge success and a lot of customers and interested people were able to convince from our experience and our various solutions in the field of vibration technology.





Integration of refugees

In June 2016 JOEST has participated in an initiative of the steering group of Flüchtlingsinitiative Buldern (FIB) and gave two young refugees the opportunity to make a 3-week internship to prepare for a professional education. At this time **Dilshad Khalaf from Iraq** and **Sohel Shajahan from Bangladesh** have manufactured metal components by themselves, performed welding work and obtained basic knowledge of metalworking.

Markus Große-Verspohl, Training Manager of industrial apprentices at JOEST, has supervised this project and was very pleased with the commitment and dedication of the two young men.



Internship at JOEST

„Hi, my name is Julius Berges, I'm 23 years old and studying in the 7th semester Mechanical Engineering at TU Dortmund. During my bachelor studies a 12-week internship is provided. I completed this internship in September 2014 (3 weeks) and from October to December 2015 (9 weeks) at the company JOEST.

It has particularly attracted me to carry out the internship in a medium-sized company, whose competences varies from the smallest machines for eg. food dosage to large machines for mining. During the internship I had the opportunity to get to know the different areas of design, production planning and quality assurance as well as the test center.

It was exciting to see the way of a product from the first idea to the final quality inspection. Here I particularly liked the fact that the various departments work together under one roof.

After I've learned a lot of theory in the university, it was interesting to put this into practice and to experience a practical application of knowledge. I liked the internship very much and I would like to thank the staff for their instructive and varied time.“

Julius Berges

Happy Birthday

Dr. Hans Moormann, Managing Partner of JOEST GmbH + Co. KG, celebrated his 60th birthday in May 2016. For years he not only stands for the own company but also in the Regional Committee Coesfeld of the CCI for the regional economy.

In addition to this task, Dr. Moormann is a board member of "Unternehmer nrw", member of the Industry Committee of the CCI as well as member of the industrial commission. He shows his honorary commitment being the Chairman of the Business Club "Wirtschaftsclub Westfalen e.V.", commercial judge at the Regional Court Muenster and at the State Labor Court Hamm.

Happy Birthday from the entire JOEST team.



Technical Management Meeting (TMM)

In May 2016 the Technical Managers of all JOEST subsidiaries around the world met again in Dülmen at the Technical Management Meeting. At this meeting the various experiences and innovations in the field of design and technology were exchanged. This regular event strengthens and supports the successful cooperation of the individual subsidiaries. We look forward to the next time.

Social Media

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