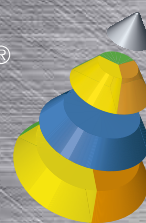


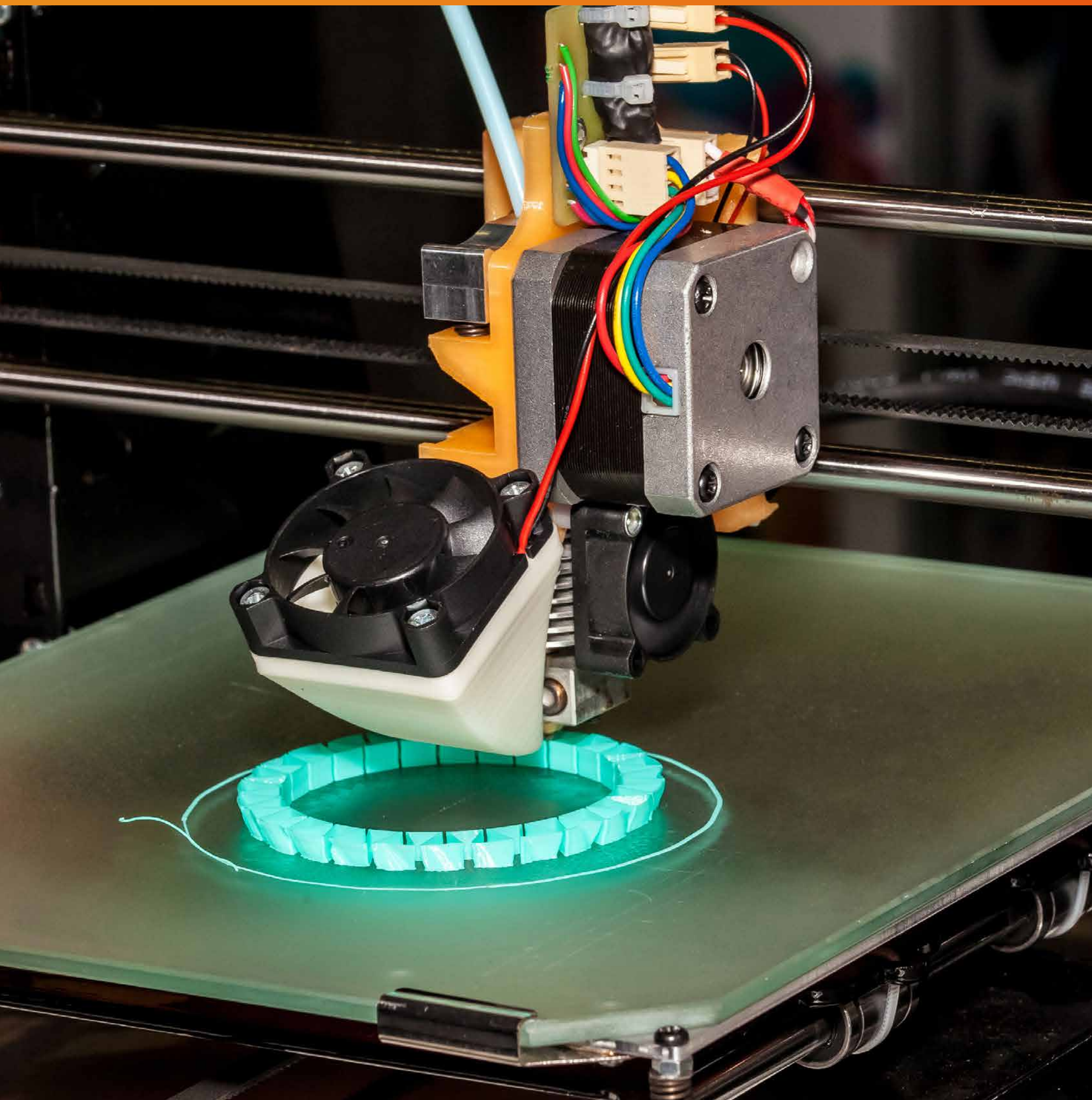
2018 CHIP

RÖSLER[®]
finding a better way ...



News from the surface technology

Mass Finishing | Shot Blasting | Engineering | Environmental Technology



EDITORIAL



The managing directors of the Rösler Oberflächentechnik GmbH: Volker Löhnert, Stephan Rösler, Frank Möller (f.l.t.r.)

Last year we implemented sizable investment programs at our locations in Untermerzbach and Bad Staffelstein. Our order books are full, and it looks as if our market position and competitive situation are practically forcing us to plan for further growth along with additional significant investments. After the commissioning of our new plastic media production facility in 2017, our next big investment project, the compound production and its logistical integration, is underway. These are just two milestones in the field of surface preparation and surface finishing. To fulfill the requirements of our customers even better, we are in the process of restructuring our logistics operations and equipping them with state-of-the-art technology. The expansion of our ceramic media production is scheduled for completion by mid 2019. At the moment all our business divisions are enjoying excellent capacity utilization. And we are pleased to report that the fiscal year 2017/18 promises to be a continuation of the positive trend of the previous year.

One key focus of our R&D activities is the development of special surface finishing processes for components produced with additive manufacturing. The close cooperation with renowned manufacturing companies and research organizations allows us to quickly develop finishing solutions for the rapidly growing 3D printing industry.

The first round of special courses offered by the Rösler Academy, founded in 2016, was received very well. 14 specialist trainers, certified by the TÜV Rheinland, train our customers in the field of mass finishing and shot blasting. At the end of the year the academy will move to a brand new training facility. You can download the actual training program at www.rosler-academy.com.

We at Rösler are pleased to successfully meet the upcoming new and interesting challenges head-on with you. Please enjoy reading the 2018 edition of our CHIP magazine!


Stephan Rösler

Imprint

Publisher and Dtp:
Rösler Oberflächentechnik GmbH | Vorstadt 1 | 96190 Untermerzbach | Germany
Tel.: +49 9533 / 924-0 | E-Mail: info@rosler.com | Internet: www.rosler.com

Editorial office:
SCHULZ PRESSE TEXT | Doris Schulz, freie Journalistin (DfV)
Landhausstr. 12 | 70825 Körtal
Tel.: +49 711 / 854085 | E-Mail: doris.schulz@presstextschulz.de

Print:
Schneider Printmedien GmbH | Reußenberg 22b | 96279 Weidhausen | Germany
Tel.: +49 9562 / 9853-3 Internet: www.schneiderprintmedien.de

Mass finishing and shot blasting – systems for post processing of AM parts
Highly adaptable finishing methods for work pieces produced with additive manufacturing

In recent years the technical characteristics of additive manufacturing (also called “3D printing”), including its production technologies, and the production units and materials, have undergone rapid development. However, post processing of additive manufactured parts still poses somewhat of a technical challenge. In many cases mass finishing and shot blasting allow creating the required surface finishes on AM work pieces in a cost-efficient manner – as long as these finishing methods are adapted to the unique requirements of additive manufacturing.

Additive manufacturing has long outgrown the stage of just being a prototyping technology and is now on the verge of becoming a system for low volume production of standard products. This unique manufacturing method is highly effective when it comes to the customization of work pieces and the flexible and fast production of small lots of geometrically complex components. It is equally effective with metallic materials, plastic, composite materials, ceramic or glass; in fact, the raw material selection has more or less become open ended! Post-production operations like the removal of support structures, surface smoothing, edge radiusing, high gloss polishing and surface preparation– all require consideration in every single process stage for achieving acceptable surface finishes. Factors to be taken into account are the actual AM technology used for creating the parts, the grain size, tolerances in the applied material layers and the work piece positioning in the production chamber.

Mass finishing – a surface treatment technology for many applications

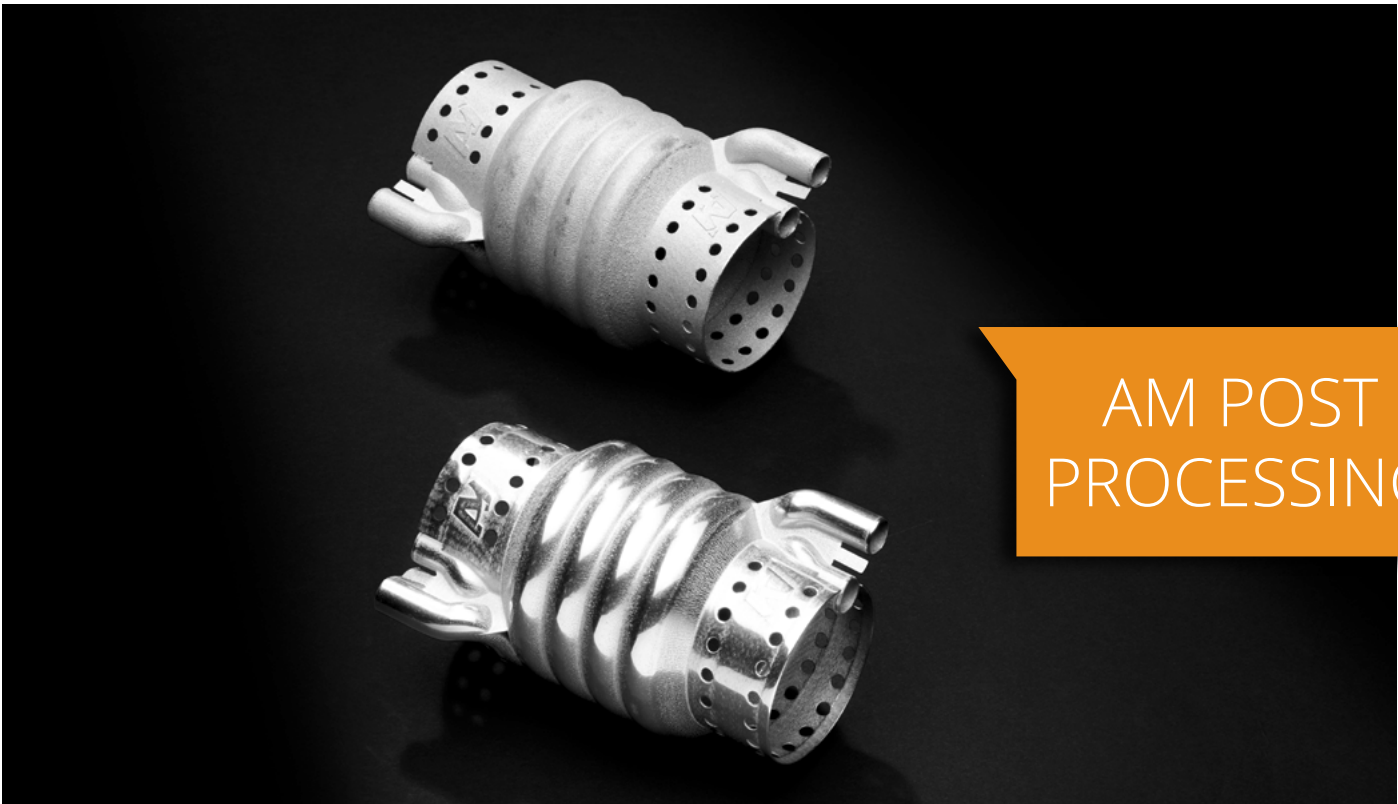
Different methods for finishing the surface of additive manufactured parts are available. Because it offers wide treatment possibilities, mass finishing is the preferred surface treatment method for AM parts made from plastic or metal. Depending on the work piece shape and size as well as the technical specifications, the required surface finishes can be achieved with single piece or batch processing of multiple work pieces. In any case, it is important to take the required surface finishes already into account during the design process. Rösler, a global leader in the field of shot blasting and mass finishing, including the machines themselves, processing media and compounds, has been working on the surface treatment of AM parts for several years. The company



In a 3-stage process the cranial plate implants, mounted to a stationary fixture, receive an extremely smooth surface finish. The cycle time could be reduced from five to less than one hour.

is not only partnering with renowned companies in this new industry but also cooperates with various research organizations. The Rösler test centers around the world have successfully developed finishing processes for different work pieces from different industries. These include, for example, the consistent and cost efficient surface finishing of cranial plates using a centrifugal disk finishing machine. During the 3-stage process, precisely defined surface areas on these implants undergo a surface grinding and smoothing operation. Likewise, for the aerospace industry a method for finishing AM produced turbine blades was developed. Other examples of successful finishing applications for AM parts are the shift lever on E-bikes, the mold core of injection molding tools, heat exchangers and sensor housings.

Your contact person:
Mr. Rüdiger Böhm
Manager Global R&D Mass Finishing
r.boehm@rosler.com
+49 9533 / 924-280



AM POST
PROCESSING

The optimal combination of process technology, processing media and compound allow the simultaneous finishing of inner and exterior surface areas in surprisingly short cycle times.

Investments in production and R&D for media and compounds
Further developments for the optimization of mass finishing processes

To meet the increasing demand for media and compounds Rösler is expanding its consumables production at its Untermerzbach location. Innovative developments in this field allow for the further optimization of various mass finishing processes.

When it comes to mass finishing Rösler is not only the global leader in equipment technologies, but with its media and compound program, it also sets new standards for process safety and cost efficiency. Thanks to their exceptionally high quality the demand for Rösler media and compounds has drastically increased.

Significant increase of the media production

In October 2017 we expanded the capacity of our plastic media production with a new production line. In spring 2018 we will commission another line that is equipped with the latest technological features. This will allow us to produce altogether total of seven production lines. To meet the increased demand we will also expand our production capacity for ceramic media in a brand new building. This new facility is scheduled to go into operation in the first quarter of 2019.

New media developments are expanding the range of applications

To open new fields in mass finishing technology, we are continuously adding new media types to our ceramic and plastic media portfolio, which already comprises of more than 15,000 different products. For example, this includes product and process development for impingement-free finishing of work pieces that have already undergone a final machining stage. To date this was not possible. Another important media type will allow the treatment of acetate-based plastic products without any embedded media grains in the work piece surface. This material is used for making ultra light, comfortable spectacle frames, for which mass finishing methods produce the perfect finishing touch. Until now urea media containing formaldehyde had to be utilized

for creating finely structured, matte finishes with a bright surface. Rösler succeeded in developing a media type without formaldehyde that will achieve equally good surface finishes.

Improved cost efficiency with recycling compounds

Compounds fulfill important tasks during the mass finishing process. These include the discharge of contaminants like dirt and oil as well as metal and media fines from the mass finishing process. The cleaning of the contaminated process water takes place in centrifugal filters. The development of dedicated compounds that can be recycled back into the finishing process along with high performance centrifuges ensures that only solid particles and oil are removed from the process water. The compound remains in the process water and can be re-used without impairment of its functionality. Depending on the application, the uptime of the process water can range from four weeks up to a whole year. This helps reduce the compound consumption, not only resulting in lower operating costs but also producing an eco-friendly environment. In the meantime recycling compounds represent the majority of our compound range. This includes liquid compounds as well as grinding and polishing pastes containing abrasives. To facilitate their use we offer these pastes in powder form. They are also available as liquids allowing recycling and easy replenishment with special dosing pumps.

Knowledge center supports customers

Maintaining stable finishing processes, finding the right finishing method for new products, replacing products

that must comply with REACH or GHS guidelines, auditing finishing processes for their cost efficiency – these are questions customers can present to our Rösler “compound knowledge center”. We will provide answers in close cooperation with our test lab and our media and compound specialists. Our goal is to provide the best possible service to our customers. That is why we are investing in a modern compound production facility in a new building at our Untermerzbach location. The new facility allows us to increase our production capacity and automate the entire compound production. This includes a fully automatic mixing and filling station but also extends to warehousing and logistics. With these investments in media and compound production Rösler is taking further steps to optimize its customer service and provide the basis for further growth.

Your contact person:
Mr. Rainer Schindhelm
Technical Director Media Division
r.schindhelm@rosler.com
+49 9533 / 924-431

Your contact person:
Mr. Adelbert Förttsch
Technical Director Compound Division
a.foertsch@rosler.com
+49 9533 / 924-290



QUALITY

A small excerpt from our extensive consumables program.

Optimally interlinked mass finishing and cleaning systems Perfectly clean work pieces in half the time

With an integrated solution for de-oiling, mass finishing and deep cleaning of stamped and formed parts VIA Oberflächentechnik not only meets the most demanding cleanliness specifications but also achieves significant cycle time reductions and cost savings. At the same time the new system allows a high degree of operational flexibility.

VIA Oberflächentechnik, founded in 1996, is one of the leading work piece cleaning specialists in Europe. This job shop company, headquartered in Grevenbrück, has three production locations where automotive and other components are undergoing various operations like de-oiling, mass finishing, ball burnishing and deep cleaning. The in-house laboratory ensures that the treated work pieces are in full compliance with the specified cleanliness demands. Depending on the stringency of the customer requirements, some products are even packed in a dedicated cleanroom.

Mass finishing and cleaning equipment from a single source

When the company received a large order from an automotive supplier for volume cleaning of clutch carriers, for which VIA had done extensive cleaning trials with pilot production runs, the existing cleaning and mass finishing capacities were no longer sufficient and had to be further expanded. Kai Lechner, manager at VIA, explains: "Right from the project start it was clear that we would purchase our new mass finishing system from Rösler. We were not so certain about buying the water based cleaning systems from the same supplier. But after inspecting a fully automatic combined mass finishing/cleaning system that has been successfully running at an automotive supplier for several years, we decided to purchase the complete package from one supplier, namely Rösler." The new line consists of two cleaning units, a linear continuous flow vibrator and an automatic process water cleaning system; all interlinked with each other. VIA also purchases grinding media as well as all cleaning and finishing compounds from the equipment supplier in Untermerzbach. Kai Lechner continues: "For us it is a lot easier to deal with one partner who takes care of everything, including service and maintenance."



The equipment concept allows the flexible utilization of the different system modules. Moreover, work pieces with similar shape and size can also be processed in the new system.

Interlinked process with high operational flexibility

For the de-oiling stage the clutch carriers are manually placed on the feeding conveyor of the compact spray-rinse washing machine at a 6-second cycle. They pass through two separate cleaning zones and a blow-off station. To ensure a long uptime of the cleaning liquid the system is equipped with filtration units and a coalescence separator. Since only one medium is utilized for the various cleaning processes, and since the work pieces are directly transferred into the mass finishing machine, a drying step was not necessary. Deburring and edge radiusing takes place in the linear continuous flow vibrator, type R 650/6600 DA. The process water is continuously cleaned in a Z 1000 centrifuge equipped with fully automatic sludge discharge. After passing through the vibratory separation unit of the R 650/6600 DA vibrator the clutch carriers are

transferred to the feeding conveyor of the deep cleaning unit. To ensure that the work pieces meet the stringent cleanliness requirements of "no metallic particles > 600 µm", the carriers are manually positioned prior to entering the deep cleaning unit. They are then passed through the zones cleaning, rinsing and passivation. The parts are sprayed with cleaning medium from above and below. The pressure and volume of the water flow from the upper and lower spray nozzles can be separately adjusted, and the various parameters can be stored as individual programs in the equipment controls. Finally, the work pieces are passed through a drying zone, before being discharged. For any job shop facility, operational flexibility is of utmost importance. Therefore, this equipment concept allows for the utilization of different modules in any conceivable combination. The combined cleaning/finishing system also allows for processing other work pieces with similar size and shape.

Large cost savings

Compared to the cleaning process for the pilot production with its numerous manual operations, the new system cuts the processing time in half. Concludes Kai Lechner: "A big advantage is that after an unplanned delivery stop by the customer we can resume production much more quickly and can supply the OEM with cleaned work pieces in extremely short lead times. The interlinked equipment concept also yielded considerable cost savings. Lastly, the working environment for the employees could be greatly improved: They must no longer move the part bins between different machines but can use the saved time for more productive work."


EFFICIENCY

The interlinked solution for de-oiling, mass finishing and deep cleaning of stamped and formed parts for the automotive industry meets not only strict cleanliness requirements but also produces significant time and cost savings.

Your contact person:
Mr. Horst Brückner
 Sales Cleaning and Water Treatment
 Technology
 h.brueckner@rosler.com
 +49 9533 / 924-681

Innovative drag finishing system for aerospace applications Perfect surface finishes for large and small gear components

When designing a new helicopter model, Airbus had to find a solution for finishing large gear components. For this challenging task Rösler developed an innovative drag finishing system with automatic work piece clamping and a clever work piece handling system.

Airbus has been using a Rösler drag finishing system for treating helicopter gear components for quite a few years. So it was only natural that this renowned aerospace company turned to Rösler to supply another drag finishing machine for finishing larger gear components used in a new helicopter model. In addition, with the new equipment the manufacturing capacity for current helicopter models needed to be expanded. Around 35 different work pieces made from special high performance steel alloys with diameters from 40 to 800 mm and weights of up to 75 kg must be processed in the new drag finisher.

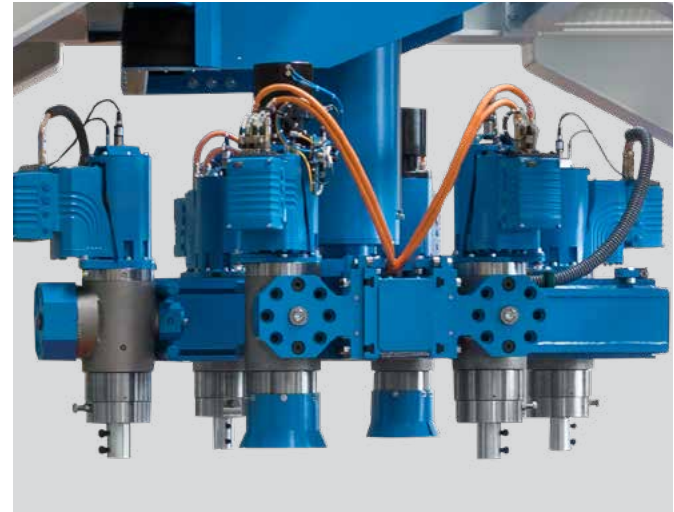
Newly designed, flexible drag finishing system

Based on numerous processing trials in Rösler's test center the company developed an entirely new drag finishing concept that meets all customer requirements. With work bowl dimensions of 1,700 (H) x 2,600 (Ø) mm this new machine is one of the largest ever built! To allow the operator easy, ergonomic access to the work stations the machine was placed in a foundation pit. Three 3.6 kW vibratory motors mounted to the sidewall of the work bowl ensure that the processing media in the work bowl, weighing about 6.7 metric tons, is thoroughly mixed in between process cycles. A crane placed behind the machine allows easy and quick filling of media into the work bowl. Worn media that has become too small is discharged through screens in the work bowl bottom. A level indicator shows the operator when to add new media, which is done manually. A Z 1000 centrifuge with fully automatic sludge discharge cleans the process water, with a timer controlling the automatic compound replenishment.

The rotating carousel (spinner) is equipped with 6 workstations with independent rotary drive units. In addition, the workstations can be shifted to form a smaller or larger circle, and their angle can be adjusted. The system allows the simultaneous processing of two large and four small gear components.

Handling system and automatic clamping facilitate work piece handling

Since some of the work pieces are quite heavy, they are loaded/unloaded with a mechanical handling system: The operator guides the handling system holding one single work piece in a precisely defined position to the workstation. After the work piece has been mounted to the station, it is automatically clamped. Smaller gear components are mounted manually. Once the mounting operation is completed, the operator selects one out of 100 different, work piece specific treatment programs stored in the PLC to start the finishing cycle. The shape and size of the specially developed ceramic RCP processing media ensures that all surface areas in the gear components are reached for creating an absolutely even surface finish and reducing the surface roughness readings from Ra 0.25 - 0.4 µm down to Ra 0.2 µm. Based on the cycle times in the existing drag finishing system the process parameters like circular orbit, rotary speed and covered distance were translated to the larger, new machine in a manner so that no changes had to be made to the existing finishing process. For unloading of the finished work pieces the carousel moves into a position that allows the operator to spray-rinse them with water and then remove them from the workstation.



The rotating carousel is equipped with 6 workstations with independent rotary drive units. The workstations can be shifted to form a smaller or larger circle, and their angle can be adjusted. Two of the workstations are equipped with an automatic clamping system.

Continuous monitoring ensures absolute process safety

In order to meet the high safety standards required in the aerospace industry, all equipment functions are continuously monitored and controlled. This includes the movement of the work piece handling system as well as the correct positioning of the work pieces in the workstation clamping system. Any deviations will cause the automatic stop of the machine. To make certain that the process water is safely evacuated from the work bowl, the draining screens in the work bowl bottom are not only flushed with water but also regularly cleaned with compressed air. Maintenance is made easy with a central lubrication system that automatically supplies the guides and work stations with grease according to preset time intervals.



The newly designed drag finishing system allows the finishing of gear components with diameters of 40 to 800 mm and weights of up to 75 kg.

RELIABILITY

Your contact person:
Mr. Jacques Dupont
 Director Rösler France
 j.dupont@rosler.com
 +33 3 86647979

Coin Blanks Finishing center – compact plug-and-play solution for processing blanks Fully automatic operation for perfectly polished coin blanks

With the compact coin blanks finishing center Rösler has developed an innovative processing system for coin blanks, which meets the requirements of Industry 4.0. It allows the fully automatic, efficient and impingement-free finishing of different types of blanks with a maximum of process safety.

The new coin blanks finishing center from Rösler allows highly precise and impingement-free processing irrespective of whether the blanks are made from precious or other metals, or whether they are intended for coin collectors, memorial coins or circulation coins. The work bowl, equipped with noise protection, the system controls, the compound dosing unit, the screening unit with rinse station and undersize classification are all integrated into the skillfully designed, compact enclosure of this innovative plug-and-play system. Special electronic interface features allow remote communication with the finishing center, which can be directly linked to a drier (for example, to a hot air linear vibratory cloth drier for stain-free drying) and an intermediate storage device. All process stages and system components are displayed in real time on a large touch screen providing a complete system overview. This makes the coin blanks finishing center a high-value, ergonomic work station for the operator, giving them complete visual control of all process stages and the possibility to quickly react to any abnormal events that might occur during the process.

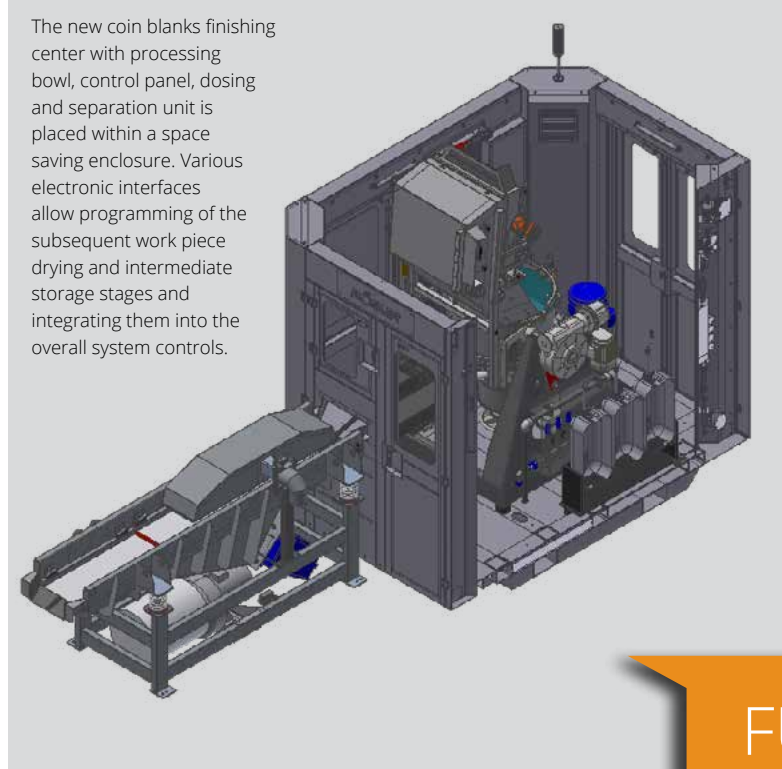
Fully automatic operation that can be easily adapted to specific coin blanks

The system PLC allows for storing of around 100 different, product-specific processing programs, which, of course, also includes the timing for the separation stage. Once the work bowl is loaded with coin blanks and media, the respective program starts automatically.

To ensure gentle separation of the finished work pieces from the processing media, the work bowl is directly connected to the vibratory screening unit. This allows the mix of finished coin blanks and media to slide onto the screening unit without any hazardous drop height whatsoever, allowing the coin blanks to stay embedded in the media all the way to the screen. Even extremely delicate precious metal coin blanks can be separated without any nicking. Of course, the separation unit can be equipped with a spray-rinse unit for cleaning the

finished blanks prior to drying. Undersize media that no longer meets the process requirements is automatically discharged during the vibratory screening cycle. When it comes to easy, time saving maintenance, the coin blanks finishing center is equally impressive. All critical system components for example, pumps, are easily accessible through access doors. Direct access to all electrical components contributes not only to the space saving design but also helps facilitate maintenance work.

The new coin blanks finishing center with its modern design was first introduced to the public at the World Money Fair 2017 in Berlin, where it drew a lot of attention.



Your contact person:
Mr. Rüdiger Böhm
Manager Global R&D Mass Finishing
r.boehm@rosler.com
+49 9533 / 924-280

FULLY AUTOMATIC

New compact centrifuge: Process water cleaning for low sludge loads The high quality and eco-friendly alternative to settlement tanks

The new compact cleaning centrifuge RZ 60 M-V-KB complements the Rösler centrifuge program at the lower end of the capacity range. This easily movable, cost effective plug-and-play unit allows high quality cleaning of process liquids with low sludge loads and is the ideal replacement for settlement tanks.

When it comes to the cleaning of process liquids from mass finishing and other surface finishing applications Rösler's centrifuge technology scores with excellent separation rates and cost efficiency. However, for applications with low sludge volume, the standard centrifuge types Z 800 and Z 1000 are frequently oversized. That is why in applications with somewhat lower quality requirements customers often work with settlement tanks. However, when faced with higher quality standards the settlement method is totally inadequate. For such applications Rösler developed the mobile compact centrifuge RZ 60 M-V-KB. This semi-automatic 2-phase centrifuge was designed as a plug-and-play system. With a drum speed of 4,000 RPM, it offers effective separation of the process water from the solid phase. This high centrifugal force allows even smaller and somewhat lighter solid particles to be deposited on the inner drum wall as sludge. Therefore, the RZ 60 can be used for applications requiring an extremely low residual content of solid particles in the cleaned process liquid, which to date centrifugal filters could not handle. This saves not only costs but also protects the environment, making this centrifuge

is far superior to settlement tanks. For example, the centrifugal filtering of coolants slows down the formation of microorganisms in the process water and, therefore, extends the uptime of the liquid. Moreover, the unpleasant odors found around settlement tanks are practically eliminated. The RZ 60 is equipped with a

combination tank for buffering the dirty and clear water. The sludge basket has a capacity of 1.8 liters (about 0.5 gallons), and the sludge can be easily removed from the basket by hand. Besides its high performance this "mini" centrifuge is characterized by a sturdy and maintenance-friendly design, featuring an indirect drive system for the drum with electric motor and separate drive belt.



ENVIRONMENTALLY FRIENDLY

The new compact centrifuge is not only the optimum alternative for settlement tanks, but it also allows cleaning process liquids requiring an extremely low residual content of solid particles in the cleaned process liquid. Thus, it helps reduce operating costs and protects the environment.

Your contact person:
Mr. Horst Brückner
Sales Cleaning and Water Treatment
Technology
h.brueckner@rosler.com
+49 9533 / 924-681

Follow-up purchase order from the Meyer Werft shipyard The world's largest preservation line in the ship building industry goes to Finland

Three years after the commissioning of a preservation line at ND Coatings, a strategic partner of the Meyer Werft shipyard in the German town of Papenburg, Rösler has now delivered a second line for the Meyer Werft shipyard in Turku, Finland. This is the largest equipment project ever undertaken by Rösler.

The acquisition of the shipyard in Turku in 2014 was a strategically important milestone for the Meyer family. It coincided with substantial investments in state-of-the-art equipment for the production of cruise ships. These included a preservation line with leveling stations for bulb flat steel, straight flat steel profiles and steel plates, all designed and built by Rösler. A key factor in the customer's decision to go with the Rösler concept was the high productivity and reliability of the preservation line Rösler had supplied to ND Coatings, the strategic partner of the Meyer Werft shipyard in Papenburg for corrosion protection, insulation and surface treatment. This is one of the most modern and eco-friendly preservation lines in the world!

Fully automatic line including two shot blast machines

The 225 meter (740 feet) long shot blast and leveling preservation line was completely custom engineered to the needs of Meyer Turku and consists of an inter-linked work piece transport system, pre-heaters, two independent shot blast machines, suitable leveling systems for beams and plates and a paint station with dryer. All system components are linked with each other and integrated into the production control system of the shipyard. Upon arrival of the work pieces at the line entrance, the control system automatically determines if the work pieces must be cleaned, shot blasted, leveled, with which color they must be painted, or if they must only undergo a partial process. For every finished component all process parameter are reported back to the production control system allowing for complete and precise documentation. The steel profiles, which are stored outdoors, are covered with rust or scale from the roll forming process. Depending on the season, they may also be covered with snow and ice. Seven work pieces are combined into a single batch on the transport system and are passed through the

cleaning station/pre-heater for de-icing – if required - at a speed of 3 m (10 feet) per minute. In a subsequent stage the work pieces undergo a blast cleaning process in a roller conveyor shot blasting machine, type RRB 16/5. Four Gamma 400 G turbines with a drive power of 15 kW each ensure optimum blasting results. They are mounted on the roof and bottom of the blast chamber made from manganese steel. Easy to replace, overlapping manganese steel liners provide additional protection against premature wear. After travelling through a blast media brush- and blow-off station the profiles are aligned in single file for passing through the subsequent leveling system at a speed of 30 m (100 feet) per minute. Faulty profiles are immediately discharged from the system. The profiles within specs are combined into batches in the subsequent batching station with batch widths of up to 3,200 mm (126").

COMPLETE SOLUTION

The steel plates, stored in a roof-covered outdoor area, can be up to 100 mm (4") thick, 3,300 mm (130") wide and 24,000 mm (945") long. They are picked up by a magnetic portal crane and placed in a centered position on the load station of the roller conveyor, the so-called main transport line. A sensor monitors the entire loading process. In the first stage the steel plates are passed through a blow-off station for the removal of water and other debris followed by a pre-heating step. From there they enter the RRB 35/6-HD roller conveyor shot blast machine at an average speed of 5 m (16 feet) per minute. The blast machine is equipped with eight (8) high performance turbines, type Rutten Gamma 400, with an installed drive power of 37 kW each. To minimize the wear rate and facilitate maintenance, the blast chamber, fabricated from

manganese steel, is lined with overlapping, easy to replace manganese steel plates. After the removal of residual blast media in a brush- and blow-off station the work pieces undergo a leveling process.

To allow for the channeling of shot blasted batches of profiles onto the main transport line for painting, the loading of raw steel plates stops automatically, as soon as a finished batch of profiles is standing by. These batches are passed through the various stations, even permitting the profiles to be pre-heated and undergoing a secondary blast process.

Coating with a minimum of overspray and solvent recovery

The paint process at the end of the line takes place with solvent-based 2-component paint types in two colors, which are automatically and instantly mixed as required. The paint is applied with spray guns from above and below the work pieces. To minimize overspray, the spray guns are controlled by a work piece recognition and displacement measuring system. The solvent used for rinsing and cleaning is conditioned and recovered in a processing plant allowing the recovery and recycling of 98% of the material. The drier was designed to ensure fast and optimum curing of the paint. It is equipped with gas burners and recirculation nozzles at the top and bottom of the cabin. In a last step the plates and profiles are staged at various unload stations for downstream manufacturing operations as prescribed by the production control system.

Your contact person:
Mr. Vasili Schaermann
Sales Management Shot Blasting Technology
Steel Industry Dept.
v.schaermann@rosler.com
+49 9533 / 924-254

Partners 4 Steel at steel trading convention 2017 Interesting meetings, new contacts and projects

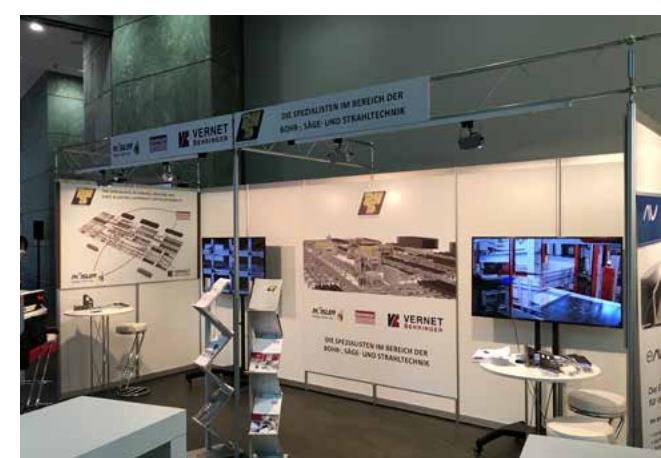
Partners 4 Steel has successfully participated at the 2017 steel trading convention organized by BDS, the federal association of the German steel traders.

Partners 4 Steel is the partnership between Vernet Behringer, Behringer GmbH and Rösler Oberflächentechnik GmbH that was created 10 years ago with the aim to cooperate in the field of steel processing. On September 28, 2017, the three companies presented themselves jointly for the first time at the steel trading convention in Darmstadt. This convention, the largest in the steel trading industry, is organized every two years by the BDS. The response was excellent! Many of the approx. 300 participants visited the joint exhibition booth to inform themselves about the Partners 4 Steel setup. Numerous customers took the opportunity to discuss current or completed projects. Of course, members of the three companies were also able to discuss new projects with the visitors in a productive and cooperative atmosphere. After this interesting and successful event the Partners 4 Steel concluded to repeat the joint appearance at other events like the

convention of the German steel fabricators organized by the Bauforumstahl e.V., the steel & architecture convention on October 11 and 12, 2018, in Duisburg, as well as the next steel trading convention in 2019.

Perfectly aligned production lines for processing of steel

The Partners 4 Steel partnership combines the core competencies of the steel specialists Behringer and Vernet Behringer, namely precise sawing technology and high performance drilling centers, with sophisticated shot blasting technology from Rösler. This helps create manufacturing lines (sawing, drilling, shot blasting and painting), which are precisely adapted to the work pieces and the associated processing aims without any interface issues whatsoever. Numerous renowned companies from the steel industry in Germany, Europe and beyond have already taken advantage of this combination.



The first joint presentation of the Partners 4 Steel cooperation was a success.

Your contact person:
Mr. Jan Möschler
Senior Sales Manager
jan.moeschler@behringer.net
+49 5069 / 4804768

Deburring and blast cleaning of castings with eight Rösler shot blast machines
Automated post treatment of castings as a specialized service

Among other machines a renowned industrial job shop is using eight Rösler shot blast machines for the post treatment of castings made from different materials. This allows the company to process high work piece volumes as well as small lots of special castings.

There are many good reasons for outsourcing the post treatment of castings for example, new projects, increased capacity requirements, or a sudden production surge. IDS Casting Service GmbH is a well-established job shop for deburring, grinding, polishing and blast cleaning of a wide range of castings made from all kinds of materials. To meet the growing demand for these sub-contract services from car and truck manufacturers, automotive suppliers and the machine-building industry, the company purchased eight shot blast machines from Rösler during the past 5 years. Crucial for the decision to go with the supplier from Untermerzbach was the performance, the versatility and reliability of the equipment as well as the excellent technical support offered by Rösler.

Economic, fully automatic processing of large work piece volumes

IDS is utilizing four wire mesh belt blast machines for the automatic deburring and blast cleaning of transmission housings made from aluminum and magnesium as well as turbine casings made from chrome-nickel alloys. For the cleaning and surface profiling of, for example, aluminum crankcases the company uses a swing chamber shot blast machine. To safely and consistently achieve the required shot blast results in short cycle times, all these machines are equipped with four, respectively, two Gamma 300 G turbines with "Y" shaped throwing blades and an installed power of 7.5 and 11 kW each. This revolutionary turbine, developed by Rösler, is not only the most maintenance friendly unit in the industry but also offers a 20% higher blast performance while

also offering reduced energy consumption. Another feature of these innovative turbines is the fact that both sides of the throwing blades can be used. A quick-change system allows replacing the throwing blades in a few minutes without having to take the turbine apart. All this results in at least twice the uptime compared to conventional blast turbines. To minimize downtimes required for maintenance work, the blast chambers of the Rösler machines are made from manganese steel. In areas directly exposed to the blast stream they are lined with easily replaceable manganese wear plates.

Compressed air system for blast cleaning of internal passages

For the automatic blast cleaning of internal passages of components like transmission housings, the customer is using an air blast machine allowing the simultaneous processing of two parts. A robot places the castings in the blast chamber and rotates them during the shot blast process. After selection of the work piece specific treatment program stored in the system PLC, blast lances clean the internal surface areas at a pre-determined speed and stop at the programmed end point. At this moment the flow of blast media also stops. During the return trip of the lance to its original position a blow-off system removes residual blast media so that the finished parts can be unloaded without any additional cleaning operation. Besides these automatic shot blast machines IDS has also two blast cabinets. They are used for jobs that require a manual blast cleaning operation or for particularly complex work pieces requiring a touch-up



Picture: IDS Casting Service GmbH

step after passing through the automatic shot blast machines.

Your contact person:
Mr. Andreas Miener
Shot Blasting Technology
Project Management
a.miener@rosler.com
+49 9533 / 924-706



ECONOMICALLY

Picture: IDS Casting Service GmbH

Increased manufacturing depth by automatic shot blasting and painting
Flexible shot blast solution for a variety of steel weldments

Perfect blast cleaning is a pre-condition for coating components that must withstand severe ambient conditions. For this reason the Dutch equipment manufacturer Delwi Groenink increased its manufacturing capabilities with a new continuous feed spinner hanger blast machine for various steel weldments.

Delwi Groenink's customers in Enschede, Netherlands, are mainly active in the lifting, off-shore and transportation sector. The company designs and produces, among other products, placement systems for containers, for example container pads. Until now the pre-treatment of these items, i.e. manual shot blasting and painting, was done externally at various job shops, which involved complex logistics and was rather time consuming. To accelerate the manufacturing process and increase flexibility, the company decided to bring these processes in-house and took over the job shops including their staff. To further optimize the shot blasting operation, which so far had been done manually, Delwi Groenink invested in a modern shot blasting machine, which was placed in a new building adjacent to the painting facility.

Conclusive shot blasting trials and a convincing equipment concept

Key factors in the decision for the continuous feed spinner hanger blast machine RHBD 27/32-K were the results of shot blasting trials with the customer's components, the success of similar Rösler systems currently operating in the field and, last but not least, the Rösler technical service in the Benelux countries. The machine is designed for continuous processing of single components and batches of multiple work pieces with dimensions of up to 2,600 x 3,100 x 11,000 mm (H x W x L). The blast chamber is manufactured from manganese steel. In addition, in areas exposed to the blast stream, it is protected with easy to exchange, gap-free manganese liners. 16 turbines, type Gamma 400 G, each with an installed power of 11 kW, generate the required high blasting intensity. They are arranged

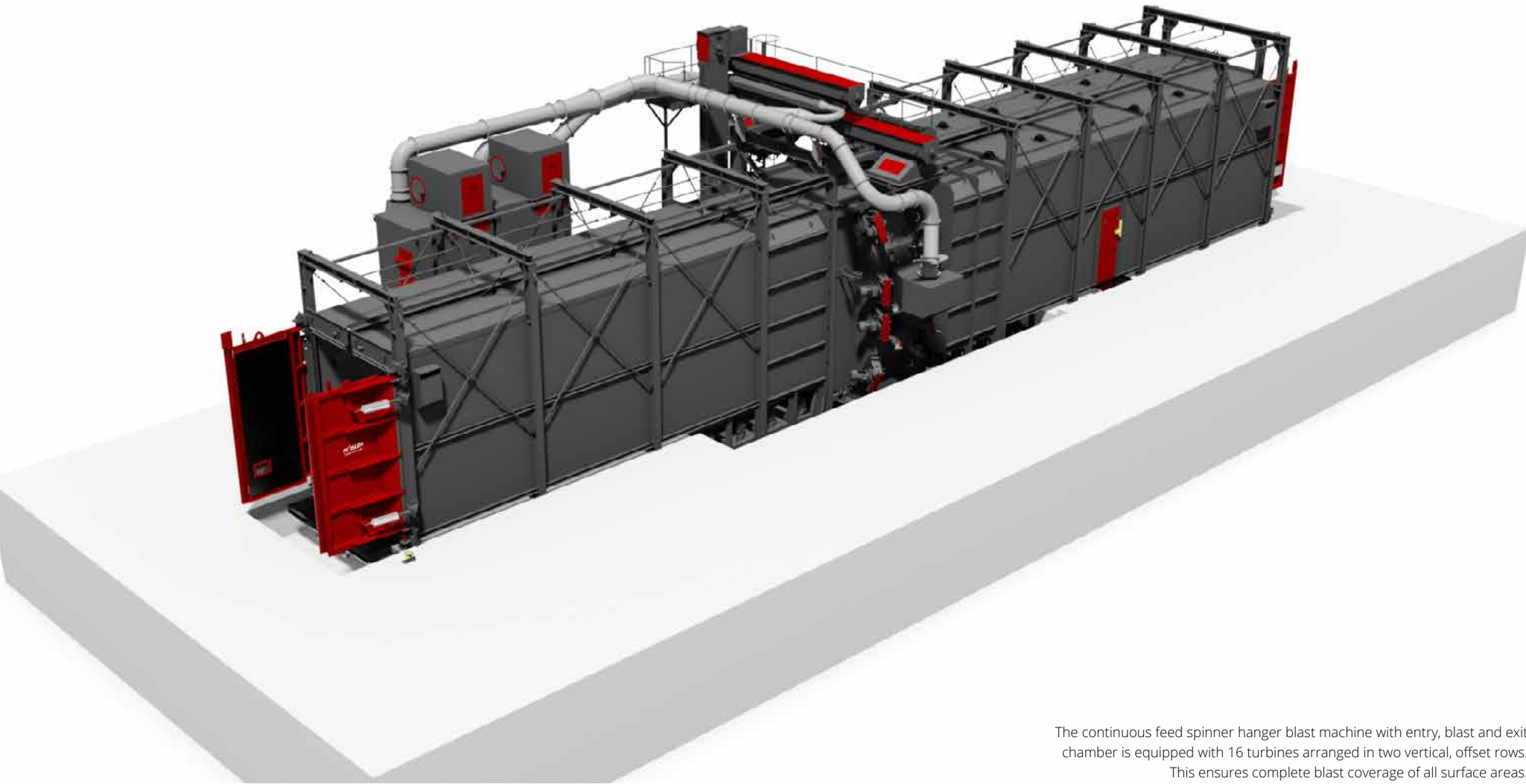
vertically in two rows on the left and right wall of the blast chamber, with the two rows being somewhat offset from each other. The turbines throw around 2,240 kg of blast media per minute ensuring excellent blast coverage of all surface areas. The special "Y" design of the throwing blades and the optimized media transfer in these Rösler high performance turbines allow a highly fluidized media movement with little or no turbulence. The resulting higher throwing and impact speeds, compared to conventional turbines of similar size, produce a 15 to 20 % higher blast performance. The blasting efficiency is further improved by the concentrated blast pattern. Moreover, both sides of the throwing blades can be utilized resulting in a doubling of the uptime of the throwing blades. All of these technical features, along with the fact that the blades can be exchanged within only seven minutes, convinced the customer.

FLEXIBILITY

A shot blasting process adapted to the customer needs

Once a steel weldment has been transferred to the transport truss, the machine recognizes that a component is ready to be blasted and transports it into the entry chamber. As soon as a sensor monitoring the front area of the blast machine, signals that no people are present, the double leaf door closes automatically. In line with the part-specific treatment program all or only some turbines are starting up, and the work piece is blasted in the blast chamber. The blasting intensity can be adjusted with frequency inverters. After completion of the blast cycle the work piece is transported into the

Your contact person:
Mr. Erwin Verbruggen
Account Manager Shot Blasting
e.verbruggen@rosler.com
+31 412 / 646-600



The continuous feed spinner hanger blast machine with entry, blast and exit chamber is equipped with 16 turbines arranged in two vertical, offset rows. This ensures complete blast coverage of all surface areas.

Rösler continues growing

In 2017 Rösler spent more than 10 million Euro for a new plastic media production facility and a new office building. Because of a continued increase in customer demand for Rösler products, management approved an additional expansion phase. Building projects with an approx. investment amount of 35 million Euro are currently in different planning stages.

Construction for the new compound production facility started last fall. And with the foundation of the Rösler Academy in 2016 suitable facilities were needed for the numerous training seminars. The academy offers courses in 19 different fields. They can be booked at www.rosler-academy.com. The Rösler Academy and marketing department will move into a new office and training building by the end of 2018.

The new compound production facility is scheduled to start its operation in spring 2019. Other projects include an expansion of office space for the sales department, expansion of ceramic media production and the expansion of our logistical infrastructure to meet the needs from our increased production capacity.



Above: The new office building will accommodate the training rooms of the Rösler Academy and more office space.
Left: The hall of the new compound production with logistics connection and loading yard.

Rösler supports charitable causes

In July 2017 about 4,500 participants of the Rösler family open house event explored the company premises with great interest. The many attractions for adults and children contributed to a successful and eventful day. No doubt, the laser show was the highlight of the evening! The company covered all the costs for food and drinks, the employees and visitors only paid a small amount towards the overall costs of the event with special chips. Rösler donated the proceeds of 12,000.00 Euro to various charitable institutions.

As in previous years, Rösler also supported the regional project "Helping is fun" in 2017. This charitable project supports families with financial difficulties in the region. Stephan Rösler, managing director of Rösler Oberflächentechnik, generously augmented the numerous contributions by suppliers. This made it possible to present 10,000.00 Euro for needy families to the project founder, Mr. Till Mayer.



Managing Director Stephan Rösler (right in the picture) handed over the check to „Helping is Fun“ initiator Till Mayer.

Rösler presents itself in new corporate image

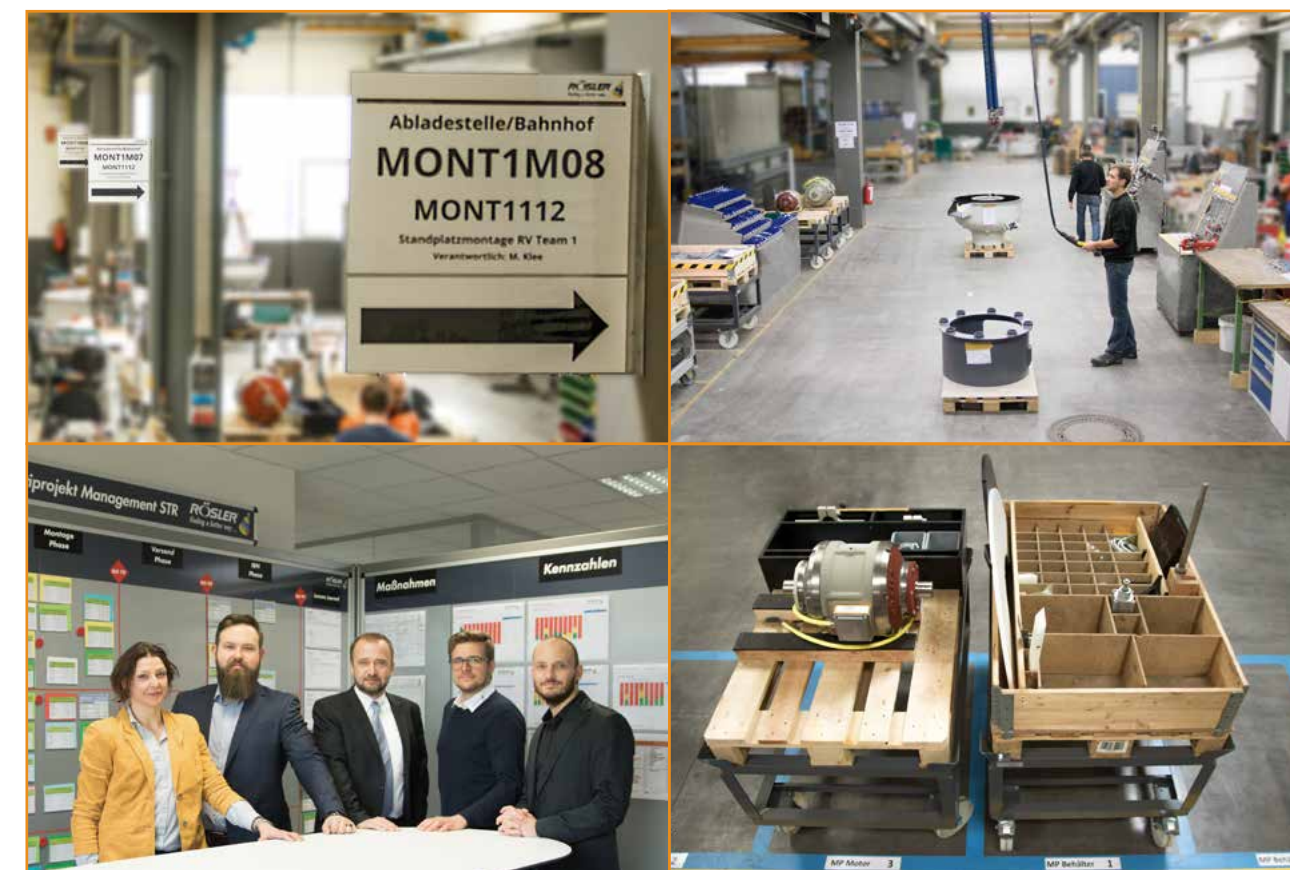


Rösler starts out 2018 with a completely revamped design of its exhibition booth. The colors of the new booth are based on the recently developed corporate design. The concept was implemented by the exhibition service company that had already successfully implemented the last two exhibition booth designs. The straightforward approach in the colors anthracite and orange provides plenty of space for the presentation of the various exhibits. Be sure to visit Rösler at the AMB exhibition in Stuttgart or the EuroBlech exhibition in Hanover. Find all exhibition dates on www.rosler.com

Lean Transformation at Rösler

„Everything changes and nothing remains still!“ This wisdom expressed by Heraclitus of Ephesus is as relevant today as it was 2,500 years ago. With the introduction of Lean Management within the past months, our company pursues the goal of establishing a lean, constantly learning organization that facilitates the professional development of its employees, as well as the establishment of logical business processes. In today's competitive, industrial manufacturing market Lean Management is more relevant than ever! With the support of internal and external advisory teams, business processes and procedures were analyzed and subjected a critical review process. The lean concept covers all corporate areas, from product development to sales. In this project Rösler pursues a holistic approach with the goal to interlink the various lean management tools like front loading, shop floor management, value stream mapping, visual management, total productive management, continuous improvement processes and many others.

Like in many situations in our daily life, implemented changes are never perfect right from the start; people must get used to them, and sometimes they must be revised. Currently 12 different internal projects under the Lean Transformation (Rösler Revolution) initiative are in process. These will help us realize our vision of being the world's best customer-oriented company in the field of surface finishing.



Regularly occurring meetings on the multiproject-board ensures short-term exchange of information between all involved departments. Transformation through the lean process are visible throughout the entire company.

About us

The Rösler Group has been the experts in the field of surface finishing for more than 80 years and offers the most extensive portfolio in the world of mass finishing systems, shot blasting, consumables and services. Renowned companies from a wide range of industrial sectors trust in Rösler products and services. With its 15 subsidiaries and more than 150 sales agencies, the Rösler Group offers an extensive global network that is always close to its customers.

The job of our specialists is to design a system for your finishing process, or a complete production line. You're in the best hands with us, we will provide support throughout your machines lifetime; from the planning phase, all the way to after sales support and service. Our technology management team works with you to develop the perfect finishing process, precisely tailored to your work pieces.

Our Mission

We are a modern and attractive family owned company active in the field of surface finishing.

„Finding a better way..." drives us.

Long term, sustainable business development is more important to us than short term profit maximization.

Our Vision

Our customers want to buy from us, because with our team of dedicated employees

- ▶ we are the world's best customer-oriented company in our field
- ▶ we deliver the best quality
- ▶ we perform the best service
- ▶ we are more innovative

