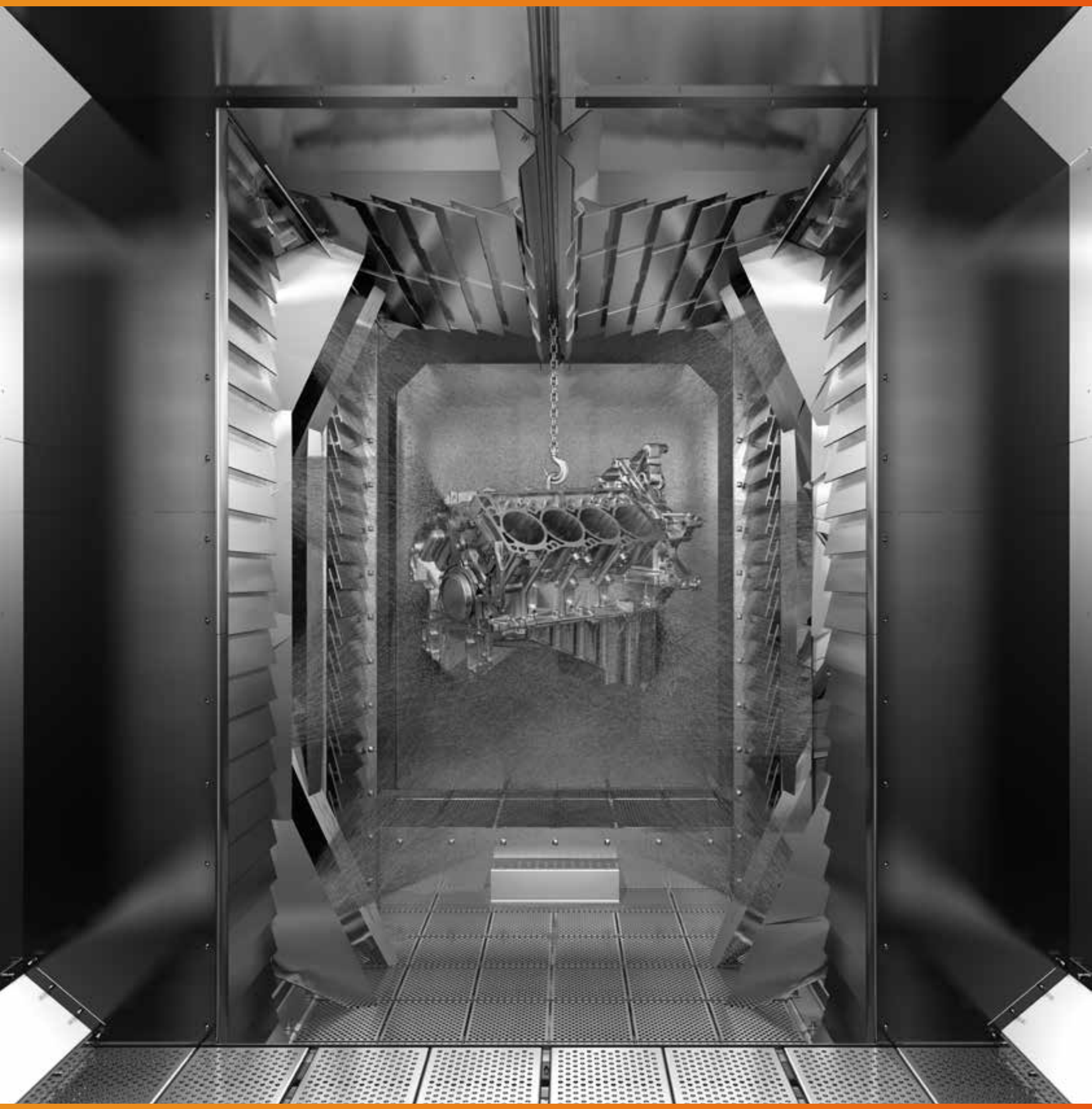
2019 CHIP

RÖSLER®
finding a better way ...

News from the surface technology

Mass Finishing | Shot Blasting | Engineering | Environmental Technologies



Mass Finishing
Page 2 – 5

Shot Blasting
Page 6 – 9

Rösler News
Page 10 – 12

EDITORIAL

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

We are happy to report that our business divisions are currently operating near capacity to meet the high demand we have experience throughtout 2018. Frequently, this poses challenges on the procurement side of our business. I want to take this opportunity to thank all our customers for their trust and loyalty in Rösler.

During the past months we have initiated numerous organizational measures and projects for further sustainable improvements in order to meet the standards we set ourselves with our mission and vision. The expansion of our plastic media production has been successfully completed with all lines running at full capacity. In the first quarter of 2019 our new compound production will be fully operational. And by summer we expect the capacity expansion of our ceramic media production to be completed. With the successful conclusion of all these projects amounting to an investment volume of about 30 million Euro we stand ready to face the challenges of the future.

With our new brand "AM Solutions" we have taken an important step to become a key player in the field of additive manufacturing. It is our goal to offer comprehensive Post Processing solutions to the users of AM technologies. These also include consultation in the Pre-Processing-Phase allowing the required surface finishes to be taken into consideration during the product design process. Please read more to this subject in the Chip magazine.

Last but not least, I am pleased to report that across our complete product range we have developed and implemented numerous interesting customer specific solutions.

I hope you enjoy reading the latest 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 (DJV)
Landhausstr. 12 | 70825 Korntal
Tel.: +49 711 / 854085 | E-Mail: doris.schulz@pressetextschulz.de

Print:

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

Innovative consumables for optimized finishing solutions

Better and more efficient mass finishing processes

Not moving forward is actually a step back – Following this mantra, Rösler is constantly working to optimize its media and compounds to further improve the process stability, cost efficiency and productivity of mass finishing processes.

Due to an increasing customer demand, Rösler is excited to introduce its new "Y-range" of media - a plastic media type with the grinding characteristics of ceramic media, which does not chip and will also minimize the risk of work piece damage. This is a unique and frequently requested combination, a challenge in which Rösler has met head on with developing this new range of media. Featuring a special composition, these plastic grinding media have the same grinding and metal removal characteristics as their ceramic counterparts, while demonstrating higher elasticity. In addition, this media type allows for faster processing of delicate work pieces made from non-ferrous metals as well as parts that tend to bend during the finishing process.

Another breakthrough in development are a new line of liquid pastes within the RSP 8 range. This innovative grinding medium, which is relatively viscous, is still pumpable, allowing it to be dosed more precisely in line with the given processing requirements. Automatic dosing systems allow further optimization of the overall process.

The utilization of such sophisticated dosing systems has helped improve the process controls, which has resulted in achieving desired finishing results with less personnel.

New developments can also be reported from the field of wastewater cleaning with recycling systems. Granular pellets are replacing the powder products which have been used up to this point for flocculation and improvement of sludge consistency. Granular flocculants have several advantages: They allow optimized handling without the risk of dust, thus contributing to improved workplace safety. They also prevent so-called "bridge building" in the dosing units, which can lead to dosing error. The new granular flocculants can be dosed with existing dosing units. This leads to more precise dosing, which is very important for processes that use water which tends to foam. All of these characteristics, in combination with the mechanical stability of the granules and short reaction times, ensure a significant improvement of process stability.

New developments in the consumables area

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

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

Mass finishing application technology

Consultation and support for users

Be it during the commissioning phase or some time during the life of a mass finishing installation, be it process implementation or optimization – our new team "Application Technology" stands ready to assist you and answer any questions you may have.

Do you have questions about your mass finishing system or its material handling? Is your process running as intended? Do you achieve stable, repeatable surface finishes? Will your process have to be optimized for technical or economic reasons? These are some of the customer questions our team "Application Technology" will be addressing in a highly pro-active manner. Specifically, this means that the team members will be contacting our customers to actively support them in accomplishing their finishing tasks and resolve their problems. Of course, this includes visits at the customer site. The experienced application engineers and TÜV certified coaches from the Rösler Academy will assist you in tweaking your mass finishing process so that it runs as intended and produces the required finishes. It goes without saying that they will also be working directly at the machine(s) as needed. Any process anomalies will be carefully documented and researched. If a problem requires further information and specialist support from other departments, or the work pieces must be processed again in our Untermerzbach test center, the Application Technology team members will be the go-to people for the customers. Rösler intends this After-Sales-Service to become an essential pillar for the implementation of our vision to become the world's best customer oriented company in the field of surface treatment. That is why the "Application Technology" team will be further expanded.

Your contact person:
Mr. Hans-Ullrich Jäckel
Head of Sales Department Mass Finishing
h.jaeckel@rosler.com
+49 9533 / 924-9975

Your contact person:
Mr. Jürgen Zapf
Technology application
j.zapf@rosler.com
+49 9533 / 924-352

Meeting the most rigid requirements of demanding collectors

The benchmark for surface finishing of blanks for collector coins!

When it comes to special coins, collectors are expecting a perfect finish, especially if the coins are made from gold and silver. To deliver just that Rösler has developed an innovative, fully automatic plug-and-play finishing center for processing blanks from precious and other metals that guarantees excellent, absolutely repeatable surface finishes.

The proper cleaning and polishing of blanks has a significant effect on the quality of newly minted coins. Thoroughly adapted processes allow not only to remove dirt, oxidation and slight irregularities stemming from the various production stages, but they also create perfectly polished pre-minting surface finishes. Through numerous process and equipment innovations Rösler has been setting new standards for coin blank finishing throughout the world. That is why one of the leading minting companies in the Far East decided to re-organize its manufacturing operation with equipment from Untermerzbach. The main goal of this investment was to further improve the quality of gold, silver and other coins by highly controlled, stable processes for finishing of the blanks

To ensure gentle processing and prevent any damage to the coin blanks, the system has no drop heights, for example, into the processing bowl, the transfer of the finished work pieces from the processing bowl to the separation unit and from there into the dryer. The handling by the operator was also optimized by consideration of ergonomic aspects.

New standards in coin blank finishing

With its new coin blank finishing center Rösler has brought coin blank finishing to a completely new level! The compact system, designed for plug-and-play operation, impresses by its attractive design. The optically pleasing, space-saving enclosure contains the processing bowl, the automatic dosing unit for pickling chemicals & polishing compounds, the vibratory screening unit with rinse-cleaning station and undersize media discharge, as well as the control panel with PLC that allows storing up to 100 work piece specific cleaning, pickling and polishing programs. No detail has been left unattended. This, of course, also applies to the excellent noise protection. During the finishing process all process parameters are collected and stored. With the system's industry 4.0 compatibility, data can be sent to a higher-level production control system. When designing the new coin blank finishing machine Rösler's engineers did not only consider functional criteria for increased operational stability but also ergonomic aspects: Material handling by the operator was simplified, and they can easily monitor the entire process. All equipment components exposed to aggressive chemicals are made from stainless steel. Despite the space saving, compact design all service areas, including the dosing system are easily accessible.

Designed for gentle processing

To prevent any work piece damage, gentle processing was a key aspect for the entire system. For example, the transfer of the coin blanks from the processing bowl to the vibratory screening unit takes place with a combined rotational/swivel movement without any hazardous dropping heights. The precise dosing mechanism ensures that the finished coin blanks travel only in small quantities from the tilted processing bowl to the vibratory screening unit for complete separation from the processing media. The vibration intensity is adjustable and easily programmable from the PLC. To prevent any spots on the work piece surface, the blanks are rinsed with demineralized water. Of course, the transfer of the blanks to the hot air linear vibratory dryer also takes place without any dropping heights. In the dryer, embedded between two heated pieces of special cloth, the finished blanks are passing through a tunnel hat is continuously supplied with fresh air.

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

The industry 4.0 compatible coin blank finishing center is designed for plug-and-play operation. All equipment components like processing bowl, separation unit and control panel are integrated into a compact, space saving and noise reducing enclosure.

Linked Cleaning and mass finishing solution for brake components

Continuous processing of parts that must be glued together

LUMAG, a well-known Polish brake pad manufacturer, presented Rösler with the challenge of finishing a surface in order to maximize its adhesion characteristics for a subsequent bonding stage. Rösler offered a solution for de-oiling and surface finishing of brake pad carrier plates directly linked to a punch press.

LUMAG Sp. z o.o., founded by Mr. Marek Zak in 1988, is specialized in the production of brake pads for drum and disk brakes for commercial vehicles. For the latter the company, located in Budzyń, Poland, developed its own manufacturing technology resulting in significant quality improvements. In addition, LUMAG develops, produces and sells brake pads for passenger cars and motorbikes under the trade name Breck.

The fully automatic de-oiling/washing and mass finishing system is directly linked to the punch press and allows for continuous feed operation. The only manual operation is the replacement of the full transport bins every few hours.

De-oiling, deburring and surface roughening

As a result of changing the production method for the brake pad carrier plates, from casting to stamping, LUMAG decided to install a new in-house manufacturing line for these products. This included a solution for de-oiling, deburring and surface roughening of the stamped carrier plates with lengths of 210-250 mm and widths between 90-110 mm. It should be noted that the components have a slit or drilled hole for placing a sensor, which monitors the wear of the brake pad. These steps were intended to ensure that the delicate stampings provide optimum adhesion characteristics for the following bonding of the brake pads. Another requirement presented by the customer was to directly link the finishing equipment with the punch press, maintain extremely gentle processing and complete automation of the cleaning (de-oiling) and mass finishing stages in continuous feed operation. LUMAG decided to partner with Rösler for this important project, because Rösler not only enjoys an excellent reputation in the industry, but was also able to supply the equipment for both processes including the finishing media and compounds from one single source.

Intelligent media selection allows cleaning without the need for drying

After the stamping process a conveyor belt transfers the work pieces to the drum washing machine equipped with an internal transport auger. In the drum the carrier plates are initially passed through an un-perforated zone into which cleaning liquid is injected by flat spray nozzles. This creates an immersion bath for de-oiling. In the following perforated drum section the cleaning liquid is drained, and in a secondary de-oiling step the work pieces are spray washed. This cleaning zone is followed by a drip-off section, a rinse station and another drip-off section. Subsequently, a conveyor belt transfers the work pieces into the mass finishing machine. Replenishment of the cleaning liquid takes place with a Dosatron proportional dosing pump. Since the cleaning liquid and the compound for the mass finishing process have practically the same chemical characteristics – including the placement of a temporary corrosion protection – carryover of the cleaning liquid into the mass finishing machine presents no issue. This clever trick eliminated the need for a drying stage after the cleaning process, resulting not only in significant savings in the overall capital expenditure but also reducing the operational costs. For proper maintenance of the cleaning liquid the washing machine is equipped with filtration units and an oil separator.

Gentle mass finishing process

Deburring and surface roughening of the work pieces takes place in a linear, continuous flow vibrator R 550/6600 DA with a specially adapted work piece loading system. Loading actually takes place at the rear end of the processing bowl instead of on the lateral bowl side with greatly reduced dropping heights. An equally gentle work piece transfer process was incorporated in the vibratory screening unit and the dryer filled with Supervelate drying media. After drying a certain work piece quantity, which is precisely measured by weight, the work pieces are discharged into a transport bin. The process water from the mass finishing machine is continuously cleaned in a fully automatic peeling centrifuge Z 1000 equipped with automatic sludge discharge.

By the perfectly tuned de-oiling and mass finishing operation the brake pad carrier plates receive the perfect surface finish for the subsequent bonding process.

Your contact person:
Mr. Karlheinz Thron
Sales Industrial Washing Equipment
k.thron@rosler.com
+49 9533 / 924-150

Your contact person:
Mr. Jaroslaw Bus
Technical Support and Export Sales
Mass Finishing Machines
j.bus@rosler.com
+49 9533 / 924-242

Fully integrated Surf-Finishing, fine cleaning and packaging

High cleanliness requirements are perfectly met within the prescribed cycle times

For a renowned manufacturer of various throttle valves and exhaust flaps Rösler developed a complete, fully automatic, integrated processing system. It includes a work piece transfer unit from different machining centers, the Surf-Finishing and fine cleaning process itself, the application of a data matrix code, packaging of the finished work pieces in small load carriers (KLT's) and their transfer to stacking cells.

The Klubert + Schmidt GmbH, located in Pottenstein, Bavaria, develops, manufactures and markets highly complex throttle and flue gas damping systems for all kinds of on- and off-road as well as marine and industrial applications. The company also produces sophisticated single components and assemblies for leading manufacturers in the field of hydraulics.

Surf-Finishers are utilizing a rotating work bowl, which ensures an especially high processing intensity. In this version of the Surf-Finisher multiple components can be processed at a time.

Challenging requirements regarding surface finishing and component cleanliness

During the course of a capacity expansion project for the CNC machining of precision components, like insertable housings for the control of exhaust gases, the company also invested in a combined solution for deburring and fine cleaning of the work pieces.

Klubert + Schmidt purchases the raw parts as castings from two suppliers. In this context the integrated production system must ensure that no part mix-ups occur. After machining the exhaust gas control housings may contain small internal burs, which must be completely removed. The subsequent cleaning process must ensure that the components meet the most stringent cleanliness requirements.

Fully integrated, linked processes with robotic work piece handling

For the Surf-Finishing operation, a highly specialized mass finishing process, a robot picks up the machined housings from a transport belt. Prior to the actual deburring process the work pieces undergo a rough cleaning step with compressed air. Subsequently, the work pieces are placed into the loading stations, where they are automatically mounted to specially developed work piece fixtures. These allow the clamping of multiple components onto each spindle of the Surf-Finisher. A partial protection of certain work piece surface areas during the finishing process is not required. The deburring operation takes place with non-chipping ceramic media. The high speed of the rotating work bowl with the resulting high pressure between media and work pieces not only results in relatively short deburring times but also ensures the removal of all burs on difficult-to-reach internal contours. To prevent corrosion of the work pieces, the mass finishing compound contains a water-based additive that provides a temporary corrosion protection. After the work pieces have been removed from the work piece fixtures, the robot places them on the transfer station for the subsequent cleaning process. There a second robot picks up the parts and positions them on specially designed work piece carriers. In an initial step the housings are passing through a cleaning station, where they receive all-around cleaning with a special wash solution. After passing through a rinse-off zone the work pieces are then dried with hot air.

Automatic quality control, application of a matrix code and packaging

The quality control fulfills two tasks: The camera system identifies the work pieces being processed with the aid of a raw part designator. At the same time, sealing surfaces are checked for potential surface faults.

The overall system includes deburring, fine cleaning, quality control, packaging in small load carriers (KLT's) and their transfer to stacking cells.

Components, which do not meet the required values, are automatically phased out of the system. The robot feeds all other (correct) components to a laser station, where a data matrix code is applied. Subsequently, the robot places the parts in a specially designed small load carrier (KLT). As soon as one KLT is full, the robot changes its gripper tool to deposit the KLT in movable stacking cells, which were also part of the initial order scope. The stacking cells themselves are staged by company employees.

With the help of a chain link conveyor and work piece specific carriers the components are staged for transfer to the washing/ cleaning system. There they are undergoing a washing as well as a drying cycle. This ensures that the cleaning process consistently fulfills the stringent cleanliness requirements.

Your contact person:
Mr. Christian Höhn
Product Management Mass Finishing
c.hoehn@rosler.com
+49 9533 / 924-891

Your contact person:
Mr. Karlheinz Thron
Sales Industrial Washing Equipment
k.thron@rosler.com
+49 9533 / 924-150

Rösler turbines increase equipment uptimes and cost efficiency

Shot blasting that is faster, saves energy and reduces wear

Cost effective blast cleaning of weldments has always been a technological challenge for users. But if the reliability of the welded components in question can potentially affect human lives, quality and process safety are of particular importance. That is why a manufacturer of rescue lifting equipment and aerial ladders, decided to equip its existing shot blast machine for weldments with state-of-the-art turbine technology from Rösler.

The customer chose the high performance Gamma 400 G turbines, which were installed step by step. This turbine exchange not only improved the overall equipment uptime, but it also helped reduce the energy consumption and improved the overall shot blast results by about 20 percent. In the meantime the customer decided to purchase a new shot blast machine from Rösler located in Untermerzbach, Germany. The new roller conveyor blast machine, specially designed for blast cleaning of welding constructions, will be used for processing different types of aerial ladder components and will be equipped with the already existing Gamma 400 G turbines.

Rosenbauer International AG, located in Austria, is a globally leading manufacturer of fire fighting and disaster management equipment. The company develops and manufactures special vehicles, fire extinguishing systems, equipment and telematics solutions for professional, corporate and volunteer fire brigades as well as solutions for fire prevention. The products, manufactured in Europe, Asia and North America, are in full compliance with all relevant standards.

State-of-the-art turbine technology improves the uptime of the shot blast machine

The plant in Karlsruhe is specialized in rescue lifting equipment and produces rotary aerial ladders and hydraulic platforms for use by fire brigades. An important stage in the manufacturing chain is the blast cleaning of the different ladder components after welding. Explains Erwin Hoffmann, manufacturing team leader at Rosenbauer in Karlsruhe: "An essential manufacturing step is the blast cleaning of the ladder components after they are welded. We are using blast media with a pellet size of one millimeter. With this media size the ladders are not only cleaned, but tensions in the material are removed, and the surface is peened. To date the company used a blast machine that is more than 25 years old and equipped with eight turbines. Since the supplier of this machine does not exist any more, it was no longer possible to purchase the required original turbine spare parts. „The parts offered by various other suppliers, did not meet our quality standards. Generally they allowed us to achieve sufficient shot blasting results, but we faced frequent equipment down times", reports the team leader. For this reason, about 4 years ago Rosenbauer decided to exchange the existing turbines step by step with modern turbine technology. At an exhibition Erwin Hoffmann found out about the TuneUp program. The Retrofit trade name of the Rösler Oberflächentechnik GmbH is specialized in the modernization of shot blast machines, be it the improvement of the equipment uptime and shot blast performance, the adaptation to changed shot blast specifications and, even, the optimization of the energy efficiency. Rösler TuneUp develops tailor-made solutions for the customers irrespective of who the supplier of the original shot blast equipment was.

20 percent savings – a significant improvement of the overall cost efficiency

Erwin Hoffmann continues: "After we had decided to utilize the Rösler Gamma 400 turbines in our existing shot blast machine, the company developed an operating cost analysis for us. Based on this we proceeded to exchange the existing turbines step by step, two turbines at a time".

The first exchange took place at the beginning of 2015, and the last existing turbines were replaced with the high performance Gamma 400 G turbines, with 11 kW drive power each, early 2017.

The special curved Y-design of the throwing blades, combined with an optimized media transfer in the turbines, generates a highly fluidized movement of the blast media. This generates a higher throwing and, subsequently, a higher impact speed of the blast media resulting in a 15 – 20 percent higher blast performance compared to conventional blast turbines of the same size. Moreover, their special design allows the use of both sides of the throwing blades increasing their usable life by a factor of two. Erwin Hoffman confirms this: "With the old turbines we could only use one side of the throwing blades, turning them around was not possible. Since each turbine is equipped with an amperage meter, also measuring the energy consumption, I found out that Gamma 400 G turbines are using around 20 percent less energy".

Compared to conventional turbines of the same size, the Gamma 400 G offers a 15 – 20 percent higher shot blast performance.

Improved blast pattern improves pass-through times

Higher uptimes and lower energy use are not the only features of the Gamma turbines from Rösler. With each turbine exchange the blast pattern could also be significantly improved. Reports the team leader: „The welded ladder components pass through our over-head rail shot blast machine at a defined speed. Each time we exchanged two turbines we could achieve the required blast cleaning results in a shorter cycle time".

A safe investment – also for the new shot blast machine

The move into a new building that changed the overall work flow, required the investment in a new shot blast machine at Rosenbauer in Karlsruhe. Because of its excellent experience with the Gamma turbines the customer decided to purchase the new machine from Rösler. The Gamma 400 G turbines already installed in the old shot blast machine will also be used for the new machine so that the investments since 2015 can still be utilized. Erwin Hoffmann concludes: "Our reasons for this decision were not only the lower consumption and wear rate. Important for us was also the better shot blast performance and the excellent technical service by Rösler".

Because of their special "Y" design both sides of the Gamma 400 G throwing blades can be utilized. A special quick change system allows changing the blade set in a turbine in less than 10 minutes.

Your contact person:
Mr. Manfred Kohmann
TuneUp Specialist
m.kohmann@rosler.com
+49 9533 / 924-795

Turbine and suction blasting in combination

Energy efficient, high quality deburring of precision plastic components

The deburring requirements for precision passenger car fuel systems are extremely demanding. That is why for this application a leading supplier of injection-molded components is using shot blasting technology from Rösler. A special dual turbine and suction blast system produced the best results with a very high energy efficiency.

During the course of a capacity expansion, the company planned to invest in a new shot blasting machine for deburring of extremely precise components for passenger car fuel systems. The work pieces with a diameter of about 40 mm and a height of 8.5, respectively 4.0 mm, are produced from a highly filled Duroplast in multi component dies.

Stringent deburring requirements

After coming out of the mold the work pieces have very fine burs and flashes. To prevent functional failures of these components during their later use, the burs must be completely and reliably removed without damaging the work piece surface and changing their dimensional integrity. For this demanding application the customer chose a plastic de-flashing shot blast system from Rösler. A major reason for their decision was their excellent experience with Rösler, already having about 25 to 30 Rösler shot blast machines in operation at various company locations.

Automatic processing with two different shot blasting methods

The swing table machine RWS 1200 T1-I4 SAT 1 has two work chambers, each equipped with a rotating satellite station that can hold six work pieces. The dual chamber concept allows loading/unloading of one batch of parts, while another one is processed. This helps keep unproductive times at a minimum.

During the shot blasting process in the noise insulated, dust-proof blast chamber the work pieces are rotating while being exposed to the blast stream of a turbine W32 with an installed power of 4 kW and a media throwing speed of up to 80 m/sec. Due to a relatively large blast pattern, about 90 % of the deburring tasks are accomplished by the turbine process. At the same time four suction nozzles, whose height, distance and direction is adjustable, are blasting the surface areas that cannot be reached by the turbine. The combination of the two shot blasting methods allows to significantly improve the deburring results compared to just blasting with a turbine. And, at the same time the dual blast system is considerably more energy efficient compared to blasting just by air:

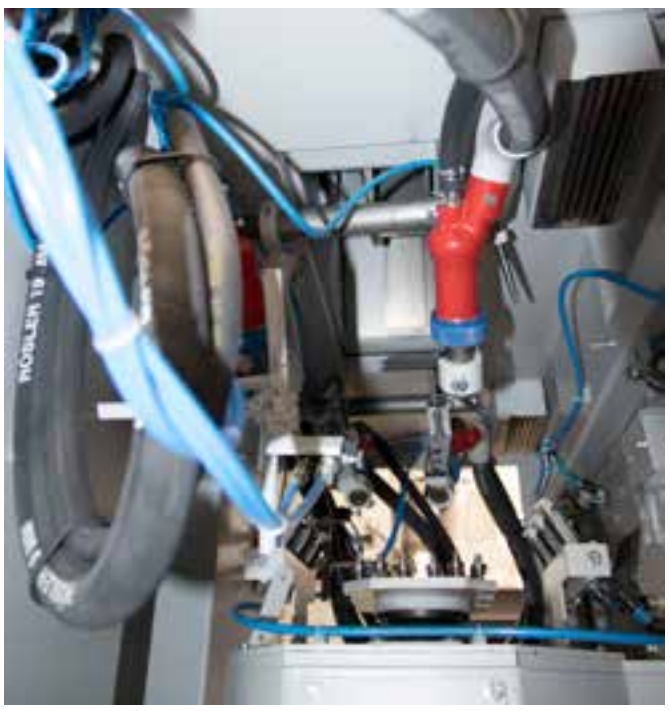
Cleaning of the non-abrasive plastic media takes place with a vibratory screening unit, which also discharges undersize media, and a special air wash separator. To prevent the media from getting electro-statically charged, which could cause adherence of the media to the work pieces, an anti-static compound, specially developed by Rösler, is injected into the blast chamber.

Manufacturing of plastic de-flashing shot blast equipment in Untermerzbach

About one year ago Rösler transferred the product line “plastic de-flashing equipment” from the previous location in Kirchleerau (Switzerland) to its main manufacturing plant in Untermerzbach. This allows Rösler to synergize the product development between engineering, manufacturing and marketing. Since this time the slogan „made by Rösler Germany“ also applies to plastic de-flashing with shot blasting. Also at the Rösler branch in Battle Creek, U.S., plastic de-flashing shot blast machines are being built, especially for the North American market.

Your contact person:
Mr. Thomas Gundermann
Sales Department Shot Blasting
t.gundermann@rosler.com
+49 9533 / 924-540

Rösler swing satellite table machine RWS 1200-T1-I4-SAT 1 in our German plant after successful pre-commissioning by the customer



Glimpse into the blast chamber of a Rösler RWS 1200-T1-I4-SAT 1 showing the following details: Blast nozzles, blast turbine, blow-off nozzles and the satellite station with work piece fixture supplied by the customer.

Detailed view of the work piece fixture

Foundry chooses a comprehensive shot blast solution from Rösler

Increased performance, improved cost efficiency and better ergonomics for the blast cleaning operation

In line with a capacity expansion, the fettling shop of the MMG Marsberger Metallguss Gebr. Cordt oHG was completely revamped to meet requirements for more capacity as well as improved quality and better ergonomics. For this purpose the company invested in a new wire mesh belt blast machine, the modernization of the existing shot blast equipment, two new dust collectors and a blast cabinet, all supplied by Rösler.

Since the Marsberger Metallgießerei Erger was taken over by the brothers Olaf und Oliver Cordt in 1996, the facility has undergone significant expansion. Today the equipment and services of this company include several lines for sand casting of different aluminum alloys, gravity die-casting and machining of these components on ultra modern machining centers and lathes.

A complete package for the blast cleaning operation

In 2018, in order to upgrade the blast cleaning operation to meet today's requirements, the company decided to purchase a new shot blast machine, as well as modernize their existing shot blasting system. In addition, two new dust collectors and a manual blast cabinet were purchased. Thanks to the modern design, high quality equipment, comprehensive after sales service and the possibility to source everything from one single source, the customer decided to do this challenging project with Rösler. Another reason to go with the supplier from Untermerzbach was a referral from another foundry that had an excellent experience with similar Rösler equipment.

Wire mesh belt blast machine meets all demands for quality, performance and ergonomics

The new de-molding blast system had not only to fulfill the challenging customer demands for blast cleaning quality, throughput and uptime, but it also had to be easy to handle by the operating staff. In line with these requirements Rösler developed a foundry version of the wire mesh belt blast machine RDGE 1250-4-F with a split elevator to fit the machine into a building with a ceiling height of 5 m. Special attention was paid to optimized wear protection. For example, the blast chamber is completely made from manganese steel and lined with easy to exchange cast wear plates from highly wear resistant material. The wire mesh belt, also made from wear resistant material, is designed for loads of 250 kg per running meter.

Four Gamma 400 G turbines, optimally placed around the blast chamber and with a drive power of 15 kW each, ensure that even extremely complex castings are perfectly blast cleaned. Compared to conventional blast wheels these high performance Rösler blast turbines, equipped with curved throwing blades in Y-design, generate an up to 20% higher blast performance while also maintaining a lower energy consumption. Their unique design allows for the full use of both sides of the throwing blades. And due to the clever quick-change system a blade change can be performed very quickly without having to disassemble the turbine. This practically doubles the service life of the throwing blades. The wear resistant and energy saving Gamma 400 G turbines were also used for the modernization of the existing shot blast system.

The new blast machine is equipped with a work piece recognition system making sure that the blast turbines are only throwing media, when work pieces are passing through the machine. With no work pieces present the machine automatically goes into stand-by mode. This also contributes to reduced wear and lower energy consumption.

The blast media volume of maximum 200 kg/min per turbine along with the belt speed is adjustable. The operator can automatically adapt these two parameters to the work pieces by simply selecting one of the blast programs stored in the system PLC. A work piece height sensor allows the optimum adjustment of the blow-off station installed at the machine exit. This allows the removal of residual blast media carried out with the work pieces. The blast media recycling system is equipped with a high performance magnet separator.

Because the castings are made from aluminum, the dust collectors for cleaning the exhaust air from the shot blast machines are in explosion-protected design. To save valuable manufacturing space, they are placed outside of the building.

Your contact person:
Mr. Norman Peter
Sales Department Shot Blasting
n.peter@rosler.com
+49 9533 / 924-659

With numerous accessories, like a high-performance magnetic separator, the wire mesh belt machine RDGE 1250-4-F was perfectly adapted to the tough operating conditions prevailing in foundries.

Steel, shipped from the customer, processed and returned to the customer

Fully automatic preservation line for steel plates and profiles

For one of its steel suppliers Rösler built a fully automatic, linked 2-in-1 preservation line for plates and profiles. The high manufacturing depth of Rösler with its own steel cutting, bending and welding departments was key to meet the quality demands of the customer.

Klöckner & Co. Germany GmbH, a leading steel supplier, expects top quality for the various steel components, which must frequently be blast cleaned and coated with a protective primer. To date, at its Bremen location, which supplies predominantly shipyards, the company had these services done by external job shops. To fulfill customer requirements faster and more flexible, it was decided to bring the blast cleaning and painting operations in-house by investing in a preservation line. Rösler was awarded this important project, because similar installations are successfully running at other Klöckner customers. Moreover, the company was impressed by the excellent handling of the pre-project phase by Rösler's sales team and, last-but-not-least, by the high manufacturing depth at Rösler considered to be a significant factor for first class quality.

In-feed section of a preservation line

Engineering and steel processing (cutting, welding, etc.) work hand-in-hand

It begins with the engineering phase, during which suggestions and ideas from various manufacturing stages are picked up and utilized, frequently resulting in significant design improvements. Once the design is completed the various equipment components are laser cut and bent. The subsequent blast cleaning stage facilitates not only the work of the welding crew but also ensures the best possible quality of the welding seams. The welding department has seven small and five large welding stations. The latter can be combined into one station that allows producing assemblies up to 36 m long in one single piece with minimal tolerances. Each assembly is checked for the proper size of the welding seams, overall dimensional integrity and optical appearance, before it is released for the next manufacturing steps consisting of an additional shot blast process and painting.

Efficient, fully automatic blast cleaning of plates and profiles

The preservation line, designed as a 2-in-1 system, consists of a profile and a main/plate line with separate loading stations, one painting booth with dryer, a thermal after burning system and three unload stations. With this configuration Klöckner can handle components up to 3,200 mm wide, 16,000 mm long and 100 mm thick. All line units are linked with each other and connected to the company's higher-level production control system.

During the loading phase the operator enters information regarding the shot blasting parameters, the paint color and at which stocking location the material has to be deposited after being processed.

The profiles come in bundles to the preservation line where they are placed on a cross-conveyor to be separated into single pieces. The equipment design already foresees a leveling station to be retrofitted at a later date, if the customer decides that such a unit is needed. In the next step the profiles are combined into batches of 3,200 mm width and fed into the plate line at a high priority. During this preparation phase steel plates can be processed continuously allowing full use of the system capacity.

In the master line the plates and profiles pass through a blow-off station to remove water and loose contaminants and, subsequently, through a pre-heater. From there they are transferred to a roller conveyor shot blast machine RRB 34/6-HD. Eight Gamma 400 G turbines with 22 kW drive power each, placed on the roof and bottom of the blast chamber, ensure that the specified blast cleaning results of SA 2,5 are safely and consistently achieved. The blast chamber, made from manganese steel is equipped with easily exchangeable manganese steel plates for additional wear protection. Carried out blast media and dust are removed in the blow-off/brush-off station located behind the blast chamber.

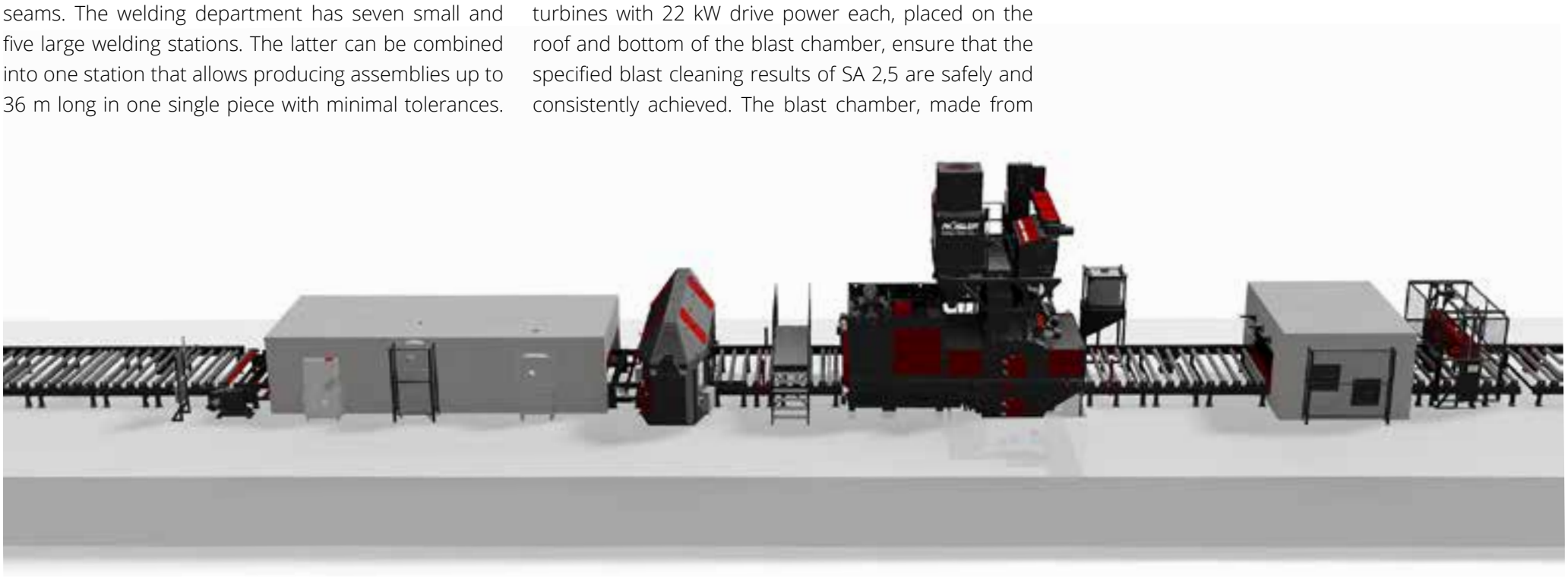
View of our welding stations

Highly flexible painting system

Painting of the plates and profiles is typically done with solvent-based 2-component paint in two colors, which are automatically mixed as required. To quickly fulfill special color requests by customers the paint system is also equipped with a third, manual mixing station for solvent-based and water-based paints. The paint is applied from above and below with eight paint guns. Each individual paint gun is controlled by a work piece recognition system and a control device that monitors the work piece length. This keeps overspray at an absolute minimum. After passing through the dryer the plates and profiles are transported to their pre-determined unload station from where they can immediately be loaded onto waiting trucks.

Your contact person:
Mr. Hans-Josef Wendler
Head of production
h.wendler@rosler.com
+49 9533 / 924-230

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



Preservation line for steel sheets and profiles

Rösler AM Solutions – Technological partnerships for the complete AM chain

Comprehensive support and solutions for volume production

Through its own developments as well as cooperation with renowned industrial partners and research institutions the AM Solutions brand from Rösler offers comprehensive support, covering not only the optimization of the actual 3D design and printing process, but also the best possible post processing method and perfect surface finishing solutions.

As specialist for surface finishing of work pieces created with conventional production methods, Rösler has worked on the development of post processing and finishing solutions of AM components for quite a few years, regardless of whether these parts are made from metal, plastic, ceramic, sand, composites or other. For quite a while our in-house labs and test centers, along with external partners, have worked on developing solutions for automated and dependable post processing and surface finishing of additive manufactured parts. Be it the removal of support structures and sintered powder from the surface, surface cleaning and smoothing, edge radiusing, high gloss polishing or surface preparation for subsequent coating. Of course, these activities also include the development of suitable compounds and media. With the foundation of AM Solutions, the new brand name within the Rösler group, the company has now gone one step further. The new division offers a comprehensive range of services and solutions for the entire AM manufacturing chain. These include support for optimizing the design and actual production of the 3D printed work pieces, advice about suitable hardware and, of course, equipment, processes and suitable consumables for post processing and surface finishing.

Launch of the Rösler AM Solutions at the Formnext 2018 in Frankfurt a.M., Germany

Cooperation with renowned industrial partners

To achieve this goal Rösler works closely with companies who are at the forefront of innovation and technology in their respective fields. For example, in close cooperation with Hirtenberger Engineered Surfaces, an innovative system for fully automatic post processing of parts printed from all kinds of metals and metal alloys like titanium, aluminum, stainless steel and Inconell, could be developed. The Plug-and-Play machine allows the combination of different processing methods including, for example, the patented Hirtisizing®. After printing and thermal treatment the work pieces are fed into the machine, where they are "post processed" automatically. Depending on the required functional and cosmetic surface finishes, in a first step support structures and sintered metal particles on the part surface are removed with the chemical/electrochemical Hirtisizing® and the surface is pre-smoothed. In a second step, the so-called High-Polishing, very smooth surface finishes are achieved within the specified surface roughness readings and without unwanted radiusing of the edges. Alternatively, high gloss finishes can also be created. After the surface finishing process the work pieces are ready for further processing without having to undergo a cleaning or other intermediate step.

AM Solutions also cooperates with Post process Technologies, a company located in Buffalo, USA. The solutions developed by this company are utilized for removal of support structures and surface smoothing. The processes are adapted to individual AM manufacturing methods: The process parameters like specific surface areas on the work piece, process duration and intensity are defined by the underlying 3D printing operation. This technology is pre-dominantly utilized for post processing of AM plastic components. However, it also allows treating metallic AM components.

Another AM Solutions partner is the Spanish GPAINNOVA. With the DryLite technology this company has developed a system for single stage, fully automatic surface smoothing and polishing – up to mirror polishes -- of metallic AM components by the ion transport of free solid particles. In contrast to electro-polishing the DryLite method does not use liquid electrolytes but solid granules. These can penetrate most component surface areas including cavities allowing the partial finishing of internal work piece contours. This process creates homogeneous surface finishes without grinding patterns and micro scratches. The original work piece shape is not affected and the required dimensional tolerances are fully met.

For 3D printed plastic components our partner company Cipres, located in Ahorn, Germany, offers the e-coloring method for coloring, infiltration of plastic surfaces and the surface refinement by the BLAST™ process (Boundary Layer Automated Smoothing Technology). The knowhow and required equipment for this system is supplied by Cipres.

Partnerships for development and research projects

In its search for new and improved post processing solutions, including surface finishing, AM Solutions is also participating in various research projects. One of them, initiated by SKZ, the center for plastic materials in Würzburg, is a study that deals with "the effect of post processing on the mechanical properties of laser sintered components". Another partnership is planned for the research and development project "Industrial use of the powder based additive manufacturing of plastic components utilizing the HSS system", which was initiated by the Fraunhofer institute for production technologies and automation IPA in Bayreuth. AM Solutions will also be part of the project "Development of coating methods for 3D printed components" that is led by the Fraunhofer institute for machine tools and work piece shaping technologies IWU in Zittau.

Besides these project-specific partnerships AM Solutions also maintains more general development co-operations with the university in Milan and various industrial companies in the fields of aerospace, medical engineering and automotive. These focus mainly on the development of industrial solutions for various tasks in the field of post processing and surface finishing of 3D printed components made from all kinds of materials. Last but not least, Rösler also supports students who are writing their term papers and thesis in this field.

Your contact person:
Mr. Manuel Laux
Head of Business Development
m.laux@rosler.com
+49 9533 / 924-9080

CIPRES GPAINNOVA hirtenberger Engineered Surfaces POSTPROCESS Automated. Intelligent. Comprehensive.

Lean Transformation

A milestone towards becoming the world's best customer oriented company in the field of surface treatment

Visions do not become reality by just wishful thinking. With a massive internal Lean Transformation project Rösler is on its way to implement the vision of becoming the world's best customer oriented company in the field of surface treatment.

The goals of Lean Transformation are clear and ambitious: Further improvement of the product and service quality, improvement of order processing with the goal of shorter delivery times and increased productivity resulting in higher customer and employee satisfaction and the creation of safe jobs. To implement these ambitious goals, the Lean Management team for the two divisions, mass finishing and shot blasting, along with various interface areas, has started the Rösler (R)Evolution project. It is worth noting that this team, formed in 2016, has now grown to 4 team members. The (R)Evolution project extends to all areas in the company including the sales and manufacturing branches on all levels. It consists of a holistic, systematic approach including the utilization and implementation of various Lean-Management tools. By highly structured communication, shop floor management, introduction of the continuous improvement process and intensive employee coaching the two divisions and respective departments are interlinked with each other. Irrespective of the high workload in the equipment manufacturing and consumables sectors this project is implemented with the highest priority. It has aready produced streamlined processes in various administrative and operational areas, for example, in engineering and equipment assembly. Processes and work places, accompanied by regular workshops, are reorganized and further optimized on the basis of common standards. With our new, internal logistics concept material, tools and assemblies are staged according to the latest Lean aspects and the principle of "Best Point", utilizing state-of-the-art transport systems. Higher productivity will also be achieved by recognizing mistakes and the continuous search for wasteful activities in the various processes. The refinement of structured communication improves the information flow among the employees and generates increased transparency in the projects department resulting in faster reaction times. An important aspect is the development of a multi project management with clearly defined tasks, authority and responsibilities for the various processes. The Lean Transformation activities have not only accelerated at our main manufacturing location in Untermerzbach. In spring 2018 the company has also begun including the sales and manufacturing branches in the Rösler (R)Evolution. Various processes were analyzed, employees were trained, and we started to jointly search for areas of improvement and implement the findings. By continuously implementing the developed Lean Transformation concepts Rösler is coming closer to achieving its vision of becoming the world's best customer oriented company in the field of surface treatment.

Your contact person:
Mr. Frank Wagner
Head of Lean Management
f.wagner@rosler.com
+49 9533 / 924-9921

Comprehensive service improves efficiency

Securing long-term process stability, cost efficiency and high uptimes

High process stability and equipment uptimes are key factors for efficient, customer-oriented manufacturing operations. To assist in meeting these criteria Rösler offers a comprehensive service package, of which spare and repair part management is an essential component.

Be it mass finishing or shot blasting – market demands for top quality, high productivity and cost efficiency can only be met by perfectly defined processes, high equipment uptimes and absolute process stability. Recognizing the importance of these demands, Rösler provides a wide selection of different services including, not only individual process and equipment development in specialized test centers, but also customer-specific engineering and quick, trouble-free commissioning of new equipment. "Last summer we purchased a tandem high-energy mass finishing system, type FKS 35, directly linked to an industrial washing machine for which we developed, in close cooperation with Rösler, a brand new work piece loading concept. Key activities like the initial engineering, linking the various equipment components, software development as well as installation and commissioning, went like clockwork. The system we came up with is quite sophisticated, yet easy to understand and operate by our people", reports Uwe Roos, who is responsible for mass finishing and cleaning technologies at Schaeffler Technologies AG & Co. KG in Homburg, where six of these lines are currently in operation. Of course, this intensive support does not end with the commissioning but lasts through the complete life of the equipment. It ranges from regular maintenance and equipment modernization programs to adapt the machinery to market demands like improved energy efficiency, increased capacity and quality improvements, to the Rösler Academy offering special training courses for machine operators and maintenance personnel.

Well equipped & staffed service departments guarantee quick turn-around times

Highly qualified, well trained and experienced technicians in the mass finishing and shot blasting service teams at our Untermerzbach location as well as 15 branches around the world make sure that in case of scheduled repairs or emergencies the customer equipment is up and running again in no time. In Untermerzbach alone more than 100 employees work exclusively in customer service. Uwe Roos adds: "Since we have been working with Rösler equipment for a long time, our service people are perfectly familiar with the ins and outs of the machinery. In those cases where we need special support from Rösler, we always get it promptly, be it by phone or on-site visits by the company's service engineers." Equally important for high uptimes of the customer equipment is the comprehensive stocking of spare and wear parts. The resulting high availability allows for quick shipment of stock items. Depending on the destination, customers frequently receive their ordered parts on the next day. In special situations requiring an even quicker reaction time, a network of specially selected courier services allows for extra fast delivery. This is confirmed by Uwe Roos: "Whenever we need spare parts extra fast, the Rösler service team leaves no stone unturned to resolve the problems immediately. This also includes shipping of spare parts by express delivery service." For spare and wear parts that are not stocked and components for somewhat older mass finishing or shot blast machines, the customers benefit from the high manufacturing depth at Rösler. These components can be submitted to engineering and manufacturing with a high priority ensuring that the lead times are surprisingly short. Another possibility to minimize equipment downtimes are spare and wear part packages stocked on site. Such packages are prepared by the service department with the specific requirements of individual customers in mind. By this forward thinking approach the required parts are instantaneously available – be it for a scheduled preventive maintenance or an equipment repair, thus drastically reducing the equipment down times.

Top quality ensures long equipment life

Besides their high availability and quick delivery, original Rösler spare and wear parts are also characterized by their competitive pricing and high quality, "made in Germany". By utilizing original Rösler parts the customers are also protected with respect to product and manufacturer liability, as the use of original parts allows the customers to fully meet the legal operator obligations for manufacturing equipment and material. Moreover, original Rösler spare and wear parts contribute to a long equipment life, short down times and reduced repair costs. In various customer surveys the high uptimes of Rösler equipment received an especially positive evaluation. In the customers' production processes high uptimes improve productivity, help reduce the costs per piece and generate substantial added value.

Your contact person:
Mr. Jörg Lässig
Manager Service Mass Finishing
j.laessig@rosler.com
+49 9533 / 924-355

Your contact person:
Mr. Uwe Konitz
Manager Service Shot Blasting
u.konitz@rosler.com
+49 9533 / 924-370

Rösler Academy expanding rapidly

Another milestone of the young history of the Academy will be reached soon: During summer of 2019 the Academy will move into brand new facilities. A total area of 1,400 qm (14,000 sqft) offers space for four training rooms with a reception and catering section, as well as additional offices. With the addition of this modern training facility, Rösler Oberflächentechnik GmbH is well prepared for the increasing demand for its customer training seminars.

The training seminars impress the participants by their entertaining and effective transfer of knowledge

Since fall 2017 the central training center of the Rösler group offers special customer seminars in the field of mass finishing and shot blasting to complement the service portfolio of this system provider. In 19 different training segments the participants acquire not only basic knowledge of mass finishing and shot blasting technologies, but they also learn the technical details of different machine types, special processes like shot peening or process water recycling and equipment maintenance. There are even seminars covering specific industries. The trainers, who have undergone special Train-to-Trainer courses and are certified by TÜV, are able to communicate complex technical details in an effective, easy to understand manner. So far the feedback by the participants has been excellent: The seminars of the Rösler Academy received on average 9.3 out of 10 possible points for professional knowledge, methodology and organization. Within the framework of re-certification by TÜV Rheinland the Academy has voluntarily committed to have its training staff further trained and thus, further improve the quality of its seminars. The goal is to provide the customers with a significant competitive edge by an effective knowledge transfer.

The new building is not the only a reflection of the success of the Academy but the seminar program will also be expanded by courses in Lean Management. These will help by preparing our business partners to successfully establish integral and efficient manufacturing systems within their own operations. Moreover, the training seminars will be taught in English, allowing the Rösler Academy to enter the international stage. This will allow our international business partners and customers to take advantage of the comprehensive experience of our certified training staff and profitably apply the acquired knowledge to their own operations.


Rendering of the new building of the Rösler Academy

Your contact person:
Mrs. Anna Moschall
Head of Rösler Academy
a.moschall@rosler.com
+49 9533 / 924-9918

Sales agents – The bond between the customers and Rösler

A philosophy beyond the mere technical business aspects

Oliver Schips, since 2001 managing director of the sales agency Josef Münch GmbH, has successfully represented Rösler for many years. Besides offering a broad range of products and processes it has been a sales philosophy of going beyond the mere technical business aspects, which has created a Win-Win situation for everyone involved.

The Josef Münch GmbH sales agency, located in Nuremberg, has been in the business of surface treatment since 1986 with a range of complimentary products. This includes shot blasting, mass finishing, preservation lines and Rösler consumables, for all of which the Josef Münch GmbH is the first initial contact in Northern Bavaria. This agency services a wide range of customers including, global players, midsize companies, as well as small and local businesses.

The customer comes first

Oliver Schips has worked for Josef Münch GmbH since 1997 and took over the business from the founder in 2013. He sees various aspects of the business, which makes his sales strategy a Win-Win situation for the customer, Rösler and himself. The customers expect not only knowledge about their respective market and industry but also a good understanding of the requirements and needs of the potential buyers. This includes looking at all angles of the customer's manufacturing processes and offering advice about which process stages have the potential for improvement. This is confirmed by Felix Dörfler from Dörfler & Schmidt Präzisionsfinish GmbH: "For the past 20 years the Münch sales agency has been our first contact for all of our mass finishing needs. In our decades long cooperation we always appreciated the deep technical knowledge and personalized advice reaching from the planning phase all the way to the start of production". For Jörg Götz from the Scherdel Waldershof GmbH & Co KG other important positive aspects of his cooperation with Münch are the philosophy beyond the mere technical aspects and a nearby location: "We always get competent, solid advice, also for special finishing solutions. Whenever needed, Mr. Schips is available and even helps us with problems on the shop floor". For Martin Eckert, production manager at H & E Büschel GmbH, another aspect is the knowledge of the internal organization at Rösler: "Mr. Schips is the go-to person for the right contact at Rösler. This helps tremendously to resolve problems and finish tasks faster and better to the satisfaction of everybody".

Relationship manager for the industrial enterprise

A significant factor determining the success or failure of a sales agency is a product range matching the market requirements and comprehensive sales and service support by the supplier. Oliver Schips points out: "With Rösler we have a highly innovative partner offering a broad range of products and finishing processes. The large spectrum of possibilities and solutions available to us, for example, the test centers, application engineering or the Rösler Academy, create an environment that allows us to always meet the customer requirements". As sales agent Oliver Schips is not only the sales specialist for Rösler but also identifies technical changes, new customer demands and market trends at a very early stage. This allows him to provide important information for the company. Oliver concludes: "Since Rösler is always open for new developments, in the test centers we can jointly experiment with processes whose outcome is not yet clear, when we start them".

Your contact person:
Mr. Oliver Schips
Sales Agency Josef Münch GmbH
o.schips@jm-schleiftechnik.de
+49 911 / 376673-15