Stable, efficient and flexible treatment of precision parts

In recent years the technical requirements for finishing the surface of complex, high-value components have become a lot more stringent. Because of increasing competitive pressures customers are not only demanding stable finishing processes with perfect results but also a higher degree of automation. Rösler meets these requirements with innovative solutions for the efficient, automated processing of precision components, even regarding targeted finishing of specific surface areas on work pieces.

Our expansion strategy continues!

For decades mass finishing methods have been successfully used for deburring, edge radiusing, surface smoothing and polishing of mass produced parts in batch or continuous feed systems. Nowadays, however, there is a growing demand for the defined finishing of single, high value components with complex or frequence surfaces that cannot touch each other during the process. For the reliable and efficient treatment of such components Rösler offers various new and improved systems, which guarantee absolute repeatable finishing results.

Shot Peening – blasting for longer component life

Efficient shot peening of gears and shafts with consistently uniform results

High quality shot blast solutions at low costs

Perfect shot blasted forged and cast work pieces

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Surf Finisher – the new standard for precision surface finishing

With its many technical features the innovative Rösler Surf Finisher operates completely new possibilities for the precise, targeted dry or wet surface treatment of complex components. The heart of this finishing center consists of one, occasionally, two robots and a rotating work bowl filled with specially selected grinding or polishing media. The work bowl comes in different sizes allowing the treatment of relatively large components in the similar manner, entirely touchless finishing of multiple work pieces. The robot fulfills two functions: For one, equipped with a specially designed gripper it performs a material handling task. In a second function the robot guides the working pieces through the processing media in programmed movements, including defined treatment angles, different immersion depths and rotary motion. This flexibility allows the targeted finishing of specific surface areas on the work pieces. During the complete process the work bowl with the processing media is also rotating at a speed of up to 80 RPM. The actual speed is determined by the work pieces to be treated and the respective finishing task. The robotic movement and the work bowl rotation create a “surfing” effect with a very high pressure between work piece and media. This pressure with the concurrent intensive surface smoothing effect produces perfect finishes within relatively short cycle times. Even with complex work piece geometries surf finishing generates surfaces readings of as low as Ra = 0,04 µm (1,6 µm asinhed)

High-Frequency Finishing – perfect and quick surface finishes through vibration

Highly effective drag finishing technology for fully automatic deburring of a variety of different-sized tool bodies. The custom engineered system consists of two interlinked drag finishes with six (6) working stations each and a robot that fully automatically mounts and dismantles the components to and from the work pieces.

Optimized drag finishing process with fully automatic work piece handling

Fully Automatic Processes!

This concept was implemented at Walter AG. This globally active company and leading supplier of precision machining tools uses Rösler drag finishing technology for fully automatic deburring of a variety of different-sized tool bodies. The custom engineered system consists of two interlinked drag finishes with six (6) working stations each and a robot that fully automatically mounts and dismantles the components to and from the work pieces. To ensure that no crash occurs electronic initiators continuously monitor the correct pneumatic coupling of the work pieces to the spindles. Different tool bodies are “dragged” through the stationary processing media at different speeds, immersion depths and treatment times in line with preset programs stored in the PLC. After completion of the cycle the robot removes the tool bodies, moves them to a rinse cleaning station and then deposits them on a tray. This new Rösler drag finishing system allows fully automatic dry or wet processing without the work pieces ever touching each other. To date such components mostly had to be deburred, smoothed and polished manually, which is not only costly but produces somewhat erratic finishing results. The new technology represents a significant milestone towards the stable and efficient surface finishing of orthopedic implants, geared components, machining tools and all kinds of automotive and aerospace components.

Fully Automatic Processes!
High quality shot blasting solutions at low costs

Nowadays, due to competitive pressures, many manufacturers invest only in plant and equipment, when their order books allow it. At the same time they also reduce the outsourcing of manufacturing capacity. Rösler is responding to this growing trend with an expansion of its range of economical standard shot blast machines.

High manufacturing depth and lower equipment costs go hand in hand. The term “standard” means that these machines are pre-configured for different types of shot blasting requirements and that they can be adapted to individual customer needs and equipment requirements – including complete process control. The machine design is based on a proven swing table principle with two (2) work positions. The barrel-like engine block shot blast machine has two blast chambers. This allows the simultaneous shot blasting and loading/unloading of the work pieces. Two independent blasting stations are at the center of this crankshaft blast-cleaning system. Two independent blasting stations are at the center of this crankshaft blast-cleaning system. Two independent blasting stations are at the center of this crankshaft blast-cleaning system. Two independent blasting stations are at the center of this crankshaft blast-cleaning system. Two independent blasting stations are at the center of this crankshaft blast-cleaning system. Two independent blasting stations are at the center of this crankshaft blast-cleaning system. Two independent blasting stations are at the center of this crankshaft blast-cleaning system.

shot blasting is strongly recommended to be used for high-strength steel and exotic materials. shot peening is a proven shot blasting concept that can be economically applied to a wide range of materials. it can improve the fatigue resistance of components and it is especially suitable for hot forming. shot peening is known as a cost-effective alternative for conventional methods such as hammering and forging. The way to ensure that shot peening is perfectly adapted to the material and the shot peening objectives, the compressive stress values achieved during the shot peening process are accurately measured and documented. Key diffraction technology allows for a highly accurate and reliable method to measure such compressive stress measurements. The unique work piece layers made up of shot peening, forming, partial crystalline structure of the shot peening process, even for large work pieces can be analyzed almost at the same time using the Bragg equation for measuring the compressive stress values. Multiple measurements with different angle settings ensure that the compressive stress measurements are highly accurate.

The Rösler shot peening system offers excellent wear characteristics. The blast chamber is made from wear-resistant manganese steel. In the direct shot blast area it is clad with a wear-resistant plate. The blast media that are used are supplied from the blast media storage hopper. Further systems ensure that the compressive stress readings during the shot peening process can be analyzed almost at the same time. Multiple measurements with different angle settings ensure that the compressive stress measurements are highly accurate. The Bragg equation for measuring the compressive stress values is used for such measurements.

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The new x-ray diffractometer in the Rösler test center allows the simultaneous shot blasting and loading/unloading of the work pieces.

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The new x-ray diffractometer in the Rösler test center allows the simultaneous shot blasting and loading/unloading of the work pieces.
**Shot peening increases the uptime of times on soil cultivation implements**

Equipment for soil cultivation is exposed to extreme loads. In order to increase the life of parts like tines, Andersen Steel Sp. z o.o. is blast-cleaning and shot-peening these products in equipment built by Rösiel.

Andersen Steel supplies tines and wear parts to agricultural implements like cultivators, grubbers and front packers equipped with vibrating components that can be found in drive trains and other rotationally symmetrical components. The technology was developed to ensure a high efficiency of the finishing process. The latest version of the Rösiel TSD 2000 C-series is equipped with a so-called TSD (Tub Surface Treatment) system, which to date was finished manually, also utilizing large vibratory systems from Rösiel. The processing tub is up to 425 and a length of 7,400 mm (17‘ x 292”) is equipped with a pneumatic lifting device, which greatly facilitates the work piece handling and complete tub length with multiple inlets. The processing tub vibrator Rösiel offers a highly effective solution for the automatic finishing of large and heavy angle work pieces.

One would have expected that surface finishing by hand disappeared from the industrial landscape a long time ago. But this is not so at all. Manual deburring and surface smoothing is still the prevailing method for finishing the surface of very large, heavy and delicate components. Application of shot peening produces somewhat inconsistent surface finishes, whereas automatic finishing of heavy parts is usually utilizing large vibratory systems from Rösiel. The processing tub is equipped with a pneumatic lifting device, which greatly facilitates the work piece handling and complete tub length with multiple inlets.

**Gentle single part processing in large vibratory systems**

The deburring, edge radiusing and polishing of large, long, heavy and, at the same time, delicate components, usually poses a considerable technical challenge. This challenge can be met head-on with large vibratory systems from Rösiel, which allow the cost effective processing of large, single components with absolutely repeatable finishing results.

**Perfect surface finishes for parts produced with additive manufacturing**

Additive manufacturing, the creation of 3D objects by using a series of layered material layers, permits the production of complex individual components from various materials like, nickel alloy, titanium, stainless steel and precious metals. It permits the creation of shapes and geometries, which are not possible to be produced by deep metal cutting. Thanks to the surface finish of parts created with additive manufacturing, manufacturers do not have to impress two or three layers of metal into the part. The open exent is a new application for very gentle surface finishing of such components. When the component is part of a product with other geometries and surface requirements can be achieved by the use of inhouse finishing solutions. The test and development center will assist you in resolving any surface finishing issues you may encounter with this new manufacturing technology.
In this edition of the CHIP magazine we want to briefly introduce you to the latest additions to our global sales and service network: China (2004), Romania (2006) and India (2008).

Rosler SurfaceTech (Beijing) Co., Ltd – After serving the Chinese market through an external sales agency for several years, in 2004, we decided to establish a small Rosler office in Beijing. Followed by another one in Shanghai. In the meantime, both locations have evolved into fully owned limited companies with 17 employees. To be able to better serve our Chinese customers, we maintain a local warehouse with a sizeable stock of media and spare parts.

Rosler Romania SRL – This sales branch, after rather modest beginnings with a small rented space in a forwarding company, was founded in 2006 as a fully owned subsidiary of Rosler Austria. Today, nearly 10 years later, Rosler Romania employs a team of 12 people in administration, the job shop, test lab and warehouse. Besides Romania, the team also covers the markets in Bulgaria and Moldavia.

Rosler SurfaceTech Pvt. Ltd., India – In 2008 Rosler set up a sales branch in Bangalore in the form of a "registered office". This was followed by the establishment of a manufacturing facility in Pune with 3,500 sqm (35,000 sqft) complete with a job shop, warehouse and offices. Since then the company has been successfully manufacturing mass finishing and shot blast equipment for the Indian market. Currently, our Indian operation has a staff of 45 employees.

Get to know us better!

https://vimeo.com/143602812

Do not hesitate to contact our global specialists!