RÖSLER®
finding a better way ...

Surface finishing of orthopedic implants and medical instruments

Vibratory finishing systems, working in perfect harmony

*When it comes to dealing with surface finishing and surface preparation problems, Rösler offers **the process solution**! Our customers can choose between two processing technologies, **Vibratory finishing** or **Shot blasting**, which offer virtually unlimited possibilities. Through extensive processing trials, we always find the right finishing solution for our customer's needs.*

This includes not only the development of a specific finishing process, but also the selection of the right equipment and consumables. We deliver the solution to satisfy your surface finishing requirements. Our success in the market proves that we are right. It is not by chance that our innovative developments and our high quality standards have established Rösler as the world technology and market leader in surface finishing and shot blasting.

In more than 60 countries we support our customers with a closely-knit network of Rösler subsidiaries and sales representatives.

We are the only company in our field operating test and demonstration centres throughout the world. This allows us to run test trials under real production conditions close to our customers. This offers several advantages: Our customers save time and money, and at the same time – through our professional processing trials and advice – they are assured of receiving the best process solutions and products available on the market!

Test centres around the world

The test centre for mass finishing and shot blasting at the headquarters of the Rösler group in Untermerzbach, Germany has:

- Nearly 100 different mass finishing and shot blast machines
- On an area of about 2,700 m² (27,000 sqft)

You will find similar test centres and expertise at our branches in USA, UK, France, Benelux, Spain, Turkey, Romania, Italy, Austria, Switzerland, Russia, South-Africa, India and Brazil.

Complete process solutions

The perfect combination of consumables and machinery guarantees absolute process integrity.

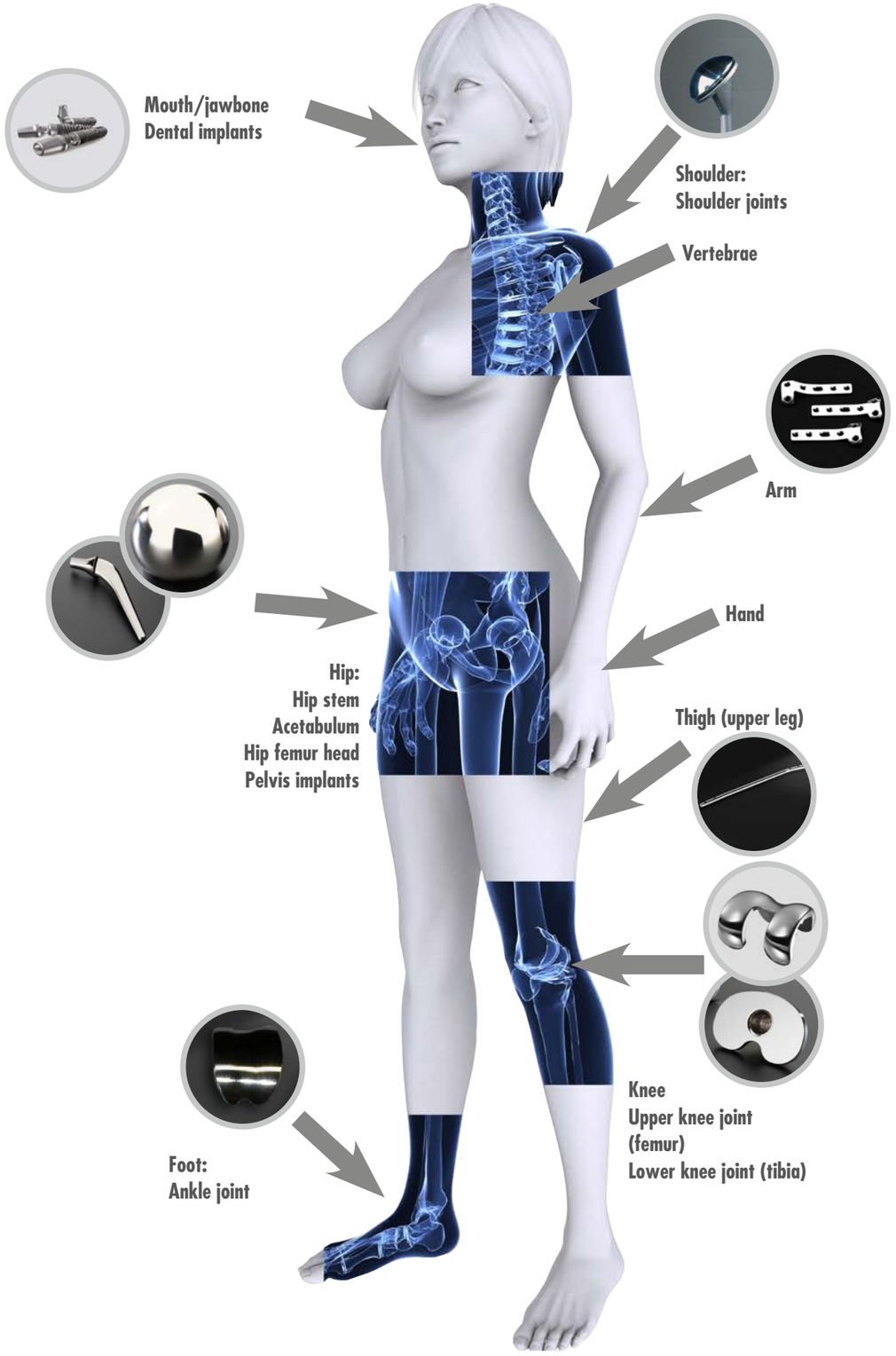
- Effective and efficient combination of differing surface treatment technlogies
- Our trained service teams ensure trouble free equipment installation and commissioning
- Comprehensive training of your staff
- After commissioning, our after-sales experts will assist you round the clock

Team spirit

Rösler is a dynamic company, in which the initiative and commitment of each single employee plays a key role. Systematic, ongoing training and a cooperative management style combined with a lean organisational structure are key elements of our people orientated philosophy. Naturally, our comprehensive apprentice program ensures that today we are already grooming the skilled employees of tomorrow.

DIN EN ISO 9001 and 50001

Fields of application / Examples of applications



Overview

Medical engineering

Casting, forging, injection molding, sintering, rapid prototyping and machining are the traditional production methods for manufacturing orthopedic implants, bone plates and medical instruments. All types of equipment, instruments, tooling and fixtures in the medical field have one thing in common: Precision, reliability and sustainability.

For more than 30 years the Rösler surface finishing methods have been an essential part of the orthopedic implant manufacturing technology.

In a team and technology oriented cooperation with nearly all leading companies in this industry we have been developing surface finishing solutions for their constantly evolving strict technical requirements.

High quality surface finishes

Right from the beginning the mass finishing technology played an essential role in finishing the surface of medical instruments and implants like knee joints. And over time Rösler was able to adapt its finishing methods to the changing work piece materials, geometries and sizes.

Dimensional accuracy, functionality and optimum surface finishes have always been at the center of the Rösler R & D efforts in the field of medical engineering. A major breakthrough was achieved with the adaptation of the Rösler drag finishing technology for orthopedic implants and other medical products. The reasons for their overwhelming market success are the significantly reduced finishing times, simple work piece handling, absolute process repeatability and perfect surface finishes.

The total solution from Rösler

The globally active Rösler group develops and manufactures mass finishing and shot blasting equipment, wastewater treatment/process water recycling systems as well as grinding & polishing media and compounds. Strictly defined and controlled production methods are the basis for our high quality standards.

HAAS Schleifmaschinen GmbH & Rösler Oberflächentechnik GmbH

Orthopedic Implant Alliance

... a technological partnership with comprehensive knowhow in the production of orthopedic implants ...

Precision grinding and milling in the field of machining/shaping of orthopedic implants (knee and hip joints) combined with the special drag finish surface finishing technology produce top quality end products from the raw castings or forgings. The result is an absolutely repeatable and highly economical manufacturing process without any interface issues or costly manual labor.

Your risk free alternative – without any technical experiments!

Drag finishing – the choice for impingement free surface finishing

The major design criteria for orthopedic implants are their functionality and their best possible biocompatibility. After the initial milling and grinding process the raw work pieces undergo a fine grinding and polishing operation in a Rösler drag finisher without ever touching each other. This operation not only eliminates all machining traces, it also creates a perfect surface finish. Depending on starting surface conditions, two or three process stages may be required to achieve the required high gloss finish with surface roughness readings of Ra < 0.2 µm.
The drag finishing process is highly flexible and can be easily adapted to the various implant variants and sizes. It does not require any costly and time-consuming equipment programming and, above all, offers absolute process consistency!

Drag finishing system

Which components can be finished?

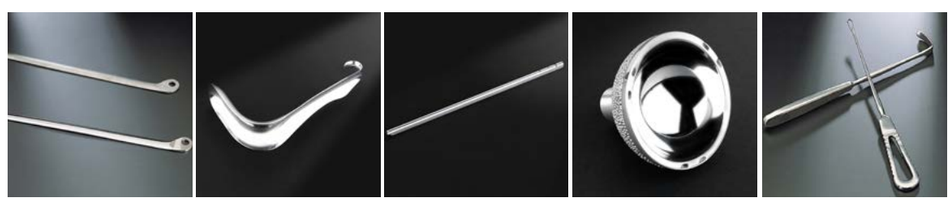
- Knee: Femur and tibia
- Hip: stem and ball joint
- Ankle joint
- Shoulder joint
- Medical instruments
- Prosthetic components

Bone screws, bone plates, surgical instruments, prosthetic components, special implants

To fully meet the patient's needs, bone plates and bone screws as well as prosthetic components must have different shapes and sizes. Instruments, like simple clamps, surgical tools and dental forceps pose a special challenge, when it comes to their surface finish: For hygienic and sterilization reasons their surface must be ground, smoothed and polished without risking their required shape and functionality.
For these difficult tasks Rösler rotary or trough vibrators are the ideal finishing systems. In these machines the parts are completely embedded and freely floating in the grinding/polishing media. The media acts as a cushion against part-on-part contact ensuring an all-around surface finish without having to mount the parts on special work piece fixtures. Only extremely delicate special implants require such fixtures.

Rotary vibrator

Trough vibrator



Dental implants, screws, connecting parts, small bone plates, vertebrae implants

The highly intensive, fluid media/part movement in centrifugal disc finishing machines is utilized to effectively finish small parts. In combination with the specially developed Rösler micro finishing media or other loose media, these mechanical systems produce excellent surface finishes in extremely short cycle times.

Somewhat longer bone screws can also be processed in centrifugal disc finishing systems with work bowl diameters of up to 1,050 mm.

Typical parts for centrifugal disc finishing

- Compression and pedicle screws
- Dental implants, dental implant abutments, dental screws
- Hand and elbow plates
- Femur screws
- Stents
- Vertebrae implants

Centrifugal disc finishing machine: FKS 02.1 - our smallest disc finisher, ideal for finishing very small parts

Centrifugal disc finishing machine: Fast finishing and quick separation – the E/SA machine range

Keramo-Finish® - high gloss polishing

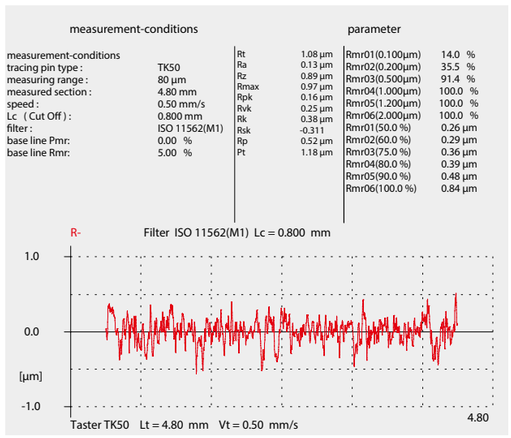
For surgical and obstetric instruments, in the dental field and for cutting instruments (scissors, scalpels) the haptic characteristics; the looks and the surface smoothness are especially important. At the time of its invention in the 1980's the pH-neutral Keramo-Finish® polishing system was absolutely revolutionary. It produces superb end finishes and can be used as an important step prior to creating anti glare surface finishes, electro polishing and PVD coating.

ISF®- REM chemically supported surface finishing

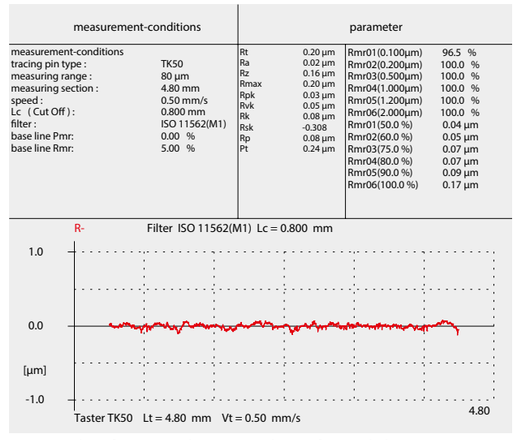
Especially for forceps, scissors and clamps it is extremely important that their geometrical integrity is not compromised during the surface finishing process. Traces from prior production stages must be removed, and a homogeneous, very smooth surface must be created. This special finishing system is the ideal complement to the pH-neutral, traditional mass finishing methods.

Medical equipment and instruments

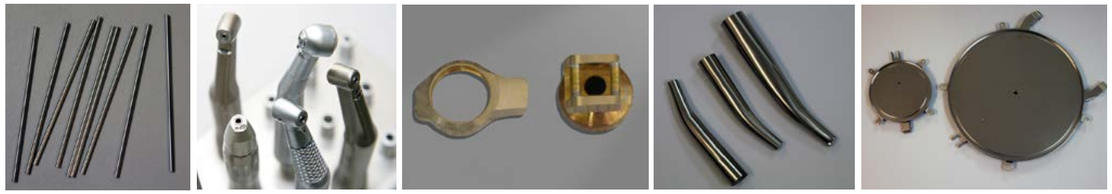
The manufacturing of medical equipment and instruments requires always very fine, smooth, shiny or anti glare surfaces without affecting their dimensional integrity. Deburring and targeted edge radiusing can frequently be combined with surface finishing as preparation for subsequent refinement steps. The respective finishing processes are then implemented in suitable finishing machines, ranging from simple vibrators to sophisticated, automated drag finishing systems.



A typical surface roughness reading prior to polishing



A typical surface roughness reading after polishing



Research & development – service

Finding a better way... our commitment to our customers

Process technology

Mass finishing is a highly flexible surface finishing technology.
It is generally uncomplicated, transparent, repeatable and economical!
Through processing trials in our test centers utilizing the original customer work pieces we develop tailor-made finishing solutions for a wide variety of surface finishing tasks. This approach provides you, the user, with a reliable basis for choosing the finishing process that is right for you.

Test centers all over the world

You can profit from the experience, creativity and knowhow of the specialists in the Rösler mass finishing and shot blasting center nearest to you.
Our promise: The best process technology for your finishing tasks. We support you throughout your search for the process that is most suitable for your requirements. Your visit in one of our test centers and the sample processing of your original work pieces will help you greatly in developing solutions for new finishing tasks or in optimizing existing finishing processes.

Test center mass finishing

Test center shot blasting

For Rösler "service" is much more than just a word

We are there to help you, whenever you may face a technical problem!

Telephone consulting for equipment as well as for process technology helps to quickly diagnose the cause for the problem. Our fast delivery service for spare parts helps to keep equipment down times at an absolute minimum.

Installation, maintenance and repair service:
Our highly trained, mobile field service technicians stand ready to support you.

Technical training:
User training for equipment and process technology can be quickly organized at your work place or at our facility.

Top of the line media and compounds Rösler is the largest supplier of mass finishing consumables in the world

Production

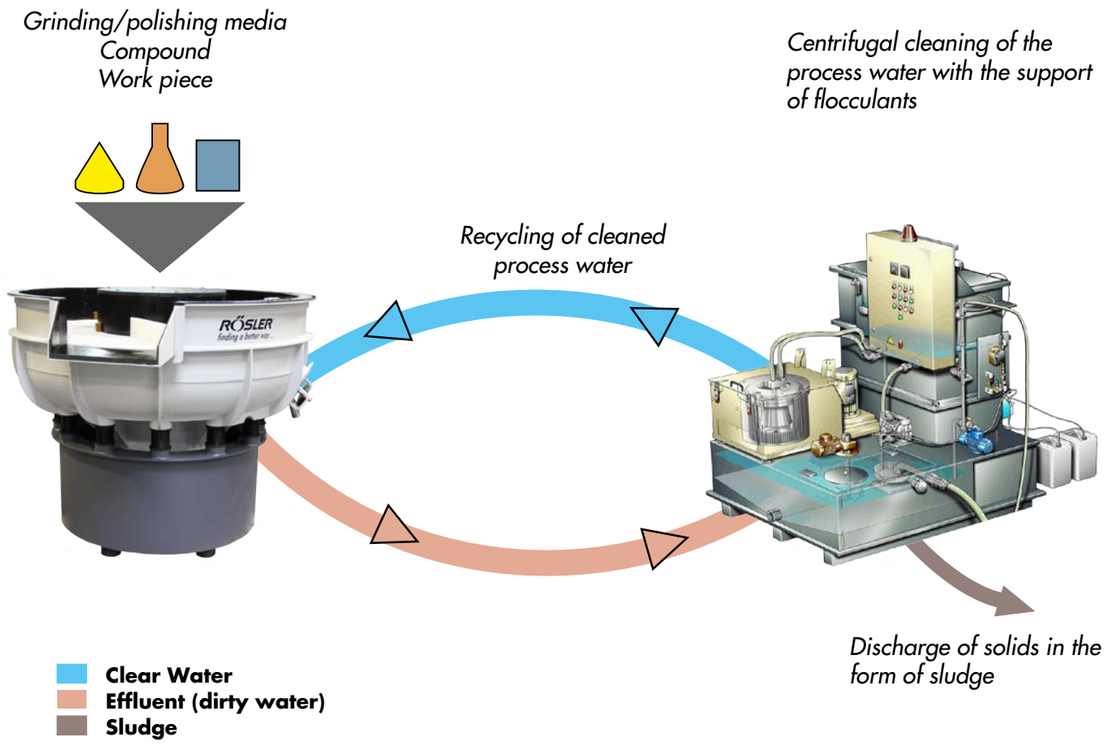
With over 60 years experience Rösler is the global leader in manufacturing ceramic media. We also produce a wide range of plastic grinding & polishing media as well as chemical compounds. Our product portfolio includes more than 8,000 different items. Our quality standards are reflected in tight controls of the production processes and the used raw materials in line with DIN EN ISO 9001. We exclusively utilize environmentally safe materials, and we apply strict ecological standards to all production phases for our media and compounds.

Media and compounds adapted to the finishing process

Only constant technical improvements of equipment and consumables guarantee optimum finishing results. In this respect we are guided by innovations taking place in medical engineering. Working closely with our global customers our research labs and process engineers are developing process solutions that can meet the most stringent finishing challenges presented to us by the latest breakthroughs in medical engineering. Handling of new materials, changing production methods and the search for cost savings are typical challenges we face on a regular basis. A number of our recently developed media and compounds – all produced in house – have been approved along with the respective finishing processes within the strict standards of the US Food and Drug Administration (FDA).
Let us assist you in selecting the media and compounds that are right for your products!

Process water treatment – a contribution to ecological sustainability

Most mass finishing methods utilize water and chemical compounds.
This offers many advantages regarding the efficiency and repeatability of the finishing process. Above all, it keeps the work piece surface clean. Rösler centrifugal process water recycling systems offer many advantages; they are economical whilst helping save water. They are not only economical but also help save water and protect the environment.



Z 800 – semi automatic process water recycling centrifuge

Z 1000 – fully automatic process water recycling centrifuge

Rösler shot blasting technology

Shot blasting is also an important technology for creating different surface finishes on orthopedic implants, instruments and other engineered medical products. Dry shot blasting as well as wet blasting systems optimize the functional surface characteristics of a part whilst improving its looks. Our comprehensive knowhow (too much space) in the field of shot blasting is available to you.

Dry shot blasting

The applications for dry shot blasting range from simple deburring to highly specialized surface finishing tasks. For example, it is possible to roughen the surface of parts for better adhesion of coatings as well as applying highly decorative surface finishes on other parts.

Wet blasting

Unlike dry shot blasting the wet blasting systems work with a mix of fine abrasives and water. This slurry and cleaning additives or inhibitors are "thrown" at the part's surface with special blast guns. This helps to achieve decorative, extremely fine and absolutely homogeneous surface finishes. Robots or CNC systems are utilized for material handling ensuring absolute repeatability of the blasting results. The effluent created by the blast operation can be cleaned in one of our centrifugal filters and can be re-used in the blast process. This helps to drastically reduce water consumption as well as wastewater treatment costs.

Germany
RÖSLER Oberflächentechnik GmbH
Werk Memmelsdorf
Vorstadt 1
D-96190 Untermerzbach
Tel.: +49/9533/924-0
Fax: +49/9533/924-300
info@rosler.com

RÖSLER Oberflächentechnik GmbH
Werk Hausen
Hausen 1
D-96231 Bad Staffelstein
Tel.: +49/9533/924-0
Fax: +49/9533/924-300
info@rosler.com

USA
RÖSLER Metal Finishing USA, L.L.C.
1551 Denso Road
USA-Battle Creek
MI 49037
Tel.: +1/269/4413000
Fax: +1/269/4413001
rosler-us@rosler.com

France
RÖSLER France
Z.I. de la Fontaine d'Azon
CS 50513 – St. Clément
F-89105 Sens Cedex
Tel.: +33/3/86647979
Fax: +33/3/86655194
rosler-fr@rosler.com

Italy
RÖSLER Italiana S.r.l.
Via Elio Vittorini 10/12
I-20863 Concorezzo (MB)
Tel.: +39/039/611521
Fax: +39/039/6115232
rosler-it@rosler.com

Switzerland
RÖSLER Schweiz AG
Staffelbachstraße 189
Postfach 81
CH-5054 Kirchleerau
Tel.: +41/62/7385500
Fax: +41/62/7385580
rosler-ch@rosler.com

Great Britain
RÖSLER UK
Unity Grove, School Lane
Knowsley Business Park
GB-Prescot, Merseyside L34 9GT
Tel.: +44/151/4820444
Fax: +44/151/4824400
rosler-uk@rosler.com

Spain
RÖSLER International GmbH & Co. KG
Sucursal en España
Polg. Ind. Cova Solera C/Roma, 7
E-08191 Rubí (Barcelona)
Tel.: +34/93/5885585
Fax: +34/93/5883209
rosler-es@rosler.com

Netherlands
RÖSLER Benelux B.V.
Reggestraat 18
NL-5347 JG Oss
Postbus 829
NL-5340 AV Oss
Tel.: +31/412/646600
Fax: +31/412/646046
rosler-nl@rosler.com

Belgium
RÖSLER Benelux B.V.
Avenue de Ramelot 6
Zoning Industriel
B-1480 Tubize (Saintes)
Tel.: +32/2/3610200
Fax: +32/2/3612831
rosler-be@rosler.com

Austria
RÖSLER Oberflächentechnik GmbH
Hetmanekgasse 15
A-1230 Wien
Tel.: +43/1/6985180-0
Fax: +43/1/6985182
rosler-at@rosler.com

Romania
RÖSLER Romania SRL
Str. Avram Iancu 39-43
RO -075100 Otopeni/ILFOV
Tel.: +40/21/352 4416
Fax: +40/21/352 4935
rosler-ro@rosler.com

Serbia
Rosler D.o.o
Dr Ivana Ribara 32
SRB- 11070 Novi Beograd
Tel.: +381 11 3184407
rosler-rs@rosler.com

Russia
RÖSLER Russland
Borovaya Str. 7, bldg. 4, office 107
111020 Moscow
Tel. / Fax: +7 / 495 / 247 55 80
rosler-ru@rosler.com

Brazil
RÖSLER Otec do Brasil LTDA
Estrada dos Galdinos 35
Jd. Barbacena
06700-000 - Cotia
São Paulo - Brasil
Tel.: +55/11/46123844
Fax: +55/11/46123845
rosler-br@rosler.com

South Africa
RÖSLER S.A. Surface Technologies
P.O. Box 7949
66 Regency Drive
Route 21 Corporate Park
Irene Ext. 31
ZA-0046 Centurion
Tel.: +27/12/345 2215
Fax: +27/12/345 3731
rosler-za@rosler.com

China
RÖSLER – BEIJING
Office 11N, Tower A, Beijing Fu Hua Mansion
No. 8, Chaoyangmen North Avenue
Dong Cheng District
Beijing 100027 P.R. China
Tel.: +86/10/6554 73 86
Tel.: +86/10/6554 73 89
Fax: +86/10/6554 73 87
rosler-cn@rosler.com

India
RÖSLER SurfaceTech Pvt. Ltd.
Pune Factory No: A-29, Chakan MIDC-Phase 2
Pune-410501
Tel.: +91/2135/690202

Bangalore Office No: 9, Main Road. RT Nagar
Bangalore-560032
Tel.: +91/80 23534445
Fax: +91/80 23339165
info@rosler.net.in

- and more than 156 representations worldwide

RÖSLER®
finding a better way ...

Surface Finishing · Shot Blasting · Engineering · Environmental Technologies

Publ.Nr. GB 253.05 - Specifications are subject to change without notice