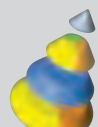


www.rosler.com



***Compact
Centrifugal Disc Finishing Machines***

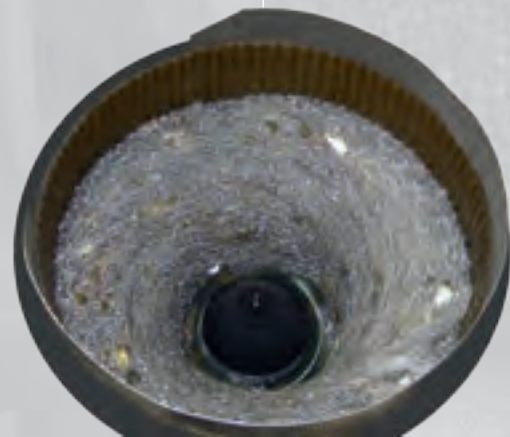
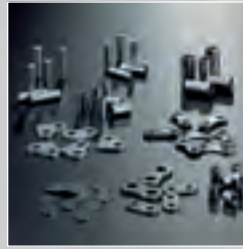
Model range: "E", "E/SM", "E/SA", "E-A"



Compact centrifugal disc finishing machines

When it comes to processing smaller work piece batches, compact centrifugal disc finishing machines represent a cost effective alternative to the fully automatic double batch systems.

They offer many of the standard technical features of the "bigger" machine range. With their space saving footprint and ease of operation these compact units are the ideal complement to conventional vibratory finishing systems. The large model range makes it easy to find the right machine for your specific finishing requirements.



Production of media and compounds

The Rösler product range of media and compounds is by far the most comprehensive in the world. 60 years of constant product development and improvement are the basis for over 8,000 different compounds as well as ceramic and plastic grinding and polishing media. This wealth of problem solving products is available to our customers all over the world.



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Areas of application

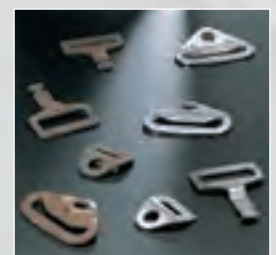
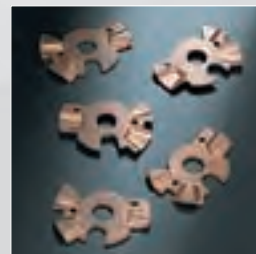
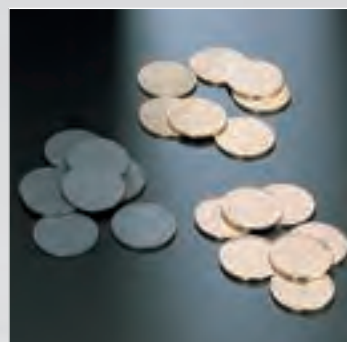
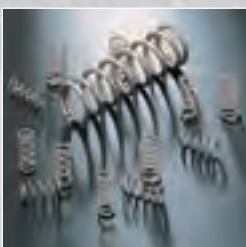
Deburring, surface grinding, radiusing, and polishing of stampings, castings or machined parts with the speed of the centrifugal disc finishing technology: short processing times and a high degree of automation are the major benefits of this finishing technology. It equally allows the finishing of thin spacers with a thickness of 0.2 mm as well as massive gear parts with a length of over 150 mm.



How does it work?

The rotating spinner (60 – 250 RPM) accelerates the component/media mass to the wall of the stationary work bowl and pushes the mass upwards along the work bowl wall. With decreasing acceleration and increasing gravity the mass slides back down to the spinner where it is again accelerated. Depending on spinner RPM and the water level in the work bowl the finishing applications range from aggressive grinding to gentle high gloss polishing.

The high energy disc finishing technology offers a grinding performance which is 10 to 30 times higher compared to vibratory finishing methods.



Overview – key technical features of the Rösler disc finishing technology

Already in their standard version the compact centrifugal disc finishing systems from Rösler offer a whole range of technical highlights qualifying them for practically any surface finishing application. Our application engineers will assist you in selecting the right finishing system for your specific requirements!.

1 Processing unit (work bowl)

- ▶ Flow technology principles were applied for the design of the rotating spinner and stationary work bowl
- ▶ Work bowl and spinner are lined with hot poured, highly wear resistant HE polyurethane. The lining surface is specially structured to provide the optimum “grip” for the work piece/media mass.
- ▶ Depending on the machine type, the gap between work bowl and spinner is either adjusted by set screws around the work bowl perimeter or with a central adjustment mechanism.
- ▶ Temperature sensor in the gap area (optional)

2 Spinner drive

- ▶ High torque electrical drive unit, speed control with frequency inverter optional
- ▶ Spinner bearing sealed against fluid ingress

3 Process water system

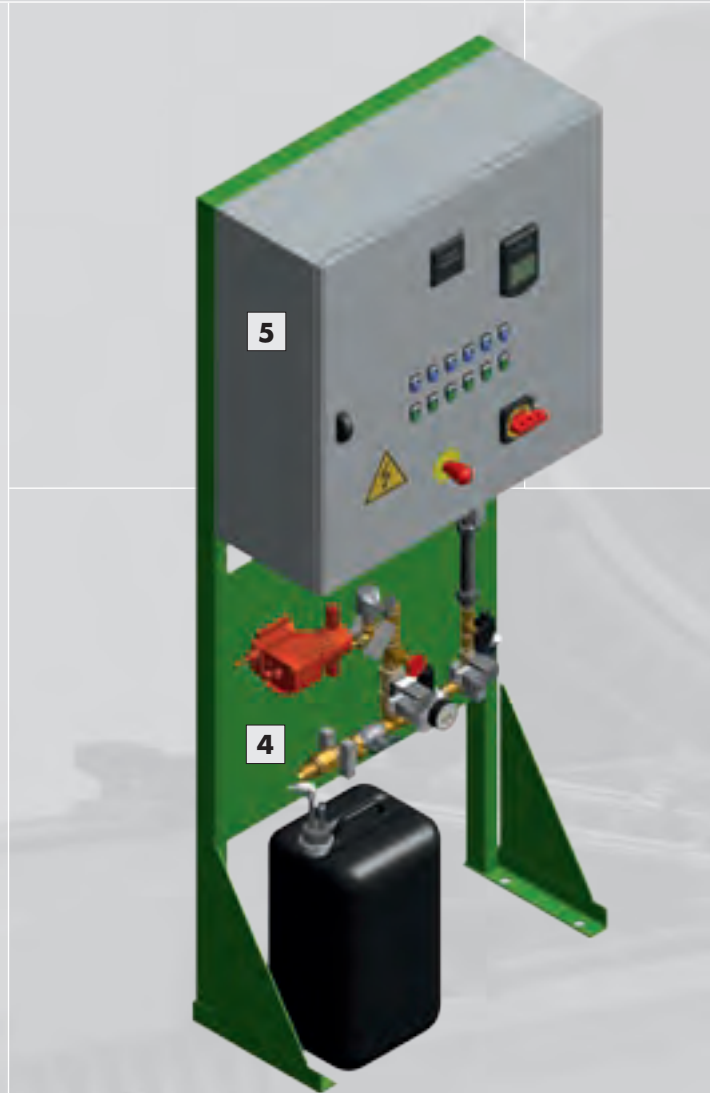
- ▶ All our disc finishing systems can be operated in process water flow-through mode
- ▶ Options are available for PLC controlled automatic process water evacuation from the work bowl with pinch valve; for smaller models with manual drain valve
- ▶ The water levels in the work bowl are adjustable

4 Process water/compound control

- ▶ Dosing system for precise injection of compound and fresh water; alternatively, operation with process water recycling

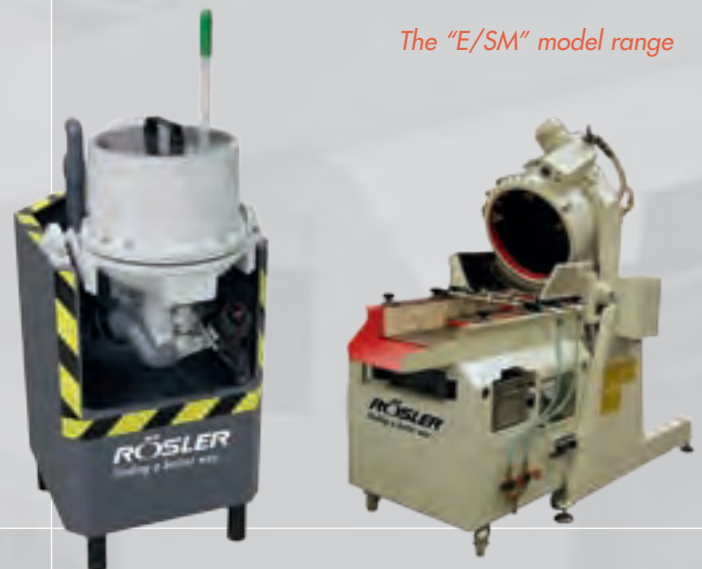
5 Electrical controls

- ▶ Easy to operate contactor controls, alternatively, for various models PLC controls
- ▶ Equipped with push button controls and display units for all machine functions



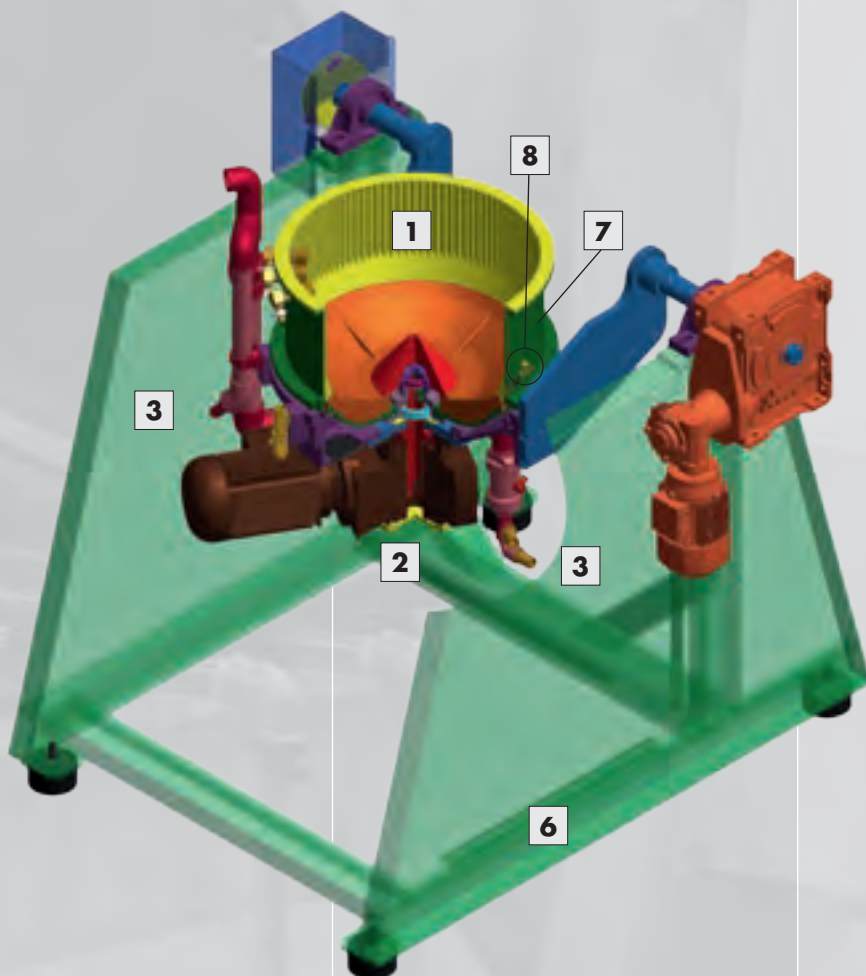
The “E” model range

The “E/SM” model range



6 Heavy duty machine construction

- ▶ Ergonomic, operator friendly design
- ▶ The equipment has extremely high uptimes and requires little maintenance work
- ▶ Whenever technically feasible, the painted machine components are powder coated, otherwise, they are protected with wet paint
- ▶ Modular concept: Various vibratory screening units and other peripheral equipment can be integrated into the disc finishing systems



The "E/SA" model range



The "E-A" model range



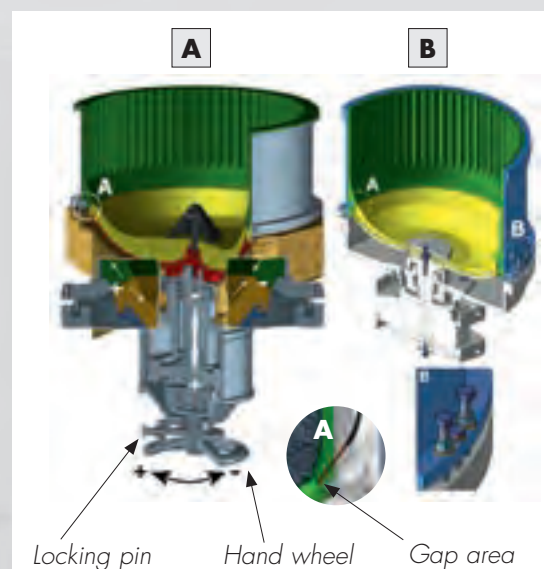
7 Gap area

- ▶ High precision design of the gap area for special applications: Certain applications like paste finishing or dry polishing processes usually require a special, extremely precise design of the gap area between spinner and work bowl. The following materials are utilized:

- hard (carbide) metals / ceramics
- Stainless steel
- Polyurethane with steel base

Gap adjustment

- ▶ **A** Central high precision adjustment mechanism operated by hand wheel (spinner moves up or down)
- ▶ **B** Gap adjustment with set screws around the work bowl perimeter (work bowl moves up or down)



8 Temperature sensor in the gap area

Permanent control of the temperature in the work bowl with automatic machine shut down for preventive protection of the gap area (included in larger models)

Centrifugal disc finishing machines, model range "E"

The model range "E" with its highly compact design can be used with different external separation systems or with no screening unit at all. This machine type allows part-on-part processing as well as the finishing of single parts with direct manual removal of the work pieces from the work bowl. Of course, if required, a screening unit can be added.

This modular system is well suited for special finishing applications. With the addition of a vibratory screening unit that is totally independent from the disc finishing machine, difficult separation tasks, i.e. the separation of parts and media, can be easily completed.



Technical features

Disc finishing unit

- ▶ Modular equipment design
- ▶ With the smaller models the work bowl can be tilted manually or mechanically with a gear motor

Screening system

Various screening systems can be added to the basic disc finishing machine.

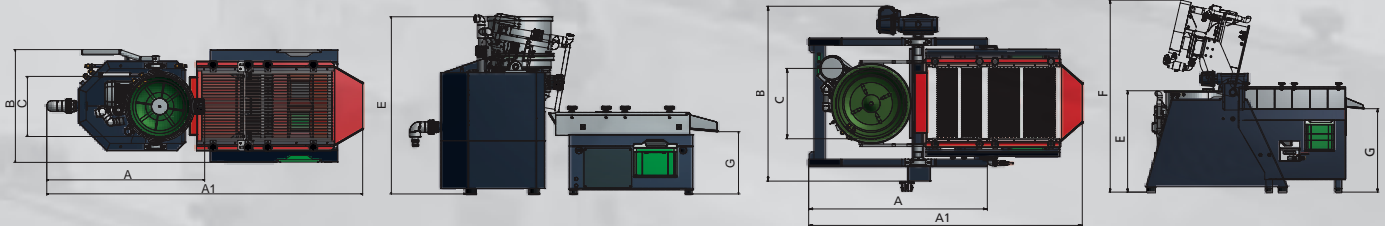
- ▶ Drive system consisting of adjustable vibratory motors; variable motor speed with frequency inverter optional
- ▶ The screens can be changed without requiring any tools; multiple screen types and sizes are available; dual screen levels with work piece tumbling step
- ▶ Spray cleaning units adaptable to specific applications
- ▶ Undersize media separation area below the primary screens with "flutter" screens
- ▶ With the smaller models the media collection bin is usually unloaded manually – unloading by crane is optional

Model range "E" with multiple work bowls and manual screening bin

- ▶ ideal for processing of small parts; requires a very small foot print
- ▶ Available in 1-, 2- and 3-bowl versions



"E" systems are available with fully automatic process controls and large area screening units. The return of the media is done manually.



Model range	FKS 02.1 E	FKS 04.1 E	FKS 04.1 E/M*	FKS 06.1 E	FKS 15.1 E	FKS 35.1 E
A (mm)	962	1129	1126	1399	1600	2225
A1 (mm)	1274	2254	2254	2214	2450	–
B (mm)	551	723	815	1395	1568	1549
C (mm)	288	428	428	496	630	800
E (mm)	940	950	1060	1210	1142	1294
F (mm)	–	–	–	2070	2163	2609
G (mm)	505	266	365	1146	1188	1236
Drive power						
Spinner (kW)	0,75	2,2	2,2	2,2	4,0	11,0
Tilting motor (kW)	Manual	Manual	0,35	0,37	0,75	Hydraulic
Hydraulic motor (kW)	–	–	–	–	–	3
Total installed power (kW)	0,75	2,2	2,55	2,57	4,75	14
Screening machine/vib. motor	–	R 40 SM	R 40 SM	R 9/6 SM-E	R 12/7 SM-E	R 18/7 SM-E
Screen area LxW in mm	–	955 x 540	955 x 540	955 x 540	1205 x 674	1785 x 685
Temperature sensor in gap area	no	no	no	yes	yes	yes
Gap adjustment: Set screws around bowl perimeter	yes	yes	yes	yes	yes	yes
Central control	no	no	no	yes	yes	yes

* With tilting motor; not depicted in the drawing

Centrifugal disc finishing machines, model range "E/SM" and "E/SA"

E/SA –
separation unit
with vibratory
unit fixed directly
to the work bowl



"E/SA" during
the separation
phase

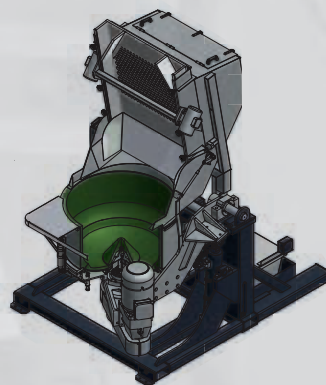


Semi-automatic systems with integrated separation unit

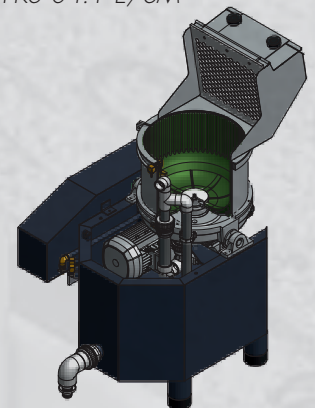
With these 2 model ranges the processing and the media/work piece separation modules are combined into one single unit. This makes the system very easy to operate, especially, because the processing media remains in the system after having been separated from the work pieces. After the separation stage the combined processing/separation module tilts back into the processing position by way of a gear motor, thus, automatically transferring the media from the separation module back into the work bowl – ready for processing the next work piece batch.

- ▶ Machine size 02.1: Separation unit manually operated
- ▶ Machine size 04: Separation unit either manually operated or equipped with vibratory motor
- ▶ from size 06: Equipped with vibratory motor

FKS 15.1 E/SA



FKS 04.1 E/SM



Technical features

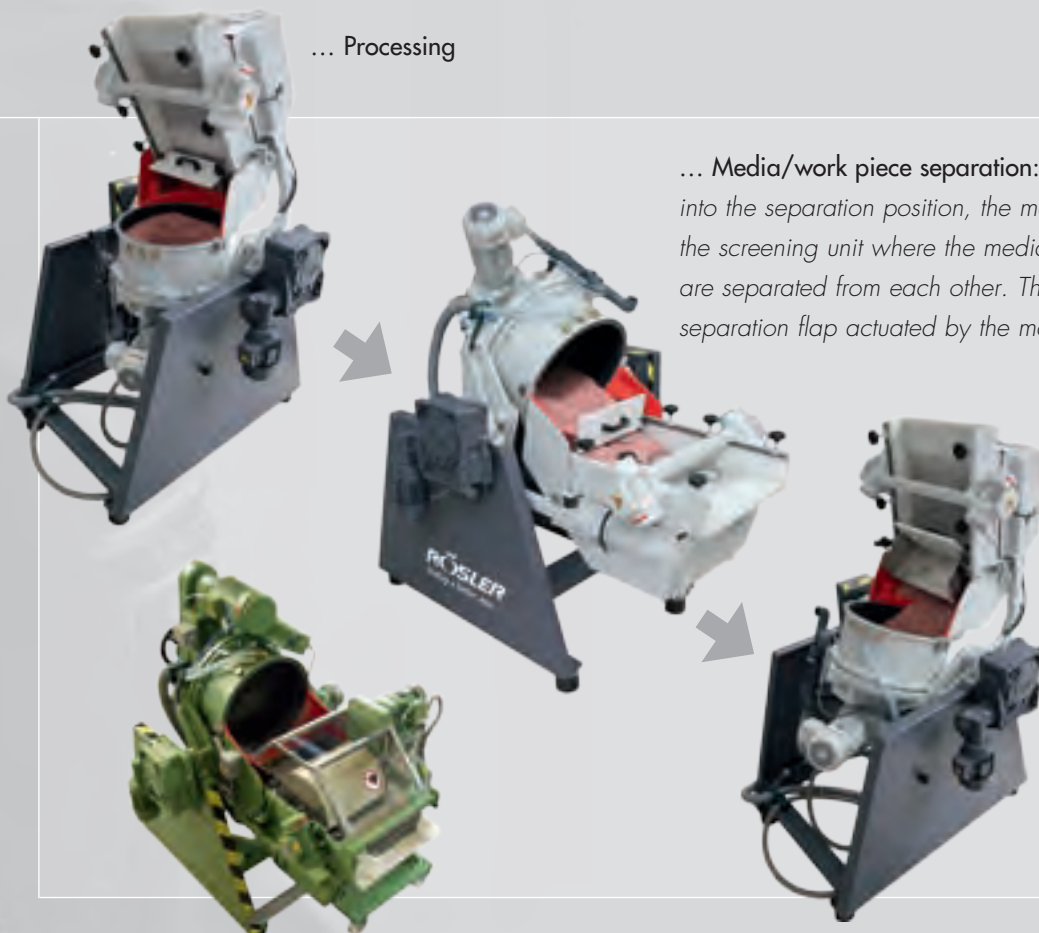
Model range "E/SM" with manually operated separation unit

Model range "E/SA" with vibratory separation unit

- ▶ Large screening area
- ▶ The screens can be changed without requiring any tools
- ▶ Special separation accessories: Inverse screening unit, drum magnetic separator
- ▶ Vibratory motors can be finely tuned; frequency inverter optional
- ▶ Large size buffer area with discharge opening for the processing media
- ▶ Easy to operate separation flap; pneumatic flap actuation optional
- ▶ Work piece rinsing station optional

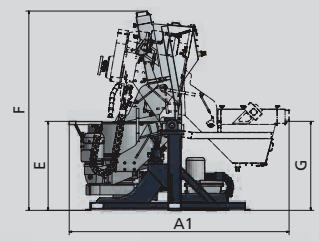
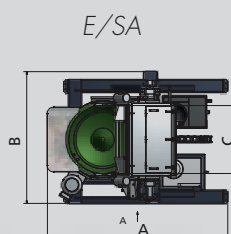
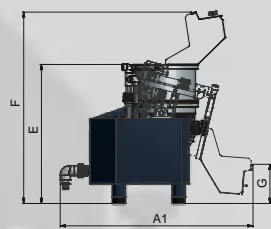
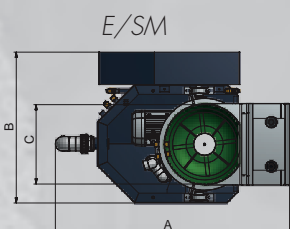
Processing (Finishing) – Separation – Process is completed

... Processing



... Media/work piece separation: When the work bowl is tilted into the separation position, the media/work piece mix flows onto the screening unit where the media and the finished work pieces are separated from each other. The flow rate is controlled by a separation flap actuated by the machine operator.

... Ready for the next batch: By tilting the work bowl back into its processing position the media flows from the separation unit back into the work bowl – a new batch of work pieces can be processed.



Model range

FKS 02.1 E/SM FKS 04.1 E/SM FKS 04.1 E/SA FKS 06.1 E/SA FKS 15.1 E/SA FKS 35.1 E/SA FKS 65.1 E/SA

A (mm)	1095	1265	1023	1295	1527	2413	2756
A1 (mm)	1305	1476	1519	1797	2155	3160	3360
B (mm)	551	815	1037	1259	1529	1502	2012
C (mm)	288	429	420	496	630	798	1037
E (mm)	945	1065	1004	1064	1175	1105	1359
F (mm)	1366	1466	1814	1938	2372	2480	3046
G (mm)	538	300	769	807	876	1035	1359
Drive power							
Spinner (kW)	0,75	2,2	2,2	2,2	4	11	15
Tilting motor (kW)	Manual	0,35	0,3	0,37	0,55	3,0	5,5
Total installed power (kW)	0,75	2,55	2,74	2,74	4,54	14,18	20,82
Screen area LxW in mm	365 x 254	400 x 435	630 x 414	680 x 530	850 x 630	1051,5 x 840	1253 x 1070
Temperature sensor in gap area	no	no	no	yes	yes	yes	yes
Gap adjustment: Set screws around bowl perimeter	yes	yes	yes	yes	yes	yes	yes
Central control	no	no	no	yes	yes	yes	yes

Centrifugal disc finishing machines, model range "E-A"

"E-A" centrifugal disc machines are compact machines designed for fully automatic surface finishing. This machine type can be easily linked with automatic work piece loading systems and different types of driers.

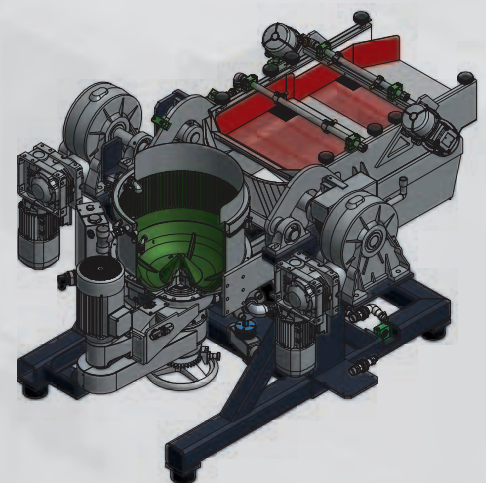


Technical features

- ▶ Tilting angle of work bowl = 140°
- ▶ Easy to install circular piping unit in work bowl for process water dosing and rinsing unit
- ▶ Gap adjustment: Either with set screws around the work bowl perimeter (bowl moves up/down) or the axial precision adjustment with hand wheel (spinner moves up/down).
- ▶ Large size screening area with dual screen levels with work piece tumbling step
- ▶ Undersize media separation unit integrated into the second screen level
- ▶ The screens can be changed without requiring any tools
- ▶ Magnetic separation optional

Preventive monitoring controls:

- ▶ Width of the gap
- ▶ Temperature in the gap area
- ▶ Process water/compound
- ▶ Overflow sensor



For pickling and polishing of coin blanks special MPA centrifugal disc finishing systems made in acid resistant stainless steel are available.

Full automatic finishing process



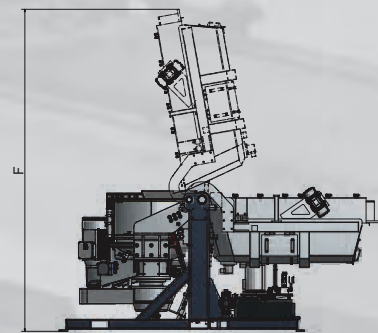
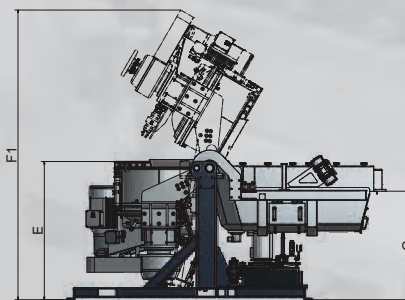
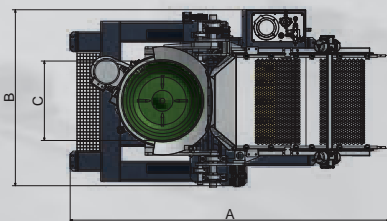
... Processing



... Separation – indexing, precisely dosed discharge of the media/work piece batch from the work bowl onto the vibratory separation unit.



... ready for the next batch – by tilting of the separation unit the processing media is automatically returned to the work bowl.



Model range	FKS 06.1 E-A	FKS 15.1 E-A	FKS 35.1 E-A
A (mm)	2007	2342	3213
B (mm)	1601	1864	1770
C (mm)	495	630	800
E (mm)	981	1186	1390
F (mm)	2178	2671	3240
F1 (mm)	1976	2200	2915
G (mm)	821	937	1091
Spinner (kW)	2,2	4,0	11,0
Total installed power (kW)	3,64	5,08	17,34
Screen area LxW in mm	945 x 566	1158 x 730	1540 x 935
Fully automatic process water level control	yes	yes	yes
Gap adjustment: Set screws around bowl perimeter	yes	yes	yes
Central control	yes	yes	yes

Perfect design, even for
the smallest details –
discharge of the
processing media



Status : 07/13

Automated surface finishing, linked systems and special equipment.

Mass finishing processes become especially efficient when the work piece handling – from the loading function all the way to the unloading and post treatment – takes place fully automatically! Rösler manufactures a wide modular range of peripheral equipment that can handle practically any automation requests. Of course, we also adapt our equipment technology to the finishing requirements specified by our customers.

Centrifugal disc finishing technology linked with....



"E-A" – automatic disc finisher with subsequent rotary drier – engineered for efficient surface finishing



FKS 02.1 E/SM – mobile compact system for finishing of coin blanks made from gold

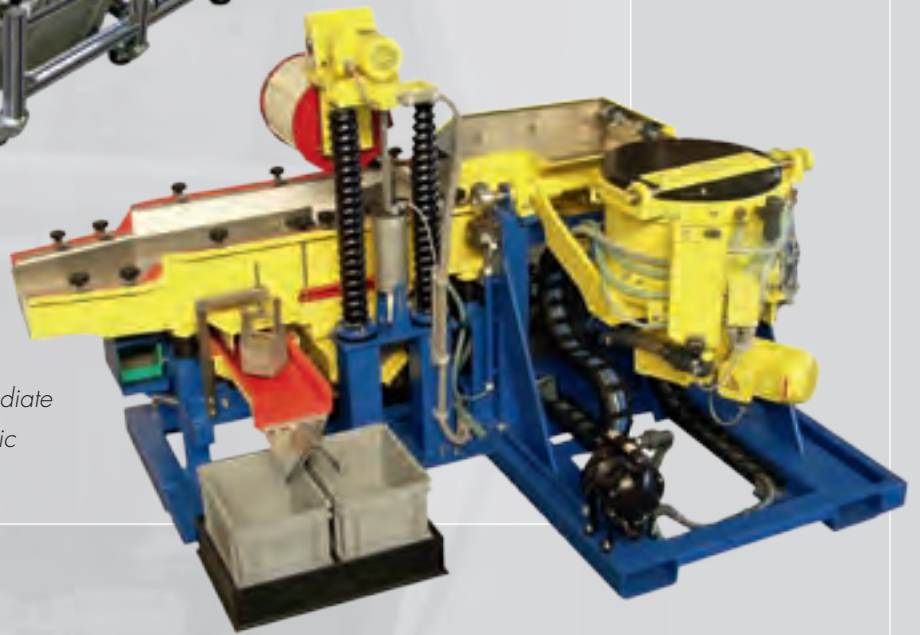


"E" tandem system – two finishing units linked to one common separation station and a rotary drier for drying and post separation.

Special "E/SA" system – automated disc finishing technology for polishing and passivation of small parts. This is a part-on-part process with no processing media.

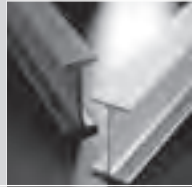


"E" system – with independent intermediate buffer and separation unit and magnetic separation.



"E-A" system made from acid resistant stainless steel – specially equipped for finishing of coin blanks in combination with a linear, vibratory hot air drier.





finding a better way ...

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 surface preparation. It is not by accident that Rösler, with its numerous innovative developments and high quality standards, has established itself as the undisputed global market leader for mass finishing as well shot blasting technologies.



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!



Worldwide Demonstration and Test Centres

Our main test centers for vibratory finishing and shot blasting are located at the Rösler headquarters in Untermerzbach, Germany:

- more than 95 vibratory finishing and shotblasting systems
- working space: approx. 2,700 square meters

Similar test centres are located in the United States, Great Britain, France, the Netherlands, Belgium, Switzerland, Spain, Italy, Austria, South Africa and Brazil.

The Total Process Solution

Consumables, machines and process safety in perfect combination:

- The optimum interaction between consumables, machinery and process stability produces excellent finishing results
- Cost saving automation allows running multiple process steps without any operator intervention
- Comprehensive training of your operators and maintenance staff
- After-sales service guarantees high uptimes for your equipment

Environmental Protection – Top Quality

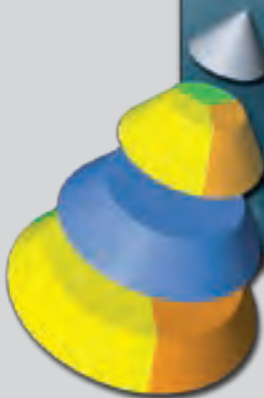
The consideration of environmental issues guarantees a high level of product quality and environmental protection.

For example, circulating the process water is a key feature of our mass finishing technology. In this case, the positive effect on the environment is reflected in savings of compound and water of up to 95%. At the same time, a high level of process reproducibility and finishing quality is guaranteed.

Team Spirit

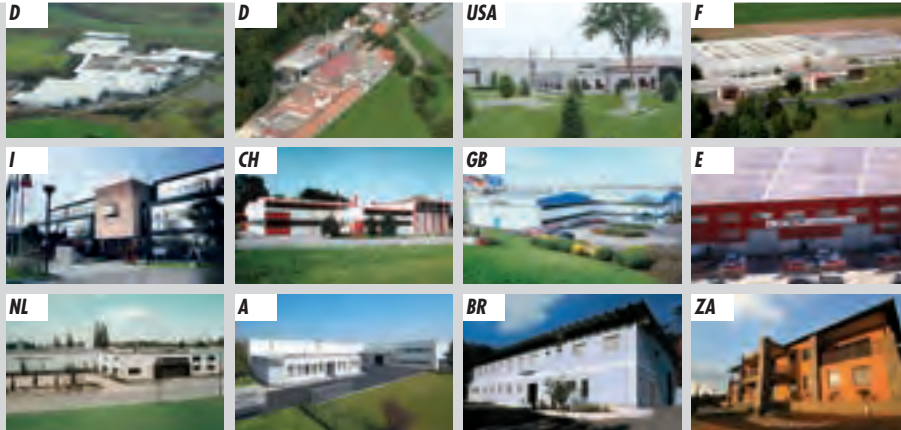
The consideration of ecological aspects in all our manufacturing processes results in eco-friendly and – at the same time – high quality products. In this respect the recycling of the process liquids is a central feature of our state-of-the-art mass finishing systems.

The positive environmental impact of these recycling systems is directly reflected in compound and water savings of up to 95% compared to conventional mass finishing processes. Furthermore, such recycling systems guarantee high quality finishing results and absolute process repeatability which are an essential requirement for today's high volume industrial production."



ISO 9001: 2008





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