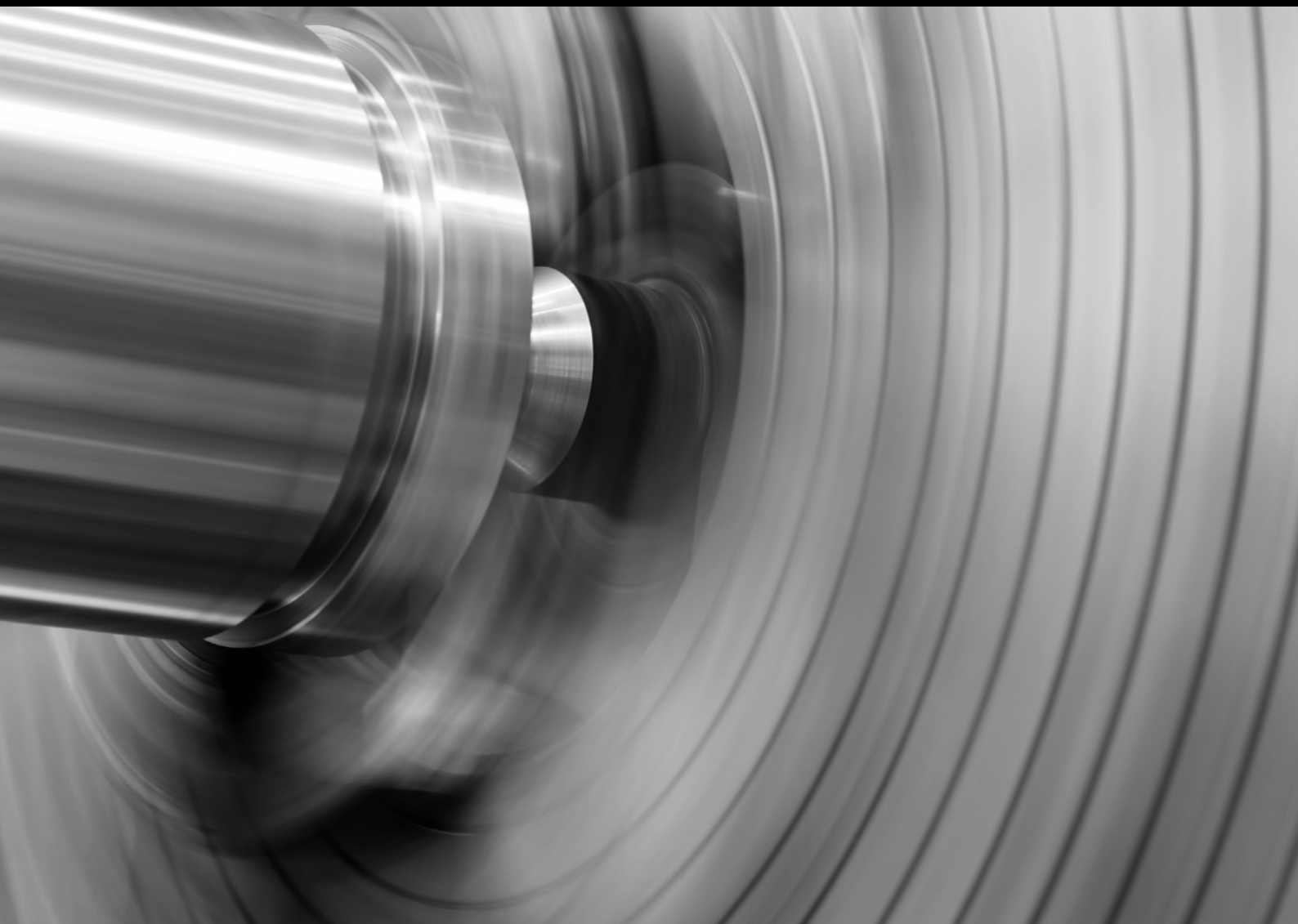


# Rotary Vibrators



# Rösler provides total finishing solutions



When it comes to surface finishing, Rösler is known to offer complete, well-engineered process solutions. Based on our comprehensive knowledge of mass finishing and shot blasting technologies, we can provide our customers with practically unlimited finishing solutions. In our state-of-the-art test lab, we conduct meaningful test trials to develop the optimum finishing processes for our customers because only complete solutions yield the best results. We are not simply offering specific surface finishing processes but we also supply perfectly matched auxiliary equipment and consumables. This approach has proven to be highly successful and has established Rösler as the global technological and market leader, with groundbreaking innovations and extremely high quality standards.

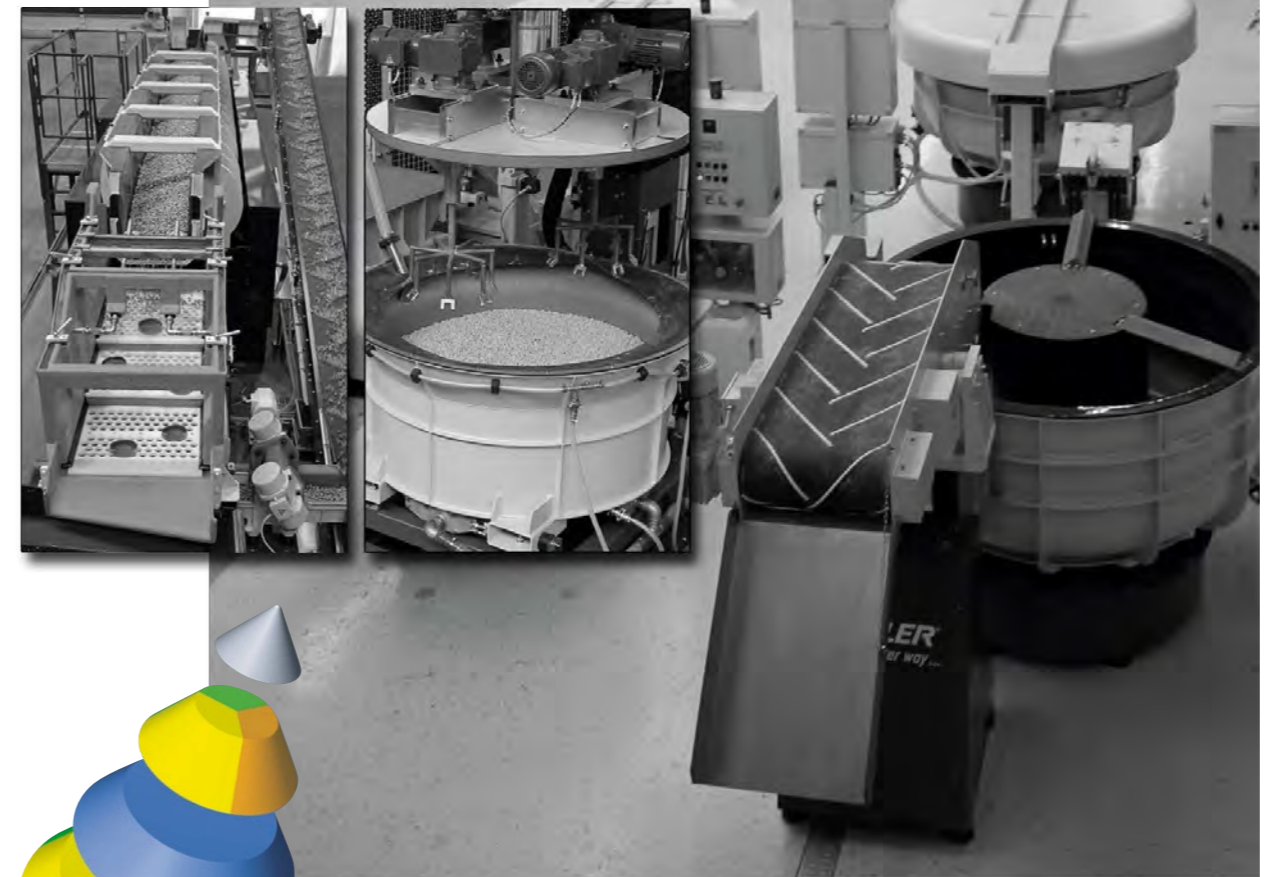


In more than 60 countries we support our customers with a comprehensive network of Rösler sales branches and independent distributors.

Rösler is the only supplier in its field maintaining test labs all over the world, where we develop process solutions under actual operating conditions and select the most suitable equipment. This approach saves our customers not only long travel distances and high freight costs, but it also provides them with products and processes that have been extensively tested by our specialists under the most severe operating conditions.



DIN EN ISO 9001 and 50001



Test lab mass finishing

## Global network of test labs

Test labs for mass finishing and shot blasting at the Rösler headquarters in Untermerzbach:

- ▶ More than 95 mass finishing and shot blast machines.
- ▶ About 2,700 m<sup>2</sup> (27,000 sqft) workspace

Our teams in USA, Great Britain, France, Netherlands, Belgium, Spain, Turkey, Romania, Italy, Austria, Switzerland, Russia, Brazil, Serbia and India provide similar test lab services.

## Complete solutions

Besides demanding high quality, environmentally safe and efficient products, our customers also prefer to purchase all process components from one single source. That is why we offer not merely the processing equipment but the complete package with perfectly matched consumables. This guarantees the best finishing results and absolute process safety. Our global service teams take care of the delivery and the installation for you. Qualified engineers train our customers right at their location. And, of course, our after-sales service members will answer all of your questions. Quick supply of all spare parts and professional consultation by our experienced process specialists ensure that your finishing processes are always running smoothly.

## Rösler Academy

**Knowledge transfer in the fields of mass finishing and shot blasting from a single source**

As the only supplier in the world that offers both mass finishing and shot blasting, we are committed to passing our knowledge and knowhow to our customers through seminars covering a wide range of surface finishing subjects. Gain in depth knowledge of how mass finishing works, how blast media passes through a shot blast machine, and how you can increase your efficiency and productivity with optimum control and testing methods for cleaning and recycling your process water. You can find a complete list of our training seminars for mass finishing and shot blasting using the following link: [www.rosler-academy.com](http://www.rosler-academy.com).



# Fields of application / Examples of application



Glass Wheel  
 Housing  
 Synchroniser ring  
 Spacer  
 Engine block  
 Saw blade  
 Tool  
 Implant  
 Casting mold  
 Spring

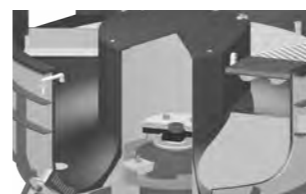


# Overview



Rösler rotary vibrators set new standards

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Fully automatic vibratory finishing

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# Rösler rotary vibrators set new standards

Successful mass finishing applications are usually the result of a combination of creative process technology and innovative equipment engineering. This approach is reflected in the varied line of Rösler rotary vibrators with their enhanced performance characteristics. They combine Rösler's high equipment quality and reliability standards with a functional design. In addition, they are easy to operate and provide a high degree of productivity.

## A technology that saves cost!



## Functional description



Vibratory surface finishing takes place in a work bowl placed on coil springs. The vibratory energy is induced by a special vibratory motor that is mounted in the center of the work bowl. The vibration creates the typical "relative" movement of media against parts. The continuous feeding of water and compound – also known as soap – supports the finishing process. Frequently, rotary vibrators are equipped with an integrated separation flap and screen. This allows separating the finished parts from the media in the machine: Via the separation screen the parts are transferred to the machine exit or to a post-treatment system, for example, a dryer, while the media remains in the machine. Of course, automatic solutions including different types of material handling systems, along with preand post-treatment units, are possible.

## Media and compound production



When it comes to consumables, no one in the industry can match our product line, or our experience. The Rösler product range of media and compounds is by far the most comprehensive in the world due to our 60 years of constant product development and improvement. There are altogether over 15,000 different types of ceramic media, plastic media, and compounds available for use in both, grinding and polishing applications. We continually offer our customers worldwide innovative finishing solutions and possibilities for product improvements and cost reduction.

## Applications

Rotary vibrators are extremely flexible and versatile mass finishing systems. Applications include: Deburring, grinding, radiusing, general parts cleaning, de-scaling, de-greasing and polishing of stampings, castings, formed, forged and saw-cut parts as well as machined components. Vibratory finishing can be used for all metals, many plastics, ceramics, rubber, wood, stone and glass and can help to achieve a wide range of objectives. Excellent results can be obtained for highly delicate and small components as well as for large and robust parts.



# Technical details

## Rotary vibrators made by Rösler ...

Our highly efficient and flexible machine systems offer virtually unlimited finishing solutions. And our engineers and process technology experts are continuously working on further technical improvements.

### Convincing technology ...

#### 1 Work bowl

All our process bowls undergo heat treatment after welding for stress relief.

- ▶ Process water supply connections
- ▶ Large access doors for easy adjustment of imbalance weights
- ▶ Many process bowl variations for easy customization of the equipment

#### 2 Integrated separation unit

The machine types EC, Euro, Euro-HS, Euro-KP, Long Radius and Long Radius-KP are equipped with internal separation. The vibration causes the media and finished parts to move across the separation screen. The media falls through the screen openings back into the work bowl, while the finished parts are moved to the machine exit.

- ▶ Separation flap or hand insertable separation gate – for the Euro, EC and LR range
- ▶ The robust separation flap is activated by an external pneumatic cylinder (Euro range, optional for EC models)
- ▶ Vibration-resistant screen mounts (wedges)
- ▶ Spray rinse system over separation screen (optional)

#### 2a Screening of undersized media

- ▶ Undersize screen segment: Optional in EC, Euro, Euro-HS and LR range

#### 3 Wear resistant lining of work bowl

Rösler manufactures its own wear-resistant linings. Prior to lining the inside of the work bowl is shot blasted for better adherence of the wear linings. The following optional linings are available:

- ▶ Molded polyurethane
- ▶ Sprayed polyurethane
- ▶ Glued-in rubber or polyurethane sheets

#### 4 Media unload plug

Double function: Media removal from the work bowl and main drain for the effluent from the work bowl. Can be cleaned from the outside

- ▶ Optional: Removal of undersize media

#### 5 Bottom drains in the work bowl

For special mass finishing processes like Keramo-Finish®, Isotropic Superfinish (ISF/REM® process), ball burnishing and pickling, we recommend the use of extra bottom drains in addition to the main drain (media unload plug).

#### 6 Stable bowl suspension

- ▶ Machine base and the special coil springs arrangement ensure a high degree of stability without limiting the vibratory movement
- ▶ Easy access to the lower imbalance weights

#### 8 Setting of the imbalance weights

The two basic upper and lower imbalance weights are securely fastened to the motor shaft. The offset angle can be easily set with the help of a shaft mounted disc indicating various angles. Depending on the required vibratory performance, additional imbalance weight plates can be easily added.

#### 9 Electrical control

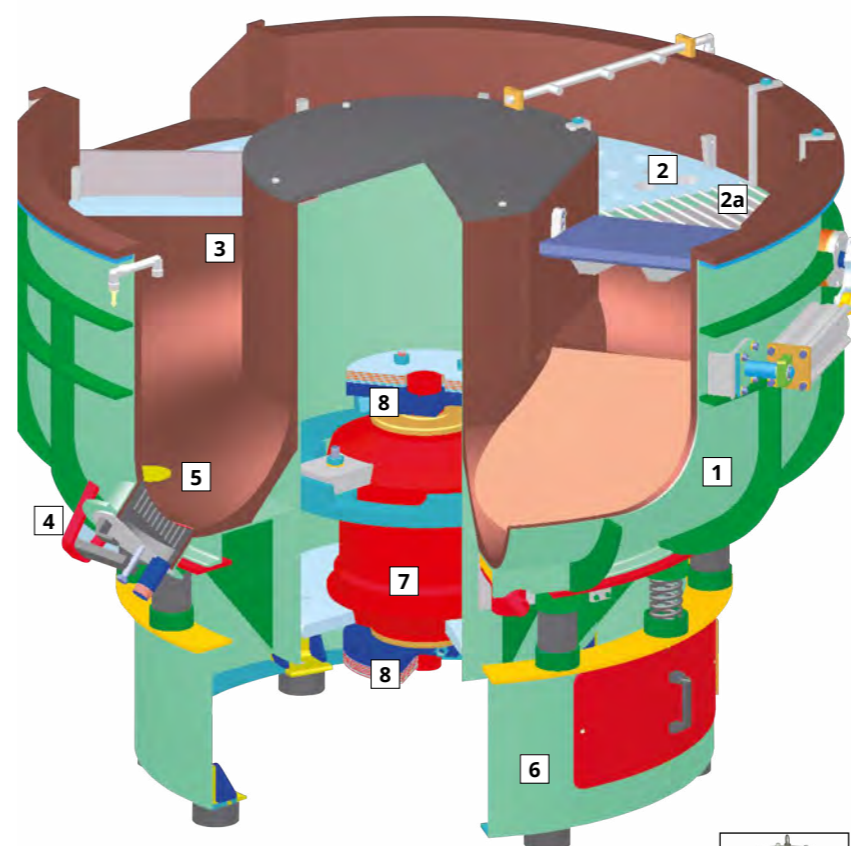
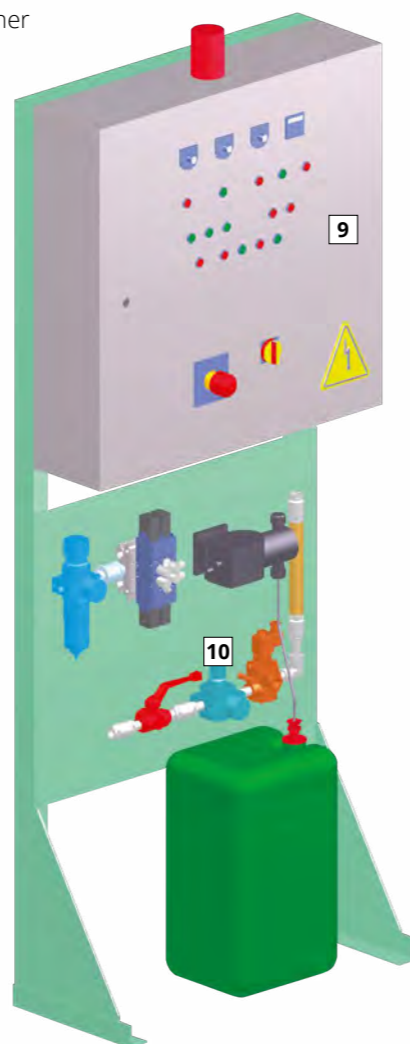
Relay controls or a PLC (optional) allow the central control of all machine functions.

#### 10 Process water supply

- ▶ Separate flow controls for fresh water and compound supply
- ▶ Process water recycling systems optional

#### Extras:

- ▶ Circular spray bar for even distribution of the process liquid in the work bowl
- ▶ Spray-rinse above the screening area
- ▶ Flow control for water and compound



#### 7 Special vibratory drive system

The direct drive vibratory motor has been specifically developed for the Rösler rotary vibrators. This powerful and robust drive system provides ample capacity for the transfer of the vibratory energy to the work bowl. The proven double-flange motor fixturing system guarantees a vibration resistant mounting of the vibratory motor onto the inner dome of the work bowl. The motor bearings can be lubricated with an automatic lubrication system. This guarantees a high bearing life.

- ▶ 2 standard motor speeds: 1,500 and 1,000 rpm at 50 Hz (1,800 and 1,200 rpm at 60 Hz)

#### Option:

- ▶ Variable speed control by frequency inverter: Provides more flexibility in all processing and separation stages

### High speed systems

“High speed” rotary vibrators produce an up to 50% higher grinding performance. Depending on the parts to be treated and the required grinding results they represent a real alternative to standard rotary vibrators. Available in the Euro-, A- and R-range as fully automatic double or triple batch systems.

### Longevity and high quality

Rösler rotary vibrators are setting high technological standards. Their functional design, the use of high-quality materials and excellent workmanship guarantee a long service life and low maintenance costs. High quality powder coatings and industrial grade paints guarantee a long-term attractive appearance as well as corrosion protection. Upon request special paints and colors are available.

# "EC"... Rotary vibrator

Due to their specially designed process channel, rotary vibrators, type EC, are truly general purpose machines: The relatively shallow incline of the process channel in the EC machines allows the processing and separation of small as well as large parts. EC machines are also ideally suited for finishing of delicate parts.

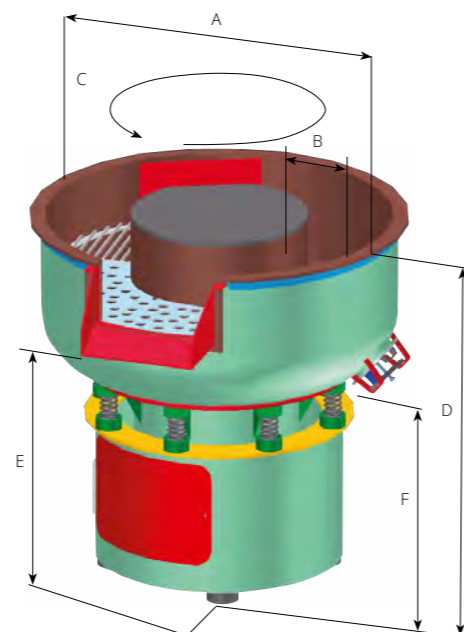


## Features:

- ▶ Shallow incline of the processing channel
- ▶ Manually insertable separation gate or pneumatically activated separation flap (option)
- ▶ Large-surface and easy to change separation screens (screen change does not require any tools)
- ▶ Rösler double-flange vibratory motor with 2 speeds (1,500 and 1,000 rpm at 50 Hz); easy and safe lubrication of the bearings
- ▶ Wear resistant lining made from hot poured polyurethane
- ▶ Flexible design of control panels and compound dosing systems

## Extras:

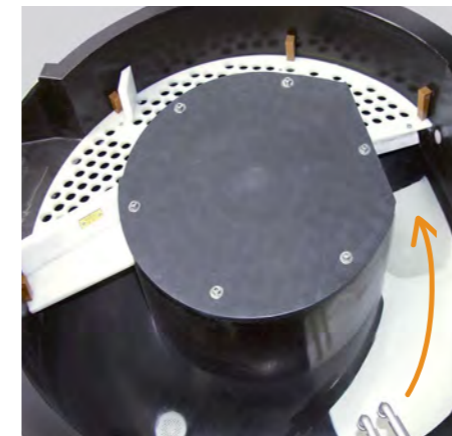
- ▶ Extra bottom drains
- ▶ Undersize media classification: Integrated into media unload plug or separate segment on separation screen
- ▶ Noise protection equipment



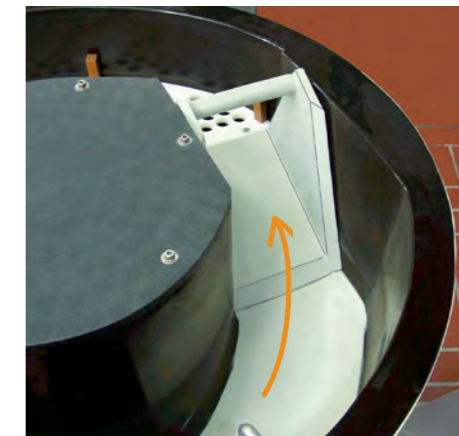
## Technical details:

### Operator-assisted separation of media from parts:

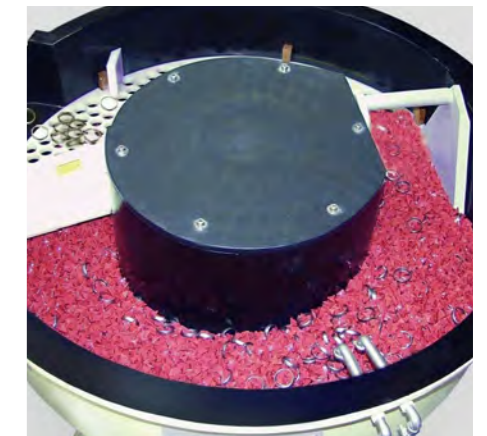
Due to their shape, size or fragility, certain parts cannot be automatically separated from the media. The manually inserted and easy to handle separation gate allows such gentle separation. Of course, pneumatically activated separation flaps are also available (R 320 EC and bigger).



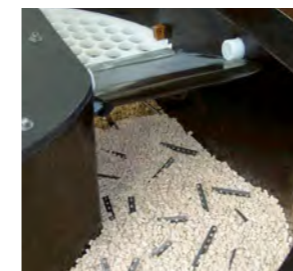
"Shallow" incline of the process channel



Manually inserted separation gate



Separation of media and parts



Pneumatically activated separation flap

Type		R 125 EC	R 220 EC	R 320 EC	R 420 EC	R 620 EC	R 780 EC
<b>Process bowl</b>							
<b>Total volume</b>	l	125	220	320	420	620	780
<b>External diameter max.</b>	mm A	910	1,200	1,280	1,520	1,695	1,805
<b>Process bowl width</b>	mm B	210	260	290	355	430	430
<b>Overall length of processing channel</b>	mm C	1,970	2,630	2,780	3,300	3,450	3,820
<b>Machine height</b>	mm D	1,105	1,115	1,210	1,240	1,235	1,260
<b>Unload height</b>	mm E	890	890	990	1,010	985	1,010
<b>Height media unload plug</b>	mm F	660	640	650	675	600	575
<b>Separation</b>							
<b>Length x width</b>	mm	710 x 210	980 x 260	1,025 x 300	1,260 x 360	1,315 x 430	1,430 x 430
<b>Area</b>	cm <sup>2</sup>	1,600	2,600	3,500	4,600	5,800	6,400
<b>Type</b>		Slide-in-gate	Slide-in-gate	Slide-in-gate, optional: pneumatically activated separation flap	Slide-in-gate, optional: pneumatically activated separation flap	Slide-in-gate, optional: pneumatically activated separation flap	Slide-in-gate, optional: pneumatically activated separation flap
<b>Drive power</b>							
<b>Speed (at 50 Hz/60 Hz)*</b>	RPM	1,500	1,500	1,500	1,500	1,500	1,500
<b>Connected load</b>	kW	0.75	3	3	3	7.5	7.5
<b>Media unload plug</b>	Ø mm	105	105	105	180	180	180

\* Standard speed 1,500 and 1,000 RPM  
Variable speed with frequency inverter

# "Euro"... Rotary vibrator

Euro rotary vibrators are ideal for interlinked, automatic surface finishing processes. They are characterized by a process channel with spiral bottom incline and pneumatically activated separation flap. A special "gate clearing" feature developed by Rösler allows fully automatic processing and separation.

## Features:

- ▶ Spiral bottom process channel for easy separation
- ▶ Pneumatically activated separation flap
- ▶ Large-surface and easy to change separation screens (screen change does not require any tools)
- ▶ Rösler double-flange vibratory motor with 2 speeds (1,500 and 1,000 rpm at 50 Hz); easy and safe lubrication of the bearings
- ▶ Wear resistant lining made from hot poured polyurethane
- ▶ Flexible design of control panels and compound dosing systems

## Extras:

- ▶ Extra bottom drains
- ▶ Undersize media classification: Integrated into media unload plug or separate segment on separation screen
- ▶ Noise protection equipment
- ▶ "Gate clearing" with sliding imbalance weights and automatic reversal of the vibratory motor



## Technical details:

### Automatic separation:

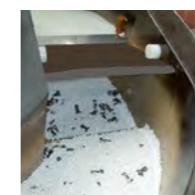
The spiral bottom process channel and the pneumatically activated separation flap facilitate automatic separation of media and parts.

### Option:

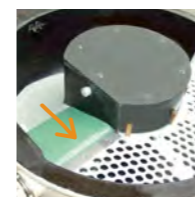
- ▶ Rinsing of the separation flap



Spiral bottom process channel



Drop behind separation flap: Prevents flat parts from sticking to each other



Separation flap, closed



Gentle "cascade" drop behind separation flap: Prevents damage of delicate parts



Manual separation flap with hand lever (R 125 Euro)

## Gate clearing

By reversing the rotational direction of the vibratory motor and subsequent sliding of the imbalance weights by around 190 degrees, the parts/media mass is moving backwards and clears the ramp area of media and parts. This allows the separation flap to move into position without "catching" any media or parts.



Motor with reversible weights

## "Euro"... HS high speed vibrators

### Work bowl:

- ▶ Made with specially treated steel
- ▶ Special gusseting for extra strength
- ▶ Wear resistant, double-thick lining made from hot poured polyurethane
- ▶ Re-enforced welding construction

### Drive system:

- ▶ Special high performance Rösler vibratory motor Power+, amplitude up to app. 10 mm
- ▶ Central lubrication



## "Euro"... KP ball burnishing systems

### For extra heavy loads:

Specially designed for ball burnishing or high-pressure deburring with steel / stainless steel media:

- ▶ Work bowl re-enforced, 270 degrees spiral bottom incline of process channel
- ▶ Rubber lining of work bowl
- ▶ Recommended accessories: Suction pump and splash guard



Type	R 125 Euro		R 220 Euro		R 320 Euro			R 420 Euro	R 620 Euro			R 780 Euro		R 1050 Euro	R 1500 Euro	
	Euro	Euro-KP	Euro	Euro-KP	Euro	Euro-KP	Euro-HS	Euro	Euro	Euro-KP	Euro-HS	Euro	Euro-HS	Euro	Euro	
<b>Process bowl</b>																
<b>Total volume</b>	l	125	125	220	220	320	320	320	420	620	620	620	780	780	1,050	1,500
<b>External diameter max.</b>	mm A	910	910	1,190	1,190	1,350	1,350	1,350	1,520	1,695	1,695	1,715	1,805	1,800	1,800	2,130
<b>Process bowl width</b>	mm B	215	215	260	260	325	330	305	350	430	435	430	440	440	460	525
<b>Overall length of processing channel</b>	mm C	2,050	1,890	2,725	2,725	3,050	3,050	2,820	3,500	3,800	3,800	3,800	4,100	4,100	4,100	4,800
<b>Machine height</b>	mm D	1,110	1,105	1,180	1,180	1,210	1,250	1,320	1,355	1,225	1,225	1,320	1,375	1,375	1,395	1,530
<b>Unload height</b>	mm E	890	890	965	960	990	1,030	1,030	1,150	985	985	1,055	1,125	1,125	1,135	1,160
<b>Height media unload plug</b>	mm F	650	625	640	640	615	635	580	705	500	500	580	600	600	550	580
<b>Separation</b>																
<b>Length x width</b>	mm	710 x 215	710 x 215	980 x 260	980 x 260	1,265 x 335	1,265 x 335	1,265 x 335	1,260 x 360	1,315 x 430	1,315 x 430	1,315 x 430	1,430 x 435	1,430 x 435	1,395 x 465	1,700 x 600
<b>Area</b>	cm <sup>2</sup>	1,600	1,600	2,600	2,600	3,500	3,500	3,500	4,600	5,800	5,800	5,800	6,200	6,200	6,500	10,200
<b>Type</b>		Manually activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap	Pneumatically activated separation flap
<b>Drive power</b>																
<b>Speed (at 50 Hz/60 Hz)*</b>	RPM	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
<b>Connected load</b>	kW	0.75	0.75	3	3	3	7.5	7.5	7.5	7.5	7.5	Power+ 12.5	7.5	Power+ 12.5	7.5	12.5
<b>Media unload plug</b>																
	Ø mm	105	105	190	190	190	190	190	190	190	190	190	190	190	190	190

\*Standard speed 1,500 and 1,000 RPM  
Variable speed with frequency inverter

# "A"... Rotary vibrator

The A – range of rotary vibrators with their powerful MS/E-V magnetic separators is in a class of its own. This machine type was specially designed for processing of parts that can be separated magnetically. The electrical controls are designed to allow the finishing process to run fully automatic.



## Features:

- ▶ Work bowl re-enforced with extra gussets and equipped with special ramp in the process channel for easy magnetic separation. High performance magnetic separator, type MS/E-V.
- ▶ Rösler double-flange vibratory motor with 2 speeds (1,500 and 1,000 rpm at 50 Hz); easy and safe lubrication of the bearings.
- ▶ Wear resistant lining made from hot poured polyurethane.
- ▶ Media unload plug with integrated effluent drain.
- ▶ Flexible design of control panels and compound dosing systems.

## Extras:

- ▶ Extra bottom drains
- ▶ Undersize media classification:  
Integrated into media unload plug
- ▶ Noise protection equipment

## "A"... HS high speed vibrators

### Process bowl:

- ▶ Made with specially treated steel
- ▶ Special gusseting for extra strength
- ▶ Wear resistant, double-thick lining made from hot poured polyurethane

### Machine base:

- ▶ Re-enforced welding fabrication

### Drive system:

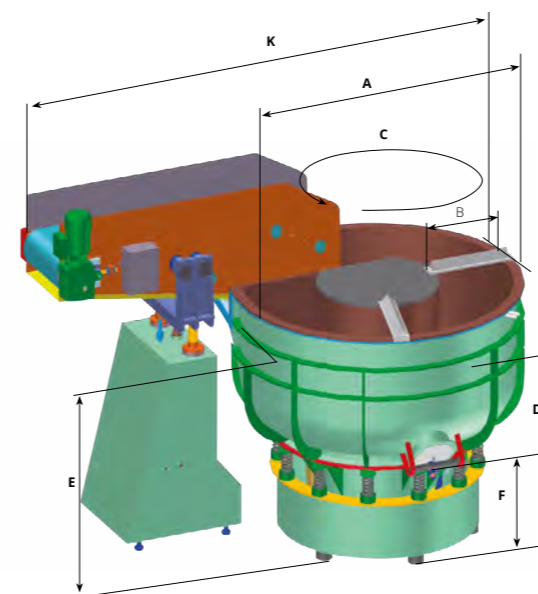
- ▶ Special high performance Rösler vibratory motor Power+
- ▶ Amplitude up to app. 10 mm
- ▶ Variable motor speed\*
- ▶ Central lubrication

\* especially useful during the separation process

IMPORTANT when utilizing magnetic separation:  
Almost all finished steel parts require de-magnetization prior to further treatment.

We offer the following options:

- ▶ Plate de-magnetization: Installed in the magnetic belt separators of the types MS/E-V and MS/E
- ▶ Drum magnet separators:  
Optionally equipped with basic de-magnetization unit
- ▶ Special solutions:  
De-magnetization tunnels and conveyor belts with single or double de-magnetizing plates



Type		R 780 A	R 1050 A	R 1050 A-HS
<b>Process bowl</b>				
Total volume	l	780	1,050	1,050
External diameter max.	mm A	1,805	1,805	1,805
Process bowl width	mm B	435	465	465
Overall length of processing channel	mm C	4,100	4,100	4,100
Machine height	mm D	1,275	1,375	1,375
Unload height	mm E	1,045	1,105	1,105
Height media unload plug	mm F	600	550	550
Total length incl. magnetic separator	mm K	3,000	3,000	3,000
<b>Separation</b>		Magnetic separat.	Magnetic separat.	Magnetic separat.
<b>Drive power</b>				
Speed (at 50 Hz/60 Hz)*	RPM	1,500	1,500	1,500
Connected load *	kW	7.5	7.5	Power 12.5
Media unload plug	Ø mm	190	190	190

\* Standard speed 1,500 and 1,000 RPM · Variable speed with frequency inverter



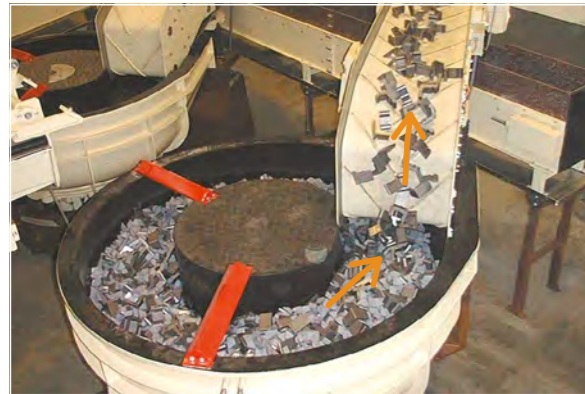
# "A"... Rotary vibrator

## Magnetic separation of finished parts

Magnetic separation of finished ferritic parts offers advantages with regard to efficiency, productivity and ease of operation.

### MS/E-V high performance magnetic separators for the "A"...range of rotary vibrators

Fully automatic removal of parts with height adjustment and adjustment of the magnetic field



#### Technical details:

The angled magnetic head and the permanent magnetic field with pulsating poles (anti-poles) facilitates the release of trapped media in the pickup area.

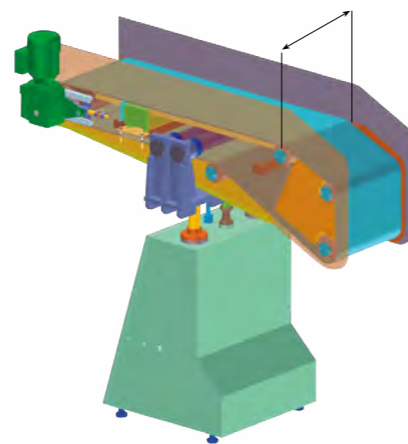
- ▶ Discharge width equals the full width of the process channel
- ▶ Special cams prevent parts from getting caught on the left and right hand side of the belt
- ▶ Magnetic adjustment in the parts pickup area
- ▶ Side plates of the magnetic head are made from stainless steel
- ▶ Pneumatic height adjustment
- ▶ Different belt designs available
- ▶ Plate de-magnetization zone

#### Extras:

- ▶ Variable conveyor speeds
- ▶ Customized de-magnetization solutions
- ▶ Automatic parts unload program with height adjustment and adjustment of the intensity of the magnetic field

#### Recommended:

- ▶ Speed control for the rotary vibrator



Type:	Conveyor width mm
R 780 MS/E-V	480
R 1050 MS/E-V	480

State: 04/2009

### MS/E magnetic separators for the EC and Euro range

The angled magnetic head and the permanent magnetic field with pulsating poles (anti-poles) facilitates the release of trapped media in the pickup area.

#### Technical details:

- ▶ Electro magnetic drum permits variation of the magnetic force
- ▶ Different belt designs available
- ▶ Special cams prevent parts from getting caught on the left and right hand side of the belt
- ▶ Side plates of the magnetic head are made from stainless steel
- ▶ Plate de-magnetization zone
- ▶ Pneumatic height adjustment

#### Extras:

- ▶ Variable conveyor speeds
- ▶ Drum with permanent magnet
- ▶ Customized de-magnetization

#### Recommended:

- ▶ Speed control for the rotary vibrator



Type	Drum width mm
R 220 MS/E	185
R 320 MS/E	245
R 420 MS/E	245
R 620 MS/E	350
R 780 MS/E	350
R 1050 MS/E	350

State: 04/2009

### TRM drum magnetic separators for EC, Euro and long radius rotary vibrators

Drum magnetic separators can easily be integrated into rotary vibrators equipped with separation screens. A key feature of magnetic drum separators is their compact, space saving design.

#### Technical details:

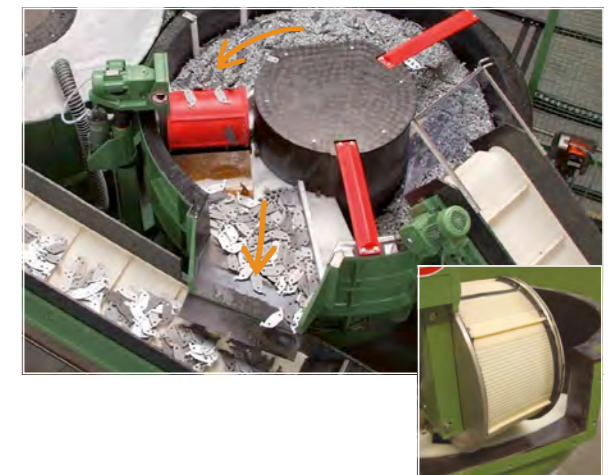
- ▶ Height adjustment by electric motor
- ▶ Variable drum speed
- ▶ Drum design: Stainless steel with a polyurethane antiadhesion coating

#### Extras:

- ▶ Integrated demagnetization unit
- ▶ Mounted on a movable frame for easy handling
- ▶ Magnetic drum can be tilted

#### Recommended:

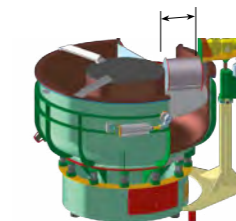
- ▶ Speed control for the rotary vibrator



Drum magnet with de-magnetization tunnel



Double drum magnetic separation system for difficult to separate parts



Type:	Drum width mm
R 125 TRM	125
R 220 TRM, R 320 TRM	180
R 420 TRM	255
R 620 TRM, R 780 TRM, R 1050 TRM	355
R 1500 TRM	425

State: 04/2009

# "R"... Rotary vibrator

Flat bottom rotary vibrators are perfect for treating large and bulky as well as delicate parts. The flat bottom ensures a perfect immersion of the parts into the media mass. For parts that need to be processed individually without touching each other, so-called "paddle wheels" with dividers are available which create separate processing chambers in the work bowl. Finished parts are usually taken out manually. Bottom unload gates allow complete evacuation of the work bowl and external separation of media from parts (option).

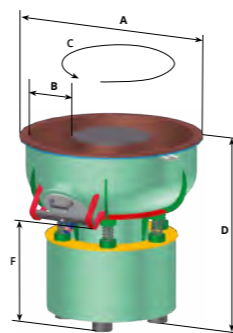
## Technical details:

- ▶ Flat bottom processing channel
- ▶ Reversing of rotational direction of vibratory motor moves the parts to the top of the media mass for easy manual removal
- ▶ Rösler double-flange vibratory motor with 2 speeds (1,500 and 1,000 rpm at 50 Hz); easy and safe lubrication of the bearings
- ▶ Adjustable imbalance weights allow different grinding intensities
- ▶ Wear resistant lining made from hot poured polyurethane
- ▶ Flexible design of control panels and compound dosing systems



## Multi-Power package:

Two levels of vibratory intensity (amplitude) can be automatically selected for aggressive de-burring followed by gentle smoothing.



## "R"...HS high speed vibrators

### Process bowl:

- ▶ Made with specially treated steel
- ▶ Special gusseting for extra strength
- ▶ Wear resistant, double-thick lining made from hot poured polyurethane
- ▶ Special high performance Rösler vibratory motor Power+, amplitude up to app. 10 mm
- ▶ Central lubrication



## "R"...KP special ball burnishing systems

### For extra heavy loads:

Specially designed for ball burnishing or high-pressure de-burring with steel/stainless steel media.

- ▶ Work bowl re-enforced
- ▶ Rubber lining of work bowl
- ▶ Recommended accessories: Suction pump and splash guard



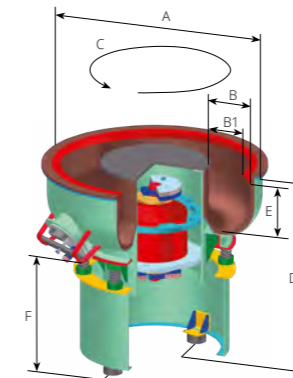
# Special work bowl versions R range ...

## "R"... rotary vibrators in E-PUR version

Outer wall of process channel equipped with triangular wedge made from polyurethane.

### Benefits:

The wedge profile in the outer wall of the process channel speeds up and optimizes the processing of small, delicate parts by preventing them from sticking to the channel wall. The wedge is also very useful for part-on-part processing without media.



Type		R 220 E-PUR	R 320 E-PUR	R 620 E-PUR
<b>Process bowl</b>				
Total volume	l	220	320	620
External diameter max.	mm A	1,190	1,350	1,595
Process bowl width	mm B	260	330	430
Max. parts width	mm B'	185	240	300
Overall length of processing channel	mm C	2,600	2,840	3,510
Machine height	mm D	1,070	1,070	1,200
Process bowl useable depth	mm E	250	280	340
Height media unload plug	mm F	645	595	625
<b>Drive power</b>				
Speed (at 50 Hz/ 60 Hz)*	RPM	1,500	1,500	1,500
Connected load	kW	3	3	7.5

Media unload plug	Ø mm	190	190	190
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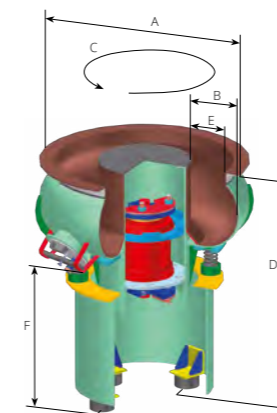
\* Standard speed 1,500 and 1,000 RPM · Variable speed with frequency inverter

## "R"... rotary vibrators in E-M version

The outer wall of the process channel has a curved profile.

### Benefits:

The curved exterior wall of the process channel optimizes the rotational movement of the parts/ media mass. Especially beneficial for processing of light-weight parts which do not easily immerse into the media but tend to float on the top.



Type		R 125 E-M	R 220 E-M	R 320 E-M	R 420 E-M	R 620 E-M
<b>Process bowl</b>						
Total volume	l	125	220	320	420	620
External diameter max.	mm A	850	1,130	1,280	1,440	1,595
Process bowl width	mm B	215	260	335	350	430
Overall length of processing channel	mm C	1,950	2,600	2,840	3,250	3,510
Machine height	mm D	1,010	1,030	1,100	1,165	1,240
Max. parts width	mm E	160	200	240	260	310
Height media unload plug	mm F	640	570	580	620	625
<b>Drive power</b>						
Speed (at 50 Hz/ 60 Hz)*	RPM	1,500	1,500	1,500	1,500	1,500
Connected load	kW	0.75	3	3	7.5	7.5

Media unload plug	Ø mm	105	190	190	190	190
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\* Standard speed 1,500 and 1,000 RPM · Variable speed with frequency inverter

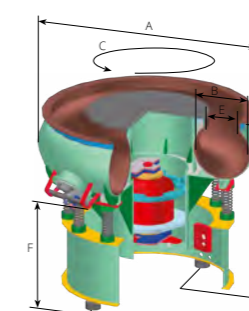
## "R"... rotary vibrators in 2-E version

Work bowl with double curved wall processing channel.

### Benefits:

Both, inner and outer wall of the processing channel are curved. This creates an ideal rotational movement of the parts/media mass: Specifically recommended for:

- ▶ ISF/REM® Superfinishing applications
- ▶ Light-weight parts
- ▶ Delicate parts



Type		R 420 2-E	R 620 2-E
<b>Process bowl</b>			
Total volume	l	330	530
External diameter max.	mm A	1,440	1,595
Process bowl width	mm B	365	430
Overall length of processing channel	mm C	3,250	3,510
Machine height	mm D	1,010	1,210
Max. parts width	mm E	220	235
Height media unload plug	mm F	530	645
<b>Drive power</b>			
Speed (at 50 Hz/ 60 Hz)*	RPM	1,500	1,500
Connected load	kW	7.5	7.5

Media unload plug	Ø mm	190	190
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\* Standard speed 1,500 and 1,000 RPM · Variable speed with frequency inverter

Type	R 125		R 220	R 320			R 420	R 620			R 780		R 1050	R 1400	R 2600	R 3500		
	R 125	R 125 KP		R 320	R 320 KP	R 320 HS		R 620	R 620 KP	R 620 HS	R 780	R 780 HS						
<b>Process bowl</b>																		
Total volume	l		125	125	220	320	320	320	420	620	620	620	780	780	1,050	1,400	2,600	3,500
External diameter max.	mm	A	910	910	1,190	1,350	1,350	1,350	1,520	1,695	1,695	1,695	1,805	1,810	1,805	2,210	2,520	2,905
Process bowl width	mm	B	210	210	250	330	335	305	360	430	430	430	435	435	455	650	765	890
Overall length of processing channel	mm	C	1,950	1,950	2,600	2,840	2,840	2,840	3,250	3,510	3,510	3,510	3,815	3,815	3,750	4,400	4,900	5,660
Machine height	mm	D	1,010	1,010	1,070	1,070	1,110	1,110	1,235	1,200	1,200	1,280	1,225	1,225	1,225	1,385	1,780	1,765
Height media unload plug	mm	F	630	620	645	595	630	630	705	625	625	705	600	600	550	675	840	815
<b>Drive power</b>																		
Speed (at 50 Hz/60 Hz)*	RPM		1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Connected load	kW		0.75	0.75	3	3	7.5	7.5	7.5	7.5	7.5	Power*12.5	7.5	Power*12.5	7.5	12.5	15	22
<b>Media unload plug</b>																		
	Ø mm		105	105	190	190	190	190	190	190	190	190	190	190	190	320 x 220	490 x 320	350 x 250

\* Standard speed 1,500 and 1,000 RPM · Variable speed with frequency inverter

State: 11/2012

State: 12/2012

State: 12/2012

State: 12/2012

# Double batch and triple batch system – Fully automatic rotary vibrators

## The finishing process and parts separation take place simultaneously

The surface finishing of mass-produced parts poses special engineering challenges. For example where no mixing of batches of different parts ("batch integrity"), carryout of media, or media lodging in the parts is allowed. Among other things this requires a reliable and effective undersize media classification system.

## Benefits of multi batch systems:

Double and triple batch systems offer maximum use of available processing capacity by simultaneous surface finishing and separation:

- ▶ Fully automatic separation process
- ▶ No mixing of parts from different batches
- ▶ Precise and controlled parts transfer to the separation unit ensures effective screening. This is a prerequisite for post treatment steps like parts washing and drying
- ▶ Can be easily adapted to the most difficult separation tasks
- ▶ Parts can be spray-washed during separation

### 1 Rotary vibrator

- ▶ Work bowl geometry based on "R" range with special gusseting for extra strength, flat bottom process channel and designed for complete unload.
- ▶ Media/parts unload gate, either pneumatically or hydraulically activated
- ▶ Rinse station to flush out residual media and parts from the work bowl
- ▶ Variable speed for the vibratory motor
- ▶ Operator platform

#### Extras:

- ▶ "R"... rotary vibrator E-PUR version – Triangular wedge on outside wall of processing channel

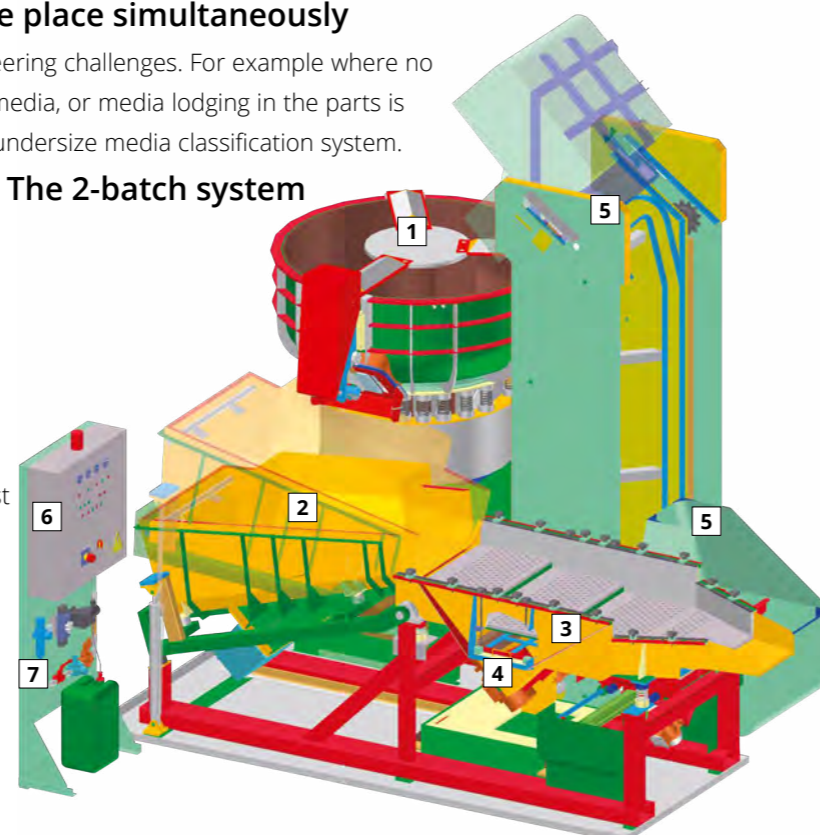
### 2 Intermediate hopper (holds one complete batch of finished parts and media):

- ▶ Variable speed of the vibratory system and variable inclination levels allow exact dosing of parts and media to the separation unit for optimum separation.

#### Extras:

- ▶ Anti-adhesion package: Prevents finished parts from sticking to the walls of the intermediate hopper

## The 2-batch system



### 3 Vibratory separation unit with large screen area:

Three screen decks with tumbling steps; screens can be easily replaced without requiring any tools

- ▶ Rinse station over screen decks for cleaning of the finished parts
- ▶ Adjustable vibration intensity, optionally with speed control

#### Extras:

- ▶ Magnetic separation; either rotary drum magnet or belt magnetic separator with de-magnetizing system

### 4 Undersize media classification:

- ▶ Special screen deck with slide-in undersize media collecting tray

### Multi-Power package:

Two levels of vibratory intensity (amplitude) can be automatically selected for aggressive de-burring followed by gentle smoothing.

### Special HS high speed version

available in model size R 620 and R 780

### 5 Media return into the work bowl:

- ▶ Special loading system for returning media to the work bowl; can also be used for loading raw parts into the work bowl

#### Extras:

- ▶ Weighing system for automatic media top-up into the work bowl
- ▶ Anti-adhesion package: The checker plate pattern prevents finished parts and media from sticking to the walls of loading system.
- ▶ Loading hopper equipped with pneumatic flap for gentle loading of media and raw parts into the work bowl

### 6 Easy-to-operate electrical controls:

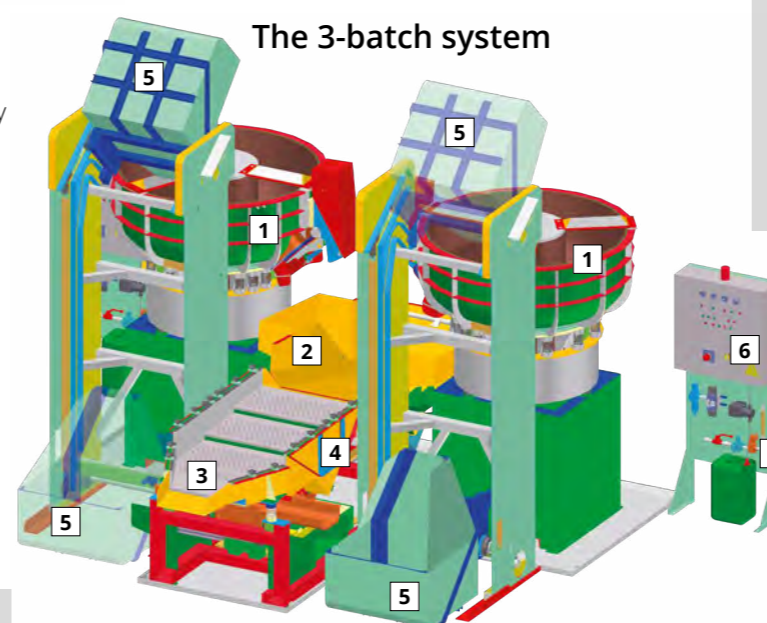
Fully automatic operation with PLC

- ▶ Multiple processing programs possible (up 99)
- ▶ MPI interface for integration into a multi-machine environment

#### Extras:

- ▶ Recording of operating parameters and machine settings
- ▶ Remote trouble shooting via modem

## The 3-batch system



### 7 Compound dosing:

- ▶ PLC controlled process water supply system with flow regulator, optionally for fresh water or recycling operation
- ▶ Dosing pump for precise dosing of compound

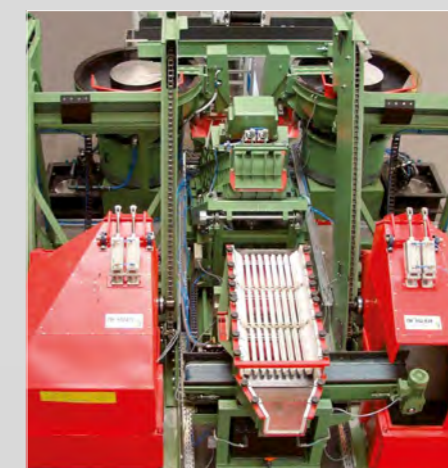
## 2-batch or 3-batch system

### The 2-batch system:



- ▶ There are two batches of parts and media in the system: While one batch of parts is processed, a second batch is being separated. This minimizes nonproductive, idle equipment time.
- ▶ The 2-batch system features a processing unit and a stand-alone separation station.

### The 3-batch system:



- ▶ There are three batches of parts and media in the system: While two batches of parts are processed, a third batch is being separated.
- ▶ The 3-batch system features a tandem installation (2 processing units) and one stand-alone separation station. This separation station is used by both processing units for separation of finished parts from media. Non-productive, idle equipment time is minimized.

### Equipment safety/noise protection

- ▶ Safety fence
- ▶ Sliding doors minimize the required floor space

#### Extras:

- ▶ Combined safety/noise protection cabin

Type		R 420 2 CH	R 620 2 CH	R 420 3 CH	R 620 3 CH
<b>Dimensions<sup>1</sup></b>					
<b>Length</b>	mm	5,300	4,400	5,300	5,400
<b>Width</b>	mm	3,900	4,000	4,900	5,000
<b>Single processing bowl</b>					
<b>Total volume</b>	l	420	620	420	620
<b>External diameter max.</b>	mm	1,520	1,700	1,520	1,700
<b>Process bowl width</b>	mm	350	430	350	430
<b>Overall length of processing channel</b>	mm	3,250	3,510	3,250	3,510
<b>Drive power</b>					
<b>Speed (at 50 Hz/ 60 Hz)*</b>	RPM	1,500	1,500	1,500	1,500
<b>Connected load</b>	kW	7.5	7.5	7.5	7.5

<sup>1</sup> More types available on request

\* Standard speed 1,500 and 1,000 RPM  
Variable speed with frequency inverter

# Special long radius vibrator type R.../2E-LR

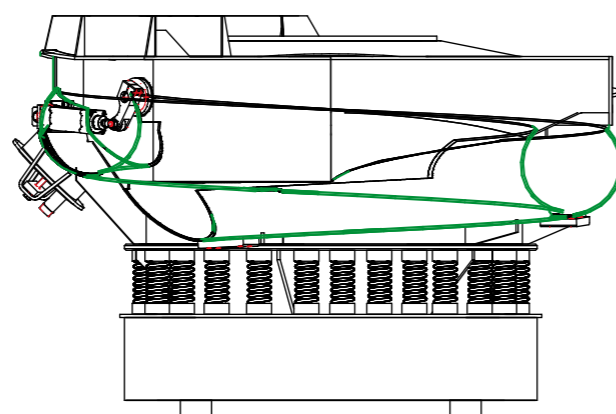
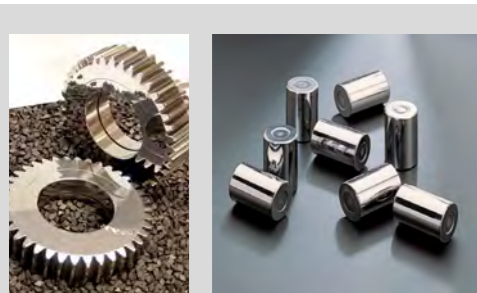
With their extra long processing channel long radius vibratory systems can be used for batch as well as continuous feed surface finishing. The work bowl has a double curved wall processing channel with equal channel width and depth. This guarantees excellent rotary movement and immersion of the parts into the media mass.

## Technical details:

- ▶ Spiral bottom process channel with continuous incline for easy separation
- ▶ Double curved walls of processing channel
- ▶ Gentle, adjustable "cascade" drop behind separation ramp.
- ▶ Manually insertable separation gate or pneumatically activated separation flap
- ▶ Linear screen area with easy to change separation screen
- ▶ Wear resistant lining made from HD 90 polyurethane



Optimum immersion of parts into media mass; protection against parts nicking each other on the channel incline



## Technical details:



**Parts loading:**  
Load chute for feeding parts in continuous feed operation



Pneumatically activated separation flap



Manually insertable separation gate

**Continuous or batch operation:**  
Separation package with automatic control of separation flap



## Separation of media from finished parts:

Easy to change screens requiring no tools allow quick ex-change of separation screens.

**Option:** Integrated rinse station over screening area for spray rinsing of the finished parts



Available upon request: Special linear separation unit with independent vibratory drive; can be linked to a rotary storage table

## Long radius- KP ball burnishing systems

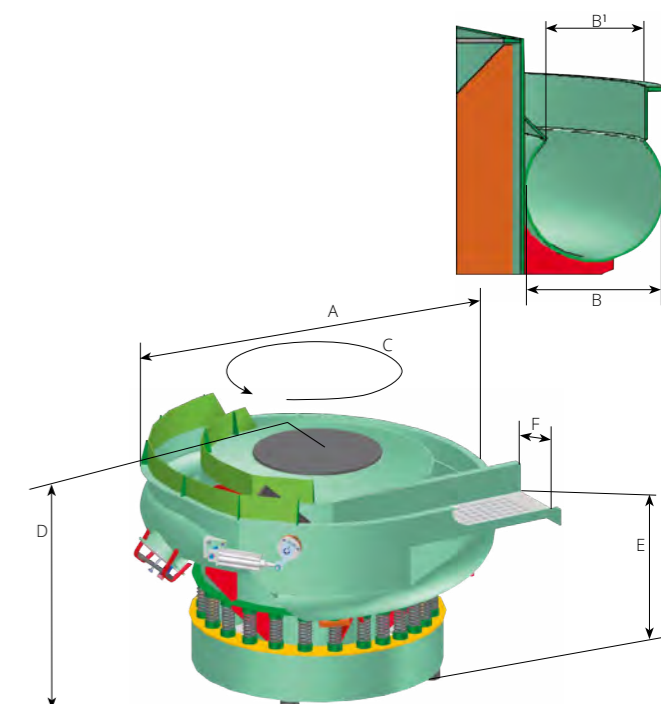
### For extra heavy loads:

Specially designed for ball burnishing or highpressure deburring with steel/stainless steel media:

- ▶ Re-enforced coil springs
- ▶ Lining of work bowl: sprayed polyurethane
- ▶ Recommended accessories: Suction pump and splash guard

Type		R 480/2 E-LR	R 780/2 E-LR
<b>Process bowl</b>			
Total volume	l	350	680
External diameter max.	mm A	1,900	2,380
Process bowl width	mm B	270	395
Workpiece loading width	mm B'	185	320
Overall length of processing channel	mm C	5,350	6,100
Machine height	mm D	1,230	1,570
Unload height	mm E	1,010	1,200
Screen width	mm F	280	340
<b>Drive Power</b>			
Speed (at 50 Hz/ 60 Hz)*	RPM	1,500	1,500
Connected load	kW	7.5	7.5
<b>Media unload plug</b>			
	Ø mm	200	200

\* Standard speed 1,500 and 1,000 RPM  
Variable speed with frequency inverter



State: 07/2015

# Separation technology

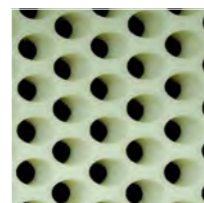
To be truly successful, vibratory finishing applications require sophisticated separation technologies. After the finishing process the parts must be completely separated from the media. Screen separation is the most commonly used separation technology. Pre-condition: Optimum difference in media and parts size. Small to mid-size ferritic parts can be separated with magnetic separators.

## Screen types:

### Perforated screens

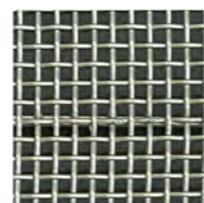
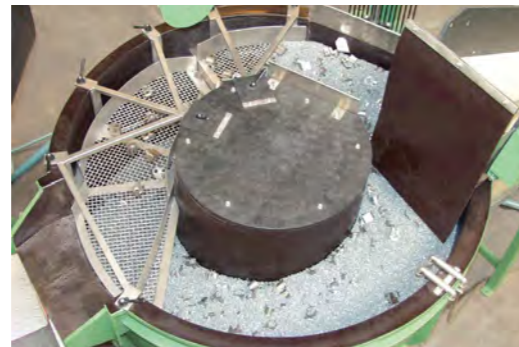


Perforated plastic board\*

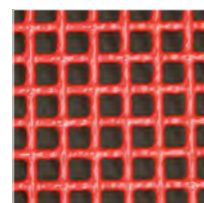


Plastic screen with holes at a 45 degree angle \*

### Mesh screens

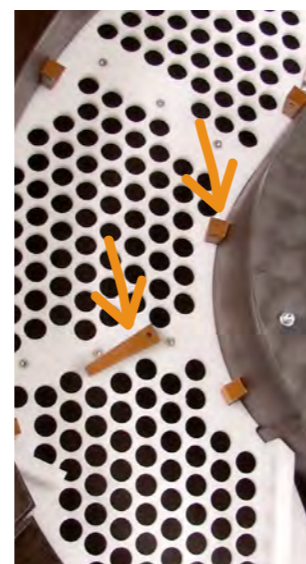


Stainless steel\*



Mesh screen with polyurethane coating\*

### Screen fastening wedges

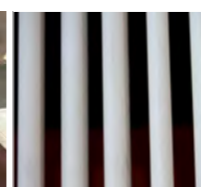
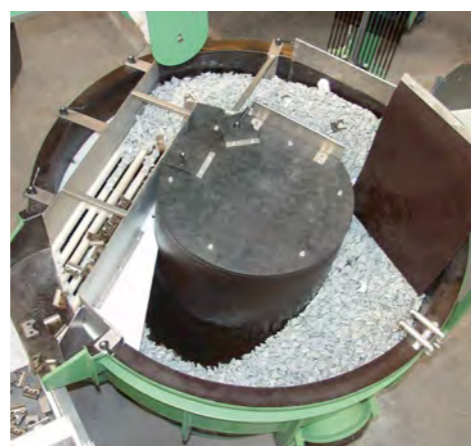


Polyurethane wedges allow quick screen fastening and ex-change of screens.

### Bar screens and slotted screens



Bar screen, (stainless steel)\*



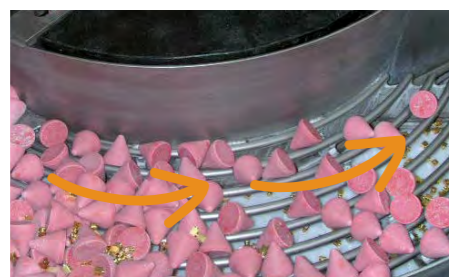
Milled plastic bar screen\*



Slotted plastic screen\*

### Reverse separation screens:

For some finishing applications the media may be bigger than the parts. This requires reverse separation screens for separation of finished parts and media.



\* Available in a wide range of sizes

## Special separation methods:



**Separation screens with built-in tumbling steps**  
Removes media from cup shaped parts



**Special separation flap** inserted from the top

### Special separation task: Linear separation unit with independent vibratory drive

Delicate parts can be separated from the media by using external screening units with independent vibratory drive. Drive system either by vibratory motor or magnetic oscillator; both with variable speed



Linear separation unit with vibratory motors



Linear separation unit with magnetic oscillator

### Undersize media classification:

The media changes its shape and size during the finishing process. Depending on the parts shape this can cause lodging of undersize media in bore holes, blind holes, undercuts, etc. To prevent such lodging, undersize media must be removed from the finishing system.



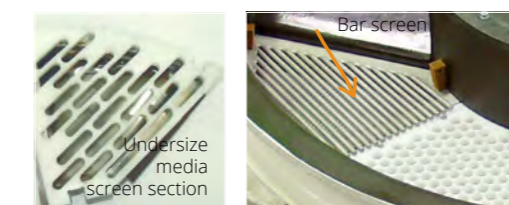
### Permanent undersize media classification:

The classification and discharge of undersize media is performed continuously while the vibratory finishing system is running (processing and separation stage).



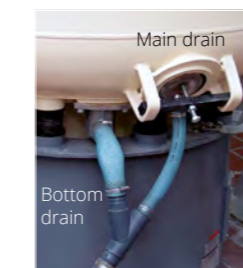
### Periodic undersize media classification:

The undersize media is only removed during the actual separation step; usually by a screen segment built into the separation screen.

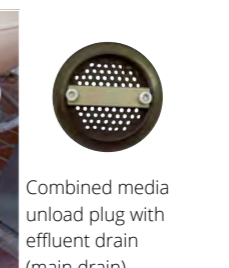


### Effluent drain:

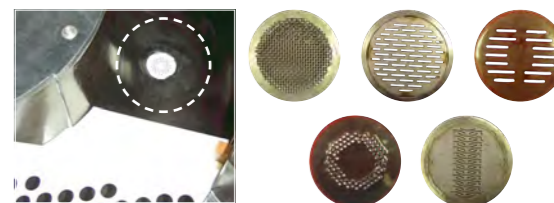
Effective removal of effluent from the work bowl is a pre-requisite for a stable finishing process.



Main drain  
Bottom drain



Combined media unload plug with effluent drain (main drain)



Bottom drains (optional) are recommended for complete removal of the effluent with special finishing applications (Keramo-Finish®, ball burnishing, REM/ISF®)

# Electrical control and compound dosing

## Electrical controls

Rotary vibrators can be used as manual stand-alone or fully automatic, linked systems. The electrical controls must reflect the complexity of the different finishing systems. For simple systems Rösler is using the well proven relay panels, while for more complex systems PLC controls are a must. These panels control all system functions including the compound and water dosing.

### Control panel E1:



- ▶ Easy to operate contactor panel for standalone machines without any peripheral equipment
- ▶ Timer for the duration of the finishing process
- ▶ Controls for dosing of fresh water or process water in recycling mode

### Control panel E2:



- ▶ Easy to operate contactor panel for standalone machines without any peripheral equipment
- ▶ Push buttons and indicator lights
- ▶ Timer for the start and duration of the finishing process
- ▶ Controls for dosing of fresh water or process water in recycling mode

### Control panel E3 and E9:



- ▶ Complete process automation with PLC S7-1200 and KTP 400
- ▶ Fully automatic operation of all Keramo-Finish® process stages
- ▶ Easy addition of extra control modules
- ▶ Controls for dosing of fresh water or process water in recycling mode and peripheral equipment

#### Extras:

- ▶ Variable speed of vibratory motor

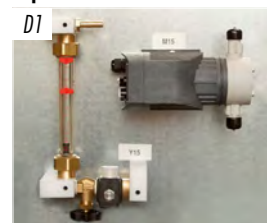
#### Extras:

- ▶ Variable speed of vibratory motor

## Compound dosing

A steady process water supply is a pre-condition for high quality finishing results. Since process water recycling systems offer ecological and economical advantages, they are preferred over fresh water supply systems.

### Compound dosing for fresh water operation:



D1 Direct installation at the control panel E1 for stand-alone machines



D2 General purpose dosing unit



D3 Keramo-Finish® dosing system

### Dosing unit for recycling operation:

Dosing unit for recycling liquids containing solid fines.



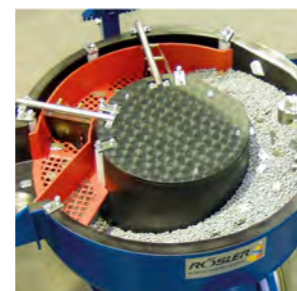
D1K without flow meter



D2K without flow meter

### Parts cleaning: Spraying and rinsing units

Spraying and rinsing units clean the parts during and after the vibratory finishing process. Special controls and dosing units permit the activation of the spray/rinse units for each individual process step.



Rinse station – above separation area



Circular rinse station in the work bowl

# Noise protection equipment

Noise abatement helps create an environmentally friendly working environment. In vibratory finishing, the size and operating intensity of the machine as well as the type and size of media and parts determine the noise level of the finishing process. Without any protective measures, the noise level can vary between 75 and 140 dB(A), mostly between 80 and 95 dB(A).

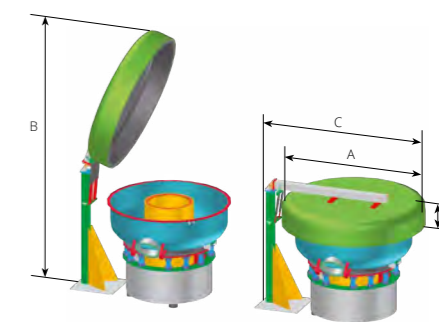
### Noise enclosing lid or splash guards:

The noise generated by the finishing process can be reduced by a tilting sound enclosing lid.

**G** = manual operation / cushioned by an air-filled shock absorber. For machines from size 420 upwards, we recommend pneumatic operation.

Type		SDD 125 G	SDD 220 G	SDD 260 G	SDD 320 G	SDD 420 G
External diameter max.	mm A	1,130	1,410	1,500	1,570	1,740
Max. height *, open	mm B	2,600	3,000	3,100	3,100	3,500
Max. width	mm C	1,520	1,760	1,810	1,840	2,100
Height lid	mm E	250	280	280	280	300

\* Height of max. opening angle = 70°



Type		SDD 320 P	SDD 420 P	SDD 620 P	SDD 780 P	SDD 1050 P	SDD 1500 P
External diameter max.	mm A	1,570	1,740	1,940	2,050	2,050	2,400
Max. height *, open	mm B	3,100	3,550	3,600	3,750	3,750	4,250
Max. width	mm C	2,200	2,400	2,610	2,660	2,660	3,000
Height lid	mm E	280	300	300	300	300	300

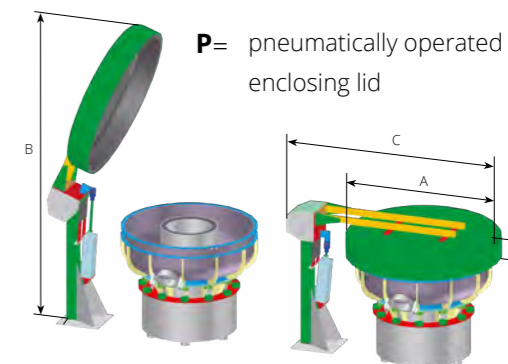
\* Height of max. opening angle = 70°

State: 04/2009



### Splash guard package:

Recommended for ball burnishing applications: The splash guard cover, combined with suction pump and speed control, prevents the uncontrolled splashing of processing liquid when foam is produced as part of the finishing process.



**P** = pneumatically operated noise enclosing lid

### The total noise protection package:

Noise protection cover and noise protection apron provide the perfect noise protection, especially in cramped conditions. Noise emissions of fully encapsulated machines – depending on operating conditions – can be reduced to < 80 dB(A).



### Noise protection cabin:

This is the perfect solution for interlinked vibratory finishing systems with integrated parts loading and post-treatment units. The walk-in noise protection cabins provide easy access for cleaning, maintenance and inspection. Thickness of the cabin modules: 40 mm or 60 mm. Reduction of the noise level down to < 75 dB(A).



# Special vibratory system

## RVH rotary vibrators for wood processing

The RVH range of vibratory vibrators has been specifically designed for surface finishing of wooden components.

### Applications:

- ▶ Deburring, radiusing
- ▶ Etching, bleaching, application of paint or wax



### Features and accessories:

- ▶ Channel screen in work bowl
- ▶ Special drive with speed control
- ▶ Paint package with heating fan
- ▶ Multiple, easy to change work bowl inserts
- ▶ Dust extraction
- ▶ PUR triangular wedge profile
- ▶ Bottom unload or screen separation



Channel screen – removal of wooden chips



Work bowl insert with heater fan

### Available sizes in the R ..., EC and Euro range:

- ▶ RVH 320
- ▶ RVH 420

## Rotary vibrators with bottom unload plug

Total discharge after “part-on-part” processing or for external separation.



Bottom unload plug with pneumatically or hydraulically activated locking lever

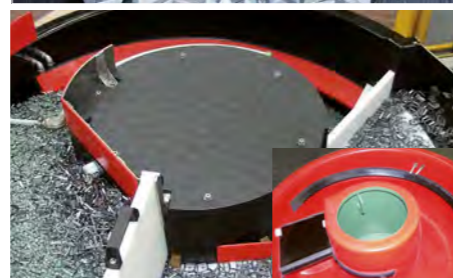


Bottom unload plug with manual locking lever

## Rotary vibrators with special work bowl lining



Process bowl with profiled structure: Prevents flat parts from sticking to the wall of the processing channel



Triangular wedge profile prevents light-weight parts from sticking to the channel wall and guides them back into the media mass

## Vibratory finishing without part-on-part contact – Rotary vibrators with dividers (“paddle wheel” system)

The “paddle wheel” divides the work bowl into individual segments or chambers. Each chamber can contain one part. This prevents damage due to part-on-part contact.



Stationary “paddle wheel” with dividers



“Paddle wheel” rotating with the media mass

## Vibratory finishing without part-on-part contact – Rotary vibrators without inner dome in the work bowl:

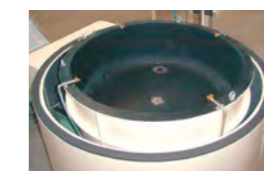
The components are either mounted to the work bowl or are „free floating” in the media mass:

- ▶ Large components: Single piece processing
- ▶ Small components: In groups, attached to special part fixtures



### Available sizes:

- ▶ R 150 DL
- ▶ R 220 DL
- ▶ R 320 DL
- ▶ R 420 DL
- ▶ R 1500 DL



## Continuous feed rotary vibrators – with parts in-feed chute

Parts are continuously fed into the work bowl through a special in-feed chute. This allows the use of the entire length of the process channel with cycle times of 3 – 7 minutes.

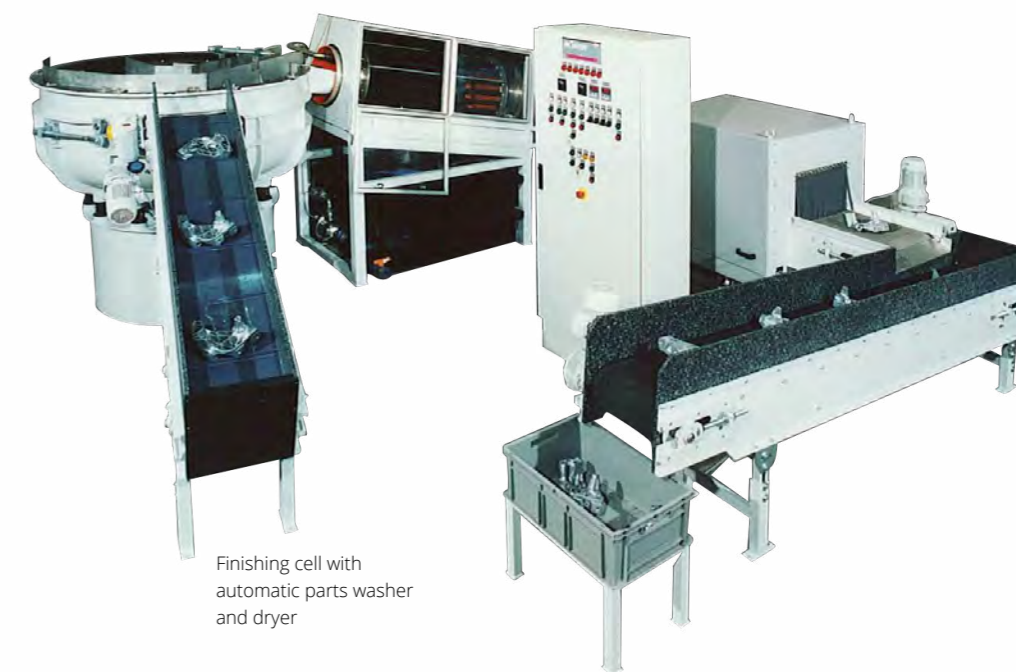


### Available sizes:

- ▶ R 620 Euro
- ▶ R 780 Euro
- ▶ R 1050 Euro
- ▶ R 1500 Euro
- ▶ R 480/2 E-LR
- ▶ R 780/2 E-LR



Parts in-feed chute



Finishing cell with automatic parts washer and dryer

# Fully automatic vibratory finishing

The efficiency of any vibratory finishing operation can be significantly increased by automating its material handling aspect – including parts-loading, -unloading and post-treatment. Rösler offers a complete range of material handling modules which can be configured into fully automatic surface finishing systems.

## Examples of automated vibratory finishing systems ...

Linear vibratory screen separation combined with rinse station, vibratory dryer and rotary storage table for finished parts



Automatic polishing system consisting of multiple vibrators, conveyor belt and vibratory dryer

Loading unit with vibratory feed hopper, magnetic belt separator and hot air belt dryer



Loading of raw parts with conveyor belt system; a second system of conveyor belts transports the finished parts to a vibratory dryer



Parts loading: Load system movable on rails with integrated vibratory feed hopper conveyor belt for collecting finished parts and transferring them to a vibratory dryer

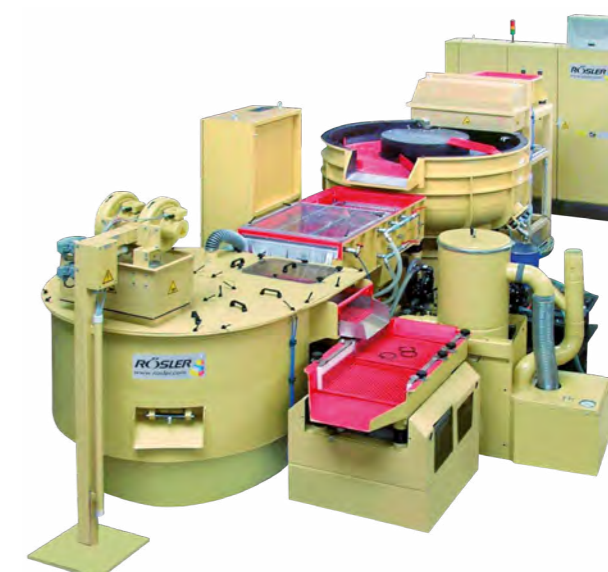


System for dual stage vibratory finishing: Parts are transferred from vibrator 1 to vibrator 2; drying with two vibratory dryers

Removal of finished parts and media from work bowl with pneumatic unload gate; external separation with magnetic drum; drying in vibratory dryer



Parts loading: Vibratory feed hopper. Vibratory washer for finished parts; drying with vibratory dryer linked with special vibratory screening unit to remove residual drying media from the finished parts







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