Long Radius Vibrators
Continuous-Flow and Batch Systems
Long Radius Vibrators

Rösler Long Radius vibratory finishing systems allow parts to be processed in either continuous-feed or batch mode. Their high degree of flexibility offers significant advantages for production planning, helping to reduce processing times and make the overall surface finishing process more economical. Last, but not least, their small footprint requires a minimum of floor space.

Media and compounds

Rösler offers the market’s widest range of mass finishing consumables. Thanks to over 60 years of experience in product development, we have a product range of over 8,000 different compounds as well as ceramic and plastic media in all shapes and sizes. This wide array of products is available to customers worldwide.

Applications for Long Radius Systems

Long Radius systems are highly effective for deburring, grinding, radiusing (edge breaking) pressure deburring, polishing and ball burnishing of: stampings, castings, forgings and machined parts. Their biggest advantage is that the same machine is capable of both batch and continuous-feed operation.

Functional principle

In the machine’s work bowl, filled with grinding or polishing media, the parts are surface finished in either batch or continuous-feed mode. In order to finish the parts, vibration is induced, which causes the parts and the media to move against each other in a scrubbing action. Once the finishing process is complete, the internal screening device separates the parts from the media. Long Radius machines provide rinsing of the parts while they are being screened, as well as automatic removal of undersized media from the system.

Long Radius machines can be easily linked into any production line.
Solenoid valves for control of process water flow and rinsing station. Flow controls and indicators for process water and compound are user-friendly and easy to read.

Powerful vibratory drive system

The specially designed DirectDrive vibratory motor offers ample horsepower to easily drive even the largest LR machines. The proven double cone flange motor mounting system ensures the efficient transfer of the vibratory energy into the processing channel. Easy access to the imbalance weights facilitates quick adjustment of the vibratory intensity. A frequency inverter allowing variable motor speeds offers additional flexibility for controlling the process intensity.

System controls

- User-friendly contactor controls (optional: PLC controls)
- Continuous speed adjustment of the motor
- Continuous control and monitoring of the water/compound dosing

Solenoid valves for control of process water flow and rinsing station. Flow controls and indicators for process water and compound are user-friendly and easy to read.

Engineered to the last detail

Evenly distributed process water entry points ensure intensive finishing action in the processing channel. Bottom drains are self-cleaning and easy to change, allowing quick drainage of the process water from the work bowl.

Separation

Quick and easy exchange of separation screens
Built-in rinsing station

Quick and easy media change

Easily accessible media discharge gate allows quick removal of the media from the work bowl.

Continuous flow or batch operation

Optional built-in pneumatically-activated separation flap allows continuous as well as batch operation.

Parts loading

Parts load chute for continuous loading of raw parts into the Long Radius machine

Machine base

- Welded construction provides a solid, stable machine base
- Large access door facilitates easy adjustment of imbalance weights, and other maintenance operations.
- Vibration dampers minimize the transfer of vibration to the floor

Occupational safety

Custom-built sound absorbing cabins are available upon request.

Long Radius Machine Technology

Rösler’s Long Radius machines were designed as “spiral bottom” machines. The processing channel of the work bowl features a continuous ascent through its entire 360° circumference, from the parts infeed chute up to the built-in separation screen. For batch operation, Long Radius machines can be equipped with an optional pneumatically-activated separation flap. The parts infeed chute below the separation screen ensures easy loading of the raw parts into the machine.

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Special Long Radius type R.../2 E-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 highlights:
- 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
- Adjustable imbalance weights allow different grinding intensities
- Wear resistant lining made from HD 90 polyurethane
- Media unload plug with integrated effluent drain
- Flexible design of electrical controls and compound dosing systems
- Extra bottom drains

Extras:
- Undersize media classification segment integrated into separation screen
- Special separation unit with independent vibratory drive
- Parts load chute
- Variable speed of vibratory motor

Applications:
Continuous feed mode
- Gentle deburring and radiusing of delicate parts
- Cleaning

Batch mode
- Intensive grinding/deburring/radiusing
- RÖSLER KeramoFinish® / REM Isotropic Superfinish ISF®
- Polishing/smoothing
- Ball burnishing

Technical details:

Parts loading
Load chute for feeding parts in continuous feed operation

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 exchange of separation screens.

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

Long Radius- KP ball burnishing systems
For extra heavy loads:
Specially designed for ball burnishing or high-pressure deburring with steel/stainless steel media:
- Reinforced coil springs
- Lining of work bowl: sprayed polyurethane
- Recommended accessories: Suction pump and splash guard

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

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Continuous feed mode
- Gentle deburring and radiusing of delicate parts
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Process bowl
<table>
<thead>
<tr>
<th></th>
<th>R 480/2 E-LR</th>
<th>R 780/2 E-LR</th>
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<tbody>
<tr>
<td>Depth</td>
<td>350</td>
<td>680</td>
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<tr>
<td>External diameter max</td>
<td>1900</td>
<td>2380</td>
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<tr>
<td>Process bowl width</td>
<td>270</td>
<td>395</td>
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<tr>
<td>Workpiece loading width</td>
<td>185</td>
<td>320</td>
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<tr>
<td>Overall length of processing channel</td>
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<td>6100</td>
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<tr>
<td>Machine height</td>
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<td>Unload height</td>
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<tr>
<td>Screen width</td>
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<td>340</td>
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<tr>
<td>Drive power</td>
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<td>7,5 kW</td>
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<tr>
<td>Speed*</td>
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<td>1000 RPM</td>
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<tr>
<td>Connected load</td>
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<tr>
<td>Media unload plug</td>
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</table>

* Standard speed 1500 and 1000 RPM. Variable speed with frequency inverter on request

RÖSLER finding a better way...
Linked Systems and Automation

The Long Radius systems can be easily integrated into manufacturing cells. Very delicate parts can be processed in continuous feed mode at pre-determined cycle times without touching each other, while somewhat less delicate parts can be processed in gentle batch mode.

Large volumes of parts not prone to impingement or nicking can be processed in continuous feed or batch mode.

**Continuous surface finishing of gear parts:**
Long Radius R 400/9 LR with hot air belt drier and rotary storage table for the finished parts.

**Gentle surface finishing in a single pass:**
Long Radius R 480/2E LR linked with an external media separation system and vibratory rotary drier.

**Batch processing of very delicate parts:**
Long Radius R 480/2E LR linked with a linear drive discharge system and rotary storage table for the finished parts.
**Big results — with a small footprint**

Whether as a stand-alone machine, or as part of a fully-automated system integrating proven Rösler loading and unloading components, Long Radius machines offer superior solutions to a wide variety of finishing requirements.

**Technical Data:**

<table>
<thead>
<tr>
<th></th>
<th>R 250/5 LR</th>
<th>R 310/5 LR</th>
<th>R 310/9 LR</th>
<th>R 400/9 LR</th>
<th>R 480/8 LR</th>
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<tr>
<td>Total length of processing channel (mm)</td>
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<td>B (mm)</td>
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<td>1370</td>
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<td>C (mm)</td>
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<td>1360</td>
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<td>1675</td>
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<td>D (mm)</td>
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<tr>
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<td>7.5</td>
<td>7.5</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

**Clean environment — our commitment**

A clean environment is an essential part of our company philosophy. In our production we use natural raw materials and recycled materials. Long maintenance intervals, the ease of maintenance of our equipment, concentrated compounds, and wear-resistant media, save valuable natural resources and contribute to a clean environment. The prevention of hazardous waste and the recycling of packing materials are an integral part of our production and sales policies.

**Quality — made in Germany**

For Rösler the word quality has deeper meaning than just faultless, reliable and long living products. Quality is an essential part of our work philosophy and is expressed in the personal sense of duty and quality found in each of our employees. Certification according to DIN ISO 9001 is living proof of our commitment to quality.
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RÖSLE OberflächenTechnik GmbH · www.rosler.com

• and more than 156 representations worldwide