Mass Finishing Technology
Process Water Treatment
Universal and Economical

From deburring to rounding edges up to polishing: Circular Vibrators are universal mass finishing machines that can be used for a wide variety of work pieces and finishing objectives. They offer a high level of efficiency and impress with their ease of use. RS Circular Vibrators can be used flexibly both as a single device and within automated production lines. They are ideal for bulk goods and are particularly economical because of an integrated extra-long separation zone.

**Application areas:**

- Deburring, Grinding, Polishing und Refining a multitude of workpieces and materials of different geometries
- Cleaning of casting molds and forged components
- Defrosting
- Economical processing of large quantities as bulk goods

Universal and Economical

Ideal for large quantities
Our RS circular vibrators are perfectly matched for a variety of applications and have the following technical features:

- Round container with a ramp that rises evenly and flatly over 180 degrees
- Extra-long, integrated separation zone with straight component outlet
- Protective polyurethane coating for long service life
- Integrated flap for separation
- Modular system for the use of various strainer plates and separation system (Reverse separators, Magnetic separators, …)
- Integrates process water management concept with quick-change drain filter
- Low maintenance, excitable vibration motor
- Easily accessible service openings
- Universal attachment option for attaching numerous delivery chutes
- Drain opening for quick change of grindstones
- Standard strainer bores to avoid grinding media jammed in the strainer
The following accessories are available for RS Circular Vibrators:

- Pneumatically activated separation flap
- Drive with variable speed control
- SPS controlled electrical switchgear
- Dosing systems for process media and additives
- All-round polyurethane wedge profile to reduce component buildup on the container wall
- Noise reducing lids
- Various systems for separation of material and grinding tools
- Extended process water control concepts
- Additional accessories (upon request)
Circular Vibrators
RM

- Varied use thanks to a work container without a central dome
- Homogeneous and uniformly grinding pattern
- Particularly suitable for hard-to-reach places and difficult geometries
- Grinding, polishing and high-gloss compaction possible in one machine thanks to the adjustable motor configuration

Versatile and efficient

From deburring to rounding edges up to polishing: RM Circular Vibrators are universal mass finishing machines that can be used for a wide variety of work pieces and finishing objectives. They offer a high level of efficiency and impress with their ease of use combined with high reliability.

Our RM Circular Vibrators are particularly suitable for fine grinding and polishing workpieces that place high demands on the desired surface. The special system construction makes it possible to achieve perfect surfaces even in hard-to-reach places such as corners or inner contours. With a high level of reproducibility and a uniform grinding pattern, RM Circular Vibrators offer maximum process safety and reliability.

For a surface quality first class
Application areas:

- Grinding, polishing and high-gloss compaction of aluminum components
- Polishing of die casting molds
- Grinding and polishing of medical implants
- Smoothing of wrought forms and turbine blades
- Deburring of complex component geometries
- Numerous other possible applications thanks to a process tailored to customer needs

Advantages:

- Consistent and reproducible processing quality of the grinding and polishing results
- Homogeneous and uniformly grinding pattern
- Possibility to maintain difficult workpiece contours
- Best results even in difficult places
- Possibility of non-contact grinding of several workpieces in one work container
- Designed for continuous operation even in 24-hour operation
- Semi-automatic operation possible through electronic process control
The following accessories are available for RM Circular Vibrators:

- Additional third unbalance motor at the tank bottom
- Drive with variable speed control (frequency controlled)
- SPS controlled electrical switchgear for partially and fully automated plant operation and optimized process control
- Dosing systems for process media and additives
- Noise-reducing lids
- Various clamping systems for fixing workpieces in the work container
- Extended process water control concepts
- Additional accessories (upon request)

*The connected load depends on the motor configuration. Two motors are available as standard, but several are available as an option.*
Trough Vibrators TV

- Universally applicable in numerous application scenarios
- Compact design for large work containers
- Numerous accessories options
- Particularly inexpensive even for occasional use
- Fast change of grinding media

Compact and Universal

Trough Vibrators are characterized by their compact design for universal use. Thanks to their U-shaped work containers, very large workpieces can be machined relative to the system sizes. The vibration motor attached directly to the underside of the working container drives the vibrators grinding machine particularly effectively. Our TV Trough Vibrators impress with a good price-performance ratio and offer an ideal machine platform for a variety of applications within the surface grinding technology.

That's how it works

With Through Vibrators, the workpieces and the grinding tool are pored loose into the working container. In the case of sensitive workpieces, the components either fixed using special clamping devices or machined in separate chambers to avoid damage during machining. The use of partitions also makes it possible to process different batches simultaneously in one machine.

The all-rounder among the mass finishing machines
Application areas:

- Deburring, smoothing and polishing
- Descaling, rust removal and cleaning
- Fillet edges
- Surface finishing

Advantages:

- Scraper edge to reduce buildup on the inside of the container
- Particularly economical even for occasional use
- Optionally available as a version for pressure deburring and for ball polishing
- Robust construction with a low-maintenance vibration motor
- Integrates holder for lifting and moving the machine using a pallet truck or a forklift
- Fast container emptying and grinding tool change through a generous drain opening for grinding media
- Quick change drain strainer made of polyurethane
- Rubber dampened feet to reduce vibration transmission
The following accessories are available for the TV Trough Vibrators:

- Drive with variable speed control (frequency controlled)
- SPS controlled electrical switchgear for partially and fully automated plant operations
- Partitions for dividing the work container
- Clamping systems for fixing workpieces
- Dosing systems for process media and additives
- Noise-reducing lids
- Extended process water control concepts
- Screening plants for the separation of workpieces and grinding media
- Universally screw able and therefore exchangeable delivery chutes
Mobile Tumbler TV mobil

- Mobile vibratory finishing machine with integrates preparation of process liquids
- Integrates strainer box for separating workpiece and grinding tools
- Compact design for large work containers including sound insulation
- Plug & Play System: Plug in the 230V power supply and get started

Mobile und Universal

Trough Vibrators are characterized by their compact design for universal use. Thanks to their U-shaped work containers, very large workpieces can be machined relative to the system sizes. Our TV Mobile is unique in that all components that are required for vibratory grinding are compact and mobile mounted on a trolley. An integrated cascade cleans the process liquid, workpieces can be separated using a strainer box and various grinding tools can be stored in slots.

Advantages:

- Mobile: All components integrated in an trolley
- Plug & Play: For commissioning, only the 230V power supply has to be plugged in
- Quiet operation due to sound insulation
- Integrated electrical control for process monitoring
- Strainer device for separating workpieces and grinding tools
- Process water treatment through an integrates cascade

The mobile trough vibrator for surface grinding
<table>
<thead>
<tr>
<th></th>
<th>TV15-M</th>
<th>TV25-M</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross volume</strong></td>
<td>Liter</td>
<td>27</td>
</tr>
<tr>
<td><strong>Net volume</strong></td>
<td>Liter</td>
<td>18</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>kW</td>
<td>0,5</td>
</tr>
<tr>
<td><strong>Inside length</strong></td>
<td>mm</td>
<td>500</td>
</tr>
<tr>
<td><strong>Inside width</strong></td>
<td>mm</td>
<td>220</td>
</tr>
<tr>
<td><strong>Inside high</strong></td>
<td>mm</td>
<td>270</td>
</tr>
<tr>
<td><strong>Overall length (A)</strong></td>
<td>mm</td>
<td>1450</td>
</tr>
<tr>
<td><strong>High of the tumbler (B)</strong></td>
<td>mm</td>
<td>1240</td>
</tr>
<tr>
<td><strong>High of the table (C)</strong></td>
<td>mm</td>
<td>720</td>
</tr>
<tr>
<td><strong>Width open door (D)</strong></td>
<td>mm</td>
<td>1200</td>
</tr>
<tr>
<td><strong>Width closed door (E)</strong></td>
<td>mm</td>
<td>730</td>
</tr>
<tr>
<td><strong>Total high (F)</strong></td>
<td>mm</td>
<td>1350</td>
</tr>
</tbody>
</table>

The following accessories are available for the mobile TV grinding systems:

- Drive with variable speed control (frequency controlled)
- Extended process control by timer
- Partitions for dividing the work container
- Clamping systems for fixing workpieces
- Dosing systems for process media and additives
- Extended process water control concepts
- Strainer for separating workpieces and grinding media in different perforations
- Additional accessories (upon request)
Trough Vibrators

TS

- Particularly powerful thanks to an extra large work container
- Powerful vibration motors attached at the front
- Suitable for processing oversized components
- Applicable for numerous special processes
- Possibility of batch grinding with chambers

Powerful and Universal

Trough Vibrators are characterized by their compact design and are universally applicable. Thanks to their U-shaped work container, very large workpieces can be machined relative to the system sizes. TS-Vibrators differ from our TV-Vibrators in the design and mounting of the drive engines. This makes it possible to build particularly large and powerful Trough Vibrators.

Advantages:
- Scraper edge to reduce buildup on the inside of the container
- Wide range of applications thanks to an undivided work container
- Suitable for processing XXL components
- Partition systems for dividing the work container into chambers are optionally available
- Particularly large work containers with high usable volumes available
- Optionally available as a version for pressure deburring and ball polishing
- Non-contact component processing possible using the clamping system

Powerful and Universal even with large workpieces
The following accessories are available for the TS Trough Vibrators:

- Drive with variable speed control
- SPS controlled electrical switchgear for partially and fully automated plant operations
- Partitions for dividing the work container
- Clamping systems for fixing workpieces
- Dosing systems for process media and additives
- Noise-reducing lids
- Extended process water control concepts
- Screening plants for the separation of workpieces and grinding media

<table>
<thead>
<tr>
<th></th>
<th>TS24</th>
<th>TS43</th>
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<td>Liter</td>
<td>350</td>
<td>550</td>
<td>800</td>
<td>1200</td>
<td>1550</td>
<td>1700</td>
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<tr>
<td>Net volume</td>
<td>Liter</td>
<td>240</td>
<td>380</td>
<td>550</td>
<td>900</td>
<td>1180</td>
<td>1300</td>
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<td>Power</td>
<td>kW</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>10</td>
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<tr>
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<td>2520</td>
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<tr>
<td>Inside width (C)</td>
<td>mm</td>
<td>420</td>
<td>550</td>
<td>550</td>
<td>650</td>
<td>850</td>
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<td>mm</td>
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<td>630</td>
<td>790</td>
<td>790</td>
<td>890</td>
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<tr>
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<td>mm</td>
<td>18</td>
<td>20</td>
<td>20</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>
Energy saving and Powerful

Since a process liquid is usually used for vibratory grinding, the workpieces are contaminated with it and must be cleaned or dried at the end of the process. Either hot air or special drying media are used to dry the components. For this purpose, the workpieces are places in a container, in which there is a heated medium for drying. Nut and corn cobs are often used in rotary dryers.

Application areas

• Component drying directly after the surface grinding process
• Polishing of components
• Stain reduction
• Fine machining of particularly difficult contours
• Prevention of flash rust due to completely dried surfaces
• Efficient drying of complex geometries

For efficient component drying after surface grinding
Advantages

- Economical and fast drying of components after surface grinding
- Achieving stain-free surfaces
- Drying and polishing the workpieces in one step
- Integrated screen section for efficient workpiece separation
- Depending on the version, batch-wise operation and continuous operation possible thanks to an integrated flap
- Spirally rising container bottom for gentle processing without a steep ramp
- Modularly exchangeable sieve inserts and delivery chutes for flexible use
- Heating registers mounted as standard in the vibration-decoupled base frame for maximum service life
- Prepared as standard for connection to dust extraction systems
<table>
<thead>
<tr>
<th></th>
<th>RT16</th>
<th>RT22</th>
<th>RT37</th>
<th>RT50</th>
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<td>Liter</td>
<td>75</td>
<td>130</td>
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<td>1,6</td>
<td>1,6</td>
<td>1,9</td>
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<tr>
<td><strong>Max. heating capacity</strong></td>
<td>kW</td>
<td>4</td>
<td>5,2</td>
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<tr>
<td><strong>Outer diameter (A)</strong></td>
<td>mm</td>
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<td>1600</td>
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<tr>
<td><strong>Width of strainer surface (B)</strong></td>
<td>mm</td>
<td>200</td>
<td>260</td>
<td>360</td>
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<tr>
<td><strong>Width of canal (C)</strong></td>
<td>mm</td>
<td>215</td>
<td>300</td>
<td>400</td>
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<tr>
<td><strong>Total high (D)</strong></td>
<td>mm</td>
<td>1100</td>
<td>1100</td>
<td>1200</td>
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<tr>
<td><strong>Output high (E)</strong></td>
<td>mm</td>
<td>880</td>
<td>880</td>
<td>950</td>
</tr>
<tr>
<td><strong>High of component-supplying (F)</strong></td>
<td>mm</td>
<td>820</td>
<td>820</td>
<td>900</td>
</tr>
</tbody>
</table>

*Custom height adjustment possible.

The following accessories are available for RT Circular Dryers:

- Drive with variable speed control
- SPS controlled electrical switchgear for partially and fully automated plant operations
- Pneumatically activated separation flap
- Dust covers and dust extraction systems
- Noise-reducing lids
- Increased heating power for shorter heating times
- Thermostat-controlled temperature control
- Universally adaptable delivery chutes
- Wear and shock protection coatings
- Strainer for separation in different perforation sizes and with protective coatings to minimize noise and component damage
Centrifuges
ZS

- Efficient processing of process liquid through high centrifugal forces
- Different sizes exactly suitable for your application
- High throughput enables the simultaneous supply of several systems
- SPS controlled and monitored cleaning process
- Process water management

Environmentally friendly and powerful

There are numerous applications in industrial production in which large amounts of contaminated process fluids are produced. If these liquids are processed and kept in a continuous cycle, costs are saved and the environment and resources are sustainably protected.

Our centrifuges with exchangeable sludge insert from the ZS series are characterized by their high cleaning performance. Thanks to the modular concept consisting of a centrifuge attachment and a base, the system can be adapted exactly to your customer needs. There is a choice of buffer tanks with different volumes for both dirty and clear water.

ZS centrifuges are particularly user-friendly because a SPS control monitors and controls the entire system. The process water management system independently monitors fill levels and communicates with coupled systems. With an exchangeable sludge insert, the discharged and dried solid can be disposed of economically and easily.

For the cycle management and cleaning of liquids
Advantages

• High discharge capacity due to acceleration forces in the system of over 2000 times gravitational acceleration (depending on model)
• Management of the process water in a cycle, which minimizes operating costs and protects the environment
• Saving of expensive additives for the finishing process (compound)
• Economical and efficient separation of solid particles from a mixture
• Designed for continuous operation with high availability
• Complete process water management in one system (buffer storage, pressure pumps, automatic level monitoring and refilling, ...)
• Supply of several systems simultaneously with only one ZS centrifuge by optionally available additional buffer tanks for clear water
• Suitable for process liquids up to 70 °C (optional cooling available)

Areas of application

• Treatment of vibratory finishing process water
• Cleaning of mixtures (suspensions and emulsions)
• Preparation of phosphating, painting, washing and oil baths
• Processing of cooling lubricants (KSS)
• Preparation of cooling liquids from saws, milling machines and lathes
• General separation of solids from liquid mixtures
The following accessories are available for our ZS centrifuges:

- Various container sizes as buffers for process fluids made of PE, PP, stainless steel
- Modularly expandable clear water tank (KW)
- Peeling pipe for clear water supply without additional feed pump
- Pressure pumps for the simultaneous supply of process water to several systems
- Auxiliary pumps and lifting systems for sucking liquid from foreign containers
- Filter and screening systems for the pre-cleaning of process liquids
- Electronic coupling with a plant park
- Automatic level monitoring and refill dosing devices
- Automated dosing devices for additional media (flocculant, compound)
- Stainless steel housing (A2 or A4)
Mobile Centrifuges ZS-M

- Mobile cleaning centrifuge with optional integrated tanks for process liquids
- Plug & Play: ready for operation in just a few minutes
- Efficient processing of process fluids through high centrifugal forces
- SPS controlled and monitored cleaning process

Mobile and powerful

There are numerous applications in industrial production in which large amounts of contaminated process fluids are produced. If these liquids are processed and circulated, costs are saved and the environment and resources are sustainably protected. Our mobile centrifuges ZS-M are characterized by their mobility with a very compact design. The trolley makes it possible to use the centrifuge universally and locally. Thanks to the modular concept and the availability of several construction and buffer tank sizes, ZM centrifuges can be optimally adapted to customer-specific needs.

For mobile processing of contaminated process fluids
Advantages

- Maximum mobility through the integration of all components on a trolley
- Flexible use due to a compact design
- High discharge capacity due to acceleration forces in the system of over 2000 times gravitational acceleration
- Management of the process water in a cycle, which minimizes operating costs and protects the environment
- Saving of expensive additives for the finishing process (compound)
- Economical and efficient separation of solid particles from a mixture
- Designed for continuous operation with high availability
- Plug & Play System: ready for use in minutes
- Clean liquids from multiple machines with just one centrifuge

Areas of application

- Treatment of vibratory finishing process water
- Cleaning of mixtures (suspensions and emulsions)
- Preparation of phosphating, painting, washing and oil baths
- Processing of cooling lubricants (KSS)
- Undersize discharge during wet blasting
- General separation of solids from liquid mixtures
- Cleaning of baths and storage tanks from external systems
### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>ZS21-M</th>
<th>ZS21-M FW</th>
<th>ZS38-M</th>
<th>ZS38-M FW</th>
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</thead>
<tbody>
<tr>
<td>Max. Capacity</td>
<td>Liter/min</td>
<td>70</td>
<td>70</td>
<td>120</td>
</tr>
<tr>
<td>Max. Capacity of sludge basket</td>
<td>Liter/</td>
<td>kg 3,5</td>
<td>3,5</td>
<td>15</td>
</tr>
<tr>
<td>Rated speed</td>
<td>U/min</td>
<td>4160</td>
<td>4160</td>
<td>2900</td>
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<tr>
<td>Max. acceleration at nominal speed</td>
<td>g</td>
<td>2070</td>
<td>2070</td>
<td>1810</td>
</tr>
<tr>
<td>Power</td>
<td>kW</td>
<td>1,5</td>
<td>1,5</td>
<td>4</td>
</tr>
<tr>
<td>Average power consumption</td>
<td>kW</td>
<td>0,8</td>
<td>0,8</td>
<td>1,5</td>
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<tr>
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<td>mm</td>
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<td>210</td>
<td>380</td>
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<tr>
<td>Dirty water tank</td>
<td>Liter</td>
<td>99</td>
<td>-</td>
<td>150</td>
</tr>
<tr>
<td>Process water tank</td>
<td>Liter</td>
<td>93</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Total high (A)</td>
<td>mm</td>
<td>1330</td>
<td>1330</td>
<td>1330</td>
</tr>
<tr>
<td>Total width (B)</td>
<td>mm</td>
<td>730</td>
<td>730</td>
<td>980</td>
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<td>High of dirty water drain (C)</td>
<td>mm</td>
<td>840</td>
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<tr>
<td>Total length (D)</td>
<td>mm</td>
<td>1030</td>
<td>1030</td>
<td>1380</td>
</tr>
</tbody>
</table>

**The following accessories are available for our mobile centrifuges:**

- Clear water tank (KW) with pressure pumps for process water supply
- Waste water tank (SW) as a buffer for process liquids
- Combined trolley with several separate containers (clear and waste water)
- Optionally with or without a peeling pipe for the discharge of clear water
- Auxiliary pumps for drawing liquid from foreign containers
- Electronic coupling with a plant park
- Agitator for improved solids discharge
- Automatic compound level monitoring and dosing units
Economical and mobile
For efficient and economical separation of grinding media and workpieces, our separation machines offer the highest performance in a compact design. Can be used anywhere and is extremely mobile thanks to lockable castors.

Advantages:
• Semi-automatic operation by two unbalance motors
• Economical separation of workpieces and grinding tools even with larger quantities
• The shortest set-up times when changing the sieve plates are made possible by a tool-free quick clamping system
• Integrated drop stages for improved sieving of grinding wheels
• Conical perforated screens to avoid wedged grinding wheels
• Sieve pan made of stainless steel, therefore no spreading of rust traces
• Screen surface completely lined with plastic to reduce damage to components during the screening process

Separators WS
• Economic separation of workpieces and grinding media
• Modularly combinable with many slide grinding systems
• Quickly exchangeable screen inserts for a wide range of grinding media
• Mobile use thanks to swivel castors
• Adaptable to a wide variety of vibratory grinding machines

For economic and mobile separation
The following accessories are available for the WS separations:

- Drive with variable speed control
- Electronic coupling within a plant park
- Sieve plates in various perforations depending on customer requirements
- Dispensing chutes in various designs and lengths
- Integrated screening of undersize chips
- Scraper, rinsing rings and drop steps for improved separation
Choose from a wide portfolio of processing equipment for your grinding or machining process. A wide range of grinding tools in different sizes and geometries are available. Liquid additives (compounds) are just as important for a high-quality vibratory finishing process as component drying at the end of the grinding process.

**Abrasives:**
- Ceramic grinding tool
- Plastic grinding wheel
- Special media for polishing and high-gloss compaction

**Granules for component drying:**
- Corn meal
- Nut meal
- Various special media

100% tailored to your application
Mass Finishing
Effluent Treatment
Grinding Technology
Abrasives
Edge Rounding
Special Machine Construction

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