

# Systems for cleaning industrial liquids



# Rösler process solutions, working in perfect harmony



Rösler offers proven and effective all-in-one, complete solutions for the cleaning of industrial liquids. By conducting extensive production trials we always find the optimum solution for the specific requirements of our customers. This includes the determination of the best cleaning technology and also covers the selection of optimum peripheral equipment. We know from experience that only all-in-one solutions produce the results that meet the customer needs. This philosophy has been proven many times over and is reflected in our manufacturing depth that is unmatched in the industry. This is the reason why, with our innovative equipment technologies and high quality standards, Rösler has been able to establish itself as the global market leader.

**We support our customers in more than 60 countries with a network of sales and manufacturing branches along with international distributors and sales representatives.**



Rösler is the only supplier in its field that maintains numerous test centers around the globe which are equipped with the latest equipment technology and where we develop process solutions under actual production conditions. This prevents not only long travelling distances and high transportation costs for our customers, but also ensures easy access to our process specialists and state-of-the-art equipment resulting in optimum process and equipment solutions.

## For our customer this translates into:

- ▶ Process solutions that are environmentally friendly and protect our natural resources
- ▶ Savings in consumption of fresh water and production materials
- ▶ Longer bath uptimes
- ▶ Cost reduction
- ▶ Compliance with environmental legal standards
- ▶ Improved part qualities
- ▶ No requirement for auxiliary filter materials



## 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.

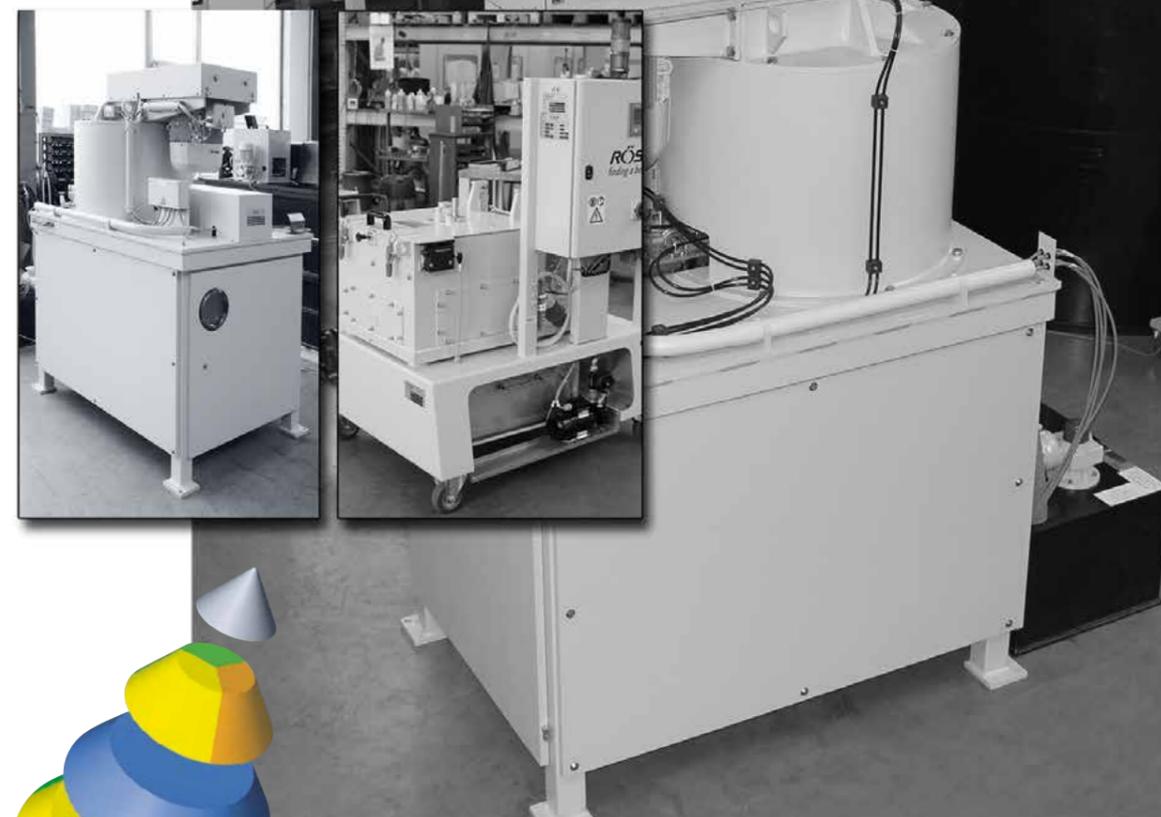
## Rösler Academy

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

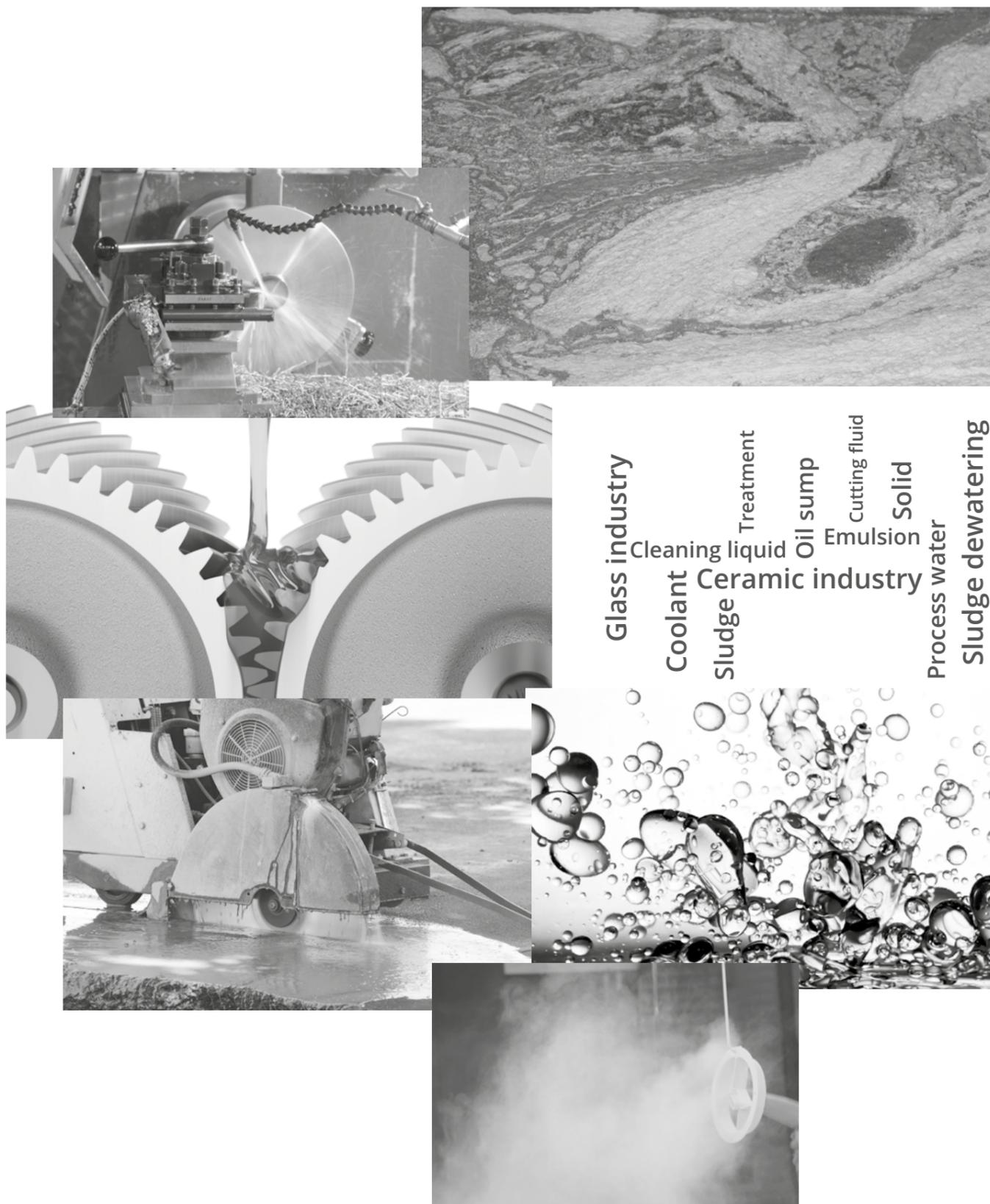
As the only supplier in the world that offers both mass finishing and shot blasting, we are committed to passing our knowledge and knowhow to our customers through seminars covering a wide range of surface finishing subjects. Gain in depth knowledge of how mass finishing works, how blast media passes 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).



DIN EN ISO 9001 and 50001



# Fields of application / Cleaning of different kinds of liquids



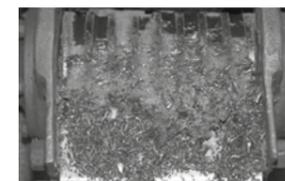
Glass industry  
 Treatment  
 Cleaning liquid  
 Oil sump  
 Emulsion  
 Cutting fluid  
 Solid  
 Process water  
 Sludge dewatering  
 Coolant  
 Ceramic industry  
 Sludge

## Overview



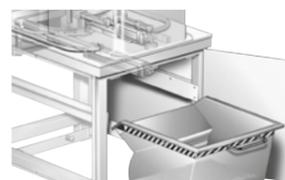
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## Saving water and protecting the environment!

### „All of us share ecological responsibility“

The Rösler Company has been guided by this golden rule throughout its history. Our centrifugal force filtering equipment help protect the environment.



### Process water treatment continues to grow in importance.

Become a role model...

...clean your liquids and at the same time reduce your water consumption.

## Effective separation of solids from liquids

The technologies utilized for treating process water like coolants, sludge from painting operations and other industrial liquids must not only guarantee an excellent cleaning effect but they must also be economical. With its sturdy and sophisticated centrifuge technology Rösler offers a wide range of cleaning solutions which include numerous technical features which excel with their outstanding cost efficiency.

Any technology for cleaning and recycling of process liquids must overcome significant technical, ecological and economic challenges to meet the prevailing cleanliness standards. The powerful centrifugal filters from Rösler, available with 2- or 3-phase separation, are usable for a wide range of different cleaning tasks and can easily be adapted to specific applications. In the semi-automatic RZ 120 M systems the sludge is manually removed from the rotary drum, whereas the RZ 150 A series features fully automatic sludge removal.

### That's how it works

In some applications the process liquid from the production machine(s) flows directly to the centrifuge, whereas other applications require a pump (lifting) station for transporting the water to the centrifuge. Coarse, solid contaminants are caught by a pre-filter at the inlet of the collection tank. The premature settling of the suspended solids at the bottom of the collection tank is prevented by an integrated electrical stirring device. A feed pump transports the process liquids polluted with solid particles and/or oil continuously into the rotating drum of the centrifuge. The high rotary drum speed of up to 3,000 RPM produces a centrifugal force that is strong enough to separate very small and light weight solid particles from the liquid phase and deposit them on the drum wall in the form of solid sludge with a residual water content of as low as 20%. Additional filters or cleaning agents are not necessary to meet the specified cleanliness requirements. The liquid now free of solids is caught by a collecting tube placed in the rotary drum and usually transported to a clear water tank. The semi-automatic RZ 120 M series is equipped with a flexible drum basket which allows easy removal of the sludge. The fully automatic centrifuges are equipped with a knife that "peels" the sludge from the inner drum wall and drops it into a container below the drum. Depending on the type of operation one single centrifugal force cleaning system can serve multiple production units, for example several mass finishing machines.

## Fully automatic centrifuges

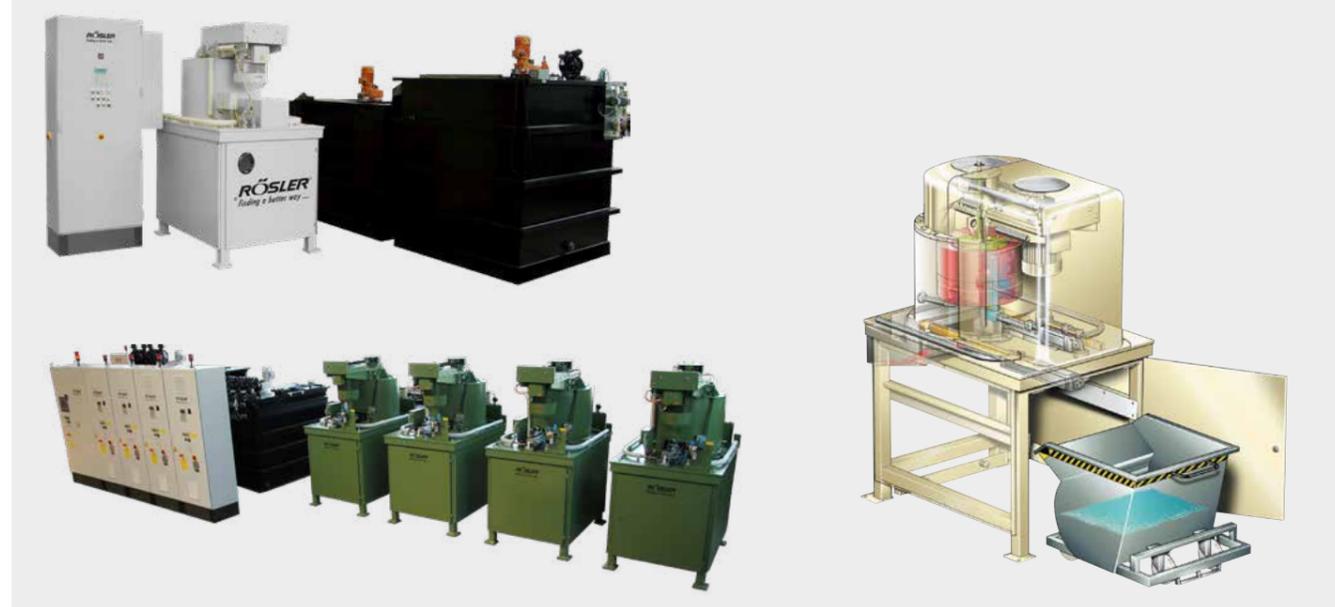
To ensure a high separation performance as well as a high reliability and uptime this centrifuge type including all its key components: electric motor, pumps, valves, rotary drum and peeling knife is characterized by its particularly sturdy design. This also includes the maintenance-friendly indirect drive of the rotary drum with special V-belt as opposed to direct drive systems which are prone to premature bearing failures. The rotating drum, with a load capacity of 30 kg (66 lbs.), is made from aluminum or stainless steel. Especially with reactive liquids the latter prevents corrosion and damage to the drum.

Depending on the specified cleanliness requirements and physical limits regarding size and weight of the particles in the liquid, the cleaning rate of the Rösler automatic centrifuges can reach 150 l/min (25 gal/min). The extremely high centrifugal force of up to 2,000 g separates solid particles > 2.0 µm from the liquid phase and deposits them on the inner drum wall as stable sludge. For example, the centrifugal filtering technology contributes to a significantly longer uptime of lubricating coolants, before they must be exchanged. Removal of the fine solid particles greatly reduces the risk of microbiological contamination. The liquid, cleaned by the centrifugal force in the drum, is picked up by a collecting tube and, depending on the application, is re-used or disposed of as waste.

### Designed for heavy duty operation and easy maintenance

For the automatic sludge discharge from the rotary drum the Rösler engineers developed an innovative technical solution: Whereas in conventional centrifuges the peeling knife, powered by a geared motor, is continuously rotating with the rotary drum, the peeling knife in the Rösler centrifuges is stationary. With a linear guide the knife moves towards the inner wall of the slowly rotating drum and peels out the sludge without placing any load on the drum bearings. After completion of the peeling cycle the inside of the drum undergoes an intensive, automatic rinse step to remove any residual sludge, which during subsequent cleaning cycles could cause imbalances resulting in premature wear of the bearings. Standard equipment in all centrifuges includes an imbalance control.

RZ 150 A with standard automatic sludge discharge



# Semi-automatic centrifuges

The semi-automatic centrifuges offer excellent cleaning results and their compact, space saving design also allows easy placement close to the processing machine(s). All components, including the centrifuge, the control panel, the process water and clear water tank are pre-assembled, allowing quick on site installation. Centerpiece of the cleaning system is the centrifugal unit designed and built by Rösler. Its robust design allows the treatment of especially aggressive liquids in a wide range of pH values.

With this centrifuge type the collecting tube catching the cleaned liquid in the rotary drum can transfer the liquid either to an adjacent clean water tank or directly to the processing machines in the immediate vicinity. For special applications with aggressive liquids the Rösler centrifuges can be supplied as stainless steel (S304/S316) versions. For use at multiple locations the semi-automatic centrifuges are also available with movable base frame. This allows the cleaning of contaminated industrial liquids from machines at different locations without requiring expensive logistics.



RZ 120 M



RZ 120 M-K



RZ 120 M-V

## 2-phase centrifuges RZ 60 M / RZ 120 M

RZ 60 M



<b>Max. throughput (l/min)</b>	max. 60
<b>Capacity sludge basket (dm³)</b>	1,8
<b>Temperature resistance (° C)</b>	70
<b>G-rating (g)</b>	1.800
<b>Motor power (kW)</b>	1,5
<b>Speed (RPM)</b>	4.100

RZ 120 M



<b>Max. throughput (l/min)</b>	max. 120
<b>Capacity sludge basket (dm³)</b>	7,5 - 10
<b>Temperature resistance (° C)</b>	70
<b>G-rating (g)</b>	1.800
<b>Motor power (kW)</b>	5
<b>Speed (RPM)</b>	2.860

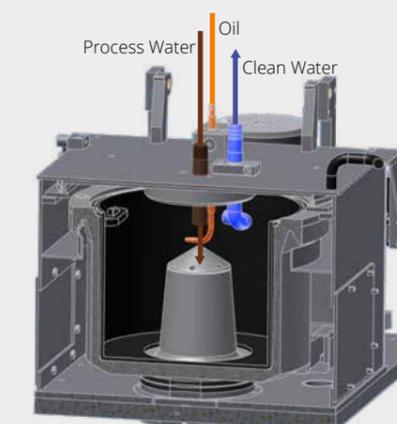
## 3-phase centrifuge RZ 120 M-3 PH

The 3-phase centrifuges allow the separation of solid particles and through a second collecting tube they can also separate oil from the process liquid. This is defined as a liquid/liquid/solid separation process. The industrial liquid containing oil and solid particles is fed into the centrifuge at a constant flow rate. Because of the different densities of the 3 “phases” the centrifugal force separates the solids and also the oil from the water. The two separated liquids are caught by two dedicated collecting tubes. The oil is transferred to a special oil tank from where it can be removed periodically and disposed off as waste. The solid sludge is deposited on the inner wall of the sludge basket and is simply removed by emptying the sludge basket at certain time intervals.

RZ 120 M-PT for 3-phase separation including process water tank made from steel

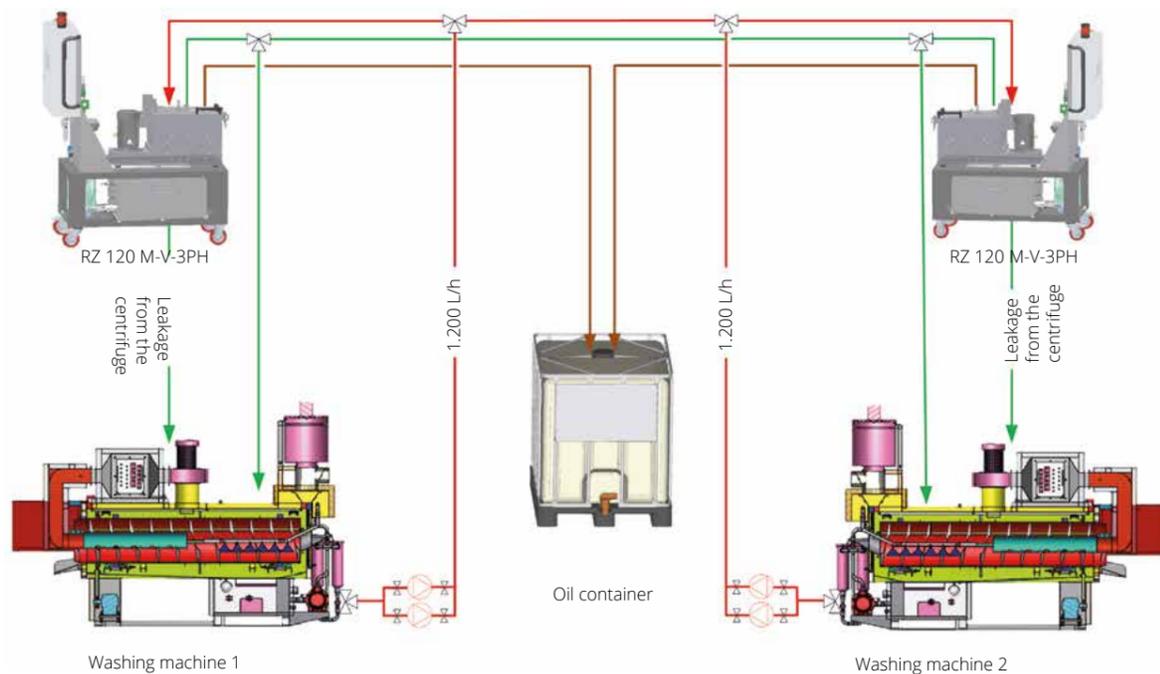


RZ 120 M-V-3PH



Cross-section of a 3-phase centrifuge

## Flow chart-example 3-phase cleaning



## Peripheral equipment

### Different process water tanks



Process water tanks made of polyethylene, polypropylene or steel/stainless steel - available in many volumes.

### Pre-separation of coarse solid particles

- ▶ Magnet separator or trough scraper
- ▶ Belt or drum filter

### Cooling of the liquid

Cooling units adapted to the liquid throughput guarantee a stable cleaning process.

## After-Sales-Service

With our wide range of technical resources we can provide competent and professional support regarding all your process water treatment problems and questions:



### 24/7 all-round, one stop technical support!

- ▶ Experienced and highly qualified team of process engineers
- ▶ Support with any process problems and questions
- ▶ Numerous test centers around the world
- ▶ Global network of branches with chemical laboratories for analyzing process liquids
- ▶ 24 hour hot line – round the clock problem solving capability
- ▶ Timely wear and spare parts service
- ▶ Tailor made maintenance contracts
- ▶ Training programs for operators and maintenance personnel
- ▶ Technical upgrades and/or relocation of existing equipment
- ▶ Support in ensuring compliance with legal requirements
- ▶ In Germany: Protective earth conductor tests (in line with EN 60204-1 / VDE 0113)
- ▶ In Germany: Periodical controls of production materials in line with Betr.Sich.V. (formerly „UVV controls“)



### Maintenance and repair service

Our qualified service team stands ready to serve you at any time, be it for an emergency, a repair or a planned maintenance.

With our short response times and well equipped service vehicles we can quickly repair and maintain your equipment on site.



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