

# ROMFIL

EVOFLOW CROSSFLOW FILTRATION



# ROMFIL

## QUALITY MADE IN GERMANY

Thank you for your interest in our products. The following pages will provide an opportunity to learn more about us and our systems.

The founders of **ROMFIL** Crossflow Filtration Technology have dealt with the application of membranes since 1975. Already in 1983, membranes were tested for the clarification of wine. The first series filters have gone into production in 1988. In 1998, the creative forces of the Crossflow Filtration Technology founded **ROMFIL** GmbH in Wolfsheim, in the midst of the Rheinhessen Tuscany.

In close collaboration with customers and oenologists of renowned national and international institutions we are constantly developing and improving our systems. We are particularly proud that **ROMFIL** Crossflow Filtration Technology is one of the gentlest filtration methods of all, especially for wine.

**ROMFIL** Crossflow Filtration stands for quality and precision in manufacturing and workmanship. We hope that - with the help of our products - our customers can organize their everyday work as convenient as possible. Some of our customers have even created the term "feel-good filtration". Thanks for this compliment, we are really pleased.

Technical quality and a perfect service come from a single source. **ROMFIL** Crossflow Filtration is „Made in Germany“. That means for us: project work, planning, design, programming and production of all our systems in Germany.

**YOU ARE VERY WELCOME TO FIND OUT MORE ABOUT ROMFIL, OUR TECHNOLOGY AND OUR PRODUCTS!**

# ROMFIL CROSSFLOW FILTRATION

In conventional static filtration processes - such as sheet filtration or filtration with diatomaceous earth - filter plates or sediments are used for the clarification of liquids. All those methods are intermittent techniques. After a certain number of filtration processes the filter media are worn, they have to be replaced and subsequently disposed of. In addition to that a filtration by final cartridges are at any rate required.

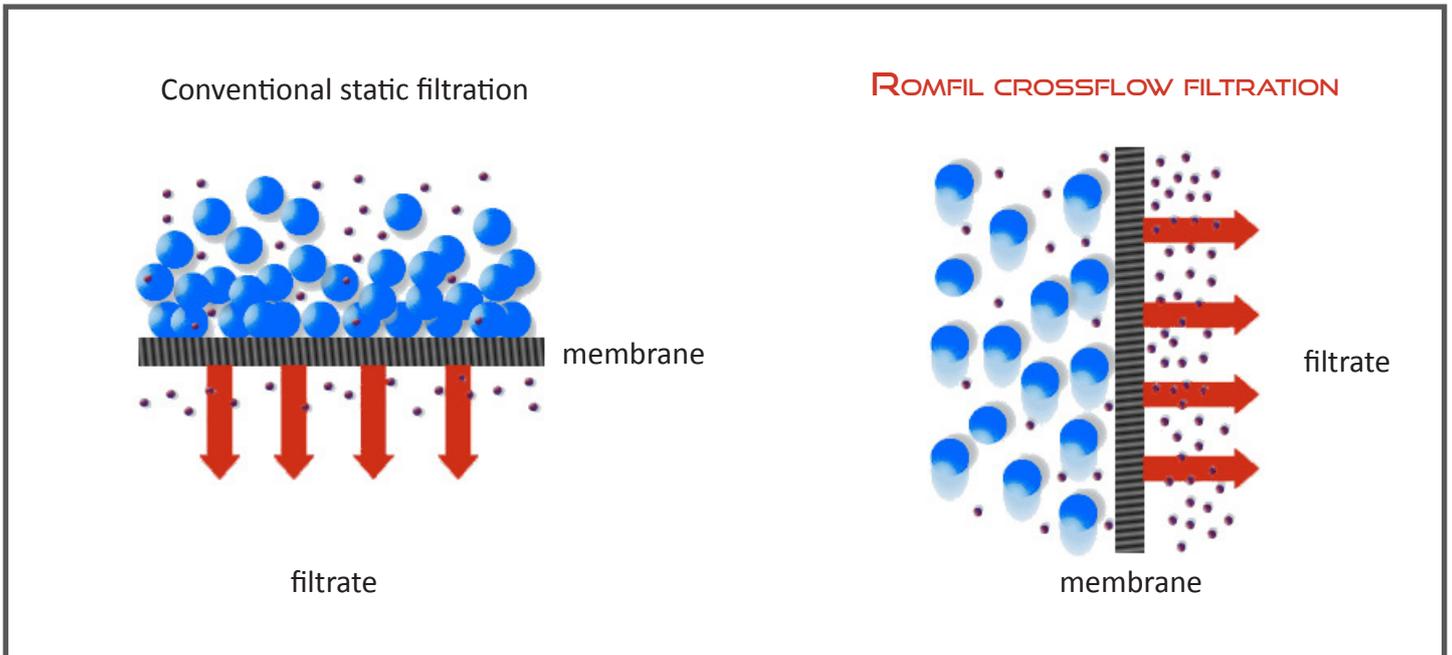
With **ROMFIL** Crossflow Filtration Technology the disadvantages of conventional static filtration methods can be avoided. Its operation is easy, cost-effective and sustainable. Our customers produce less waste, save energy, operating time and manpower. What are the differences?

When using **ROMFIL** Crossflow Filtration, the liquid stream is not lead in the reverse direction of the membrane, but along the membrane.

The porous surface structure of the hollow fibre membrane allows the filtrate to exit smoothly. In addition, a controlled, gentle and efficient backflush procedure with the filtrate is carried out during the filtration process. Among other things, membrane blocking can so be excluded.

Filtration with **ROMFIL** Crossflow Filtration Technology allows for a longer service life of your system. In addition, neutral filter media are in operation.

Filtrate and filtration additives do not mix. Time and costs can be reduced. Another advantage of the **ROMFIL** Crossflow Filtration Systems is a significantly reduced filtration loss compared to conventional filtration methods.



Schematic comparison between conventional filtration and ROMFIL Crossflow Filtration.

# ROMFIL EVOFLOW FILTRATION SYSTEMS RCF

**ROMFIL Crossflow Filtration Systems RCF** have always convinced our customers with their performance, efficiency and gentle treatment of the filtrate.

In times of steadily rising energy prices we are glad to give our customers the following details: Operation with the new technology of **EVOFLOW CROSSFLOW FILTRATION SYSTEMS RCF** is even more energy-saving, quieter and much more environmentally friendly. As a consequence, production costs will be reduced.

The gentle treatment of the filtrate, which is typical for **ROMFIL** products and also particularly important for the filtration of wine, could be further improved.

As one of the few manufacturers of Crossflow Filtration Systems **ROMFIL** offers Crossflow Filtration Systems that comply with EU regulation 10/2011 on plastic materials and articles intended to come into contact with food.

Depending on their individual demands and requirements, customers may choose from different models of **ROMFIL** Evoflow Filtration Systems. Starting with the entry-level model with one or two modules, all **ROMFIL** Crossflow Filtration Systems are equipped with

standard reduced volume automatic cut-off. The RCF Basic Systems offer a well-priced entry-level version into Crossflow Filtration. Basic Systems are equipped with standard Evoflux modules and possess all required features for Crossflow filtration.

All other RCF Systems offer a large number of technical features, e.g. **ROMFIL** Evoflush - automatic back-flush. Depending on customers' requirements, RCF Systems are equipped with a wide range of features – up to fully automatic filtration.

After reduced volume automatic cut-off, fully automatic **ROMFIL Crossflow Filtration Systems RCFA** (starting with four modules) automatically start water flushing or - optionally - chemical cleaning. Then they independently return to filtration mode. As RCF A-Systems can be operated unobservedly over longer periods, they are very attractive for large wineries.



# RCF'S STRONG POINTS AT A GLANCE



## EASE OF USE

A new generation of touch-sensitive screens (Touch Panels) allow for easy and intuitive operation. With the possibility to customize the technical design and a user interface with a clear structure, straightforward operation of **ROMFIL** Filtration Systems is guaranteed.



## HIGH LEVEL OF BUILD QUALITY

We set high standards for all materials used in the manufacturing process. Similarly, a high level of build quality is required. We are dedicated to delivering a virtually perfect product to our customers. We hope that we are able pass on our enthusiasm for quality and precision to our customers and their work.



## ECONOMY

A sophisticated concept of our filtration systems as well as modern pumps permit particularly low power consumption. Energy costs can be reduced.



## EASE OF MAINTENANCE

Our systems are designed and built in a way that their components can easily and straightforwardly be changed and maintained. Wearing parts such as mechanical seals and bearings of pumps can quickly be replaced. Customers save time and costs.



## SERVICE

Once a year we offer our customers the possibility of a check-up which is free of charge. This means that the filtration system is checked by one of our employees or co-operation partners on-site. Relevant call-out fee shall not be charged. Should, however, repair measures become necessary, they shall be invoiced.



## COMPACT CONSTRUCTION

Thanks to their elaborate, compact construction our filters are space-saving and easy to move. **ROMFIL** Systems will find their place even in the smallest cellar. They are mounted on sturdy wheels with plastic bushings. Our systems are designed to keep their weight as light as possible. This helps to guarantee a high degree of flexibility and maximum use of your working space.



## ERGONOMICS

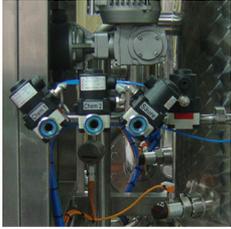
As all connections are located on one side of the system, hoses can be routed systematically. Consequently, the risk of accidents is minimized. Hoses can be connected within a short period of time. Filters are ready for immediate and straightforward operation.

# RCF'S STRONG POINTS AT A GLANCE



## INTELLIGENT CLEANING

Self-cleaning cycles are carried out during the filtration of the product. If required, the system can also be flushed with water. In the process the filtrate does not come into contact with flush water. Due to the intelligent self-cleaning process during filtration, only a small amount of cleansing agent is needed. Chemical cleansing agents are only required if filters are heavily soiled or for long-term preservation. Those chemical cleansing agents are adapted to the respective system. This allows for maximum cleaning efficiency while the filtration system is prevented from damage. Should chemical cleaning become necessary, our customers have the possibility to use a program guiding them via Touch Panel through the entire cleaning process (guided cleaning). Hence, ease of use and operating safety are increased. The fully automatic **ROMFIL** Crossflow Filtration Systems carry out all necessary steps of the cleaning process independently. Personnel costs can be reduced.



## TEMPERATURE

An advanced pump technology ensures optimal energy exploitation without dissipating energy to the filtrate. The product does virtually not warm up.



## NOISE LEVEL

Ear protection is not required when operating the system. During the filtration process noise exposure is below 60dbA. Our customers can therefore run their systems during actual rest periods.



## BREATHING PROTECTION

Thanks to modern **ROMFIL** Crossflow Filtration Technology breathing protection is unnecessary – in contrast to filter media that raise dust (diatomaceous earth).



## INFLOW

Due to the exceedingly optimized routing of pipes, the filtrate is treated in the best possible way, which is particularly important for the filtration of wine. Eddies, which have a negative effect on CO<sub>2</sub> concentration, are kept very low. The filtration process for wine remains stress-free to the greatest possible extent.



## VISUAL CHECKS

Transparent elbows and module housings ensure that the filtrate can be permanently checked during the filtration process. In addition, the integrity of membranes can be monitored. If an individual membrane fibre is damaged, it can be precisely located. The modules' transparent housing also enables observation of the cleaning reaction.

# RCF'S STRONG POINTS AT A GLANCE



## FILTRATION DYNAMICS

Adjustable filtration dynamics offer the possibility to individually adjust **ROMFIL** Cross-flow Filtration Systems to the respective filtrate. As a result, even with wines that are difficult to filtrate, the balance between gentle treatment and efficiency can be maintained.



## INDUCTIVE FLOW METRE

With the standard inductive flow metre it is possible to filtrate exactly the amount of liquid that is desired or needed. This is particularly important if our customers produce cuvées, have to transfer filtrates or want to use **ROMFIL** Crossflow Filtration Systems for contract filtrations.



## COMPLETE EMPTYING

**ROMFIL** Crossflow Filtration Systems are so constructed that they completely drain when positioned on an even surface. The residual amount remains particularly small. With the smallest of our filters the residual amount is 2.5 litres. Residual amounts of the filtrate can be completely collected and reused. Separate emptying of unfiltered side and clarified side enables batch splitting in the best possible way.

## AVAILABLE OPTIONS

**ROMFIL** Crossflow Filtration Systems offer a whole range of optional features which give our customers the opportunity to customize their systems to a high degree and to adjust them to their requirements.

Here is a small selection of options:



## TEXT MESSAGE OPTION

With the Text Message Option, the filtration system sends a text message (SMS) with the filter's status messages to a pre-set mobile phone.



## RRC OPTION

The RRC option allows customers to track and monitor operation of their **ROMFIL** Cross-flow Filtration System via smartphone, tablet or PC.

# AVAILABLE OPTIONS



## VARIO OPTION

This option enables operation of an external supply pump via the **ROMFIL** Filtration System.

The filter may so be operated either directly from the tank or via supply pump.



## MODULE SHUTDOWN OPTION

By manually or automatically (as required) reducing the amount of modules, the residual amount can be kept as low as possible; even small amounts can be filtrated.



## TURBIDITY CONTROL OPTION

Turbidity control is an additional safety option. Turbidity control is constantly measuring the filtrated product. Once a pre-set limit is exceeded, the **ROMFIL** Crossflow Filtration System will shut down automatically.



## AUTOMATIC CLEANSING AGENT DOSING OPTION

Cleansing agents of fully automatic **ROMFIL** Crossflow Filtration Systems can be entirely dosed by the system. In connection with automatic tank cleaning (CIP) the system cleans itself independently. This optional feature is available from the RCF8 A onwards as standard.



## FORK POCKET OPTION

Four pockets are installed below the **ROMFIL** Crossflow Filtration System. The system can easily and safely be transported by a forklift truck.



## COMPRESSOR OPTION

This option becomes important if there is no air pressure connection available where the **ROMFIL** Filtration System is installed. A compressor will then be integrated in the system. An additional advantage of this option is the filter's increased mobile use.



## TANK MANAGEMENT OPTION

The fully automatic **ROMFIL** Crossflow Filtration System offers the possibility to connect several tanks with one filtration system. The filter independently processes tank after tank. So the system can run independently - even during the night. What is more, the annoying and time-consuming re-routing and connecting of hoses can be omitted.

## EVOFLUX MODULE



**ROMFIL** Filtration Systems RCF are equipped with our standard Evoflux modules.

**ROMFIL** Evoflux modules are temperature-resistant up to 70 degrees Celsius. For membrane fibres we use proven polypropylene. With Evoflux modules, cleaning processes can be carried out at considerably higher temperatures.

Filtration processes become more environmentally friendly and cost-efficient as less cleansing agents are used. What is more, our customers can choose from different modules.

## RANGE OF APPLICATIONS & MATERIAL

**ROMFIL** Crossflow Filtration Systems were originally designed for the gentle filtration of wine. In the meantime, the method is also used to filtrate liquids in other areas. Here are a few examples:

- water
- distillates
- iced tea
- vinegar
- river water
- fruit juice
- fruit wines
- mead
- mineral water
- must
- pharmaceutical products
- spirits
- sweetener solutions
- drinking water

Our customers demand a great deal of their products. So do we.

That's the reason why our systems are subject to strict requirements and high quality standards. We exclusively use high grade stainless steel as base material to manufacture our systems. We have also thought of the smallest details that shall make - on a long-term basis - every-day life more convenient. For example, the systems are mounted on sturdy wheels with plastic plain bearings. They can so be moved easily for many years.

Our modules are especially designed and manufactured for **ROMFIL** GmbH. The quality of our systems is guarantor of your safety as well as reliable and efficient operation.

# AUTOMATION AND CUSTOMIZATION

Every single **ROMFIL** Crossflow Filtration System is a unique specimen. Our systems, which are all based on a basic appliance, are constructed in accordance with the customers' individual requirements. So we can ensure that you get the appliance you really need. You can choose to what extent your ROMFIL Crossflow Filtration System shall be automated and customized.

Are there any requirements from your part which we have not included in our options yet? Please don't hesitate to bring it to our attention! We are always happy to implement your requests.



# SERVICE

It is our utmost concern to provide a reliable, professional and perfect service.

It's important for us that you always reach the correct contact person. That's why we can gladly do without call centres and voice computers.

We always do our best to react immediately and straightforwardly. We have therefore all wearing parts and spare parts in stock.

When buying a **ROMFIL** Crossflow Filtration System, our customers are individually briefed on their appliance, including a detailed technical documentation of their system, an operating manual and a service record. Annual check-ups shall be documented in the service record.

We are pleased to offer you the opportunity to test our appliances. We will gladly provide you with a **ROMFIL** Crossflow Filtration System.

So you can take your time to convince yourself of our systems' performance and advantages in your own work environment.



# GENERAL OVERVIEW OF ADVANTAGES

## BENEFITS FOR YOUR PRODUCT

Thanks to our consistent effort to develop ROMFIL Crossflow Filtration Technology, we succeeded in bringing our gentlest ROMFIL Crossflow Filtration Systems so far on the market. We are constantly working on the development of our systems, aiming at a careful treatment of your products.

### **Virtually no CO<sub>2</sub> loss**

Due to an optimized inflow of pipes and modules as well as a specialized design of connecting adapters, the loss of CO<sub>2</sub> during the filtration of wine can be neglected. Its natural concentration stays practically constant.

### **Virtually no increase in temperature**

Due to the combination of frequency-controlled feed pumps and low-speed recirculation pumps, unnecessary energy input can be avoided.

### **Minimal residual amount**

With their elaborate design, ROMFIL Crossflow Filtration Systems practically prevent interblending and guarantee an extremely low residual amount.

### **No loss of colour and aroma**

A membrane fibre in ROMFIL modules, which was especially developed for wine, ensures that natural colours and aromas in wine are neither damaged nor extracted.

### **Stability and fermentation**

ROMFIL Crossflow Filtration allows for early microbiological stability. Once filtrated, there will be no secondary fermentation when stored according to specifications.

## BENEFITS FOR YOU

We always appreciate a close co-operation with our customers. This is how we have access to a very large and versatile fund of experience. Together with the latest discoveries in science and technology, we incorporate this know-how into the development of our products.

### **Only once**

With ROMFIL Crossflow Filtration Technology, only one single filtration process is needed to get perfect results. Preliminary clarification is not required. Additional filtration additives are not necessary. Your product is filtrated in one operating cycle.

### **No additional staff**

Due to a largely automated process you are able to save personnel costs.

### **Hardly any monitoring**

Thanks to our elaborate safety devices, ROMFIL Crossflow Filtration Systems require only minimal manned monitoring.

### **Final filters**

With ROMFIL Crossflow Filtration Systems you reach a considerably prolonged service life of final filters.

### **No effort for waste disposal**

Disposal of filter materials and additional filtration accelerators is inapplicable.

## FURTHER PRODUCTS IN ROMFIL'S PORTFOLIO

### ROMFIL FLOTATION SYSTEMS RFS

**ROMFIL** Flotation Systems are used for clarifying liquids such as water and must. RFS Flotation Systems are also ideally suited for problematic musts (rotten fruit, botrytis, ice wine etc.).

Our **ROMFIL** Flotation Systems RFS operate with a standard performance between 3,000 and 60,000 litres per hour. But even peak performances of several hundred thousand litres per hour are feasible. Depending on the customer's requirements, various degrees of automation are available.

User friendliness of **ROMFIL** Flotation Systems was also one of our greatest concerns. Systems are mounted on a mobile, sturdy stainless steel frame and prove to be particularly low-maintenance. Cleaning is made quick and easy.



### ROMFIL GAS MANAGEMENT SYSTEMS RGT

The **ROMFIL** Gas Contactor RGT permits dosing of various gases into liquids and also dissolving them. The content of  $\text{CO}_2$ , for example, can so be enhanced to give white wine more freshness. On the other hand, unwanted  $\text{CO}_2$  can be extracted from red wine.  $\text{CO}_2$  can be absorbed up to its saturation limit. This process also allows volatilization of unwanted aromas. In addition, RGT Systems offer the possibility to extract oxygen to prevent oxidation of the medium at an early stage.

**ROMFIL** Gas Contactors do not generate large gas bubbles during the gas dosing process, but diffuse gases into the medium without pressure and on a microscopic level. Exact dosing in the end product is therefore possible.

The RGT module is the heart of our systems with thousands of highly porous, interwoven polypropylene fibres. This membrane ensures exchange of gases and other substances. The RGT module is supported by a sturdy stainless steel frame. With their acid- and alkali-resistant wheels, **ROMFIL** Gas Contactors can be easily moved.

**ROMFIL** Gas Contactors are available in various degrees of automation.



### ROMFIL OZONE GENERATOR BOZ

The **ROMFIL** Ozone Generator BOZ ensures efficient, quick, fail-safe and cost-efficient sterilization. Ozone ( $O_3$ ) is one of the most suitable sterilization agents at all. It can be extracted from atmospheric oxygen and is therefore available everywhere.

After a short production period, the generator enhances the available drinking water with ozone. It is then fed to the sterilizer and rinsers. Consequently, bottles are sterilized in only one single run before bottling. Subsequent treatment is unnecessary, so time and costs can be saved.

In addition, with **ROMFIL** Ozone Generators, unwanted manganese and iron can be removed from water. Those elements are oxidized by ozonization. They can then be removed with the appropriate filter.

Operator safety is certainly guaranteed at all times. Excessive ozone will immediately be destroyed and thus decomposes into oxygen ( $O_2$ ), which is absolutely harmless. There will be no hazardous waste water that would have to be disposed of.

**ROMFIL** Ozone Generators are low maintenance products and compactly built.



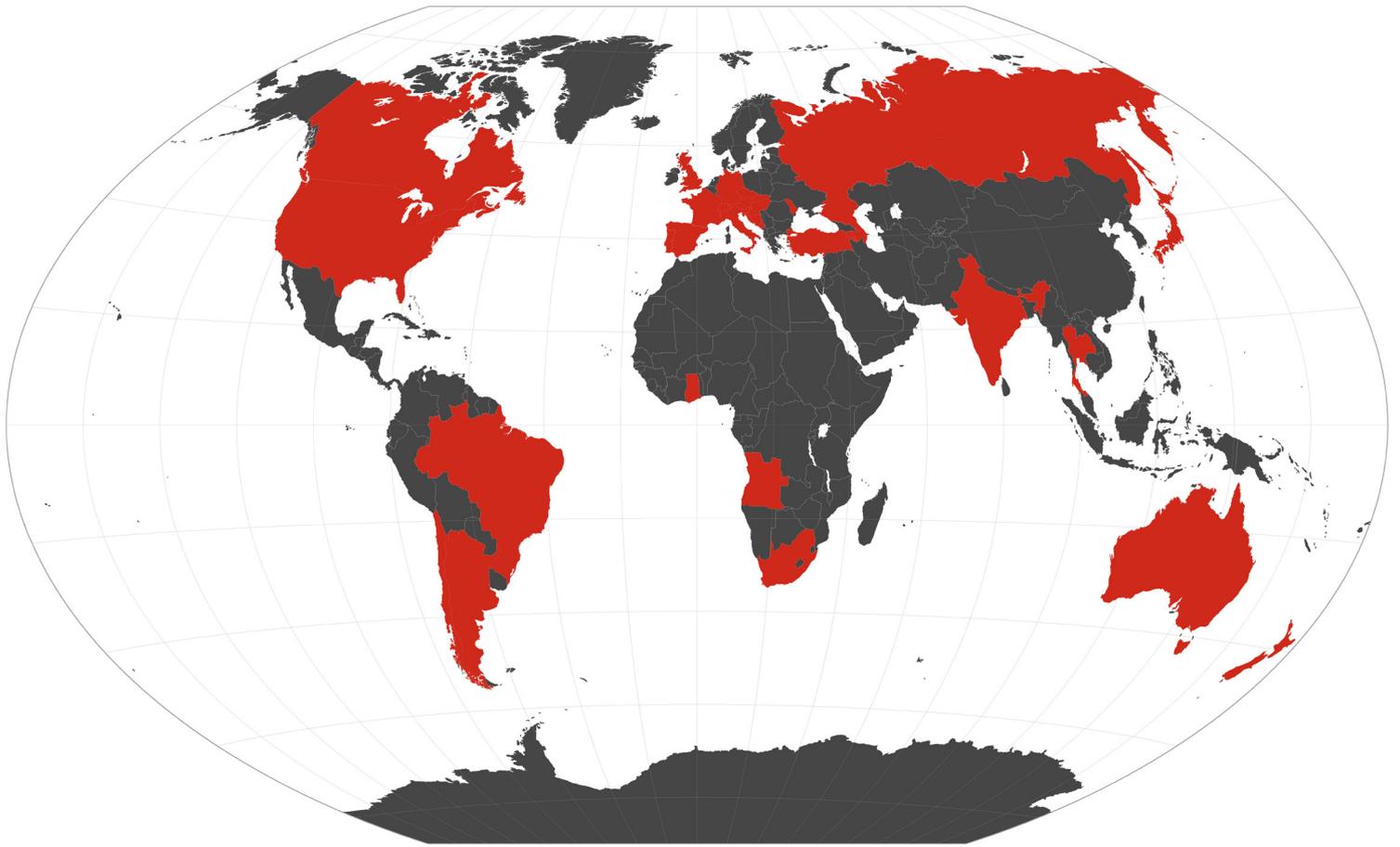
### ROMFIL STEAM GENERATOR RDZ 50

The **ROMFIL** Steam Generator RDZ 50 is used to steam and clean systems and tanks.

In addition, the steam generator can be equipped with our optional pump system, so that it serves as hot water source. Consequently, it is also possible to connect the RDZ 50 to a heating coil, a cooling plate or a jacketed tank in order to gently heat up liquids or control the fermentation process of must. It is of course also possible to initiate a wine's second fermentation.

Our steamer is mounted on wheels and is certainly compactly built with minimum space requirements. Its mode of operation and design offer more flexibility in use.





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Austria  
Brazil  
Canada  
Chile  
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England  
France  
Germany  
Ghana  
Hungary  
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Japan  
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New Zealand  
Portugal  
Russia  
Serbia

Slovakia  
Slovenia  
Spain  
South Africa  
Switzerland  
Thailand  
Turkey  
Ukraine  
USA

**WE HOPE THAT WE HAVE PIQUED YOUR CURIOSITY FOR OUR PRODUCTS.  
FEEL FREE TO CONTACT US! WE ARE LOOKING FORWARD TO YOUR CALL  
OR YOUR EMAIL.**

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