

Integrated solutions  
*for* purification *of*  
gas *and* liquids



Jacobi's expertise ranges from laboratory technicians, engineering and installation specialists and implementation consultants to application support teams and on-site service staff.



**UNWANTED CONTAMINANTS PRODUCED** from a wide range of sources are facts of life that affect us all every day. Organic or inorganic, these contaminants are present in the air we breathe and the food we eat to the water we drink. Activated carbon is the tried and true guardian on the front line when it comes to safe and effective removal of pollutants in air, gas or liquid streams from industrial processes, and by-products in the manufacture of foodstuffs.

Choosing the right activated carbon is an important step but it is not enough. As a full service company Jacobi knows what it takes to achieve a maximum solution. Our service experts handle issues regarding placement/removal, reactivation or disposal as well as required filtration equipment, pilot trials and full scale operations.



From the food we eat to the air we breathe, activated carbons help remove health threatening pollutants.

# The Service Company

Mobile adsorption systems for purification of gas and liquids provide flexible solutions to emissions from a variety of sources.





# The Skilled Company

**ACTIVATED CARBON IS** effective for removing a wide array of pollutants such as chlorine, ozone or halogenated compounds. The nature of some these substances means that spent activated carbon needs to be disposed of properly according to regulations set forth by various government authorities. We are well acquainted with these various requirements and regulations and can provide proper disposal service for utilized activated carbon.

Engineering expertise and on-site support is offered by our highly skilled technical team.



Samples of spent carbon are tested in an authorized lab to ensure safe reactivation according to stringent regulations.

#### JACOBI OFFERS:

- Laboratory testing
- Pilot studies
- Bench proving
- Application simulation
- Life expectancy calculations
- Engineering assistance
- Application know-how
- Tech experts for on-site support





Our dedicated site service teams are available to assist in the installation of mobile filter systems wherever they are required.



Mobile filter units can be operated in parallel or in series to remove a wide array of contaminants.

# The Solutions Company

**OUR MOBILE FILTER UNITS** are designed to treat dissolved organics from a variety of sources. The units can be placed in parallel to increase processing effectiveness, or in series to improve performance. The entire filter bed is constantly flooded with evenly distributed liquid, which prevents channelling at low treatment rates and optimizes the life of the filter.

The media is always active even in cases of intermittent use and can be easily serviced under backwash conditions. When spent activated carbon reaches saturation, it can be replaced in the existing filter. In semi-static mode the modular units are particularly suitable for temporary or emergency situations.



Our filter units are well suited for emergency use, allowing efficient removal of a wide range of dissolved organic compounds.

## JACOBI OFFERS MODULAR FILTRATION FOR:

- Potable water
- Process water
- Solution purification
- Effluent processing
- Groundwater treatment
- Process liquor purification



Modular design allows multiple filter units to be used in parallel, which decreases energy consumption.

**JACOBI'S MODULAR FILTER** units come in two sizes, and provide a convenient and easy-to-use solution to emissions from a variety of liquid applications. AquaFlow™

and EcoFlow™ can be arranged in parallel to increase treatment rates, or in series to improve the removal efficiency.

AquaFlow™ can be used for treatment of flows from 1–50 m<sup>3</sup> per hour, utilising granular or extruded activated carbons in fixed beds. EcoFlow™ is available for treatment of flows up to 60 000 m<sup>3</sup> per hour per module, and 25 m<sup>3</sup> of activated carbon per module.

Depending on the type of activated carbon selected, the system can be used to adsorb multi contaminant streams, or adapted to remove specific contaminants such as chlorine, ozone or halogenated compounds. The system is especially suitable for use in temporary or emergency situations in site remediation or spillage scenarios.

# The Mobile Company



Typical applications of our modular bed filtration devices include the treatment of process effluents and contaminated groundwater.





# The Systems Company



Treatment systems can be project managed from initial drawings, through implementation to final equipment handover.

**ACTIVATED CARBON FILTRATION SYSTEMS** are often installed as an upgrade to a current emission point or as part of a new build. This requires not only the filtration units but also the means of passing the contaminated substance through the treatment facilities. In addition to pumps and piping or fans and ducting, the carbon must be measured for effectiveness using various pressure or temperature sensors and VOC detectors.

Jacobi provides full packaged facilities for end-of-pipe solutions and mobile treatment stations for the addition of PAC at remote locations. If required, treatment systems can be project managed by Jacobi, from initial drawings, through commissioning to final equipment handover. Understanding our customer's needs is key to our ability to offer full and comprehensive solutions.



Engineered solutions are provided that precisely reflect the requirements of our customers, taking into account regional regulations and operational standards.



We can handle all aspects of a facility upgrade or new build.



# The Hands-on Company



Jacobi has the equipment, experience and expertise to ensure maximum effectiveness and return on investment.

**USING ACTIVATED CARBON** effectively requires careful placement and removal to ensure the integrity of the asset is maintained. In order to maximize the yield from reactivated material, spent carbon should be carefully removed as this has a direct financial impact on overall operating costs.

Jacobi's dedicated team of specialists have over 20 years' experience and are certified to all environmental health and safety regulations. They work constantly with handling activated carbon as well as associated filtration media, such as sand and anthracite.

For removal purposes we utilize specially designed equipment for handling activated carbon by either water-eduction or dry vacuum, and also can arrange transportation from the site. By providing a full service package, Jacobi ensures maximum effectiveness and return on investment.



Our team is certified according to all environmental health and safety standards.



**IN MANY APPLICATIONS**, spent carbon can be reused after recycling. We offer users of granulated and extruded carbon a cost effective and environmentally friendly reactivation service eliminating the need for costly landfill or incineration. Thermal reactivation is an environmentally responsible process that helps to reduce CO<sub>2</sub> emissions, while contributing to a sustainable use of the world's resources.

In order to eliminate cross contamination of materials, Jacobi operates two dedicated reactivation kilns, each designated for use dependent on the type of spent carbon being reactivated. One line is dedicated to food grade and potable water applications only. The other unit processes spent activated carbon from industrial applications such as chemical processing, wastewater or gas treatment.

Regardless of the reactivation process we can put together a complete carbon exchange service. Our skilled application support team and lab technicians will customize a world class solution for your specific needs. It is, of course, our customers and their requirements that dictate the reactivation solution we provide.



For many industrial customers our ReSorb™ Pool carbon grades will be the most economic service. For more demanding carbon grades our ReSorb™ Solo service concept offers the advantages of a completely segregated and custom reactivation for food grade and potable water solutions.

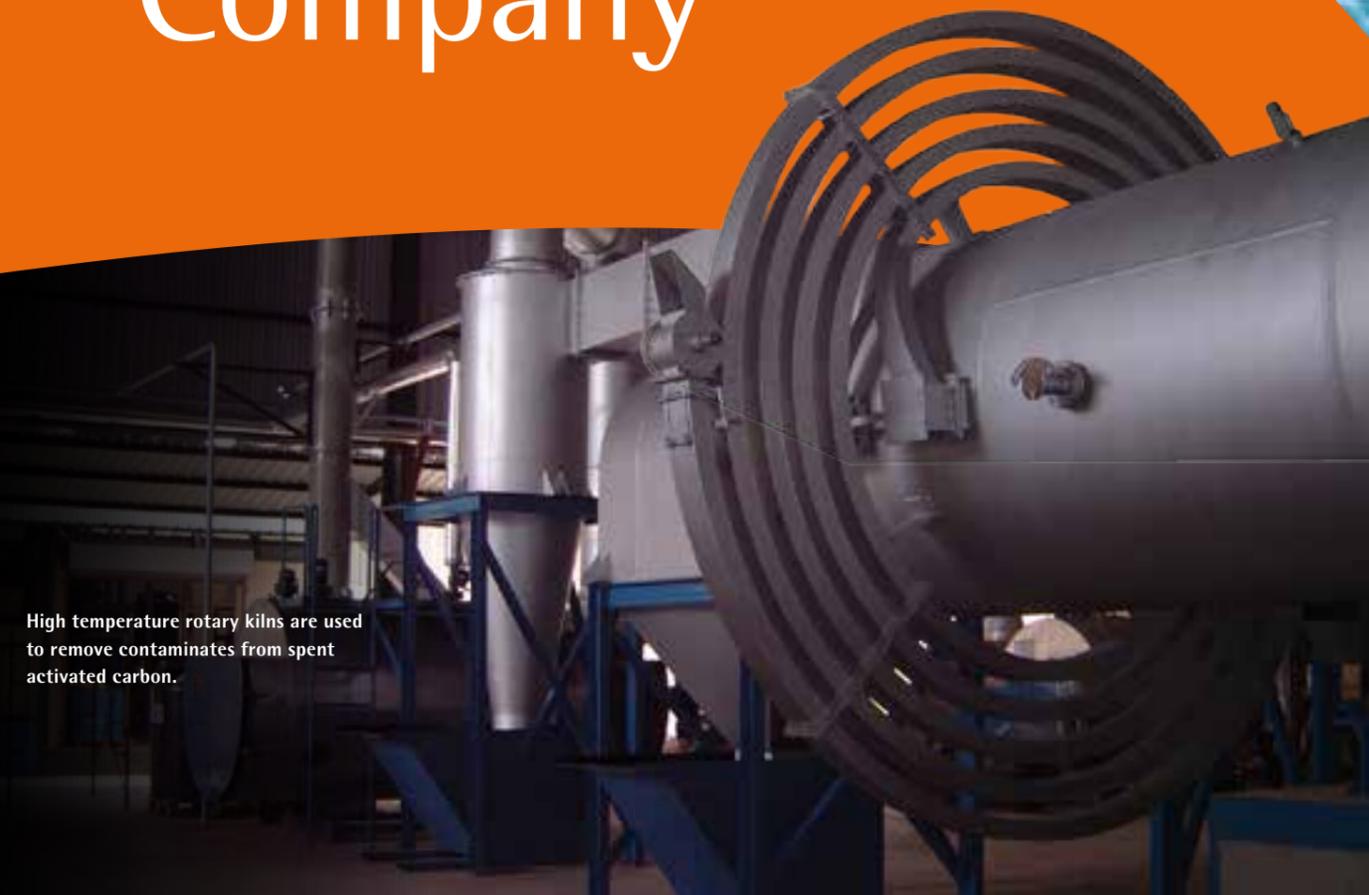
# The Recycling Company



ReSorb™ Solo is a closed loop where the used carbon is sent back to the customer. ReSorb™ Pool is an open loop where carbon is returned and processed, and then re-used by Jacobi.



Reusing spent activated carbon after recycling is not only cost effective, but also good for the environment.



High temperature rotary kilns are used to remove contaminants from spent activated carbon.



# The Ecological Company



**SPENT CARBON MUST** be profiled and tested to determine if it is suitable for reactivation according to regulations. Many contaminants may not be accepted at certain vendor facilities, such as dioxins, pesticides, herbicides, sulphur/cyanide and halogenated compounds along with an extensive list of adsorbed metals.

Prior to removal the exhausted carbon must be classified as either hazardous or non-hazardous. The producer of the spent carbon is responsible for testing, and the process involves filling out an application form and submitting a small sample of spent carbon to an authorized laboratory for testing.

Jacobi can help to determine how to conduct suitable analysis of the media, how to complete any required paperwork, and how to properly sample the spent media. Media can be provided for replacement on site or via vessel exchange, Jacobi helps customers to complete the required paperwork, properly sample the spent media and conduct suitable analysis. Fresh activated carbon can then be provided for replacement on site or via vessel exchange, or using the customer's own personnel.

JACOBI OFFERS HELP TO DETERMINE LEVELS OF CONTAMINANTS LIKE:

Antimony	Chromium	Selenium
Arsenic	Lead	Silver
Barium	Mercury	Thallium
Beryllium	Nickel	
Cadmium	PCB	



Determinating the spent carbon's degree of hazard is the user's responsibility. Our certified lab help client's with filling out forms, submitting samples and conducting proper testing.



State of the art expertise helps determine if the client's equipment is being utilized under ideal conditions that will maximize operating life of the media.

**PROLONGING THE LIFE** of the activated carbon and the equipment requires periodic testing of the filter units and the media itself. This information is an indicator of whether the equipment is being utilized under ideal conditions and can be used to make enhancements that will extend the useful life of the carbon and determine the equipment's remaining operational lifetime. Jacobi offers expert laboratory services that can assist in this type of testing. Getting the most out of our customers' investment is important for us all.

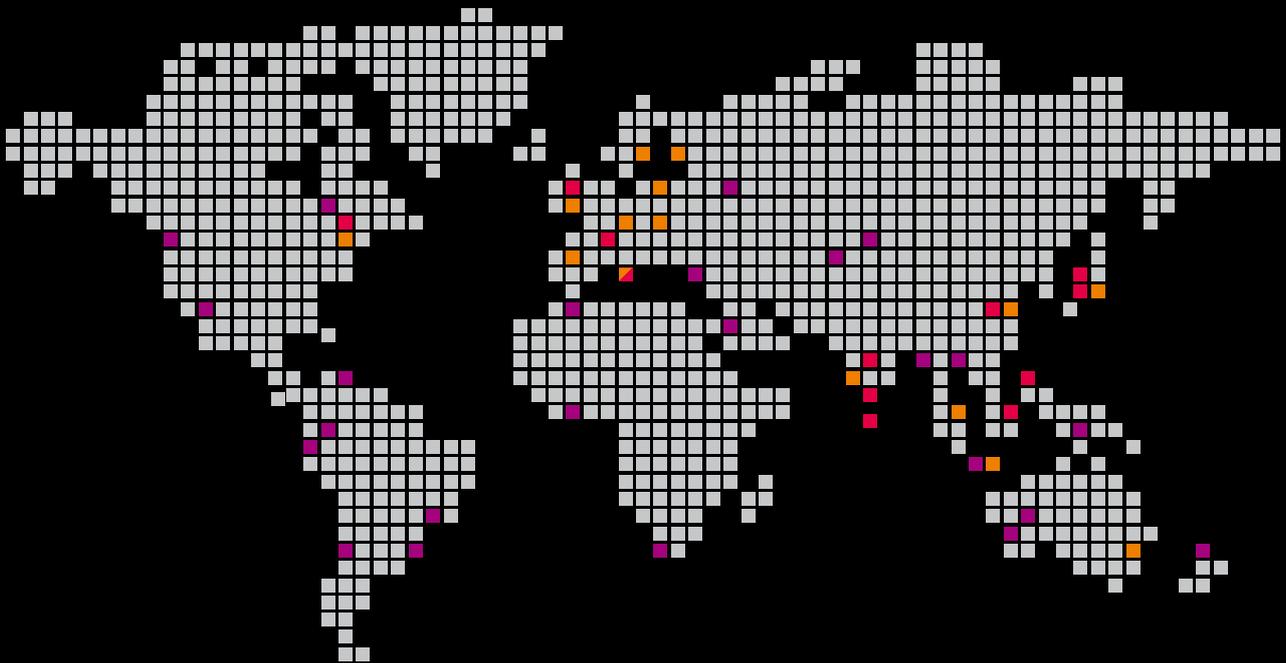


In the ongoing work of removing organic and inorganic contaminants, extending the operating life of filter equipment and the spent activated carbon is what truly generates return on investment and benefits for the environment.

*The* Caring  
Company

# The Global Company

Jacobi Carbons has developed the most diverse production base in the industry with manufacturing plants, reactivation plants and sales offices located in 19 countries around the world.



## MANUFACTURING PLANTS

China  
France  
Germany  
India  
Italy  
Japan  
Sri Lanka

The Philippines  
United Kingdom  
United States  
Vietnam

## SALES OFFICES

Australia  
China  
Finland  
France  
Germany  
India  
Italy  
Japan  
Malaysia

Poland  
Singapore  
Spain  
Sweden  
Switzerland  
United Kingdom  
United States

## AUTHORISED AGENTS AND DISTRIBUTORS

Algeria  
Argentina  
Australia  
Brazil  
Canada  
Colombia  
Ghana  
Chile  
Ecuador  
Indonesia  
Kazakhstan

Mexico  
Myanmar  
New Zealand  
Papua New Guinea  
Peru  
Saudi Arabia  
Russia  
South Africa  
Turkey  
United States  
Uzbekistan

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JACOBI CARBONS IS  
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OSAKA GAS CHEMICALS GROUP