



GIG Karasek Technical Center
Laboratory / Pilot Plants



High-quality test infrastructure for individual experimental purposes

Under perfect adapted conditions your own sample materials can be subjected of proven specialists in meaningful laboratory and pilot tests. All systems are designed for great flexibility, interconnected with each other and, as required for a variety of tasks can be configured and combined.

High quality of service accompanies all services at the GIG Karasek Technical Center: We respond flexibly to your wishes and our experts will accompany you from concept to key issues such as investment decisions.

Our testing team consecrates the secrets of pioneering process technology. Only long-term and sustainably managed research and innovation provides the necessary results in order to optimize the processes of our customers in the future.

Optimization of operating data and systems

As efficient basis for the development of individual devices to complete systems, the GIG Karasek Technical Center was launched, which can now point to hundreds of successful trials. Thanks to its extensive test infrastructure and the expertise of highly experienced staff optimizing operational data as well as systems are in focus.

Laboratory

Test your product on a small scale - before it gets serious

For many products, the definition of the optimal system configuration and testing of the operating data are required. GIG Karasek offers you the easy way to make your product test, connect our systems on a laboratory scale.

Instead technology off the shelf, we realize individually tailored to the processes and research goals scalable systems for you.

- glass short path
- rotovap



„GIG Karasek develops technology for the world of tomorrow. To meet every customer's needs and different requirements, our experts realize tailor-made process solutions that can be flexibly adapted to the most individual specifications.“



Research & Development

- Pre - Experiments in the laboratory
- Experiment accompanied by process engineer
- Pilot-scale trials
- Determination of the optimal process parameters and performance limits
- Plant optimization
- Preparation of product samples, small quantities, sample quantities
- Test report
- Design of large systems (scale-up)

Available Systems

- Thin Film Evaporator
- Short Path Evaporator
- Falling Film Evaporator
- Forced Circulation Evaporator
- Plate Molecular Evaporator
- Thin Film Dryer
(Vertical and horizontal)
- Rectification column
- Laboratory glass-flash Evaporator
- Rotovap, batch distillery
- Miniplants

Main Components

- Feed tank
- Preheater
- Flash container
- Capacitor
- Discharge pump and weighing tank for residue and distillate
- Vacuum pump with cold trap
- Degasser
- Cold trap for dry ice or liquid nitrogen filling
- Setter
- Circulation pump
- Demister
- Concentrate measuring container
- Distillate measuring tank
- Feed pump
- Radiator, boiler
- Circulation
- Packings, mass transfer trays
- Mobile operator control and monitoring panel

Available Mini-Plants:

- *Thin Film Evaporator*
- *Short Path Evaporator*
- *Falling Film Evaporator*



Thin Film Evaporator

The innovative special solution for demanding tasks in separation technology: Our thin-film evaporators of sophisticated materials provide high performance and can even separate sensitive products in small quantities.

The thin-film evaporator system is used for the thermal separation of liquid mixtures, wherein the evaporator is about one separation stage. The feed solution is transferred from the reservoir through a preheater to the head of the thin-film evaporator. Along the inside of a cylindrical, externally heated mantle flows a thin film to the bottom of the evaporator, where the low-boiling components are vaporized.

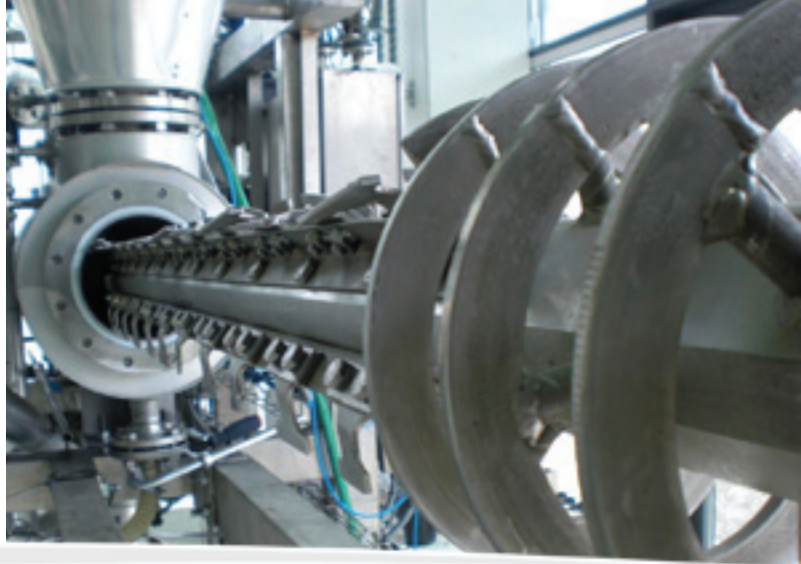
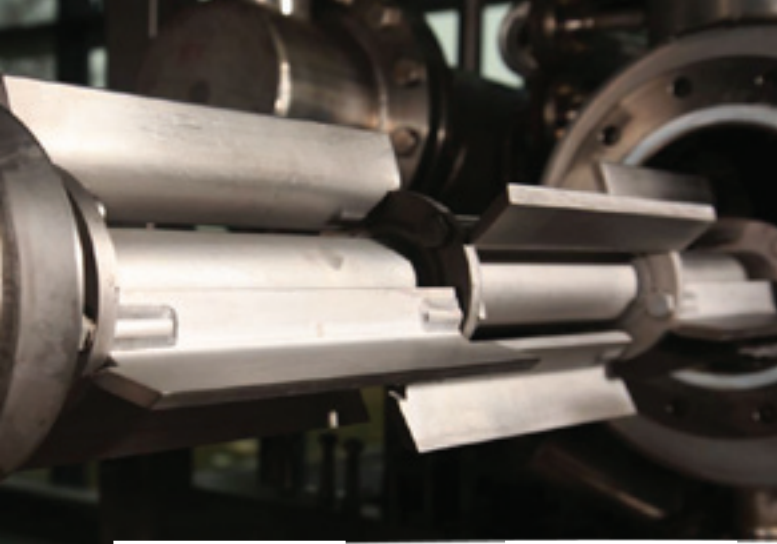
To increase the evaporation rate of the film is turbulently mixed by means of a film-contacting wiper system which is mounted on a rotor.

Depending on the product we equip the thin film evaporator with the optimal wiper from a selection of high-quality models. The bottom product is discharged by means of a gear pump. The vapors flow to the condenser where they are deposited on the tube side. The vapor condensate is collected in weighing containers or pumped directly into a collection bin. The heating medium for the thin-film evaporator is heat transfer oil. The capacity of the plant is determined by a mass balance.

Besides conventional evaporation tasks also drying experiments, the residue is removed in solid form (as powders) can be performed on this system.

Operating Range

- Throughput up to 250 kg / h
- Process pressure up to 1 mbara
- Heating temperature to 350 ° C



Short Path Evaporator

The GIG Karasek short path evaporator convinces because of a particularly wide range of services in product-friendly technologies for delicate fabrics:

The spectrum of this special apparatus reach from high evaporation to fine vacuum distillation at pressures up to 0.001 mbar.

The method of the short path distillation is traditionally referred to as a molecular distillation. In thermally-sensitive products working pressures up to 0.001 mbara are needed. For further development of the pressure range <1 mbara the pressure loss between evaporator and condenser must be minimized, and kept low accordingly by the GIG Karasek short path evaporator technology with high evaporation rate.

In order to shorten the path of the vapors to the condenser we install the condenser into the evaporator.

Our thin-film and short-path evaporators are interconnected with each other, like our other systems. Thus critical-residence-time evaporation processes can be simulated without product damage. In order to avoid freezing out of the distillate at the condenser, the cooling water is heated.

Operating Range

- Throughput up to 250 kg / h
- Distillate cut to 99%
- Process pressure up to 0,001 mbara
- Heating temperature to 350 ° C
- Cooling water to 90 ° C

Thin Film Dryer

Poke conventional dryer technologies for heat sensitive products to their limits, the successful film evaporator principle of GIG Karasek ensures gentle processes that satisfy both economic and process engineering.

In addition to the various possibilities of the film evaporator to handle very viscous products, our technical center also offers the drying of sludge and pasty substances option. The specific design of the horizontal dryer satisfies the specific requirements for minimum loss of valuable product, product protection and purity. Furthermore, caused by mechanical cleaning any deposits on the heating surfaces and the maintenance costs are reduced. The product to be dried is distributed highly turbulent evenly in a thin layer by means of a rotor on the heating surface and using the wiper blades conveyed through the apparatus to the outlet nozzle. In very wet sludge predrying on vertical apparatus and the drying can be performed on horizontal thin film dryer. By combining both dryers a very low residual moisture content is reached.

Operating Range

- Process pressure up to 25 mbar
- Temperature to 300 ° C
- Throughput up to 200 kg / h



Custom tests

Customized processes instead attempts of the rod

In GIG Karasek Technical Center you will find a comprehensive range of quality equipment for experimental purposes of any kind.

Our specialists will advise you in detail and ensure optimal individual processes of your evaporation or distillation process. For best results, the system parameters are always optimized precisely.

Cost Gentle patterns of production & wage distillations

For product launches usually a sampling is necessary to explore the market opportunities and needs. Again, we support you with economic concepts: Our pilot evaporation plants offer the possibility of concentrates and distillates produce in much larger quantities than possible with laboratory equipment.

The necessary personnel expenses per produced pattern amount falls due to the high level of automation in the technical center of low and enables a particularly cost-saving production patterns.

In addition, we are pleased to offer on request on the implementation of wage distillations.

Full data transparency and availability

... are prerequisites for GIG Karasek:

Our systems work with SPS and you receive after your attempts, all data in the form of a comprehensive test report for your further use.

The essential areas of our business activities are

- Process Simulation
- Experimental Procedure
- Cleaning of the system
- Detailed test report
- Attempt accompanied by GIG Karasek process engineer
- Sample quantities

GIG Karasek - A Member of Dr. Aichhorn Group

Our Portfolio

Evaporation Technology

- Falling film evaporator
- Forced Circulation evaporator
- Optimization, conversions and expansion
- Detection of possible energy-saving potential

Thin Film-/Short Path Technology

- Evaporation technology
 - Thin Film Evaporator
 - Short Path Evaporator
- Drying
 - Horizontal Thin Film Dryer
 - Vertical Thin Film Dryer
- Evaporation plants

Other Equipment

- Special constructions including performance guarantees
- Processing of special materials
- Heat exchangers, columns, tanks, reactors
- Pharmaceutical containers and vessels, fermenters, tanks with and without agitator
- etc.

Our Service

- Advice and analysis of problems and development of new technologies
- Creation of profitability and feasibility studies
- Conducting laboratory pilot tests
- Procedural process design incl. EMSR
- Full implementation including:
 - Basic & Detail Engineering
 - Own production, including heating and cooling units
 - Qualification for the entire project management
 - Delivery and apparatus, pipeline and EMSR installation
 - Commissioning and personnel training
 - Maintenance, service and performance guarantee

Approvals and Standards

For all information regarding our approvals, certificates, etc., please visit our website.

www.gigkarasek.com.

Highest Quality is our Standard!

Equipment for the world of tomorrow.

We are your first contact for demanding process solutions and plant projects. For decades, we support our international customers in the fields: chemical, paper & pulp, food and pharmaceutical industries. Our specialty of expertise are in the fields of distillation, evaporation and drying. We also manufacture according to customer requirements and needs special process equipment for different procedural applications. With our own laboratory / technical center we offer our customers full service support. Because of our laboratory we remain constantly on the pulse of time and develop new technologies.

Our Edge - Experts with experience and manufacturing expertise

We know what industrial production processes benefit and create custom (Complete-)solutions from A to Z, which are tailored to the specific customer requirements. We offer our customers our expertise in consulting, lab and pilot testing, planning, engineering, production and commissioning of functional units or complete process steps for the most diverse applications. We support independent in complete systems from the scope of the project as well as in the sustainable optimization, conversions and extensions.



Experimental projects with GIG Karasek start early, to accompany and advise you right from the beginning:

Before the test, in close cooperation with the customer, careful planning and the simulation of the concentration or distillation process in pilot scale takes place. The requirements for the scale-up process data are determined. We developed methods of operations that can be carried out in excess of the scale-up factor 2000.

Contact us

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