



The Pioneer in Material Processing®

# Tradition and Innovation since 1863

## Industrial mixing and fine grinding technology

**EIRICH stands worldwide for a comprehensive range of products and services in the field of preparation technology. Its particular focus is on mixing and fine grinding technology, with know-how developed over 150 years of close cooperation with industrial users and universities.**

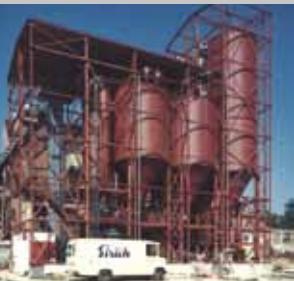
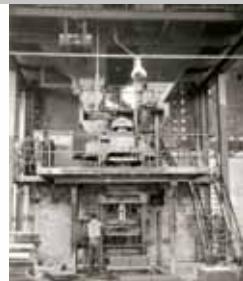
### EIRICH the Pioneer

Maschinenfabrik Gustav EIRICH was founded in 1863. Originally a mill workshop, it has developed over the years into a group of companies with international operations. The foundation of mixing technology was actually laid back in the early twentieth century, as demonstrated by several design patents which achieved commercial success on an industrial scale. Yet despite all the technical and social changes that have taken place in the course of its history, EIRICH remains committed to the governing principle once pursued by its founders: "Offer the customer the best in progressive, technical achievements".



### Mission

EIRICH sees itself as a leading technology supplier for high-end processing tasks with a worldwide presence. Pursuing a corporate philosophy of operating internationally and thereby ensuring close proximity to every customer, the EIRICH Group has secured its place in all the key economic regions of the world. The focus is on innovative technology for machinery and plant engineering designed to offer maximum benefit to end users. This is made possible by EIRICH's own research and extensive vertically integrated manufacturing.





### Know-how

Something which EIRICH has always been particularly notable for is the development and design of machines which offer outstanding performance and reliability. At the same time, application and materials processing technology has been expanded and further developed in the company's own test centers.

As a result, users today can rely on comprehensive know-how which provides the ideal basis for a trusting partnership for the development of modern and economical processes.

EIRICH preparation technology is used for both individual batch modes and continuous processes in the following basic operations:

**Mixing – Granulating – Drying –  
Fine grinding**

### Applications Technology

EIRICH has broad expertise in the following sectors and industries when it comes to material-specific processes for the preparation of raw materials, the production of both semi-finished and end products:

**Building materials – Ceramics – Glass –  
Carbon paste – Battery paste – Friction  
linings – Metallurgy – Foundries – Environmental protection**

### Solutions from a Single Source

The companies in the EIRICH Group are technology partners who offer a single source for preparation system users. This partnership exists from the very start of the project with first talks to planning, implementation and worldwide after-sales service with a reliable supply of spare parts throughout the operating life of the plant.



# **Companies in the EIRICH Group**

## **Partners for process technology – worldwide**

### **Close to the Customer – the Key to Success**

What started in 1956 with the establishment of the first overseas company in Canada was rigorously and successfully continued in the years to follow. A global presence was built up step by step.

Today the EIRICH Group is comprised of 17 companies in 11 countries on 5 continents and has a workforce of more than 1,400 employees. In addition, some 100 industry agents are responsible for sales of EIRICH products.

Being within easy reach of all our customers enables us to offer high-grade technological solutions which are perfectly adapted to the application's specific requirements. Companies with international operations in the industries which we supply, benefit enormously from the consistent concepts and services, without interface problems.

Intensive, worldwide cooperation between our own technology centers and extensive cooperation with research institutions provide the basis for the development of innovative and economical products and processes.

At all its plants, EIRICH preparation technology is always based on standardized principles in design engineering and quality assurance. This applies not only to machinery, plants and control systems but also to the all-important supply of spare and wear parts, and the comprehensive after-sales services offered for the entire service life of the production plant. And EIRICH products have an excellent reputation when it comes to service life and operating availability.





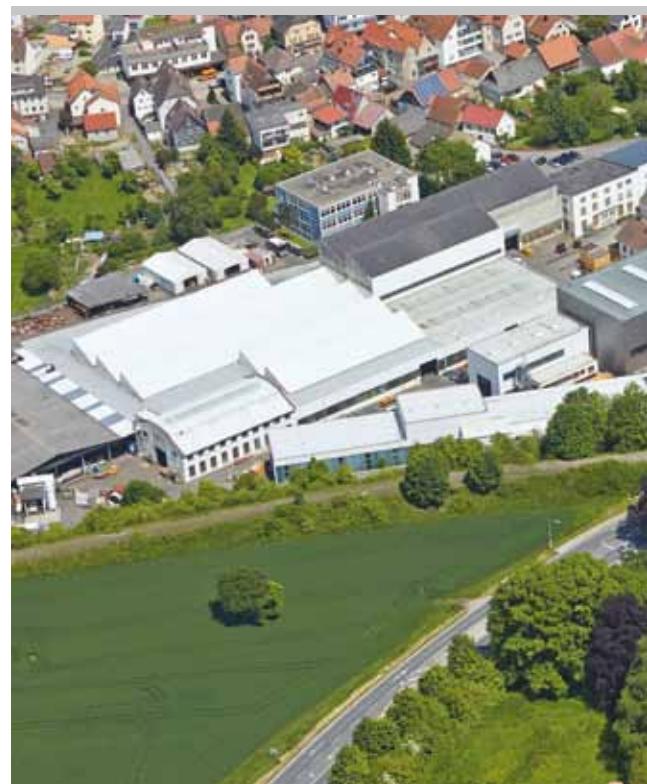
# Maschinenfabrik Gustav Eirich, Hardheim

## The strategic center

Maschinenfabrik Gustav Eirich is the strategic center of the EIRICH Group and the coordination point for all general activities. Located at the Hardheim plant and Plant 2 in Kürsheim are the Technology, Sales, Production and Central Services divisions of the company.

These include:

- **Development departments** for machinery, plants and control systems
- **Test center** for all areas of mixing and fine grinding for the development and optimization of operational processes, from the laboratory scale through to the production scale
- **Plant engineering** with extensive capacity for basic and detailed engineering of new construction, conversion and extension of complete mixing and grinding systems
- **Mechanical engineering** with high vertical integration in production and standard of quality, equipped with state-of-the-art machining centers
- **Control engineering** with our own in-house software and hardware planning, including test facilities for all drives, sensors and program workflows



1. Central Services  
Order Center  
Personnel Development  
Production  
Test Center

2. Customer Center / Market & Technology  
3. Plant 2 in Kürsheim





Internal facilities are provided for training and personnel development of all employees. The unusually high percentage of trade apprentices among the workforce – more than 10 % – is evidence of the importance the company accords to the education of its own employees.

Over 100 engineers and technicians from a wide range of disciplines are employed covering fields such as mechanical engineering, electrical engineering, foundry technology, process technology, chemicals and ceramics.

Which is just one of the reasons why EIRICH has always been and continues to be a pioneer and trendsetter in the development and introduction of new processes.



# The EIRICH Group Worldwide

## Know-how within easy reach



**Eirich France SAS**  
**Saint-Priest / Lyon**



**ООО Eirich Maschinentechnik**  
**Moscow**  
**Dnepropetrovsk**

Sales - Engineering - Service



**Mixing and fine grinding technology**

Sales - Service



**Mixing and fine grinding technology**





**Eirich India Pvt. Ltd.  
Eirich Automation Systems Pvt. Ltd.  
Mumbai**

Sales - Test Center - Engineering  
Production - Service



**Mixing and fine grinding technology  
Process control and automation systems**



**Nippon Eirich Co., Ltd.  
Nagoya**

Sales - Test Center - Engineering  
Production - Service



**Mixing technology  
Fine grinding technology:  
TowerMill vertical agitated media mill for  
wet grinding of ores, limestone and minerals**



# The EIRICH Group Worldwide

## Know-how within easy reach



**Eirich Machines Inc.**  
**Gurnee IL / Chicago**

Sales - Test Center - Engineering  
Production - Service



**Mixing and fine grinding technology**

**Mixing and reaction technology** for  
the food, chemical and pharmaceutical industries  
(Division: American Process Systems)





**Eirich Industrial Ltda.  
Jandira / São Paulo**



**Birkenmayer (Pty.) Ltd.  
Isando / Johannesburg**

Sales - Test Center - Engineering  
Production - Service



**Mixing and fine grinding technology**

Sales - Test Center - Engineering  
Production - Service



**Mixing technology  
Block making machines** for  
building materials and ores



# The EIRICH Group Worldwide

## Know-how within easy reach



**Eirich Group China Ltd.**  
**Hong Kong, Shanghai, Beijing**

Sales - Test Center - Engineering  
Production - Service



**Mixing and fine grinding technology**  
**Production of spare and wear parts**  
Eirich Process Equipment (Shanghai) Co., Ltd.  
**Import and export of machines, spare**  
**and wear parts**  
Eirich (Shanghai) International Trading Co., Ltd.





**Eirich Machinery Jiangyin Co., Ltd.  
Jiangyin, Jiangsu Province**

Sales - Test Center - Engineering  
Production - Service



**Plants for the foundry industry:**  
Sand preparation, separating and shake-out drums, transport and cooling of castings, batching machines, automatic pouring systems, dust extraction systems



# Technology for Modern Preparation Processes

## Mixing, granulating, drying

**EIRICH is the number one supplier of industrial mixing technology in the world – based on over a century of innovative development work. This experience enables EIRICH to guarantee that materials are always prepared to a consistently high quality in a wide range of industries – after all, the end product is only as good as the quality of the mix.**

### Mixing

The unique working principle of the EIRICH intensive mixer enables homogenization to be separated from transportation of the material during the process. This means that mixing operations can be perfectly adjusted to each specific mixing task. The mixing processes are suitable for both continuous and batch operations that can be performed under normal pressure or under vacuum. The mixers have usable volumes ranging from 1 to 12,000 liters and therefore cover every requirement from the laboratory scale to production plants with throughputs of over 1,000 t/h.

Furthermore, the flexibility of the EIRICH mixer makes it suitable not just for homogenizing work but for kneading, plasticizing, dispersing, hydrophobing, coating and granulating as well.

### Granulation

The granulation, pelletizing or build-up granulation of fine-grain and dust-type materials is an important process for many applications in different industries: ceramics, metallurgy and environmental applications.



*Mixer with a usable volume of 12,000 liters for the preparation of iron ores and sinter mixes*



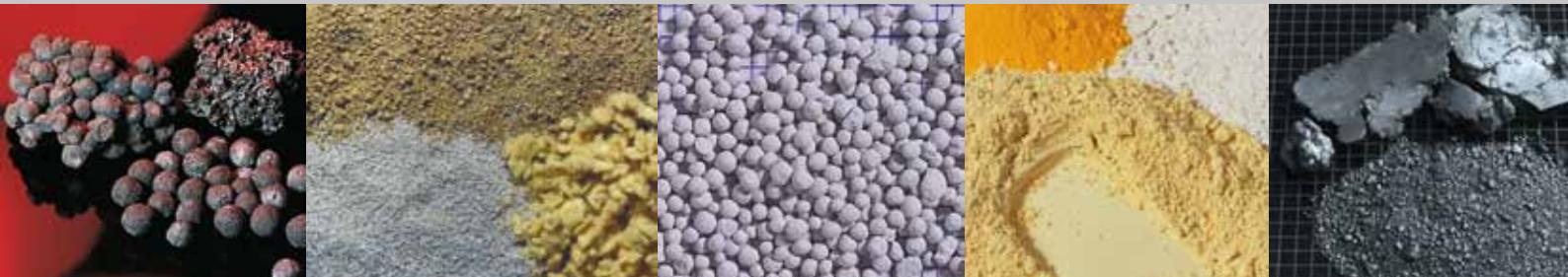
## Drying

Cost-effective results can be achieved in complex preparation processes by combining an EIRICH intensive mixer with task-specific peripheral drying equipment. Mixing, granulating, heating, reacting, drying and cooling can all be carried out either concurrently or in sequence in a single machine.

System concepts are individually planned and implemented as turnkey solutions. Intelligent control concepts enable processes to run more reliably and with greater flexibility.



*Laboratory mixer for applications under vacuum on the basis of the EVACTHERM® principle for product development or small-scale production*



# Technology for Modern Preparation Processes

## Fine grinding

**Over the past years, the EIRICH Group has rigorously expanded its “fine grinding” business. A substantially enhanced choice of different grinding systems now provides the user with practical alternatives for technical and above all economical solutions that are optimally adapted to the application.**

### MaxxMill®

#### Dry and wet grinding – iron-free as well

The MaxxMill® agitated media mill is a versatile, multitalented piece of equipment for economical dry and wet grinding. It is particularly notable for the considerable flexibility in products, formulas and particle size distribution.

Different sizes are available offering throughputs ranging from 0.2 to 10 t/h depending on the input material and the final quality required.

It can be used not only for the dry ultra-fine grinding of soft to hard material systems from 75 µm to less than 5 µm, but also for wet grinding at medium degrees of fineness down to below 10 µm. The materials used for the grinding balls and wear elements range from steel, polyurethane, hardened steel to ceramic. This also makes iron-free grinding processes possible, something which is an important requirement in the ceramics industry. Typical uses include batch compositions, slurries and raw materials for glazes and frits. Aluminum oxide, bauxite, calcium carbonate, kaolin, quartz and talcum are typical examples.

### TowerMill

#### Vertical agitated media mill for high throughputs

Nippon Eirich, Japan, supplies the TowerMill, a vertical agitated media mill for wet grinding in the fineness range from 15 µm to 100 µm. The machine concept is characterized by a far smaller space requirement and a 30-40 % lower level of energy consumption compared to conventional ball mills. Effective protection systems in the mill shell reduce wear and minimize maintenance costs. This is particularly advantageous for wet grinding of abrasive ores with high throughputs as it reduces operating costs considerably.

Typical applications are the preparation of ore and slag as well as the preparation of lime-milk for flue gas desulfurization with drive ratings of up to 1,200 kW.





*A combination of a MaxxMill® and intensive blunger for the preparation of ceramic slurry for the production of large tiles*



*MaxxMill® MM3 for dry grinding of frits*

*EIRICH TowerMill ETM 1500*



# Products and Services from a Single Source

## Material processing, engineering, machinery and plant

### Material Processing

The companies in the EIRICH Group offer a wide range of solutions for material processing tasks. This is assisted by close cooperation with industry, universities and research institutions in Europe, America and Asia, which has been maintained on a partnership basis for decades.

Our own test centers can call on the experience gained from numerous successfully completed plants. They provide all the data required for the design of individual machines, for the engineering for plants and for the quality-related criteria for prepared mixtures. All new and customer-specific applications are validated and documented in pre-production trials at EIRICH, using the customer's original materials. This is a service-proven and cost-effective means of minimizing risk based on extensive scale-up knowledge.

### Plant Engineering

Plant design solutions are provided by experienced engineers and technicians working within the customer's material processing specifications – for new projects, conversions, modernizations, relocations or extensions.



*Operational support services from EIRICH test centers*

Thanks to their international presence, EIRICH companies are able to take account of all conditions, standards and regulations applicable in the destination country from the project's start.

They offer everything from the incorporation of individual mixing and grinding devices to turnkey plants, including the power installation and structural steel work.

Optimized, intelligent concepts reduce installation and commissioning times or also ensure that downtimes are kept to a minimum whenever existing plants are extended or modernized while production is in progress.



# design

## Mechanical Engineering

All the key components required for ensuring compliance with performance and quality-related criteria are developed and manufactured by EIRICH itself. In particular this means the batching and weighing systems, the intensive mixers and the various types of mills, plus the control systems. The high vertical integration in manufacturing guarantees that all international requirements concerning quality and safety can be reliably met.



# Products and Services from a Single Source

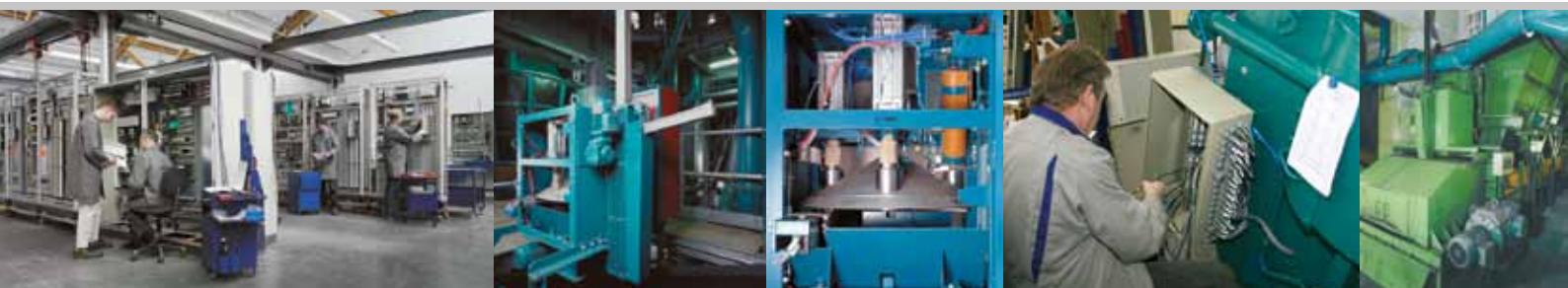
## Control systems, service

### Process Control and Instrumentation Technology

EIRICH delivers components for every automation level in preparation systems, and they are all developed and manufactured in-house. From power units and on-site units to complex control systems and associated sensor systems.

EIRICH plans the optimum level of automation for requirements and takes account of interfaces connecting to higher-level ERP systems.

Operationally reliable hardware combined with innovative software ensures that process workflows run efficiently at all times – from simple target-performance comparisons to CAQ systems for protocol logging and documentation of each individual batch.





## Service

Accurate implementation of the system on site with a safe, smooth and on-schedule handover to the operating and maintenance staff is what you can expect from EIRICH.

This involves an offer of a complete package of service from all the plants around the world:

- **Assembly / Installation**
- **Commissioning**
- **Training**
- **Spare and wear parts**
- **Maintenance**
- **Repairs**

The user can rely on special software to provide support with timely and professional preventative maintenance and repair, always custom-tailored to each individual plant.

For troubleshooting and rectification of faults EIRICH also provides a teleservice system which allows the user to communicate directly with experts at EIRICH.

Also included in the range of services offered is a reliable spare and wear parts service – worldwide and with guaranteed supply over many decades.



# **Innovations and Technology Transfer – Worldwide**

## **From raw materials to a quality product**

### **Building materials Ceramics Refractory Glass**

### **Battery paste Friction linings Foundries Carbon paste**

### **Metallurgy Environmental protection**

#### **Partnership and open cooperation with our customers**

For EIRICH, being close to our customers is the key to success. This close dialogue from the very outset in the development stage is what produces innovative solutions of high quality and reliability. In this respect the fact that EIRICH preparation technology is widely used in a broad range of industries throughout the world is of particular importance.

Experience shows that in practice there is in fact very little exchange of experience between industries. EIRICH therefore plays a key role here as the interface for the transfer of technology. Numerous successful examples provide impressive testimony of its effectiveness.

Our customers profit from this partnership and open cooperation – worldwide.







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Pursuing a corporate philosophy of operating internationally and thereby ensuring close proximity to every customer, the EIRICH Group has secured its place in all the key economic regions of the world.

The focus is on innovative technology for machinery and systems engineering designed to offer solutions for high-standard preparation tasks from a single source.

Applications and process technology with own test centers, a high vertical range of production and comprehensive after-sales service provide the ideal basis for the development of modern and economical processes for a multitude of industries.

**Building materials – Ceramics – Glass – Carbon paste – Battery paste  
Friction linings – Metallurgy – Foundries – Environmental protection**

### The EIRICH Group worldwide:



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