

The mixing room specialists



Harburg-Freudenberger – Rubber mixing technology

In Freudenberg we develop, manufacture and supply complete mixing room systems. This includes storage silos, feeding and weighing systems, internal mixers, mixing mills, dump extruders and their respective peripheral equipment.

In the field of rubber mixing technology we can provide the optimum machine for any type of production or capacity requirement, economic, reliable, easy to maintain and customized to the user's requirements.



We have a long history

More than 100 years ago, the Werner & Pfeleiderer company pioneered the development of the internal mixer, with an operating principle still a standard today. In 1900 the world-renowned "MASTICATOR" kneading machine opened up a new era in rubber processing.

In the late 1960's Werner & Pfeleiderer acquired the Homrich company, a mechanical engineering company in the town of Freudenberg. In 1987, following the takeover of Werner & Pfeleiderer by Krupp, all activities relating to rubber mixing technology were concentrated at the Freudenberg site under the company name of Werner & Pfeleiderer Gummitechnik GmbH.

The Freudenberg facility then became a centre for modern, advanced, mixing room technology and state of the art rubber production processes, of considerable international repute.

After the merger of Werner & Pfeleiderer and Krupp Kautschuktechnik Harburg in 1997, in 2002 the new company changed its name to ThyssenKrupp Elastomertechnik GmbH. The production range of the two companies, already established and important in their own fields, complemented each other perfectly.

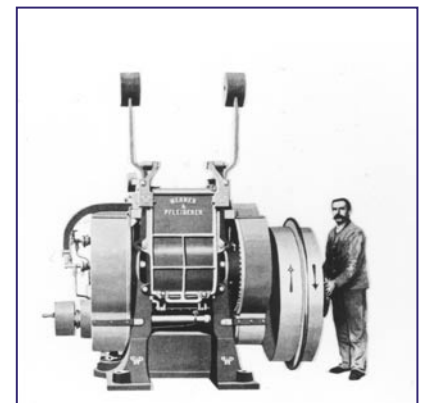
Then in 2005, L. Possehl & Co. mbH acquired the ThyssenKrupp Elastomertechnik GmbH from ThyssenKrupp Technologies.

Since then the success of the two companies, each rich in tradition, has continued with the unchanged and extensive scope of service provision and technical competence, for individual machines or complete projects, under the name of "Harburg-Freudenberg Maschinenbau GmbH".

The synergism of the company's two divisions, in Harburg and in Freuden-

berg, has extended the potential for innovation and the provision of proven and forward-looking technologies in all areas of our activity.

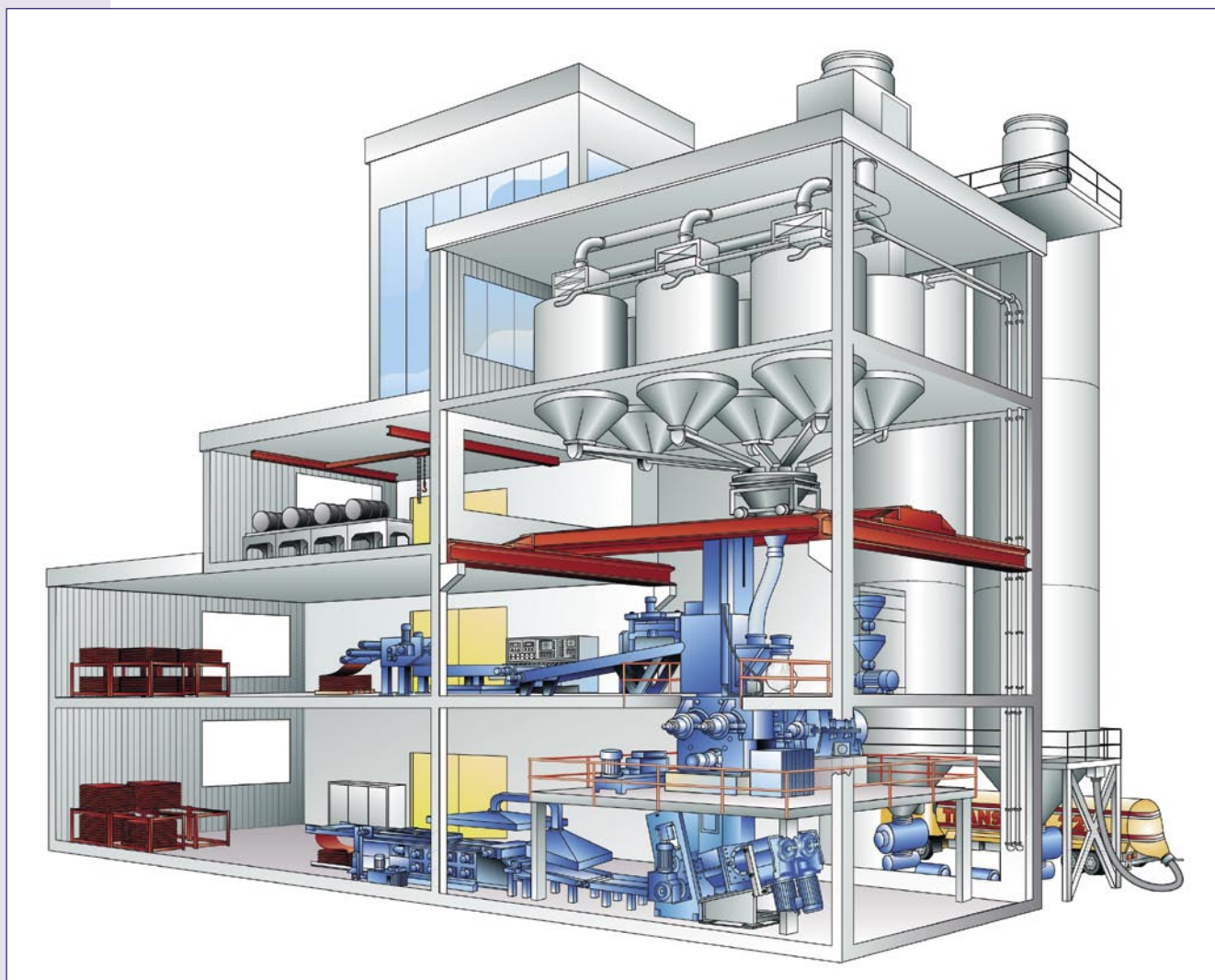
Harburg-Freudenberg provides one of the most comprehensive product ranges for the rubber compounding and processing industry available from a single source. A product range that contains equipment for almost every major process in rubber products manufacture.



**Complete mixing room systems
– from a single source with complete security**

Within our complete mixing room systems we guarantee that all the individual elements and subsystems are perfectly matched, from the raw material intake to the discharge of the finished sheet, pellet or granulate. In this way all interfaces between the instrumentation and control equipment are guaranteed to be problem-free.

What is more, we are here to help at every stage of your project. In the preparatory phase we can draw up a complete investment plan that includes flow diagrams depicting the overall system, as well as profitability analyses and feasibility studies. By carrying out much of the basic engineering and detailed engineering at the same time as we draw up your project study, we can provide a clear view of the scope of our services.



Our computer-based project management system keeps deadlines and costs under tight control throughout the term of the project. Our experienced process engineers are on hand during the commissioning of your new facilities and also when you move into production.

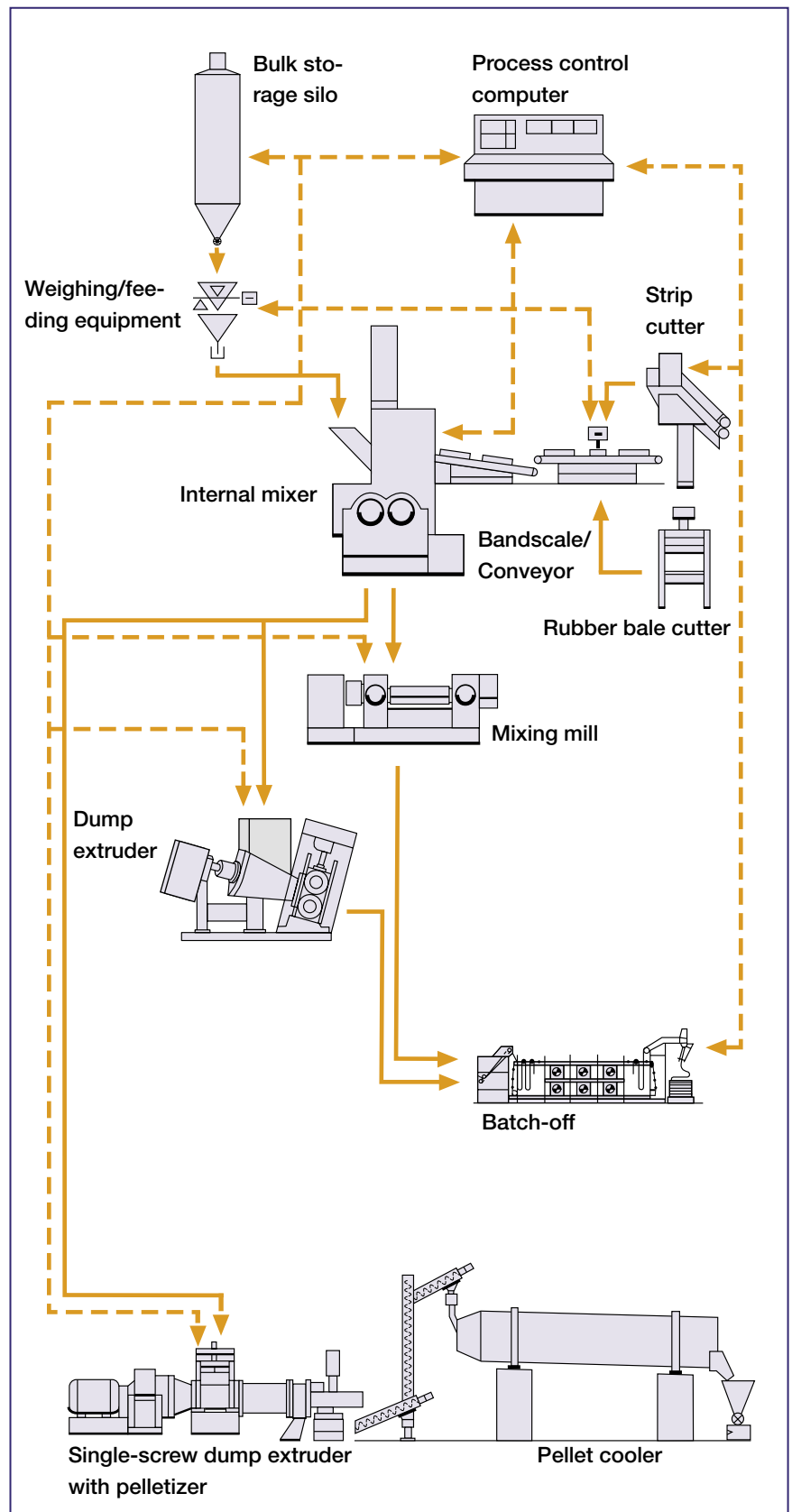
The strength of the rubber mixing division in Freudenberg, lies in the design and construction of complete mixing room systems, from raw material intake to the finished sheet, pellet or granulate.

With optimally matched individual elements, the most modern microprocessor process controls and integrated quality control, we guarantee constant reproducible quality, combined with flexibility and high productivity.

For decades the rubber mixing division in Freudenberg has enjoyed the confidence of rubber mixing experts from around the world because of the quality of this service.

This is not least because we can supply complete mixing lines "from one source". These are based on our experience as a single supplier, with the crucial know how in all aspects of planning and equipping complete mixing rooms to the most modern standards.

You can make use of this unique "from one source" concept to ensure the success of your project and the efficiency of your production. Please contact us to obtain further information.





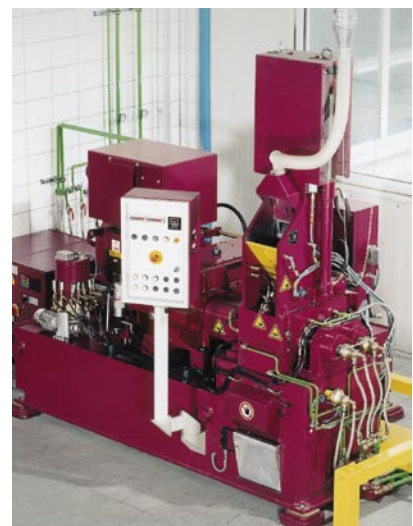
Heavy Duty Internal Mixer, type GK 420 N

Our Internal Mixers – A Superior Concept

With the machines of the original “Werner & Pfeleiderer” design we are able to supply the best solution for any range of compounds or any capacity requirement. The various machine sizes available and their modular design ensure that our internal mixers can be adapted and tailor made to meet any demand.

Our GK-N series (Tangential) and our GK-E series (Intermeshing) internal mixers distinguish themselves by their productivity and reliability.

Laboratory internal mixers from Harburg-Freudenberger also have the same sophisticated technology as the production size machines. Apart from a smaller mixing chamber volume of 1, 5 and 5 litres they are equal to the larger production machines in all other respects.



Laboratory Internal Mixer

Our range of peripheral machines are designed to complement the internal mixer

Specially developed for the diverse requirements of rubber mixing, our range of peripheral machines offers maximum reliability, availability and economy. The machines are also extremely easy to operate and maintain.

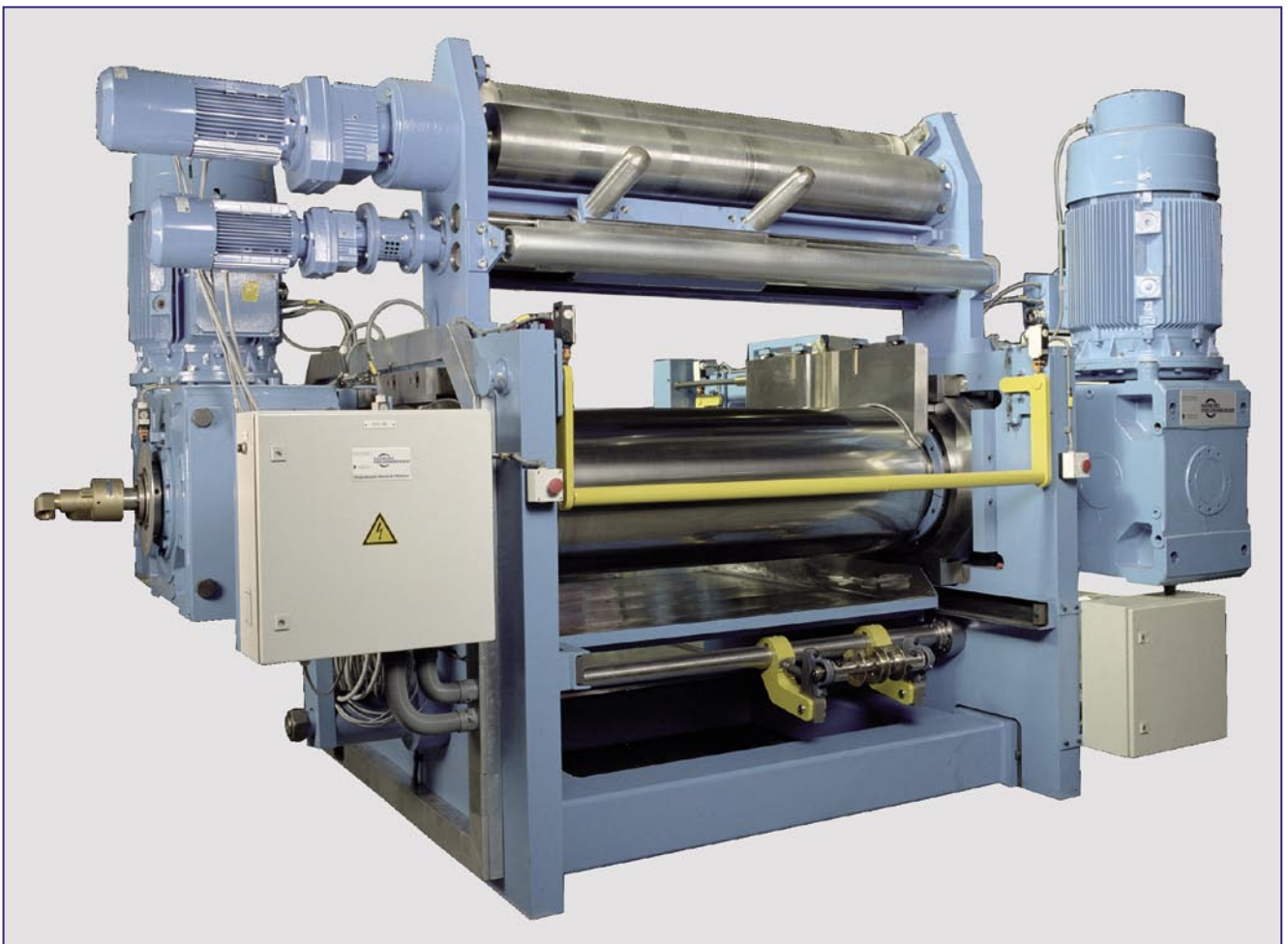
High - performance Mixing Mills

Our high-performance mixing mills, with their compact construction, are ideal as down stream equipment.

They are equipped with:

- Hydraulic gap adjustment with integrated overload protection.
- Separate roll drives with infinitely variable speeds and friction.
- Effective roll cooling.
- Cooled Stockblender with variable speed drive.

High-performance mixing mills are also suitable for open mill mixing.





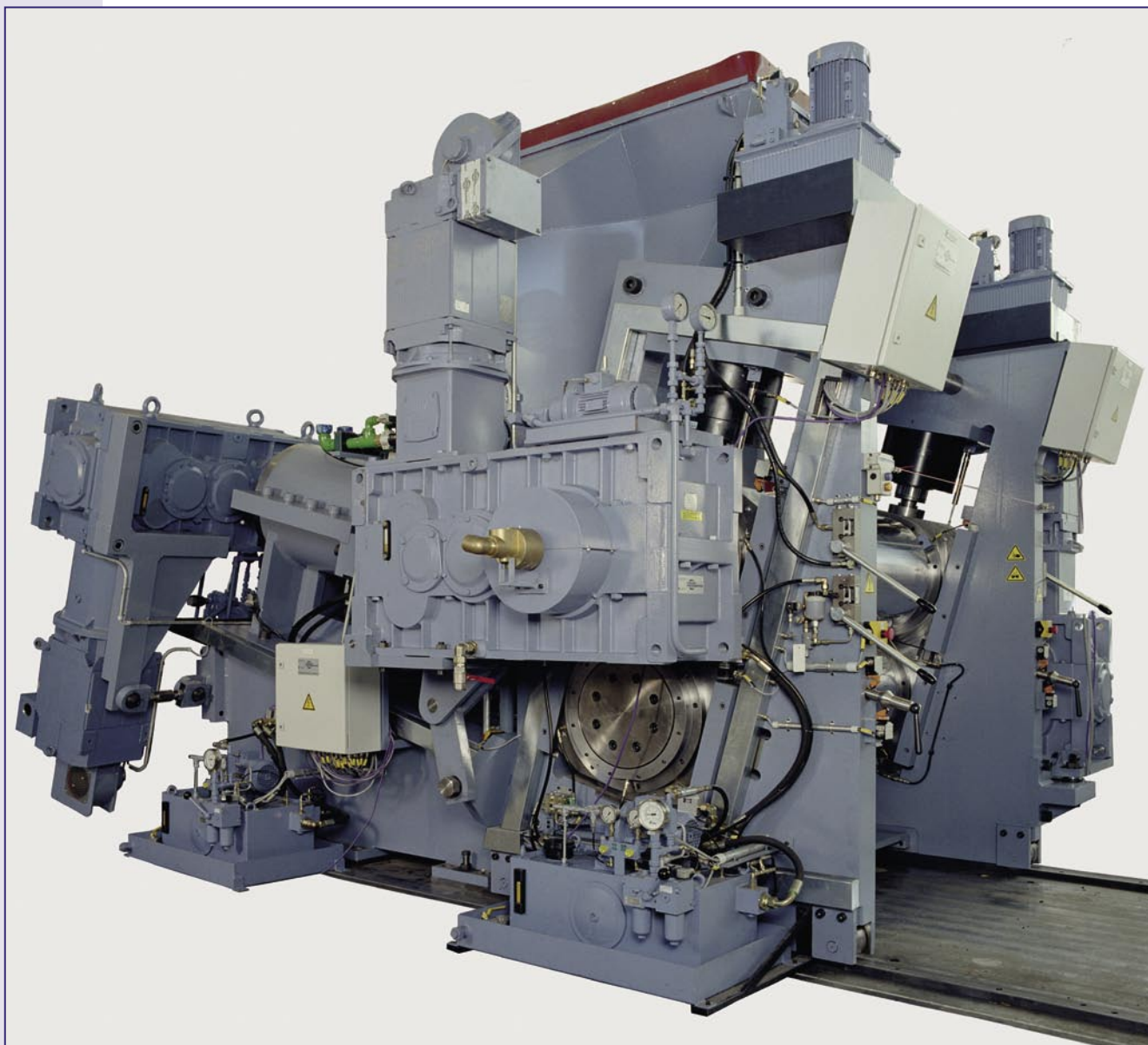
Dump Extruders

Our dump extruders are precisely matched to our internal mixers. They offer high quality, low cost downstream processing with a variety of profiling possibilities.

Depending on the intended use, they can be supplied, as an EAE single-screw extruder with pelletizing, gra-

nulating or tube die heads, or with a roller-die calender.

The DSE conical twin-screw extruder, mainly used in the tyre industry, is normally supplied with a roller-die calender, however for other applications it can be used in conjunction with a gear pump.



Twin screw extruder DSE 450 with roller-die calender 610 x 1400

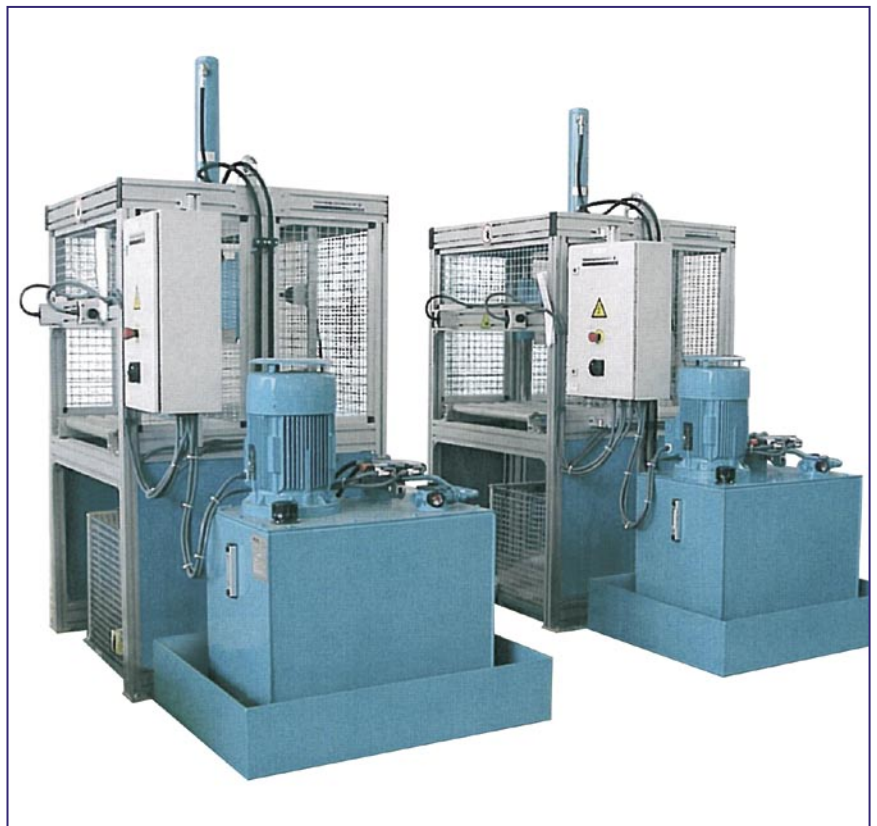
Strip cutting machines

Strip cutting machines produce various sizes of strips, slabs and continuous sheet used to feed cold feed extruders, mixer loading conveyors or preheating mills.



Hydraulic rubber bale cutters

Hydraulic rubber bale cutters cut rubber bales into smaller pieces, before the pieces are weighed and fed into the internal mixer.

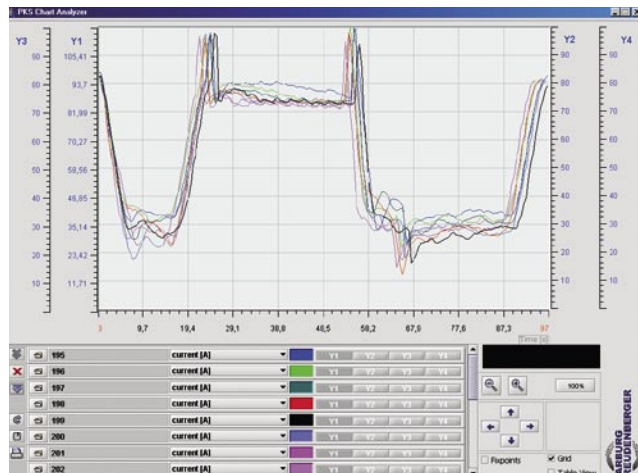
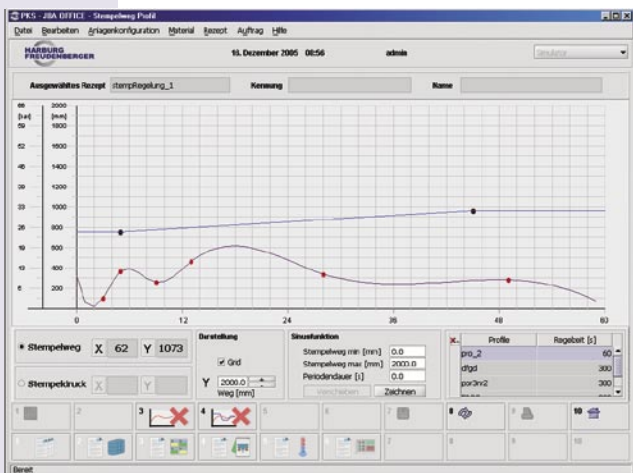
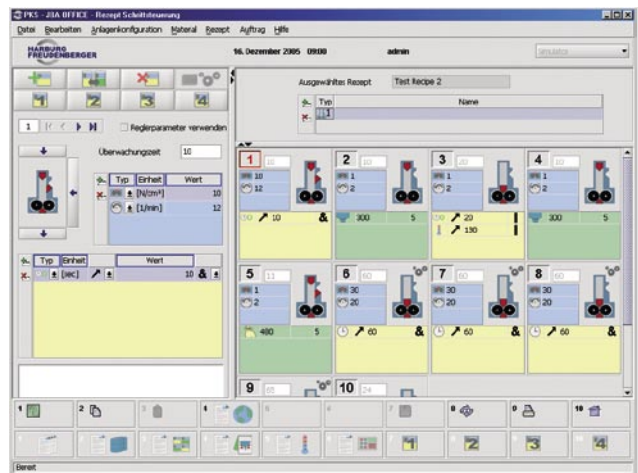
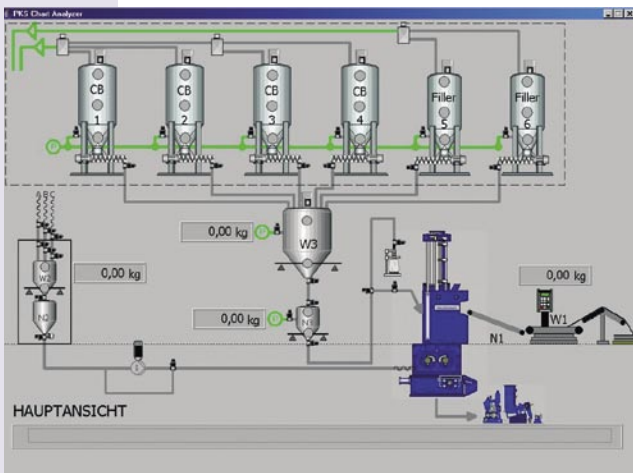


Control and automation systems

We can supply a range of control options, from simple manual mixer controls up to computer based process control systems for the complete mixing room. These systems control the automatic weighing and feeding of ingredients into the internal mixer, the mixing cycle, the mixing mill or dump extruder and the batch-off. In addition they also facilitate data administration, data networking, tele-diagnostics and tele-maintenance.

Our PKS-JBA is specially tailored to the processes in the mixing room and provides a considerable improvement in compound output and quality. Due to its open architecture the PKS-JBA automation system can be used in an isolated application for single mixers, or as a control system for decentralised automated mixing lines.

The PKS-JBA system has a modular design and can be adapted to any mixer configuration. Thus any application can be created and optimised with regard to its engineering and economy.





Harburg-Freudenberg Research & Development Centre

The R&D Centre is not only intended for our research and development projects. The centre is also available to our customers, in order to test our machines before buying them. Customers can test our equipment, check the processing of their recipes under operation conditions and also determine the optimal preconditions for their new or existing mixing plant. Our R&D Centre contains up to date machines and equipment of the latest generation. In the adjoining laboratory, Mooney, vulcanisation and hardness tests can be carried out on the compounds produced.

The equipment in the R&D Centre permits the training of mixing room personnel under realistic conditions. Thus we can contribute significantly to the knowledge and proficiency of customer's personnel even before a new mixing project is commissioned. This also ensures the acceptance and implementation of the new technology.

Customer Service

Consultancy Service

Service starts with competent and objective advice before any machine purchase. Following on from this we guarantee reliable customer service and the provision of original spare parts for decades to come.

Modernization

Experienced teams of experts are available to keep mixing room equipment up-to-date, to increase compound quality and productivity.

Service/Spare Parts

Competitive machine inspections and service contracts, for hardware and software, offer the greatest possible security through preventive maintenance and rapid spare parts supply.

Maintenance

Experienced engineers carry out regular machine inspections, take measurements and recommend any appropriate maintenance work required. In this way on site spare parts stock levels can be optimised.

Presence

In addition to our plants in Hamburg-Harburg and Freudenberg we also have production and assembly plants in the USA and Croatia as well as subsidiary companies in Paris and Moscow.



Harburg-Freudenberger

We develop, build and distribute machines, lines and systems across our three company divisions based on 150 years of company tradition.

Rubber mixing technology

We provide the most comprehensive range of machines for the rubber and caoutchouc industry including all major preparation and processing stages.

- Complete mixing room systems
- Internal mixer
- Mixing mills
- Dump extruder

Caoutchouc technology

Production machines and lines for the manufacture of tires and technical rubbergoods from raw material feeding to vulcanisation:

- Extruder
- Extrusion lines
- Tire building machines
- Curing presses

Edible Oil Technology

Machines for processing oilseed, crude oils of vegetable origin and animal raw materials as well as screw presses for the dewatering of synthetic caoutchouc and similar products:

- Screw presses
- Extraction lines
- Refining lines
- Process engineering

We are always at your service

With our foreign offices and our service points we have a global presence. If you would like to learn more about Harburg-Freudenberger or if you require information on specific services, please do not hesitate to contact us.



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