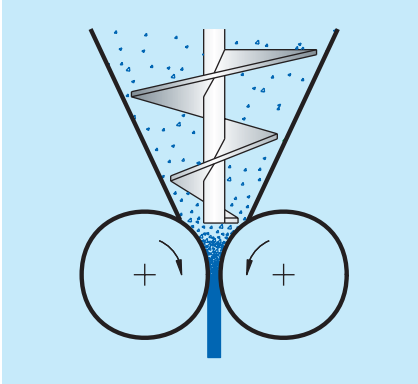
ROLLER COMPACTORS FOR MINERALS, METALS AND CHEMICALS

HOSOKAWA MICRON

HOSOKAWA ALPINE Compaction

A Division of HOSOKAWA ALPINE Aktiengesellschaft

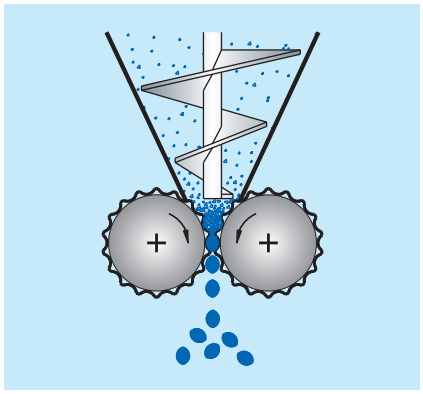
Compaction and Briquetting Densification and Particle Sizing



Compaction
Powder is compressed into a solid form called flakes. Compressing the powder into flakes increases the bulk density of the material for the final product.

Dry Granulation
The flakes produced by compaction are gently milled to the required particle size distribution as required by the process.
Sieving or classification can also be performed to achieve a tighter distribution.

Compaction Benefits:
· Insures good flow properties
· Increases bulk density
· Particle size control
· Low energy consumption
· Minimal product heating
· Dust free processing
· Good dosing properties
· Consistent & reproducible results

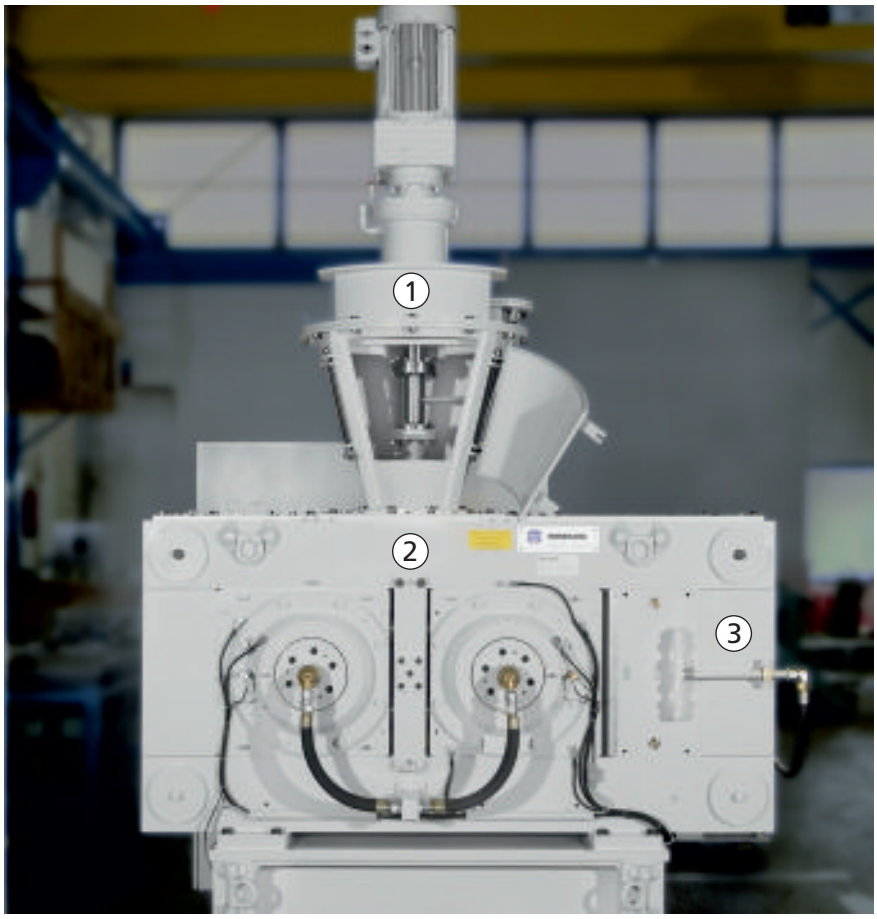


Briquetting
Briquetting processes utilize specially made compaction rolls enabling production of a variety of sizes and shapes. Typical examples include:
· Pillow shapes
· Almond shapes
· Stick shapes

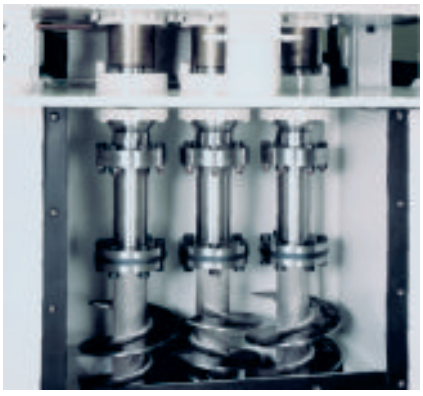
Synchronized counter-rotating rolls and very tight tolerances insure a consistent end-product.

A wide range of sizes and shapes.

Standard Features for Tough Applications



Based on the width of the compacting rolls, single or multiple feed screws are used. The goal is to insure proper feed distribution of material across the roll face, for consistant product quality and maximum roll life.

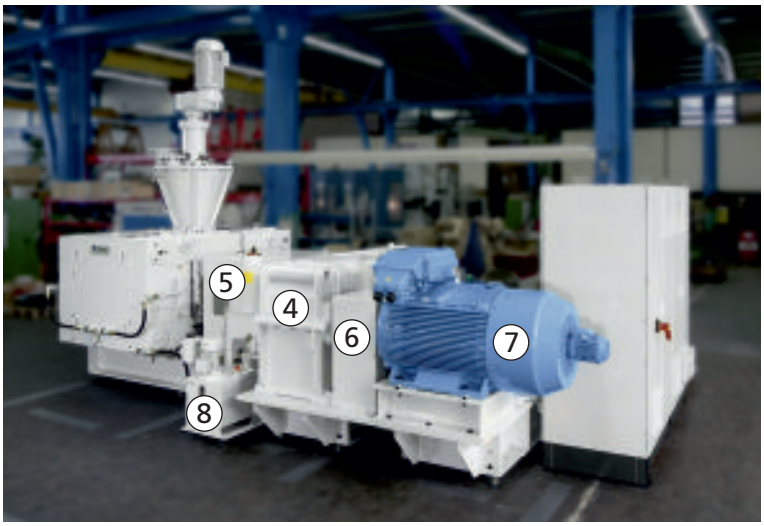


KOMPAKTOR® Front Side

① Screw Feeder
② Press Frame
③ Hydraulic Cylinders

KOMPAKTOR® Drive End

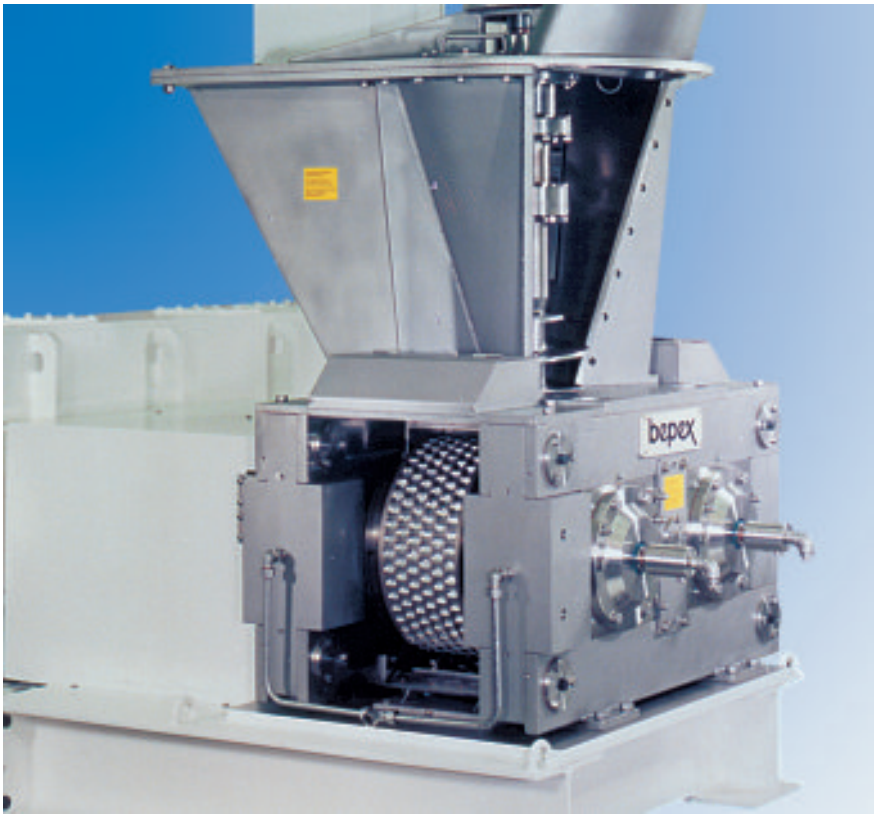
④ Dual output shaft reducer
⑤ Curved tooth coupling for radial compensation
⑥ Flexible coupling, Option: Belt drive
⑦ Roll drive motor
⑧ Hydraulic pump unit



Options

Gear heating
Roller cooling
Automatic grease pump
Sealing gap cleaning
Roll gap measuring

Custom Designs for Demanding Applications



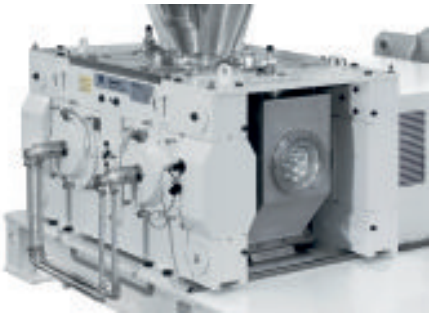
An easily removable panel allows access to the feed screw. The screw can be removed from the machine without disturbing the drive assembly.

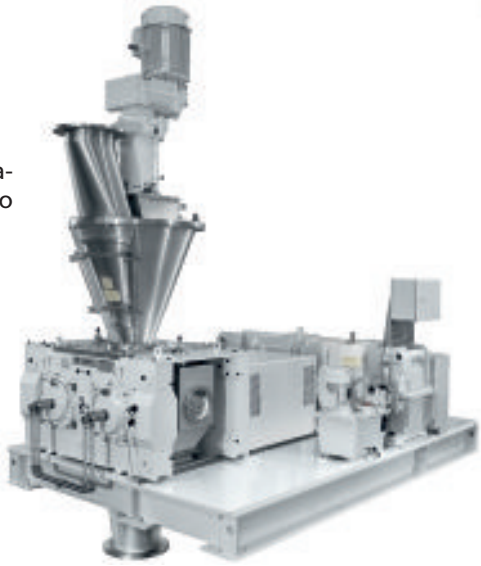
Housing of the compacting rolls for gas and dust-tight operation especially important when poisonous products are processed or the process is executed under protective gas.

Design Details:

- Electronic press force measurement
- Automatic press force control
- Roll cooling system
- Adjustable roll gap
- Press frame made of stainless steel (option)

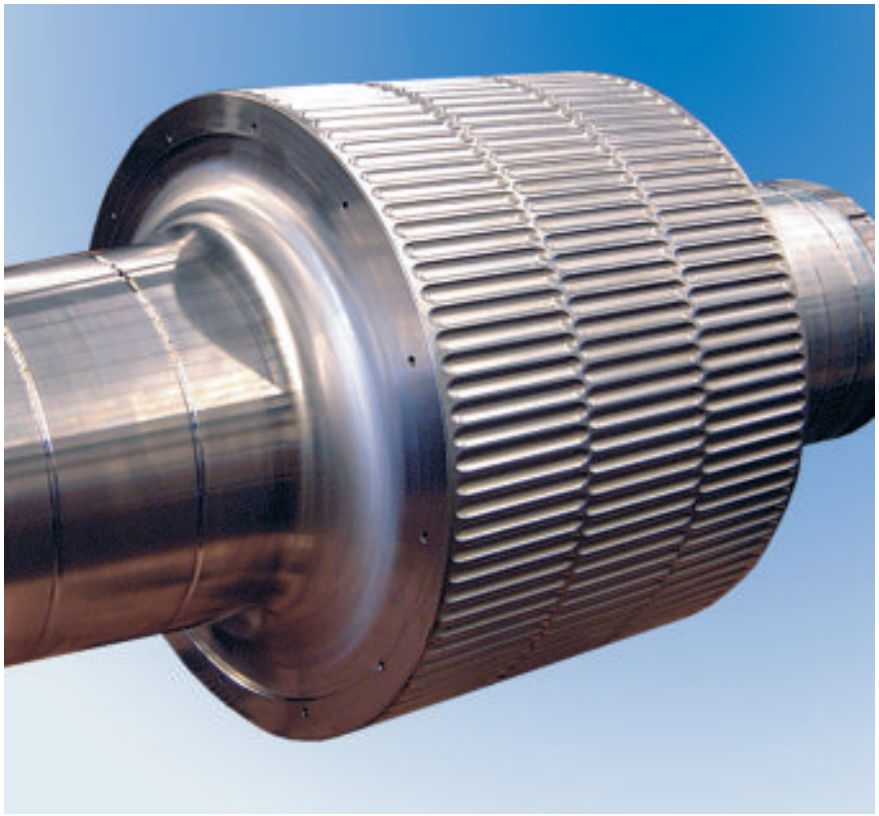
In handling fine, low bulk density materials a vacuum system is used to evacuate air from the product.



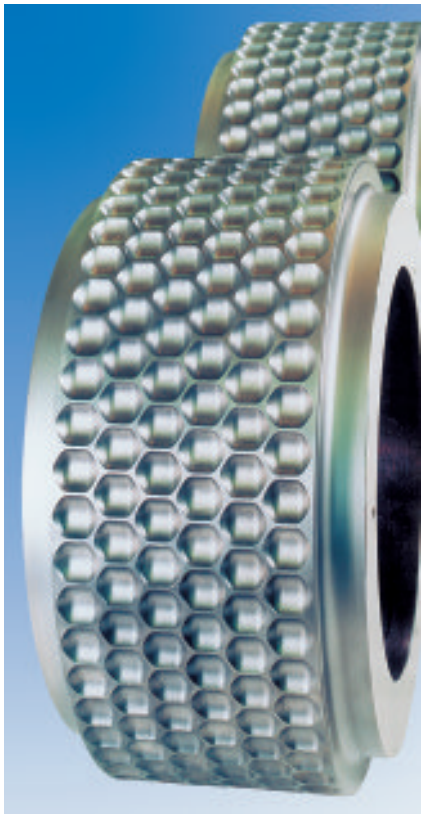


Heavy-duty **KOMPAKTOR** for high capacity compaction in the chemical industry. All parts in contact with the product are made of stainless steel. The machine is designed to contain a positive pressure in the product zone for inert gas purging.

Press Rolls and Feed Screws Working Parts designed for each Application



Integral roll
Options for alloy overlay against corrosion or welded-on hardfacing.

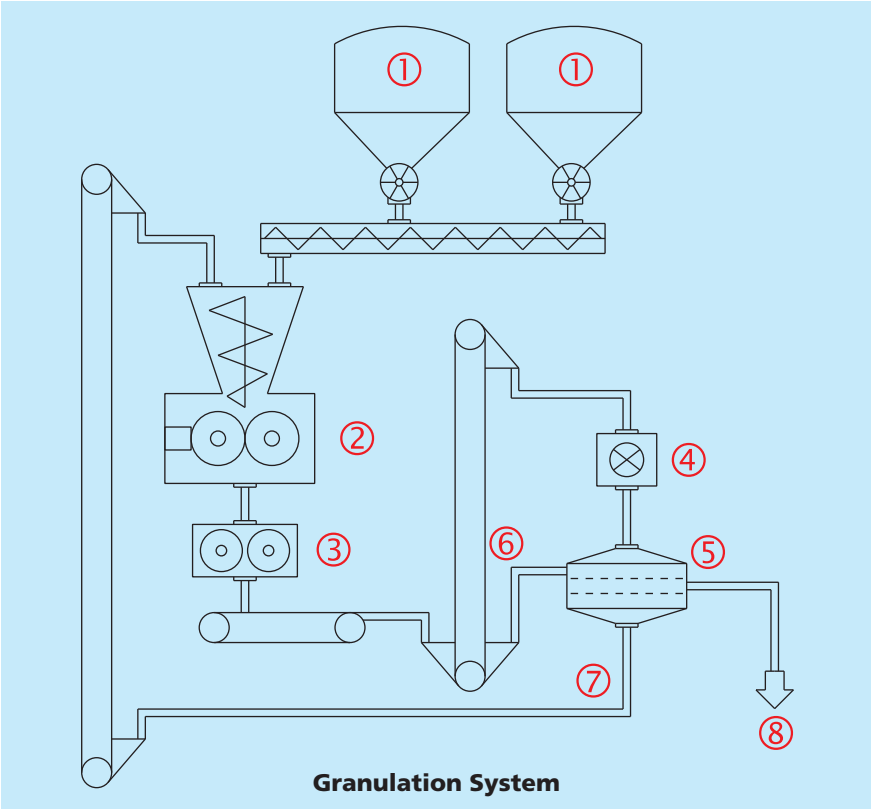


Roll tires
offer an optimum balance between service life and economy, either made of stainless steel or tool steel, both with surface heat treatment.

Segmented Rolls
For hot and abrasive products. Segments can be replaced without removing the roll from the machine.

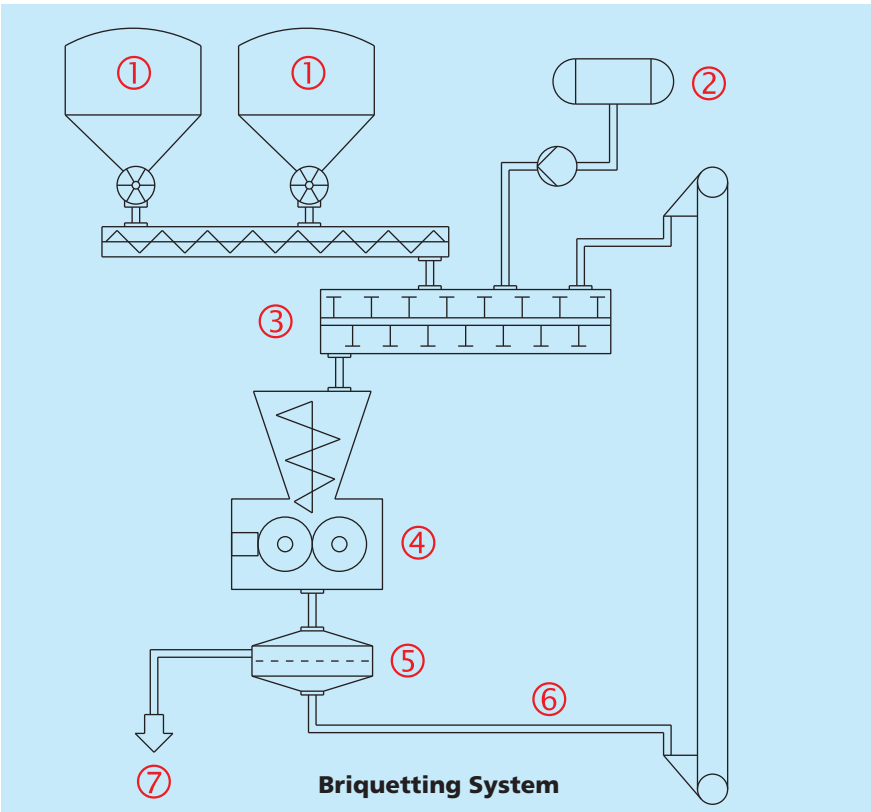
Feeder designs
The compression ratio of the feeder is adapted to the product. Made of stainless steel or with welded-on wearing protection.

Granulation and Briquetting
Proven System Technology



Granulation System

① Product
② KOMPAKTOR®
③ Pre-Crusher
④ Impact Mill
⑤ Screen
⑥ Recycle coarse
⑦ Recycle fines
⑧ Product Granules



Briquetting System

① Product, Solid Binder
② Liquid Binder
③ Mixer
④ KOMPAKTOR®
⑤ Screen
⑥ Recycle fines
⑦ Product Briquettes

Certain products do not require binders.

Process Technology
Single-source Expertise

The HOSOKAWA Alpine test lab
Several sizes of roll compactors are available in the Hosokawa Alpine test lab, allowing us to show feasibility and demonstrate the performance of our systems on your materials. Our engineers combine years of experience with the information gained from your specific application to deliver the optimum product for your requirements. After the test, you will receive a detailed report and material samples.

Our experience results in your total satisfaction.

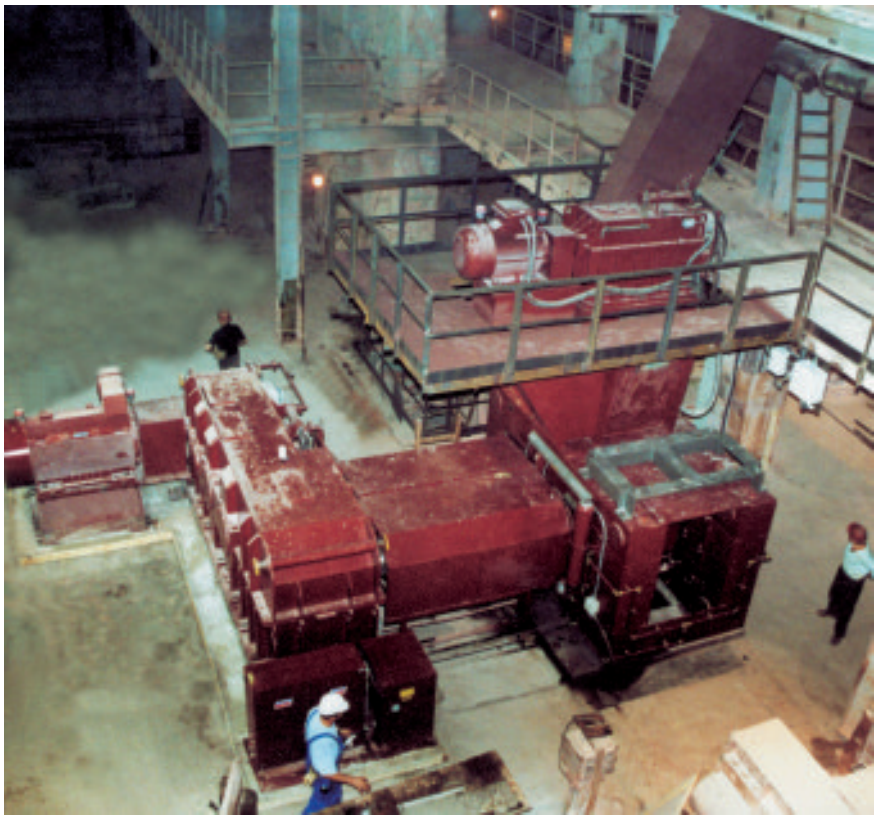
Plant construction
Engineering
Automation
We do not only deliver machines, but the complete plant with all accessories including the controls and automation.

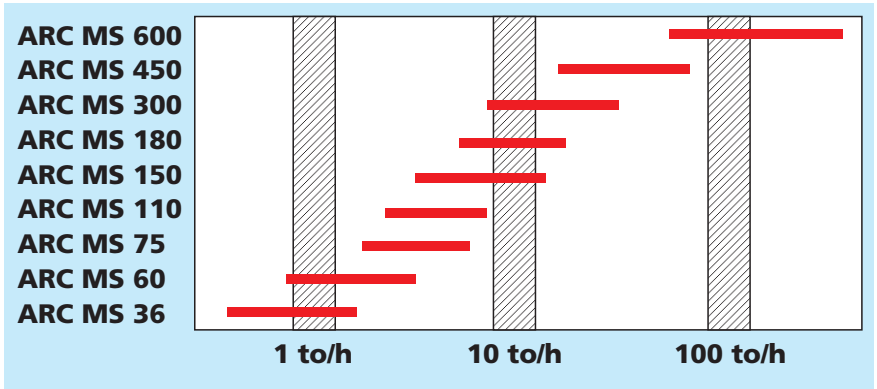
Thus the processing technique is reliably transformed into an industrial plant with full function

Range of capacity:
Compactors are laid out according to the product to be processed.
The combination of different press frames, roll diameters and drive groups entails a very big range of capacity, which fulfils all requirements of the industry.

. . . and more
Along with roller compactors, our lab is fully equipped with the necessary auxiliary equipment to perform a variety of powder processing functions including mixing, screening and milling. Our analytical lab contains the equipment needed to verify the most important physical properties of your feed material and the products produced.

Pilot plant


KOMPAKTOR in a factory for potassium chloride. Capacity over 100 to per hour; roll drive motor 800 kW.



HOSOKAWA ALPINE
Agglomeration Technology
We bring your powder into shape

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The ALPINE Technologies
Machines and complete plants for
- ❑ Compaction
- ❑ Briquetting
- ❑ Granulation
- ❑ Size reduction
- ❑ Pelletizing
- ❑ Extrusion
- ❑ Spheronization

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A Division of HOSOKAWA ALPINE Aktiengesellschaft

Hosokawa Alpine Compaction is a member of the Hosokawa Micron Group, responding to global needs through emphasis on materials science and engineering. The Group is an international provider of equipment and technology for powder and particle processing, plastics processing and confectionery products. The Group maintains facilities for research, engineering, manufacturing and service in each of the world's major industrial markets.

Roller Compactors MMC - Oe - Schweikert - Printed in Germany - 06/14