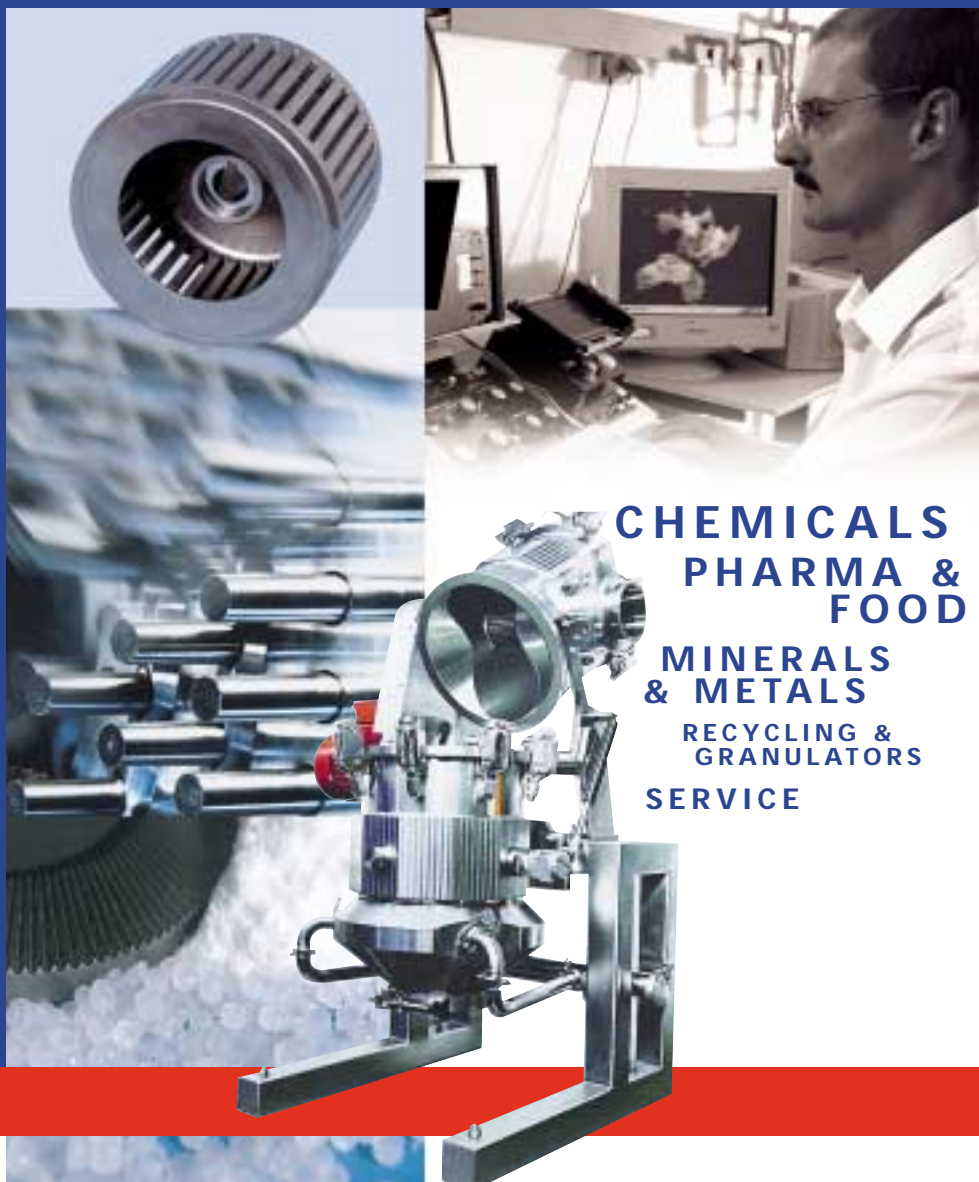


BUSINESS SEGMENT
POWDER AND PARTICLE PROCESSING



CHEMICALS
PHARMA &
FOOD

MINERALS
& METALS
RECYCLING &
GRANULATORS
SERVICE



HOSOKAWA ALPINE

PROCESS TECHNOLOGIES FOR TOMORROWSM

HOSOKAWA ALPINE

ONE COMPANY - TWO BUSINESS DIVISIONS



Hosokawa Alpine has been in business for over 100 years. Regardless of the field, i.e. blown film processing or powder & particle processing, we are traditional trendsetters on the market. The driving force behind refining our technologies is the experience we gain and the challenges we face as market leaders

WE ARE YOUR

BLOWN FILM PROCESSING

As a specialist for film blowing lines to manufacture thin plastic film, Hosokawa Alpine ranks among the world's foremost suppliers in this market segment. The vast fund of know-how, the high quality standards, the continuous innovation and high degree of reliability are all reasons for the constant growth of this business division.

POWDER & PARTICLE PROCESSING

Formed in 1898, Hosokawa Alpine's range includes the development, design and manufacture of components and turnkey systems to produce powders, granules and bulk materials for the chemical, pharmaceutical, food, minerals, metals and recycling industries. Whether the task is comminution, classification, dust removal, handling, metering, weighing or packing, you will always find Hosokawa Alpine to be a competent and innovative partner.

DIVISIONAL STRUCTURE

The name ALPINE stands for competence in all areas of comminution technology. The long years of close cooperation between our engineers and the development departments of our customers have made us leading specialists for powder and particle processing technology around the world. Because our aim is to offer our customers the very best in professional and accomplished advice tailored to their specific branch of industry, our powder and particle processing division is divided into five subdivisions:



COMPETENT PARTNER



- PHARMA & FOOD

The manufacture of powdery substances for the pharmaceutical industry is a job for specialists. Hosokawa Alpine conforms with international pharma standards and supplies a wide range of products and performance, including special processes for the food industry. Whatever method of size reduction is used, we are the specialists.

- CHEMICALS

The range of chemical products is just as wide and diverse as are the different demands on the properties of pigments or powders. We supply process-technological solutions for the chemical industry as a single-source partner. Our comprehensive range of products means that we are able to meet a vast number of different requirements. We also offer competent advice on solutions for basic chemical products and auxiliary products, as well as for toners, paints, pigments, herbicides or fertilisers.

- MINERALS & METALS

We supply complete dry and wet processes with state-of-the-art mills and classifiers for processing mineral raw materials. Our machines and systems for fillers, ceramic raw materials, metallic compounds and alloys all meet the high demands set by our customers. We are not just manufacturers, however, but also competent partners for the engineering and design of complete turnkey systems.

- RECYCLING & GRANULATORS

We design, build and deliver complete granulator systems to include all necessary system components. Whether the feed material is injection mouldings, sprues, film webs or film edge trims, our granulators are designed for even the most difficult cutting tasks. In addition, we also supply in-line recycling solutions for rubber or cable which are tailored to the individual requirements.

- SERVICE

Our service division gives support during the entire lifetime of any Hosokawa Alpine system or machine. Our extensive range of services includes spare parts supply, maintenance, inspection, servicing, repairs, general overhauls, system upgrading, and training. A fairly recent addition to our portfolio of services is a range of pre-owned ALPINE machines.

No matter what part of the world you are in or what your processing challenge is, Hosokawa Alpine is never far away with the best solutions and support. Our range of services includes project management, installation, commissioning, training, maintenance and system upgrades.

EVERYTHING FROM
ONE SINGLE
RESPONSIBLE SOURCE.



ALPINE PROCESS PHARMA & FOOD DIVISION TECHNOLOGY



*Technological innovation in every detail.
Division which offers a comprehensive range of
services on the sector of process technology,
machine design and systems engineering in
accordance with the prevailing cGMP standards.*

DIVISION PROFILE

PHARMA & FOOD DIVISION

Developed in close cooperation with the customer, this division designs and manufactures aseptic processing systems for powdery products, and enjoys market leadership on this sector.

The demand to separate operators and process resulting from the dictates of hygiene is met by the integration of CIP/SIP technology or isolation technology.

We supply machines and systems which permit the highly automated manufacture of high-quality foodstuffs and functional food in innovative processes.

ISOLATION TECHNOLOGY

One objective is to avoid the risk of aseptically manufactured products becoming microbiologically contaminated by the environment.

**HOSOKAWA ISOLATOR
WITH INTEGRATED
ZIRCOPLEX CLASSIFIER
MILL 100 ZPS**



**CIRCOPLEX
CLASSIFIER
MILLS ZPS**



High end-product fineness, cool grinding and flexible production parameters are what tip the scales in favour of the Circoplex classifier mill ZPS for food production applications.

**SPIRAL JET
MILLS AS**



Sterile grinding system for antibiotics with the 100 AS Spiral Jet Mill. The system can be sterilised in auto claves. Numerous machine sizes with grinding chamber diameters from 50 to 500 mm.



SPECIAL SERVICES

The pharma & food division offers the complete range of basic and detail engineering services.

These services include not only system technology, but also automation and process visualisation as well as system qualification. Material samples which are used for downstream tests or for customer applications are produced by ALPINE in the laboratory and testing centre.

PROCESS SOLUTIONS FOR: FOODSTUFFS

Cereals, pulses (peas, beans), starch and starch derivatives, sugar and sugar substitutes, spices, tea, dried fruits and vegetables, thickening agents (gelatine, pectin, carrageenan), emulsifiers, vitamins

COSMETICS

Face powder, eye-shadow, etc.

PHARMACEUTICALS

Active substances (BPC/API);

Auxiliary agents such as: lactose, cellulose, starch;

Compounds

PRODUCT RANGE

- Crushers; Hammer Mills
- Granulators
- Fine Impact Mills
- Contra-rotating Pin Mills
- Mechanical Classifier Mills, e.g. Powderplex APP, Zircoplex ZPS
- Spiral Jet Mills
- Fluidised Bed Opposed Jet Mills
- Static Air Classifiers, e.g. Multiplex zigzag classifier
- Dynamic Air Classifiers, e.g. Stratoplex classifier ASP
- Turboplex classifier ATP, etc.
- Laboratory mills: Impact mills, spiral jet mills, fluidised bed opposed jet mills, classifier mills
- Laboratory air classifiers
- Laboratory-scale sieving technology and particle size analysis: Air Jet Sieve 200 LS-N
- Wet sieving technology
- On-line particle analysis

FLUIDISED BED OPPOSED JET MILLS AFG

An optimal machine and system design is achieved through the use of innovative manufacturing methods and a high degree of precision during production.



Opposed Jet Mill 400 AFG in CIP design; shown integrated into a pressure-shock-proof system used to process penicillin derivatives.

Machine sizes: 100 AFG - 710 AFG.

The main components of the mills are manufactured as monoblock parts, i.e. in one-piece construction.

MULTI-PROCESSING SYSTEM MP

System with 100 AFG fluidised bed opposed jet mill in cGMP design for processing small batches.



Modular system design.

By exchanging components, the system can be operated as:

Fluidised Bed Opposed Jet Mill 100 AFG; Spiral Jet Mill 100 AS; Zircoplex Classifier Mill 50 ZPS; Fine impact mill 100 UPZ; Turboplex Ultrafine Classifier 50 ATP.

FINE IMPACT MILLS UPZ



Type 500 UPZ in tangential design. Compact configuration for optimal accessibility to permit component exchange and cleaning. Exchangeable grinding elements to order.

ALPINE PROCESS CHEMICALS DIVISION TECHNOLOGY



*The specialists for all those questions regarding fine powders and much more...
The scope of activities of the Chemical Division is just as wide as the vast range of materials for which Alpine offers process solutions.*

DIVISION PROFILE

The systems and processes offered by the Chemical Division cover all the basic operations of mechanical process technology such as size reduction, separation, air classification, mixing, conveying, product collection and feeding.

The target of the Chemical Division is to find the most practical and economical solution for the case in hand.

WET PROCESSING TECHNOLOGY

Besides the classic dry processing techniques such as size reduction and air classification, Hosokawa Alpine has extended its range to include wet grinding and wet classification. Boosted by this complement to the traditional range of dry processing techniques, the

Chemicals Division is now even better equipped to cope with customer-specific requirements and to elaborate suitable process solutions.

CHEMICALS DIVISION

CONTRAPLEX WIDE-CHAMBER MILLS CW



Pin mill with 2 driven pin discs achieves high powder finenesses.

Wide-chamber housing permits even sticky materials to be ground.

Machine sizes: 160 CW - 1120 CW.

Drive power: up to approx. 500 kW.

FLUIDISED BED OPPOSED JET MILLS TFG

New product line for quick and easy cleaning.

- Eminently suitable for toner and pigments; especially if the product or colour is changed frequently.
- Integrated ultrafine classifier for extremely spatter-grain-free end products with steep particle size distributions. Classifying wheel with vertically mounted drive. Can be opened hydraulically by 180° for cleaning.



- Loss-in-weight level control system with load cells.
- Low noise emission: < 83 - 85 dB(A).
- Standard design: pressure-shock-proof to 10 bar overpressure.

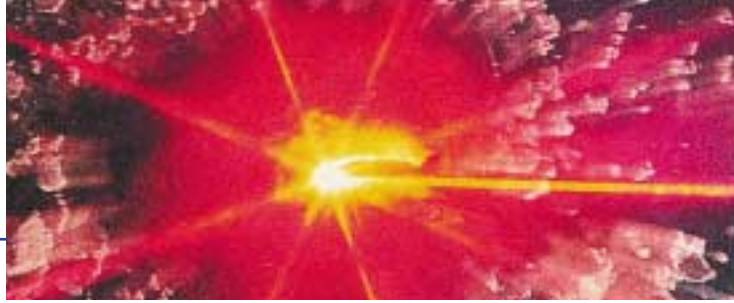
HORIZONTAL WET AGITATED BALL MILL AHM

Applications: Basic chemicals, catalysers, pigments, dyes, plant protectors, fine chemicals, metallic oxides

- Mill housing: cylindrical, cooled.
- Agitator: perforated discs and special agitating elements.
- Separating device: slotted pipe screen, exchangeable without emptying of the mill.



- Wear protection: polyurethane, hard metal, ceramic.
- Operating reliability: double-action mechanical seal.
- Handling: easy to operate, quick to clean.



SOLUTIONS FOR:

- Base chemical products and auxiliaries
- One- and two-component toner
- Powder coatings and clear varnish
- Dyestuffs, organic and inorganic pigments
- Herbicides, pesticides, insecticides, fungicides
- Wax and resins
- Titanium dioxide
- Fertilisers
- Stearates, silica gels, silicic acids and carbon black
- Initial products for catalysts
- Additives for rubber and plastics processes
- Flame protection agents, fire extinguishing powders
- Bicarbonate for flue gas desulphurisation

PRODUCT RANGE AND SPECIFIC PROCESS KNOW-HOW FOR:

- Turnkey lines for the production of toner. From the premix to the finished toner powder.
- Turnkey systems for the formulation of plant protectors.
- Standard systems for non-explosive materials.
- Explosion-protected systems pressure-shock- proof, with and without venting and/or explosion suppression.
- Inert-gas systems as explosion protection or because the product demands it.
- Dyestuff and pigment Processing systems Easy to dismantle and reassemble, easy to clean (important for frequent product changes).
- Laboratory machines and analysis units for the production of mini batches, for quality control and quality assurance.
- Wet grinding and wet classification

FLUIDISED BED OPPOSED JET MILLS AFG

- Delivers a steep particle size distribution with sharp topsize limitation.
- Operating range: $d_{97} = 3 - 150 \mu\text{m}$.
- Cool grinding: no temperature rise during grinding.
- Contamination-free grinding, no wear in grinding bin.
- Easy to clean.
- Loss-in-weight level control system with load cells.



AFG DESIGNS:

- Single-wheel or multi-wheel classifier heads.
- Horizontal or 3-D nozzle arrangement.
- Standard or mega-jet nozzles.
- Machine sizes: 100 AFG - 2000/4 AFG.

ULTRAFINE CLASSIFIER TSP, TTSP

Novel one - and two-stage classifiers for excellent coarse materials for applications such as:



- Minimisation of the fines portion < $2-5 \mu\text{m}$ with black and coloured toner.
- Dedusting of powder coatings to reduce the $10\text{-}\mu\text{m}$ portion to < 5 %.
- Dedusting of silicic acids and silica gels.
- Fines reduction in the case of pigments with strong coating behaviour.
- Low pressure drop permits the use of standard radial fans.

FINE IMPACT MILLS UPZ



Type 1400 UPZ, 0,3 bar (Ü) compression proof. Versatile comminution system with exchangeable grinding elements such as beater disc (figure), pin discs, swing beaters, plate beaters. Numerous machine sizes with grinding element diameters between 160 and 1400 mm. Drive power between 5.5 and 315 kW.

ALPINE PROCESS MINERALS & METALS DIVISION TECHNOLOGY



*Engineering, manufacturing,
supply and service.
Product and Process
Know-How as the basis.*

DIVISION PROFILE

MINERALS & METALS DIVISION

- Complete processing systems and stand-alone machines: Crushing, Cooling, Drying, Grinding, Micronisation, Air classification, Wet classification, Storage, Packing, Control units, Coating, Calcination, Granulation
- Mineral fillers: Limestone, dolomite, talcum, chalk, barite...
- Precipitated Calcium Carbonate complete turnkey plants for the production of different types of PCC
- Ceramic raw materials: Feldspar, quartz, zircon sand, aluminium oxide...
- High-tech materials: SiC, boron carbide, Al₂O₃, graphite...
- Ceramic glazes
- Building materials: Gypsum, clay, bentonite...
- Rare earths
- Wood, cork...

SERVICES

We analyse your products, we offer application-specific advice, we carry out trials, we produce application samples, we offer contract grinding services, we engineer, design, purchase, manufacture and install for you.

YOUR PARTNER FOR

Project management, Installation, Commissioning, Training, Maintenance and system upgrades.

STRATOPLEX ASP



The standard classifier for high throughput rates in the medium-fine range ($d_{97} = 15 - 150 \mu\text{m}$). Low energy requirement, sharp topsize limitation, wearproof design, extremely low-maintenance. Wide application range, e.g. Limestone, dolomite..., Feldspar, quartz..., Gypsum, hydrated lime..., Zircon sand, Al₂O₃

TURBOPLEX CLASSIFIERS ATP

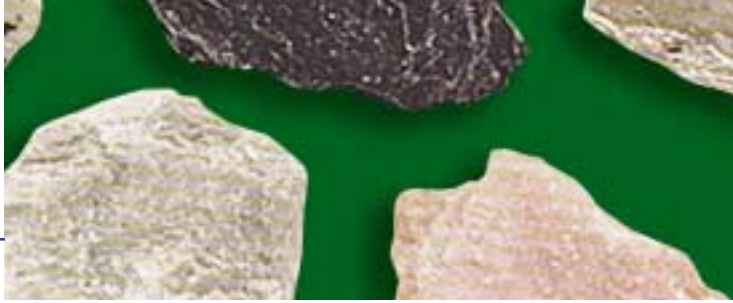


Over 1000 classifiers of this type have been sold - in a great variety of different designs. With the new ATP-NG (NG = new generation), we have now broken through into the sub-micron range. End-product finenesses of $d_{50} = 0.3 \mu\text{m}$ ($d_{97} \leq 2 \mu\text{m}$) are being achieved in production-scale systems.

AGITATED BALL MILLS ATR/ANR

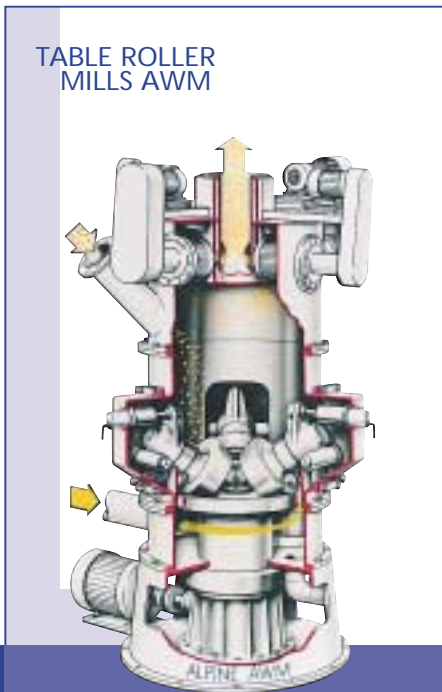


Are the solution for manufacturing dry ultrafine fillers or wet-ground coating pigments. Absolutely no iron pick-up, high-energy grinding, end-product finenesses to $d_{97} = 2 \mu\text{m}$, regardless of whether dry or wet processing.



PRODUCT RANGE:

- Table Roller Mills AWM
Drive power: 75 - 500 kW
- Ball Mills with different types of linings, different grinding media, and different drive concepts
- Classifier Mills:
Zircoplex Classifier Mill ZPS
Micron Classifier Mill ACM
Long-Gap Mill LGM
- Stratoplex Air Classifier ASP for high performance in the medium-fine range
- Turboplex Air Classifier ATP in one-wheel or multi-wheel design
- Micron Air Classifier MS with ceramic wear protection
- Ventoplex Air Classifier, the compact circuit-air classifier
- Pin mills for coating tasks
- Fluidised Bed Opposed Jet Mills AFG for special applications
- Dry Agitated Ball Mills ATR for ultrafine products
- Wet Grinding Systems with Agitated Ball Mills ANR
- Wet Classifiers AHP, high precision of cut high operating reliability easy to clean



Are characterised by:
fine products ($d_{97} = 10 \mu\text{m}$), low energy requirement, low noise operation, low vibrations, low investment costs, high performance.

Applications:
Limestone, dolomite, talcum, bentonite, clay



The ball mill is still the workhorse in the mineral powder industry.
Since developing the S.O.-S.F. (superfine) mill, we are now in a position to produce extremely fine fillers ($60-70\% < 2 \mu\text{m}$) in direct circuit using a dry, low-energy and low-cost process.

ALPINE PROCESS RECYCLING & GRANULATORS DIVISION TECHNOLOGY



For granulators and recycling solutions go with ALPINE.
The right equipment for the job.

DIVISION PROFILE

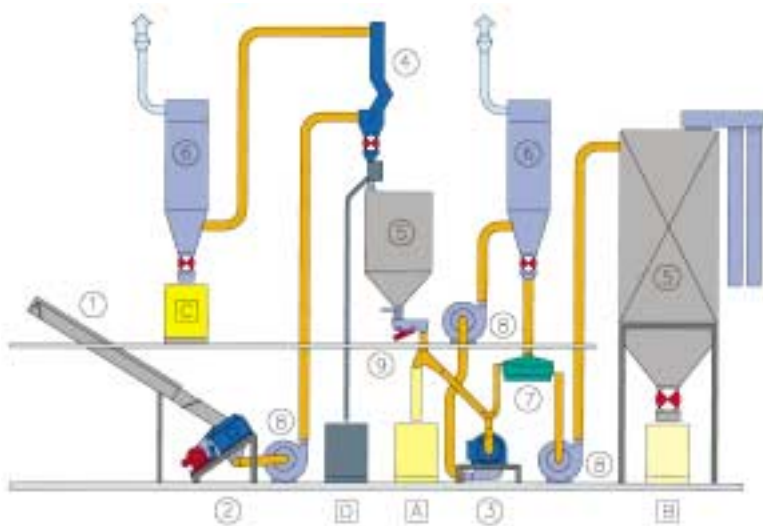
RECYCLING & GRANULATORS DIVISION

- Engineering & supply of complete systems: Cutting, Precrushing, Disintegration, Rolling into balls, Fine grinding, Fractionation, Separation, Dedusting.
- Engineering "Made by ALPINE"
- Recycling processes, Process development
- Plastics processing, Regeneration systems
- Film recycling
- Fine grinding systems for plastics and rubber
- Precious metal recovery: Scrap cable, Electronic scrap, etc.
- Plastics processing for chemical or energetic reuse

SERVICES

- Engineering and trials.
- Customer service

COMPLETE RECYCLING PROCESSES EXAMPLE: PVC WINDOW PROFILES RECYCLING



Problem specifications:

- Fine grinding of PVC profiles.
- Separation of dust and protective film.

Feed material:

- Rejects and start-up profiles up to 6 m in length.

Product yield points

- A** PVC ground granules
- B** PVC fine powder
- C** Dust / protective film
- D** Metals

- 1** Feed chute
- 2** Compact Line Granulator CL
- 3** Fine Cutting Mill AFS
- 4** Granulate Dedusting System DE
- 5** Silo
- 6** Filter
- 7** Sieving machine
- 8** Fan
- 9** Feed material channel

GRANULATORS IN STAINLESS STEEL



To order, ALPINE Granulators completely or partly in stainless steel. Alternatively with anti-corrosion coating.

COMPACT LINE GRANULATORS CL



- Robust design with integrated wear protection.
- Wide-chamber design with electrohydraulically actuated machine top section and screen support.
- Rotors in patented cross-scissor-cut design.



PRODUCT RANGE:

- Polymer Line Granulators PL
Drive: 4 - 75 kW
- Compact Line Granulators CL
Wide-chamber design.
Drive power from 30 - 160 kW
- Rotoplex Granulators Ro
Heavy-duty design.
Drive power from 11 - 500 kW
- Universal Shredders UZ
Powerful single-shaft shredders
- Shredders
- Fine Cutting Mills AFS for powdered plastics
- Granulate Dedusting Systems
- Plastics Recycling Systems with RE-Extruders
Output: approx. 60 - 1200 kg/h
- Hammer Mills, Crushers, Pulverisers, Air Classifiers, etc.

POLYMER LINE GRANULATORS PL



- Compact design with integrated noise insulation.
- Ingenious grinding chamber design ensures low noise operation and prevents product from ejecting.
- Rotor knives and stator knives in double angle cut design.

FINE CUTTING MILLS AFS



- Drive power: 15 - 132 kW)
- State-of-the-art gear ring technology in proven quality.
- The innovative and central gap adjustment ensures optimum operation and rapid maintenance.
- Variable gear ring and gap geometry.

ROTOPLEX GRANULATORS RO



- Unparalleled heavy-duty design principle.
- High number of rotor knives and stator knives.
- Rotors in patented cross-scissor-cut design.

ALPINE PROCESS TECHNOLOGY TECHNICAL CUSTOMER SERVICE



DIVISION PROFILE

In our fast-moving times, a quick and competent response is what counts when it comes to customer service. Fully trained and experienced, the staff members of the Technical Service Division offer exactly that - whenever and wherever it is needed.

The ultimate objective of our Technical Service Division is to make sure that the availability of Alpine's machines is as high as possible. It goes without saying that customer service is an inherent part of the quality of every ALPINE product. Since setting up an emergency hotline on 1 January 2000, we are now at your service around the clock.

RANGE OF SERVICES

The wide range of technical services is geared to our customers' needs and includes:

- Consulting services / inspections
- Maintenance / maintenance agreements
- Servicing - either on site or at ALPINE
- General machine overhauls
- Spare parts service for long-term machine availability
- System and process optimisation
- Second hand machines
- Operator training - either on site or at ALPINE

TECHNICAL CUSTOMER SERVICE

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IN AN EMERGENCY,
ASSISTANCE IS ALWAYS
CLOSE TO HAND.

OUR TELEPHONE HOTLINE:

+ 49 821 5906 111



Each and every team member is responsible for the satisfaction of our customers.

APPLICATION TESTING CENTRE



*Studying and solving problems
in the largest testing centre for
mechanical process technology.*

**CUSTOMER SERVICE
TAILORED TO SUIT
OUR CUSTOMERS!**



ALPINE's application testing centre offers unique facilities for carrying out customer trials aimed at finding the best possible system design and at determining the technical warranty parameters. Tests are carried out both on a production scale and a pilot scale.

Spread over approx. 3000 m², the application testing centre provides ample space for execution of all the basic operations of mechanical and thermal process technology, e.g.:

- Size reduction (dry and wet)
- Granulator technology / shredding
- Air classification
- Wet classification
- Sieving, separation
- Mixing, drying, flash drying

Online (i.e. direct at the grinding-classifying system) particle size analysis of dry powders in the range 0.5 - 850 µm.

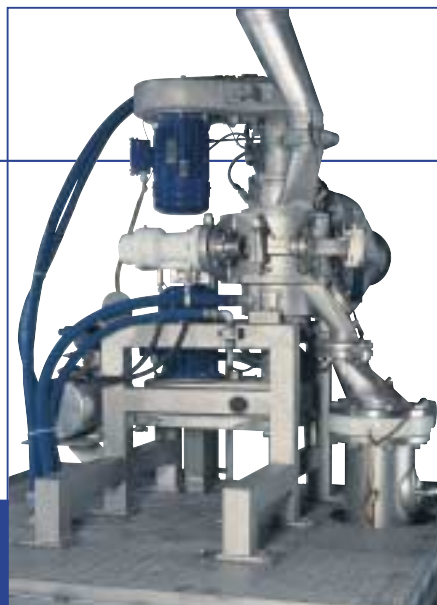
Taking advantage of ALPINE's application technology also means being on the receiving end of our customer service, the scope of which includes detailed test reports containing all the relevant testing data and parameters.

With over 60 machines and complete systems, ALPINE's application testing centre is ideally equipped to meet every customer testing requirement.

Annexed to the testing centre is a laboratory equipped with numerous state-of-the-art measuring and testing units for determination of powder properties.

SPECIAL FEATURES OF THE TESTING CENTRE:

- Selected systems used for size reduction and classification in the fine and ultrafine range are protected against dust explosions.
- Oil-free and water-free compressed air.
- Hot-gas operation.
- Cryogenic operation with LN₂ to -80°C operating temperature.
- Contamination-free processing trials carried out with special systems for ultrafine comminution and air classification.
- Grinding-classifying circuit mode, e.g.: closed-circuit between ball mill and ultrafine classifier; open product-circuit between impact mills and sieving machines, air classifiers.



200 TTSP
CLASSIFYING SYSTEM
IN THE TESTING CENTRE

ALPINE PROCESS FILM EXTRUSION DIVISION TECHNOLOGY



ALPINE has been manufacturing blown film lines since 1955. The reliability of ALPINE lines and the company's many years of experience in planning and implementation of such complex entities is well known.



DIVISION PROFILE

Three testing centres in Germany/Augsburg, Japan and the USA are always equipped with the latest machines and components and are used for customer trials and development.

Trials can be conducted with the lab lines under production conditions and allow a practice oriented evaluation of the capability of HOSOKAWA ALPINE.

Product Range:

- Extruders
- Filtration Systems
- Die Heads
- Cooling Systems
- Calibration Systems
- Take-Off Units
- Winders
- Control Systems
- Profil Optimization Systems

FILM EXTRUSION DIVISION



PROCESSED RESINS

- Polyethylens
- Polypropylens
- Polyethylen-Copolymers
- Ionomers
- EVOH
- Polyamids

KEY INDUSTRIES

- Packaging Industry
- Food Industry
- Building Industry
- Transport and Logistics
- Chemical Industry

TECHNOLOGIES

- Blown Film Extrusion:
 - Mono-Extrusion
 - Co-Extrusion up to 7 Layers
- Orientation
- Winding
- Slitting
- Treatment

ABOUT THE HOSOKAWA MICRON GROUP



The Hosokawa Micron Group is an international provider of equipment and systems serving a broad range of industries which include: chemical; mineral; pharmaceutical; polymer; food; blown film processing; confectionery and bakery and specialized food.

CORPORATE VISION

Hosokawa Micron Corporation was established in 1916 as Hosokawa Iron Works in Osaka, Japan. Today, Hosokawa Micron Group is a world leader in providing process solutions in the fields of powder and particle processing, blown film processing, and confectionery production.

Hosokawa Micron Group maintains facilities for research, engineering, manufacturing and service throughout Asia/Oceania, the Americas and Europe. Hosokawa Micron is advancing our 85 years of powder and particle technology experience and market leadership in the future with the application, development and commercialization of ultra fine composite particles in the rapidly expanding field of nanotechnology.

The Hosokawa Micron Group will always be the leading global company covering the mountain range of Powder Technologies. The Group will achieve peaks of excellence in the development and commercialization of advanced materials, process equipment and systems engineering.

MISSION STATEMENT

The purpose of the Hosokawa Micron Group is to provide economical technical solutions to solve customer business problems and ensure customer satisfaction and to provide a challenging and satisfying work environment for all employees in order to ensure a reasonable return to Shareholders.

CORE BUSINESSES

Hosokawa Micron Group is a global leading supplier of a comprehensive range of Powder & Particle processing, Blown Film processing, and Confectionery & Bakery technology & systems. We offer value-added material solutions responding to global needs through emphasis on material science and engineering for the future. Hosokawa is your competent partner both in Micron and Nano technologies throughout the world.

POWDER AND PARTICLE PROCESSING	BLOWN FILM PROCESSING	CONFECTIONERY & BAKERY SYSTEMS TECHNOLOGY
<ul style="list-style-type: none"> - Grinding and Classifying - Mixing and Drying - Agglomeration and Compaction - Particle Modification and Composition - Containment and Clean Air Technology - Toll Processing and Contract Manufacturing 	<ul style="list-style-type: none"> - Blown Film Extrusion - Film Orientation - Process Control Systems 	<ul style="list-style-type: none"> - Mass preparation - Weighing, Cooking, Dosing - Mixing, Depositing - Extruding, Forming, Cutting - Enrobing, Cooling, Tempering - Processing Lines
ALPINE BEPEX K-G MICRON MIKRO RIETZ SCHUGI STOTT VITALAIR VRIECO-NAUTA	ALPINE	BEPEX-HUTT KREUTER TER BRAAK

HOSOKAWA MICRON GROUP

WORLDWIDE



PROCESS TEC

The HOSOKAWA MICRON GROUP is an international supplier of machines, systems, processes and services.

Based on this comprehensive performance range, HOSOKAWA offers process solutions for a great number of different business segments:



1. POWDER AND PARTICLE PROCESSING

HOSOKAWA is the world's largest provider of processing systems for the field of powder and particle processing. Renowned names such as ALPINE, Bepex, Stott, Vitalair, Rietz, Mikro, Micron, and Vrieco-Nauta are all included in the Group's range.

Regardless of the size, i.e. production-scale systems, pilot systems or laboratory equipment, HOSOKAWA's products and technologies are used in numerous process stages, for example during comminution, mixing, drying, agglomeration, classification, weighing and metering.

2. BLOWN FILM PROCESSING

HOSOKAWA ALPINE is one of the world's foremost suppliers of film blowing systems. As a one-stop shopping partner, Alpine supplies complete systems for the manufacture of blown film, from granule feeding systems to film winders, from single-layer die heads to 7-layer lines, and from simple speed regulators to state-of-the-art process control systems. And with ALPINE's own film orientation lines, complete systems are now available which facilitate film upgrading and enhancement processes.



Osaka, Japan



Augsburg, Germany

TECHNOLOGIES FOR TOMORROWSM



Germany

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Aktiengesellschaft & Co. OHG

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