

Fast Track Service from Concept to Commissioning with Hosokawa Micron Ltd

Hosokawa Micron Ltd's customers can look forward to a unique fast track service from initial enquiry to equipment commissioning, according to plans announced by Hosokawa Micron Ltd's Powder and Particle Processing Division, based in Runcorn, UK.

This emphasis on a more focused approach to powder and particle processing technology is in direct response to customer demands for technical specialisation, and to meet more and more exacting equipment specification and performance criteria.

The proposed fast track service will be undertaken by two separate teams, each team incorporating specialist technical sales, engineering, commissioning and installation personnel.

One team will be dedicated to Pharmaceutical applications and the other to FCM, Food, Chemical and Mineral applications.

Both teams will offer highly specialised support, to meet the customers specific powder and particle processing needs.

This move to a single, initial, point of contact

will ensure Hosokawa Micron Ltd. customers gain direct access to the complete Hosokawa network of technical expertise. It will give a swift and seamless, fast track response with customers being fully supported from initial enquiry right through to final completion by a specialist dedicated Hosokawa team.

Iain Crosley with 19 years of experience with Hosokawa Micron Ltd, will lead the FCM team, responsible for Food, Chemical and Mineral industry enquiries and projects, supported by Team Manager, Stewart Bryan and Technical Centre Manager, Simon Gillingham.

Andrew McLeish with over 15 years experience at Hosokawa Micron Ltd will head up the Pharmaceutical industry team supported by Team Manager Malcolm Nield.

Existing and future installations for both application areas will be supported by the experienced Hosokawa Micron After-Sales Team, led by David Lyon. With its own specialist technical expertise, the After-Sales Team will offer customers on-going service, spares and operational support.

Sweet Taste of Success

Nestle Research and Development in Singapore choose a Rietz RP Lab Disintegrator when then they needed production of small scale samples of culinary products with an easy scale up option for higher capacity production.

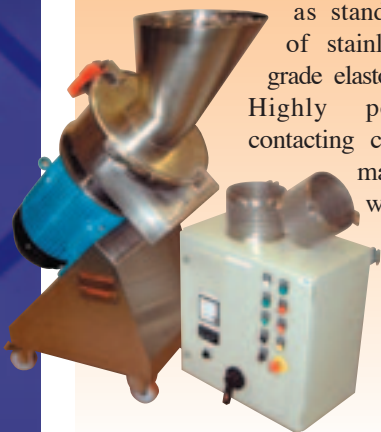
The RPLaboratory Disintegrator is a development of the proven Rietz Angle Disintegrator and incorporates hygienic design & construction as standard with full use of stainless steel & food grade elastomers throughout.

Highly polished product contacting components reduce material deposition whilst the easy clean design allows for fast change over of processing internals.

The Laboratory RP unit incorporates a 200mm diameter disintegration rotor, directly mounted onto an extended shaft, high speed motor of 7.5kW power rating. The motor shaft is specially manufactured in a stainless steel alloy to maintain the hygienic design requirements of the machine. The motor is thermally and dynamically rated for use up to 7,000 rpm.

The Disintegrator was supplied complete with it's own electrical control panel incorporating the necessary speed control and required safety devices.

Rietz Angle Disintegrators are available in a variety of standard sizes, powers & configurations to suit a wide & varied range of duties, processes and applications. Options for continuous ejection of non-friable, reject or contamination material via an integral secondary reject port within the processing chamber are also available.



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CONTACTS

- FCM Team -
Stewart Bryan
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Malcolm Nield
- Containment Division -
David Westmorland
- After Sales Team -
David Lyon
- Toll Processing -
Simon Gillingham

EXHIBITIONS

16 - 18 March 2004
Interphex USA
Stand 2373

16 - 18 March 2004
Powtech
Nurnberg
Stand 7-439

Powerpaint a better picture

With more and more products being finished with high-grade surfaces, the demands on manufacturers of paints and pigments are constantly increasing. The Alpine Agitated Ball Mill Powerpaint DPP was specifically designed for use in the paints and pigments field for the grinding and dispersion of high quality paint systems and pigments to meet this increased demand.

For the optimum dispersing effect, the grinding chamber geometry was designed to be suitable for small grinding elements and a high peripheral speed.

The Alpine DPP is constructed with return channels between the separating chamber and the grinding chamber, this design allows the grinding pearls to circulate under the influence of centrifugal force, thus preventing the screen from becoming blocked even if the product viscosity is high.

The Alpine Powerpaint DPP has an integrated lifting unit for quick and easy dismantling for inspection, maintenance and cleaning.

Available in 3 Machine sizes 22, 45 & 75 kW

With a throughput range (Paint/Varnish) 100- 1000 kg/hr



Processing Times Chopped

The Rietz Extractor offers food processors shorter processing times, reduced energy costs and improved handling of large blocks of food products such as cheese, butter, frozen meat, frozen fruit and frozen fish.

The Rietz Extractor, is ideal for size reduction of large blocks to enable further blending or processing to be achieved in a single pass. The machine's robust construction and ability to withstand shockloads means low maintenance operation and minimal machine downtime.

The low rotational speed of the hammers and the high torque generated gives a high throughput to power consumption ratio,

creating an efficient size reduction of even quite delicate products without bruising. Typically the action of hammer on anvil creates only minimal product temperature rise during processing which prevents product melt, degradation and the problems of re-cohesion and adhesion of molten or separation of fatty products.

Manufactured with stainless steel contact parts, in easy clean design, the Rietz Extractor has a sealed processing chamber which eliminates potential contamination of product by lubricants.

Various orifice plate options for control of particle size and the ability for integration with other processing equipment means the Rietz Extractor is suited to a range of batch processing operations.



Flexible Food Mixer

Flexibility of operation and cleanability make the new design of Vrieco-Nauta© conical mixer ideal for food manufacturers running more than one product on a single line.

Based on the market leading Vrieco-Nauta© design, the new mixer, from Hosokawa Micron Ltd. offers the flexibility to adjust the mixing energy to the most optimal level for your individual requirements without compromise to the final product. Frequency controlled drive units deliver a unique intensive mixing action, and a selection of interchangeable mixing screws enable the mixing process to be adjusted to meet a range of process and product demands.

The potential contamination and cleanability problems associated with any type of mixer for the food industry have been avoided primarily at the design stage by incorporating a central bottom discharge for maximum vessel discharge capability. However in cases where cleaning can not be avoided a range of manual and automatic, wet and dry integrated cleaning systems are available.

The semi domed vessel cover and sanitary mixing screw and drive design incorporating FDA approved seals, reduce potential contamination risks and increase product integrity.

Available with optional large inspection doors for easy access and in a reduced height build design for installations where headroom is a problem this new mixer from Hosokawa Micron Ltd. gives food for thought for food manufacturers seeking the latest in mixing technology.

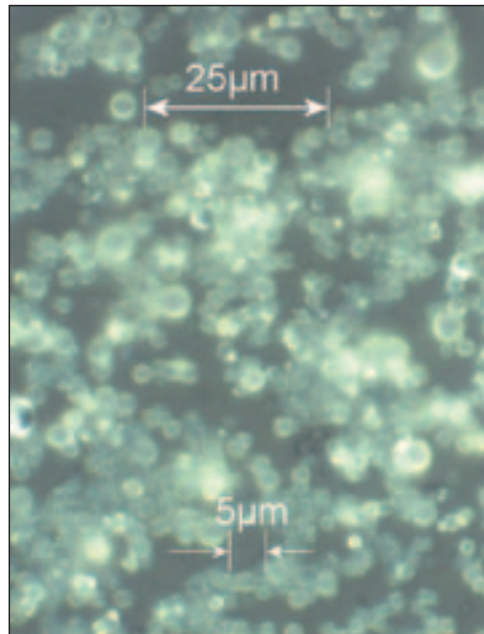
Available in sizes from 5 to 100,000 litres.

New Atomisation Technology for Microfine Powders

Collaboration between Hosokawa Micron Ltd and Novel Technical Solutions Ltd has led to the development of an atomisation technology which revolutionises the production of microfine powders.

Capable of producing fine powders from soft or difficult to grind materials with a tight particle distribution this technology opens up the scope of materials which can be produced and enables the creation of 'designer particles' to give customers new materials engineering potential for unique product development and added value, further extending the boundaries of materials innovation.

The single step, ultrasonic gas atomisation process, offers an alternative to conventional grinding, jet milling or other atomisation technology, creating spherical particles typically below 50 microns (and with some materials below 10 microns) with an accurately engineered particle size distribution.



This novel technology with low capital investment costs, reduced energy consumption and potential for closed loop waste recycling offers a cost effective solution to conventional micronising techniques and meets customer demand for ever finer particles and for spherical particles with their inherently unique flow properties, colour intensity and mixing characteristics.

Initially developed for use with polymer based materials such as waxes, surface coatings, inks, pigments, paint additives, plastics and toners, the process technology, which involves extruding a melt or liquid into a self-generated ultrasonic gas stream, has broader applications in fine chemicals, pharmaceuticals, food and fuel combustion.

The collaboration of Novel Technical Solutions and Hosokawa Micron Ltd. means customers have access to this innovative technology supported by Hosokawa Micron's network of powder and particle processing expertise, enabling complete, validated system development and optimum plant performance to be provided.

Wet Chemistry Isolators

Companies operating in the wet processing field of chemical synthesis now have access to innovative, specialist, wet processing, barrier containment systems when looking to safeguard personnel from potentially hazardous substances. Already established as one of the world leaders in dry powder and particulate containment technology, Hosokawa Micron's Containment Division have recently developed wet chemistry isolator technology in conjunction with a leading custom synthesis company.

Designed to enclose a fully assembled and operating, small scale bulk active pharmaceutical manufacturing plant including



reaction vessel, crystallisation equipment and filtration vessels the isolators give easy but contained operator access for product input, product removal, operational adjustment and maintenance.

The new Stott isolator has been developed in response to health and safety concerns for personnel working directly with the liquid forms of increasingly concentrated active, toxic ingredients used in pharmaceutical production. For research and development projects or for companies manufacturing small product quantities of pharmaceutical or other potent products the isolator offers flexibility of operation, product integrity and personnel protection of the highest level.

The single chamber isolator offers two modes of operation, an isolator mode providing Operator Exposure Levels of $<1\mu\text{g}/\text{m}^3$ 8hr TWA and an airflow mode to provide, by the use of inflow air velocity through the doors, an Operator Exposure Level of $<200\mu\text{g}/\text{m}^3$ 8hr TWA.

As an additional safety feature because solvents are used in the process, the Stott isolator is designed to ensure any solvent vapour concentration remains below the lower explosion limit (LEL)

Within the isolator are shelves and dishes to retain small process components, cannisters, batch reagents or other products which precludes the need for open door access for most operator, process intervention.

Plant equipment is assembled via the open front doors and our photograph shows a typical equipment arrangement. All process services are piped to the isolator and connected outside the isolator.

The isolator is fully equipped with spray balls and lance for complete CIP operation with the cleaning liquid fully discharged to drain.

Power of the Press

Press agglomeration of fine powders can improve the processing of pharmaceuticals on tableting presses, increasing flowability, reducing segregation of materials of various particle sizes and increasing dust control.

The lower press forces and shorter press times required for tableting granules also has the benefit of lengthening the service life of the tablet press tools.

The high external forces required for press agglomeration in turn eliminate the need for binders or addition of fluids with the subsequent reduction in the need for drying.

Specially designed for the agglomeration of pharmaceuticals the Bepex Kompactor consists of a feed unit and two counter

rotating synchronous rolls which compact the materials with the profile of the roll surface determining the shape of the discharged product.

Roll pressure, speed and screw speed are all accurately controlled and logged for trend plots and permanent recording of process conditions. Control systems designed to meet the quality control and validation demands of the pharmaceutical industry are available.

The overall easy clean design of the Bepex Kompactor with CIP/WIP options and special roll bearing system ensures contamination free final product.

The fully shrouded Kompactor gives maximum protection for both operator and



product and is suitable to operate in clean room conditions.

The well proven technology of the Bepex Kompactor is available with the full Hosokawa Micron support of test facilities for product trials and the process experience of their technical team.

Olive stone to Carbon

One of the world's leading producers of activated carbon has installed a complete turnkey milling and process control system from Hosokawa Micron Ltd to give them unmanned production, 24 hours a day, 7 days a week. Grinding olive stones prior to processing into activated carbon, the system produces an olive stone flour with 100% consistent particle size below 150 microns.

Activated carbon is a microporous carbonaceous material used for the removal of unwanted colours, odours or tastes,

contaminants or hazardous elements from process materials. It is used in almost every product containing sugar or sweeteners to guarantee a pure end product. Used in purification of pharmaceuticals and in some dialysis apparatus and even as a filter to prevent petrol vapours escaping from automobile petrol tanks.

The importance of surface area is paramount in the efficiency of active carbon, therefore the need for efficient milling and grinding of the material is of equal importance.

The plant consists of a combination of Hosokawa brand equipment and OEM equipment essential for the transport of material to and from the Hosokawa Mikro ACM 150 Air Classifier Mill.

The material entering the grinding chamber is aggressively comminuted by the action of the hammers on the grinding track. The fine material rises up on the air stream and is presented to the classifier. In-specification material passes through the separating device to be

conveyed onwards. Particle size is affected by the classifier speed which is controlled by a variable speed motor and frequency converter. Oversize material drops back into the grinding area for further size reduction and classification.

The acceptable milled material is conveyed upwards and collected on the filter bags of the reverse jet filter and is released by the sequential pulsing of the bag sets. The differential pressure between the clean and dirty sides of the system is continually monitored to identify any process problems relating to bag efficiency.

The collected product is discharged from the filter hopper by means of a constant speed rotary valve. The milled material falls under gravity on to a vibratory safety sieve, whose task it is to remove spurious oversize grits. The in-specification material discharges into an intermediate hopper fitted with level probes which monitor material levels.

The milled material is finally dense phase conveyed to an existing storage silo.

Hosokawa Micron's technical team commissioned the system with final debugging, functional testing and material runs to meet the process guarantee.



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