



Kek-Gardner
Powder Processing Excellence

**Powder
Processing
Equipment
&
Systems**

CENTRIFUGAL SIFTERS

KIBBLER PRE BREAKERS

CONE MILLS

IMPACT MILLS

CLASSIFIER MILLS

MIXERS

BLENDERS

SYSTEMS SOLUTIONS



Kek-Gardner Centrifugal Sifters

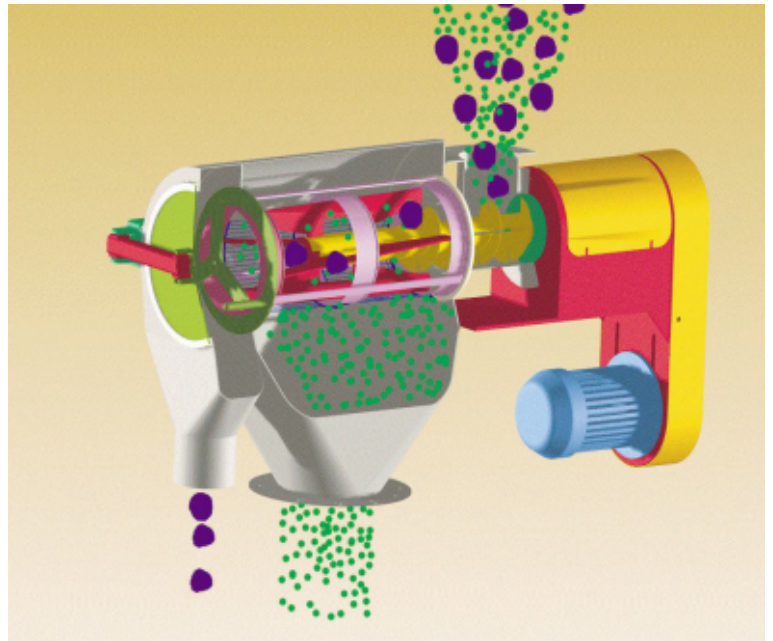
“Easy Clean” Cantilever Design Sifter

The Kek-Gardner Cantilever Centrifugal Sifters can be supplied to suit both gravity feed or as in-line models suitable for use in negative and positive pressure conveying lines. The Cantilever design offers users high standards of hygiene and ease of operation and they are available in ATEX Zone 20 internal, 21 external type certified format.

Centrifugal Sifters offer efficient dust tight operation with low noise levels and no vibration.

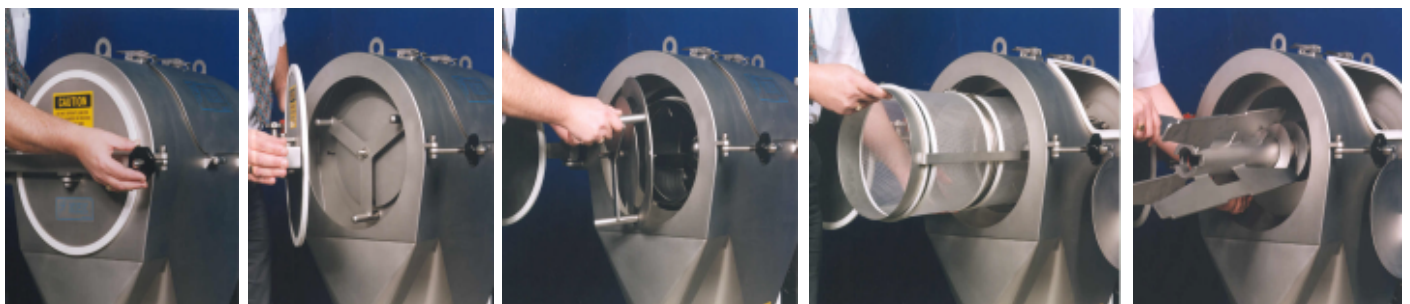
The Sifters are suited to a diverse variety of applications throughout the process industries including:

- Policing raw materials prior to processing
- De-dusting of re-ground product
- Reclaim of product from damaged or out-of-specification packages
- Classification
- De-agglomeration
- Bulk conditioning
- Scalping
- In-line sifting - in pneumatic conveying line



Advantages of the Cantilever design:

- No over-size end bearing
- No over-size end shaft seal
- Hinged over-size end door
- Easily removed screen retainer
- Easy to remove sifting screen
- No tools required
- In-situ rotation of the sifting screen for inspection
- Easy to clean internally once screen has been removed



Typical Applications

Albumen	Icing Sugar	Alginate	Insecticides	Rice
Aluminium Hydrate	Iron Powder	Ammonium	Lactose	Soap
Apple Powder	Lavender	Aspirin	Colours	uPVC
Barium Sulphate	Limestone	Barley	Maize	Bran
Bentonite	Metallic Salts	Bone Meal	Milk Powder	Oats
Bread mix	Oxides	Carbonates	Phosphates	Egg Powder
Casein	Pigments	Cellulose Powder	Potato Granules	Nitrates
Ceramic Powder	Chlorides	Salt	Citric Acid	Whey Powder
Flour	Clay	Soya	Cocoa Cake	Spices
Borax	Stearates	Copper Powder	Sulphates	Cornflour
Chlorates	Talc	Detergents	Titanium	Resins
Dyes	Wheat	Yeast	Food Additives	Gravy Powder

Kek-Gardner Centrifugal Sifters

Sifter Range

Laboratory Sifter

This Sifter features a cantilevered shaft design and is built for rapid and easy disassembly for thorough cleaning. It ensures total recovery of product after each sifting operation.

Mini-Sifter

The Mini-Sifter has a cantilevered shaft design and is ideal for pilot and small production processes. Throughputs range from a few grams per minute to typically 150 kg/hr.

K300C

This Sifter also features a cantilevered design and can handle a throughput of 3 to 5 tonnes per hour depending on the product and sieve screen size. Mirror polished units are well suited to high hygiene applications in the pharmaceutical industry.

K650C - gravity and in line vacuum and pressure Sifters available

Also employing a cantilevered shaft design, the K650C is the workhorse of the Sifter range, capable of sifting up to 20 tonnes per hour.

K800C - gravity and in line vacuum and pressure Sifters available

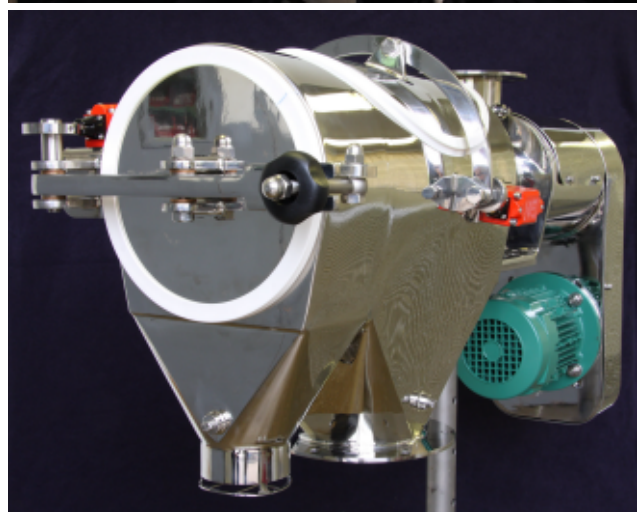
The K800C with cantilevered shaft is capable of sieving at rates of up to 40 tonnes per hour. The machine has a generous clearance around the sieve screen, enabling it to maintain production rates with sticky products.

K1100C - gravity and in line vacuum and pressure Sifters available

The K1100C is the largest cantilevered model in the range. Capable of throughput rates up to 70 tonnes per hour, the K1100 offers customers high capacity sieving with the added benefits offered by the cantilevered design, i.e. Reduced downtime for cleaning and maintenance.

K1350 - gravity and in line vacuum and pressure Sifters available

The K1350 features bearings at both ends due to its size and is designed for rates of up to 100 tonnes per hour. It also features a unique "forward and lift" access door on gas struts, for ease of inspection, cleaning and maintenance as well as a hinged oversize end door.



Kek-Gardner Vertical Sifter

If you need to check screen your product for occasional impurities and off-spec material but don't need a full Sifter capability, this is the machine for you!

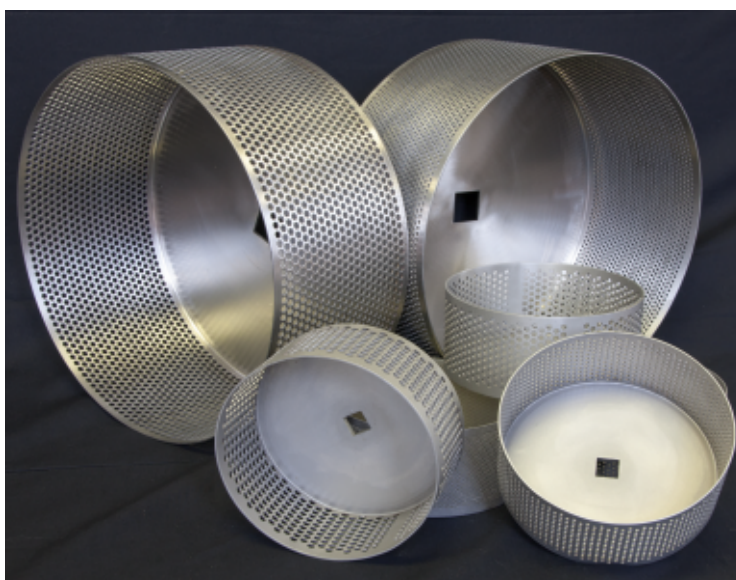
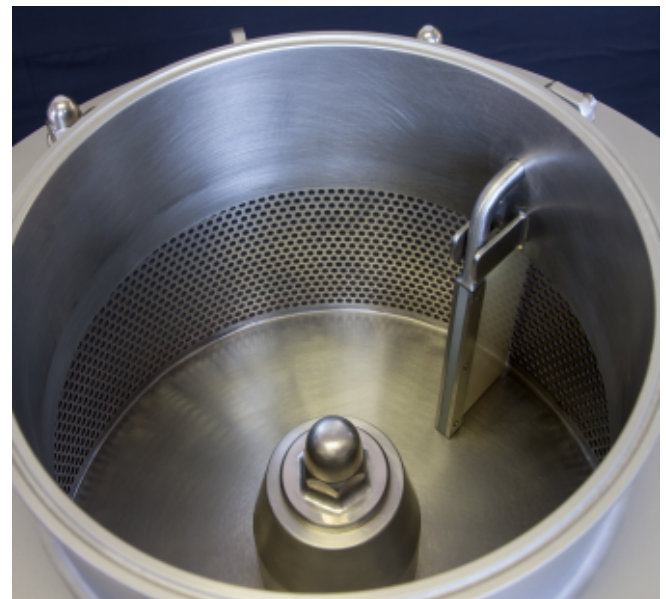
The Kek-Gardner "VS" range of Vertical Screeners offer a simple, compact easy solution to ensure product quality is maintained at all stages of your manufacturing process.

Available in 3 sizes these machines offer a wide range of capabilities ranging from a few kilo's through to 50 tonnes per hour.

Features include:-

- True vertical in-line design with no offset between inlet and outlet
- Compact easy to clean and maintain
- Vibration free operation with excellent dust containment
- High capacity in relation to size & power requirements
- Low noise
- Easy identification of contaminant type and amount
- Can be used with wet or dry products

Come to Kek-Gardner - The specialists for all your Centrifugal sieving & screening needs!



Kek-Gardner Centrifugal Solid-Liquid Separator

Kek-Gardner bring you their latest range of Centrifugal Solid-Liquid separators based upon over 40 years of experience in supplying these machines to many industries including, Food, Chemical and Pharmaceutical.

They offer all the normal benefits associated with our standard range of Sifters including vibration free and high containment operation, coupled with state of the art cantilevered shaft design, for easy access, cleaning and inspection.

These machines offer a compact, yet high capacity solution to the problem of removing solids from all types of liquids including high viscosity ones which are difficult to handle on normal vibratory machines.

Typical uses for these machines include:-

- De-watering of plastic & rubber granules
- Waste water and sludge pre-treatment to remove gross contamination
- Removal of un-dissolved product from latex rubber liquids etc.
- Separation of "curds & whey"
- Check sieving and homogenization of sauces, purees and emulsions.



Kek-Gardner Kibblers

The Kek-Gardner Pre-breaker mill is a heavy duty mill for coarse grinding and lump breaking applications.

The Kibbler can be supplied with conventional shaft support at both ends for heavy duty applications but for less arduous processes; the Kibbler can be supplied with Cantilever shaft mounting for improved access and cleanability.

Kek-Gardner Kibblers accept lumps up to 150mm dia., and reduce them to less than 2-3mm and are used for a variety of processes such as:-

De-agglomeration - Breaking down of compacted hygroscopic products that have agglomeration due to dampness or compaction.

Pre-milling - Pre-grind of very large lumps to a particle size small enough for further grinding.

Coarse Grinding - Product is broken down for use (e.g. melting or dissolving) in another process. Ingredients can be sized for mixing. Damaged products can be reclaimed for rework. Filter press cake can be broken to increase surface area for more efficient drying.

User Benefits

All models:

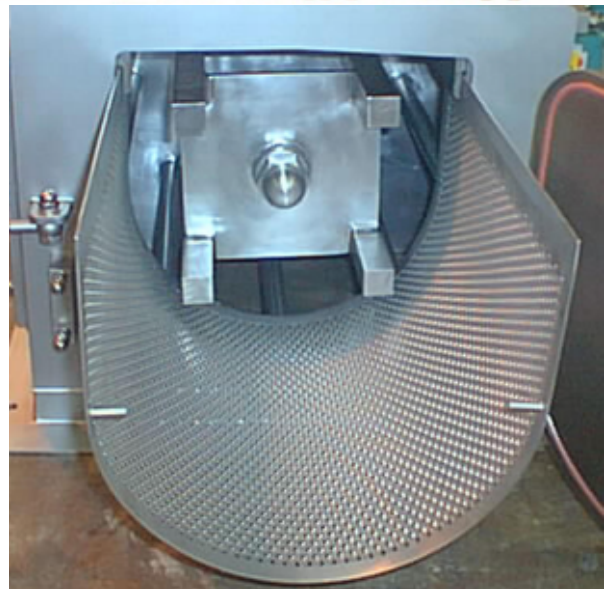
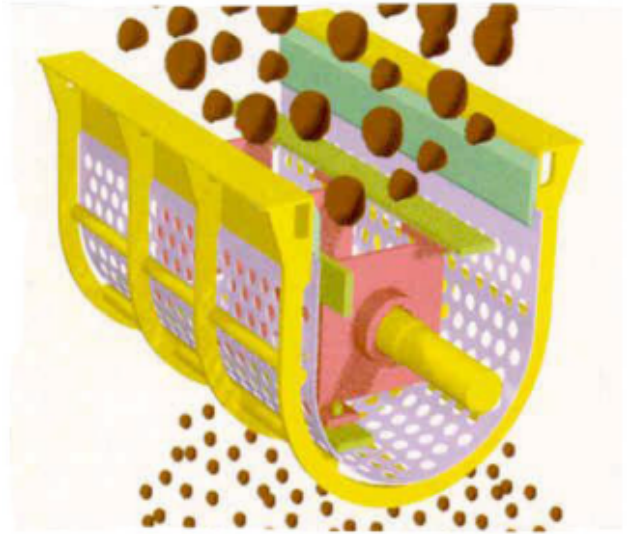
- Easily removed screens for rapid changing & easy cleaning
- Heavy duty beater and screens for long life
- Low speed operation with less than 1m/second tip speed
- Wide range of grinding screen sizes/types and interchangeable beaters to suit a variety of process requirements
- Optional variable speed drives for even greater particle size distribution flexibility
- Operator friendly - no heavy items to support during cleaning

Cantilever shaft models:

- No end bearing or seals for greater hygiene
- Easier to clean and maintain
- More rapid strip-down and re-assembly

Typical Applications

Rusk	Liquorice Blocks	Charcoal	China Clay
Titanium Dioxide	Coal / Coke	Resin	Pitch
Detergent Lumps	Wax	Soap	Citric Acid
Gum Karaya	Chocolate	Nuts	Digestive Biscuits
Gum Arabic	Agglomerated Sugar	Sodium	Ammonium Chloride



Kek-Gardner Cone Mills

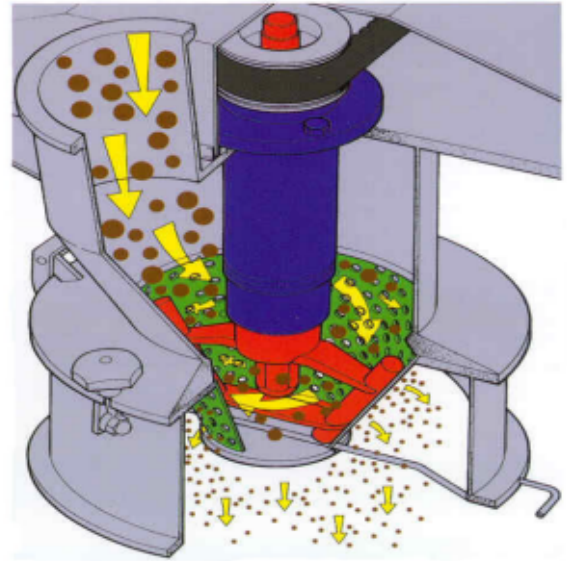
Designed for intermediate granulation applications, cone milling is a gentle, low energy form of size reduction. Used for a wide range of granulation applications including fatty, heat sensitive, sticky, moist or fragile products. It alleviates traditional milling problems of noise, dust and heat generation.

The gentle grinding action of Kek-Gardner Cone Mills, capable of control within fine limits, maintains a close particle size distribution with minimal fines generation, typically grinding from 125 - 250 micron.

Kek-Gardner Cone Mills are specifically designed to meet the requirements of today's Food, Dairy and Pharmaceutical Industries. Kek-Gardner's knowledge of the industry processes enables them to produce bespoke equipment to meet the ever changing demands.

User Benefits:

- **High efficiency** - Virtually all the energy input is used in the size reduction process
- **Gentle grinding action** - Permits uniform size distribution, resulting in minimal fines
- **Low heat generation** - Essential when milling fatty, sticky or heat sensitive products
- **Low dust levels** - No need for air filtration and keeps installation costs to a minimum
- **Low noise** - No costly acoustic protection required
- **Flexibility** - Free standing mobile units are available that can be used in any location. Standard models can be used as part of process systems as well as special bespoke units that are an integral part of other capital equipment
- **Hygienic designs** - All models can be cleaned with high pressure hoses and are designed to run under fully submerged conditions, provision is included for air purging where required.



Typical Applications

Reclaim of damaged biscuits
Size reduction of extruded bran
Coarse breaking of hazelnuts
Crumbling of fresh bread
De-agglomeration of brown sugar

De-agglomeration of milk powder
Breaking of filter press cake
Breaking agglomerated detergents
Pre-dispersion of pigments
Tablet reclaim

Wet & dry granulations
Dispersion of soap granules
Size reduction of breakfast cereals
Homogenized sizing of flakes

Kek-Gardner Universal Mills

Kek-Gardner fine grinding Universal Mills are designed and constructed for high performance, robustness, easy maintenance and safety in use.

Construction can be of cast iron, cast steel or stainless steel and where required, can be designed to withstand explosion over pressure situations of up to 10 bar g.

A range of models is available to suit a variety of processes and throughput requirements from a few kgs to several tons per hour.

Typical requirements are to grind materials of up to 3 Moh hardness to 15 - 50µm mean particle size.



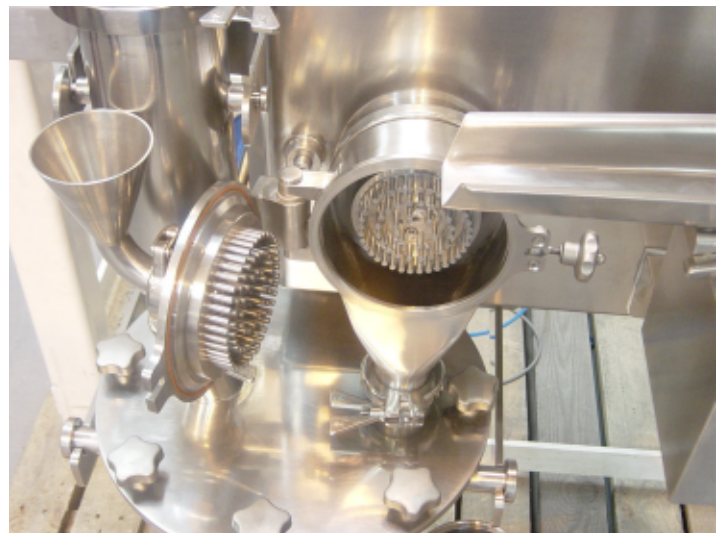
Capabilities

Mill designs can be customised to accommodate any process requirement. From milling potentially explosive or toxic materials effectively and safely to cryogenic operation for difficult to mill materials, Kek-Gardner have the experience and the solution.

Most materials that are milled have the potential to ignite during the milling process and this must be accounted for in the mill design. As well as the traditional vented systems, Kek-Gardner specialise in suppressed, inerted and 10 bar EPSR designs to protect against potential dust explosion.

Operational extras include sound insulation, dust filtration and systems to vent, suppress, inert or contain risks of explosion.

With the ever increasing toxicity levels of active ingredients, the need to protect operators from hazardous materials becomes more critical. At Kek-Gardner, equipment is designed to provide the highest levels of primary containment and protection within our core equipment.



Features

- Fine grinding to average particle size of 15µm
- Easily accessible and interchangeable grinding medium (pin & disc, turbine & screen)
- Adjustable mill speed
- Choice of bottom or involute discharge
- Option of explosion proof design

Benefits

- Flexibility - caters for differing products and particle size requirements
- Easy and efficient cleaning between batches
- Choice of discharge arrangement overcomes limitations of plant size or layout

Kek-Gardner Air Classifier Mills

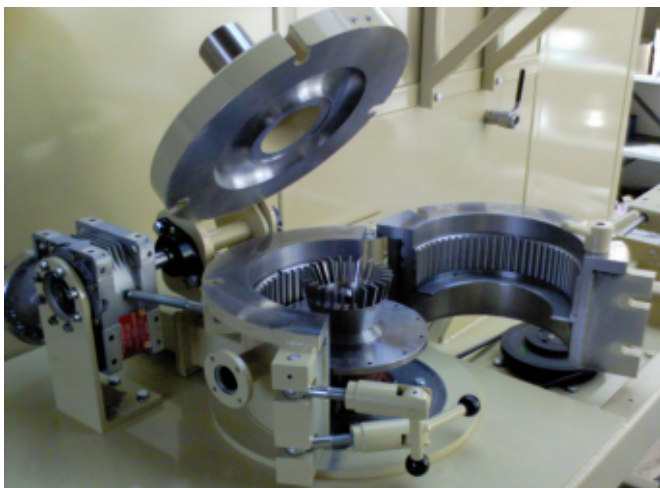
The Kek-Gardner Air Classifier Mill offers finer grinding capability plus greater control over particle size distribution. Typically grinding to a particle size in the region of tens of microns, the Air Classifier Mill serves all industries producing fine powders where control of grinding temperature and particle size distribution is of prime importance.

Particle size is controlled by fully adjustable rotor speed, classifier speed, airflow rate and feed rate.

For operational efficiency, Kek-Gardner mills are available with fully opening "Clam Shell" body designs where process considerations demand ease of access for inspection, cleaning and maintenance.

This feature is of particular benefit to multi-product users who need quick product change over with no cross contamination.

The range of Air Classifier Mills is extensive from the Laboratory size mill delivering a few kilos per hour for R & D purposes, through to large capacity production machines capable of many tons per hour.



Features

- Grinding to 5 - 100 μ m mean particle size
- Grinding and Classifying in one machine
- Temperature controlled grinding
- Controlled particle size distribution
- Easily accessible and changeable grinding media
- Optional "Clam Shell" opening

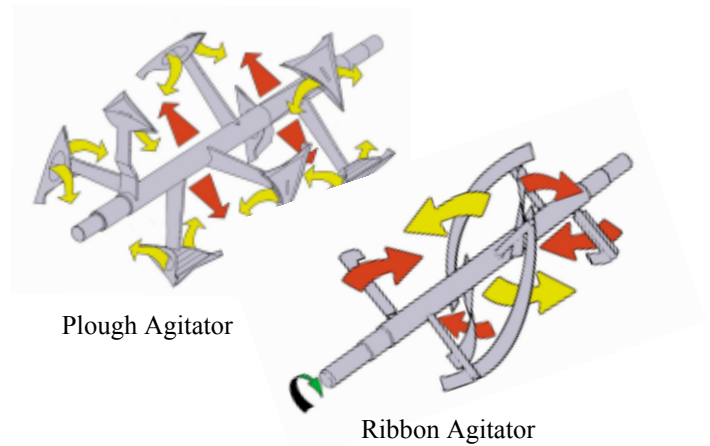
Benefits

- Easily adjustable particle size output
- Internals easily removed
- Easy access for cleaning and maintenance
- No need for separate classification equipment
- Caters for a wide spectrum of applications
- Downtime between products is minimised

Kek-Gardner Mixers & Blenders

Kek-Gardner offer an extensive range of Mixers and Blenders comprising:

- Ribbon Mixers
- Paddle Mixers
- Plough Mixers
- Vertical Mixers
- Continuous Mixers
- Double Cone Blenders
- Y Cone Blenders
- Reactors / Processors



All Kek-Gardner Mixers are capable of processing a vast range of ingredients. We can design and build customised Mixers which meet the specific process requirements of our clients, including ATEX compliant Mixers.

Typical special features include:
 Pressure / vacuum rated vessels
 Jacketed vessels for heating or cooling
 Cantilever Mixers for ease of cleaning
 Continuous mixing applications
 Turn-key mixing stations

Range available - 3 litres up to 100,000 litres.



Typical Applications

Powder soup mixes
 Flour
 Batter mixes
 Instant drink mixes
 Chocolate drinks

Spices
 Flavours
 Jelly crystals
 Polymer homogenisation
 Biscuits

Muesli
 Bakery ingredients
 Custard powder
 Metal powder
 Animal feeds

Tea
 Burgers
 Coffee
 Extending colours
 Ceramics

Kek-Gardner Systems Capabilities

Capabilities

Kek-Gardner's key objective is to supply solutions based equipment and systems to meet the needs of the Food, Pharmaceutical and Chemical industries. Whether the process be Sieving, Mixing, or Size Reduction, Kek-Gardner has extensive expertise gained over many years, positioning the company as a complete solutions provider.

To compliment the range of powder processing equipment, Kek-Gardner can offer Turn-key process packages.

Our team of engineers can integrate other process equipment to produce a process system tailored to your requirements, which can encompass some or all of the following:

Process Design including product testing, P&ID and instrument schedules

Mechanical Design including modelling

Electrical Design including hardware and software

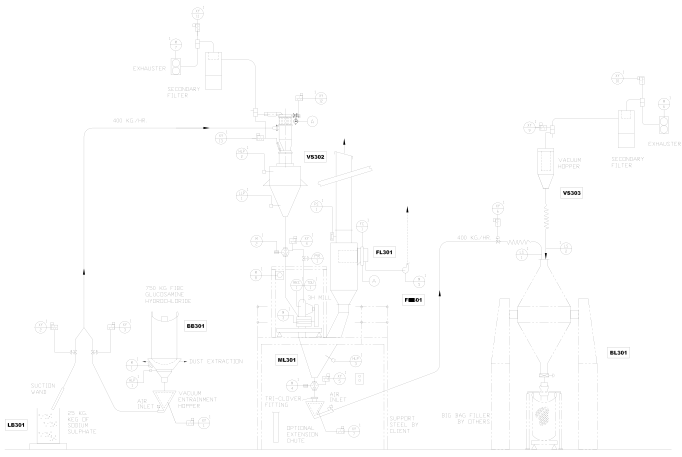
Process Validation including IQ & OQ

Factory Acceptance Testing

Mechanical and Electrical Installation

Commissioning and Training

Site Acceptance Testing



Test Facilities

Kek-Gardner have a comprehensively equipped Technology Centre where trials are conducted and fully documented.

This facility ensures that a realistic assessment can be made of the equipment's suitability to meet particular needs.

Process equipment and systems can also be tailored to simulate specific process requirements e.g. under cryogenic / controlled temperature or pressure and vacuum conditions.



After-Sales Site Support

At Kek-Gardner, we pride ourselves in achieving the right result for our customers.

The Kek-Gardner team of highly skilled process engineers are capable of commissioning, optimising and maintaining your equipment once it is on site.

From simple process review and trouble shooting through to service contracts, we're here to help.



Contact us to find out how we can provide solutions to your powder processing requirements.
Visit our website for more details on each product in the Kek-Gardner range.

www.kekgardner.com

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