



Kemutec

Specialists in Powder Processing Technology

Mills & Grinders

Centrifugal Sifters

Mixers & Blenders

Powder Processing Equipment & Systems



Specialists in Powder Processing Technology

Powder Processing Equipment

Kemutec specializes in Powder Processing equipment and systems. Supplying the KEK, PPS and Gardner brand products, Kemutec is the premier supplier in Size Reduction, Sifting, and Mixing technologies for the Food, Pharmaceutical and Chemical industries. The equipment includes Centrifugal Sifters, Cone Mills, Air Classifier Mills, Kibbler/Pre-Breakers and Universal Mills. No matter the application Kemutec has the powder processing solution.

Kemutec's US headquarters is located in Bristol, PA with a sales office and a state of the art technical center designed to provide first hand testing, evaluation and the recording of trials. Kemutec also support a network of representatives throughout North and South America, all able to provide application engineering, sales and service.



Kek Sifters in Manufacture

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Process Packages & Systems Capabilities

Based upon the extensive process expertise gained over many years of supplying Kek, PPS, and Gardner equipment, Kemutec is in the enviable position of being able to supply customers with the *Total Package* for the Processing and Handling of Powders.

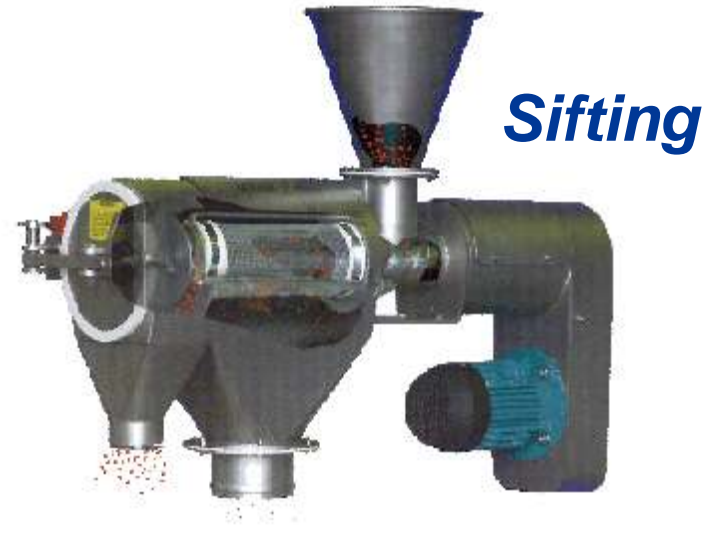
With one or more of their core processes at the heart of the package, Kemutec can offer the full spectrum of support services to clients who are looking for a 'Turnkey Solutions' including:

- Mechanical Design Engineering - Including the functional Design Specification, CAD and 3D modeling
- Electrical Design Engineering - Including Product Testing
- Instrumentation - Including P & ID's
- Factory Acceptance Tests
- Mechanical & Electrical Installation
- Site Acceptance Tests
- Process Validation - Including IQ, OQ and PQ
- Commissioning and Handover to Client

Kemutec's key capability is in providing custom packages for individual applications. Thus matching their knowledge with the client's needs and producing a combined solution.



Milling



Sifting



Mixing



Kemutec Spice Milling and Mixing System

Pharmaceutical



Kek Universal Mill for Pharmaceutical Dry Granulation

Food



Kek Centrifugal Sifters for Policing of Dry Powder Ingredients

Chemical

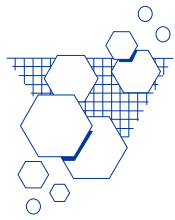


Kek Kibbler for Pre-breaking of Lumpy Feed Stock

Environmental



Kek Universal Mills for Dry Sorbent Grinding



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High Efficiency Sifting

Kek Centrifugal Sifters

'Easy Clean' Cantilever Design Sifters

The Cantilever design Kek Centrifugal Sifter is based on the tried and tested Kek Centrifugal Sifter range. The 'Cantilever' design offers users high standards in hygiene and ease of operation that are unprecedented.

This sifting concept has proved so successful, that virtually the whole range is now this design.

Benefits

Hygienic - Clean, simple design

High efficiency - time saved during inspection, cleaning and maintenance

Operator friendly - no tools required for stripping down and cleaning

Easy access to oversize end door for opening in seconds

Easily removable sifter screen for inspection and cleaning

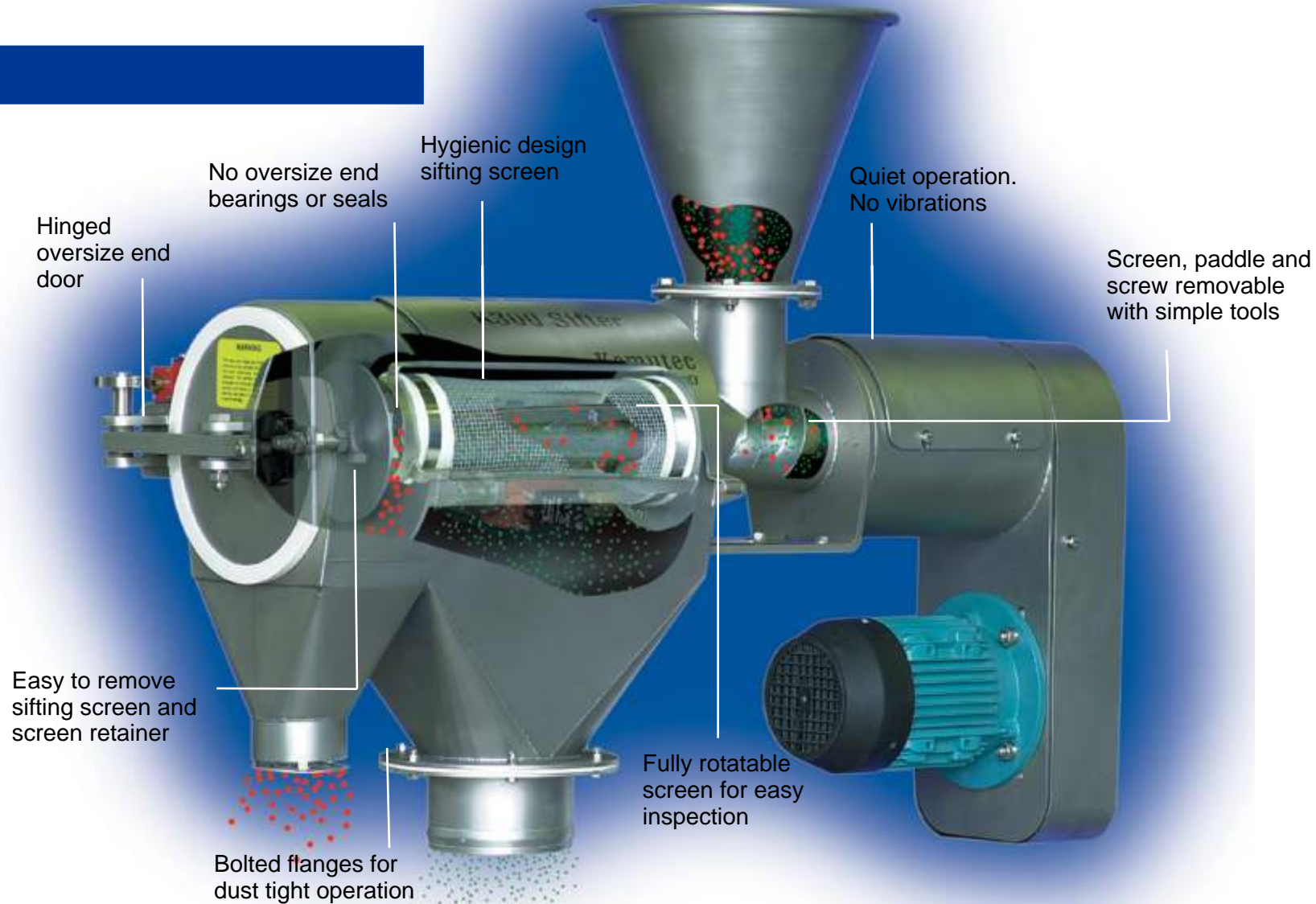
No leakage or contamination at the oversize end

Easy Inspection - 360° in-situ rotation of sifting screen allowing inspection of the complete screen without removal from machine.

Centrifugal Sifter Range

Model	Screen Area sq. ft.	Motor hp	Request Data Sheet
Lab Sifter	0.47	0.5	DS490
Mini Sifter	0.47	0.5	DO3-416
K300	0.90	0.75	DS478
K500	2.00	2.0	DS502
K650	3.57	3.0	DS529
K800	6.20	5.0	DS492
K1350	14.18	10.0	DS317

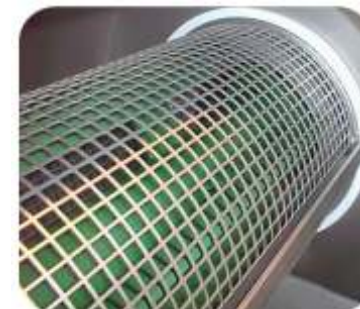
**Request a
Kek Centrifugal Sifter
Sales Data Sheet**



Screen Options

Kek Centrifugal Sifters can be supplied with a range of screens and screening media.

- Nylon
- Woven Wire
- Wedge Wire
- Perforated Steel Plate



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Kek Centrifugal Sifters

Principle Processes

Feedstock policing

Check sifting both bulk product and minor ingredients to remove extraneous materials such as string, packaging, insects, bolts, etc and to remove hard lumps of agglomerated product typically at the point of discharge from storage silos or sacks etc.

Scalping

Protecting processing or packaging equipment by removing the small percentage of product exceeding the maximum feed stock specification.

Classification

One or more Centrifugal Sifters divide product into the various grades required for further processing or packaging.

De-dusting

Removal of fines that have been generated during processing and handling which will otherwise spoil the appearance of a packed product or cause a problem during subsequent processing.

Conditioning

Centrifugal sifters are an excellent means to enliven stored product to give it a more uniform density and to make it flow easier.

De-agglomerating

The positive action of Centrifugal Sifters ensures that all but the hardest agglomerates of otherwise perfectly good product are recovered.



K650C Sifter 'policing' food ingredients



A custom designed K800 Sifter

Special Applications

De-watering

Centrifugal Sifters are equally suitable for the removal of excess liquid from certain slurries, pastes and solids in suspension.

De-packeting

Fitted with a special inlet scroll which cuts open packing material, Centrifugal Sifters are ideal for the recovery of product from sachets, bags, pouches and other wrapping where the finished product is under-weight, substandard or damaged in some way.

Fruit de-lumping

By installing an adapted screw feeder at the Centrifugal Sifter inlet, blocks of dried fruit can be broken up into individual pieces without damage.



A 'tandem' K650 sifter arrangement

Other special applications include

Gas purging of the unit - ideal for inerting applications

High pressure sifters for explosion containment

Twin / Tandem sifters for multiple separations

Specialist application data sheets giving more detailed information on the above are available on request

Inline Pneumatic Conveying Centrifugal Sifters

Kek offers many models for Blow-Thru and Vacuum Inline Pneumatic Conveying applications:

Benefits

- Compact design
- No need to disentrain conveying air
- Ideal for floor level installation
- Strengthened construction
- Range of optional fittings such as
 - Overs canister
 - Pressure relief valves
 - Wedge wire screens
 - Quick release connections

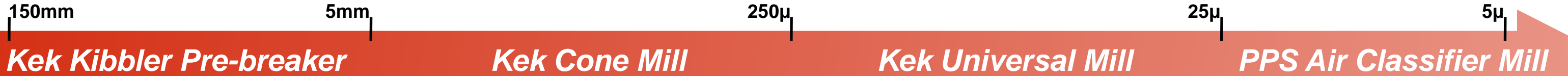


An inline-pressure K650 for flour policing

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Coarse to Ultra Fine Grinding with Kemutec



Kek Kibbler Mill - Coarse Grinding & Pre-Breaking

Kek Kibbler pre-breaker mills are designed to work in conjunction with other Kek mills or as stand alone mills in their own right. Strong and robust, the Kibbler is designed to demolish large lumps up to 150mm and reduce them down to 2 or 3mm in preparation for further processing. Size reduction takes place through a combination of impact, crushing, cutting and abrasion as the slow speed, heavy duty beater sweeps product against the contoured grinding screen.

Benefits

- Easily removed screens for rapid changing and easy cleaning
- Heavy duty beater and screens for long life
- Hinged end door with bearing support for easier removal of bearing
- Bolted flanges for dust tight operation
- 'O' ring seals to end plate for rapid changing and easy cleaning
- Low speed for low noise, low heat and low dust operation
- Wide range of grinding screen sizes/types and interchangeable beaters to suit a variety of process requirements
- Adjustable beater/screen clearance to change particle size distribution

Kek Kibbler Range

Model	Throughput Scale-up	Cantilever Design	Request Data Sheet
M303	0.5	✓	DS512
M305	1.0	✓	DS440
M311	2.0		DS464

Robust, heavy duty construction



Cantilever Design

Some Kek Kibbler models are available with cantilevered grinding beaters. These are ideal for lighter duty food, pharmaceuticals and fine chemical applications. This design offers improved hygiene and easier cleaning through the elimination of one set of bearings and seals. The non-drive end access door can be opened and closed more rapidly making access easier and reducing grinding screen change times.

Cantilevered shaft models:

- No end bearings or seals for greater hygiene
- Easier cleaning
- More rapid strip-down and re-assembly



Cantilever Shaft Kibbler with no end bearings

Typical Applications

De-agglomeration

Breaking down of compacted hygroscopic products that have agglomerated due to dampness or compaction.

Pre-Milling

Pre-grind of very large lumps to a particle size small enough for further fine 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 re-work. Filter press cake can be broken to increase surface area for more efficient drying.



Slow rotating beater forces product through the screen



Optional sack tip hopper

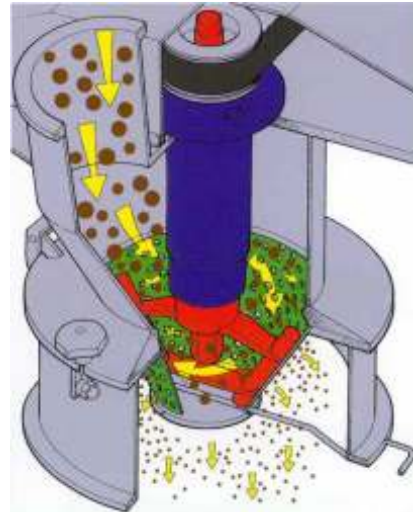
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Kek Cone Mills - for Versatile Intermediate Grinding & De-agglomeration

Cone Milling is a versatile low energy size reduction process ideal for fatty, heat sensitive, sticky, moist or otherwise difficult to grind products. It alleviates the noise, dust and heat problems associated with traditional milling techniques at a stroke.

A gentle grinding action, capable of control within fine limits, maintains a close particle size distribution with minimal fines generation.

Because the residence time required to process product is very short, heat generation is negligible, and build up is drastically reduced - even for moist or sticky products.



A Kek 220 Underdriven Cone Mill

Benefits

High Efficiency - Virtually all the energy input is utilized in the size reduction process.

Gentle Grinding Action - Permits uniform size distribution, resulting in the minimum of fines.

Low Heat Generation - essential when milling fatty, sticky or heat sensitive products.

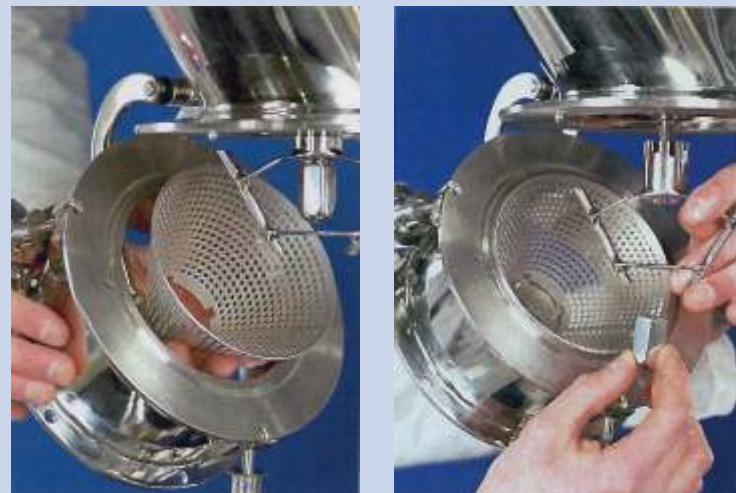
Low Dust Levels - No need for air filtration. Keeps installation costs to a minimum.

Low Noise - No costly acoustic protection. Mobile units can be used in any location.

Flexibility - Free standing mobile units, standard models as part of process systems and special custom units as an integral part of other capital equipment.

Novel Rotor Adjustment

Much of the appeal of the Cone Mill is the flexibility of the grinding media - which can be changed easily, quickly and safely, with the minimum of disruption to production. Another patented innovation is the easily adjusted rotor/cone clearance. The retaining nut is simply loosened and the rotor turned to another position. The rotor drive dogs pick up on a series of alternative castellations on the rotor, all of which are machined to a different depth. The retaining nut thread is orientated to ensure that it cannot come loose during operation.



Kek Cone Mill Range

Kek manufactures a wide range of Cone Mills, from the Lab Size 75 through to the high rate 680, capable of processing at many tons / hour. - See table below

Model	Cone Diameter mm	Motor Size hp	Data Sheet	Drive Type Options
75	75	Fractional	DS501	Direct Drive
120	120	0.75	DS349	Direct & Underdriven
170	170	3	DS525	Underdriven
220	220	5	DS476 DS497	Top Drive & Underdriven
340	340	10	DS469 DS519	Top Drive & Underdriven
540	540	20	DS520	Top Drive
680	680	25	DS532	Top Drive

Request a Kek Cone Mill Sales Data Sheet

Customize

Kek Cone Mills are customizable - typically:

Drive Arrangements

- Top Belt Drive
- Top Direct Drive
- Under Belt Drive
- Under Gear Box Drive
- Remote or Thru Wall Drives

Feed Arrangements

- Gravity
- Inline Conveying - both vacuum and pressure
- 10 Bar PSR

Mounting Arrangements

- On Mobile Support Frames
- On Masts and Pillars for Lift and Swivel Capabilities

Cleaning

- Fully Immersible Grinding Chambers & Shaft Seals
- Additional CIP / SIP Spray Nozzle

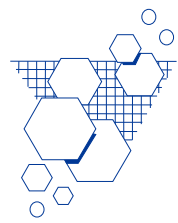


A custom built Kek 220 Cone Mill in a pharmaceutical process line



A Kek 340 Cone Mill with 'thru-the-wall' drive

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The First Name in Powder Milling

Kek Universal Mills - for High Performance Fine Grinding

Kek Universal Mills provide unmatched high performance and versatility when it comes to one-pass high energy fine grinding. With a variety of interchangeable high energy grinding media, the Kek Universal Mill offers infinite flexibility to customize the grind for all powders and granules.

The Kek Universal Mill is available in a large range of sizes, from small lab and pilot units through to 200 hp production units.



A Kek 3H Mill installation

Kek Universal Mill Range

Model	Motor Size	Data Sheet
6H	2 hp	on request
5H	3 to 5 hp	DS530
4H	10 to 15 hp	DS521
3H	20 to 50 hp	DS527
2H	40 to 100 hp	DS341
1H	125 to 200 hp	on request

**Request a
Kek Universal Mill
Sales Data Sheet**



A pharmaceutical pilot scale Pin Mill in a glove box isolator



Pinned Disc

Interchangeable Grinding Media

- Pinned Discs
- Turbine and Screen
- Rib Track

Various types of grinding media can be interchanged and fitted to the same size Kek Universal Mill - offering the most flexible milling solution.



Turbine & Screen

PPS Air Classifier Mills - for the Ultimate in Fine Grinding

PPS Air Classifier Mills provide the ultimate performance in ultra-fine and size controlled powder grinding. Utilizing an internal air classifier, the mill carefully grinds and classifies powders, resulting in typical average particle sizes in the 5 to 10 micron range.



A PPS 8CMT Mill



A PPS Air classifier Mill with 'Easy-Clean' Clam-Shell Design

PPS Air Classifier Mills are used throughout the Food, Chemical, Powder Paint and Pharmaceutical industries for typical applications including:

- Powder Paint
- 12X Powdered Sugar
- Gluten Powders
- Sodium Bicarbonate
- Sorbents

PPS Air Classifier Mill Range

Model	Main Drive	Classifier Drive	Airflow
Lab CMT	1.5 hp	1 hp	175 cfm
1 CMT	5.5 hp	1 hp	500 cfm
2 CMT	10 hp	2 hp	700 cfm
3 CMT	15 hp	3 hp	1000 cfm
4 CMT	30 hp	5.5 hp	2500 cfm
5 CMT	40 hp	7.5 hp	3000 cfm
6 CMT	60 hp	10 hp	5000 cfm
7 CMT	75 hp	15 hp	6000 cfm
8 CMT	200 hp	30 hp	11750 cfm
10 CMT	300 hp	60 hp	18000 cfm
12 CMT	400 hp	75 hp	24750 cfm



A PPS 1 CMT 'Rapid Response Unit' - for quick clean down

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Mixing with a Century of Experience

Gardner Ribbon Mixers - for Rapid Powder Mixing

L Series U Trough Ribbon Batch Mixers

Designed with hygiene in mind, the L Series U-trough Ribbon Batch Mixer is perfect for small batch applications. The neat and compact range of mixers is supplied with batch working capacities of 35-400 liters. A large, hinged lid and all-round access to the outlet makes for easy filling and emptying.

HE Series U Trough Ribbon Batch Mixers

Capacities range from 100 to 20,000 liters. HE Series U-trough Ribbon mixers have unconventional short aspect ratio (length to diameter) mixing troughs. Short mixing times combined with low energy, gentle action and high efficiency ensures that minor ingredients are dispersed homogeneously without the need for pre-mixing.

New Cantilever Design

Kemutec has developed an exciting new range of Cantilevered Mixers in parallel with their highly successful range of Kek Cantilevered Sifters.

With this new mixer design concept, one set of bearings and seals at the non drive end are eliminated. The arrangement of cantilevered agitator and mixer body, together with much improved access for cleaning via a full diameter hinged and safety interlocked door at the non drive end of the mixer, results in a significantly improved cleaner and more hygienic machine.

Features

- Cantilevered agitator shaft
- No non drive end bearings /seals
- Choice of plough, paddle or interrupted spiral agitator
- Choice of traditional air purged packed gland assembly or mechanical seal
- Access for cleaning and inspection from both the top of the mixer body and the end via a hinged and interlocked end door
- Dust tight
- Wide range of outlet valves - automatic or manual
- Available in Carbon steel, Stainless steel or Hastelloy
- Choice of finishes - painted, satin, bead blast or polished

**Request a Gardner Mixer
Sales Data Sheet**



A Range of Gardner HE Ribbon Mixers



A cut-away of a Gardner 'Cantilever' Ribbon Mixer

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Gardner Plough Mixers - for High Energy & Intensive Mixing

PE Series Plough Mixers

The high energy, high shear, high speed plough type mixer with cylindrical short aspect ratio mixing chambers, cuts mix times to a few seconds.

Extra shear can be achieved by adding side cutters or intensifiers. Alternative trough shapes are available to suit specific application requirements. Capacities range from 50 to 50,000 liters.

Continuous Mixers

Based upon the tried and tested agitator designs of the batch mixers, Gardner offers a range of Continuous Mixers custom-built to meet individual process requirements, typically having capacities of 50 - 20,000 liters per hour. These mixers have aspect ratios of 4:1 or more. An adjustable overflow weir plate is fitted at the discharge end and the agitator is biased so as to promote flow towards the weir while ensuring the dwell time is adequate for the process.



Gardner PE Plough Mixer with side intensifier

Double Cone Blenders - for Gentle Blending

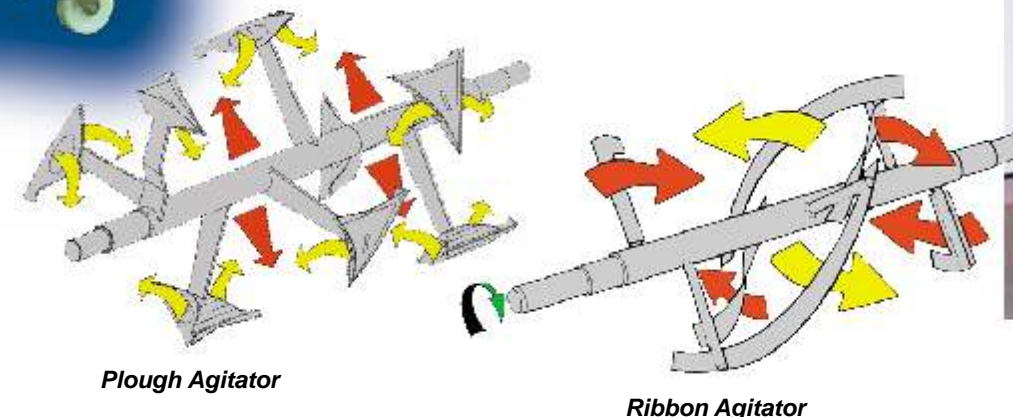
The gentle, low energy tumbling action of the Double Cone Blender is ideal for blending the most delicate and fragile products. Ideal for mixing very heavy and abrasive products.

Hygienic and easy to clean, each blender features our unique multi-shear deflector plates for the improved blending efficiency of free-flowing powders and granules.

Double Cone Blenders can also be designed and built as processors for sterilizing and drying from 2 to 100,000 liters capacity.



Gardner Double Cone Blender



Plough Agitator

Ribbon Agitator

Technical Center

Kemutec offers comprehensive test facilities located in Bristol, PA. Fully equipped to demonstrate full-scale production, pilot and lab size equipment, the facilities allow for first hand evaluation and recording of trial results.

Principle Processes Include:

Sifting and Screening with Centrifugal Sifters

Size Reduction with Cone Mills, Universal Mills, Air Classifier Mill and Pre-Breakers.

Mixing and Blending with Ribbon Mixers and Double Cone Blenders

Supporting the testing services, Kemutec utilizes a laser particle size analyzer to facilitate accurate size determination of both the feed and processed test materials.



Kemutec Test Laboratory

Rental Equipment

Kemutec offers a range of rental equipment to enable you to test at your site. This is particularly desirable when the process application needs to take place while the product is in a specific condition or when it requires a high degree of containment.



Kemutec Technology Center

After Sales & Service

Kemutec's after sales service department ensures that any further requirements that customers have are dealt with by experienced personnel.

Spare parts are manufactured and stocked in house to ensure rapid identification and dispatch when it is needed most.

Contact us to find out how we can provide solutions to your powder processing and handling requirements.

Additional Kemutec Products



Mucon Iris Diaphragm Valves



Mucon Disc Valves



Mucon Rotalog Level Indicator



Promo-flo Discharge Aid



Kemutec

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