



Gardner

MIXERS AND BLENDERS

**POWDER MIXING
TECHNOLOGY FOR THE
FOOD, PHARMACEUTICAL
AND CHEMICAL
INDUSTRIES**



'EASY CLEAN' CANTILEVER DESIGN MIXERS



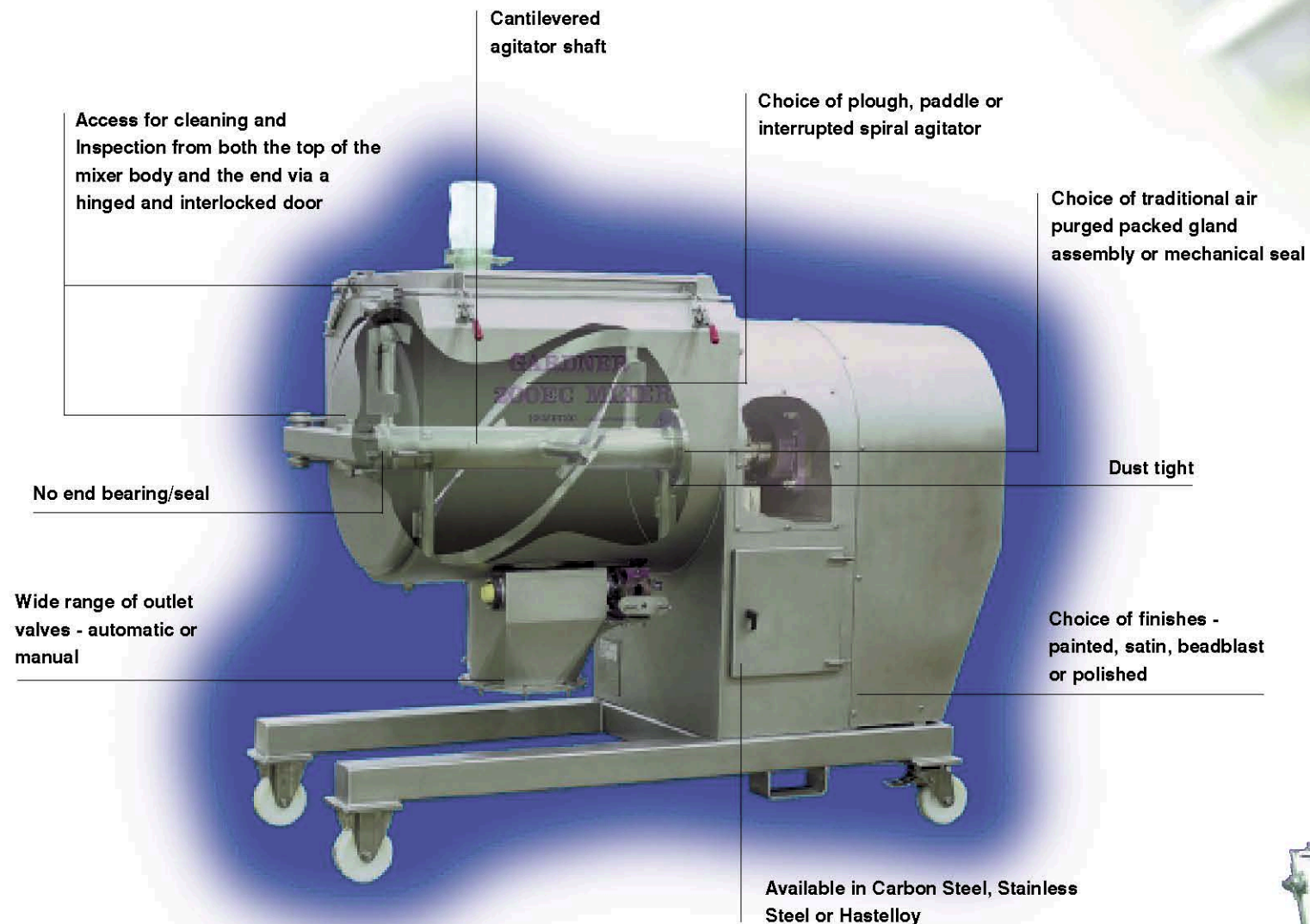
New Cantilever Design Mixer

Kemutec have 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. This 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 vessel, offers significantly improved access for cleaning and hygiene.

Features

- Cantilevered agitator shaft
- No non drive end bearings / seal
- 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

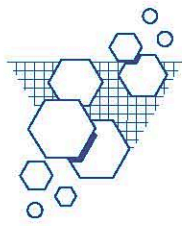
Benefits

- Improved hygiene
- Improved access for cleaning
- Improved access for inspection
- Total containment



The reputation of GARDNER mixing technology and manufacturing quality is founded on practical experience gained through long service to the food, pharmaceutical and chemical industries. Extensive resources and proven expertise enable Kemutec to produce a whole range of mixing equipment - from a standard powder mixer to custom built processors. This experience enables a wide array of diverse process applications and operating conditions to be addressed.

KEMUTEC engineers specialise in powder process technology and combine this knowledge with their vast applications experience to design the most suitable mixer for any particular application. Manufacturing practices are accredited to ISO 9001, meeting the standards imposed by customers.



Gardner Mixers

THE GARDNER MIXER RANGE

Ribbon Mixers

L Series U Trough Ribbon Mixers

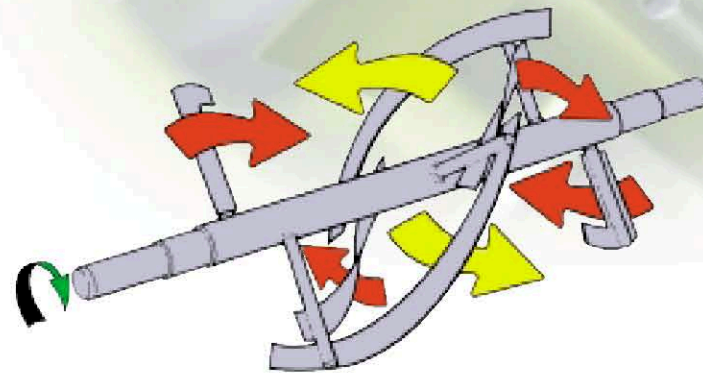
Designed with hygiene in mind, the L Series U-trough Ribbon Mixer is perfect for small batch applications. This neat and compact range of mixers is supplied with working capacities of 35-400 litres. A large, hinged lid and all-round access to the outlet makes for easy filling and emptying.



H Series U Trough Ribbon Mixers

The large surface area to volume ratio of these traditional U-trough mixers makes them well suited to applications where the mixture has to be heated or cooled. Trough capacities range from 600 to 3,200 litres.

Trough Jackets can be specified for cold water, hot water, steam or oil. Alternatively, electric surface heaters can be applied.

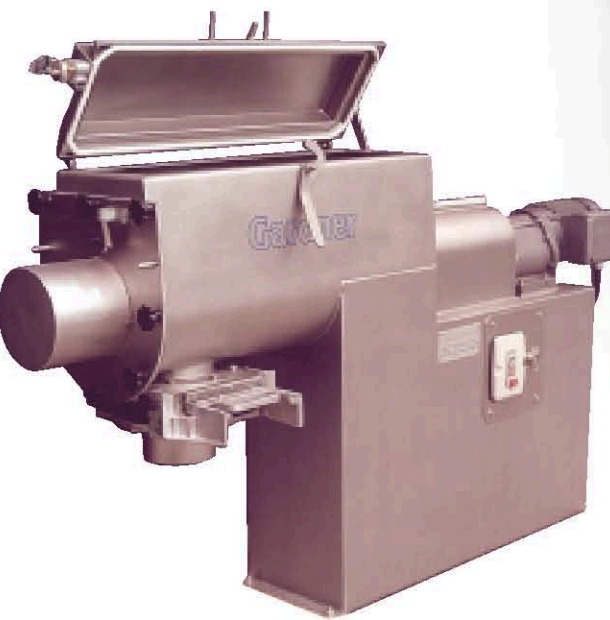


Typical Applications for Ribbon Mixers

- Dry powder mixing
- Liquid addition into powders
- Live storage of sticky powders
- Granulation

HE Series U Trough Ribbon Mixers

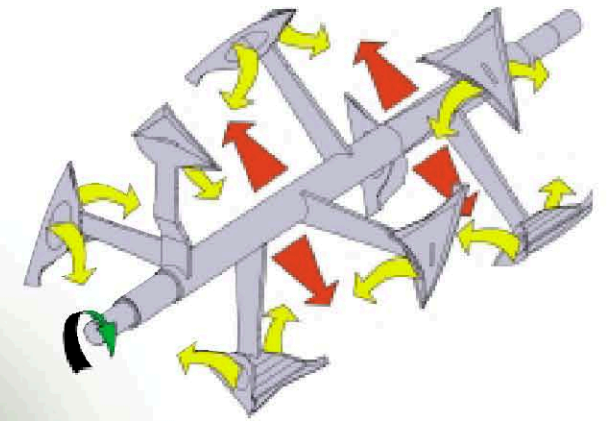
Capacities range from 100 to 20,000 litres. HE Series U-trough Ribbon mixers have unconventional short aspect ratio (length to diameter) mixing troughs. Short mixing times combined with low energy, gentle action and high efficiency ensures that minor ingredients are dispersed homogeneously without the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



Plough Mixers

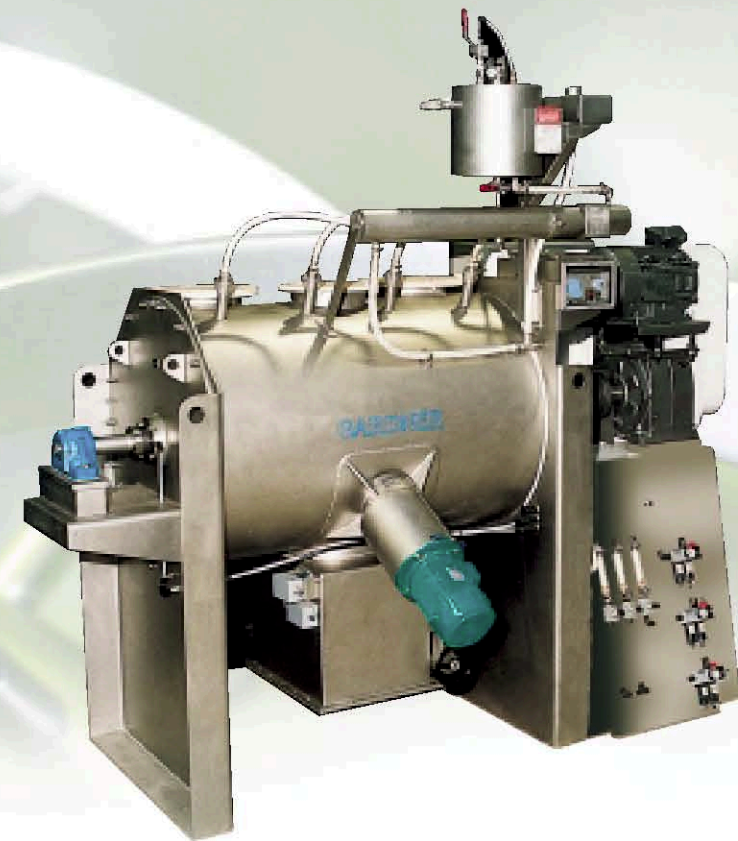
PE Series High Intensity Plough Mixers

High energy, high shear, high speed plough type mixers with cylindrical short aspect ratio mixing chambers.



Typical Applications for Plough Mixers

- Ideal for powder and semi-dried solids mixing
- Ideal for cutting fat into flour
- Addition of oils or other liquids into powders
- Mixing soap
- Extending colours
- Breaking down agglomerates



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 litres.



THE GARDNER MIXER RANGE Continued

RE Series Processors and Reactors

A custom-built range of Processors and Reactors, 50 - 5,000 litres capacities based on the range of horizontal mixers with either ribbon or plough type agitators. Suitable for chemical reactions, sterilising, drying, heating and cooling; each unit is designed and manufactured to meet specific process requirements.



Heating and cooling jackets can be applied to trough exteriors. Processors built to withstand high pressures and vacuum applications will be constructed in accordance with BS 5500.

Typical Applications for Processors and Reactors

- Chemical reactions
- Sterilising
- Drying filter cakes
- Slurry mixes

Stirred Bunkers

Essentially, a ribbon mixer whose agitator rotates at just a few rpm to keep premixed material alive. Topping up from a batch mixer and continuously taking away product from a stirred bunker is an alternative means of providing a continuous supply of mixed product. It also allows checking of each batch before it is discharged into the bunker guaranteeing consistent product quality.

Continuous Mixers

Based upon the tried and tested agitator designs of batch mixers, GARDNER offer a range of continuous mixers custom-built to meet individual process requirements, typically having capacities of 50-20,000 litres 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 whilst ensuring the dwell time is adequate for the process.

Double Cone Blenders

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 sterilising and drying from 2 to 100,000 litres capacity.

Typical Applications

- Pharmaceuticals
- Tea
- Metal powders
- Ceramics
- Cement



CUSTOMISED MIXERS

The Complete Package

Kemutec are happy to discuss, design and manufacture a specific mixer to suit any given application. The technical team specialise in non-standard designs and will supply the mixer you want - whatever that may be.

Specialised Applications

Every type of GARDNER mixer can be tailored to the specific application requirements of our customers, including;

Loading Arrangements

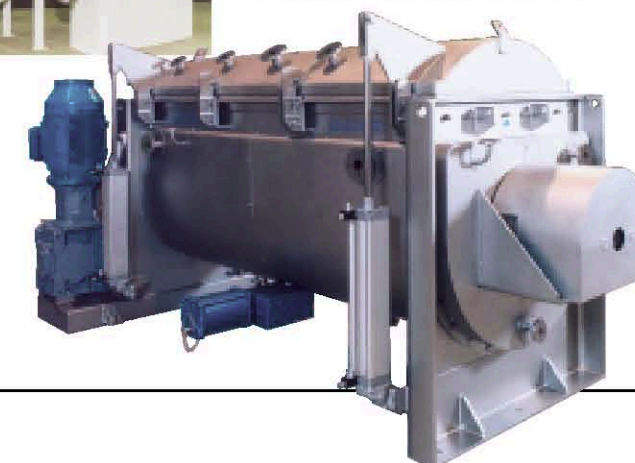
- Full-length access lids
- Additive feed hatches
- Gridded loading ports
- Sack tip loading units

Construction Materials

- Carbon steels
- Stainless steels
- Abrasion resistant steels
- Sophisticated alloys

Optional Extras

- Heating and cooling jackets
- Spray systems for liquid addition
- Special drive arrangements
- High intensity side cutters
- Air-purged seals
- Variable speed drives
- Soft start packages
- Hastelloy



Surface Finishes

- Acrylic and epoxy resin lining
- Crack and crevice free welds
- Bead blast satin finish for Stainless Steels
- Mirror polish finish for Stainless Steels
- Abrasion resistant rubber or ceramic lining

Discharge Valves

- Contour-fit plug valves
- MUCON Iris Diaphragm Valves
- Bomb doors
- Slide valves



KEMUTEC has a wealth of experience and expertise in designing, building, installing and commissioning complete processing packages.

GARDNER Mixers are manufactured alongside other well-known KEMUTEC products including MUCON Iris Diaphragm Valves, and KEK Mills and Centrifugal Sifters. Our team of process, mechanical and electrical engineers use this experience and knowledge to determine the individual needs of each application and to produce a complete package proposal. We have the resources to progress each contract through site surveys, design, manufacture, installation and commissioning.

OUR OTHER PRODUCTS

Test Facilities

Customers are encouraged to visit our extensively equipped Technology Centres at our UK headquarters and at our North American base in Bristol, Pennsylvania. Here, we have the facilities to mix and blend at elevated or reduced temperatures and/or under pressure or vacuum conditions as required.

After Sales Service

At Kemutec, we want to ensure the smooth operation of our customers' production. Therefore, not only is our equipment robustly designed for longevity, we offer planned maintenance schedules and hold a comprehensive stock of spare parts and other key components.

'KEK' UNIVERSAL MILLS

For the fine grinding of food, pharmaceutical and chemical materials of up to 3 Moh hardness to within the range of 90 to 500 micron mean particle size.



'KEK' KIBBLERS

Designed to accept lumps up to 150mm dia. and reduce them down to 2 or 3 mm within a narrow particle size distribution and with minimal fines at rates ranging from 2 to 25 tonnes/hour.



'KEK' CENTRIFUGAL SIFTERS

Compact, high efficiency sifters for throughputs up to 100 tph. Most have cantilevered drive shafts reducing the number of bearings and seals - offering major benefits for hygiene and cleaning.

'KEK' CONE MILLS

A gentle, low energy size reduction concept for fatty, heat sensitive, sticky, moist, or fragile products. Alleviates noise, dust and heat problems of traditional milling techniques.

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