

www.silverson.com

high shear mixers

the first name in high shear mixers



better mixers, better results



The Silverson way

For over 60 years Silverson has specialized in the manufacture of quality high shear mixers for processing and manufacturing industries worldwide.

With customers in over 150 countries, and serving industries as diverse as food, pharmaceuticals, cosmetics, luboils and petrochemicals, Silverson has become the world leader in the field of high shear mixing. Time after time, companies specify Silverson mixers as the "standard" equipment for their manufacturing process.

The key to this success is based on the professionalism and commitment Silverson shows to each of its customer's needs. Whether supplying machines from its standard range of mixers or designing equipment specifically to meet an individual customer's requirements, quality is guaranteed.

With a customer base that includes many of the world's largest companies, Silverson is constantly at the forefront of new technologies. Developing and applying new high shear mixing techniques to meet these needs, Silverson has the experience, knowledge and commitment to both quality and service to solve today's mixing needs and those of the future.

A truly international company, Silverson is represented by a network of associated companies, distributors and agents in over 50 countries, serving North America, Europe, Asia, Australasia, South America and Africa.



The Silverson advantage

Speed

The exceptionally rapid Silverson mixing action substantially reduces process times compared with conventional agitators and mixers, and can reduce mixing times by up to 90%.

Versatility

The advantage of the Silverson approach to mixing is that any one machine can perform the duties that in the past may have required several different pieces of process equipment. This unrivalled versatility allows any machine to perform the widest range of mixing applications:

Blending

A homogeneous product is rapidly produced when blending liquids of similar or greatly varying viscosities, eliminating problems such as stratification.

Emulsifying and homogenizing

Emulsions (typically in the range of 0.5 to 5 microns) can be easily achieved.

Disintegration

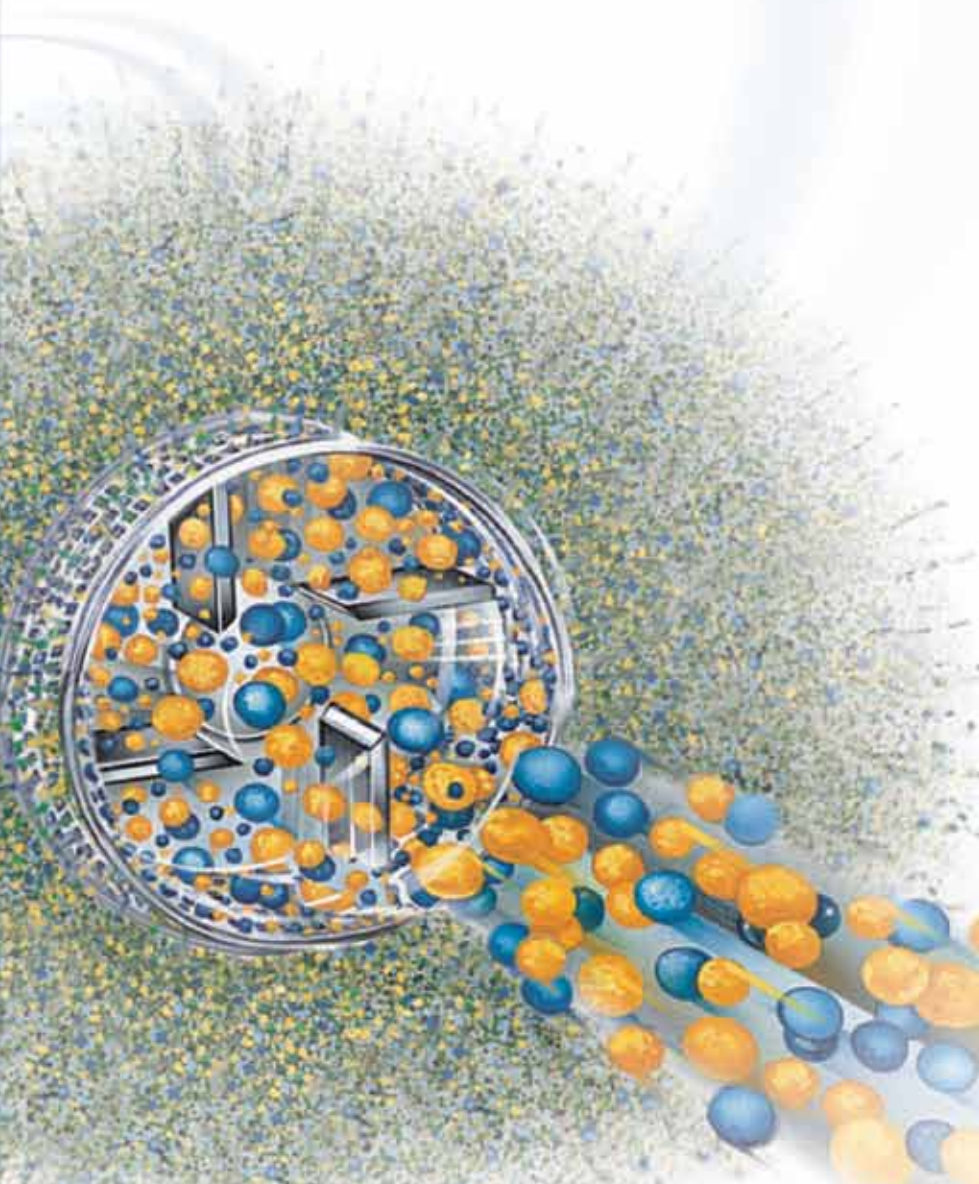
All Silverson rotor/stator mixers can disintegrate matter of animal, vegetable, mineral or synthetic origin in a single operation.

Particle size reduction

Uniformly mill both solid and semi-solid materials into either solution or fine suspension.

Gelling and solubilizing

The high shear action of the Silverson rotor/stator can rapidly disperse gums, alginates, C.M.C., carbopols, etc., resulting in an agglomerate-free solution within minutes.

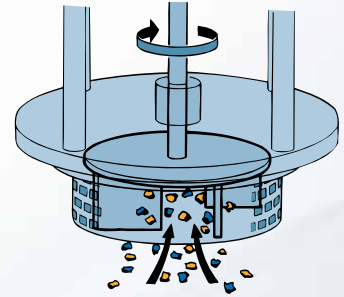


How the Silverson works

The advantages of Silverson's high shear rotor/stator mixer over simple conventional stirrers or agitators stem from the multistage mixing/shearing action as materials are drawn through the specially designed Silverson workhead - the heart of every machine.

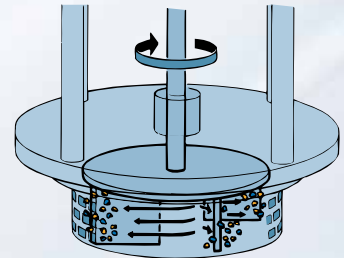
Stage 1

The high-speed rotation of the rotor blades within the precision machined mixing workhead exerts a powerful suction, drawing liquid and solid materials upwards from the bottom of the vessel and into the center of the workhead.



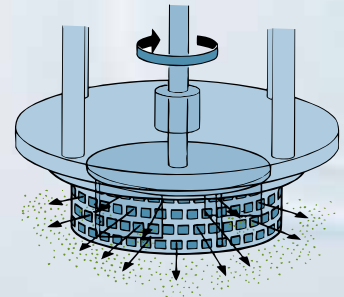
Stage 2

Centrifugal force then drives materials towards the periphery of the workhead where they are subjected to a milling action in the precision machined clearance between the ends of the rotor blades and the inner wall of the stator.



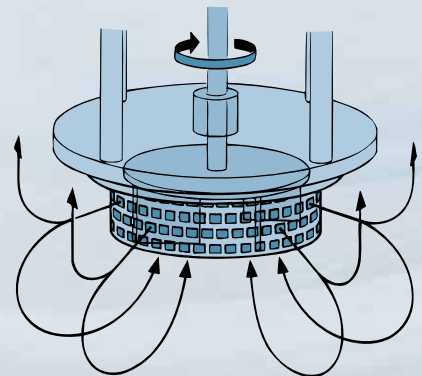
Stage 3

This is followed by intense hydraulic shear as the materials are forced, at high velocity, out through the perforations in the stator and circulated into the main body of the mix.



Stage 4

The materials expelled from the head are projected radially at high speed towards the sides of the mixing vessel. At the same time, fresh material is continually drawn into the workhead maintaining the mixing cycle. The effect of the horizontal (radial) expulsion and suction into the head is to set up a circulation pattern that minimizes aeration caused by the disturbance of the liquid's surface.



Interchangeable heads and screens

A comprehensive range of workheads and screens is available for all Silverson rotor/stator mixers. These easily interchangeable workheads offer great versatility by allowing any machine to be adapted to perform a wide range of mixing operations including emulsifying, homogenizing, disintegrating, dissolving, dispersing, blending, particle size reduction and de-agglomerating. Changing from one head or screen to another is quick and simple.

General purpose disintegrating head

This is the most versatile of all the heads, giving an exceptionally vigorous mixing action. Ideal for general mixing applications, its uses also include the disintegration of solids and the preparation of gels and thickeners, suspensions, solutions and slurries.



Slotted disintegrating head

For the disintegration of fibrous materials such as animal and vegetable tissue, as well as the disintegration and solubilization of "elastic" materials such as rubbers and polymers.



Square hole high shear screen™

Provides exceptionally high shear rates ideal for the rapid size reduction of soluble and insoluble granular solids. It is also suitable for the preparation of emulsions and fine colloidal suspensions.



Standard emulsor head and emulsor screen

Suitable for liquid/liquid preparations and especially useful for all emulsions. Emulsor screens are available in fine, medium or coarse perforations.



Silverson service

Experience and know how

Silverson has been the leader in High Shear Mixing technology for over 60 years and has built up a detailed knowledge of mixing process requirements. This accumulated knowledge enables our technical staff and sales representatives to clearly identify a client's needs and recommend the type of mixer most suited to provide an efficient and economical solution.

Extensive test facilities

Available for the use of all clients, Silverson operates dedicated test facilities equipped with a wide range of laboratory and production scale machines where customers may test new products and discuss their applications with our technical staff. If preferred, Silverson mixers can be provided for on-site trials to allow evaluation under actual production conditions.

Customization

Increasingly today's process manufacturers require equipment to be designed to meet their own particular needs. Silverson has a positive approach and flexibility which allows mixers to be custom designed and built to suit individual user's specific requirements.

Worldwide support

A truly international company, Silverson is represented by a network of associated companies, distributors and agents in over 50 countries, serving Europe, North America, Asia, Australasia, South America and Africa.

Installation

Silverson offers expert advice and, if required, can assist with and supervise installation and start up.

After-sales service

With over 60 years of experience Silverson realizes the importance their customers place on reliable and rapid back-up service. Our large stock of manufactured parts enables us to dispatch most standard spares the same day they are ordered.



Some of Silverson's clients

Silverson is pleased to be able to service the exacting needs of some of the finest companies in the world.



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Further information

A range of detailed Technical Data Sheets is available from Silverson, including performance data, dimensional diagrams and other specifications.

Silverson can also supply a range of Application Reports and Video/CD packages with further information about the company and its products.

All information can be secured by calling your local Silverson representative or by requesting a copy of the necessary information through our website:

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Patent Pending.