



Ultramix Mixers

The Silverson Principle

For over 75 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.

Why Silverson?

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 unrivaled 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.

Ultramix

The Silverson Ultramix features an innovative single-piece dynamic mixing head, combining superior performance with minimized cleaning and maintenance requirements.

Ideal for rapidly wetting out powders including gums and thickeners, the Ultramix is also ideal for use in vessels with narrow openings. The vigorous mixing action is capable of moving the entire contents of vessels even in difficult shaped containers. For this reason the Ultramix offers considerable advantages for customers using IBCs (tote bins).

The range includes a laboratory scale unit, allowing the user to accurately reproduce the performance of production mixers in the laboratory.

Advantages

- Ultra sanitary design - single-shaft, single-piece mixing head
- Designed for Clean-In-Place (CIP) with Sterilize-In-Place (SIP) as an option
- Full compliance with 3A, USDA and cGMP requirements
- Rapid incorporation of large volumes of powders
- Excellent in-tank movement, even when processing high viscosity mixes
- Low maintenance - no wearing parts or bushings
- Reduced power requirement
- Suitable for aggressive chemical service to the most demanding sanitary requirements



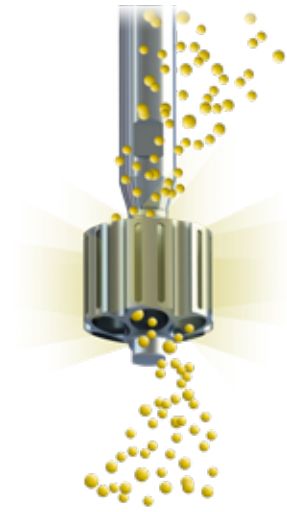
Ideal for Powder Incorporation
gums & thickeners



How the Ultramix Works

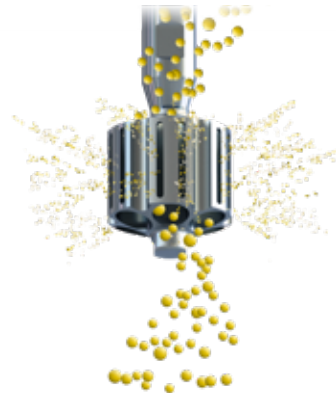
Stage 1

As the mixer rotates at high speed, the propulsion grooves on the outside of the mixing head project the surrounding product outwards, creating an area of low pressure outside the head.



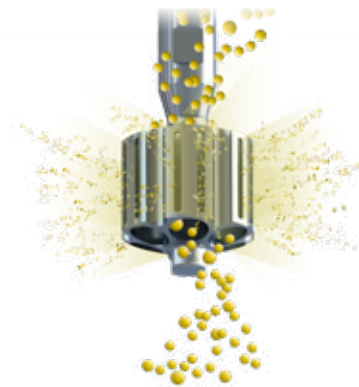
Stage 2

This draws product from within the mixing head through the radial slots to the outside. The material is subjected to a shearing action as it passes through the slots and is projected back into the body of the mix with great force.



Stage 3

Fresh material is simultaneously sucked in through the holes in the top and bottom of the mixing head, setting up a vigorous flow pattern throughout the vessel.



Ultramix Options

Stand Mounting

The Ultramix is primarily designed for fixed mounting in a vessel, but mobile floor stands are available for models up to U10. These enable the mixer to be moved from vessel to vessel and to be raised and lowered during operation, if required, in order to give the optimum mixing position at varying stages of the process.



IBC Mixing

The Ultramix is ideal for mixing in problematic containers such as IBCs and Tote Bins - the highly efficient in-tank movement provided by the small diameter workhead overcomes the problems often encountered with difficult vessel geometry.



Bottom Entry Mounting

Silverson Bottom Entry mixers can be supplied with an Ultramix head in place of the standard rotor/stator workhead. This is ideal for applications that are beyond the capabilities of a conventional agitator or stirrer but do not necessarily require the intense high shear of a Silverson rotor/stator mixer. It can also be used for rapid dispersion of gums and thickeners and ultra-sanitary applications in the food and pharmaceutical industries.



Technical Specifications

Materials of Construction

	Standard	Bottom Entry
Wetted Parts 316L Stainless	●	●
Wetted Parts Special Materials	○	○

Motor

TEFC	●	●
Other - Stainless Explosion-Proof/ATEX	○	○

Mounting

Mobile Hydraulic Floor Stand	up to U10	
Vessel Mounting	●	●

Sealing

V Ring	○	
Single Mechanical		●
Double Mechanical		○
Special Seal Arrangements		○

Sanitary Construction

Ultra-Sanitary Specification	○	○
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● Standard ○ Optional

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Patent Pending.