





HOMOGENIZER

Ross is the leading manufacturer of high shear rotor-stator mixer homogenizers and highspeed dispersion equipment for the adhesives, chemical, cosmetic, food pharmaceutical and plastics industries. Our designs are ideal for emulsification, homogenization, particle size reduction and dispersion.

Laboratory testing is available to qualify your application, and to insure the selection of the best Ross High Speed Mixer for your requirements. Based on data supplied or gathered during testing in our Test and Development Center, our engineers assist in the selection of the most efficient equipment.

Silverson Mixer Homogenizers are fast and efficient and are capable of producing a fine droplet or particle size, typically in the range of 2 – 5 microns. This degree of homogenization is suitable for the vast majority of products, such as creams and ointments, lotions, sauces and flavor emulsions.

Silverson offers a range of in-tank and In-Line mixer homogenizers for these applications. The precision-machined Silverson workhead generates exceptionally high shear rates in a three stage process that rapidly homogenizes the product to the required uniformity.

For the few applications that demand submicron particle or globule sizes a highpressure homogenizer may be required. Where this is the case, passing the product through a high shear Silverson Mixer Homogenizer first will dramatically improve throughput, process efficiency and reduce operating costs. This is because a highpressure homogenizer works better when fed with a premix of uniform and fine globule or particle size, allowing the product to pass through the homogenizer at a much faster rate, normally in a single pass.

Batch Mixers

A Silverson high shear batch mixer doesn't simply mix; it emulsifies, homogenizes, solubilizes, suspends, disperses and disintegrates solids. Each mixer, with its precision-engineered Silverson rotor/stator workhead, far outperforms conventional mixers, cutting processing times by up to 90%, improving quality, product consistency and process efficiency.

Silverson High Shear Batch Mixers will:

- Process from 1 to 8000 gallons
- Eliminate agglomerates and fish eyes
- Create stable emulsions and suspensions
- Reduce particle size
- Rapidly dissolve solids
- Accelerate reactions

High Shear In-Line Mixers

Silverson High Shear In-Line mixers are supremely efficient and rapid in operation and are capable of reducing mixing times by up to 90%. The action of any Silverson In-Line mixer can be modified with the use of rapidly interchangeable workheads. This enables any machine to mix, emulsify, homogenize, solubilize, suspend, disperse and disintegrate solids.

Features:

- Aeration free
- Self-pumping
- No bypassing
- Interchangeable workheads
- Sanitary construction

- Easy maintenance
- Lower power requirements
- Eliminates agglomerates and fish eyes
- Creates stable emulsions and suspensions
- Reduces particle size
- Rapidly dissolves solids
- Accelerates reactions

In-Line Ultra Sanitary Mixers

The Silverson Ultra Sanitary series of multipurpose In-Line mixers is able to perform the widest variety of applications - mixing, emulsifiying, homogenizing, disintegrating and dissolving, with an efficiency, flexibility and sanitary construction unmatched by other machines.

3A TPV (Third Party Verification) and EHEDG Certified and designed to comply with FDA and cGMP Guidelines.

Features:

- Self-pumping
- Aeration free
- No bypassing
- Interchangeable workheads
- Self-draining tangential outlet
- Ultra Sanitary single mechanical shaft seals, easily converted to double mechanical shaft seals
- No manual dismantling and cleaning is required, significantly reducing maintenance, operating cost, increasing reliability and increasing productivity

High Viscosity In-Line Mixers

Silverson's High Viscosity (HV) In-Line Mixers offer exceptional flow rates and the ability to process higher viscosity products.

This is achieved by a unique and innovative "pumping rotor" design which substantially increases the mixer's capacity when compared to standard In-Line mixers, eliminating the need for an additional feed pump when processing higher viscosity products in the food, pharmaceutical, cosmetic and chemical industries.

Features:

- Ultra sanitary construction based on the 3-A and EHEDG-Certified UHS mixer range
- Self-pumping
- Aeration free
- No bypassing
- Interchangeable workheads
- Vertical or self-draining tangential outlet
- Designed for Cleaning-In-Place

Flashmix Powder/Liquid Mixers

The Silverson Flashmix takes a revolutionary approach to powder/liquid mixing. Unlike many powder/liquid mixers, which use vacuum to pull in powders, the Flashmix literally forces powder into the liquid stream. This not only allows it to disperse and hydrate large volumes of powders, it means it can be used at higher temperatures and with higher viscosity mixes - offering the advantages of high shear mixing to a wide range of applications that were previously not possible.

Advantages

- Fast powder incorporation rates of up to 500 lbs/min
- Agglomerate-free, consistent product, time after time
- Suitable for operation at higher temperature
- Suitable for higher concentrations of gums and thickeners
- Minimum aeration
- Sanitary the Flashmix is based on an EHEDG and 3-A Certified hygienic mixer
- Modular construction with a range of options to suit a wide range of applications and batch sizes
- Low power requirement; no additional pump required
- Low level, ergonomic design
- Simple the Flashmix is easy to install, easy to operate and easy to clean

Flashblend Powder/Liquid Mixing Systems

Dispersing powders into liquids and creating a consistent homogeneous product, time after time, is one of the most difficult of all mixing applications. To satisfy this need Silverson has developed the Flashblend, a high shear system for rapid incorporation of a wide range of powders, including problematic gums and thickeners. The Flashblend is designed to incorporate powders on a continuous and semi-continuous basis at rates of up to 30,000 lbs/hour. The system can handle a wide range of viscosities, from low viscosity products through to viscous gels.

Advantages

- Suitable for large scale production
- Agglomerate-free product
- Repeatability
- Speed
- Minimum aeration
- Improve vessel hygiene
- Viscous liquids can be incorporated into the bulk liquid via the hopper. Liquid additives can also be pumped directly into the venturi.