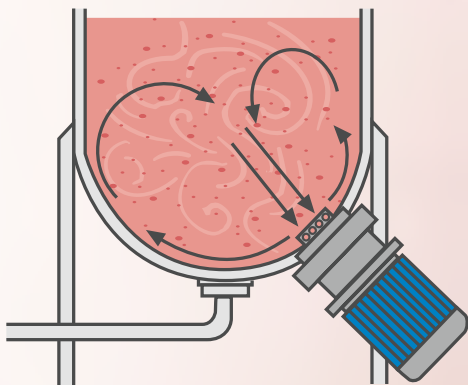


Bottom Entry mixers

Silverson's sanitary series of High Shear Bottom Entry mixers are designed to fit into the bottom or side of a mixing vessel. These high shear mixers are typically used in conjunction with a slow speed anchor stirrer or scraper unit for high viscosity products. The Silverson Bottom Entry mixer gives high shear homogenization, while the stirrer/scraper distributes the homogenized output uniformly through the vessel. This is ideal for high viscosity cosmetic, pharmaceutical and food products.

Bottom Entry mixers can also be used by themselves on low viscosity products and to wet out powders.

Silverson Bottom Entry mixers offer full compliance with USDA and cGMP requirements.



Technical specifications

Materials of construction

All wetted parts are in 316L stainless steel. Special materials on request. Electropolished finish is available as an optional extra.

Motor specifications

TEFC, washdown duty and explosion proof motors are available as standard. Inverter rated, stainless steel and other motors are available as optional extras. Electrical switchgear or wiring is not supplied.

Mounting

Stainless steel flange fitting is available as standard. Clamp-on fitting is optional for smaller machines.

Sealing

Single mechanical shaft sealing: A single carbon/ceramic mechanical shaft seal with viton elastomers is standard. Other face materials and elastomers are available as optional extras.

Double mechanical shaft sealing: These are required when processing products that are abrasive, sticky or viscous or when the system is under vacuum.

Sealant flushing systems can be supplied as optional extras.

Cleaning

Clean-In-Place (CIP) design. Simple, easy-to-clean construction.

Operating pressures

All standard models are designed for operation on pressures not in excess of 40 psi (2.8 bar). High-pressure units are available upon request.

Ultra sanitary model available with features including:

- Crevice-free construction.
- Sanitary metal bellows shaft seal.
- Electropolished finish.



General purpose disintegrating head



Slotted disintegrating head



Square hole high shear screen™



Emulsor screen



Disintegrator 2500

If you thought it couldn't be done think again. Silverson's mighty Disintegrator mixing system will disintegrate, solubilize or disperse the largest of solids - up to 40" (1000mm) across - in a single operation and in times you wouldn't believe!

The D2500 incorporates a powerful and unique Silverson mixer located in the bottom of a custom-built vessel. The mixer exerts a massive suction downwards from the surface of the liquid, pulling down even the most buoyant of solids, no

matter what the size. These solids are literally ripped apart and dispersed throughout the mix, and with the refinement of a Silverson In-Line mixer, included in the system, are totally solubilized or suspended.



How the D2500 works

The D2500 is a self-contained, high-powered unit consisting of a specially designed Silverson high shear rotor/stator disintegrating workhead set into a custom-built vessel coupled with a Silverson High Shear In-Line mixer.

Stage 1

The unit is charged with liquid and started. Large solids are fed into the vessel and drawn down into the workhead, which will rapidly shear lumps and slices off the edges and corners. These will be drawn into the interior of the workhead, driven by centrifugal force to the periphery and further sheared by the rotor tips against the edges of the stator as they are expelled radially from the head.

Stage 2

Rapid fragmentation of the large solids continues until all the particles are small enough to be drawn into the workhead for further disintegration. Materials are discharged horizontally from the workhead and forced up the vessel's walls, drawn into the center vortex and repeatedly through the workhead for final disintegration. This cycle continues until all solids are reduced to granular size.

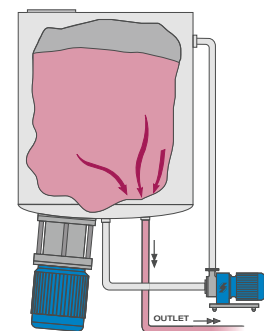
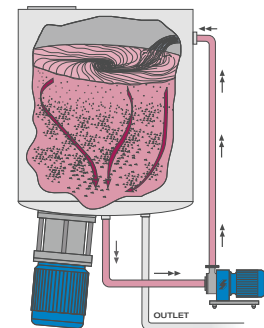
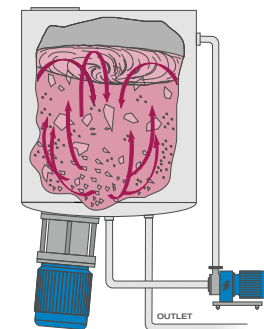
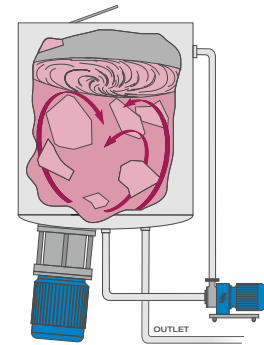
Stage 3

Once the solids are down to granular size, the self-pumping Silverson In-Line mixer is started. The product is drawn from the bottom of the vessel, processed through the In-Line mixer's high shear rotor/stator workhead and passed back into the top of the vessel, ensuring complete solution or suspension.

Stage 4

Samples may be taken off at any time during the process. When inspection shows that all solids are completely dissolved or suspended, any additives or final additions of solvent to standardize the product may be introduced either into the vessel or into the In-Line mixer loop.

As soon as the product passes inspection and quality control, the vessel may be emptied either through the Silverson In-Line mixer or a separate self-draining outlet.



Advantages

Size and shape of product is inconsequential. The Disintegrator 2500 can take odd shapes and the largest sized polymer bales commercially produced.

- No need for pre-grinding, slicing or cutting of large solids. All solids are dissolved in one vessel.
- Elimination of additional equipment such as grinders or choppers reduces maintenance costs and dust emissions.
- Puts products into complete solution or suspension without leaving undesired particles on vessel walls.
- Can handle poly-wrapped bales without prior removal of wrapper, eliminating the need for cutting and excess waste.

Typical Applications

- Rapid solution of rubbers and polymers into lubricating oils, solvents and bitumen for the production of VM luboils, adhesives and polymer modified bitumen for road surfacing
- Dispersion of filter cakes.
- Disintegration of solid blocks of cheese, butter, compressed raisins & dried fruit, oleoresins and frozen meat.
- Disintegration and dispersion of animal and vegetable matter.
- Wet crumbing of waste rubber.
- Disintegration of solid gums, resins and varnishes.
- Recovery of waste confectionery.

