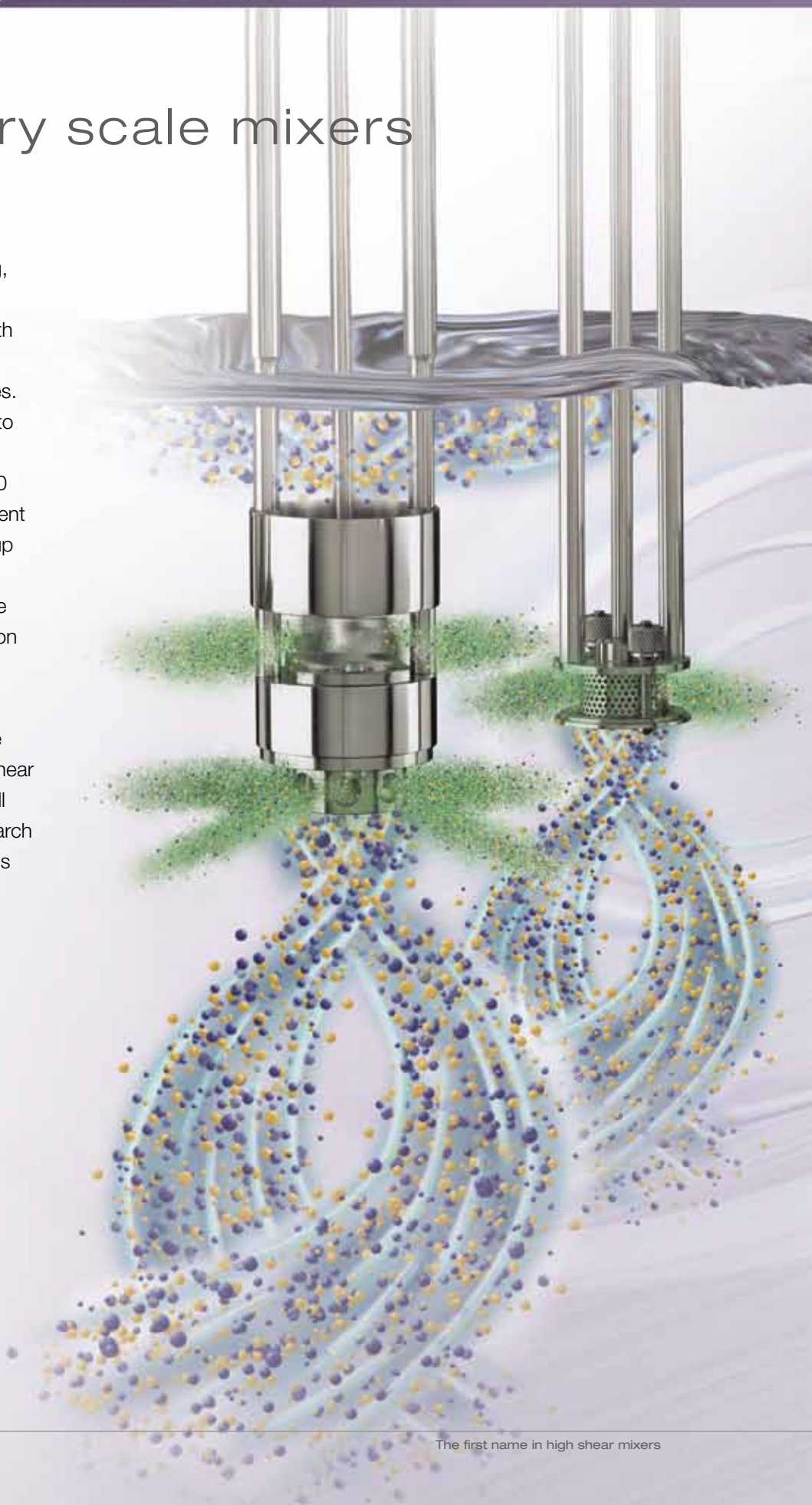
Laboratory scale mixers

Silverson Laboratory mixers are suitable for the widest range of applications - mixing, emulsifying, homogenizing, disintegrating, dissolving - with an efficiency and flexibility unmatched by other machines. With a capacity from 1ml up to 12 liters and the ability to mix in-line with flow rates up to 20 liters/minute, they offer excellent reproducibility when scaling up and provide an accurate and easy means of forecasting the performance of larger Silverson machines under full-scale working conditions.

The Silverson L5 Series is the latest development in High Shear Laboratory mixing, ideal for all routine laboratory work, research and development, QA analysis and small scale production in all industries.



L5M-A mixer

L5M-A Mixer

The multifunctional L5M-A Model features touch pad control with digital tachometer, programmable integral timer and amperage display, all accessed via the Mode button. The unit can be supplied with a "DataLogger" program allowing monitoring of speed and power draw over time. This level of instrumentation is invaluable for applications where process validation and reproducibility are required.

Motor unit

Powerful 1hp (750W) 110 volt, single phase (220 volt optional), 50/60 Hz. Nominal maximum speed 8000 rpm (6000 rpm under full load).

Speed control

Infinitely variable electronic speed control with integral on/off switch.

Electric rise & fall bench stand

The mixing unit may be effortlessly raised and lowered using the touch pad controls on the motor unit.

Construction

All wetted parts are in grade 316L stainless steel with the exception of the bushing which may be bronze alloy or PTFE.

The L5 is finished in a tough, easy to clean, non-chip white nylon coating. The flat base is covered by a removable non-slip solvent-resistant mat.

Interchangeable mixing assemblies

Standard assembly (two arm) supplied complete with a General Purpose Disintegrating Head, Square Hole High Shear Screen, Standard Emulsor Screen and Axial Flow Head.

Slotted Disintegrating Heads, Fine Emulsor Screen, Pump Heads and other special heads are available as optional extras, see overleaf.

Capacity - depending on viscosity - up to 12 liters. Mixing unit dimensions – length 11 1⁄2" (290mm), width 2 1⁄4" (57mm).

Mixing assemblies

Duplex assembly

The Duplex comprises two workheads facing in opposite directions. The upper head pulls materials down from the surface of the mix, and provides a coarse disintegrating action, while the lower head draws material up from the base of the mixing container, further reducing particle size to accelerate solubilization or suspension.

This combined use of two workheads makes the Duplex ideal for high viscosity mixes and applications where light or buoyant material (powders, rubbers and polymers, etc.) needs to be drawn down from the surface of a mix and rapidly dispersed.

Typical applications

- Rapid solution of rubbers and polymers for the production of luboils, adhesives and asphalt compounds
- Disintegration and dissolving solid resin for varnishes
- Vegetable and meat purée/slurries

Tubular mixing assemblies

A series of interchangeable tubular mixing units suitable for use in narrow-necked containers is available, with capacities from 1-500ml.

1” tubular

Capacity, depending on viscosity, 50ml up to 500ml.

3/4” tubular

Capacity, depending on viscosity, 20ml up to 250ml.

5/8” micro

Capacity, depending on viscosity, 5ml up to 50ml.

3/8” mini-micro

Capacity, depending on viscosity, 1ml up to 10ml.

Ultramix

The Silverson Ultramix is designed for applications which 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.

In-Line mixing assembly

The In-Line assembly fits on to the model L5 Series Laboratory range and converts it into an in-line mixer/homogenizer.

The centrifugal action of the rotor in the high shear rotor/stator workhead generates a non-positive pumping action which gives a throughput on low viscosity liquids of approximately 20 liters/minute, reducing as the viscosity increases.

The In-Line assembly is suitable for use at atmospheric pressure only. It is not recommended for use on abrasive, corrosive or flammable materials.

Specialized mixers

L5 Sealed unit laboratory mixer

Designed for research in the pharmaceutical and biotechnology fields, the L5 Sealed Unit allows sterile or highly infected tissues to be handled under conditions of absolute safety.

The Sealed Unit features a Quick-Release mechanism permitting use with a wide range of mixing assemblies.

Mixing vessels

Glass vessels with capacities from 7ml up to 1 liter are available. Stainless steel vessels are available with volumes from 1 - 10 liters.

Operation under vacuum

Special sealed mixing assemblies are available for operation under vacuum.

Model L2/Air (Compressed air)

Suitable for use in Explosion Hazard areas. The L2/Air is powered by a 0.25 hp, 6000 rpm variable speed air motor. The L2/Air will accept all L5 Series mixing assemblies. Supplied with a manually operated adjustable bench stand.

Pilot scale mixers

AX series

This series of mixers is designed for small-scale production in pilot plants, research institutes, hospital pharmacies, etc. Light and easily operated, AX series models have a capacity of up to 50 liters.

Model AX5

The AX5 features touch pad controls and is compatible with Silverson's "DataLogger" system.

Motor

Powerful 1 hp (0.75 kW) 110 volt single phase motor (220 volt optional) 50/60 Hz.

Speed control

Infinitely variable speed control. Nominal maximum speed 6000 rpm.

Electric Rise & Fall Stand

The unit features an integral rise and fall stand with touch pad controls.

Model AX60

The Model AX60 features a fixed speed 1 hp 3 phase motor. TEFC, washdown duty and explosion proof motors are available. Variable speed available via an inverter as an optional extra.

More powerful motors allowing a maximum speed of up to 6000 rpm also available.

Model AX/Air

The Model AX/Air is powered by an intrinsically safe compressed air motor suitable for use in Explosion Hazard areas.

Bench stand

Spring assisted or electric rise and fall bench stands are available for use with the AX60 and AX/Air models.

Verso - pilot scale In-Line mixer

The Silverson Verso is a bench top In-Line mixer ideal for laboratory or pilot scale applications. The unit offers excellent reproducibility when scaling up and provides an accurate and easy means of forecasting the performance of larger In-Line mixers under full-scale working conditions.

The Verso is equipped with a digital tachometer, ammeter and programmable timer, invaluable for applications where process validation and reproducibility are required. It is also compatible with the Silverson “DataLogger” program.

Features

- Touch pad control panel.
- Powerful 1 hp (0.75 kW) motor with infinitely variable speed control.
- Single or multistage interchangeable workheads available.
- Self-pumping.
- Maximum operating pressure 100 psi (7.6 bar).
- 0.5” Tri-clamp inlet/outlet connections.
- Single mechanical shaft seal.
- All wetted parts are in grade 316L stainless steel.
- Sanitary construction.

Advantages

- Eliminates agglomerates and fish eyes.
- Creates stable emulsions and suspensions.
- Reduces particle size.
- Rapidly dissolves solids.
- Accelerates reactions.
- Aeration free.
- No bypassing.