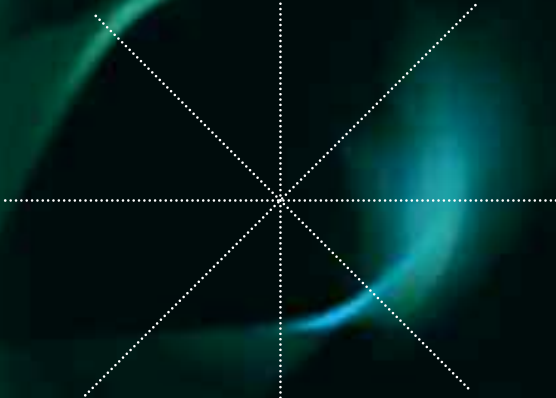




Sanitary Mixing



And Blending

# Sanitary Mixing & Blending

**PIONEERING TECHNOLOGY. INCOMPARABLE QUALITY. WORLDWIDE LEADERSHIP.**

Serving all the process industries in virtually every industrialized country around the world, Ross can offer experience and production capacity that no other manufacturer of specialty mixing and blending equipment can match. In the USA alone, Ross operates five plants, an analytical laboratory and a vigorous R&D program. Overseas, Ross sanitary equipment is being built in our own plant in China and in licensed manufacturing facilities in Japan, Europe, Africa and the Indian Sub-continent.



## MEASURING

*the value of our experience.*

No other manufacturer of specialty mixing equipment offers a product line as diverse as ours. With expertise in such a broad spectrum of industries and applications, Ross is uniquely equipped to improve production and product quality on *your* process line.

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# Mixer Emulsifier

## **THE DRIVING FORCE IN ROTOR/STATOR DESIGN.**

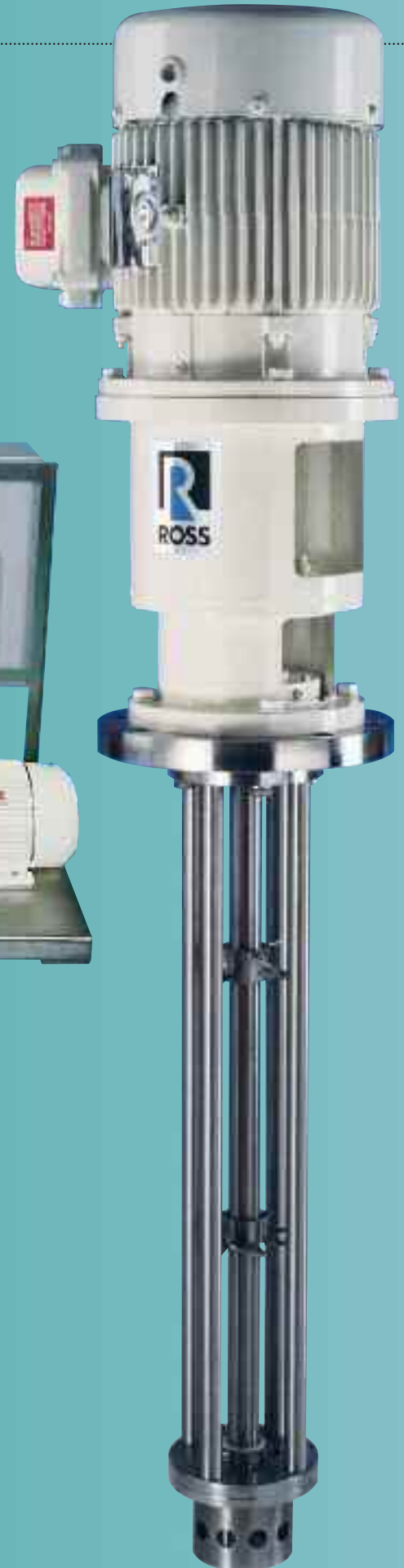
Design innovations developed by Ross have produced a new breed of sanitary rotor/stator mixers with faster tip speeds and more intense shear than ever before.

When the X-Series Mixer Emulsifiers\* were introduced recently, they were capable of faster sub-micron emulsification than any other rotor/stator mixer ever made. Now available in a wide choice of sizes and configurations, they also provide a reliable path for scale-up.

The next generation of Mixer Emulsifiers – the *MegaShear\*\** – represents another innovative leap in rotor/stator design for particle size reduction. The *MegaShear™* provides an opportunity for pharmaceutical, cosmetic and food manufacturers to shorten mixing cycles and improve product quality.

\*Patent No. 5,632,596

\*\*Patent pending.



## **HIGH-SPEED POWDER INDUCTION WITH THE NEW SLIM SYSTEM.**

The Ross SLIM system, now available in either a batch or in-line configuration, presents the fastest method ever developed for wetting out solids in a liquid. A unique rotor/stator generates a powerful vacuum and draws solids directly into the high-shear zone –

beneath the surface of a batch, or injected into a liquid stream.

Hard-to-disperse solids – such as fumed silica, calcium carbonate, titanium dioxide, gums and thickeners – are instantly dispersed, eliminating the “dusting” associated with conventional equipment.



## **MORE ROTOR/STATOR PROCESS SOLUTIONS.**

Ross offers a complete line of conventional rotor/stator designs with single-stage and multi-stage rotors, and a variety of stators to accommodate many applications. Advanced models, like the multi-stage Quad-Slot Mixer Emulsifier, are widely used for emulsions, suspensions and dispersions. Many rotor/stator combinations are available in either batch or in-line units, in lab sizes through full-scale production.



[www.mixers.com](http://www.mixers.com)

# VersaMix

## **VERSATILITY, ECONOMY AND LARGE-SCALE PRODUCTION CAPACITY.**

When Ross introduced the first triple-agitator mixer, the VersaMix offered sanitary product manufacturers a new dimension in versatility and cost-efficiency. Today, the Sanitary VersaMix is still a powerful tool for an exceptionally wide variety of mixing tasks – from simple mixing and dispersion to high-quality emulsification. In sizes from 1 to 3,000 gallons, it is used around the world for the preparation of such products as creams, lotions, ointments, sauces and condiments.

Especially for operations involving short production campaigns and frequent changeover, the VersaMix is uniquely equipped to adapt without costly delays.

Because it is available in sizes through 3,000 gallons, the VersaMix is also a popular choice for long runs and large production volumes.

Scale-up is highly predictable, and a multitude of options are available to suit lab and production needs. Change-can vessels, for example, are available in sizes through 750 gallons. With many change-can and fixed-vessel models in stock, the VersaMix can provide a uniquely flexible processing



## **MULTI-AGITATOR, CHANGE-CAN FLEXIBILITY.**

The combination of three independently-driven agitators – with no seals in the product zone – gives the VersaMix terrific versatility. The agitators can include any combination of a slow-speed anchor, high-shear Mixer Emulsifiers, augers to enhance axial flow, and high speed disperser blades. Typical sanitary designs also include vacuum/pressure, CIP, SIP, SLIM and SISAL sub-surface injection system for powders and liquids, a set of portable change-can vessels, and a complete control package.



# Ross/Olsa Vacuum Mixer Homogenizers

## **THE ULTIMATE SANITARY PROCESSOR FOR FINE CREAMS AND LOTIONS.**

Ross/Olsa Vacuum Mixer Homogenizers are designed and engineered to meet the strict requirements of the pharmaceutical, biotech and personal care industries. The wide range of configurations available give the process and manufacturing engineer the ability to manufacture better quality products, higher productivity, almost perfect reproducibility, and capability to handle the widest range of products and viscosities.

In addition to vacuum mixing and homogenizing, our systems offer a wide range of features including, internal pressure capability, integrated vacuum, temperature control and CIP systems, as well as sophisticated PLC based recipe-management systems.

Ross/Olsa Vacuum Mixer Homogenizers are being used throughout the world for the manufacture of a wide range of pharmaceutical, biotech and personal care products. These systems provide perfect batch-to-batch reproducibility and have a high degree of flexibility for processing formulations over the widest range of viscosities.

Most units can be pressurized for "autoclave" sterilization. Oil and water phases can be transferred to the mixer by vacuum suction without auxiliary pumps. Powders can be added by vacuum suction, usually into the Homogenizing Turbine, preventing lumping and agglomerate formation in the bulk during processing.

All units are designed to meet cGMP specifications, are easy to operate and clean, and provide direct scale-up from small sized mixers to larger production units.

## **COAXIAL, COUNTER-ROTATING AGITATORS**

The Ross/Olsa Vacuum Mixer Homogenizer generates extremely efficient flow, both radially and axially, even with very small batch sizes. With minimum batches as low as 15% of working capacity, the Vacuum Mixer Homogenizer is an efficient production machine for both short, low-volume runs and continuous full-scale operation.

The counter-rotating blades of the Ross/Olsa Vacuum Mixer Homogenizer are complemented by a high-speed Homogenizing Turbine in the bottom of the vessel. A sophisticated injection system allows the addition of powders and liquids, under vacuum, directly into the high shear zone.



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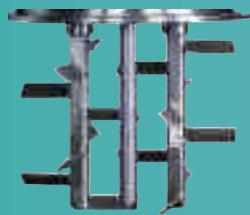
# Planetary Mixers

## REINVENTING THE DOUBLE PLANETARY MIXER

Ross has been the world's leading maker of planetary mixers since we introduced the first of its kind more than 50 years ago. Today, the Ross Sanitary Double Planetary mixer is the preferred choice for such products as gels, shear-sensitive active ingredients and excipients, and transdermal adhesives.

Now, with the new HV Blades that Ross has recently developed, the Ross DPM Double Planetary mixer is capable of handling materials in much higher viscosities than ever before. In fact, the new blades enable the Double Planetary mixer to handle materials that would otherwise require a double-arm mixer.

Ross Sanitary Double Planetary mixers are available with a selection of several agitator designs, vacuum/pressure, CIP/SIP, multiple change-can vessels, orbiting temperature probes within the vessel, heat transfer and several drive options.



## THE NEW ROSS HV BLADE\* DESIGN

The HV Blades make the Double Planetary mixer far more versatile, because it can handle viscosities as much as *four times* higher than a conventional Double Planetary mixer. Shear is increased, while a continuous downthrust action prevents highly viscous materials from "climbing" the blades – inhibiting proper mixing action and making clean-up difficult.

*\*Patent pending.*

# Blenders And Vacuum Dryers

## **FAST BLENDING CYCLES. FAST DISCHARGE.**

Look closely at a Ross Sanitary Ribbon, Paddle or Vertical Cone Screw Blender, and you will see why Ross is considered a leader in *all* forms of mixing and blending, in *all* the process industries. Ross engineering innovations make our blenders extraordinarily productive. Our Ross-built control systems make them versatile and easy to integrate in your plant. The superior quality of our vessel design and fabrication make them easy to clean and sterilize.

Because Ross builds both horizontal and vertical blenders, we are uniquely equipped to provide *exactly* the right blender for your application. With many options available, Ross can often provide the blender you need direct from stock – an overnight solution for a sudden shortfall in production capacity.

## **VACUUM DRYERS.**

Ross also manufactures an extensive line of Ribbon, Paddle, and Vertical Cone Screw Vacuum Dryers. Fast, accurate and gentle, they are ideal for many sanitary applications – especially those involving shear-sensitive and heat-sensitive materials. Complete turn-key systems are available.



## **LESS MAINTENANCE. LOWER RISK OF CONTAMINATION.**

Our “unsupported” blending screw – engineered to operate without a lower support bearing – can dramatically reduce downtime. It also promotes complete discharge, reducing the risk of contamination. Ross can provide blenders and dryers as large as 500 cu.ft. with this feature and others specially designed for sanitary applications.

# Control Systems

## **A SINGLE SOURCE FOR ADVANCED CONTROLS AND MIXING/BLENDING EQUIPMENT.**

The best way to obtain a control system custom-tailored to your mixing equipment, and ensure a smooth start-up, is to buy your control system and mixing equipment from the same manufacturer.

No other company in the world can match Ross's experience in *both* specialty mixing and controls. Ross SysCon, our control systems division in Savannah, Georgia, can provide a comprehensive package of control design, manufacturing and support for virtually any production environment.

Ross offers a selection of multi-agitator and PLC/PC-based controls with many options for integration into your existing production network. Ross can also provide cost-effective strategies for stand-alone installations. The Ross EasyLog™ system, for example, logs performance data and allows you to download or display trends in real time – without the need for



## **CONTROLS THAT FIT YOUR NEEDS – AND OUR EQUIPMENT – PERFECTLY.**

Ross can deliver a control system that meets all of your requirements exactly – for hardware and software compatibility, easy expandability, efficient on-site support and ready availability of components. Ross controls provide the best possible combination of flexible process control and long-term value.

Contact Ross today for detailed  
information on any of the products  
and services we offer.

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