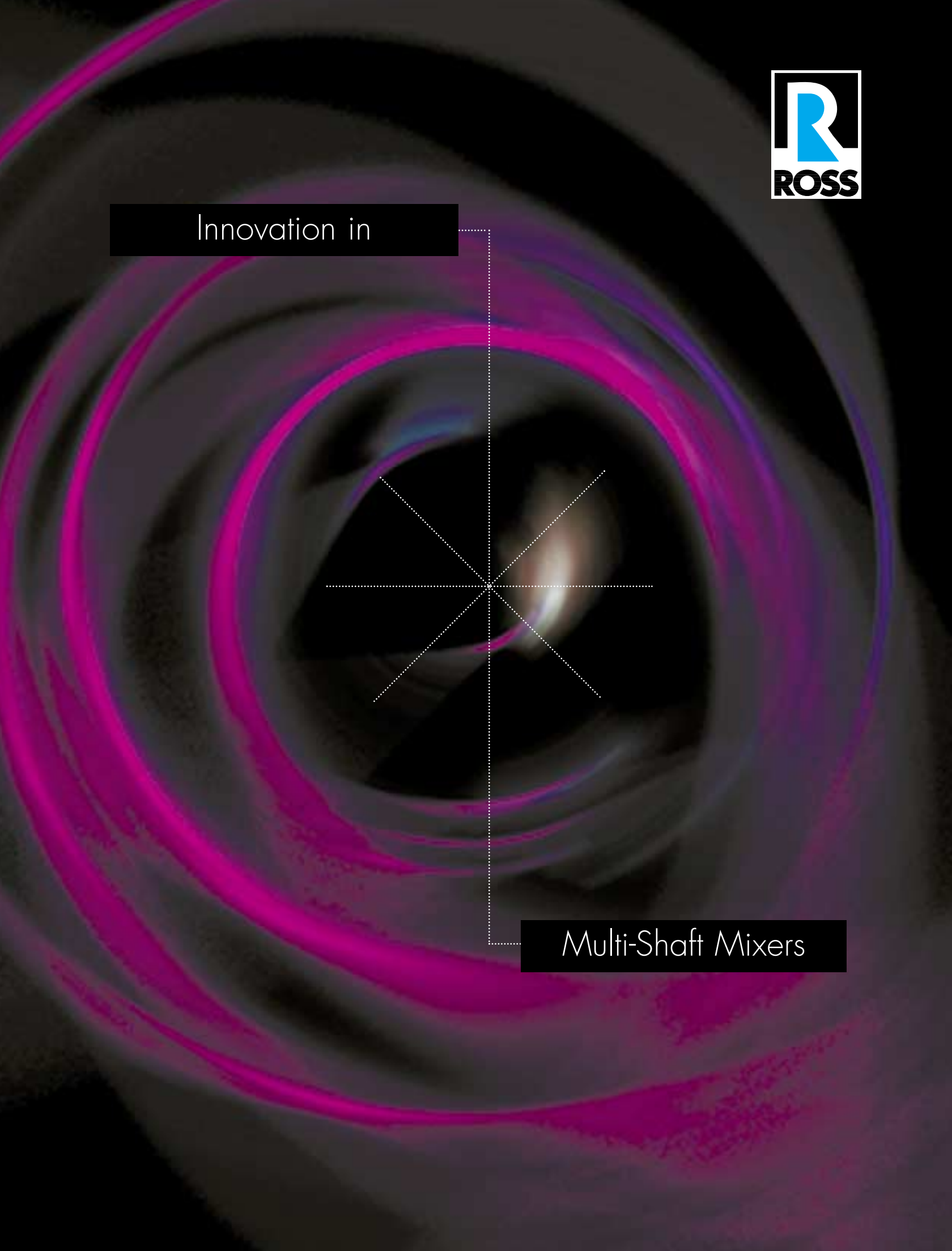
ROSS
Innovation in
Multi-Shaft Mixers

Ross Multi-Shaft Mixers

THE WORLDWIDE STANDARD FOR DESIGN AND INNOVATION

Ross is the leading manufacturer of Multi-Shaft Mixers and has been since we introduced the original Multi-Shaft Mixer 30 years ago.

Today, Ross operates five plants in the USA, along with Ross-owned and licensed plants in Europe, Asia, the Indian Sub-Continent and Africa. The Ross family of multi shaft mixers includes sizes from 1/2-gallon to 4000 gallons capacity– and a multitude of options to meet the needs of most industrial applications.

THE WORLD'S LARGEST INVENTORY OF MIXERS IN STOCK FOR FAST DELIVERY

Our multi-million dollar inventory of mixers and blenders is your ultimate assurance that you can have the equipment you need, when you need it.

THE ROSS DIFFERENCE – INNOVATIVE DESIGN AND FABRICATION

Take a close look at a Ross Dual or Triple Shaft Mixer. You will see that all multi-shaft mixers are not the same. Ross design innovations – like the use of special dry running seals for sanitary applications, or a lubricated bushing system for the rotor stator mixer – give Ross customers a terrific advantage. All Ross Multi-Shaft Mixers are built with generous shaft supports to eliminate the concern over maintenance issues. Our engineering and fabrication facilities are uniquely equipped to handle the job, at a reasonable cost, for standard or complex designs.

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The Ross Difference

DUAL OR TRIPLE SHAFT DESIGNS TO FIT YOUR EXACT PROCESSING NEEDS

We offer Dual and Triple Shaft designs to meet your specific process requirements. Our economical Dual Shaft design includes a conventional high speed disperser and a two wing anchor agitator. This configuration is ideal for straight forward dispersion and mixing applications.

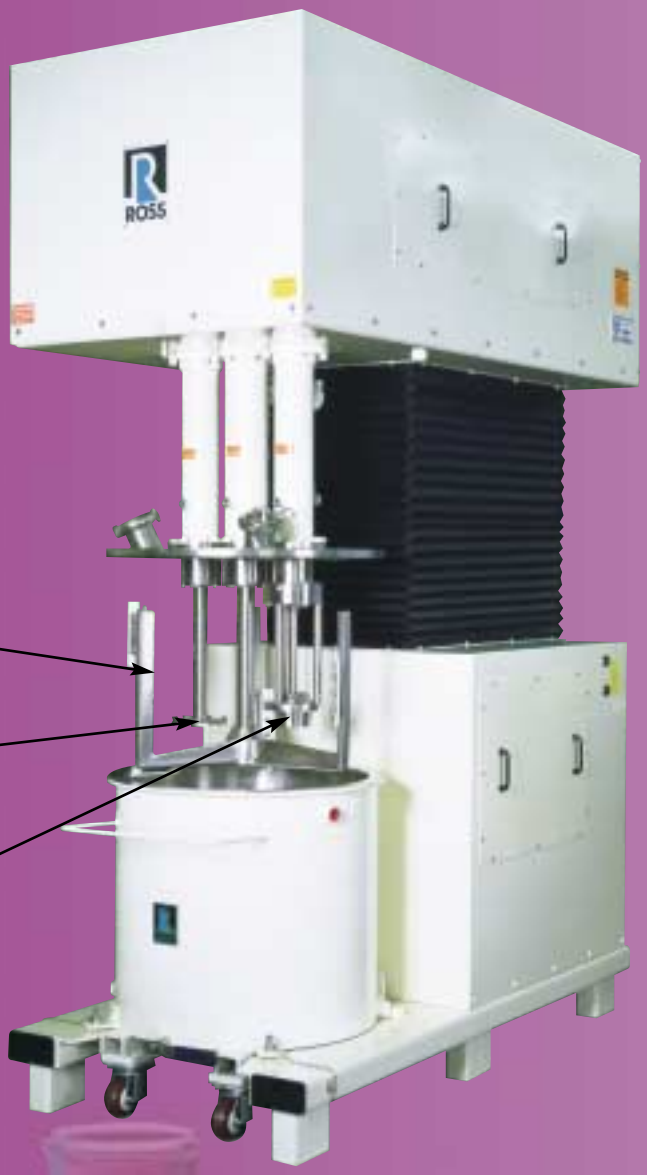
The Triple Shaft design extends the operating range of this product line by adding either a high shear rotor/stator mixer, or a second high speed disperser. The addition of a high shear rotor/stator mixer adds the capability of emulsifying and homogenizing products that require higher shear to reduce the size of the particles being mixed.

The Dual Shaft and the Triple Shaft designs are available in standard or sanitary configurations. They can be customized to meet any special process considerations such as vacuum or pressure operation.

The Ross Multi-Shaft Mixer is a proven design to meet the changing requirements of today's major process industries.

Ross Multi-Shaft Mixers are tailored to suit the individual process demands of customers manufacturing products that range from low to high viscosity. This is possible by selecting the best combination of the three agitation systems offered with this mixer.

Models are available in fixed tank and change-can designs. Change-can units are built through 1000 gallons capacity whereas fixed tank models are available to 4000 gallons capacity. An extensive range of design combinations, horsepower selections and optional features are available with each mixer.

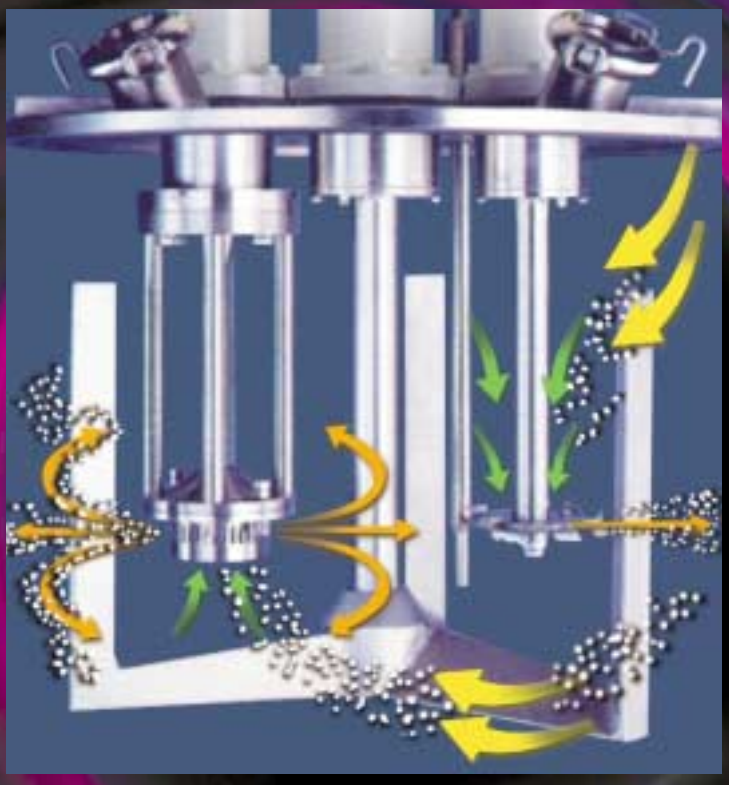


Three Wing Anchor Agitator
Provides movement of materials to high speed mixers

High Speed Disperser
Disperses solids into viscous liquids

High Shear Rotor/Stator Mixer
Used for products that require very fine dispersions and emulsification

MODEL VMC-100 VACUUM MIXER



The three separately driven agitators work in concert with each other to produce a thorough mixture of all product components.

When all three agitators are used, the mix cycle is usually shorter when compared to dual shaft models.

High Shear Rotor/Stator Mixer

The high speed close tolerance rotor and stator provide high shear to all materials being passed through the rotor/stator gap. This intense shearing action is used to reduce particle size for homogenization, dissolution and emulsification. Used alone this mixer is best applied with materials having a maximum viscosity of 10,000 centipoise. In conjunction with the anchor its useful range can be extended to over 100,000 cps.

High Speed Disperser

The conventional dispersion blade is used to disperse solids into viscous liquids that are beyond the viscosity range of the high shear rotor/stator mixer and anchor combination. This mixer is best applied by itself in a viscosity range up to 50,000 cps and in conjunction with the anchor to nearly a million centipoise.

Three Wing Anchor Agitator

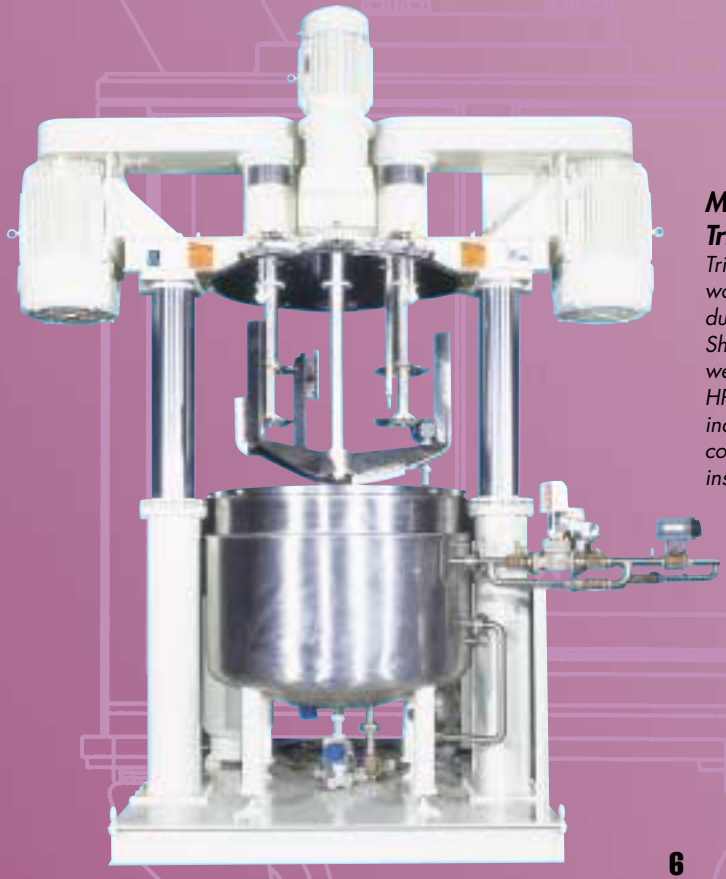
The three wing anchor agitator is designed to provide maximum movement of product under low shear conditions. It moves materials in radial and axial directions to feed the product to the high speed mixer heads. It is also used to improve heat transfer by constantly moving stagnant materials from the interior tank walls. Teflon scrapers attached to the anchor can assist in heat transfer. The inherently strong triangular shape of the anchor makes it easy to clean between batches.

Model VMC VersaMix

This triple shaft model is ideal for research and development activities. This mixer is available in 1, 2 and 4 gallon sizes. It allows users to develop new products with the confidence they can scale up to production sizes. The mixer is designed with the user in mind with all stainless steel wetted surfaces, also optional features are available such as vacuum construction, a jacket to heat or cool and including a choice of agitator designs. Included is our newest helical anchor design. The mixer controls are built into the mixer housing to permit single point hook up upon receipt of the mixer from the factory.

Model CDA-50 Dual Shaft Mixer

Our production model, change-can Dual Shaft Mixer, is supplied in a range of sizes from 10 through 1000 gallons capacity. The 50 gallon model shown includes an optional vacuum hood for operation to 29½ Hg, and a single post air/oil hydraulic lift system. The mix vessel is jacketed to provide heating or cooling and is mounted on non-sparking caster wheels for ease of movement within the plant. The 5 and 10 HP drives are supplied with explosion proof motors. Agitators are independently driven for better mixing control.



Model CDA-500 Triple Shaft Mixer

Triple Shaft Mixers above 300 gallons working capacity are supplied in single and dual post hydraulic lift design. Most Multi-Shaft Mixers are supplied with stainless steel wetted parts, like the mixer shown. The 50 HP-anchor and two 100 HP-Dispersers are independently variable speed. The ASME code constructed and stamped jacket is insulated and sheathed in stainless steel.

For further details see specification sheets.

Sanitary Model VMC-10

A typical all stainless steel VersaMix for handling cosmetics applications. The VMC-10 includes three independently driven agitators – with no agitator seals beneath the product level. This sanitary design includes vacuum, a jacket for heating and cooling and a floor mounted control console. Multiple mix vessels enable semi-continuous operation of the mixer. All interior and exterior exposed surfaces are of polished stainless steel construction.

Sanitary Model VMC-200

Ross is often the manufacturer of choice for those who require the ultimate in design for critical sanitary mixing and dispersion applications. This mixer includes three independently driven agitators. This sanitary design includes vacuum/pressure, CIP and SLIM (Solid/Liquid Injection Manifold) for the subsurface injection of powders and liquids. Multiple mix vessels enable semi-continuous operation of the mixer. All interior and exterior exposed surfaces are of polished stainless steel type 316 construction.

Complete Production System

Complete computerized systems can automate your mixing process and ensure consistency and flexibility. All mixing parameters from individual agitator control to vacuum and thermal control at key process stages can be pre-set for a variety of mix recipes. These systems are easily updated to meet changes in your production requirements.

For further details see specification sheets.

Fixed Tank Designs

Model VM-1000 Fixed Tank Design

Fixed tank models having working capacities to 4000 gallons are available. All of these models are built to customers' specific requirements.

This mixer has a working capacity of 1000 gallons. It includes a 30 HP-Three Wing Anchor agitator with Teflon wall scrapers, a 50 HP-conventional high speed disperser and a 75 HP-high shear rotor/stator mixer. The stainless steel sheathed jacket was provided to control the temperature of the batch. Wetted parts are of stainless steel construction. This mixer is designed to permit the lifting of the agitators from the vessel with an overhead crane for periodic maintenance inspections.

Model VM-750 Fixed Tank Design

The fixed tank design allows a great deal of design latitude and permits user selection of bottom shape, a wide range of drive options, internal pressure or vacuum, jackets, etc. Fixed tank mixers have the capacity to mix the same range of viscosities as the change-can models. Discharge is, however, limited somewhat by the flow properties of the final mixture. The mixture must be of a nature that will discharge by gravity or with a modest amount of internal pressure. The addition of a large discharge valve can assist in discharge. The Mixer shown includes a complete control package, dual agitators, special cover openings and provision for internal pressure and vacuum operation.

For further details see specification sheets.

Typical Applications

Ross has been involved in hundreds of different applications throughout the process industries. This exposure to many different applications permits us to apply our expertise across a wide range of industrial needs.

Food	salad dressings, flavorings, food colors, chocolate coatings, fillings
Adhesives	hot melts, formulated epoxies, urethanes, silicones, rubber solutions
Plastics	plastisols, polyester dispersions
Ceramics	slurry dispersions
Coatings	inks, specialty coatings, paints, asphalt, magnetic coatings
Pharmaceuticals & Cosmetics	creams, lotions, ointments, shampoo, toothpaste, hair dyes

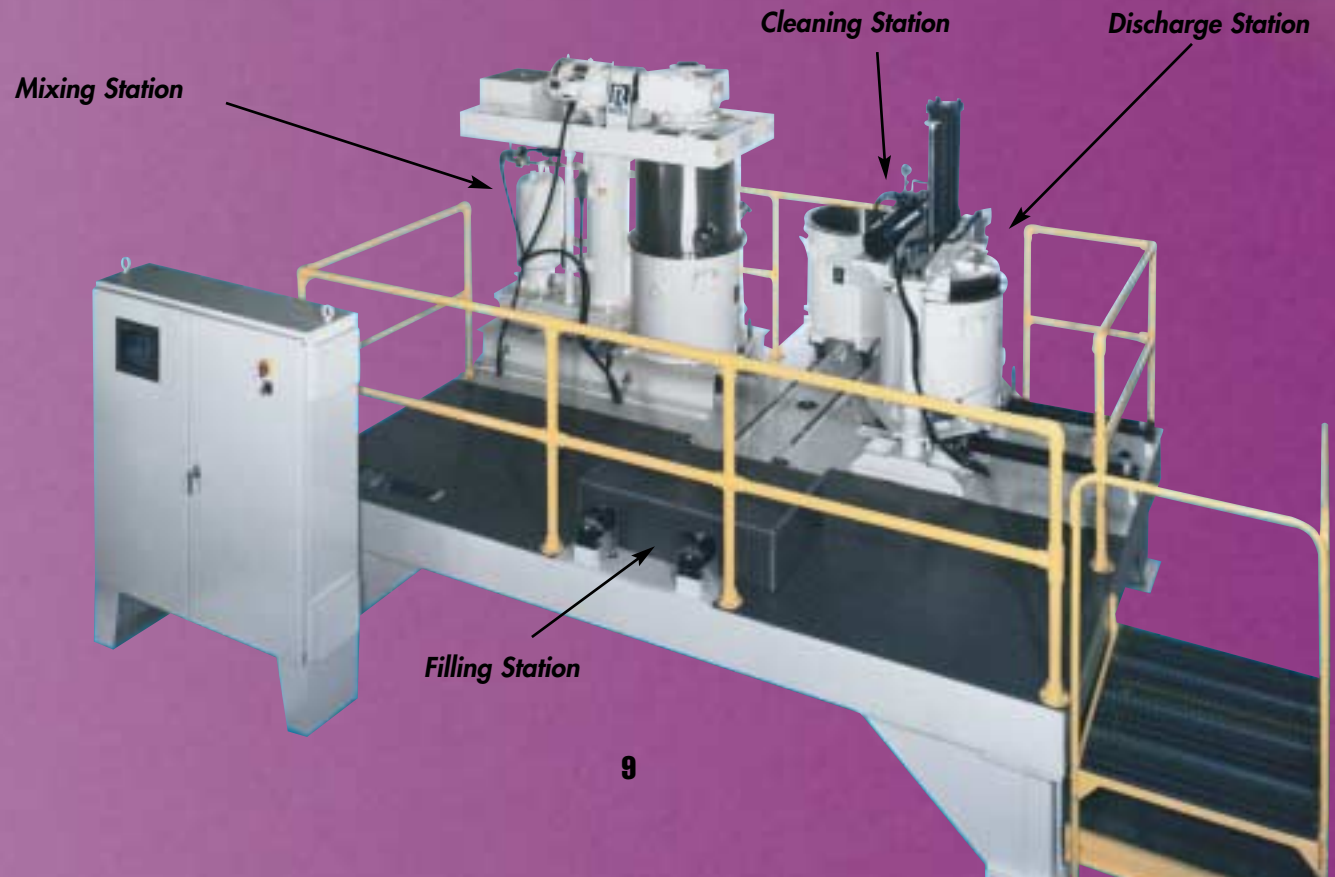
Optional Features

Ross design and application engineers are the best in the business. They can recommend a package of options that will ensure that your new mixer will deliver superior performance for many years.

- Internal pressure
- PLC control systems
- Sanitary designs
- Jackets for heating or cooling
- Bottom and wall scrapers on the anchor
- Solenoid operated discharge valves
- Special coatings such as Kynar, Teflon and Nylon
- Explosion proof designs
- Discharge systems
- Devices to measure and monitor torque
- Vacuum construction
- Drive options such as electronic and hydraulic variable speed drives
- A range of materials of construction including stainless type 304 and 316, Hastelloy, carbon steel and titanium

INTEGRATED TURNTABLE MIXING/DISCHARGE SYSTEM

An automated turntable mixing system can make your Multi-Shaft mixing process significantly more productive. As the turntable indexes, the change cans cycle through a sequence of charging, mixing, discharging and cleaning. With a complete control system and material handling package, operator intervention can be virtually eliminated. Compact and platform-mounted, the system can cut labor costs while it improves end-product consistency and increases production.

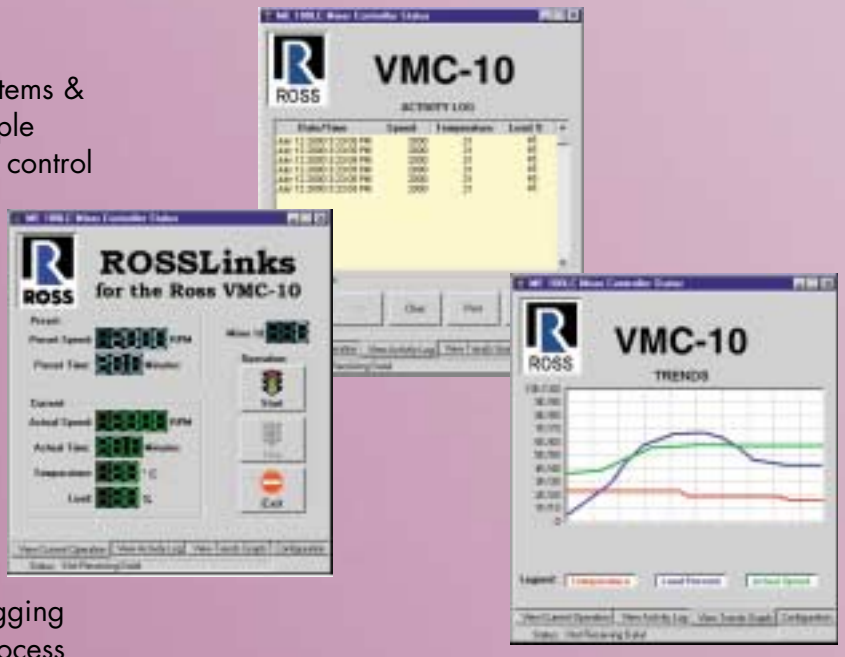


Ross Controls, Fabrication and Development

ROSS CONTROLS AND DATA MANAGEMENT

Controls are designed and built by our Systems & Controls division. Whether you need a simple ON/OFF switch or a multi-axis, PLC based control system, no other company can build controls that are better suited to your new mixer and your process requirements. By choosing a genuine Ross control system, you can save time in engineering, simplify your start-up, reduce costs substantially, and guarantee that your control will be flexible enough to expand efficiently as your needs change.

Ross offers a spectrum of choices to help accelerate your process and make it more accurate and consistent. Our data logging systems can also help you manage your process more effectively – with the data acquisition and analysis capabilities you need for efficient process development and tight quality control.



*Using the **Ross DataLinx** data management system, data from each mix cycle can be captured and downloaded to your PC in CSV (Microsoft Excel) file format for display, documentation and analysis.*

ROSS CUSTOM FABRICATION

With extensive fabrication facilities in the USA and overseas, Ross is equipped to build all the components your system requires. This is your best assurance of flawless quality from start to finish, and prompt delivery.

THE ROSS TEST & DEVELOPMENT CENTER

This facility allows you to simulate your process and test our mixer before you buy it.

Contact Ross today for detailed information on any of the products and services we offer, or to schedule a test in the Ross Test & Development Center, call **1-800-243-ROSS** in the USA, or 631-234-0500.
Fax: 631-234-0691.
E-mail: sales@mixers.com.
Or visit Ross on the web:
www.dualshaftmixers.com
www.mixers.com

Charles Ross & Son Company
710 Old Willets Path
Hauppauge, NY 11788-0615
USA Tel.: 800-243-ROSS
631-234-0500
Fax: 631-234-0691
E-mail: sales@mixers.com
Internet: www.mixers.com
www.dualshaftmixers.com

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