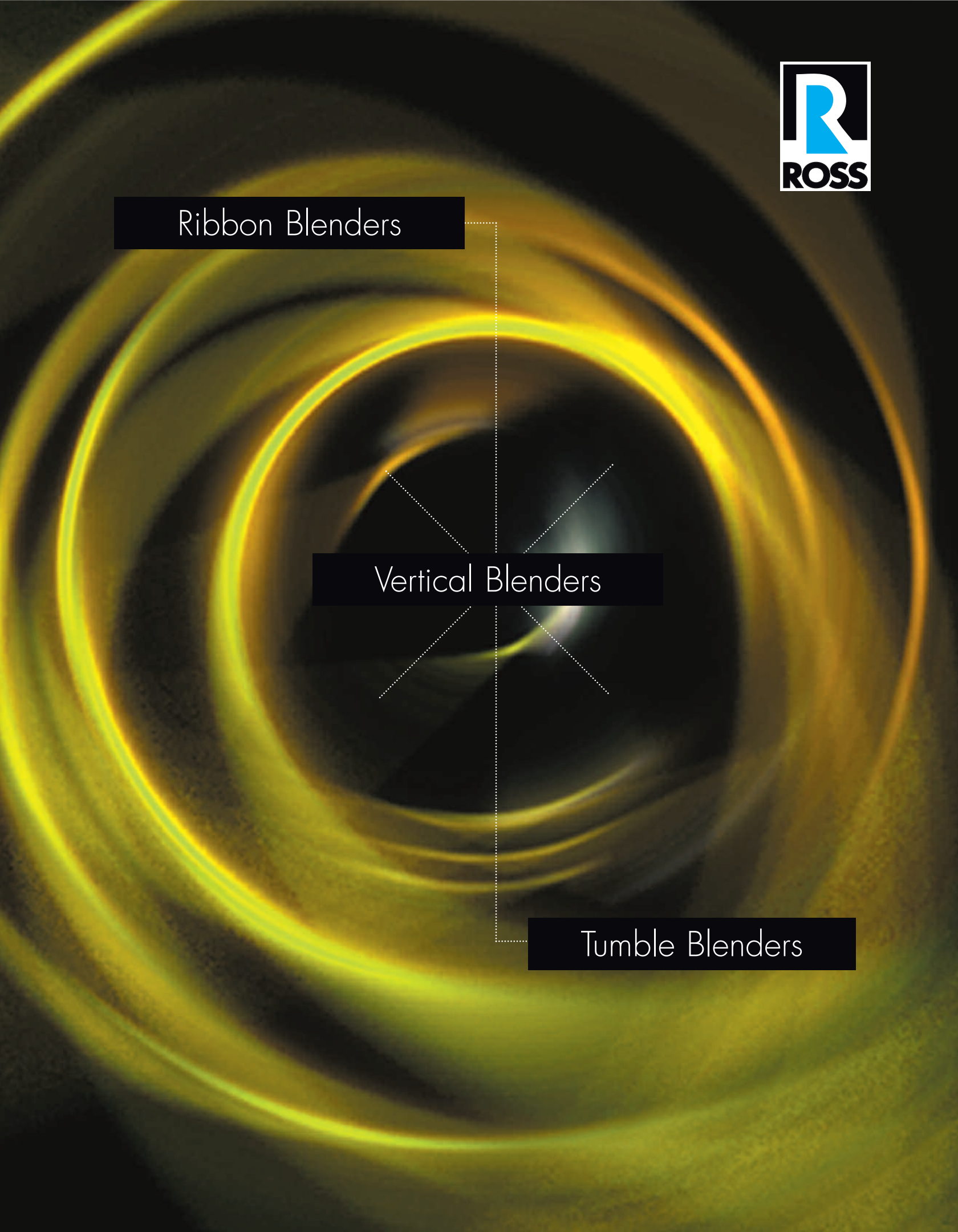

ROSS
Ribbon Blenders
Vertical Blenders
Tumble Blenders

Ross Ribbon, Tumble & Vertical Blenders

WORLD CLASS MANUFACTURING – AND WORLD CLASS VALUE

Ross has been building the most advanced mixing and blending equipment for more than 165 years. Our Ribbon Blenders, Paddle Blenders, Tumble Blenders, Vertical Blenders and Vacuum Dryers are used today in all the process industries, and in virtually every industrialized nation.

Today, Ross operates five plants in the USA, along with Ross owned plants in China and India. Ross can deliver a combination of economy, productivity and fast delivery that no other company can match.

The Ross family of dry blenders includes sizes ranging from 1 to over 500 cu. ft. capacity.

ROSS

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

Our multi-million dollar inventory of blenders is your ultimate assurance that you can have the equipment you need, when you need it. Test on your own process line or in our Test and Development Center – before you purchase.

CHOOSE A BLENDER THAT MATCHES YOUR APPLICATION

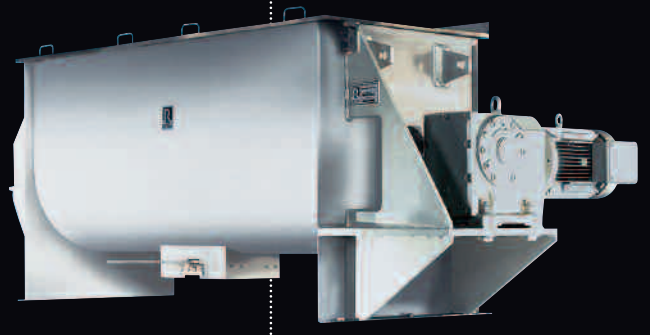
Since Ross manufacturers a complete line of Ribbon Blenders, Tumble Blenders and Vertical Blenders, we can guarantee that you will find a Ross blender that solves your blending requirements.

THE ROSS DIFFERENCE – INNOVATIVE DESIGN

Take a close look at a Ross Ribbon Blender, Tumble Blender or Vertical Blender. You will see that all blenders are not alike. Ross design innovations such as unsupported screws in our Vertical Blenders, give Ross customers a terrific advantage. Our sophisticated engineering and fabrication facilities are uniquely equipped to handle your requirements.

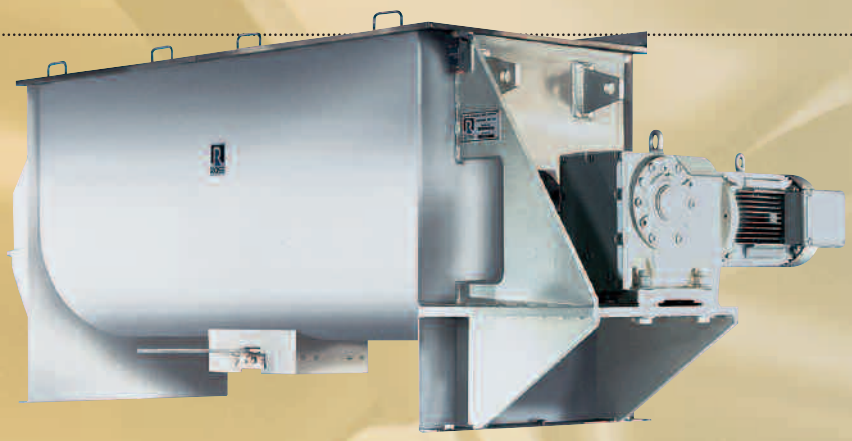
THE ROSS DIFFERENCE – SUPERIOR FABRICATION

Clean design and a meticulous finish can produce faster blending cycles, more thorough discharge, and easier clean up. With fabrication facilities that dwarf those of our competitors, we can build any blender in-house, from start to finish. This is the best assurance you can have of consistent quality and low prices. We can engineer a Ross Blender to meet virtually any requirements you may have to meet your process needs.



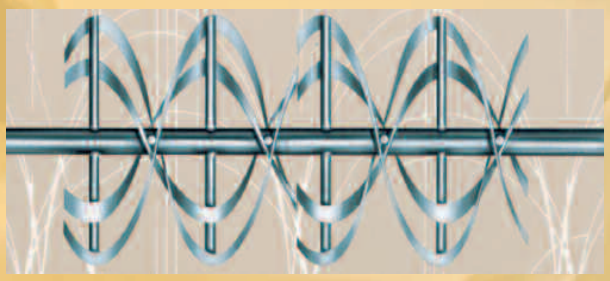
Ribbon Blenders

Ross Ribbon Blenders meet the toughest standards for quality and long-term performance. Our attention to detail is meticulous, because every detail in design and fabrication translates to an increase in production.

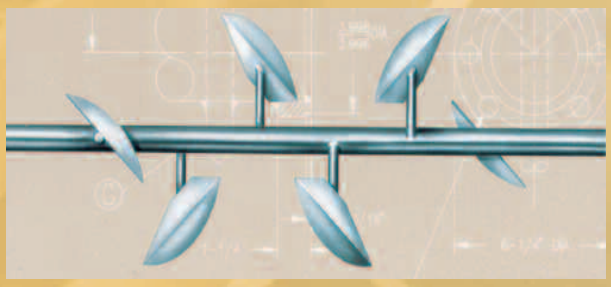


BALANCED RIBBON DESIGN

Precisely designed and fabricated ribbons and troughs ensure that blending cycles are fast, with well-balanced lateral and radial transfer of your ingredients. All Ross Ribbon Blenders include inner and outer ribbons to accelerate the blending cycle.



This continuous ribbon, designed for center discharge, is the preferred choice for most blends. It provides vigorous lateral and axial movement of your bulk material.

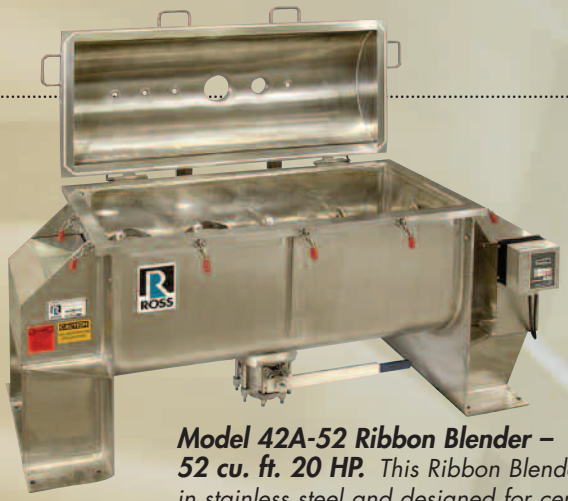


Running at about 2/3 the speed of a comparable Ribbon Blender, the Ross Paddle Blender provides gentler blending with less heat development. It also offers lower risk of binding material between the agitators and the trough.

- All interior corners have a radius to prevent material from collecting in corners and creating problems during the discharge/cleaning cycle.
- Clearances are meticulously controlled.
- All internal welds are ground smooth.
- A manually-actuated Slide Paddle Valve or Slide Knife Gate Valve is generally the first choice for a Ross Ribbon Blender. For applications including vacuum or pressure operation, a Spherical Disk Valve, Knife Gate Valve or Ball Valve provide a positive seal. If no dead space can be tolerated, a Flush Plug should be considered.

THE ROSS DIFFERENCE – IMMEDIATE DELIVERY

Ross maintains the world's largest inventory of blenders in stock. If we have a Blender in stock that meets your specifications, we will ship it fast. If you need a custom design, or a blender with features we do not normally stock, we can provide a great alternative – a trial/rental that will give you an immediate increase in capacity while your new blender is being built. A trial/rental also gives you an opportunity to confirm your blender selection on your own process line before you buy it.



Model 42A-52 Ribbon Blender – 52 cu. ft. 20 HP. *This Ribbon Blender, built in stainless steel and designed for center discharge, is equipped with a special vacuum cover and a jacket for heating and cooling.*

Model 42N-515 Ribbon Blender 515 cu. ft. capacity - 175 HP. *We have built nearly 50 of these stainless steel, jacketed and internal pressure blenders for a major international client.*

Model 42A-100 Ribbon Blender – 100 cu. ft., 25 HP. *Ross offers many Ribbon Blender designs to meet the specifications of virtually any industry. This Blender is equipped with a two-piece cover and removable safety grate, operator controls and a pneumatically operated discharge valve.*

DESIGN OPTIONS

Ross offers a broad selection of options, including:

- High speed choppers to quickly break apart agglomerates
- Special ribbon/paddle designs to accommodate virtually any application
- Spray nozzles to uniformly add liquids
- Special-alloy wear plates and coatings to protect against premature wear when blending abrasive materials
- Many choices for valves, seals and stuffing boxes
- Discharge screws in bottom of trough

Model 42N-25 Ribbon Blender – 25 cu. ft., 10 HP. *This Ribbon Blender, built in stainless steel and designed for center discharge, is equipped with a control panel designed and built by Ross Systems & Controls.*

Model 42N-1 Ribbon Blender – 1 cu. ft., 3/4 HP, *stainless steel. Ross offers a complete line of Ribbon Blenders, with several sizes for laboratory development and small-scale production.*

SIZES

Standard sizes range from 1/2 cu. ft. to 515 cu. ft.

Tumble Blenders

DESIGN FEATURES

Ross Tumble Blenders are supplied with generous standard features.

- Double Cone design in 316 stainless steel construction
- Manually operated Butterfly valve for discharge - 24″ discharge clearance
- Hinged stainless steel charging opening
- Mirror finish on interior surfaces
- 150 grit finish on exterior surfaces
- Non-stainless steel components are finished with a durable two-component paint.
- Safety railings with limit switches
- Intensifier bars are included
- Complete control panels with pushbuttons and E-stops are provided

DOUBLE CONE BLENDER

Double Cone Blenders and V-Blenders are most often used for the intimate dry blending of free flowing solids. The solids being blended in these units can vary in bulk density and in percentage of the total mixture. Materials being blended are constantly being intermixed as the Cone rotates. Normal cycle times are typically in the range of 10 – 15 minutes, however they can be less depending on the difficulty of blending.

Ross Double Cone and V-Blenders are stocked in 5, 10 and 15 cu. ft. capacities. A full range of sizes from 1/2 to 100 cu. ft. working capacity are available. Each is constructed of type 316 – stainless steel and is internally polished to a 240 grit sanitary finish. The exterior is polished to an easily cleaned 150 – grit finish.

SIZES

Standard sizes range from 1/2 cu.ft. to 100 cu.ft

DESIGN FEATURES

Programmable Touchscreen controls are available to provide a friendly interface for your opertors.

Manually operated butterfly valves are used to permit complete discharge.

Easily opened and closed charging openings permit complete cleaning between batches.

High Speed Intensifier bars are included to disperse minor ingredients and break up agglomerates.

V-BLENDER

All Ross Cone Blenders are supplied with Intensifier bars to permit deagglomeration as needed. Discharge is accomplished through a manually operated Butterfly valve. The valve is positioned 24" from the floor when in the bottom position. All units are provided with appropriate safety railings and appropriately interlocked safety interlocks. Stop-Start and E-Stop Pushbuttons are included with all blenders.

In Stock

Ross Tumble Blenders in Double Cone and V - Shapes are available from stock for fast shipment. We inventory 5, 10 and 15 cu.ft. models, all are constructed in 316 stainless steel and supplied with controls for immediate start up. All Ross blenders are available for purchase or rental, to meet long term needs or a surge in short term demand.

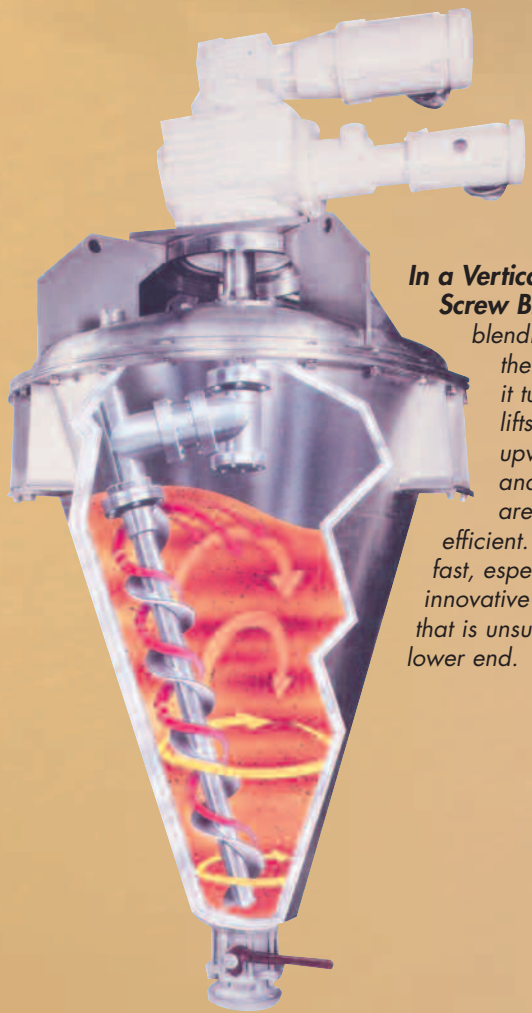
Vertical Blenders

GENTLE AND FAST BLENDING, WITH NO HEAT BUILD-UP

Ross Vertical Blenders provide an excellent design alternative for applications when your product is shear sensitive or your process parameters are critical.

Products that require low-impact blending are best handled in a Ross Vertical Blender. The blending action of the slow-turning blending screw is far more gentle than the agitators in a Ribbon Blender of the same working volume.

Slower speed blending is also advantageous for heat-sensitive products, since the blending action of a ribbon can generate more heat than that of a mixing screw.



In a Vertical Cone Screw Blender, *the blending screw orbits the vessel wall while it turns and gently lifts material upward. Blending and heat transfer are extremely efficient. Discharge is fast, especially with an innovative screw design that is unsupported at the lower end.*

BATCH FLEXIBILITY

Because of the geometry of the cone, the Ross Vertical Blender can operate efficiently with batches as small as 10% of blender capacity. (A ribbon blender generally requires a minimum of 30-40% of full capacity.)

THOROUGH DISCHARGE AND EASY CLEANING

The Ross Vertical Blender is also your best choice when you need virtually 100% discharge, with a minimum of cleaning. With no lower bearing needed to steady the blending screw, the Ross "unsupported screw" design is especially efficient in discharge – and it completely eliminates a notorious maintenance headache in most Vertical Blenders. The Vertical Blender is easier to clean than a ribbon blender, since you never have to disassemble packing glands.

LOWER RISK OF CONTAMINATION

If your application requires the greatest possible protection, the right choice is a Ross Vertical Blender. With no packing gland in the product zone, and with special seal designs available to provide the ultimate protection from drive lubricants, your products are safe from the contamination problems that are common in other blender designs.

ECONOMICAL BLENDING

The Vertical Blender consumes up to 50% less power than a comparable Ribbon Blender. The efficiency of the Vertical blender can reduce operating cost, due to its low horsepower to volume ratio.

SIZES

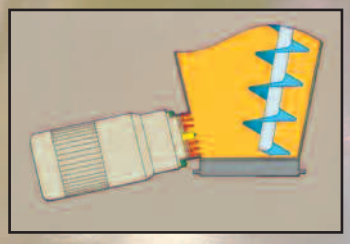
Standard sizes range from 1 cu. ft. to over 500 cu. ft.

DESIGN OPTIONS

Ross offers a broad choice of options for Ribbon Blenders and Vertical Blenders.

Ribbon & Vertical Blender Options	
Vacuum/pressure, with ASME stamp	3
High speed choppers	3
Special lower-cone designs for accelerated discharge in difficult applications	3
Spray nozzles	3
Sanitary design	3
CIP/SIP capability	3
Special-alloy wear plates and coatings to protect against premature wear when blending abrasive materials	3
A variety of discharge valve designs	3

Model V-350 Vertical Blender – *this vacuum design in stainless steel construction includes a dimpled jacket for heating & cooling. The screw is unsupported.*



High speed choppers *are added to many Vertical Blender designs to accelerate the blending process by breaking down lumps.*

Model V-1 Vertical Blender – 1 cu. ft., 1/2-1/3 HP. *Vertical Blenders are available for the laboratory through pilot plant and full-scale production.*

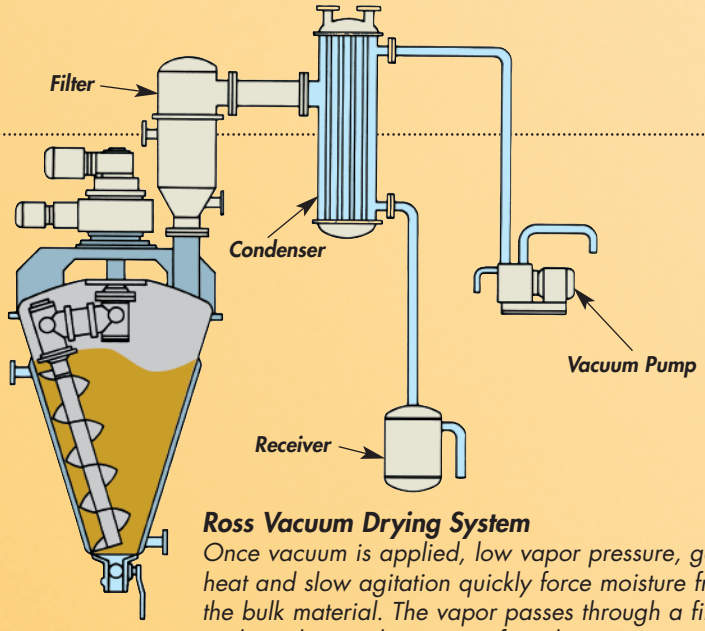
Model V-64 Vertical Blender – 64 cu. ft., 15-1 1/2 HP. *A vacuum model constructed in stainless steel. The interior of this unit is polished to a 140 grit finish. The cone includes a sectionalized dimpled jacket with a removable bottom section.*

Vacuum Dryers

VACUUM DRYING

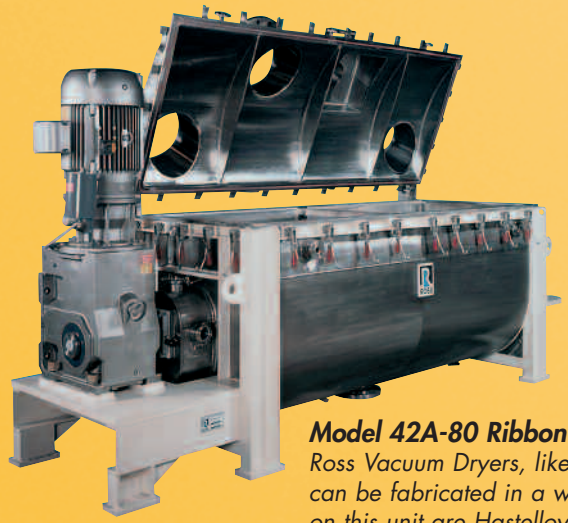
Trust the experts for controlled drying and efficient solvent recovery. Requiring only gentle heat to drive off moisture or solvents, vacuum drying is an excellent method for drying heat-sensitive materials – including many foods, botanicals and pharmaceutical products – without fear of thermal degradation. Vacuum allows you to take the batch material quickly through a series of changes in physical state – from slurry to a paste, and from a paste to a dry powder.

A well-equipped vacuum drying system allows you to draw off solvents so they can be condensed and captured. This prevents them from contaminating the atmosphere (both inside and outside the plant). They are then available for re-use, or they can be safely discarded to meet environmental requirements.

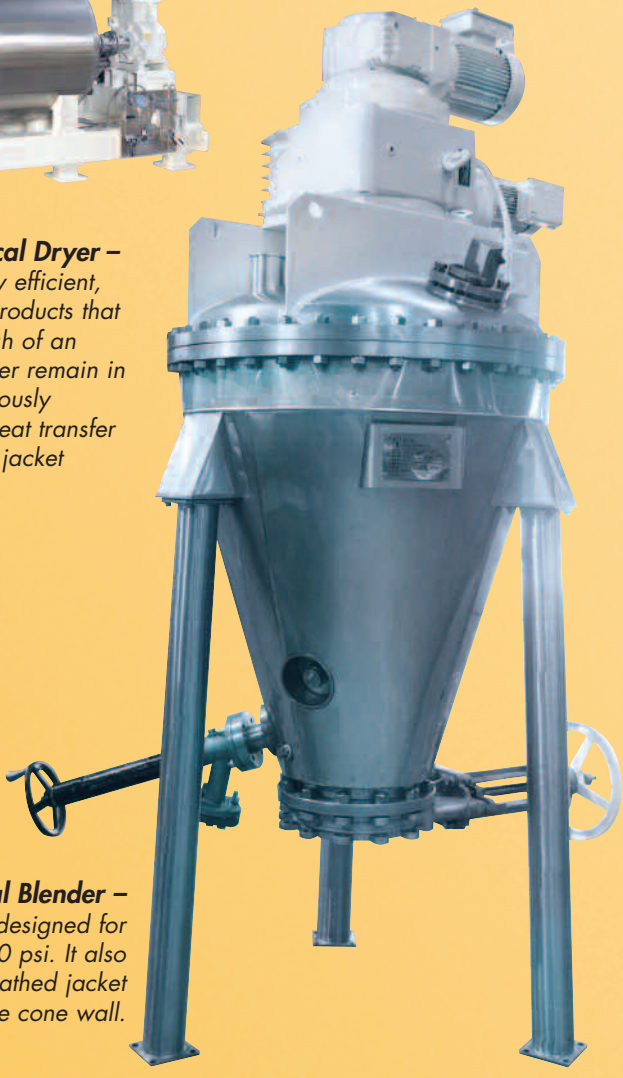


Ross Vacuum Drying System
Once vacuum is applied, low vapor pressure, gentle heat and slow agitation quickly force moisture from the bulk material. The vapor passes through a filter and condenser, then is transferred to a receiver. The vessel is jacketed to control internal heat.

Model 42C-150 Ross Cylindrical Dryer – 150 cu. ft., 100 HP *is extremely efficient, thanks to its cylindrical design. Products that persistently hang up on the trough of an ordinary U-shaped Ribbon Blender remain in the batch, since they are continuously removed by the outer ribbons. Heat transfer is also highly effective, since the jacket surrounds the entire cylinder.*



Model 42A-80 Ribbon Blender – 80 cu. ft., 40 HP.
Ross Vacuum Dryers, like this one built for a medical application, can be fabricated in a wide variety of materials. All wetted parts on this unit are Hastelloy. A space-saving drive design helps to conserve space on the plant floor.



Model V-10 Vertical Blender –
This stainless steel blender is designed for vacuum/pressure operation to 90 psi. It also includes a 125 psi insulated and sheathed jacket and a sampling port through the cone wall.

Test Center & Support

THE ROSS DIFFERENCE – SEE IT FOR YOURSELF

The Ross Test and Development Center gives you an opportunity to test using your own ingredients, and a variety of equipment. A close simulation of actual conditions on your process line is essential to accurately predict machine performance.

Once you've identified the right blender for your application, our engineers will help you fine-tune your process. Sophisticated analytical instruments enable us to document each test sequence and proceed methodically.

To learn more about our extensive test facilities, visit our website: ***www.dryblenders.com.***

CONTROL SYSTEMS FOR BLENDING AND DRYING

Ross can provide a control system ideally configured for any blending application – atmospheric blending, vacuum blending or vacuum drying. The control can be equipped to regulate all process variables and maintain optimal levels of shear, vacuum and heat transfer. Changing parameters can easily be programmed into the control to accommodate a variety of product formulations and to ensure consistency from batch to batch.

With many options available, Ross can build multi-agitator and PLC/PC-based control systems with all the functionality you need for efficient process control and data acquisition.

SUPPORT YOU WON'T FIND ANYWHERE ELSE

Ross blenders are engineered to provide many *decades* of service. Throughout the life of your blender, Ross stands beside you with a complete package of support. With the world's largest inventory of spare parts, we ship most orders in less than 48 hours.

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