



simondryers
Process Drying Technology

TUBULAR DRYERS



SIMON TUBULAR DRYERS, COOLERS & CONDITIONERS

With over 90 years of experience in the design, manufacture and application of rotating Tubular dryers and coolers, for an extensive range of materials, R. Simon (Dryers) Ltd. can offer a unique advisory service to process industry in the application of extremely efficient and well proven products. Equipment from this range of products has been supplied to over 50 different countries throughout the world, and to many different process industries, the major ones being brewing and distilling, confectionery, starch, food, chemical, pharmaceutical, corn and cereal milling.

CONTINUOUS OPERATION

Lowers labour and operational costs and simplifies material handling. The drying material is uniformly agitated and flows through the drum at the rate fixed for efficient drying of the particular material.

ECONOMY OF PERFORMANCE

Achieved through the efficient transference of heat through the product with optimum use of heating surfaces plus the ease of operation and low maintenance cost.

SIMPLICITY OF DESIGN AND CONSTRUCTION

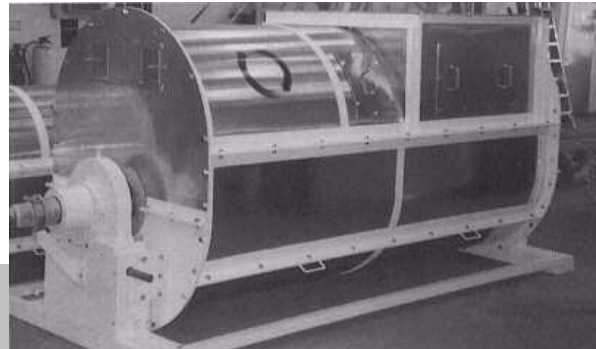
The product of experience enables operating and maintenance costs to be kept at a low level. The robust construction gives the equipment a long and economical working life.

DESIGNED FOR VERSATILITY

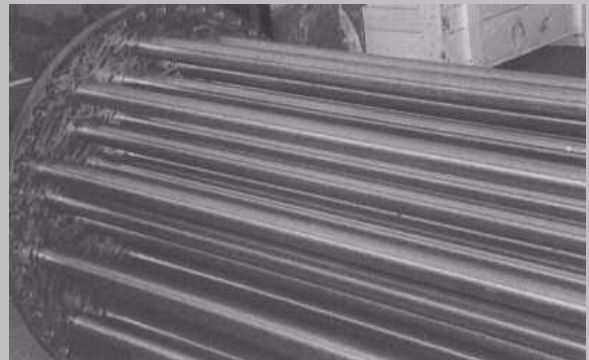
These units are constructed to meet the particular requirements of the process industry and the nature of the processed material, such as treatment of corrosive material, high quality food, chemical and pharmaceutical products, etc.

SIMON ENGINEERS

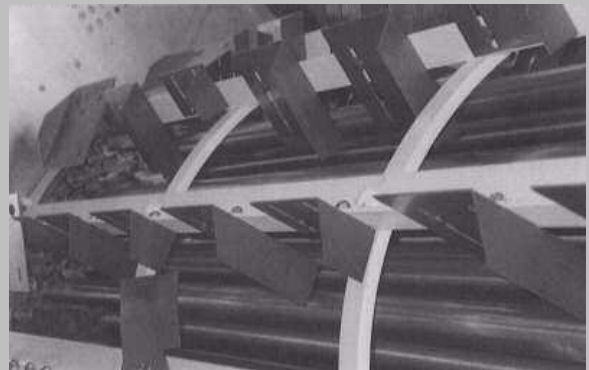
Experience available for testing products, advising on plant layout including materials and handling. Test/small volume production plant available on Hire/Loan.



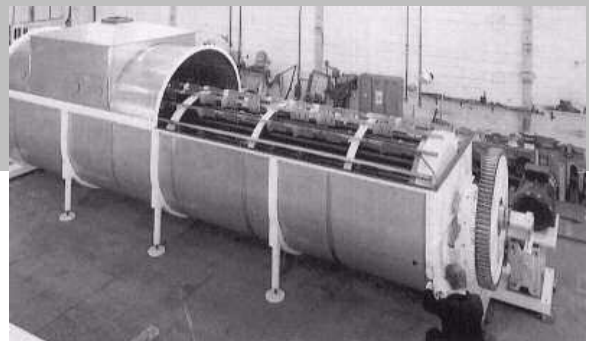
Series 090 Starch/Flour Dryer



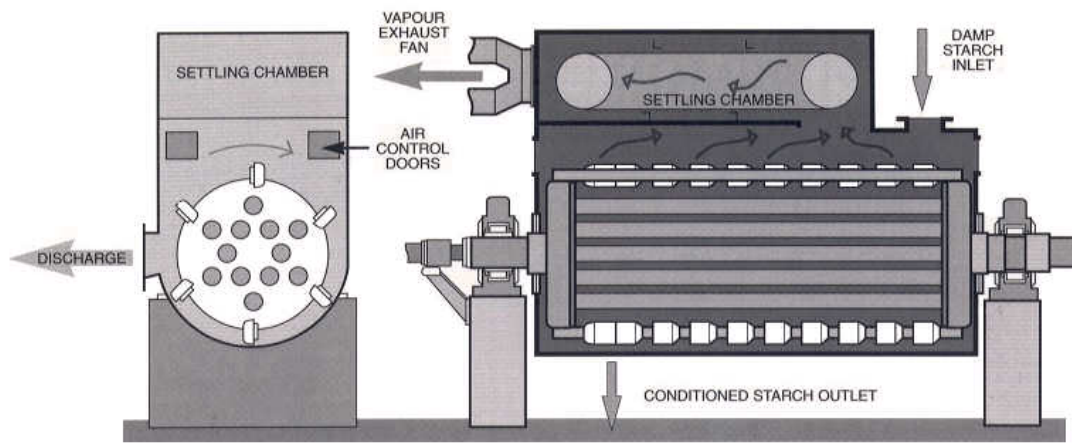
Tube Reel under construction



Interior view of Tubular Dryer showing the lifting and conveying elements



Tubular Dryer for Rape Seed nearing completion



General Specifications

SYSTEM: Drying is effected by a concentric revolving reel of parallel tubes, charged with live steam. The wet processed material is fed in at one end of the machine and passes over and amongst the tubes, at the same time being conveyed at a measured rate until discharged in a dry state at the opposite end. It is a continuous process. Simon coolers are of similar design with a coolant replacing steam in tubes.

CONSTRUCTION: The heating (or cooling) element known as the tube reel comprises high grade steel tubes rigidly held between substantial endplates, each endplate being fitted with a cast steel, fabricated steel, or suitable alloy header which is designed to facilitate the flow of steam or coolant, and the removal of condensate through trunnions. The distributing and conveying elements are placed around the periphery and along the length of the reel.

The materials of construction are chosen to meet each particular application.

The dryer or cooler casing is of robust construction, in a variety of materials to suit the application and is thermally efficient.

For better performance and ease of maintenance, outboard roller bearings are used.

Additional features which can be fitted as required are drop bottom doors to facilitate cleaning, and built-in expansion chambers to reduce fine dust carry over in vapour extraction systems.

Selected Applications

BREWING/DISTILLING:

Spent grains are successfully processed on Simon tubular dryers. Typically the initial moisture content may be around 65% which is reduced to about 10% or less in the processed product.

Prior to drying in the tubular dryer the grains are often passed through a Simon mechanical dewatering screw press to reduce moisture content from as much as 80% to 65%, thereby conserving energy.

FLOUR & STARCH: Simon tubular dryers are widely used in the preparation of special flours

Typical applications include

Heat treatment and moisture reduction of flours for soup thickeners

Enzyme inactivation

Treatment of special flours to prevent infestation and give long shelf life.

Treatment for flour products for industrial use

Treatment of biscuit and cake mixture flours

CONFECTIONERY:

The Simon tubular dryer and cooler is ideally suited for the application of re-processing moulding starch after use. It provides a continuous process producing the starch for re-use at the right temperature in a relatively short time. The process is more economical than batch drying, saving both in energy cost and in quantity of starch required for re-circulation.

CHEMICAL & PHARMACEUTICAL:

In the chemical industry, wherever moisture must be removed from large volumes of granular substances, powders, or slurries - whether organic or inorganic - Simon tubular dryers offer an economical and efficient answer to many drying problems. For organic solutions or noxious dusts, the stationary shell design of the Simon tubular dryer assures a tight seal, eliminating the hazard associated with leakage.

CEREALS:

Simon tubular dryers are used extensively in maize milling plants for drying maize grits, maize germ and gluten meal

They are also in use in breakfast food factories for pre-heating cereal grains prior to processing and for the conditioning of soya beans.

ECONOMY • EFFICIENCY • SIMPLICITY

MATERIALS PROCESSED.

FOOD

Barley
Ground Bone
Bran
Cereal Mixes
Demerara Sugar
Flour
Gluten
Grains
Gravy Mix
Pasta Waste
Shredded Pomace
Black Currant
Soya Beans
Soya Meal
Starch
Sesame Seeds
Wheat Bran
Wheat Flour
Whole Wheat

CHEMICAL

Aluminium Hydrate
Aluminium Powder
Aluminium Waste
Ammonium di Molybdate
Ammonium Sulphate
Barium Carbonate
Barium Sulphate
Bicalcium Bihydrate Phosphate
Calcium Carbonate
Cera Hydrate
Chromic Oxide
Diabasic Lead Phosphite
Ferrous Sulphate
Iron Oxide

Lead (White)
Carbonate of Lime
Hydrate of Lime
Mica
Potassium Nitrate
Potassium Sulphate
Salts
Sodium Silica Fluoride
Sulphur Filter Cake
Tribasic Lead Sulphate
Zinc Phosphate

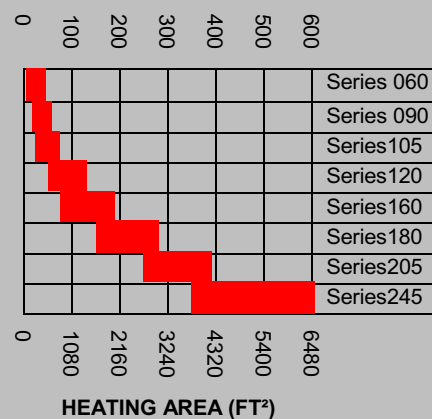
OTHERS

Apple Pomace
Armaspheres
Blood (coagulated)
Blue Dye
Bone Meal
Carbide Sludge
Carbon Black
Chalk
Coal
Coal Slurry
Confectioners Starch
Cotton Seed (sterilisation)
Fluorspar
Spent Grains
Maize Grits
Polyethylene
Polyurathane Granules
Poultry Feed
P.V.C. Chips
Sawdust
Spent Wash and Draff
Tomato Peel and Seeds

Approx. Heating Areas & Tube Reel dimensions of Standard Machines

Series No	Tube Reel		
	Diameter M ft	Length M ft	
		Min	Max
060	0.06 1.97	2.20 7.21	3.25 10.66
090	0.90 2.95	2.30 7.55	5.00 16.40
105	1.05 3.44	2.30 7.55	5.00 16.40
120	1.20 3.94	2.30 7.55	6.40 21.00
160	1.60 5.29	3.20 10.50	6.40 21.00
180	1.80 5.90	5.65 18.54	7.00 22.97
205	2.05 6.73	6.40 21.00	8.25 27.04
245	2.45 8.04	6.40 21.00	9.14 30.00

HEATING AREA (M²)



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OTHER SIMON PRODUCTS

- Drum Dryers
- Drum Flakers
- Indirect Calciners
- Rotary Louvre Dryers and Coolers
- Laboratory and Pilot Machines