

# **FLUID-FLOW™**

## ***Vibrating Fluid Bed Systems***

The efficient way to process while conveying.

***We Make Your Work Flow***

**Carrier®**

*Vibrating Equipment, Inc.*



# WE MAKE YOUR WORK FLOW

*Since our origin in 1950, Carrier has been recognized as the industry leader in designing and building bulk material handling equipment. From fine powders to hot castings, our unique method of processing with vibration has served all major industries around the world - providing the most efficient systems to simultaneously convey and process materials.*

## One-Step Processing

Carrier's unique vibration technology gives you the power to perform varieties of processing functions while conveying, feeding or elevating bulk materials. From the most delicate grains to the bulkiest ores, our patented drive systems apply harmonic motion to handle your materials without degradation.

## Carrier Gives You the Processing Power to:

Dry	Screen	Moisten
Distribute	Meter	Scalp
Orient	Quench	Dewater
Classify	Tumble	Divide
Blend	Grade	Sort
Recycle	Separate	De-oil
Wash	Proportion	Solidify
Agitate	Blanch	Accumulate
Cool	Heat	Calcine

## Solutions Designed to Order

Our vibrating machinery doesn't come ready-made "off-the-shelf". We design and build each unit to order. Our engineers work with your engineering team to tailor each piece of equipment to match product type, process parameters, and upstream/downstream capabilities. Designs satisfy sanitary specifications and other industrial standards. Complete research and development capabilities are available to set design parameters for new and unusual process requirements.

## We Put Your Process to the Test

Comprehensive product/process testing allows the exploration of various processing methods and new technologies for equipment evaluations before investment. Carrier's lab is equipped to test customers' samples in simulated production operations to offer **cost-effective equipment solutions** based on their specific profit demands.

This confidential "teamwork" approach affords mutual knowledge and satisfaction that a proposed system meets precise requirements. If required, complete field test packages are available for testing at your facility. Whether using our in-house lab, on-site testing, or a combination of the two, our Total Systems Process Warranty assures performance.

## Put Carrier to the Test

Just tell us what you are moving and what you want to do to it along the way. And we'll show you how Carrier Vibrating Equipment can make it better and move it faster. Our engineering creativity combines with technology to MAKE YOUR WORK FLOW, whether you need:

- New equipment designs, processes or methods,
- Improved efficiencies of existing process lines,
- Or complete analysis of material behavior in any given process

**Call Carrier Vibrating Equipment today and see how we can make things flow better for you.**

# FLUID-FLOW™ Vibrating Fluid Bed Systems

## Improve Product Quality While Lowering Capital Costs and Energy Consumption

Pioneering in vibrating equipment technology, Carrier continues to expand innovative applications to a wide range of processing plants. More and more industries rely on our improved and cost-efficient methods for processing while moving their products. Multifunctional, space-saving equipment meets industrywide construction and environmental codes, while providing low-energy, minimum maintenance operation.

Materials benefiting from Carrier's processing techniques include:

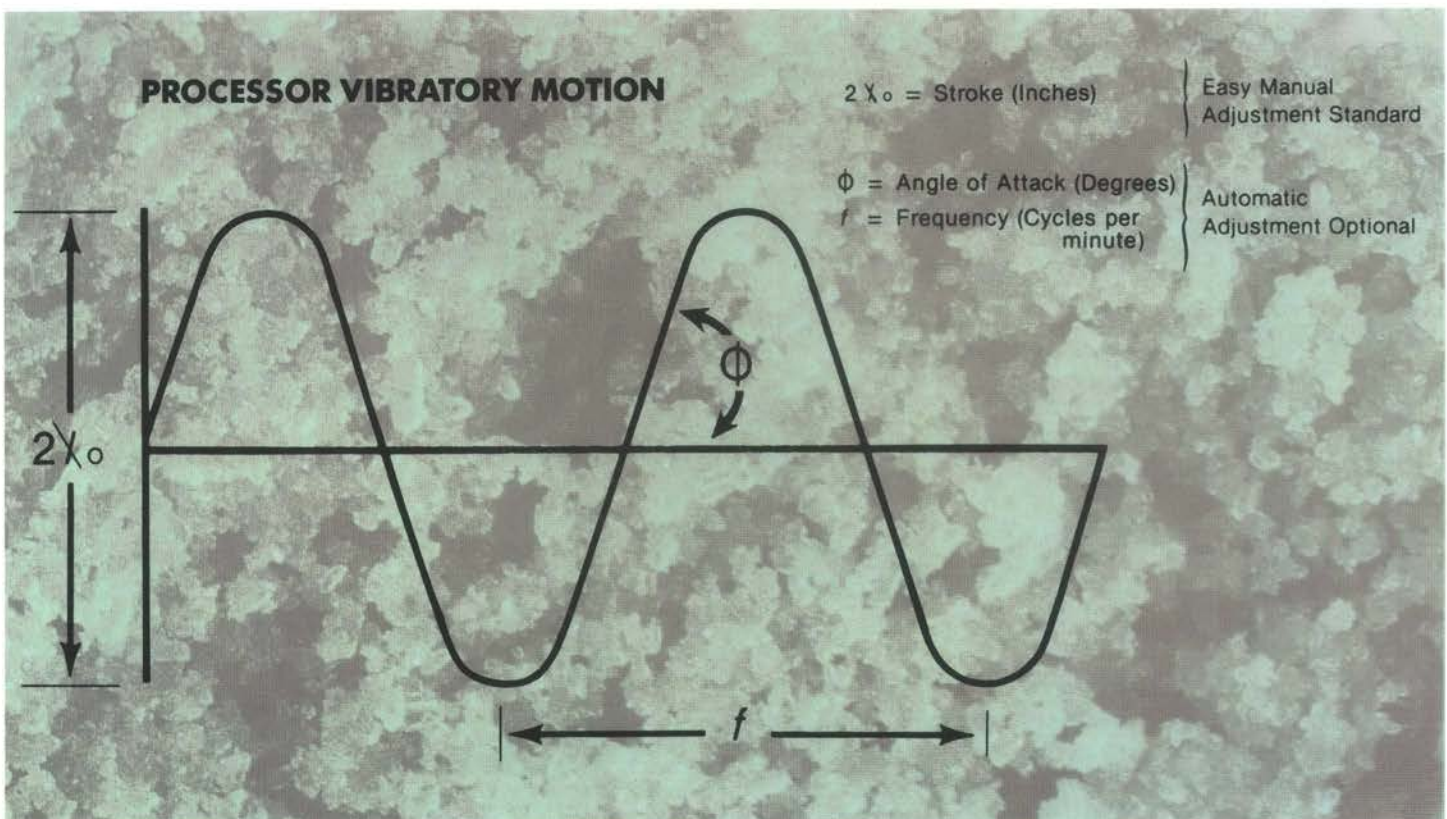
<b>Synthetics</b>	<b>Dairy Powders</b>	<b>Bark</b>
<b>Minerals</b>	<b>Ores</b>	<b>Seeds</b>
<b>Fertilizer</b>	<b>Confections</b>	<b>Cheese</b>
<b>Plastics</b>	<b>Pharmaceuticals</b>	<b>Resins</b>
<b>Pet Foods</b>	<b>Fiberglass</b>	<b>Glass</b>
<b>Sugar</b>	<b>Cereals/Grain</b>	<b>Pasta</b>
<b>Tobacco</b>	<b>Bauxite/Clay</b>	<b>Rice Bran</b>
<b>Coal/coke</b>	<b>Crumb Rubber</b>	<b>Explosives</b>
<b>Vegetables</b>	<b>Rubber Pellets</b>	<b>Detergents</b>
<b>Tile Chips</b>	<b>Scrap/Refuse</b>	<b>Sludge</b>
<b>Acid Crystals</b>	<b>Chemical Compounds</b>	<b>Salt</b>

## Improved Process Action

Carrier Vibrating Fluid Bed Systems are specially designed to provide a continuous passage of air through the product bed — giving you a more efficient drying and cooling process at a minimum retention time because your material's surface area contact is maximized.

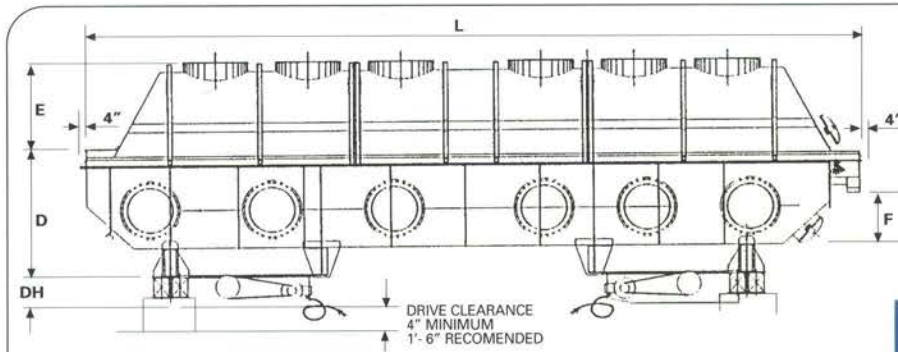
## Eliminate Hot Spots and Accelerate Reactions

Our unique one-step processing allows you to classify or combine fragile and degradable materials safely while drying, cooling, heating and mixing. Custom-made drilled decks are gently vibrated to move your material through the processor without degradation. Particles are mixed and turned to promote temperature uniformity and increase the speed of chemical reactions. Built to compensate for thermal expansion, systems are unaffected by hot supply air up to 1200°F.

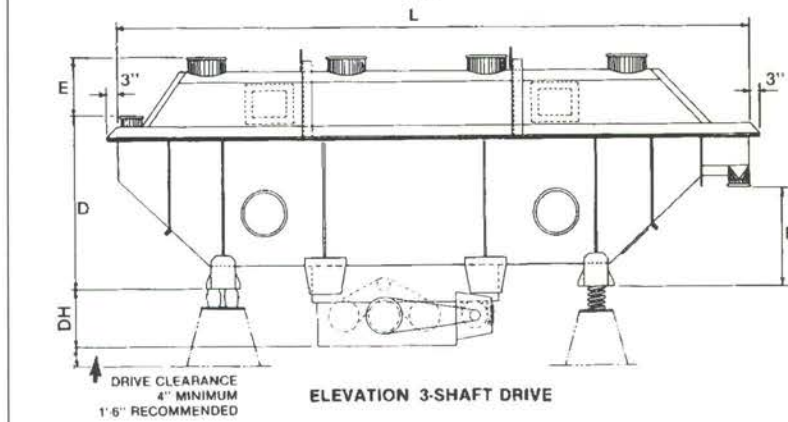


# THE **Carrier** VIBRATING ADVANTAGE

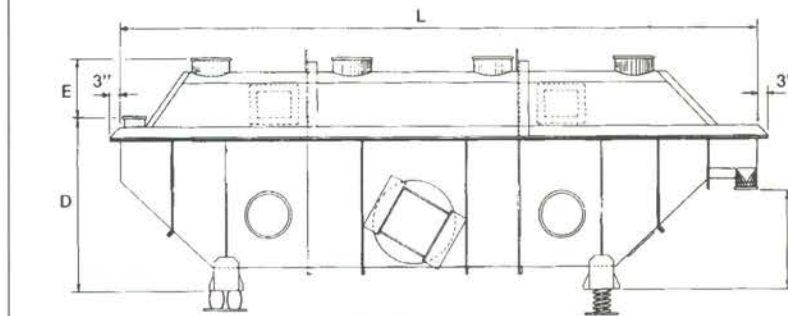
Your work flows more smoothly thanks to our THREE-SHAFT DRIVE TECHNOLOGY. This patented drive system ingeniously applies harmonic motion through a series of gentle "throws and catches" to convey without degradation. You control the retention time by adjustment in vibration angle, stroke and frequency.



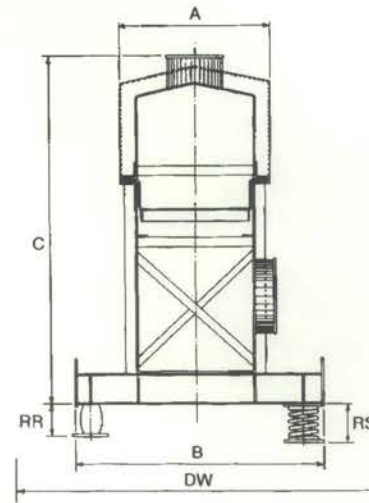
ELEVATION (2) x 3-SHAFT DRIVE



ELEVATION 3-SHAFT DRIVE



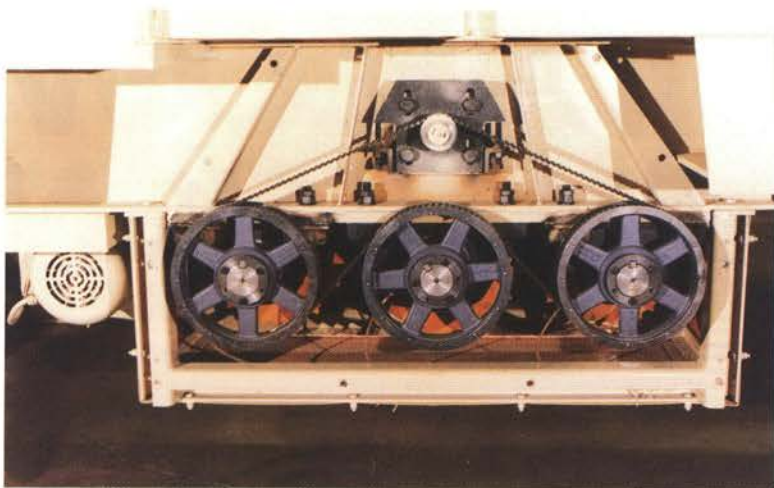
ELEVATION TWIN DRIVE



CROSS-SECTION

**FLUID-FLOW™**  
VIBRATING  
FLUID BED DRYER/  
COOLERS

"L" (Lgth.)	Model No.	WEIGHT LBS.		DRIVE HP		"DH" Drive Height	"DW" Drive Width		"A"	"B"	"C"	"D"	"E"	"F"	"RR" Rubber ISOL.	"RS" Spring ISOL.
		Twin	3-Shaft	(2 Motor) Twin	3-Shaft		Twin	3-Shaft								
10'-6"	1260S	2500	2600	1	2	1'-9"	5'-0"	2'-6"	1'-6"	3'-0"	5'-0"	3'-9"	1'-3"	2'-0"	8"	9"
	2460S	3000	3100	1	2	1'-9"	6'-0"	2'-6"	2'-6"	4'-0"	5'-3"	3'-9"	1'-6"	2'-0"	8"	9"
	3660S	3300	3300	1	2	1'-9"	7'-0"	2'-6"	3'-6"	5'-0"	5'-9"	3'-9"	2'-0"	2'-0"	8"	10"
	4860S	4400	4100	1 1/2	3	1'-9"	8'-0"	2'-6"	4'-6"	6'-0"	6'-6"	4'-0"	2'-6"	2'-6"	8"	10"
	6060S	5100	5400	1 1/2	5	2'-0"	9'-0"	2'-9"	5'-6"	7'-0"	7'-3"	4'-0"	3'-3"	2'-6"	8"	10"
15'-6"	1260S	3100	3200	1	2	1'-9"	5'-0"	2'-6"	1'-6"	3'-0"	5'-3"	4'-0"	1'-3"	2'-6"	8"	9"
	2460S	4100	4000	1 1/2	3	1'-9"	6'-0"	2'-6"	2'-6"	4'-0"	5'-6"	4'-0"	1'-6"	2'-6"	8"	10"
	3660S	4800	4600	1 1/2	3	1'-9"	7'-0"	2'-6"	3'-6"	5'-0"	6'-0"	4'-0"	2'-0"	2'-6"	8"	10"
	4860S	5600	4600	2	5	2'-0"	8'-0"	2'-9"	4'-6"	6'-0"	6'-6"	4'-0"	2'-6"	2'-6"	8"	10"
	6060S	6600	6900	2	5	2'-0"	9'-0"	2'-9"	5'-6"	7'-0"	7'-3"	4'-0"	3'-3"	2'-6"	8"	10"
20'-6"	7260S	10000	10300	3	7 1/2	2'-0"	10'-11"	3'-0"	6'-7"	8'-0"	8'-7"	4'-4"	3'-8"	3'-3"	8"	10"
	1260S	5000	4800	1 1/2	3	1'-9"	6'-0"	2'-6"	2'-6"	4'-0"	5'-6"	4'-0"	1'-6"	2'-6"	8"	10"
	2460S	5700	6100	2	5	2'-0"	7'-0"	2'-9"	3'-6"	5'-0"	6'-0"	4'-0"	2'-0"	2'-6"	8"	10"
	3660S	6600	7000	2	5	2'-0"	8'-0"	2'-9"	4'-6"	6'-0"	6'-6"	4'-0"	2'-6"	2'-6"	8"	10"
	4860S	9800	9200	3	7 1/2	2'-0"	10'-0"	3'-0"	5'-6"	7'-0"	8'-0"	5'-0"	3'-0"	3'-0"	8"	10"
25'-6"	7260S	12400	12000	5	10	2'-6"	11'-3"	3'-6"	7'-8"	8'-2"	9'-6"	6'-0"	4'-0"	3'-6"	8"	1'-0"
	2460S	6300	6800	2	5	2'-0"	6'-0"	2'-9"	2'-6"	4'-0"	5'-6"	4'-0"	1'-6"	2'-6"	8"	10"
	3660S	7100	8100	2	7 1/2	2'-0"	7'-0"	3'-0"	3'-6"	5'-0"	6'-0"	4'-0"	2'-0"	2'-6"	8"	10"
	4860S	10200	10500	3	10	2'-6"	9'-0"	3'-6"	4'-6"	6'-0"	7'-3"	4'-9"	2'-6"	3'-0"	8"	1'-0"
	6060S	131000	13200	5	10	2'-6"	10'-0"	3'-6"	5'-6"	7'-0"	8'-3"	5'-0"	3'-3"	3'-3"	8"	1'-2"
30'-6"	7260S	NA	18300	NA	15	2'-6"	NA	3'-8"	7'-8"	8'-2"	9'-9"	5'-9"	4'-0"	3'-9"	8"	1'-2"
	4860S	14000	14000	7 1/2	15	2'-6"	9'-3"	3'-8"	4'-6"	6'-0"	8'-0"	5'-3"	2'-9"	3'-3"	8"	1'-2"
	6060S	NA	18000	NA	20	2'-6"	NA	3'-10"	5'-6"	7'-0"	9'-0"	5'-6"	3'-6"	3'-6"	8"	1'-2"
40'-6"	7260S	NA	22000	NA	25	2'-6"	NA	4'-0"	7'-8"	8'-2"	10'-0"	6'-0"	4'-0"	4'-0"	8"	1'-2"
	6060S	NA	28800	NA	(2) x 10	2'-6"	NA	4'-2"	5'-10"	7'-0"	9'-6"	6'-0"	3'-4"	4'-4"	8"	1'-2"
	7260S	NA	33700	NA	(2) x 15	2'-6"	NA	4'-2"	6'-10"	8'-2"	10'-0"	6'-0"	4'-0"	4'-4"	8"	1'-2"
8460S	NA	38600	NA	(2) x 15	2'-6"	NA	4'-2"	7'-10"	9'-2"	10'-6"	6'-0"	4'-6"	4'-4"	8"	1'-2"	



**THREE-SHAFT DRIVE**

Provides smooth vibration for conveying while keeping power requirements low — and maintenance even lower.



**ON-LINE CHANGE OF VIBRATION ANGLE WITH PUSH-BUTTON CONTROL**

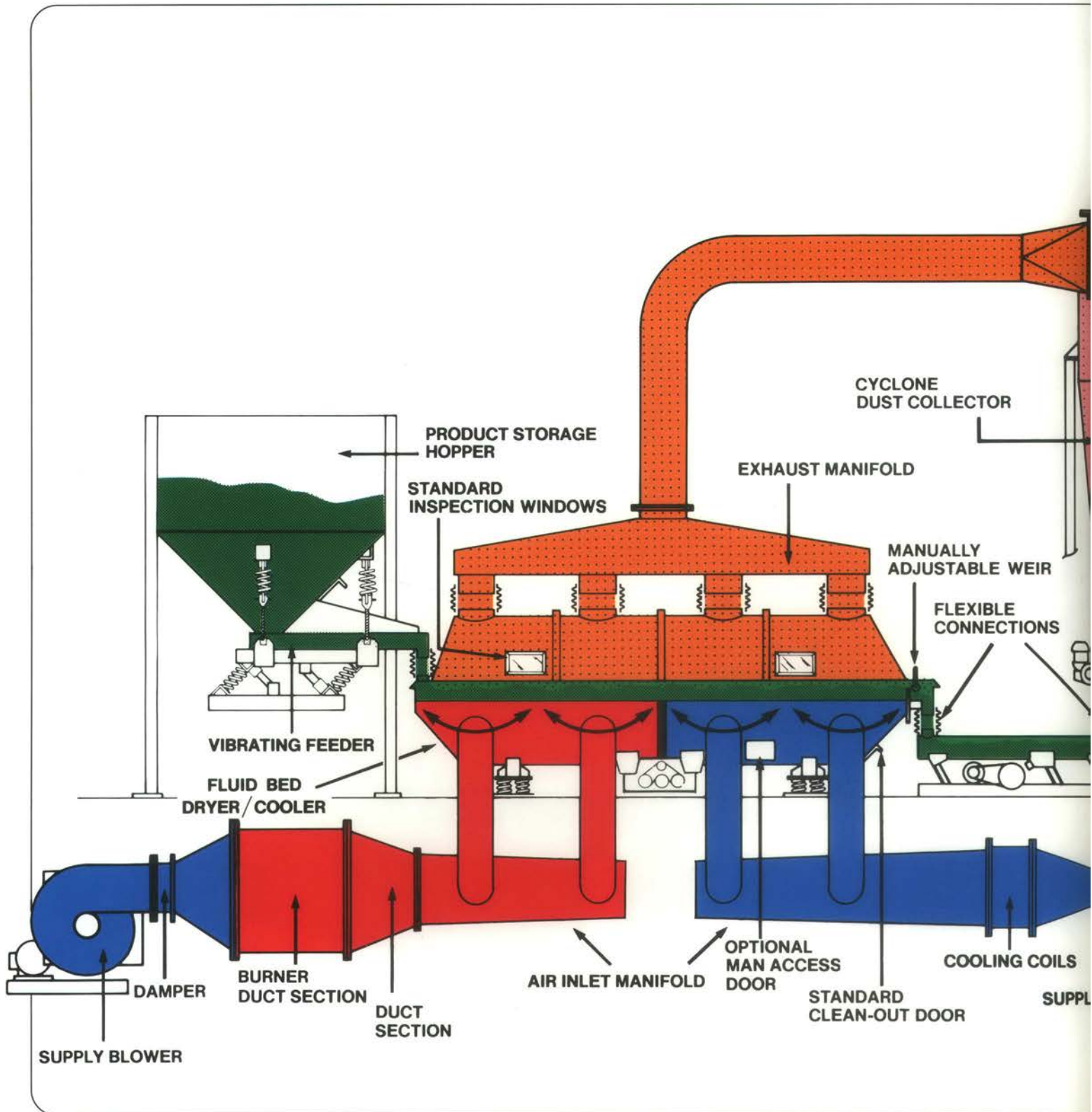
Carrier's patented Delta-Phase II® drive system offers ultimate control of retention time *without* high cost or increased floor space. Completely electronic on-line adjustment — no downtime necessary for product and process changes.



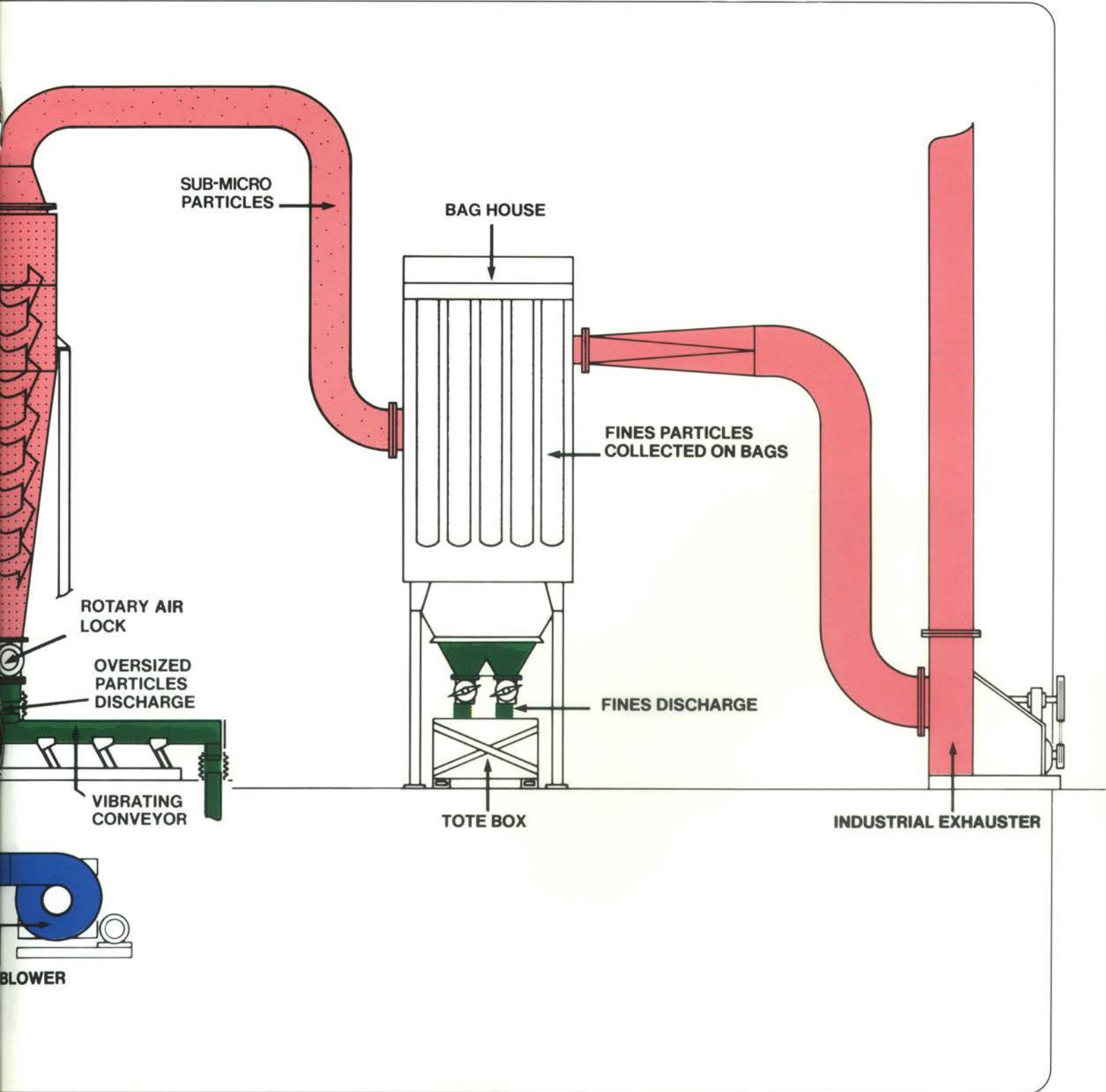
**EASY TO OPERATE AND MAINTAIN**

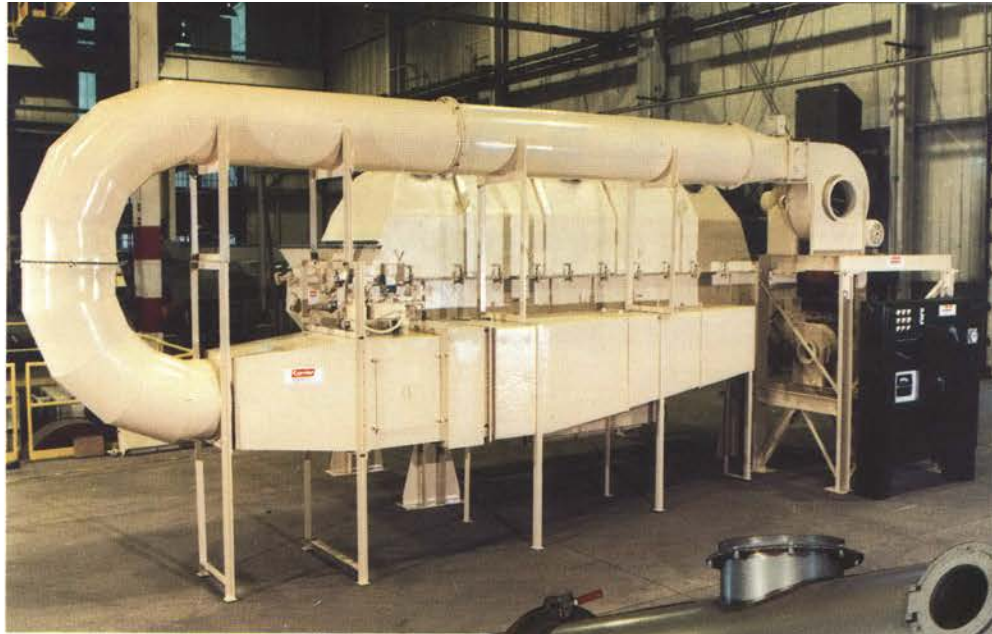
Strategically placed inspection ports and access doors permit observation of your work flow at crucial intervals. And because there are so few moving parts, the only maintenance required is periodic bearing lube.

# Carrier® FLUID-FLOW™ TOTAL SYSTEM DESIGN



**SYSTEMS INCLUDE:** blowers, heating and/or cooling source, charging feeder, dust collection, duct work, air and temperature controls.





### ***Chemical Pellet System***

Carrier's unique one-step processing was called for in this chemical product system, which safely processes sensitive materials.

### ***Dryer/Cooler Screen Conveyor for chemical products***

Carrier's Fluid Bed Systems will simultaneously dewater, dry, screen and feed, as seen in this unit used for chemical products.



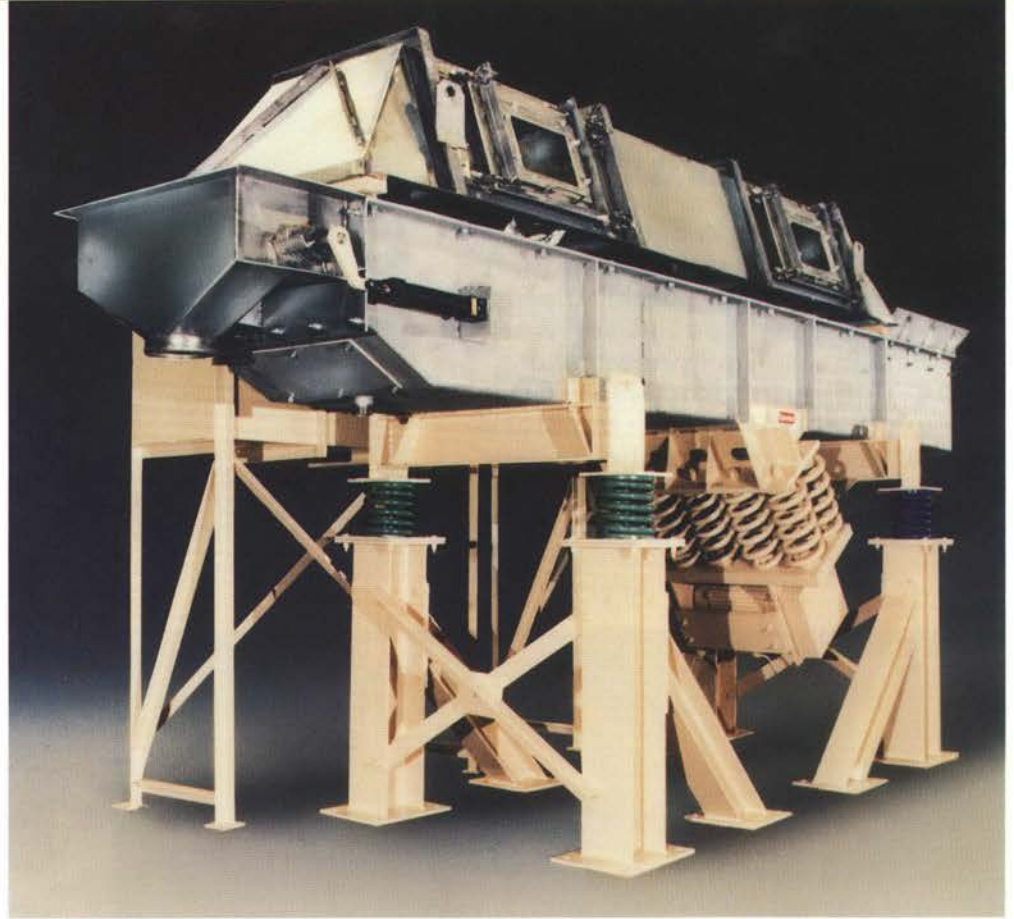
### ***Coil Spring Cooler Conveyor***

Carrier designs systems to fit specific needs. This Coil Spring Conveyor was engineered for efficient high-capacity cooling of compound rubber pellets used in making tires. A spray/dewatering conveyor and transfer conveyor completed the system.



**Adhesive  
Briquettes Unit**

Carrier custom-designed this single system with all needed auxiliaries to dewater two types of adhesive briquettes, dry them in a fluidizing zone, and then feed them to packaging lines.



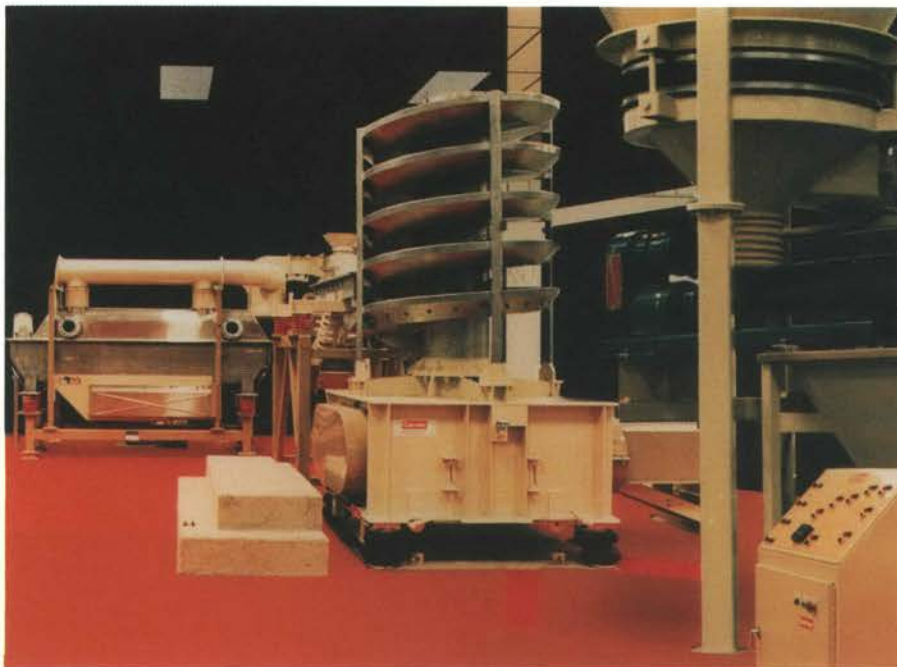
**Leaf Spring Conveyor for cocoa powder**

Even the finest materials can be processed with ease, thanks to this Leaf Spring Fluid-Bed Conveyor used to dry and cool cocoa powder.



# TEST DRIVE

Carrier's extensive in-house laboratory evaluates various equipment applications for your specific needs. Our engineering specialists work hand-in-hand with your project team to assure optimum processing and conveying performance. Moisture analysis, temperature control, retention time and pressure data are automatically recorded.



## TOTAL SYSTEM PROCESS WARRANTY

Carrier verifies all process parameters to assure system performance. Our problem-solving system brings together distinctly qualified people to analyze your requirements. The result — mutually valuable technical expertise across a broad range of industries.



Field test packages, fully instrumented for complete spectrum testing, are available for testing at your job site to gather needed data for proper design. Simple one-piece construction, fully assembled on a portable frame, makes for easy installation.

# CARRIER MAKES THE WORK FLOW FOR PROCESSING INDUSTRIES AROUND THE WORLD

Abbott Labs  
Amstar Sugar  
Allied Signal  
Akzo  
American Can  
A D M  
Amax Nickel  
Anchor Foods  
American Pelletizing  
Alcan Recycling  
Anchor Hocking  
Armstrong World  
Arkansas Eastman  
Alflex  
Amway  
American Steel  
Advanced Elastomers  
Arcadian Corp.  
Allegheny Power  
Alpo  
American Nutrition  
Aristech  
Armco  
Ameripol/Synpol  
American Cyanamid  
Anniston Ordnance  
American Electric Power  
Amax Coal  
Alcan Powder & Pigments  
Allyndale Corp.  
Anchor Glass Cont.  
Albis Canada  
Amoco  
A. O. Smith  
Allied Chemical  
American Synthetics  
Asgrow Seeds  
Atlas Chemical  
Alcoa  
AMF Telescope  
Amax Phosphate  
Anheuser-Busch  
Airco Products  
Acheson-Colloids  
Amherst Coal  
American Potato  
Amax Chemical  
Blaw Knox  
Bristol Labs  
Beatreme Foods  
Brand S Lumber  
B&W Tobacco  
Barton Salt  
Blommer Chocolate  
Borden  
Buckeye Cellulose  
Boise Cascade  
Blue Circle Atl. Cement  
Borg-Warner Chemical  
Bethlehem Steel  
Briggs/Stratton  
B. P. Polymers  
Bendix  
Baymag-Canada  
BASF Fibers  
Cooper Tire  
Certainteed  
Carbon Products  
Colonial Rubber  
Columbia Recycling  
Courtaulds  
CPC International  
Columbian Chemical  
Colonial Sugar  
Crown Zellerbach  
ChemWaste Mgmt.  
Central N.Y. Bottle  
Clow  
Caterpillar  
Criterion Catalyst  
Custom Vinyl  
Cereales, Mexico  
Coors  
Celanese Plastics  
Cumberland Recycling  
Coal Liquid  
City of Ames  
Cataphote  
Carnation  
Charms Candy  
Cities Service  
Carborundum  
Copolymer Rubber  
Colgate Palmolive  
Chemical Lime  
Cyprus Miami Mining  
Can. Polystyrene  
Ciba-Geigy  
Cargill Salt  
Campbell  
Calgon Carbon

C&H Sugar  
Coperbo  
California Vegetable  
Crown Central Petro  
Chevron  
Corning  
Commercial Solvents  
Cuba Cheese  
Central Soya  
City of Detroit  
City of Honolulu  
Day Products  
Doe Run  
Dragon Products  
E. I. DuPont  
Dow Chemical  
Diamond Salt  
Doane Products  
Dad's Products  
Domino Sugar  
Dietrich Milk  
Dairyland Power  
Delco  
Dairymens  
Donnelley  
Didier Taylor  
Delmarva Power  
Degussa  
John Deere  
Domstar Gypsum  
Exide Corp.  
Energy Fuels  
Eveready Battery  
Englehard  
Eli Lilly  
Eastman Kodak  
Excel Wire/Cable  
Exxon  
Enviroplastics  
Ethyl  
Eastern Assoc. Coal  
Environmental Sys.  
East. Freeze Dry  
Emerson  
ENICHEM  
Flex-O-Lite  
Food Ingredient Tech.  
Ft. Howard Paper  
Feeco International  
Flavor House  
Firestone  
Fuller  
Fiber Industries  
Ford Meter Box  
FireKing International  
Federal Paper  
Fisher Mills  
Ferro Source  
Georgia Kaolin  
Grinnell  
GTE Glass  
Gulf Chemicals  
GTE Products  
Grande Cheese  
General Housewares  
Glenmore  
Great Lakes Carbon  
General Mills  
General Foods  
Griffin Corp.  
Georgia Pacific  
Goodyear  
Goodrich  
G. E. Lighting  
General Electric  
Gould  
G. E. Plastics  
Georgia Kraft  
General Tire  
Gardner-Denver  
General Motors  
A. P. Green  
Glover Feeds  
Helena Chemical  
Hillshire Farms  
Holly Carburetor  
Hoechst-Celanese  
Hi Pro Feeds  
Hershey  
Hecla Mining  
Hules Mexicanos  
Hercules  
Hubbard Milling  
Hardy Salt  
Harbison Walker  
Huish Chemical  
Hoosier Energy  
Hoover Universal  
Hatco Chemical  
Hankuk Glass

Industrias-Negromex  
Ideal Cement  
Interstate Bakeries  
International Paper  
Interlake  
INCO Recycling  
I C I America  
ITT Domestic Pump  
International Salt  
Inter-Plast  
Johns Manville  
Jasper Corp.  
Kingsford  
Kobelco Metal Pwds.  
Kwikset  
Kal Kan  
Krispak/Canada  
Kentucky Stone  
Kimberly Clark  
Kerr-McGee  
Kraft  
Kellogg  
Kahns  
Kumho Tire  
Land-O-Lakes  
Laem Chabang Ind.  
Lantic Sugar Ltd.  
Lambert Seafood  
LaRoche Chemical  
Lomac Inc.  
Lake Charles Carbon  
Libby Foods  
Lever Brothers  
Louisiana-Pacific  
Lifesavers  
Lykes Pasco  
L & L Products  
Liggett/Myers  
Libby-Owens  
Lavino  
Masonite  
Miles, Inc.  
Manville  
Millikin  
Malt-O-Meal  
Miller Brewing  
Mitsubishi  
Moore Plastics  
Mobil Mining  
Muehlstein  
Martin Marietta  
Mobby Chemical  
Maxwell House  
Magnum Magnetics  
Mono-Chem  
Monsanto  
Minn. Corn Processing  
Microwave Fusion  
Morton Salt  
Master Metals  
Manley Tools  
Mississippi Lime  
Mead Container  
Nat'l. Poly Recycling  
Nova Scotia Power  
Nat'l. Refractories  
Noranda Mines  
Nypel Chemical  
Niagara Power  
Nuclear Materials  
N.W. Port. Cement  
Navistar  
Nestle  
National Brands  
National Ecology  
NYCO Minerals  
OSCO  
OMC Spruce Pine  
Owens-Illinois  
Owens-Brockway  
Ore-Ida  
Oregon Metallurg.  
Oil-Dri Corp.  
Okonite  
Olin  
Olin Brass  
Occidental Chem.

Polysar  
Pioneer Products  
PPG  
Phillips Lighting  
Phillips Petroleum  
PQ Corp.  
Procedair Ind.  
Peabody Coal  
Productos De Leche  
Protein Blenders  
Packard Electric  
Pillsbury  
Pet Foods  
Polyscience  
Planters  
Procter & Gamble  
Purechem  
Potlach  
Pine Hall Brick  
Pennwalt  
Publishers Paper  
Plough  
Pfizer  
Polymer Rubber & Chem.  
Plating Systems  
Philip Morris  
Potters Industries  
Posco, Korea  
Proctor & Schwartz  
Quaker Oats  
Quikrete  
Quality Confections  
Riverton Cement  
RJR-Nabisco  
Rogers  
Romchim IV  
Reynolds Metals  
Reese Candy  
Rohm & Haas  
Ross Labs  
Riceland  
Reed Tool  
Ralston Purina  
Revere Copper  
Scrap Tech  
Sundance/Canada  
Squirrel Brands  
Safeway Stores  
Scott Paper  
Sid Richardson  
Shieldalloy  
Sony Magnetics  
J. R. Short Milling  
Shell Chemical  
Standard Brands  
Stauffer Chemical  
Sigr Carbon  
Springfield Plastics  
Simplot Mining  
St. Regis  
Seagrams  
Staley  
Sweets Candy  
A. Schulman  
Sinex, Mexico  
Speer Carbon

Shell, Netherlands  
South Point Ethanol  
Southern Clay  
Sunline Brands  
Standard Oil  
Stackpole Carbon  
Shintech, Inc.  
Southern States Coop.  
Saferco Products  
Stoelting  
Seapak  
Searle  
Sunmaid  
Spice World  
Sierra Pacific  
Timet  
Tennessee-Eastman  
Teledyne  
Teknor Apex  
Tarkett Ind.  
Thatcher Glass  
Thiokol Chemical  
Tennessee Alloys  
Texaco  
Texada Lime  
3-M  
Texas Gulf Chem.  
Twin City Concrete  
TRW Carr  
Uniroyal  
Uncle Ben's Rice  
UOP Molecular Sieve  
United Catalyst  
Universal Leaf  
Union Carbide  
U.S. Steel  
United Merchants  
Utah Marb. Cement  
U.S. Mineral  
U.S. Plywood  
Union Camp  
Universal Cement  
U.S. Tobacco  
United Catalyst  
Velsicol Chemical  
Vetrox Int'l.  
Valley Dolomite  
Victaulic  
Wolfcreek Coll.  
Wheatland Tube  
Western Energy  
W.R. Grace  
Weetabix  
Western States Sugar  
Weyerhaeuser  
Westvaco  
WTE Corp.  
Wayne Pigments  
Willamette Ind.  
WRC Ind.  
Waste Alternatives  
Zeon Chemicals





***THE STANDARD OF EXCELLENCE IN BULK MATERIAL HANDLING AND PROCESSING EQUIPMENT***

---

Fluid Bed Dryer/Cooler Systems, Conveyors, Spiral Elevators, Feeders, Shakeouts  
Screens, Bin Activators, Pile Dischargers

CARRIER VIBRATING EQUIPMENT, INC. and VIBRANETICS DIVISION of CARRIER  
3400 Fern Valley Road • P. O. Box 37070 • Louisville, Kentucky 40233 • (502) 969-3171 • FAX: (502) 969-3172  
www.carriervibrating.com • e-mail: cve@carriervibrating.com

CARRIER Vibrating Equipment (CANADA) Ltd. • Aurora, Ont. • (905) 727-3185 • FAX: (905) 727-3187

CARRIER Europe, SCA • Nivelles, Belgium • 32-67-883-753 • FAX: 32-67-883-688

Representation: USA, CANADA, MEXICO, KOREA, P.R. CHINA, TAIWAN

Licenseses: India, Japan, Sweden

Reproduction or transmission of all or any part of the information contained herein is unauthorized without the written consent of Carrier Vibrating Equipment, Inc. UNAUTHORIZED DUPLICATION OR REPRODUCTION OF THIS INFORMATION IS A VIOLATION OF FEDERAL LAW.