Vibrating Equipment Technical Center

As a leading manufacturer of vibrating machinery, SINFONIA TECHNOLOGY has considerable experience and vast technical resources in this field.
The Vibrating Equipment Technical Center is equipped with the most advanced facilities to provide for all customer's needs relating to vibrating equipment and particulate materials.
The first floor houses the latest measuring and testing equipment, and various types of vibrating equipment of all sizes.
We are ready at any time to undertake basic tests on materials, and carry out precision testing with material samples,
or performance and assessment testing,
using any type of vibrating equipment.

The Technical Center is always ready to respond to customer's inquires with a team of skilled research and technical staff and a range of advanced equipment.

Analysis of characteristics of particulate material

Testing of processing equipment

The development of new technology/ new applications/new products

Please feel free to consult us.

For safe and reliable operation, it is essential to read the user's manual carefully before using this equipment.

We have a new slogan in Japan; "ECOing" a combination of "eco" and "ing". This is to promote eco-friendly technological development and manufacturing.
Our ecological activities are of course not limited to Japan and practiced in many countries around the world.

SINFONIA **SINFONIA TECHNOLOGY CO., LTD.**
Shiba NBF Tower, 1-30, Shibadaimon 1-chome, Minato-ku, Tokyo, 105-8564, Japan
TEL +81-3-5473-1864 FAX +81-3-5473-1845

SINFONIA TECHNOLOGY (THAILAND) CO., LTD. **Bangkok Sales Office**
12th Floor Room 1205, 319 Chamchuri Square Building, Phayathai Road, Pathumwan Bangkok Bangkok 10330
TEL +66-2160-5068 FAX +66-2160-5069

SINFONIA TECHNOLOGY (SINGAPORE) PTE. LTD.
96 Robinson Road, #13-02 SIF Building, Singapore 068899
TEL +65-6223-6122 FAX +65-6225-2729

PT. SINFONIA TECHNOLOGY INDONESIA
Graha Paramita 8th Floor Suite E Jl. Denpasar Raya Block D2 KAV. 8 Kuningan, Jakarta 12940 Indonesia
TEL +62-21-252-3606 FAX +62-21-252-3608

CODE E91-310

Content of this catalogue may change due to product improvement without notice.
URL http://www.sinfo-t.jp/eng

Printed in Japan 1203AII Ⓢ

Vibrating Dryer-Cooler Systems

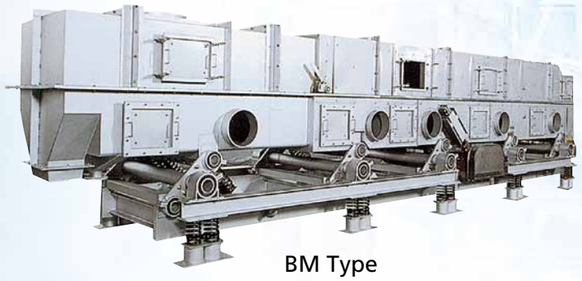
SINFONIA
SINFONIA TECHNOLOGY CO., LTD.

IMPROVEMENT OF PRODUCT QUALITY

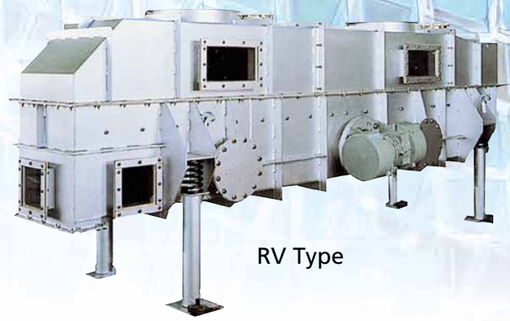
ONE STEP PROCESSING

HYGIENIC

As a leading manufacturer of vibrating equipment,
SINFONIA TECHNOLOGY has been providing vibrating
equipment necessary for granular material handling.
We also have been supply the equipment for various industries
such as food, chemical, casting, metal industries.
Our original vibrating dryer and cooler equipment is manufactured based on
rich experience and accumulated know-how.
By unique operation principle, which is combination of vibration with
blowing air, any granular material can be ideally dried and cooled.
No matter what kind of applying material, physicality, throughput, purpose,
and installation condition, we will provide you the best solution.



BM Type



RV Type

About Vibrating Dryer

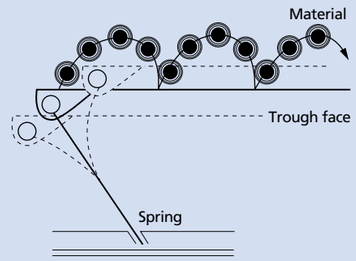
Vibrating Equipment Ensures Uniform Fluidization

If the fluidization of materials flow is inadequate, uneven drying and cooling occur. Even materials with different particle size and different specific gravity can be conveyed with our special vibrating technology. Hot and cool air currents are also used to fluidize materials involved; each and every particle is uniformly dried and cooled.

Vibration System Allows Precise Control of Residence Time

If uniform drying and cooling is not enough, precise control of the temperature and moisture content is needed to finish materials to the required specifications. For this purpose, it is essential to control the residence time during which materials are subjected to hot and cool air currents.
In this vibrating system it is possible to change the vibration conditions (amplitude and frequency) and so effect total flexible regulation of residence time (conveyance time) of materials. Thus, it is possible to achieve quality control to meet all conditions.

Principle of Conveyance and Fluidization by Vibration



Comparison Chart

Item	Vibrating dryer	Fluid-bed dryer	Band dryer	Rotary dryer	Flash dryer
Material carrying mechanism	Vibration+ Fluid bed	Fluid bed	Conveyor	Rotary shell	Air stream
Material coverage	Wide	Limited (Powder- particle only)	Wide	Limited (No cohesive and adhesive materials)	Limited (No adhesive materials)
Particle damage	Less	Less	Less	Some	Some
Drying time adjustment	Controllable	Somewhat difficult	Easy	Hard	Hard
Heat efficiency	High	Middle	Middle	Middle or low	Middle
Hot air volume	Controllable	High	Middle (Limited)	Low	Low
Carrying power	Large	Large	Small	Large	Small
Equipment cost	Middle	Low	Middle	High	Middle
Install space	Middle	Middle	Large	Large	Middle
Dust loss	Small	Large	Small	Middle	Large
Maintenance property	Very good	Good	Bad	Bad	Little bad

Features

Achieving high evaluation from various industries such as food, chemical, ceramic, and casting.

Uneven Drying and Cooling Are Eliminated

Even materials of different grading and specific gravity can be fluidized uniformly by vibration and air currents. Drying and cooling are always carried out uniformly as the conveying speed is fixed and this results in constant residence time.

Flexible Temperatures and Moisture Control

Since the layer depth and residence time can be controlled exactly as required by varying the vibrating condition by means of electric control such as an inverter, the temperature and moisture content of materials can readily adjusted as needed to match ambient temperature and humidity conditions. All this gives greatly improved product quality.

Materials Are Not Damaged

As the hot air and cool air act as a cushion, shocks to the materials are reduced, and damage and loss by exhaust of materials as well as dust generation are prevented. Flakes and pellets are not damaged or powdered.

Simultaneous Drying and Cooling

Since moisture content adjustment by hot air and temperature control by cool air are performed consecutively in one system, an efficient process line can be achieved. This is very suitable for drying and cooling where strict precise quality control is required.

Energy Saving and High Efficiency

The power required for blowing air is greatly reduced as vibrating movement fluidized and conveys materials effectively. Thus, this vibrating system gives far greater energy saving than other types. In addition, as heat conductivity rate is high, the unit processing capability is also large.

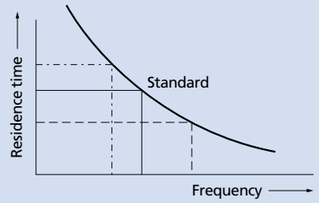
Can Be Used for Materials of Different Grading and Specific Gravity

Since vibration does not allow retention of materials on the through face, all types of materials can be evenly dried and cooled. Even powders and particles with high moisture content or those with high cohesiveness can be smoothly processed with a simple adjustment of the vibration and blower speed.

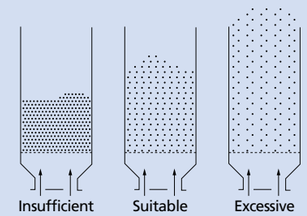
Hygienic Trough That Corresponding to HACCP

Original trough structure that corresponded to HACCP is able to preserve cleanness. As you can see the illustration below, high washability is realized by rounded edge of trough and integral structure. By washing trough, preserving high cleanness that can not possible with conventional welding is realized.

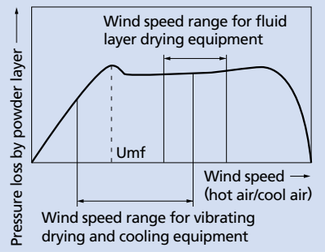
Variation in Residence Time by Frequency Adjustment



Fluidizing Conditions in Conjunction with Blowing

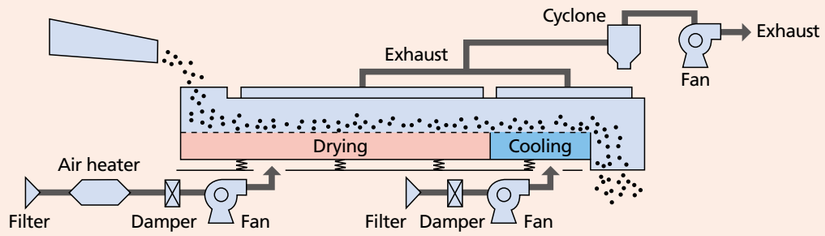


Comparison of Ranges for Wind Speed Selection



Structure

This system consists of a vibrating conveyor as the base, a heat source (and cooling source), blower and exhaust emission (dust) control device.
This system used vibrating movement to convey and fluidize the materials uniformly and the air currents from below the trough pass evenly through particles, thereby effecting consistent, highly efficient drying and cooling.
This system is ideal for use in processes where even drying and cooling, control of temperature and moisture content are vital process factors, or where energy saving and improvement of cost performance are required. Use our equipment to improve the quality and overall productivity in your plant.

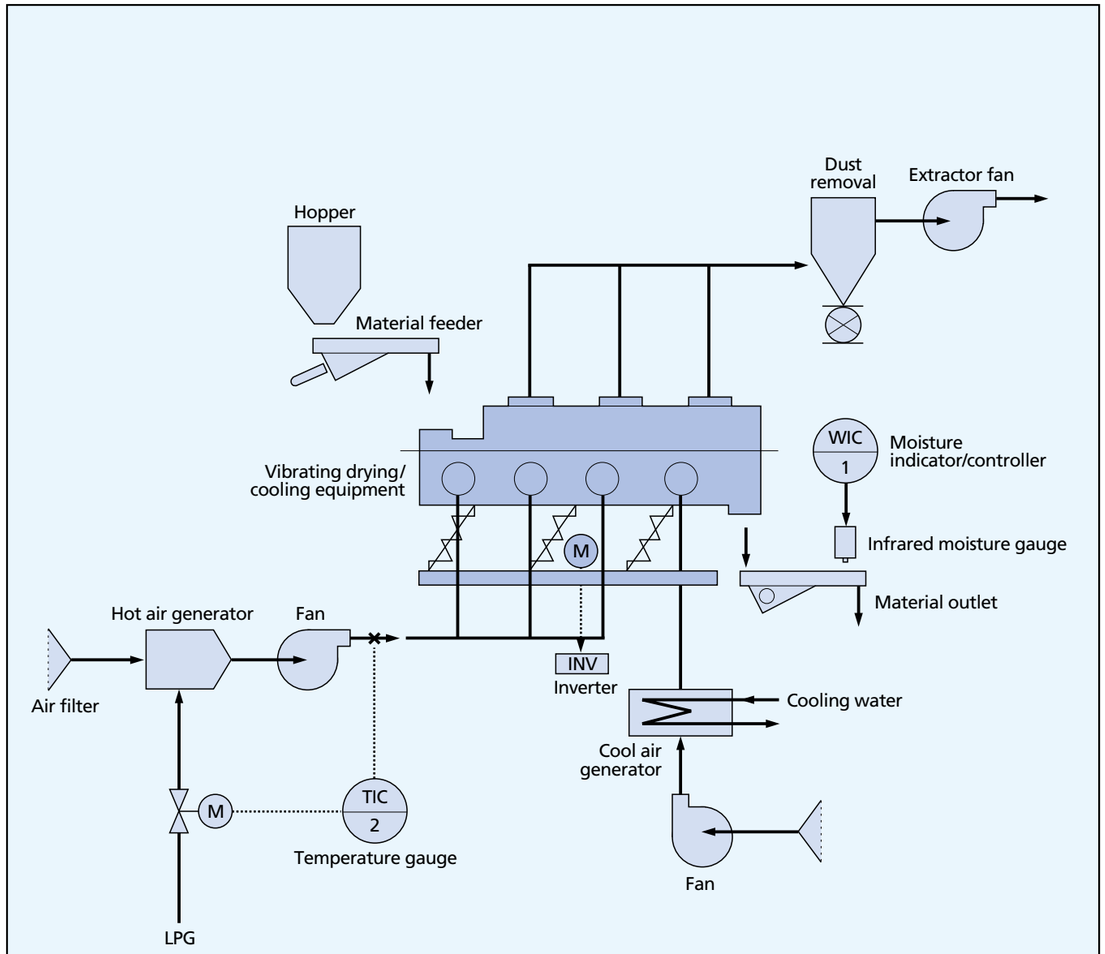


Examples Application

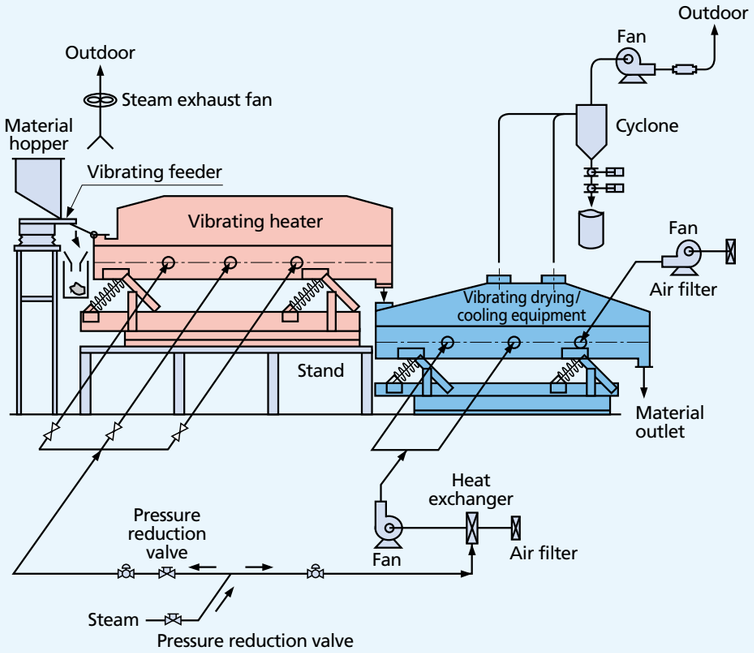
We undertake whole processes from planning, designing, manufacturing, through constructing.

Our best vibrating dryer-cooler system for granular materials has excellent sales achievement under food industries. It has a good reputation with our clients because of its high quality, high efficiency, and high reliability even though it is easy to handle. Our company delivers vibrating dryer-cooler system in total system as to client's needs. We provide the best dryer-cooler system with newest technology and experienced technique, and also we undertake from planning, designing, manufacturing, to constructing.

System Configuration



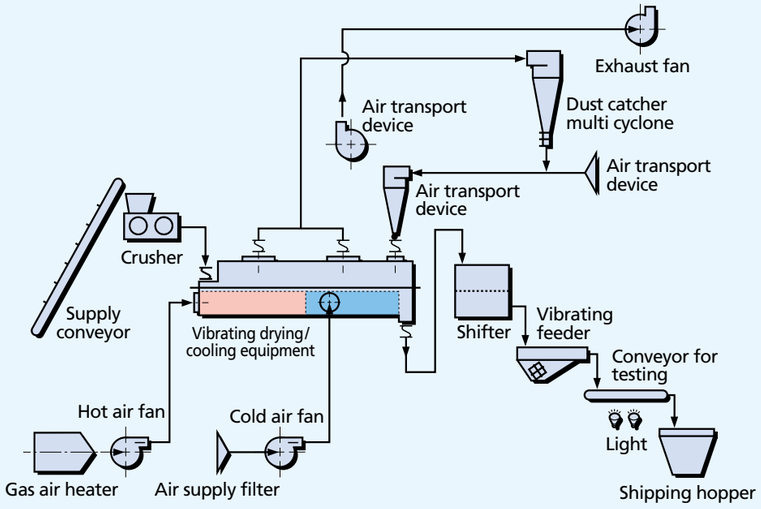
Grain sterilizing dryer-cooler system



This is a proven example of high quality dryer-cooler system used after the steam sterilizing process of grains such as buckwheat.
It enables drying and cooling without damaging the material, which is ideal for material secondary process.
Instead of heating the buckwheat in powder condition as before, this system rapidly dries and cools the steam-treated buckwheat in grain. Therefore, the heat temperature will not reach the material contents.
This system enables to sterilize the material equally without losing property, which is the most characteristic feature.

- Processing performance
  In the case of buckwheat kernel, viable bacteria count is under 10^3coliform group count negative.

Dryer-cooler system for frozen bread crumbs



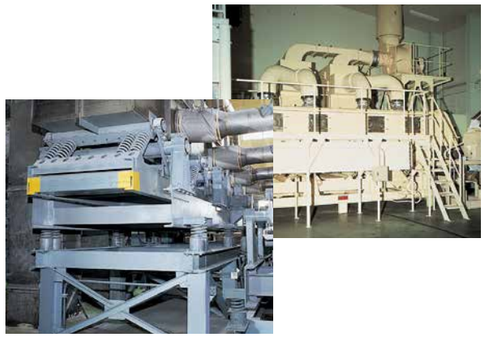
Drying and cooling process of frozen bread crumbs are required to keep high quality and sever humidity control. By the use of this vibrating system, products are fluidized evenly and smoothly, uniformly-processed without damage and become uniformly dried, while conventional stationary fluidized bed dryer-cooler system have disadvantages such as low efficiency, uneven and various drying results.
Moreover, this vibrating 2 in 1 system enables efficient use of space.

- Specification
  Type:DCBM-1350-6.3
  Motor 5.5kW6P
  Handling material:
  Raw bread crumb
  Throughput:1300kg/hr
  Drying condition:
  Moisture38% (Inlet)
  Moisture11～30% (Outlet)

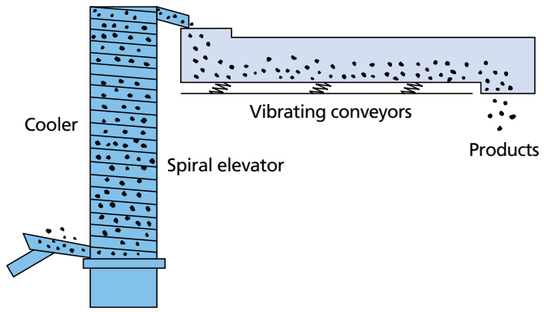
Case of Application System

Applicable for wide variety of materials.

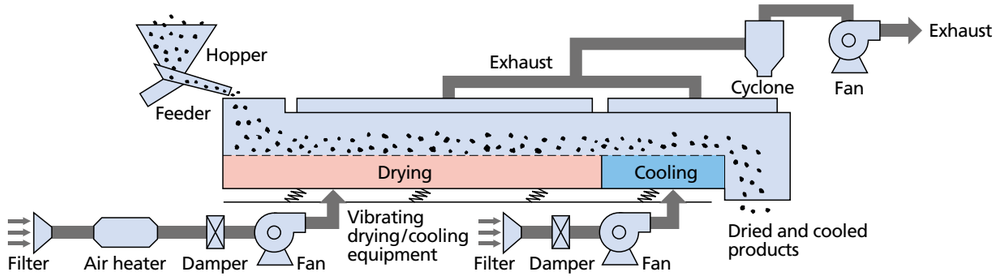
Vibrating dryer and cooler equipment will work well in various industry especially for food, chemical, ceramic, and metal industry. Specifically, Chemical seasoning, granulated sugar, sugar crystal grain, coffee, powdered milk, chemical fertilizer, resin pellet, powdered medicine, activated charcoal, casting sand, burnt lime and more materials are suitable.



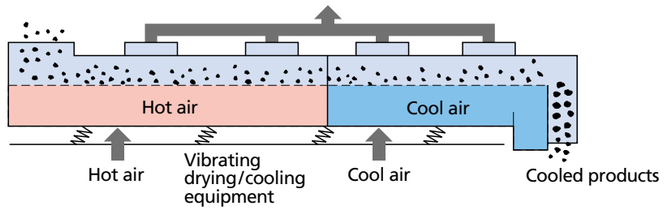
Cooler equipment for synthetic rubber



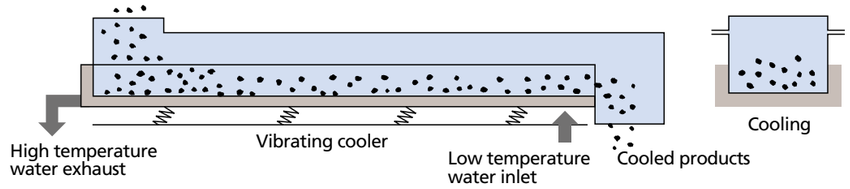
Dryer and cooler equipment for powdered coffee



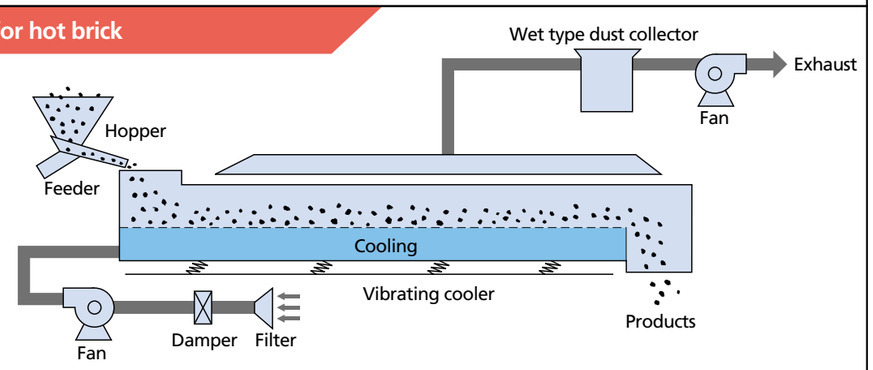
Dryer and cooler equipment for chemical seasoning



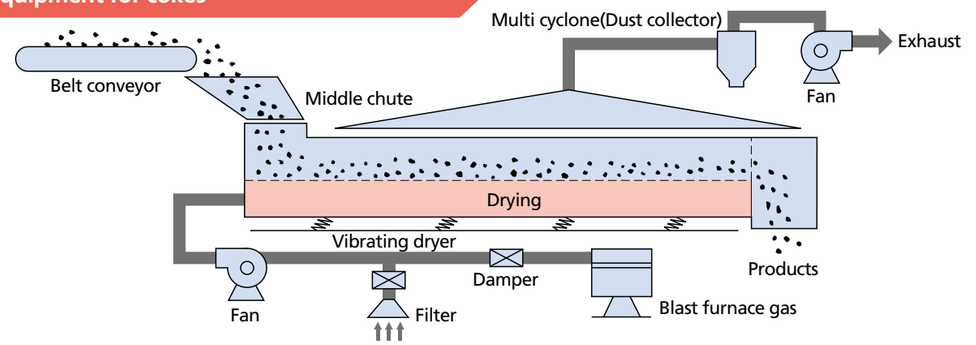
Water-cooling equipment for brunt lime



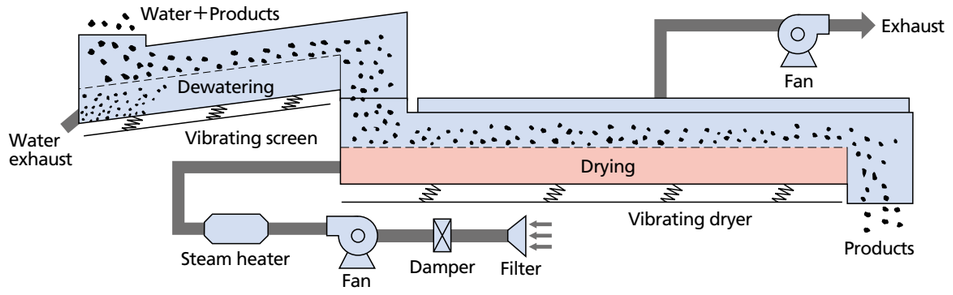
Cooler equipment for hot brick



Dryer equipment for cokes



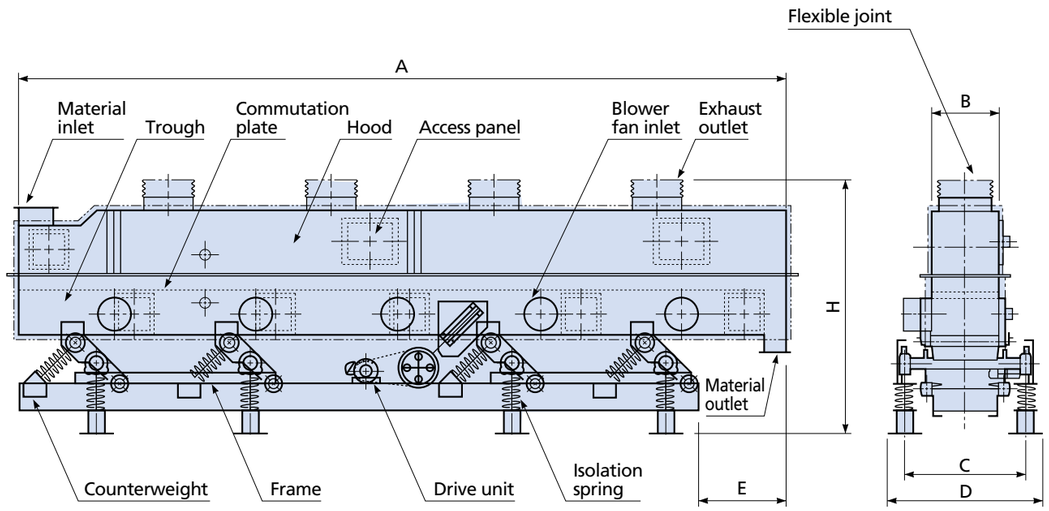
Dewatering dryer equipment for vinyl chloride



Dimensions

BM Type

Unit : mm



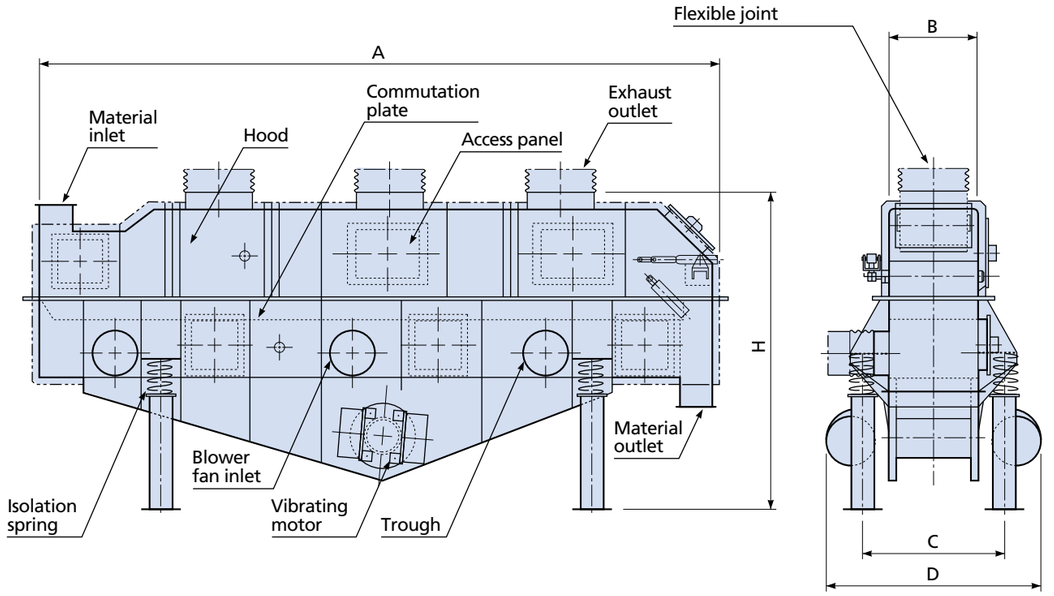
●Dimensions Table

Models	A	B	C	D (Max)	E	H (Height)	Weight (kg)	Motor output (kW)
BM-300-3.0	3000	300	800	1000	500	1775	1500	0.75 × 1
BM-300-4.0	4000	300	800	1000	500	1775	1900	0.75 × 1
BM-300-5.0	5000	300	800	1000	500	1775	2100	0.75 × 1
BM-450-4.0	4000	450	950	1150	500	2075	2300	1.5 × 1
BM-450-5.0	5000	450	950	1150	500	2075	3000	1.5 × 1
BM-600-5.0	5000	600	1100	1300	800	2175	4000	2.2 × 1
BM-600-6.0	6000	600	1100	1300	800	2175	4600	2.2 × 1
BM-600-7.0	7000	600	1100	1300	800	2175	5000	2.2 × 1
BM-600-8.0	8000	600	1100	1300	800	2175	5500	2.2 × 1
BM-900-6.0	6000	900	1400	1600	800	2275	5900	3.7 × 1
BM-900-7.0	7000	900	1400	1600	800	2275	6400	3.7 × 1
BM-900-8.0	8000	900	1400	1600	800	2275	7500	3.7 × 1
BM-1200-8.0	8000	1200	1700	1900	800	2325	8200	3.7 × 1
BM-1500-8.0	8000	1500	2000	2200	800	2375	10000	5.5 × 1
BM-2000-8.0	8000	2000	2500	2700	800	2475	13500	5.5 × 1
BM-2000-10.0	10000	2000	2500	2700	800	2475	16000	5.5 × 1
BM-2000-12.0	12000	2000	2500	2700	800	2475	17800	5.5 × 2
BM-2000-14.0	14000	2000	2500	2700	800	2475	19500	5.5 × 2
BM-2000-16.0	16000	2000	2500	2700	800	2475	21000	5.5 × 2

Note: BM types are noted based on its functions as follows.
- ●Having only drying function : DBM-xxx-x
- ●Having only cooling function : CBM-xxx-x
- ●Having both drying and cooling function : DCBM-xxx-x

RV Type

Unit : mm



●Dimensions Table

Models	A	B	C	D (Max)	H (Height)	Weight (kg)	Motor output (kW)	Motor type
RV-300-2.5	2500	300	600	740	1775	400	0.4 × 2	RV-44D
RV-300-3.0	3000	300	600	740	1775	450	0.4 × 2	RV-44D
RV-450-2.5	2500	450	800	950	2075	500	0.75 × 2	RV-78B
RV-450-3.0	3000	450	800	950	2075	600	0.75 × 2	RV-78B
RV-450-3.5	3500	450	800	950	2075	750	0.75 × 2	RV-78B
RV-450-4.0	4000	450	800	950	2075	850	0.75 × 2	RV-78B
RV-600-3.5	3500	600	950	1120	2175	1000	0.75 × 2	RV-78B
RV-600-4.0	4000	600	950	1120	2175	1200	0.75 × 2	RV-78B
RV-600-4.5	4500	600	950	1250	2175	1400	1.5 × 2	RV-158B
RV-600-5.0	5000	600	950	1250	2175	1700	1.5 × 2	RV-158B
RV-600-5.5	5500	600	950	1250	2175	2000	1.5 × 2	RV-158B
RV-600-6.0	6000	600	950	1320	2175	2200	2.2 × 2	RV-228B
RV-750-5.0	5000	750	1150	1320	2225	2500	2.2 × 2	RV-228B
RV-750-5.5	5500	750	1150	1320	2225	3000	2.2 × 2	RV-228B
RV-750-6.0	6000	750	1150	1320	2225	3300	2.2 × 2	RV-228B
RV-900-5.5	5500	900	1300	1320	2275	3400	2.2 × 2	RV-228B
RV-900-6.0	6000	900	1300	1320	2275	3700	2.2 × 2	RV-228B

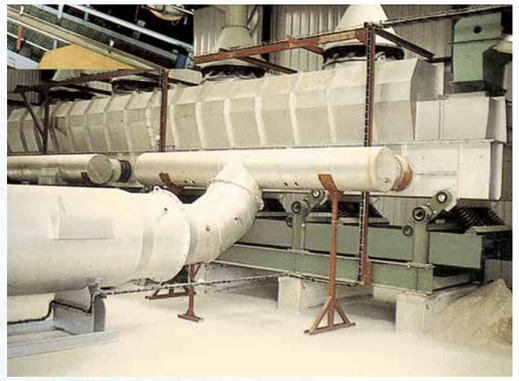
Note: RV types are noted based on its functions as follows.
- ●Having only drying function : DRVF-xxx-x
- ●Having only cooling function : CRVF-xxx-x
- ●Having both drying and cooling function : DCRVF-xxx-x

Delivery Records

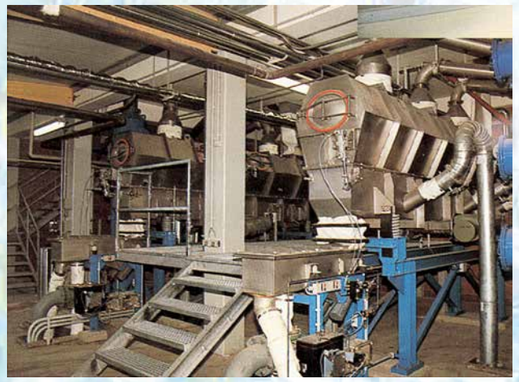
DBM Type

DCBM Type

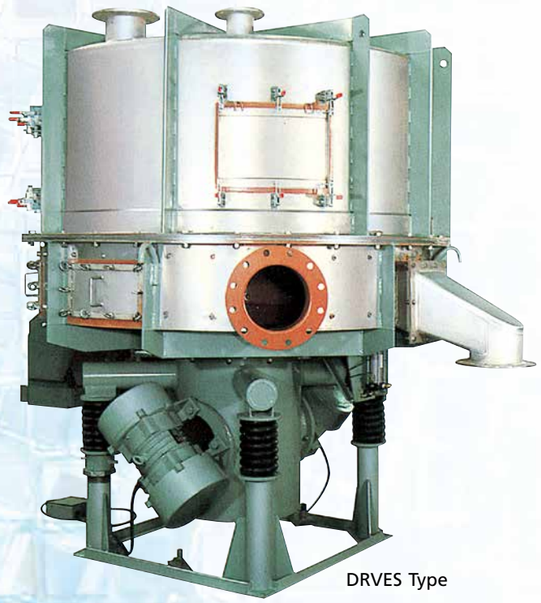
Spiral Elevator



DBM Type



DRVF Type



DRVES Type

List of Major Supply Records

Models	Handling material	Processing ability (kg/hr)
DCBM-1350-6.8	Bread crumbs	1300
DCRVF-300-2.5	Cornstarch	60
DCBM-750-8	MSG	2000
DBM-450-5	Dry soup	900
DCRVF-450-3	Instant coffee	75
DCBM-1500-19	Granular sugar	30000
DBM-750-15	Rice chip	1700
DCBM-750-7	Salt	3500
DBM-750-15	Rice biscuit dough	1700
CBM-1200-8.2	Glucose sugar	2300
CMVCB-600-7.7	Curry powder	2500
DBM-2000-6	Soya flake	50000
DBM-1500-6	Corn gluten meal	2000
CBM-600-4	Flours	1000
DCBM-1800-11.8	Powdered milk	1000
DBM-900-4	Coleseed	15000
CRVF-450-2.4	Corn germ	700
DCBM-900-11.6	Powdered oyster shell	6000
DCBM-1200-9	Soy protein	1500
DCBM-900-7	Buckwheat	3000
CBM-1350-8	Powdered milk	3500
DBM-600-6	Sesame	4000
DCBM-900-10	Raw chocolate	800
DCRVF-600-4.5	Dried sardine	230
DCBM-1500-10.5	Pet food ϕ5.3×13～15 ϕ9×9～11	5550
DBM-1200-11.0	Fish meal (For yellowtail)	1200
CRVF-900-4.5	Fish meal (For yellowtail)	1200
DBM-1500-17	Fish meal (For shrimp)	1850
DCBM-1500-7.8	Fodder pellet ϕ3.5、ϕ4.5、ϕ6.0	15000
DCBM-2000-7.8	Fodder flake, maize, milo, oats, barley	15000
CMVCB-450-3.5	Vinyl chloride pellet	1500
DBM-600-4.6	Phenol resin	400
DCBM-450-4.5	Phenol resin	300
CRVES-780-2.05	Urea-melamine cast material	150
CMVCB-600-4	Tetronic pellet	2000
DBM-750-3.4	Hard vinyl chloride	1200

Models	Handling material	Processing ability (kg/hr)
CMVCB-300-8	Nylons chip flake	100
DBM-12000-9.4	PCV compound chip	14500
CBM-750-4	PVC pellet	2600
CRVF-600-4.5	Poval	2000
CMVCB-1050-4	ABS pellet	3600
DBM-450-10	Thermo-setting resin	700
DBM-1200-5	Polyacrylamide	600
DCBM-600-6	Phenol resin	—
DBM-1600-13	Rubber crumb	5000
CBM-1050-5.5	Synthetic rubber	3200
DBM-1200-12	Synthetic rubber	4600
CMVCB-600-6	Ammonium nitrate granulate	5500
CMVCB-1050-5.5	Soap powder	4000
CBM-1200-12	Chemical soda	6000
DCBM-1200-7.45	Granular calcium chloride	4000
DBM-300-7.5	Caustic silver	300
DBM-900-6	Calcium phosphate	1500
DCSBM-750-5.8	Dinitronaphthalene	400
DCBM-450-3.5	Ammonium sulfate (natrium)	350
CRVF-300-2	Phosphate	200
DRVES-1800-1.1	Catalyzed hydrogenation of terephthalic acid	117 (/30minutes)
DRVES-1200-5	Electrolysis manganese dioxide	2500
CBM-1500-8	Sulfur pellet	2000
CMVCB-1200-4.9	Magnesium hydrate	1800
CBM-7500-7.5	Granular calcium chloride	600
CRVF-600-4.6	Ammonium sulfate	11000
DRVF-500-2.3	Enzyme drug	120
CMVCB-750-2.4	Iron oxide	200
DCBM-600-9.2	Magnetic powder	400
DBM-900-5	Electro melting alumina(Abrasive)	1500
CRVF-300-2.5	Alumina ball	300 (ℓ/h)
CRVES-650-0.8	Powdered ferrite	250
CBM-1200-12	Chemical fertilizer	15000
CMVCB-750-7.5	Silicate-calcium fertilizer	11000
DBM-1200-7.9	Chemical fertilizer	50000
CMVCB-750-8	Chemical fertilizer	9400
CBM-450-7.6	Burnt lime	3500
DCBM-1050-10	Pelletized original soil for nursery soil	6600
DMVCB-1200-14	Magnesium fertilizers	18000

Vibrating Dryer and Cooler System Application Form

In order to satisfy customer's needs. Every vibrating dryer and cooler equipment are manufactured depending on each characteristic of handling materials and purpose of use, please fill out the form below to provide the best equipment for customers.

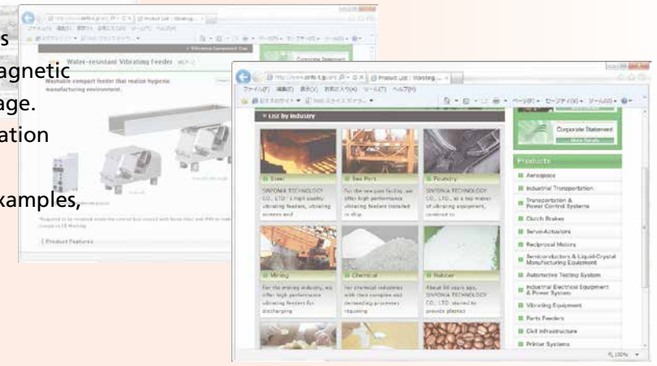
Design condition (Please fill out completely and be as specific as possible)

1	Purpose of use	☐ Drying ☐ Cooling ☐ Heating					
2	Name of product to be handled			Change of product category/grade(times / ☐ day ☐ month)			
3	Material condition	☐ Flake ☐ Pellet ☐ Granulated ☐ Agglomerated ☐ Muddy					
4	Throughput	t·kg/h	as	% 〔Wet weight basis (WB) Dry weight basis (DB) 〕			
5	Moisture content	Inlet %	Outlet	% 〔Wet weight basis (WB) Dry weight basis (DB) 〕			
6	Temperature of material	Inlet ° C	Outlet	° C	Allowable maximum temperature	° C	
7	Bulk density	wet		dry			
8	Particle size	Max ( ) mm					
		(～) mm %		(～) mm %			
		(～) mm %		(～) mm %			
9	Specific heat	kJ/kgK (kcal/kg° C)					
10	Condition of material	☐ Free flow ☐ Bridges ☐ Packs ☐ Sticky ☐ Abrasive ☐ Corrosive ☐ Hygroscopic					
		☐ Others ( )					
11	Heat source	☐ Heavy oil ☐ LPG ☐ Electric heater					
		Steam Steam pressure ×MPa (kg/cm²G)					
		Others ( )					
12	Cooling source	Atmosphere (Temperature ° C)	Water (Temperature ° C)	Cooled air (Temperature ° C)			
13	Material of product contact metal	☐ SS400 ☐ SUS304 ☐ SUS316L ☐ Titanium ☐ Others ( )					
		Coating ( )					
14	Coating specification *Our standard color will be applied if there is no request.	Type of coating Designated by client ☐ None ☐ Yes ( )					
		Color of coating Designated by client ☐ None ☐ Yes ( )					
15	Power source	Motor V Hz	Instrumentation V Hz				
16	Installation location	☐ Indoor ☐ Outdoor ☐ GL ☐ On base ☐ Hazardous area( )					
		☐ Nonhazardous area ☐ Noise regulation(dB(A))					
17	Scope of supply	☐ Fluidized bed dryer/Cooler ☐ Fan ☐ Heater ☐ Air filter ☐ Dust collector ☐ Control panel ☐ Duct					
		☐ Others ( )					
18	Pre and post process of dryer	How do you charge product to dryer? What discharging equipment do you install? Diagram, etc.					

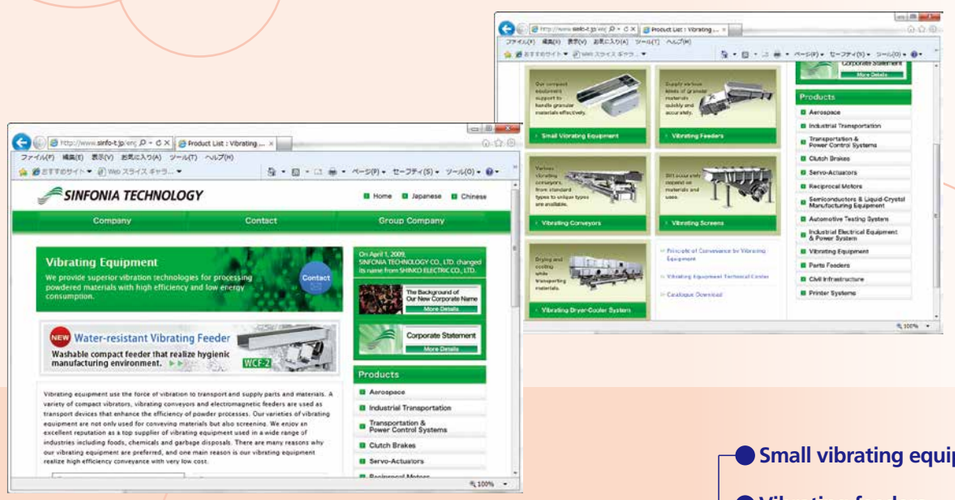
Vibrating Equipment Web Page

You can check out anything about vibrating equipment from the newest product information to various application system examples on internet.

There are valuable information of various vibrating equipment as if small electromagnetic vibrating feeder CF series on our homepage. On the page, you can get helpful information such as specific product information, technological information, application examples, and other wide variety of information. Please feel free to visit our web site.



http://www.sinfo-t.jp/eng/vibrating.html



CONTENTS