

# Your Partner for Plant Engineering & Technology

Chemical & Pharma Processing Equipments  
Labdori(Filter dryer), Screw Mixer, Reactor system  
Automatic Coating System





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Filter Dryer

Double Cone Filter Dryer / Labdori

Micro / Filter Housing / Rotary Vacuum

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Heat Exchanger / Pressure Vessel / Storage Tank



## Greeting

We, **HAN KANG**, has been working mainly on design, manufacturing and services for chemical, pharmaceutical and chemical-related plants since its establishment in 2001.

Most of our technical staffs have more than 20 years of experience in those industrial fields, which is one of our strong features enabling our success and getting good reputation from customers.

Our main activities are: Design, supply and services for industrial equipment & chemical plant engineering including heat transfer, pollution control systems, energy conservation and environmental issues.

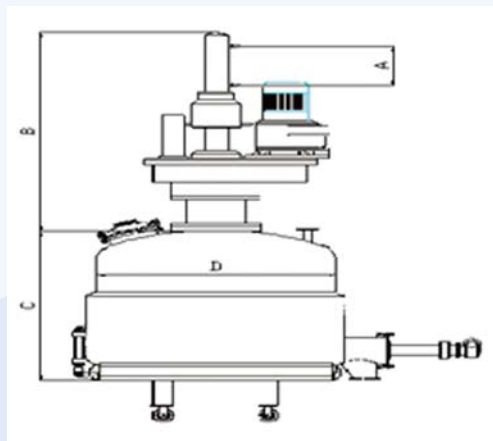
Our goal is to develop products and services of Best Quality and to create mutual benefits with our customers.

We do our best to achieve it.

## Filter Dryer



<STANDARD DIMENSION>



VOL/DIM	A	B	C	D	Press.	Temp.
200 Liter	250	800	800	900	-1kg ~ 4kg	20(°C) ~ 150(°C)
500 Liter	300	1100	000	1100		
1000 Liter	350	1800	200	1550		
1500 Liter	400	2000	500	1650		
2000 Liter	450	2270	670	1720		
3000 Liter	550	2800	800	1950		
4000 Liter	650	3200	2000	2100		
5000 Liter	700	3300	2100	2200		
6000 Liter	750	3400	2200	2300		
7000 Liter	800	3500	2280	2500		
8000 Liter	850	3600	2350	2800		
9000 Liter	900	3700	2400	3250		
10000 Liter	950	3800	2450	3700		

### Features

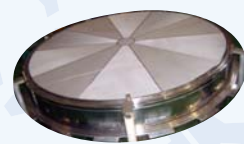
It can perform the complex functions, which move the impeller up and down in the axial direction and rotate it forward and reverse in the radial direction simultaneously. It can also carry out the axial movement and the radial rotation separately as an operation option, so it is very efficient equipment. The cone type filter dryer, the bottom cover of which forms a slope, is able to discharge the filtering effluents with much ease because their flow is efficiently guided along the flow path built on the slope and are collected well at the effluent collecting tank located at the bottom center. Also it can transport all sludge along the filter slope to the sludge discharge port and so we can discharge it effectively. We improve the way how to fasten the filter to the bottom cover from the bolting type to the quick one-touch closure type, so can reduce the equipment idling time between replacing filter in the process.

### Applications

The filter & dryer of large capacity/OLED & LED industry/  
Filter & Dry for API/Chemicals & Biological industry/  
Agrochemical industry

### Flat bottom type

It discharges the filtering effluents through pressing and suctioning the sludge. After series of washing, it dries the sludge. It can perform the filtering and the drying processes at the same equipment, so that prevents the contamination, which may occur during the transport of filtered sludge to a dryer.



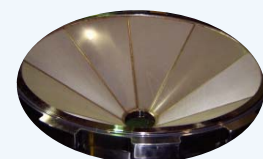
### Cone type 30°

The filter of a cone shape is comfortably located on the bank of the flow channels formed on the inclined bottom cover, so the filter does not contact the bottom cover directly. It can help preventing filter from clogging perfectly. Also, it can transport dried powders or slurries along the slope of the filter effectively.



### Cone type 45°

During the process of back flushing, the filter of the flat bottom type floats upward, so it may bump into the bottom of the impeller. The cone type, however, can prevent the problem thanks to the slope. In case of poor fluid flow, we can increase the angle of the slope to enhance the flow.



## Double Cone Filter Dryer

### Features

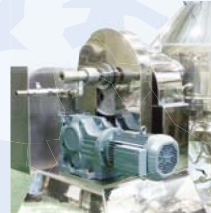
- It is the equipment which can perform filtering and drying by revolution of equipment body in lieu of impeller agitation, so has advantages of low equipment vibration and noise. It can also reduce electrical power consumption drastically.
- It can reduce the remnants of unreacted reactants, products, and cleansing solution residing in the equipment thank to the simple interior design, so carry out easy cleansing with less cleansing solution, and reduce waste effluents and production loss drastically.
- Since it is cleaned by the revolution of equipment body with cleaning solution filled, more efficient than the impeller agitation, it can achieve much effective cleaning with less cleansing solution consumed, so it is very economical

### Applications

- Filtering and Drying in pharmaceutical industry
- Chemicals, Biological, & Food industries
- Agrochemical industry



Detail



## Labdori

### Features

- Filter Dryer for Laboratory scale experiments
- The up-down and forward/reverse revolution of impeller is possible solely with one drive motor, so it is very economical in equipment cost.
- It sustains the function without a pneumatic unit and mechanical seal, so its cost is low.
- It is a Disc-brake type which can provide the convenient adjustment of up-down movement.
- No risk of contaminants thank to perfect sealing using leap seal.
- It secures safety in operation with installation of near-sensors.
- Convenient cleansing thank to non-existence of bellows
- Easy assemble & disassemble

### Applications

- Filtering & Drying of pharmaceutical products
- Convenient lab scale filtering and drying
- Experiments for reaction, filtering, and drying in fine chemicals, biological, and food industries
- Lab of Agrochemical, chemical, biochemical, and food research



Detail



## Micro Dryer

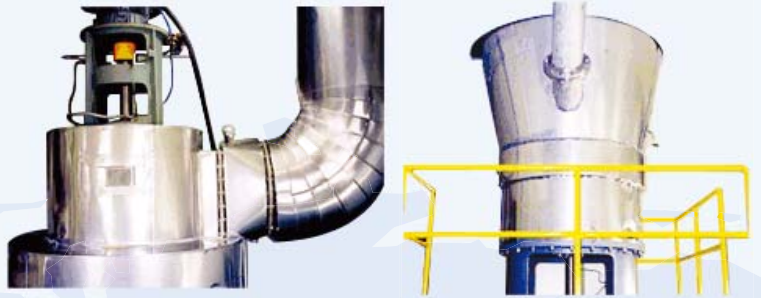
It is the equipment to keep the particle size distribution and moisture content always constant by installation of the separator to the pneumatic conveying dryer. The feeding must be always constant and adjusted according to moisture content. Wake formation can increase the heat transfer coefficients, so reduce the value of the lowest moisture content further.

### Features

- 1) Indirect heating type
- 2) Proportional control for the temperature control system

### Applications

- Pharmaceutical, Food & Chemical industries



## Filter Housing

It is the typical filtering equipment, which can apply to all the fields in need of filtering process. It provides multi-purpose applications and is convenient thank to the design of easy dissemble & assemble.

### Features

- 1) Adjustment of housing height is possible
- 2) Easy view of products inside the equipment thank to sight glass view
- 3) Free 360° revolution

### Applications

- Pharmaceutical, Biochemicals, Agrochemicals, Food & Chemical industries



## Rotary Vacuum Dryer

It provides a wide heating area, preserves the property of raw material, and recovers solvent with ease. It fills up wet products, mixes them with peddle, and dries them with indirect heating. This operation is usually performed in vacuum condition.

### Features

- 1) Granular/High moisture content materials can be treated
- 2) Low temperature operation is possible
- 3) Solvent recovery is possible
- 4) High energy efficiency
- 5) Indirect heating type
- 6) Drying by heat conduction is possible

### Applications

- Pharmaceutical, Organic chemicals, Dying, Chemical Intermediates, Recovery of solvent



## Fluidized Bed Dryer

It is the highest efficient dryer type. It can be applied to granulation and coating effectively with installation of appropriate distributor at top or bottom, recover solvents, and good fit for the temperature sensitive products. It can reduce drying time and shorten discharge process, so it is the efficient dryer for the material of low fluidity.

### Features

- 1) Short drying time
- 2) Easy transportation of products thank to the slope adjustment
- 3) Installation of special filter for antistatic purpose
- 4) Complex function of drying and mixing can be performed simultaneously
- 5) Easy cleaning inside & outside with water and convenient filter replacement
- 6) Minimize the operation noise thank to the separation of intake blower
- 7) It can produce granules with installation of spray system (optional)

### Applications

– Pharmaceuticals, Cosmetics, Agrochemicals, Fertilizers, Animal feeds, Chemicals, Polymer resins, Amino acids, Flour, Cornstarch

General type



Complete Discharge type



## Paddle Dryer

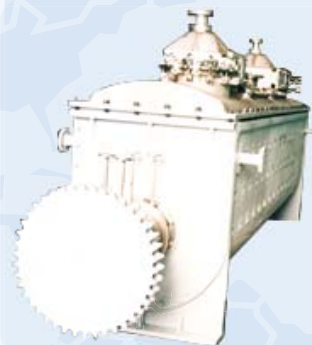
It is the indirect heating type, in which the product is dried by contacting paddle and interior wall. The higher the temperature of heating medium is than the b.p. of the dried product, the higher heat transfer coefficient (i.e., better heat transfer) it has. It can treat the material of high moisture content and needs small area for its installation.

### Features

- 1) Small installation area & simple structure
- 2) High heat transfer coefficient & high transfer rate
- 3) Easy operation
- 4) Less discharge and no dust
- 5) Treatment of high moisture content product is possible
- 6) Less destruction of particles

### Applications

– Petrochemical products, Organic/Inorganic compounds, Foods, Sewage/waste sludge



## Vacuum Dryer

It performs efficient control at high temperature and has uniformity thank to array of heating plates of special design. Especially, it can be used to the dryer where product is dried by heat conduction. It completes the drying by heating the plates and jackets to appropriate temperature in a vacuum condition. It is used to recover solvents from pharmaceuticals & chemicals.

### Features

- 1) Temperature control by PID controller
- 2) PLC automatic control system
- 3) Lower operating cost than other dryers

### Applications

– Pharmaceuticals, Chemicals, Electronic products, Products undergoing thermal processing, Semiconductors



## Reactor

It is applied to the processes of mixing, synthesis, and polymerization. It is custom made, so fit for diverse environments and purposes. The system design from the a pilot plant of a small scale to the commercial plant of a full scale is available and it can complete diverse type of reactions not only in a batch reactor but also in a continuous system. Our expertise in such special design as a single fluid jacket, heating method, PLC control of mixing and reaction PH can provide consistency in the repeated operation and perfection in production. In the total reaction system, such components as heating/cooling systems, columns, refluxes/condensates, vacuum systems, feeding, preheating, and instruments can be selectively chosen.

### Features

- 1) Perfect sealing by mechanical seal
- 2) Maximizing the efficiency of reaction with appropriate application of impeller
- 3) Producing diverse products according to RPM variation
- 4) Design of high heat conduction

### Applications

- 1) Polymerization
- 2) Isomerization
- 3) Organic chemical synthesis
- 4) Dehydrogenation



## Screw Cone Mixer

Thank to the features of smooth mixing and high mixing efficiency, it is good fit for the uniform powder mixing of large quantity and the solid mixing of different properties. It is the high efficiency mixer and so has an advantage of short operating hours.

### Features

- 1) Uniform mixing
- 2) Custom design of screw according to the characteristics of processes or products
- 3) Low shear force and smooth mixing

### Applications

- Agrochemicals, Animal feeds, Pharmaceuticals, Resins, Dyes, Pigments, Fine chemicals, Foods





## Double Cone Mixer

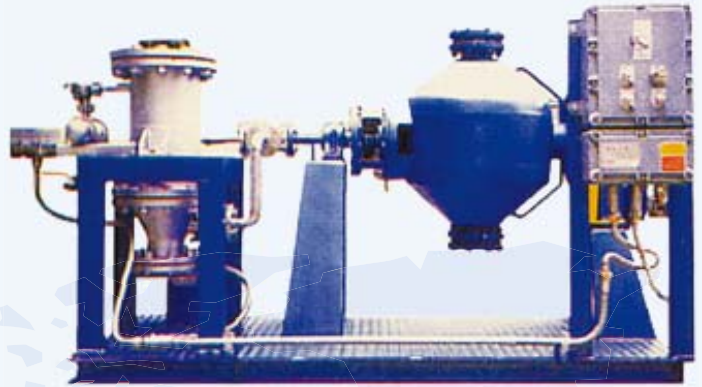
It performs very uniform mixing with the revolution of body equipment. It is efficient to mix dried powder and fills it up 33~45% of total volume to guarantee the granules of uniform size and good mixing.

### Features

Thank to simple internal design, it provides smooth mix and easy cleansing.

### Applications

- Fine chemicals, Pharmaceuticals, Dyes, Foods, Textiles, Leathers



## High Speed Mixer

It is the equipment to mix the material to be cut in the following process. It granulizes and mix the contents using rotation of blade, the optimal choice of which can produce the uniform quality product.

### Features

- 1) Diverse speed control using inverter. A single or two different speeds is also available.
- 2) Fabrication with various materials is available
- 3) High glossy finish
- 4) It is design for the operation at an atmospheric condition and is also possible for that in vacuum or pressured conditions.
- 5) Electrical network design considering hazardous or safe environments.

### Applications

- Ceramics, Chemicals, Dyes, Foods, Pharmaceuticals



## Ribbon Mixer

It is applied to the processes of mixing the liquid or the powder of low viscosity and can perform uniform mixing in a short period.

### Features

- 1) Easy cleansing & simple operation
- 2) Prevention of the axial part from contamination by special sealing
- 3) Fabrication of internal impeller as ribbon type, so it can maximize the mixing effect.

### Applications

- Uniform mixing of powders and liquids in Pharmaceutical, Food, and Chemical industries



## Bead Tower

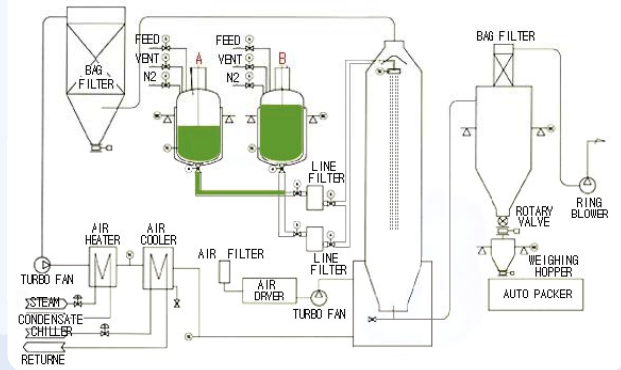
Bead is formed in spherical shape by coagulation of liquid due to its cohesive force after injecting the liquid of appropriate viscosity through tiny hole. It improves the disadvantage of old flaker so as to produce the beads of excellent quality, eliminate dust generation, and provide good fluid flow in automatized equipment.

### Features

- 1) Low investment cost
- 2) Perpetual equipment of high quality production
- 3) No product cling to equipment wall thank to small value of D/H ratio
- 4) Production of beads of uniform size

### Applications

– Wax & Oil, Chemicals, Foods, Resins, Powder milk, Surfactants

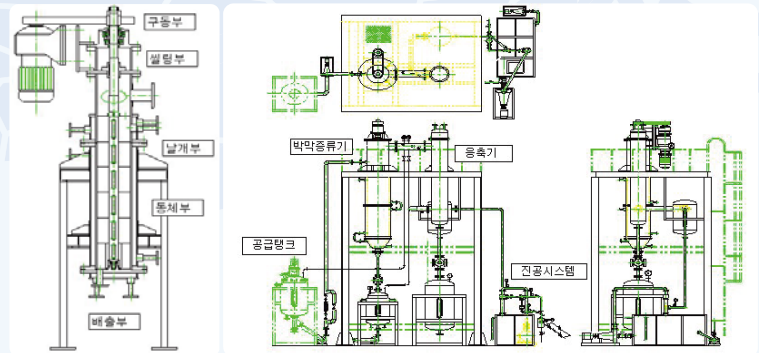


## Thin Film Evaporator

It is the equipment for liquid separation or simple concentration using b.p. difference. It can increase purity of products and provides large heat transfer area and high overall heat transfer coefficient. It can purify, concentrate, decolorize, and degas for short period.

### Features

- 1) Large heat transfer area
- 2) Good fit for high viscous materials
- 3) Recovering solvents
- 4) Continuous automatic processing system is possible



## Flaker / Drum-Flaker

It produces thin slices by removing heat from liquid and coagulating it. Drum cooling keeps the drum temperature constant by applying pneumatic pressure and the slicer converts liquid to rigid thin slices. It is produced by solidification of dissolved products at the outer surface of revolving drum and the ones solidified at the internal surface of drum by contacting injected cold water. Coagulated slices from the surfaces is removed by the scraper.

This structure guarantees the long life span of the equipment. Durable equipment for smooth and continuous operation is available. Also the equipment of diverse speed is available. A screw conveyor, as slice cutter, a slice thickness controller, and a sealed cover are provided as components.

### Features

- 1) Low failure rate
- 2) Low operating cost
- 3) Continuous process is possible
- 4) High efficiency at high temperature
- 5) Low heat loss
- 6) Thin slice can be made in a single process
- 7) Thin slice of uniform quality

**Applications** Acetanilide, Fatty acids, Nickel catalysts, Naphthalene, Resins, Waxes, and the like



## Heat Exchanger

It is used for the heat recovery, cooling, condensation, and evaporation. It is the equipment for the efficient use of energy, which consists of heat transfer areas in the form of tubes or plates and the thermal energies kept by vapor, liquid feeds, intermediates, and products are exchanged through them.

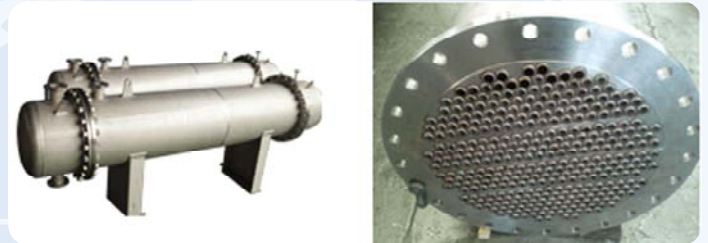
### Features

- 1) Diverse applications (recovery of waste heat/  
Cooling/Heating/Condensation/Evaporation)
- 2) Efficient use of heat 3) Various structure according  
to purposes is available



### Applications

- Petrochemicals, Pharmaceuticals, Foods, Ship building  
Plants and the like



## Pressure Vessel / Storage Tank

It is used for the storage of diverse kinds of raw materials and products in all industrial fields. It can be fabricated in a various shape according to material properties, states, and usages.

### Features

The custom made storage protects the contents from environment during the designed periods of preservation. Storage resistant to such harsh environments as containing toxic gas, acidity, salt and chemicals can be fabricated using appropriate materials.

### Applications

- All kind of storage tanks and pressure vessels





본사/공장 : 경기도 화성시 마도면 마도공단로 5길 46-14

Head Office : 46-14, Madogongdan-ro 5-gil, Mado-myeon, Hwaseong-si, Gyeonggi-do, Korea

Tel : 82-31-355-8114 Fax : 82-31-355-0078 E-mail : [hk@hkcne.co.kr](mailto:hk@hkcne.co.kr)

엔지니어링 사업부 : 경기도 군포시 엘에스로 172 한림휴먼타워 805호

Engineering Division : #805, Hanlim Human-Tower, 172, LS-ro, Gunpo-si, Gyeonggi-do, Korea

Tel : 82-31-477-8141 Fax : 82-31-477-8145