Vacuum drum dryer
Drum cooler
Your process our challenge

We are a growing plant manufacturing enterprise steeped in tradition. Since 1932 we have been offering solutions in the fields of chemical/pharmaceutical, environmental technology, foodstuffs industries and other equipments in order to optimize production chain for all theses different partners. We deal in industrial drying, filtration and mixing processes all types of various materials. To fulfil these tasks in a most beneficial collaborative way with our customers. We realize solutions with the scope of an order- and application-orientated way. Therefore we provide more than 15,000 sqm of production space. We offer the complete range of apparatus associated with vacuum process technology. Together we develop the Optimum Process with our Customers.

DVA Portfolio & Activities

Performance requirements of the customer
Performance requirements of the customer
Professional advice, analysis and proposal of a suitable process. When the properties of a product are unknown, test runs in our own technical facility are often mandatory in-house laboratory.

Engineering
Planning, construction, project drawing, layout and software development

Process
Specification of the process parameters, selection, scaling/layout of equipment or plant (taylored)

Manufacturing
High vertical range of manufacturing due to the various and flexible chipping, processing and welding machines

Installation, commissioning, training and service – worldwide –

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Two-drum dryer

Drum dryers are film dryers in which the product only comes into direct contact with the necessary drying temperature for a few seconds therefore ensuring particularly quick drying. With this type of drying, the product to be dried comes into extensive contact with the heated drums. Thanks to the many years of experience of DVA, this drying procedure can be implemented in a way more gentle to the product by using vacuum.

Applications
- Used for the drying of solvents, suspensions and/or doughy or pasty substances.

Drum surfaces
- 0.2 m² laboratory device up to 25 m² large equipment
Principle of the two-drum dryer/cooler

Drum dryers are used for continuous drying of solutions, suspensions and pastes of the most varied textures and viscosities. The drums are usually heated with steam or thermal oil. The wet material is distributed between the drums by means of a dosing system. The gap between the drums can be adjusted between 0.1 and 2 mm. The applied wet product distributes itself evenly along the hot drums, resulting in the evaporation of moisture as the drums turn. The dry product that forms after about ¾ of a revolution is then removed by scrapers. This can vary depending on the resulting film, flakes or powder, and can be fed via appropriate conveyors to the next processing step. Operation is possible at atmospheric pressure or under vacuum. The device consists of a sturdy metal housing which contains the drums, scrapers, and the loading and discharging equipment.

Drum cooler

In drum coolers, whether it’s a single or a dual drum cooler, the aim is to remove heat from the product. They mostly serve to crystallise saturated solutions and to cool down and solidify molten products. The drums are cooled down with water or a brine mixture. Scrapers remove the crystallised, cooled and solidified product that sticks to the surface of the cooling drum, which is then supplied through the product outlet, mostly in the form of flakes, an moved to the next processing stage or for packaging. When compared to other continuous solidification techniques, drum coolers stand out due to their simple process control and high ease of use.

Applications

- Cooling and solidification of molten products and suspensions for the production of homogeneous structures.

Product results / process parameters

The product results are affected by the following process parameters:

- Revolution speed of the drums
- Temperature
- Drum gap
- Vacuum (when available)
Process and procedure optimisation
Vacuum drum dryers are always used when products to be processed are temperature-sensitive and easily decompose or oxidise during the drying process.

Pilot plant
The device to be used depends strongly on the properties of products to be processed. DVA provides its customers with an in-house pilot plant to optimise the production processes at laboratory scale. The engineers at DVA assist customers with their know-how and many years of experience and as a result may also propose alternate equipment if necessary. First results arising from our own analysis, can be directly used to further optimise processes.

Materials
- The drum surfaces are usually made of hard chrome-plated or specially coated hard metal.
- The drum body consists of GG and/or a welded construction of carbon steel or stainless steel.
- The housing is usually made from stainless steel.

Types
- Atmospheric or vacuum
- ATEX, GMP, FDA
- one or two drums
- Heated housing
- Dust & gas-tight housing
A member of the Meier Group

System solutions from one source - ask for information about the following products of the Meier Group:

- Vacuum, paddle and rotary dryers
- Agitator filters / filter dryers
- Drum dryers/ coolers
- Impregnation plants
- Hot dipping impregnation
- Oil refining
- Transformer drying
- Vacuum and pressure impregnation
- Chamber dryers for the electrical industry
- Annealing and continuous furnaces for the plastic industry
- Special equipment
- Order and Contract Manufacturing
- Service and maintenance by our system servicing

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