



ALLGAIER | PROCESS TECHNOLOGY

CDry

Contact disc dryer for solutions and suspensions



DRYING OF SOLUTIONS AND SUSPENSIONS

CONTACT DISC DRYER - DRYING OF LIQUIDS CONTAINING SOLIDS

The CDry is used for efficient treatment of liquid products containing solids, like suspensions or solutions to be processed into dry goods. A liquid containing the material to be recovered is fed onto a heated rotating disc array where the liquid evaporates leaving behind solid material that is mechanically scraped off. A main benefit of the CDry is the arrangement of a large heat transfer area on a small footprint.

Compared to convective drying technologies, a contact dryer such as the CDry has lower heat loss with the warm exhaust air flow. In the CDry, the exhaust vapor is removed with a high-water vapor concentration leading to lower specific energy consumptions (e.g. steam) compared to convection dryers.

THE ADVANTAGES AT A GLANCE

	ENHANCED PROCESS MONITORING	By a moveable hood made of laminated safety glass on the front side of the CDry and an intelligent process control system.
	COMPACT DESIGN	Compact disc package and a switch cabinet integrated into the machine frame creates a small footprint that is also easily transported.
	OPTIMAL ACCESSIBILITY	Machine controls, instruments, drive and circulation pump can be accessed through a separate panel, while a window and internal light allow for visual observation during dryer operation.
	SIMPLE OPERATION	The intuitive touch screen allows for easy read-out of current data and setting of machine operation parameters.
	ENHANCED SAFETY	The design of the Allgaier CDry is in compliance with all CE regulations including the Machinery Directive. All rotating and hot surfaces are covered, and a safety valve is included in the integrated steam control section for machine service.

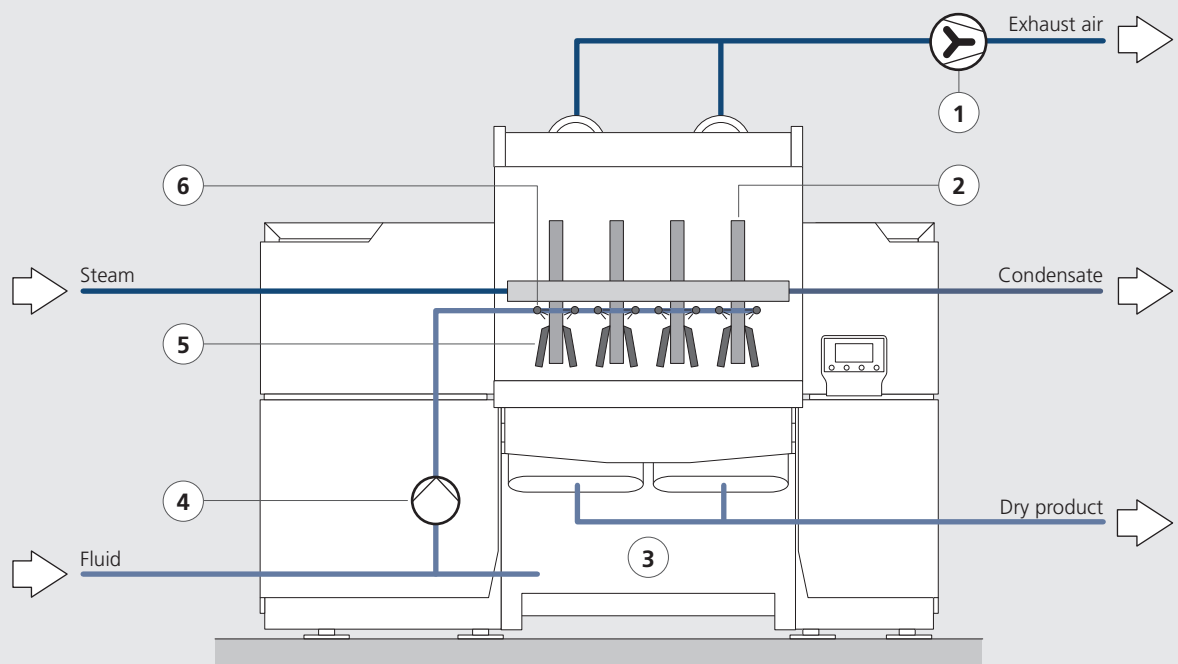
HOW THE ALLGAIER CDry WORKS

Liquid is pumped from a product buffer tank into the circulation tank. The suspension is conveyed by a circulation pump to the individual feed pipes next to the heated, rotating discs. The feedpipes transfer the liquid onto the discs and excess liquid is returned to the circulation tank. The liquid on the heated disc evaporates during one rotation. The degree of product dryness can be controlled by the rotation speed and the heating steam pressure of the discs. The dried or concentrated product is scraped off the discs by blades and the resulting dry product is conveyed out of the dryer.

Depending on the material properties, the resulting dry material can have different forms and texture. The exact product behavior can be analyzed in our pilot plant at the Allgaier test center.



HOW THE ALLGAIER CDry WORKS



- | | |
|--------------------|--------------------|
| 1 Fan | 4 Circulation pump |
| 2 Disc assembly | 5 Scraper blades |
| 3 Circulation tank | 6 Feedpipes |

ROBUST TECHNOLOGY AND COMPACT DESIGN

Because of their special, slim design, the disc assembly enables very good heat transfer resulting in a highly efficient drying process.

Because high quality stainless steel is used in key processing areas of the Allgaier CDry, it is very robust and durable.

The operational status of the CDry is visible at all time on a large touch screen panel, easily accessed on the machine. The multi-colored light, located on the top of the machine housing, shows the machine status and is easy visible by the operator. Various levels for "standard" operational functions are pre-programmed into the system, with manual intervention possible.

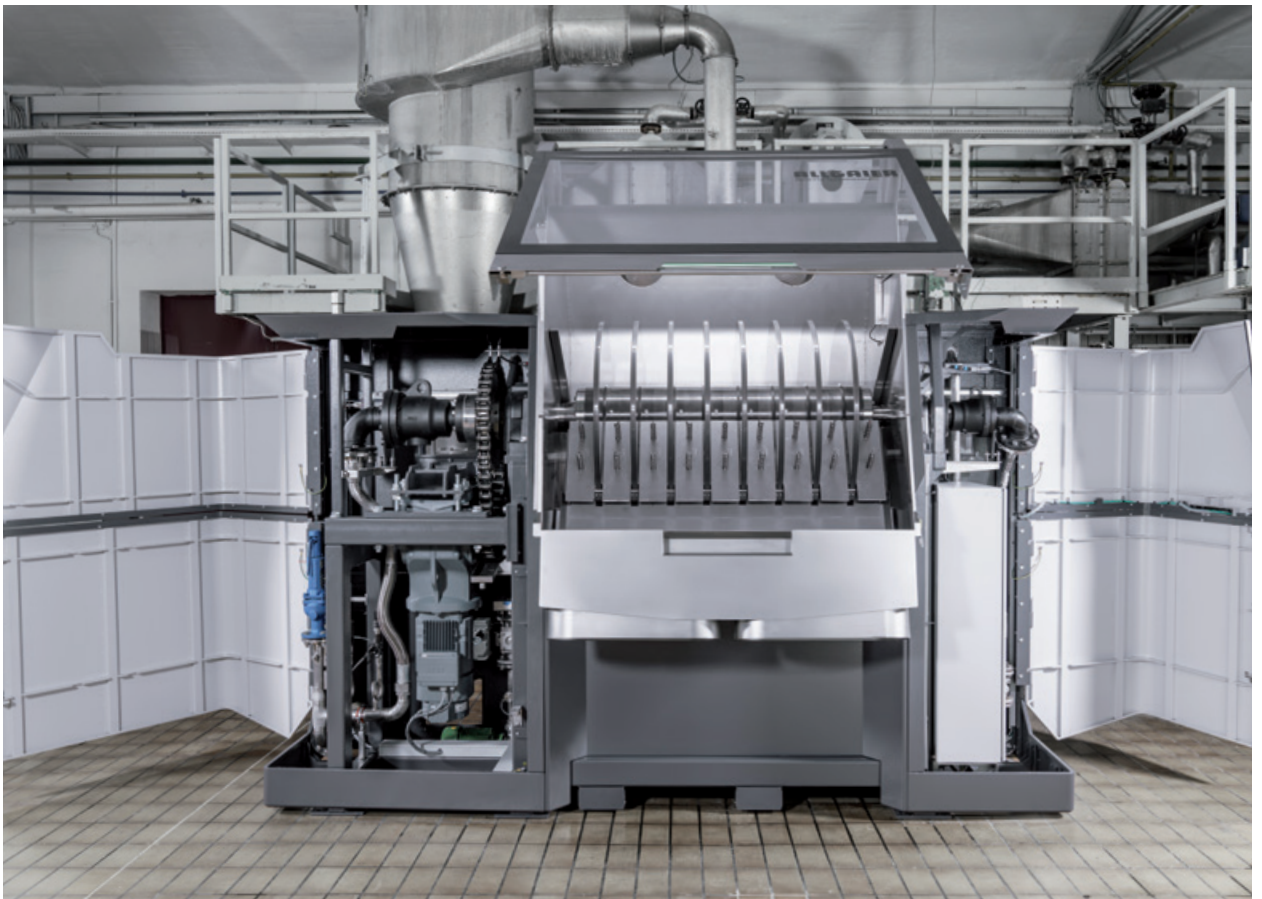
Operator controlled repair and maintenance functions are present, and if necessary, remote maintenance of the CDry is possible.



OPTIMAL ACCESSIBILITY FOR MAINTENANCE

The Allgaier CDry is designed for operational visibility and ease of maintenance. The hood located on the front of the machine contains a large pane of safety glass looking into the disc package to observe the system during operation. For illumination of the process area, a light is directly located above the drying discs.

The hood lifts-up and out of the way for convenient access to the processing area for cleaning and maintenance. Large doors also pivot out and away from the technical chambers for maintenance and service.



MODEL OVERVIEW

MODEL OVERVIEW

There are currently three (3) models in the Allgaier CDry family:

The Allgaier CDry 501 lab is primarily used for drying small quantities of material or in a lab for developing new applications.

The Allgaier CDry food is perfect for the highest demands of the food and animal feed industries.

The Allgaier CDry, the original Allgaier disc dryer, continues to serve the needs of the chemical industry, wastewater technology, pigment and high-value suspension industries.

THE RIGHT SIZE FOR YOUR APPLICATION

Not too big, but not too small.

No matter which size CDry you choose, we will meet the high standard you have come to expect from Allgaier in technology and economic return on your investment. Some models even allow for capacity expansion within the same machine frame with the addition of more drying discs so your initial investment is not lost just because your business needs grow.

Type		CDry lab	CDry	CDry food
Version		Laboratory dryer/ production of small capacities	Industrial production scale	Food-/Fodder applications
Disc diameter	mm	540	900 or 1,300	900
Number of discs	pcs.	1	2-16	2-12
Total heat transfer area	m ²	0.4	2-32	2-12
Water evaporation max.*	kg/h	80	4,000	1,500
Special features		manageable size, compact machine design	Simple and robust tech- nology for continuous industrial operation	Processing chamber designed according to EHEDG guidelines with optional CIP-System available

* Depending on the product to be dried and the moisture content. Values are to be understood as a rough orientation.

DIFFERENCES OF THE TYPES

With its range of models, sizes and possible configurations, the Allgaier CDry can serve a wide variety of industries, applications and capacities. The CDry 501 lab, with a single drying disc and small surface area of 0.4 m², can be used to produce relatively small quantities of dried material. The 900 Model series of dryers have discs with a diameter of 900 mm for medium capacity needs. This model can also be supplied as a CDry food version, designed to meet the strict design and material requirements of the food industry. Along with the

900 Model series, the 1300 Model series with larger drying discs, are both important tools for the disposal of liquid waste and recovery of high-valued solids from liquids in the chemical industry.

CDry lab



CDry



CDry food



Laboratory applications and small product capacities

Robust operation in chemical applications up to wastewater treatment

Highest demands and product qualities for food production

CDry

CDry

The size and materials used for the discs can be adapted to specific customer needs, including disc surface treatments regarding the issue of abrasion and corrosion.

The Allgaier CDry was the recipient of the ACHEMA Innovation Award in 2020.



EQUIPMENT AND OPTIONS

- Compact machine footprint
- Closed machine housing
- Machine front incl. safety glass
- Heat exchange surface from 2-32 m² available
- Multiple disc material and surface treatment and combinations available
- Intuitive machine operation via touch panel
- Efficient drying of liquid products by contact drying
- Flexible installation and easy transport
- Fast product availability due to short start-up times

OVERVIEW CHART OF SIZES AND CHARACTERISTIC DRYER PROPERTIES

Type			CD-902	CD-904	CD-906	CD-908	CD-910	CD-912	CD-1306	CD-1308	CD-1310	CD-1312	CD-1314	CD-1316
Disc diameter		m	0.9						1.3					
Number of discs		pcs.	2-12						6-16					
Heat transfer area per disc		m²	1						2					
Total heat transfer area		m²	2-12						12-32					
Water evaporation *		kg/h	80-4,000											
Dimensions ** closed housing	Width	m	2.99		3.63		4.27		4.20		5.00		5.80	
	Height	m	2.74		2.74		2.74		3.50		3.50		3.50	
	Depth	m	1.98		1.98		1.98		2.60		2.60		2.60	
Dimensions ** opened housing	Width	m	4.55		5.19		5.83		6.00		6.80		7.60	
	Height	m	3.03		3.03		3.03		4.00		4.00		4.00	
	Depth	m	3.07		3.07		3.07		3.80		3.80		3.80	

* Depending on the product to be dried and the moisture content. Values are to be understood as a rough orientation.

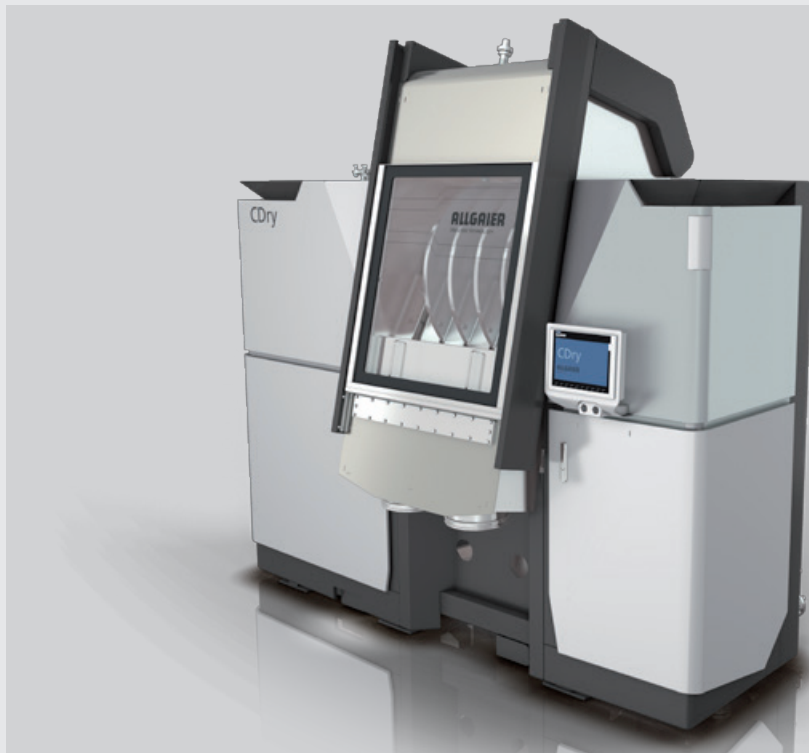
** Dimensions may vary depending on the optional design of the drying system.

CDry food

FIT FOR FOOD

The CDry food is based on the standard CDry model. However, the design of the process chamber and the components used in the CDry food family were developed in strict compliance with the latest EHEDG and FDA guidelines, making the Allgaier CDry food the contact dryer for milk/whey products, high-quality food/feed supplements or any food-grade liquid requiring production of solid product.

The highest product quality, robust system design, flexibility and user-friendly operation is why the Allgaier CDry food was awarded the International FoodTec Award of the DLG. (german agricultural association) Product changes are made easy with an optional automatic "Cleaning in Place" (CIP) system, significantly reducing your downtime for cleaning.



EQUIPMENT AND OPTIONS

- Hygienic machine design
- Process chamber design according to EHEDG guidelines
- Easy cleaning of components in contact with the product
- CIP System with integrated cleaning nozzles available for the process chamber as an option.
- Optimized front window with sealing function for cleaning operation Heat exchange surface available from 2-12 m² in size
- "Captive" surface treatment of the disc assembly to prevent surface coating flaking.
- Fast and flexible adjustment of process parameters
- Production of unique product variants due to contact drying possible

OVERVIEW CHART OF SIZES AND CHARACTERISTIC DRYER PROPERTIES

Type			CD-902	CD-904	CD-906	CD-908	CD-910	CD-912
Disc diameter		m	0.9					
Number of discs		pcs.	2-12					
Heat transfer area per disc		m ²	1					
Total heat transfer area		m ²	2-12					
Water evaporation *		kg/h	up to approx. 1,500					
Dimensions ** closed housing	Width	m	2.99		3.63		4.27	
	Height	m	2.74		2.74		2.74	
	Depth	m	1.98		1.98		1.98	
Dimensions ** opened housing	Width	m	4.55		5.19		5.83	
	Height	m	3.03		3.03		3.03	
	Depth	m	3.07		3.07		3.07	

* Depending on the product to be dried and the moisture content. Values are to be understood as a rough orientation.

** Dimensions may vary depending on the optional design of the drying system.

CDry lab

LABORATORY DRYER 501

The CDry 501 lab is based on the larger siblings in the CDry family, manufactured with the same robust design and high-quality materials. The compact dimensions make this CDry perfect for test labs, production simulations and small batch drying applications. The fully integrated steam/condensate components are located in the dryer housing itself. A single 0.4m² drying disc, simple installation, semi-autonomous control system via the integrated touch panel completes the package. Different pump options may be selected for circulating various types of liquid, and product change over can occur within a short interval.



EQUIPMENT AND OPTIONS

- Footprint corresponds approximately to the dimensions of a standard Euro pallet (approx. 1.2 m x 0.8 m)
- Drying surface area of 0.4 m²
- Integrated steam/condensate instruments
- For laboratory applications and production of smallest quantities
- Vapour exhaust fan mounted in machine housing
- Operation by intuitive touch display
- Machine frame placed on solid heavy-duty castors
- Stainless steel machine housing
- Lockable protective hood for optimum operator safety and best process monitoring at the same time
- Easy removal of the circulation tank and the dry material hopper

OVERVIEW CHART OF SIZES AND CHARACTERISTIC DRYER PROPERTIES

Type			CD-501
Disc diameter		m	0.54
Number of discs		pcs.	1
Heat transfer area per disc		m ²	0.4
Total heat transfer area		m ²	0.4
Water evaporation *		kg/h	< 80
Dimensions ** closed housing	Width	m	approx. 1.20
	Height	m	approx. 1.85
	Depth	m	approx. 0.80

* Depending on the product to be dried and the moisture content. Values are to be understood as a rough orientation.

** Dimensions may vary depending on the optional design of the drying system.



APPLICATION AREAS

CHEMISTRY

Specialty Chemicals
Bio/polymer suspension
Pigment suspension
Tungsten
Titanium dioxide
suspension
Process water
Salt solutions
Brine Settling sludge
Plating wastewater
Graphite
Copper sulfate
Silica
Indium
Industrial carbon black
Polyacrylonitrile
Talc suspension

WASTE/RECYCLING

Industrial wastewater
Landfill leachate
Mineral wastewater/
sludges
Brewery wastewater
Activated sludge
Water-based paint
wastewater
Paint stripping
wastewater
Pigment wastewater
Fermentation
concentrate
Coating wastewater
Metal-loaded
wastewater
Zinc/ferrite wastewater

FOOD

Gelatin
Milk (skim milk/
whole milk)
Whey concentrate
Rosemary
Apple/strawberry
concentrate

CERAMICS

Ceramic
Suspensions
Glass ceramics

ANIMAL FEED

Molasses
Beer yeast
Protein suspension
Feed additives
Algae suspension
Byproducts of the
Alcohol production
Fish water/fish protein
Brewer grains
Pectin

and many others.



CONVINCE YOURSELF IN OUR TECHNOLOGY CENTER

In our Technical Center, located in Uhingen Germany, we are able to test your products, assist you in the development of new products and support you in the integration of Allgaier CDry equipment into your existing production facilities.

With more than 50 years of experience and thousands of test, we look forward to bringing our knowledge and expertise to your world and solutions.





Allgaier Process Technology with its core brands Allgaier, Mogensen, Gosag and Mozer is the market leader in custom-made systems for industrial **washing, drying, cooling, screening and sorting** applications for all types of bulk material. With a presence in over 40 countries, Allgaier Process Technology serves more than 30,000 manufacturing customers in a variety of industries including, but not limited to, chemicals, pharmaceuticals, foodstuffs, fodder, waste/recycling, mining, metallurgy, bio fuels, wood, ceramics, plastics, stones and soil.

ALLGAIER

MOGENSEN

GOSAG

MOZER

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