Aircel

Compressed Air & Gas
Purification for Every Application

Critical Dew Point Heatless Desiccant Dryer

CDP-Series

Aircel

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70 - 5,000 SCFM

The Aircel CDP -Series is a fully automatic Dual Tower Heatless Regenerative Compressed Air Dryer designed for -100F PDP. The dryer is designed for applications where dew point performance is critical. The CDP-Series reliable operation and robust valving, requires no user adjustment and virtually no user maintenance. Our precision engineered components and design deliver outstanding service life and operational durability. Aircel has the experience, engineering and manufacturing capabilities to continuously develop dryers with the highest quality performance.

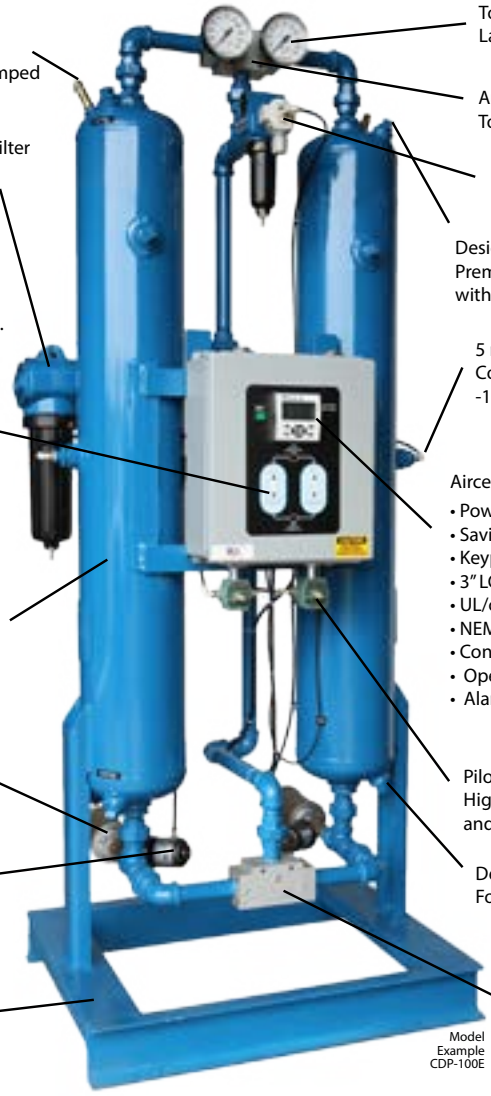
How It Works

Moisture saturated compressed air enters the coalescing pre filter (F1) where aerosols are coalesced then drained via an automatic drain system. The moist water vapor-laden inlet air free of liquid water flows to the inlet of the dryer through the APV (Automatic Piston Valve) (V1) which diverts the inlet air to one of the towers, in this example tower (T1). Air flows upward through the adsorbent bed removing the moisture vapor, the dried airflow exits the tower through the outlet APV valve (V2) flowing to the outlet particulate after filter (F2) which removes particulates from the air stream. Clean and dry air now flows to the process air distribution system.

Visit our website for a detailed description of the CDP regeneration process under the products section.

CDP-Series

Standard Features & Benefits



Relief Valves
ASME UV stamped

Tower Pressure Gauges
Large easy-to-read 3.5" display

Automatic Piston Valve (Inlet/Outlet)
Tough and reliable automatic shifting

Mounted Pre & After Filter
Package with
Zero Air-Loss Drain

Regulated & Filtered Pilot Air
Maintains constant stream of clean purified air

Desiccant Fill Port
Premium grade Molecular Sieve
with high moisture capacity, made in the U.S.A.

LED Tower Operation
Indicates sequence of operation
(drying & regenerating) for towers.

5 min NEMA Cycle
Continual cycling to maintain
-100 PDP

Aircel Programmable Controller (APC)

- Power ON/OFF Switch/Light
- Savings Alarm
- Keypad Push Buttons
- 3" LCD Monochromatic Display
- UL/cUL-508a Control Assembly
- NEMA 4 Steel Enclosure
- Configurable PLC Control
- Operational Hours on display
- Alarm output dry contacts

ASME Carbon Steel Vessels
a.) ≤ 500 scfm 200 psi @ 450°F
b.) ≥ 600 scfm 150 psi @ 450°F

Purge Exhaust Mufflers
For low noise with built-in
safety relief valve

Pilot Solenoid
Highly reliable
and long-lasting

Angle-Body Purge
Exhaust Valve
Durable 10 year
longevity

Desiccant Drain Port
For easy desiccant replacement

Automatic Piston Valve (Inlet/Outlet)
Durable Polyurethane seals with
10 year longevity

Rugged Steel Frame
Single complete package
with floor stand

Model
Example
CDP-100E

Additional Standard Features

- -100°F pressure dew point
  Remote start/stop control
- Fail-safe design: failure of power and/or pilot air causes the purge exhaust valves to close, uninterrupted drying
- Stainless steel desiccant supports and air diffusers to prevent channeling
- Counter-current regeneration, upflow drying, and downflow depressurization
- High performance butterfly valves (≥ 600 scfm models)
- Easy installation with single point connection for electrical and inlet/outlet air
- 5 minute NEMA cycle
- Standard communication through RS-232/RS-485 combo port
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Optional Structural Features

- All-pneumatic control package (no electricity required)
- Pre-piped filters and by-pass valve packages
- High inlet pressure up to 7000 psig
- -100°F pressure dew point
- NEMA 7, NEMA 4X,

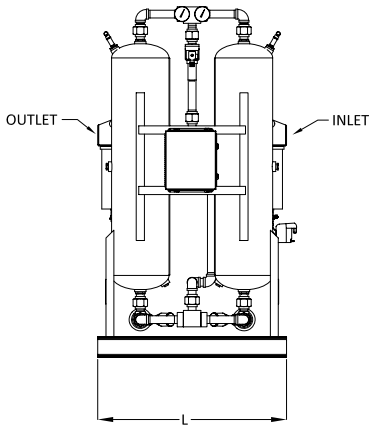
Optional Controller Features

- Failure-to-shift alarm
- High-inlet temperature alarm
- Outlet dew point display
- Pressure alarm
- Visual moisture indicator
- Optional communications: Profibus-DP, AS-I, CANopen, DeviceNet, and Ethernet

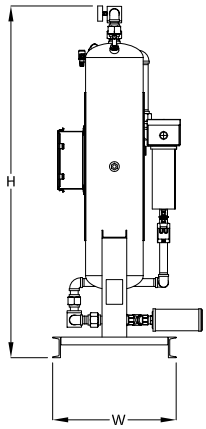
Model Comparison & Specifications

Part Number	Model	Capacity[1] (scfm)	Connection	Dimensions (in.) H	L	W	Weight (lbs)
	CDP-70	70	3/4" NPT	75	30	24	
	CDP-100	100	1" NPT	75	30	24	
	CDP-150	150	1" NPT	85	30	24	
	CDP-200	200	1-1/2" NPT	85	34	24	
	CDP-250	250	1-1/2" NPT	86	46	24	
	CDP-300	300	1-1/2" NPT	87	46	30	
	CDP-350	350	2" NPT	89	50	30	
	CDP-450	450	2" NPT	89	50	30	
	CDP-500	500	2" NPT	89	50	30	
	CDP-600	600	2" NPT	93	66	40	
	CDP-750	750	2" NPT	98	70	40	
	CDP-1000	1000	3" FLG	98	70	40	

[1]Capacity rated in accordance with CAGI ADF 200 @ 100 psig, 100°F Inlet, 100°F Ambient and a PDP of -100°F.
Operating Pressure: 60-190 psig (models 70-500) and 60-140 psig (models 600-1000).
Ambient Air Temperature: 38°-105°F. Inlet Air Temperature: 40°F-100°F.
Standard Power Supply: 115 VAC, consult factory for other options available.

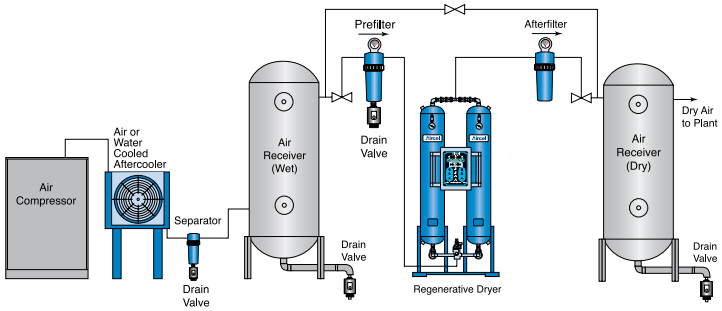


FRONT



RIGHT SIDE

Recommended Installation



Capacity Correction Factors

To Size the Dryer Capacity for Actual Conditions

Adjusted Capacity = scfm x C1 x C2

To calculate the capacity of a given dryer based on non-standard operating conditions, multiply the standard capacity by the appropriate correction factor(s).

EXAMPLE: Dryer Model: CDP-100
Standard Capacity: 100 scfm
Actual Operating Conditions: 120 psig working pressure: C1 = 1.18
100°F inlet temperature: C2 = 1.0
Adjusted Capacity = 100 scfm x 1.18 x 1.0 = 118 scfm

To Select the Dryer Model for Actual Conditions

Adjusted Capacity = scfm/C1/C2

To choose a dryer based on a given flow at non-standard operating conditions, divide the given flow by the appropriate correction factor(s).

EXAMPLE: Given Flow: 350 scfm
Actual Operating Conditions: 120 psig working pressure: C1 = 1.18
100°F inlet temperature: C2 = 1.0
Adjusted Capacity = 350 scfm/ 1.18 / 1.0 = 296.6 scfm
Selected Dryer Model: CDP-300

The Compressed Air and Gas Institute (CAGI) has developed standards to protect users of compressed air & gas equipment. ADF200 the current standard for desiccant compressed air dryers, specifies the dryers performance to be rated at 100°F inlet temperature, 100°F ambient temperature, and 100 psig system pressure. To adjust the dryer capacity from these "CAGI conditions" to your specific application, please use the correction factors below for differing system pressures (C1) and inlet air temperatures (C2).

Capacity correction factors for system air pressure (C1)

System Pressure (psig)					100					
Correction Factor					1					

*For inlet pressure above 150 psi (models 1000 +), consult factory

Capacity correction factors for inlet air temperature (C2)

Inlet Temperature (°F)				100				
Correction Factor				1				

*For inlet temperature above 100°F, molecular sieve desiccant is required

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