GSA Air Dryers

PEHB series
Blower purge desiccant air dryers
Global Standard Air & Gas

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Why Desiccant Air Dryer?

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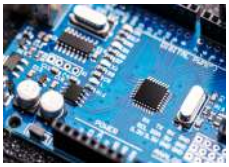
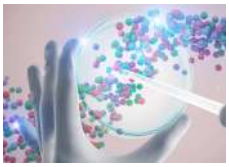
A refrigerated air dryer chills and dehumidifies compressed air, using a refrigerant. To prevent condensate generated while cooling compressed air from being frozen or a heat exchanger from being frozen-burst, dew points are usually kept at 0°C or higher. For moisture-sensitive processes, therefore, a desiccant air dryer is essential.

In general, a desiccant air dryer offers -40°C or lower temperature of dew points. It is used in various fields such as food & beverage, pharmaceuticals, petrochemicals, electronics & semiconductor and medicine. In these industries, even a small amount of water might result in process discontinuance or product defect. Therefore, a highly reliable desiccant air dryer is a must-have system.

GSA's desiccant air dryer is able to provide even super-dry compressed air (-100°C or below) according to user needs. We have enhanced customer satisfaction through the design of diverse desiccant air dryer systems.






Classification

Desiccant Dryer

Heatless Regenerative Type (PHL Series)
- A commonly used model with a short process cycle (nearly 10 minutes)
- Simple structure and low power consumption
- About 14% purge consumption

Heater External Type (PEH Series)
- A model with a long process cycle (8 hours or longer)
- A heater needed to heat regeneration air mounted
- About 8% purge consumption

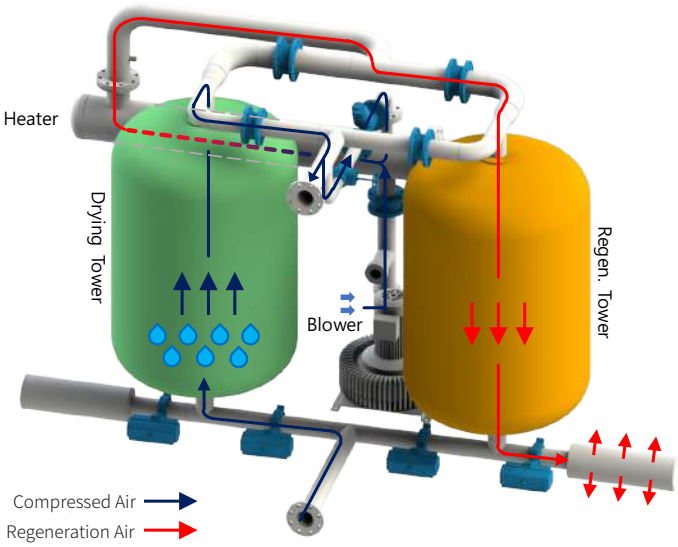
Blower Regenerative Type (PEHB Series)
- A model with a long process cycle (8 hours or longer)
- Desiccant regeneration by a blower and heater using ambient air
- About 3% purge consumption

Zero Purge Type (ZEHB / ZEHC Series)
- A model with a long process cycle (8 hours or longer)
- Desiccant regeneration by a blower and heater using ambient air
- Zero purge consumption

Operating Mechanism

Compressed air with high moisture flows into the drying tower. While it moves from the bottom to the top of the tower, moisture is adsorbed by the charged desiccant, producing dry compressed air. While the air is being dried in the drying tower, other towers perform in regeneration process to remove adsorbed moisture. The regeneration process is divided into heating and cooling processes. During the heating process, the regeneration air uses ambient air sucked by blower. Then, it is heated by a heater, heating the desiccant in the regeneration tower. After moisture is removed, it is discharged to the outside through a muffler at the bottom of the regeneration tower. Once the heating process is complete, a cooling process begins. The heated descant is cooled down, using a part of the dry compressed air from the drying tower. Then, it is discharged to the outside through a muffler at the bottom of the regeneration tower. Once the cooling process is completed, the desiccant regeneration process from the regeneration tower is also finished. The purge valve by the regeneration tower is closed. Then, re-press process pressurizing regeneration tower starts. Once the dynamic pressure process is done, two towers are switched. The drying tower performs regeneration process and the tower that the regeneration process is completed performs drying process.

A series of above processes are automatically repeated according to specific time and sequence, producing dry air consecutively. In terms of an operating cycle, it is basically operated for 8 hours. Drying process is performed by two towers (4 hours each). Specifically, it is heated for 2 hours and 30 minutes and cooled for 1 hour and 27 minutes with 3-minute re-press.



Desiccant Air Dryer for Stable Dew Points

Desiccant Air Dryer with Diverse Features

1 PAN/DUAL Check Valve
High-performance PAN/dual check valves with a little chance of breakdown used

2 Control Air Filter
A control-purpose compressed air filter installed to prevent valves and pneumatic solenoid valves from malfunctioning

3 Minimization of Purge Air Loss
Minimizes compressed air loss through accurately calculated orifice sizing and precision processing

4 SAFETY VALVE
Ensures safety with KOSHA-certified safety valves

5 High-quality Desiccant
Stable dew points with high-quality activated alumina including FRANCE AXENS

6 High-quality Pressure & Temperature Gauges
High performances and low faults with highly reliable pressure and temperature gauges

7 PLC and Touchpanel
A touchpanel designed for PLC and user convenience applied; able to operate and get diverse information easily

8 Electric Heater
An immersion heater with very low heat loss and great heating performances used

9 High-quality Ring Blower
Low noise and law faults despite long operation with a high-quality ring blower

10 High-quality Muffler
Minimizes noise from the purge with an Allied Witan's muffler

11 Highly Reliable Auto Valve
Proven angle sheet and butterfly valves used

12 PARKER Pneumatic Solenoid Valve
Able to check operating conditions easily, using PARKER's LED pneumatic solenoid valve

13 Efficient Compressed Air Distribution System
A bottom distributor installed to prevent the bias flow of compressed air in a large adsorption tower and provide stable dew points

Blower Regenerative Desiccant Air Dryer

Global Standard Air / Gas

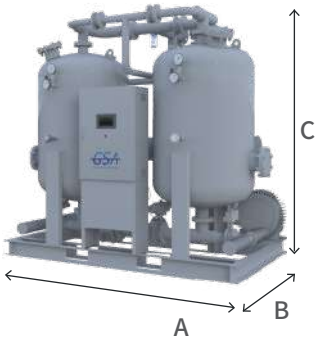
Technical Specification

Design Conditions

- Inlet Pressure : 7 barg
- Inlet Temperature : 38 °C
- Dew Points : -40 °C @ ATM
- Design Temperature : 250 °C
- Design Pressure : 9.7 barg
- Differential Pressure : 0.2 bar

References

- Those with - 40°C or below dew points are also customizable.
- ASME specifications in addition to KS are also customizable.
- A unit with 9.8barg or higher operating pressure is custom-made.
- Special-purpose models in addition to the proposed specifications are also customizable.
- Large models bigger than those stated in the specifications above are also customizable.
- The specifications are subject to changes without notice for product improvement.



Model		Connection	Flow Rate	Air Compressor	Heater	Blower	Power Supply	Dimensions (mm)			Desiccant Amount *Note 1	Weight *Note 2
		A	Nm³/hr	HP	kW	kW	V / Ph / Hz	A	B	C	kg/2Tower	kg
PEHB	100	FLG. 20A	160	20	2.0	0.75	220V/380V 440V 1Ph/3Ph 50/60Hz	1000	420	1570	60	290
	150	FLG. 25A	240	30	3.0	0.75		1400	510	1690	97	350
	200	FLG. 40A	320	40	3.5	0.75		1600	850	1770	121	520
	285	FLG. 40A	450	50	5.0	1.5		1600	850	1770	160	570
	350	FLG. 40A	550	60	6.5	1.5		1900	880	2030	213	830
	430	FLG. 40A	680	75	7.5	1.5		1900	900	2030	266	940
	560	FLG. 50A	890	100	9.5	1.75		2100	1000	2230	324	1180
	720	FLG. 50A	1140	130	12.5	2.55		2100	1000	2230	406	1430
	900	FLG. 65A	1430	150	15.0	2.55		2600	1250	2400	500	1650
	1100	FLG. 65A	1740	175	18.5	4.5		2600	1250	2400	593	1970
	1350	FLG. 80A	2140	200	22.5	4.5		2600	1670	2330	754	2490
	1550	FLG. 80A	2450	250	26.0	4.5		2600	1710	2330	943	2880
	2100	FLG. 100A	3320	300	35.0	8.6		3100	1650	2445	1243	3750
	2600	FLG. 100A	4120	400	43.0	8.6		3400	1970	2290	1442	4100
	3000	FLG. 125A	4750	500	49.0	12.6		3550	1970	2290	1620	4700
	3400	FLG. 125A	5380	600	56.0	12.6		3650	2140	2530	1883	5150
	4100	FLG. 125A	6490	700	68.0	15.3		3650	2180	2530	2310	5450
	4500	FLG. 150A	7120	800	75.0	15.3		5700	2100	2960	2494	5800
	5400	FLG. 150A	8550	900	88.5	22.7		5700	2100	2960	3055	6450
	6000	FLG. 150A	9500	1000	99.5	22.7		6000	2150	3000	3325	7250

*Note 1: Desiccant Amount of 2 Towers
*Note 2: Total Weight

Correction Factors

Correction Factor by Inlet Air Temperature												
Inlet Air Temperature (°C)	27	32	38	43	49							
Correction Factor	1.14	1.12	1.00	0.75	0.65							
Correction Factor by Inlet Air Pressure												
Inlet Air Pressure (barg)	4	5	6	7	8	9						
Correction Factor	0.6	0.75	0.87	1.00	1.16	1.24						