GSA Air Dryers

ZEHB series
Blower zero purge desiccant air dryers
Global Standard Air & Gas

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Why Desiccant Air Dryer?

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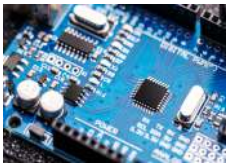
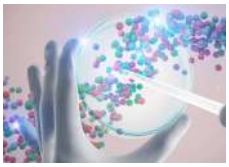
A refrigerated air dryer chills and dehumidifies compressed air, using a refrigerant. To prevent condensate generated while cooling compressed air from being frozen or a heat exchanger from being frozen-burst, dew points are usually kept at 0°C or higher. For moisture-sensitive processes, therefore,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

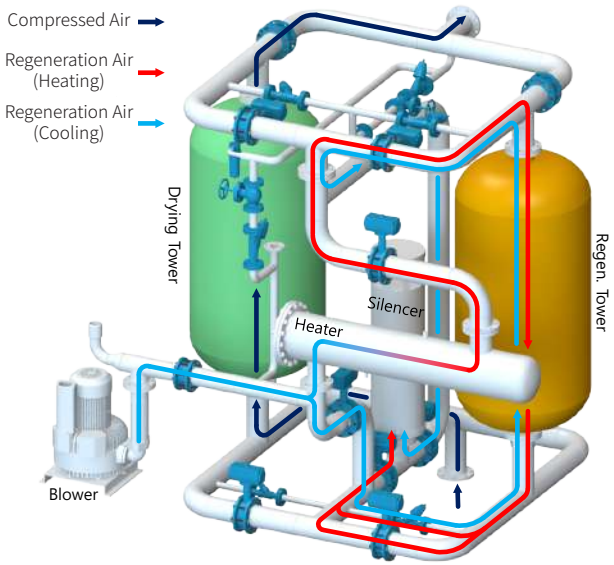
Zero Purge Type (ZEHB / ZEHC Series)
- A model with a long process cycle (8 hours or longer)
- Desiccant regeneration by a blower and heater using ambient air
- Zero purge consumption

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 sucked in from ambient air by a blower is heated up to the set temperature through an electrical heater. After moisture is removed, the heated regeneration air is discharged to the outside through a muffler at the bottom of the regeneration tower. Once the heating process is complete, the cooling process needed to cool down the heated desiccant in the regeneration tower begins. The cooling process is divided into ZEHB Type which cools down the desiccant, using the ambient air sucked by a bower and ZEHC Type that cools off the desiccant with coolant by circulating regeneration air.

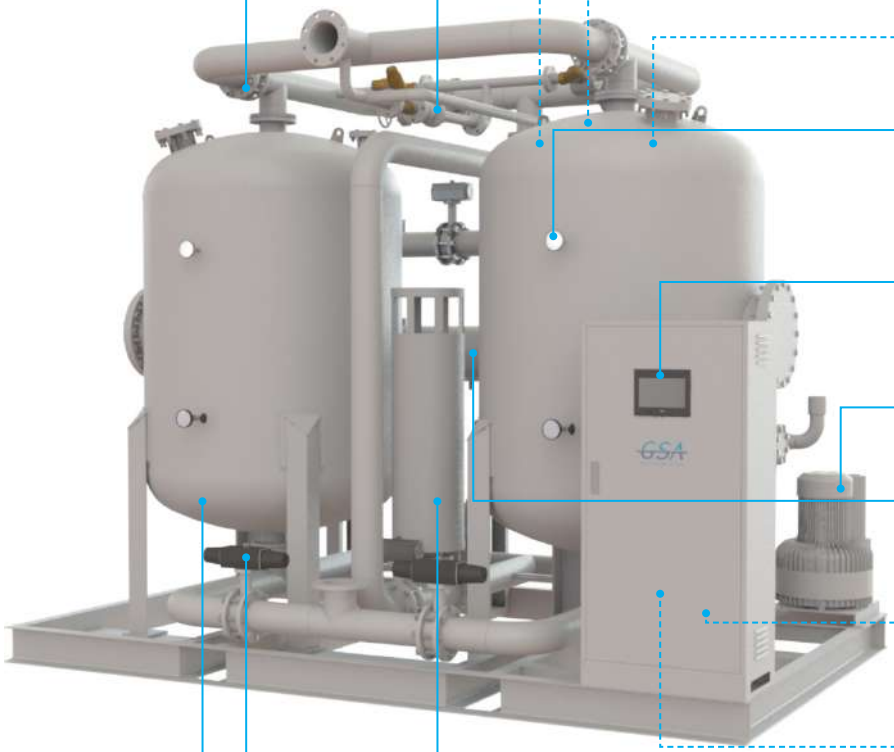
Once the cooling process is done, the desiccant regeneration process is also finished. Then, re-press process pressurizing regeneration tower starts. Once the re-press process is done, two towers are switched. In the drying tower, then, the regeneration process is performed. In the towers where such regeneration process is completed, drying process is performed. A series of above processes are automatically repeated, providing dry compressed air.

In a zero-purge desiccant air dryer, the air compressor's load factor is low without any purge which is consumed during desiccant regeneration. Depending on the adsorption tower's regeneration temperature, diverse heating process control features are added, reducing power consumption (energy-saving model).



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

3 SAFETY VALVE
Ensures safety with KOSHA-certified safety valves

4 CONTROL AIR FILTER
A control-purpose compressed air filter installed to prevent valves and pneumatic solenoid valves from malfunctioning

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

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

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

11 Power Regulator (Specifications Applied)
Able to control a heater efficiently through this power regulator and reduce power consumption

12 High-quality Muffler
Minimizes noise from the purge with an Allied Witan's or specially designed (large model) muffler

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

14 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

Zero Purge Desiccant Air Dryer

Global Standard Air / Gas

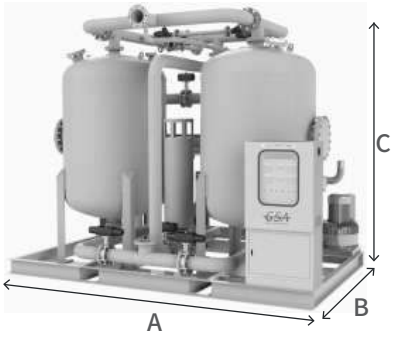
Technical Specification

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
ZEHB	430	FLG. 40A	680	75	8.5	1.5	220V/380V 440V 3Ph 50/60Hz	1900	900	2030	324	1440
	560	FLG. 50A	890	100	11.0	1.75		2100	1000	2230	406	1700
	720	FLG. 50A	1140	130	14.0	2.55		2100	1000	2230	474	2060
	900	FLG. 65A	1430	150	17.5	2.55		2600	1250	2400	592	2200
	1100	FLG. 65A	1740	175	21.5	4.5		2600	1250	2400	755	2470
	1350	FLG. 80A	2140	200	26.5	4.5		2600	1670	2330	943	2690
	1550	FLG. 80A	2450	250	30.0	4.5		2600	1710	2330	1,022	3100
	2100	FLG. 100A	3320	300	41.0	8.6		3100	1650	2445	1,384	4090
	2600	FLG. 100A	4120	400	50.5	8.6		3400	1970	2290	1,848	4700
	3000	FLG. 125A	4750	500	58.5	12.6		3550	1970	2290	1,980	5860
	3400	FLG. 125A	5380	600	66.0	12.6		3650	2140	2530	2,272	7400
	4100	FLG. 125A	6490	700	80.0	15.3		3650	2180	2530	2,707	8200
	4500	FLG. 150A	7120	800	87.5	22.7		5700	2100	2960	3,055	9600
	5400	FLG. 150A	8550	900	105.0	22.7		5700	2100	2960	3,566	11400
	6000	FLG. 150A	9500	1000	117.0	22.7		6000	2150	3000	4,052	12300
	7000	FLG. 200A	11080	1200	136.0	25.2		7000	2200	3500	4,621	13500
	8000	FLG. 200A	12660	1300	155.5	30.6		7000	2500	3700	5,279	14700
	9000	FLG. 200A	14520	1600	1750.0	37.0		7000	2500	3700	5,942	15600

*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						