

# GSA Air Dryers

## PEHB series

Blower purge desiccant air dryers

*Global Standard Air & Gas*



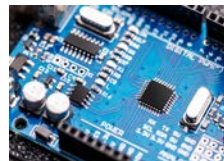
# Why Desiccant Air Dryer?

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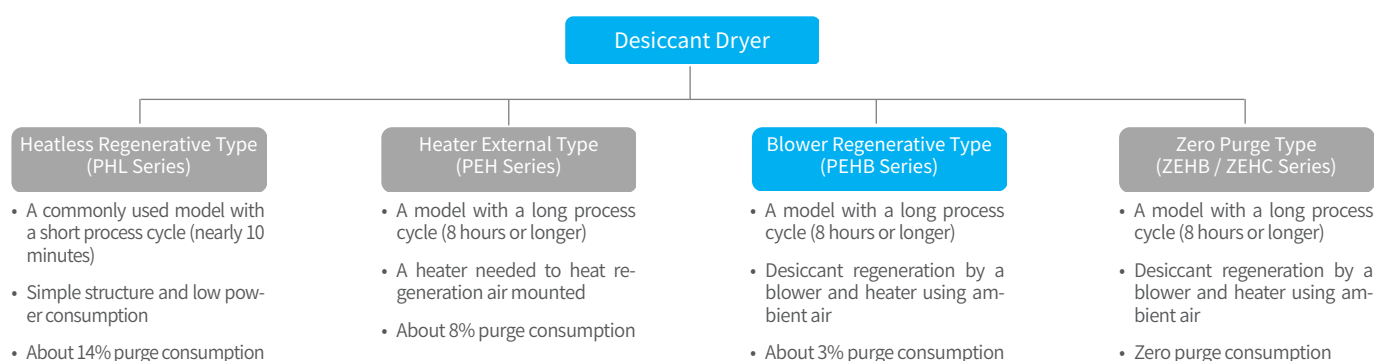
A refrigerated air dryer chills and dehumidifies compressed air, using a refrigerant. To prevent condensate generated while cooling compressed air from being frozen or a heat exchanger from being frozen-burst, dew points are usually kept at 0°C or higher. For moisture-sensitive processes, therefore,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

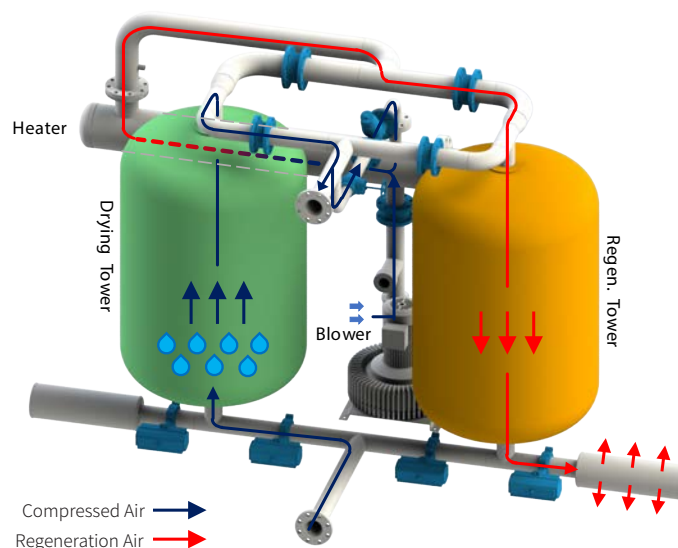


## Operating Mechanism

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 desiccant 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.

PEHB Desiccant Air Dryer Series



# 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
- 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 low faults despite long operation with a high-quality ring blower
- 10 High-quality Muffler**  
Minimizes noise from the purge with an high-quality muffler
- 11 Highly Reliable Auto Valve**  
Proven angle sheet and butterfly valves used
- 12 Pneumatic Solenoid Valve**  
Reliable operation is ensured by using high-quality pneumatic solenoid valves
- 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

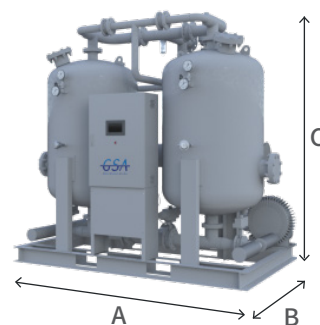
## Technical Specification

### 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
- Inlet air conditions  
: ISO 8573.1:2010 Class 4.4.1

### 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	Heater	Blower	Power supply	Dimension(mm)			Amount of adsorbent <sup>*Note1</sup>	Weight <sup>*Note2</sup>
		A	m³/hr	kW	kW	V / Ph / Hz	A	B	C	kg/2Tower	kg
P E H B	150	FLG. 40A	250	3.4	1.5	380 / 3 / 60	970	1100	1890	110	500
	200	FLG. 40A	370	4	1.75		970	1100	1990	170	650
	285	FLG. 40A	495	4.5	1.75		1150	1200	2240	210	900
	350	FLG. 50A	660	7.5	1.75		1150	1200	2540	280	1000
	430	FLG. 50A	870	9	1.75		1150	1200	2570	390	1200
	560	FLG. 65A	1050	10	3		1250	1300	2670	460	1500
	720	FLG. 65A	1380	12	3		1450	1400	2700	520	1800
	900	FLG. 80A	1680	15	3		1450	1400	2705	700	2000
	1100	FLG. 80A	1950	18	6.3		1700	1600	2750	860	2400
	1350	FLG. 80A	2280	20.4	6.3		1700	1700	2850	1000	2900
	1550	FLG. 100A	2950	28.5	7.5		1900	1700	2950	1050	3400
	2100	FLG. 100A	3700	33	9		2400	1800	2990	1560	4000
	3000	FLG. 150A	5400	44	13		2500	1950	3250	2100	4800
	4100	FLG. 150A	6600	56	15		3200	2300	3250	2900	6000
	4500	FLG. 150A	7500	62	15		3200	2400	3250	3200	6500
	5400	FLG. 150A	8500	70	20		3200	2500	3300	3780	7300
	6000	FLG. 200A	10500	85	22		3400	2500	3430	4200	8100
	7000	FLG. 200A	12000	100	27		3600	2500	3430	4900	10300
	9000	FLG. 250A	15000	110	30		4000	3000	3430	6400	12300

\*Note 1: Desiccant Amount of 2 Towers

\*Note 2: Total Weight

## Correction Factors

Correction Factor by Inlet Air Temperature												
Inlet Air Temperature (°C)	25	30	38	45	50							
Correction Factor	1.12	1.05	1.00	0.7	0.55							
Correction Factor by Inlet Air Pressure												
Inlet Air Pressure (barg)	4	5	6	7	8	9						
Correction Factor	0.6	0.72	0.87	1.00	1.1	1.15						

