

# GSA Air Dryers

## PEH series

Heated desiccant air dryers

*Global Standard Air & Gas*



# Why Desiccant Air Dryer?

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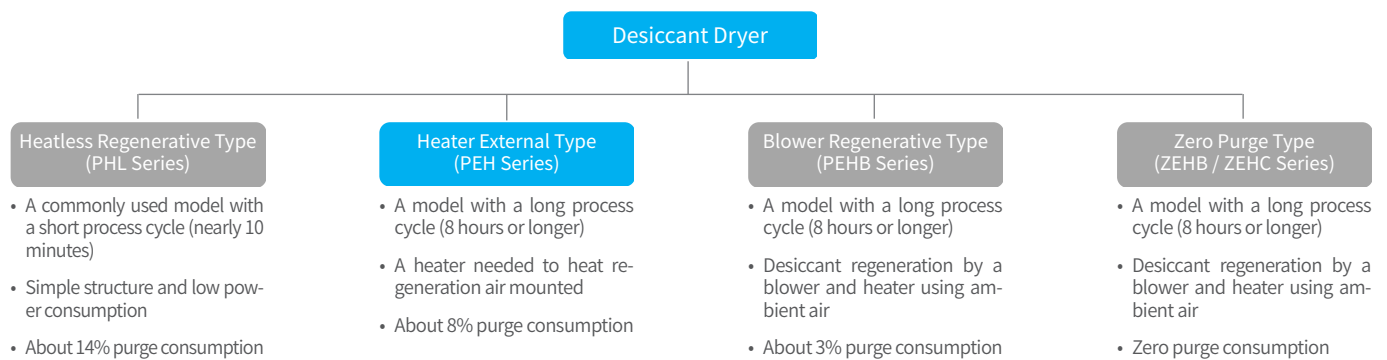
A refrigerated air dryer chills and dehumidifies compressed air, using a refrigerant. To prevent condensate generated while cooling compressed air from being frozen or a heat exchanger from being frozen-burst, dew points are usually kept at 0°C or higher. For moisture-sensitive processes, therefore,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

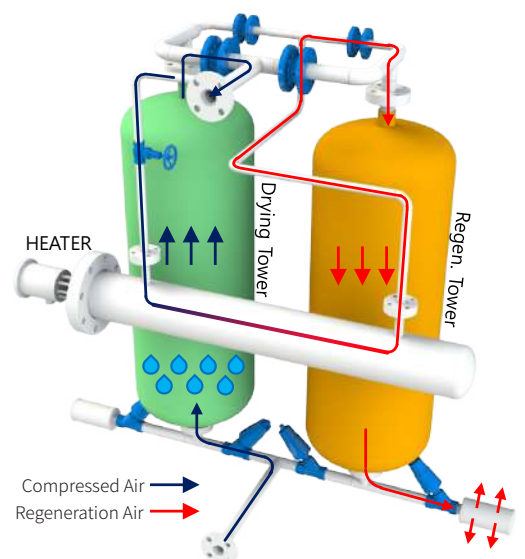


## Operating Mechanism

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. During the regeneration process, dry compressed air from the drying tower is partially used. The dry compressed air at the outlet is heated by an electric heater, and moisture adsorbed by the desiccant in the regeneration tower is desorbed and discharged through a muffler at the bottom. When the heating process is completed, the heater is turned off and cooling process proceeds. The cooling process is a process to enhance adsorbing performances by cooling down the heated desiccant. Once the cooling process is completed, the desiccant regeneration process from the regeneration tower is also finished. The purge valve from the regeneration tower is closed. Then, re-pressurize regeneration tower starts. Once the dynamic pressure process is done, two towers are switched. In the drying tower, then, the regeneration process is executed. The drying tower performs regeneration process, and the tower that the regeneration process is completed performs drying process.

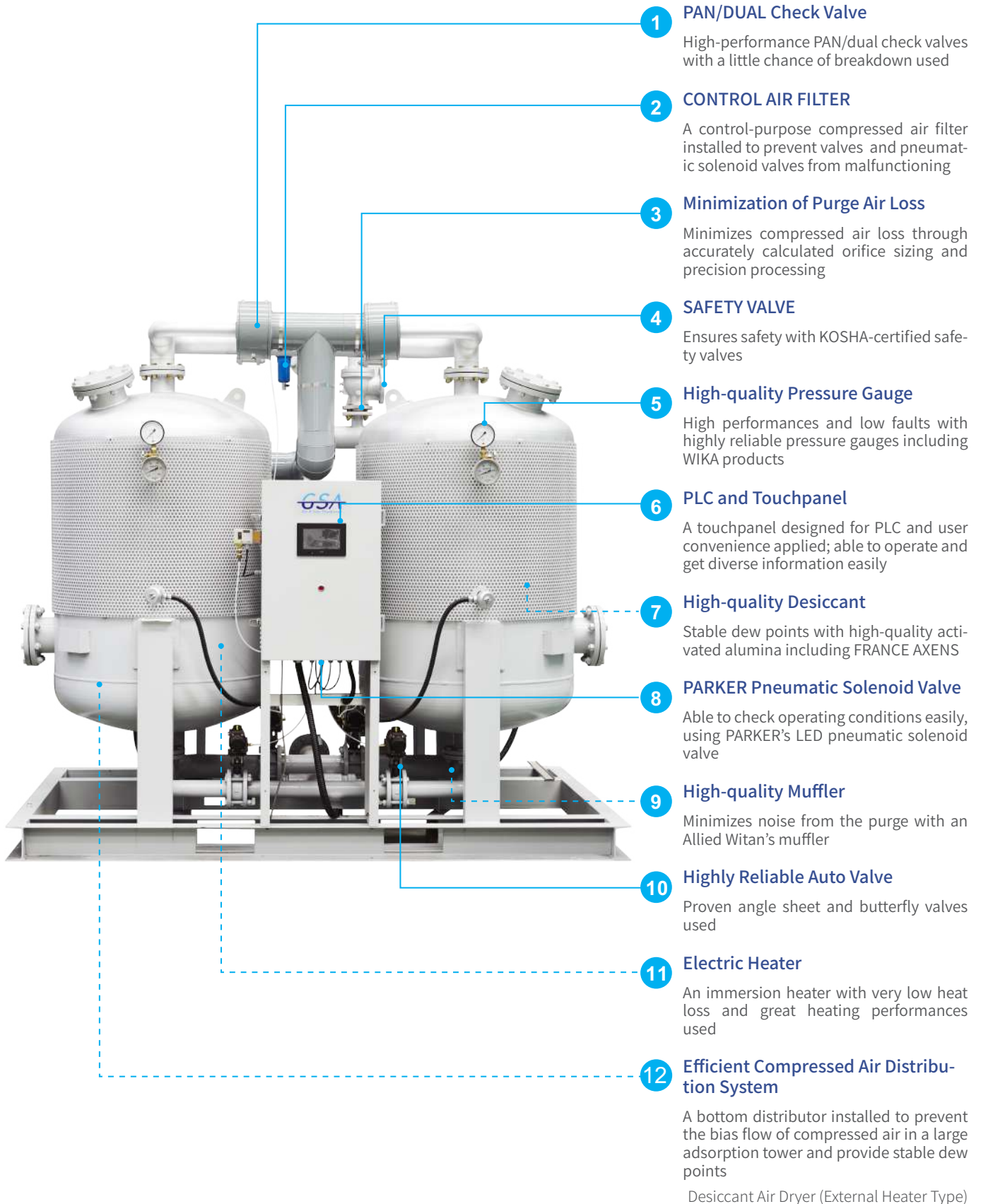
A series of above processes are automatically repeated according to specific time and sequence, producing dry air consecutively. In terms of an operating cycle, it is basically operated for 8 hours. Drying process is performed by two towers (4 hours each). Specifically, it is heated for 2 hours and 30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

PEH 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 Pressure Gauge**  
High performances and low faults with highly reliable pressure gauges including WIKA products
- 6 PLC and Touchpanel**  
A touchpanel designed for PLC and user convenience applied; able to operate and get diverse information easily
- 7 High-quality Desiccant**  
Stable dew points with high-quality activated alumina including FRANCE AXENS
- 8 PARKER Pneumatic Solenoid Valve**  
Able to check operating conditions easily, using PARKER's LED pneumatic solenoid valve
- 9 High-quality Muffer**  
Minimizes noise from the purge with an Allied Witan's muffer
- 10 Highly Reliable Auto Valve**  
Proven angle sheet and butterfly valves used
- 11 Electric Heater**  
An immersion heater with very low heat loss and great heating performances used
- 12 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  
Desiccant Air Dryer (External Heater Type)

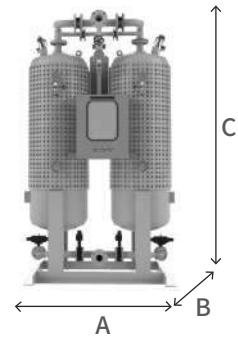
# Technical Specification

## 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 9.7barg 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	Power Supply	Dimensions(mm)			Desiccant Amount <sup>*Note 1</sup>	Weight <sup>*Note 2</sup>	
						A	B	C			
P E H	100	FLG. 20A	160	20	1.5	220V 380V 440V / 3 Ph / 50, 60Hz	800	420	1570	60	260
	150	FLG. 25A	240	30	2.0		1100	510	1690	97	320
	200	FLG. 40A	320	40	2.5		1300	850	1770	121	480
	285	FLG. 40A	450	50	3.5		1300	850	1770	160	530
	350	FLG. 40A	550	60	4.5		1600	880	2030	213	780
	430	FLG. 40A	680	75	5.5		1600	900	2030	266	880
	560	FLG. 50A	890	100	7.0		1700	1000	2230	324	1100
	720	FLG. 50A	1140	130	9.0		1700	1000	2230	406	1350
	900	FLG. 65A	1430	150	11.0		2200	1250	2400	500	1550
	1100	FLG. 80A	1740	175	13.5		2200	1250	2400	593	1850
	1350	FLG. 80A	2140	200	16.5		2200	1670	2330	754	2350
	1550	FLG. 80A	2450	250	19.0		2200	1710	2330	943	2750
	2100	FLG. 100A	3320	300	25.5		2650	1650	2445	1243	3600
	2600	FLG. 100A	4120	400	31.5		2850	1970	2290	1442	3900
	3000	FLG. 125A	4750	500	36.0		3050	1970	2290	1620	4500
	3400	FLG. 125A	5380	600	41.0		3150	2140	2530	1883	4900
	4100	FLG. 125A	6490	700	50.0		3150	2180	2530	2310	5300
	4500	FLG. 150A	7120	800	55.0		5000	2000	2960	2494	5600
5400	FLG. 150A	8550	900	65.0	5000	2000	2960	3056	6200		
6000	FLG. 150A	9500	1000	73.0	5300	2100	3000	3325	6900		

\*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	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	1.16	1.24					

