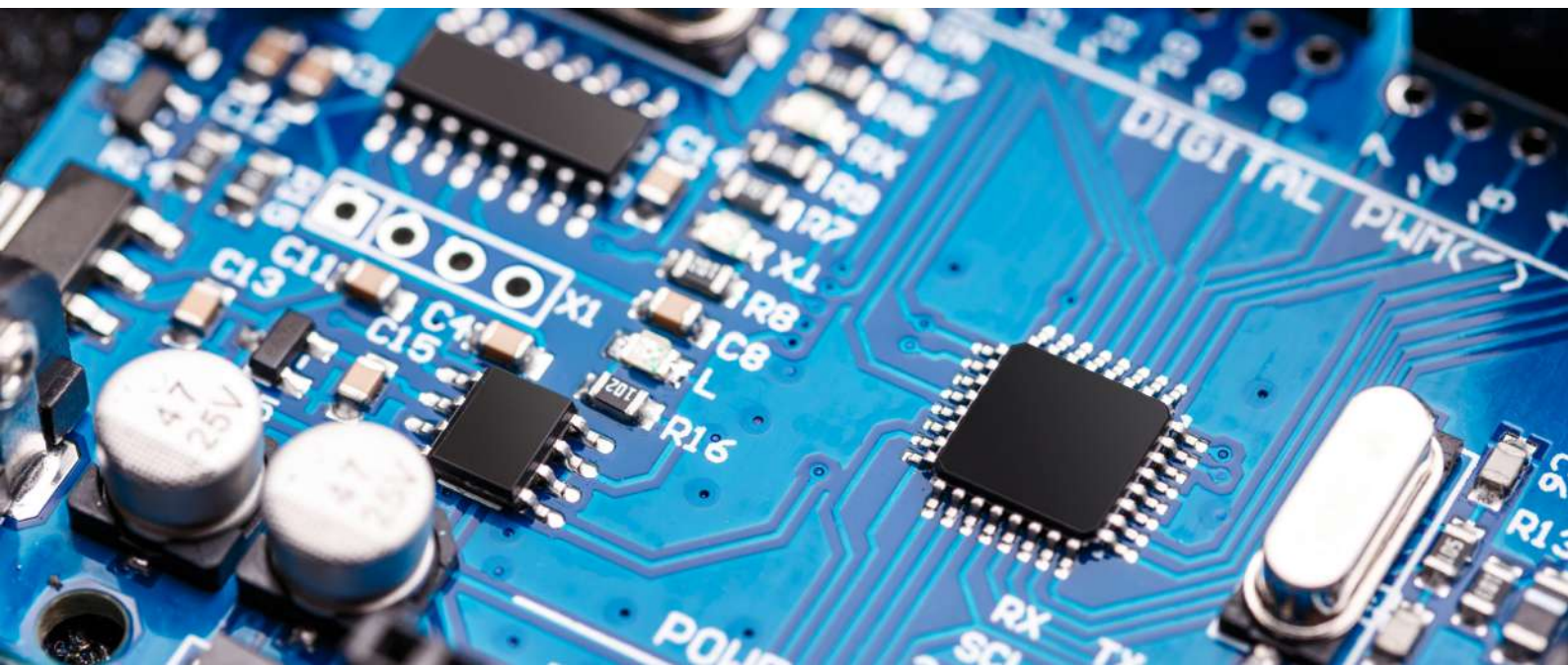


GSA Air Dryers

PHL series

Heatless desiccant air dryers

Global Standard Air & Gas



Why Desiccant Air Dryer?

Why Desiccant Air Dryer?

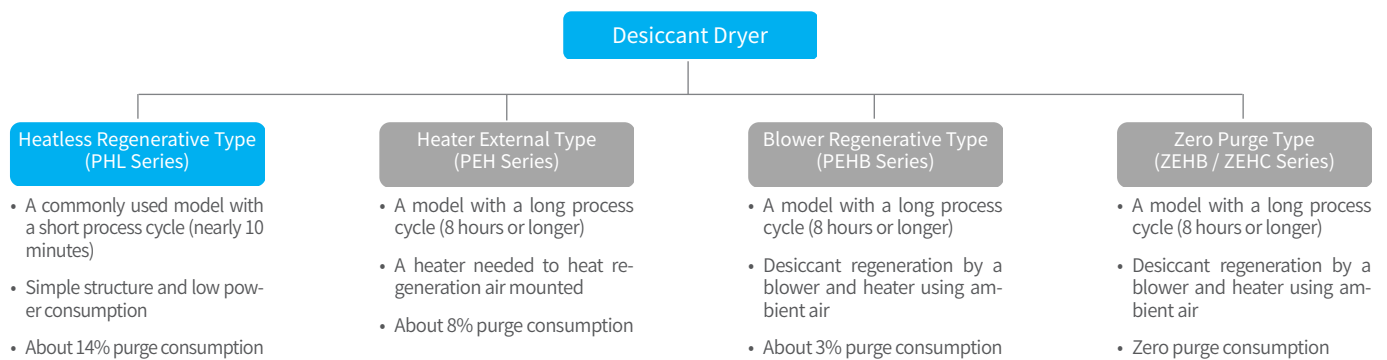
A refrigerated air dryer chills and dehumidifies compressed air, using a refrigerant. To prevent condensate generated while cooling compressed air from being frozen or a heat exchanger from being frozen-burst, dew points are usually kept at 0°C or higher. For moisture-sensitive processes, therefore,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



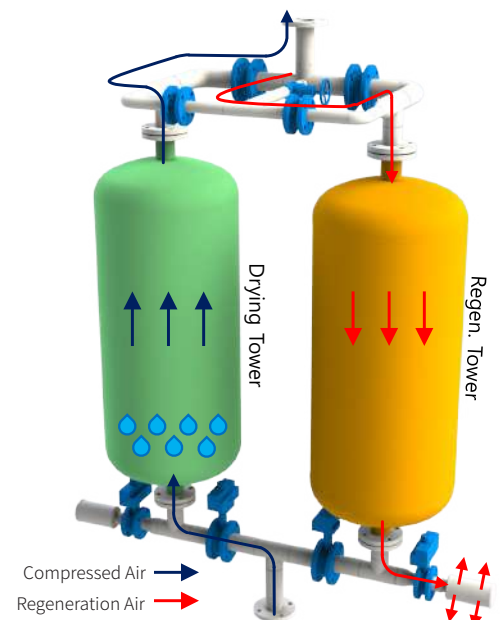
Classification



Operating Mechanism

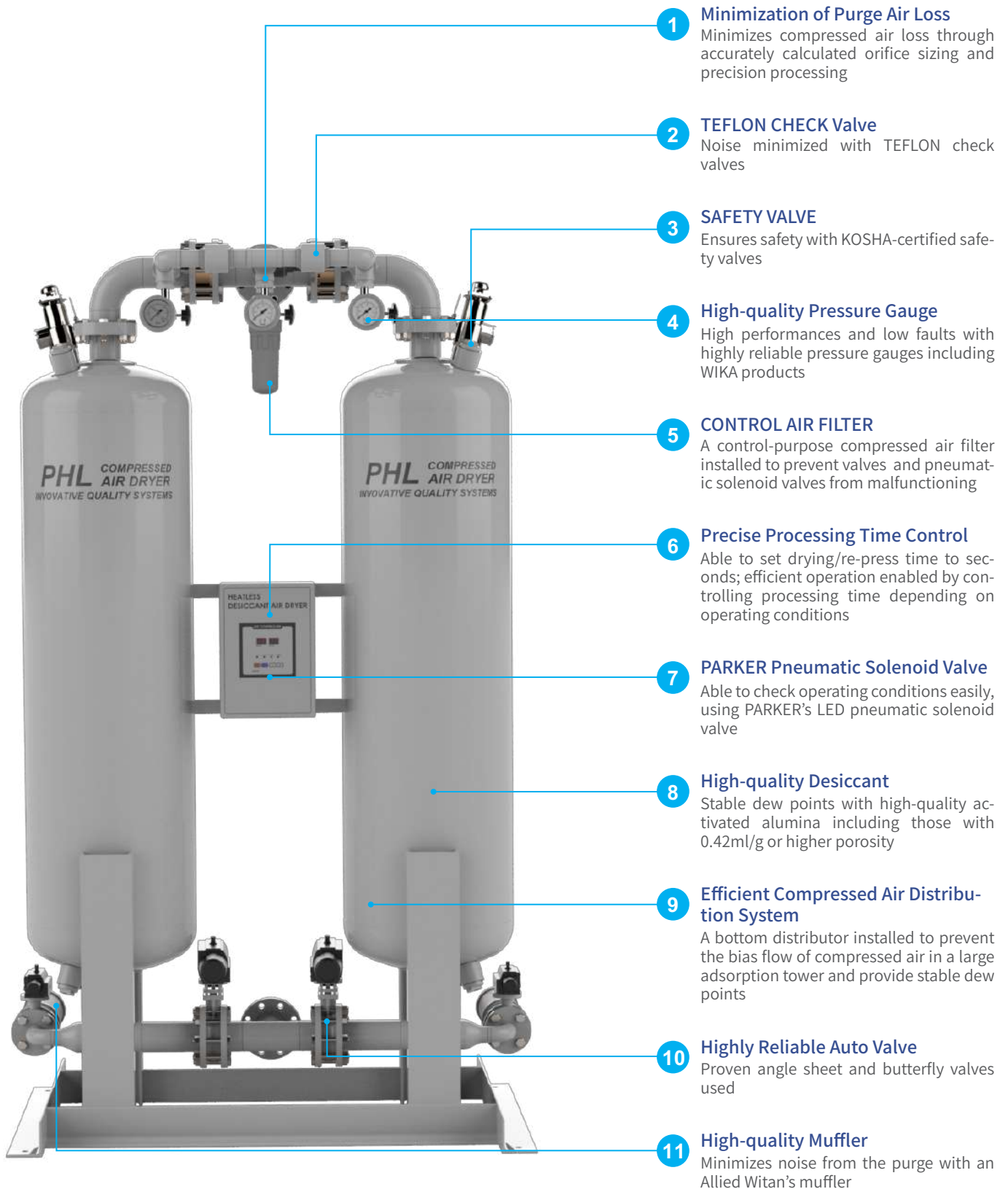
Compressed air with high moisture flows into the drying tower. While it moves from the bottom to the top of the tower, moisture is adsorbed by the charged desiccant, producing dry compressed air. While the air is being dried in the drying tower, other towers perform in regeneration process to remove adsorbed moisture. During the regeneration process, dry compressed air from the drying tower is partially used. The dry compressed air is discharged to the outside through a muffler at the bottom of the regeneration tower after moisture adsorbed into the desiccant is removed. Once the regeneration tower process is complete, the purge valve of the regeneration tower is closed. Re-pressurization process is in progress to increase the pressure of the regeneration tower. Once the re-pressurization process is done, two towers are switched. The drying tower performs regeneration process and the tower that the regeneration is completed performs a 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 10 minutes. Drying process is executed by two towers (5 minutes each). Specifically, it is regenerated for 4 minutes with 1 minute dynamic pressure.



Desiccant Air Dryer for Stable Dew Points

Desiccant Air Dryer with Diverse Features



- 1 Minimization of Purge Air Loss**
Minimizes compressed air loss through accurately calculated orifice sizing and precision processing
- 2 TEFLON CHECK Valve**
Noise minimized with TEFLON check valves
- 3 SAFETY VALVE**
Ensures safety with KOSHA-certified safety valves
- 4 High-quality Pressure Gauge**
High performances and low faults with highly reliable pressure gauges including WIKA products
- 5 CONTROL AIR FILTER**
A control-purpose compressed air filter installed to prevent valves and pneumatic solenoid valves from malfunctioning
- 6 Precise Processing Time Control**
Able to set drying/re-press time to seconds; efficient operation enabled by controlling processing time depending on operating conditions
- 7 PARKER Pneumatic Solenoid Valve**
Able to check operating conditions easily, using PARKER's LED pneumatic solenoid valve
- 8 High-quality Desiccant**
Stable dew points with high-quality activated alumina including those with 0.42ml/g or higher porosity
- 9 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
- 10 Highly Reliable Auto Valve**
Proven angle sheet and butterfly valves used
- 11 High-quality Muffler**
Minimizes noise from the purge with an Allied Witan's muffler

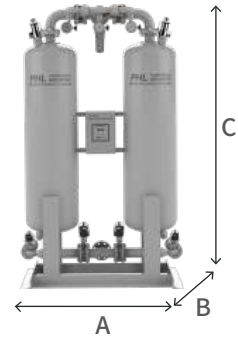
Technical Specification

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.
- The specifications are subject to changes without notice for product improvement.



Model	Connection	Flow Rate	Air Compressor	Power Consumption	Power Supply	Dimensions (mm)			Desiccant Amount* ^{Note 1}	Weight* ^{Note 2}	
	A	Nm ³ /hr	HP	W	V / Ph / Hz	A	B	C	kg/2Tower	kg	
P H L	100	PT 20A	160	20	50	220 / 1 / 50, 60	1000	470	1495	48	170
	150	PT 25A	240	30			1000	470	1495	60	260
	200	PT 40A	320	40			1200	560	1642	97	320
	285	PT 40A	450	50			1200	560	1642	121	400
	350	PT 40A	550	60			1400	630	1705	129	450
	430	PT 40A	680	75			1400	630	1705	160	500
	560	PT 50A	890	100			1500	680	2036	213	560
	720	PT 50A	1140	125			1500	680	2036	266	650
	900	FLG. 65A	1430	150			1800	750	2251	325	700
	1100	FLG. 65A	1740	200			1800	750	2251	406	780
	1350	FLG. 80A	2140	250			1900	995	2338	480	900
	1550	FLG. 80A	2450	300			1900	995	2338	593	1000
	2100	FLG. 100A	3320	400			2300	1170	2849	755	1500
	2600	FLG. 100A	4120	500			2300	1170	2849	943	1700
	3000	FLG. 125A	4750	550			2650	1295	3005	1065	2000
	3400	FLG. 125A	5380	600			2650	1295	3005	1243	2250
4100	FLG. 125A	6490	700	3100	1653	2307	1455	2800			
4500	FLG. 125A	7120	800	3100	1653	2307	1620	3000			

*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)	3	4	5	6	7	8	9				
Correction Factor	0.37	0.55	0.76	0.87	1.00	1.16	1.24				