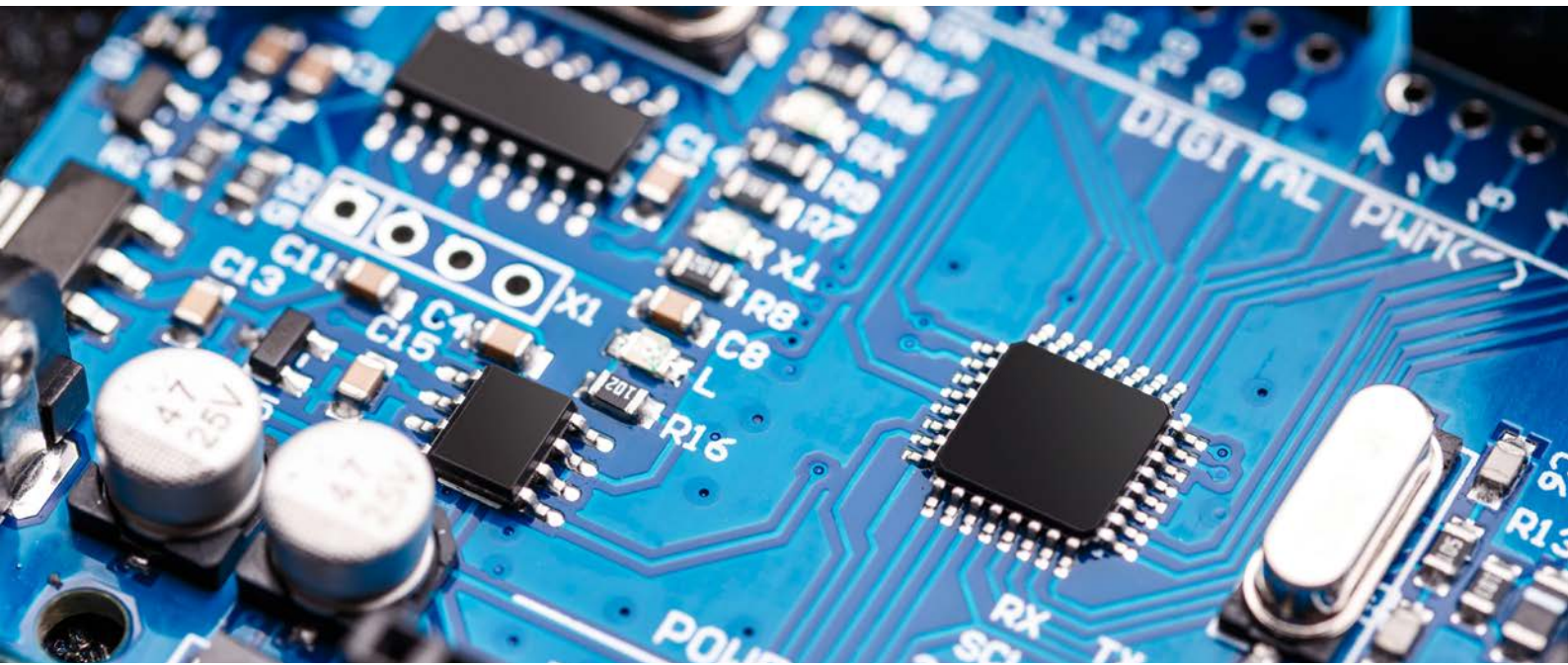


GSA Air Dryers

PHL series

Heatless desiccant air dryers

Global Standard Air & Gas



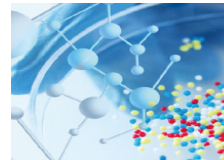
Why Desiccant Air Dryer?

Why Desiccant Air Dryer?

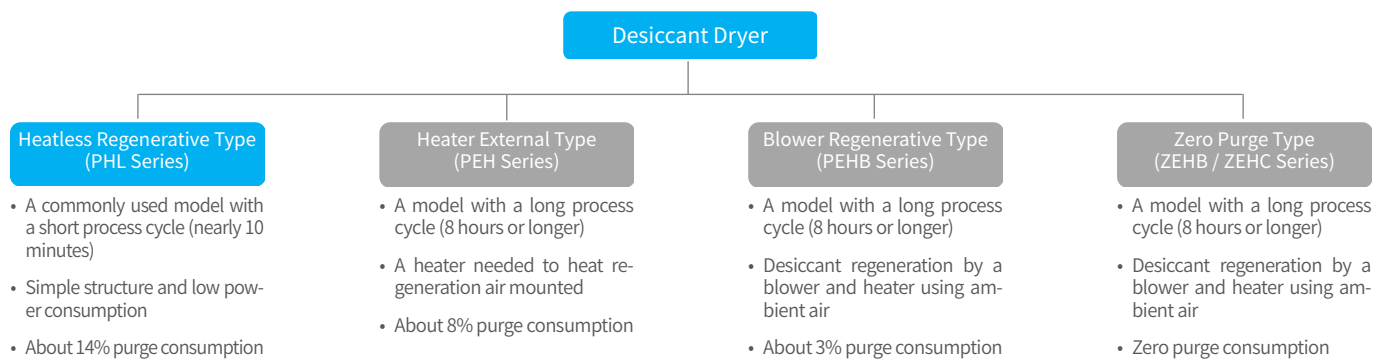
A refrigerated air dryer chills and dehumidifies compressed air, using a refrigerant. To prevent condensate generated while cooling compressed air from being frozen or a heat exchanger from being frozen-burst, dew points are usually kept at 0°C or higher. For moisture-sensitive processes, therefore,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



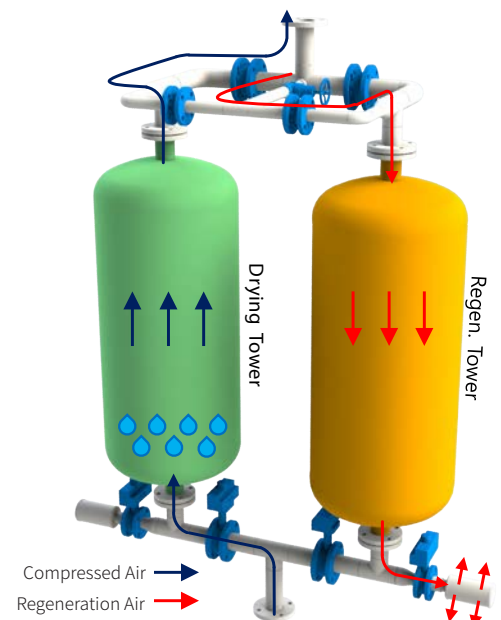
Classification



Operating Mechanism

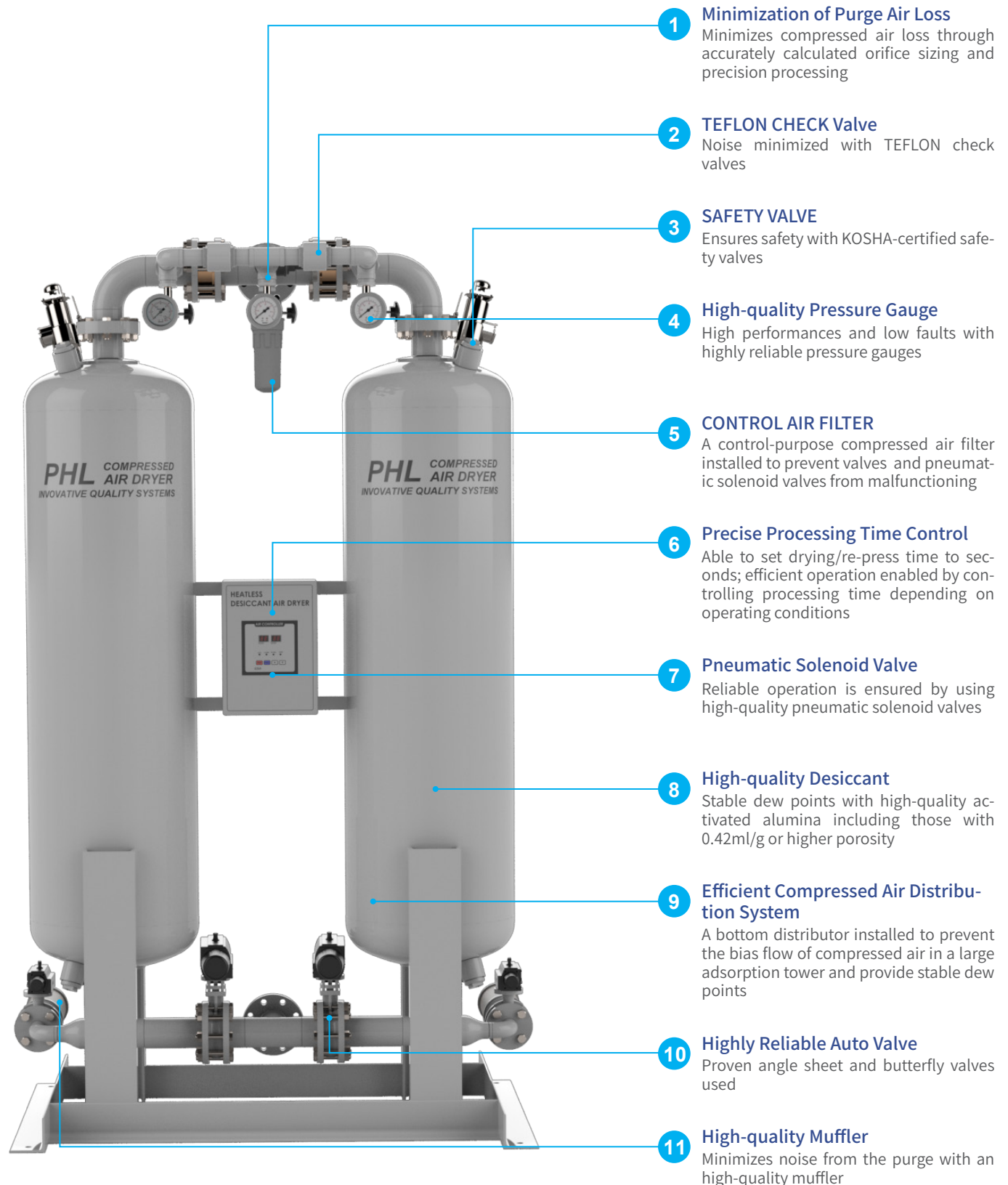
Compressed air with high moisture flows into the drying tower. While it moves from the bottom to the top of the tower, moisture is adsorbed by the charged desiccant, producing dry compressed air. While the air is being dried in the drying tower, other towers perform in regeneration process to remove 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 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
- 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 Pneumatic Solenoid Valve**
Reliable operation is ensured by using high-quality pneumatic solenoid valves
- 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 high-quality muffler

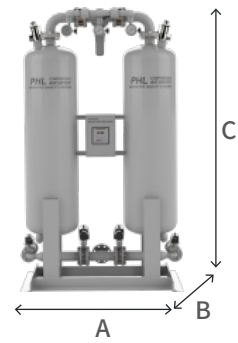
Technical Specification

Design Conditions

- Inlet Pressure : 7barg
- Inlet Temperature : 38°C
- Dew Points : -40°C @ ATM
- Design Temperature : 250°C
- Design Pressure : 9.7barg
- Differential Pressure : 0.2bar
- 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 9.7barg 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	Power Consumption	Power Supply	Dimensions (mm)			Amount of adsorbent <small>*Note1</small>	Weight <small>*Note2</small>	
					A	B	C			
S H L	5	PT 15A	10	50	220 / 1 / 60	500	225	745	3	23
	10	PT 15A	20			500	225	745	4	27
	15	PT 15A	25			500	225	745	7	36
	20	PT 15A	35			500	225	745	10	46
	25	PT 20A	45			840	305	1010	15	102
P H L	50	PT 20A	85			840	305	1535	25	136
	75	PT 20A	130			1150	435	1665	40	160
	100	PT 25A	170			1150	435	1870	50	250
	125	PT 25A	215			1150	435	1870	60	260
	150	PT 25A	255			1150	435	1870	65	272
	200	PT 40A	340			1150	485	1865	90	306
	250	PT 40A	425			1270	550	1800	125	405
	350	PT 40A	595			1270	585	1870	175	473
	500	PT 50A	870			1400	670	2090	250	650
	650	PT 50A	1110			1400	670	2350	325	720
	800	FLG. 65A	1360			1500	1100	2600	400	900
	1000	FLG. 80A	1700			1500	1100	2610	500	1125
	1200	FLG. 80A	2040			1800	940	2390	595	1305
	1400	FLG. 80A	2380			1800	940	2750	700	1575
	1600	FLG. 100A	2720			2000	1000	2900	800	1755
1800	FLG. 100A	3060	2000	1000	2900	860	2205			
2000	FLG. 100A	3400	2000	1110	2900	1000	2340			

*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					

