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Please refer to the actual product.



ENERGY-EFFICIENT. PURE AIR.

**PROFESSIONAL SERVICE PROVIDER
FOR COMPRESSED AIR PURIFICATION AND SEPARATION**

Professional service provider in the field of compressed air purification and separation

ABOUT US

Guangdong Lingyu Energy Equipment Co., Ltd.



Note: The above images show the head office, factory, and R&D center.



Established in **2009** in Guangdong Province, China.



National High-Tech Enterprise, National Specialized and Sophisticated "Little Giant" Enterprise, Guangdong Provincial Specialized and Sophisticated SME, and a qualified supplier for state-owned enterprises.



Industry benchmark enterprise, member of multiple industry associations, with **30+** patented technologies.



Achieved annual sales exceeding RMB **100 million** in 2021, maintaining an average annual growth rate of over **25%** for three consecutive years.



A professional manufacturer integrating R&D, production, sales, and after-sales service for compressed air purification systems.



Jointly established Industry-University-Research Laboratories with South China University of Technology and Xi'an Jiaotong University.



Governing member of the Compressed Air Purification Equipment Branch of China General Machinery Industry Association.



Manufacturing base covering **40,000 m²**, with a workforce of more than **300** employees.



Comprehensive domestic and international sales network, supported by dedicated domestic sales, overseas sales, and after-sales service teams, with **40+** sales and service centers nationwide.

LINGYU CORE VALUES



SUSTAINABILITY



WIN-WIN
COOPERATION

CORPORATE HONORS

Recognized Quality, Proven Excellence



High-Tech Enterprise



Specialized and Sophisticated Enterprise



Credit Rating AAA Enterprise



AAA Quality Service Enterprise



Invention Patent Certificate



Utility Model Patent Certificate



Design Patent Certificate



Software Copyright Registration Certificate

Accumulated 30+ Patent Certificates



ISO 14001
Environmental Management
System Certification



ISO 9001
Quality Management
System Certification



ISO 45001
Occupational Health and Safety
Management System Certification



ISO 45001
Occupational Health and Safety
Management System Certification



GCCA Product Quality
Safety Certificate
(Refrigerated Air Dryer)



GCCA Product Quality
Safety Certificate
(Adsorption Air Dryer)</

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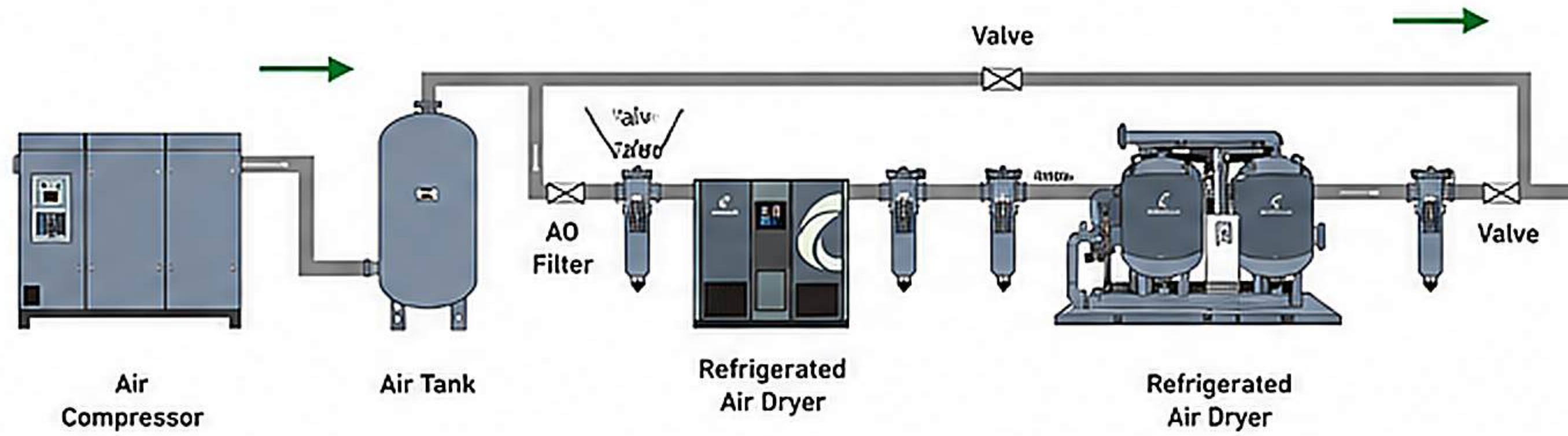
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01 COMPRESSED AIR PURIFICATION SYSTEM

Compressed air purification system

The compressed air used in industrial fields undergoes various operations and processes, making it inevitable that oil, moisture, dust, and other impurities are generated during the production process. If the compressed air is not properly purified, dried, and filtered, it will not only affect the performance and service life of equipment and pneumatic tools, but may also lead to product quality defects, production line interruptions, and even serious safety accidents.

TYPICAL INSTALLATION DIAGRAM OF
COMPRESSED AIR PURIFICATION SYSTEM



Note: The above is a typical configuration. The actual system may vary depending on user requirements.

QUESTION 1: COMPRESSED AIR MOISTURE

Purification solutions: Refrigerated air dryer, desiccant air dryer, adsorption dryer

FORM OF CONTAMINATION

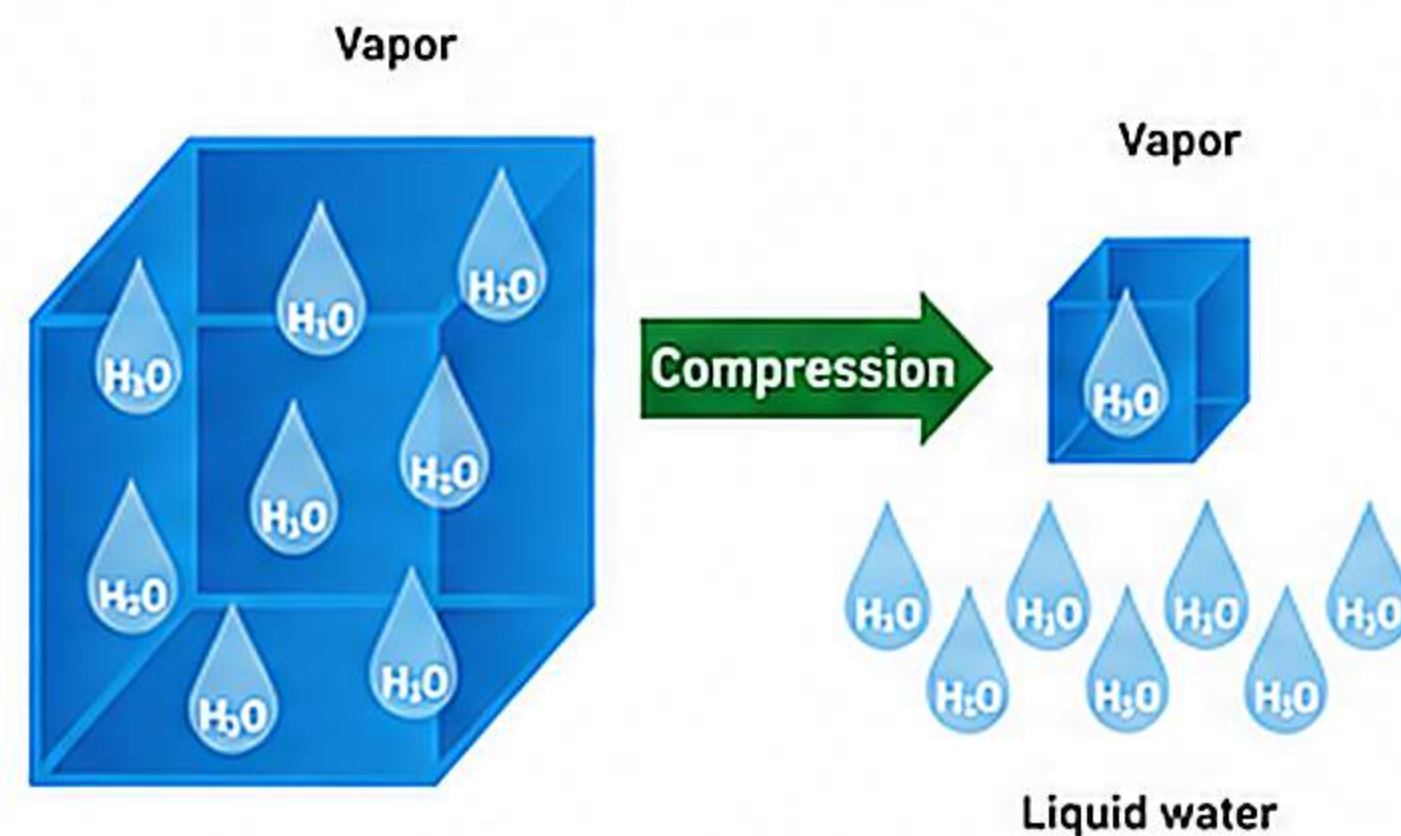
Water vapor, liquid water

HOW ARE CONTAMINANTS FORMED?

Moisture is naturally present in the air we breathe. When air is compressed, the amount of moisture increases. As the temperature of the compressed air cools down in the system, the moisture condenses into liquid water.

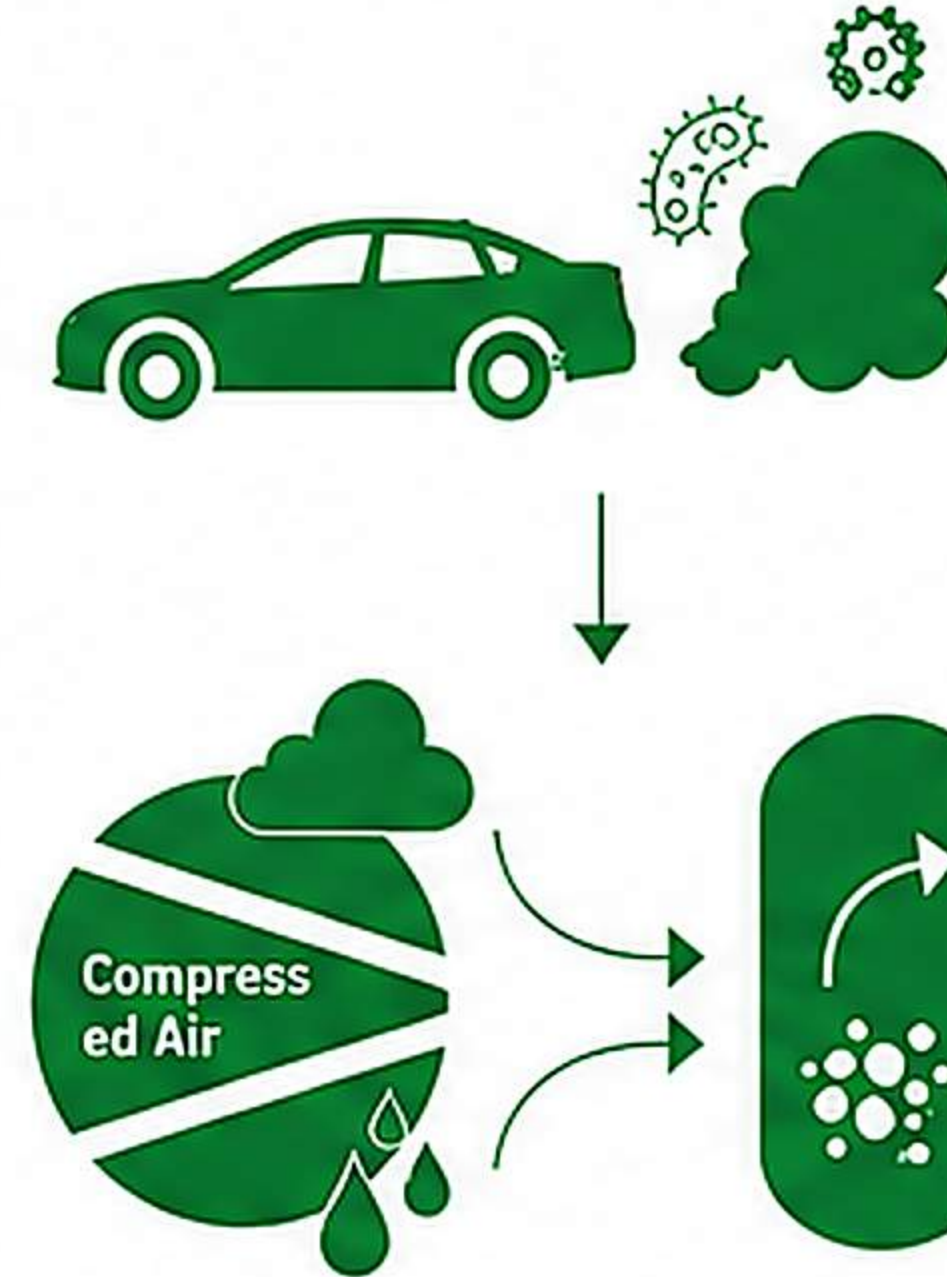
WHAT PROBLEMS CAN CONTAMINANTS CAUSE?

- Equipment corrosion
- Pipeline blockage
- Reduced product quality
- Pipeline
- Control system failure
- Leakage



QUESTION 2: COMPRESSED AIR CARRYOVER OIL

Purification solutions: Refrigerated air dryer, coalescing filter, oil removal filter, oil-water separator, high-efficiency oil removal filter, etc.



FORM OF CONTAMINATION

Liquid oil, oil mist, vapor

WHAT PROBLEMS CAN CONTAMINANTS CAUSE?

01 COMPRESSED AIR PURIFICATION SYSTEM

Compressed air purification system

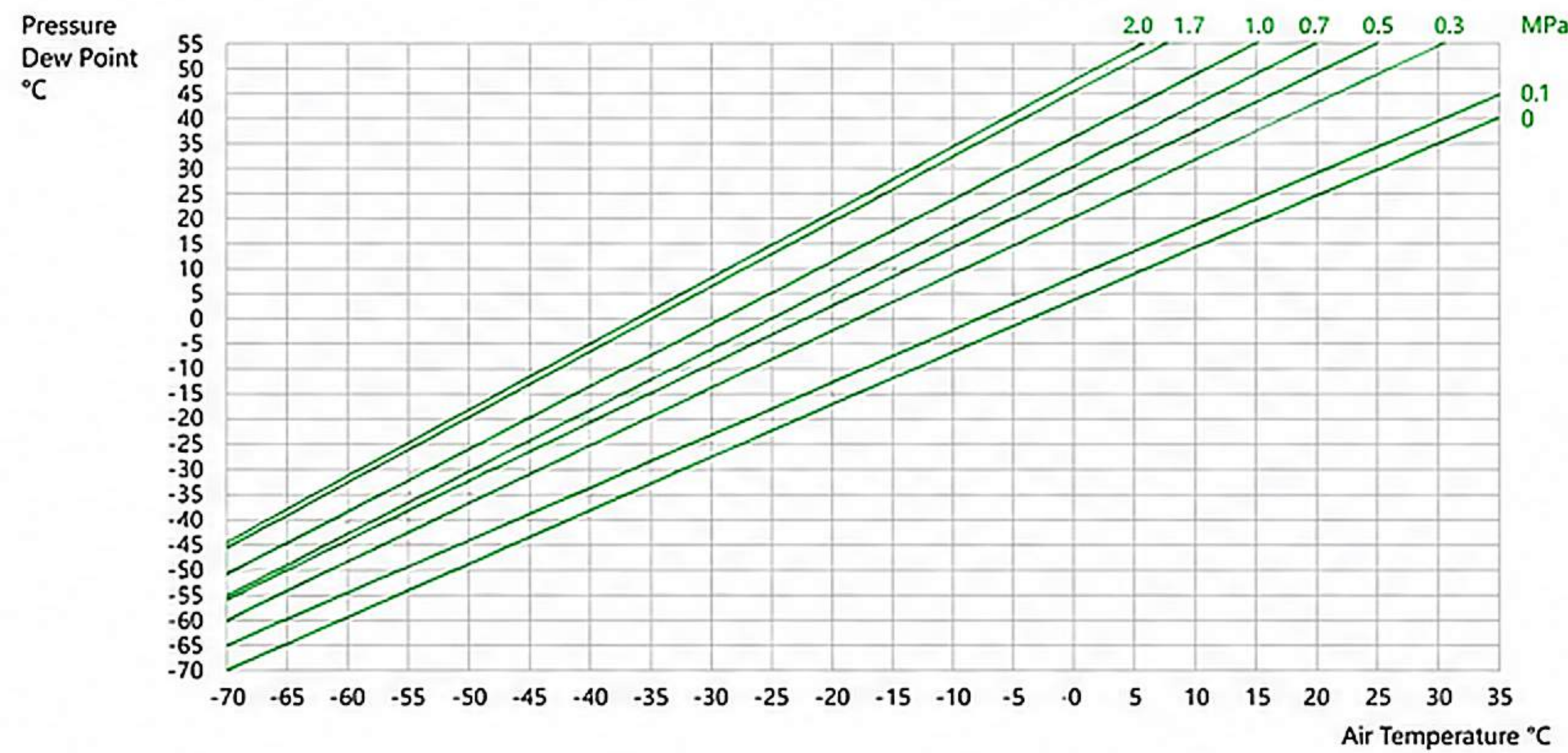
What is humid compressed air?

Under certain temperature and pressure conditions, the air contains a certain amount of water vapor (in other words, the moisture content). When the temperature decreases, the water vapor in the air reaches saturation. At this point, any further decrease in temperature will cause some of the water vapor to condense into liquid water.

Dew point explanation:

At a certain pressure, as the temperature of the compressed air decreases, the water vapor in the air reaches saturation and begins to condense into liquid. The temperature at which this condensation begins is called the pressure dew point. The pressure dew point is related to the amount of water vapor in the air—the higher the moisture content, the higher the pressure dew point; the lower the moisture content, the lower the pressure dew point.

Pressure Dew Point – Pressure Relation Chart



Pressure Dew Point – Moisture Content Reference Table

Dew Point (°C)	Water Content g/m ³	Dew Point (°C)	Water Content g/m ³	Dew Point (°C)	Water Content g/m ³	Dew Point (°C)	Water Content g/m ³	Dew Point (°C)	Water Content g/m ³
14	12.070	1	5.192	-12	2.0060	-25	2.7074	-38	0.2141
13	11.350	0	4.847	-13	1.8760	-26	0.6463	-39	0.1940
12	10.660	-1	4.523	-14	1.7360	-27	0.5922	-40	0.1757
11	10.010	-2	4.217	-15	1.6050	-28	0.5422	-41	0.1590
10	9.309	-3	3.930	-16	1.4830	-29	0.4960	-42	0.1438
9	8.819	-4	3.660	-17	1.3690	-30	0.4534	-43	0.1298
8	8.270	-5	3.4070	-18	1.2610	-31	0.4141	-44	0.1172
7	7.50	-6	3.1690	-19	1.1650	-32	0.3779	-45	

03 ADSORPTION DRYER

Compressed air adsorption dryer

3.1.1 CH Series Heatless Regenerative Adsorption Dryer



WORKING PRINCIPLE

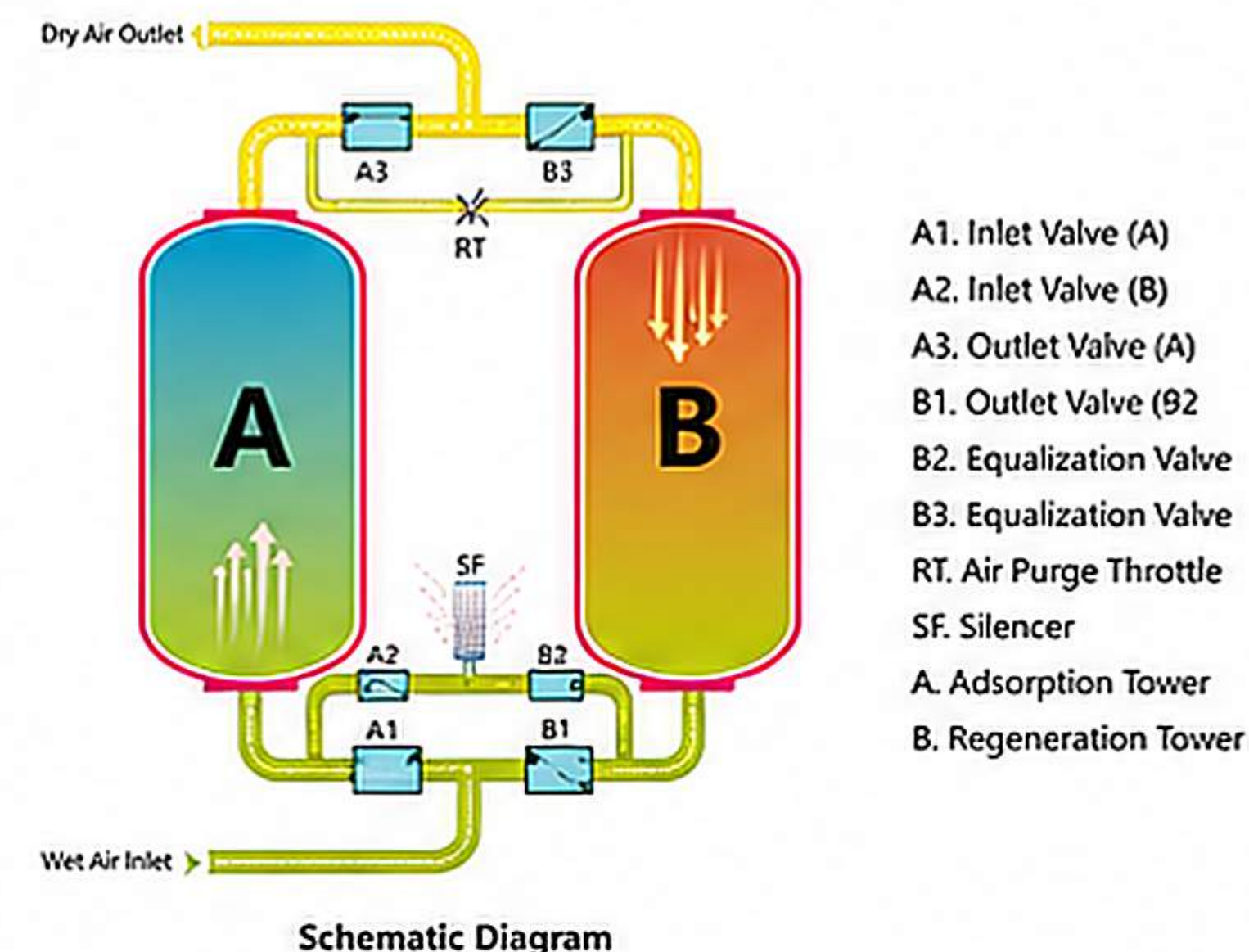
The heatless regenerative adsorption dryer uses the molecular sieve adsorption principle. In the twin towers filled with adsorbent, one tower adsorbs moisture from the compressed air while the other is regenerated by depressurization. When the adsorption tower is saturated, the pressurized tower switches to regeneration, and the regenerated tower returns to adsorption mode, thus ensuring continuous supply of dry compressed air. The microprocessor control system automatically switches the operating towers in sequence. Therefore, during the entire drying process, no manual operation is required. The CH series dryer adopts a reliable valve system with long service life and stable performance.

DESIGN FEATURES

- Reliable and Durable Valves**
Pneumatically actuated valves with high reliability and long service life; stable operation and easy maintenance.
- Aluminum Alloy Valve Body**
Aluminum alloy valve body with excellent flow performance and low pressure drop.
- Silencer**
Built-in silencer reduces noise; optional mufflers on exhaust ports further reduce noise.
- Electronic Control System**
PLC intelligent control with Chinese/English display and communication interface; convenient operation and maintenance.
- Operating Status Indicator**
Panel displays the operating status of the dryer in real time, facilitating troubleshooting and maintenance.
- Automatic Drain Valve**
Timed and programmable automatic drain valve; opens and closes periodically to discharge condensate, ensuring stable system pressure and protecting the adsorbent from moisture impact.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 10°C ~ 30°C
(Limit inlet temperature: ≤ 40°C)
- Average outlet dew point: 8% ~ 14%
- Outlet pressure dew point: -50°C ~ -20°C
- Adsorbent: Activated alumina
- Ambient temperature: 35°C
(2°C ~ 45°C can be used)



TECHNICAL PARAMETER

Model	Capacity (m³/min)	Voltage (V/Hz)	Power (kW)	Air Inlet/Outlet Connection	Equipment Weight (kg
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03 ADSORPTION DRYER

Compressed air adsorption dryer

3.1.2 HH Series Heatless Regenerative Adsorption Dryer



WORKING PRINCIPLE

The HH series heatless regenerative adsorption dryer uses molecular sieve adsorption to remove moisture from compressed air. During adsorption, one tower adsorbs moisture under pressure while the other is regenerated by depressurization. When the adsorbent becomes saturated, the towers switch automatically to ensure continuous supply of dry compressed air.

A portion of the dried air is used to regenerate the other tower by purging moisture without external heating, followed by repressurization. The microprocessor control system automatically manages the cycle based on preset parameters, ensuring stable performance and energy efficiency. Manual operation is not required.

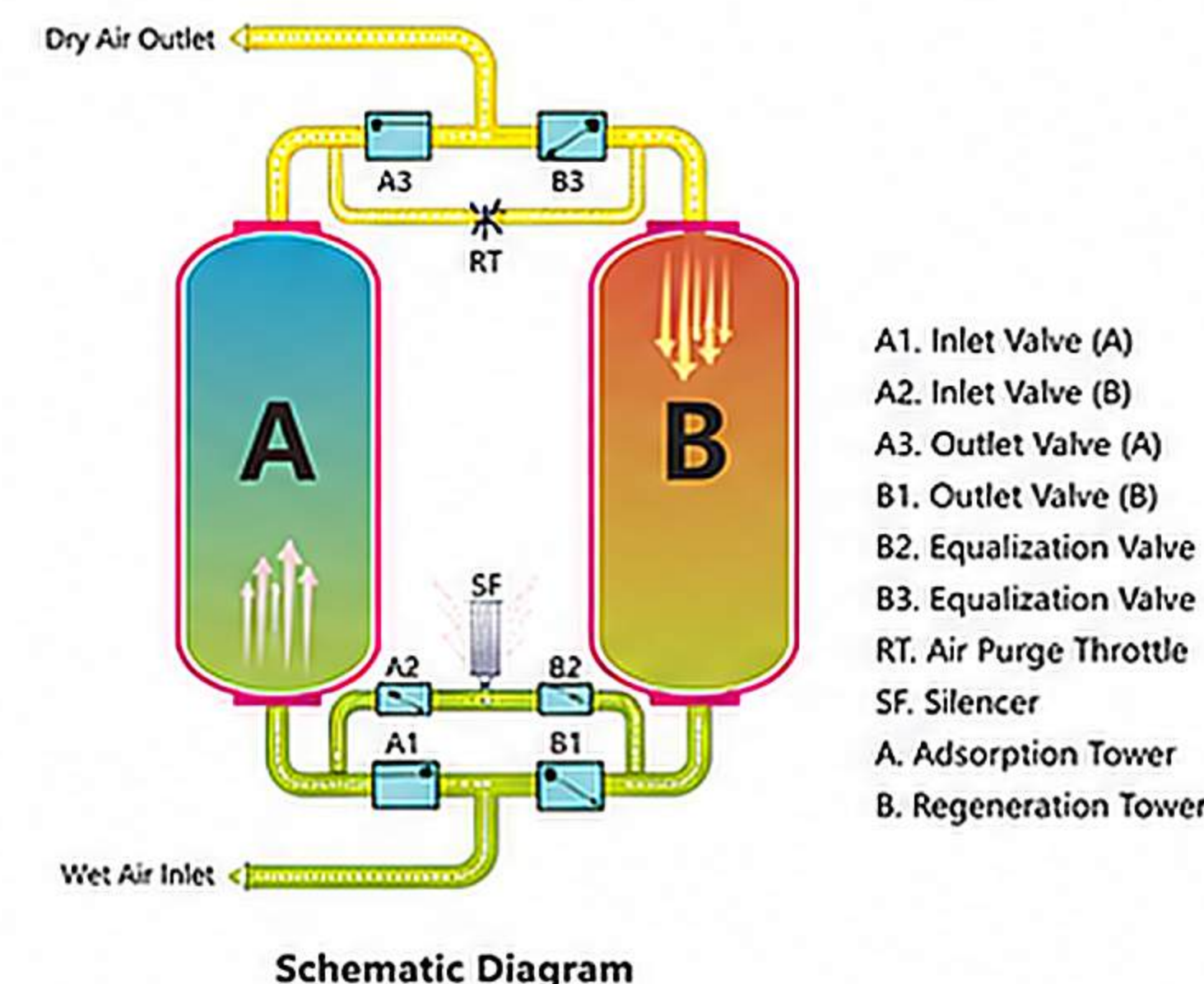
The HH series adopts reliable valves with long service life and stable operation.

DESIGN FEATURES

- Reliable Pneumatic Valves**
High-reliability pneumatic valves deliver responsive operation, long service life, and stable performance.
- Aluminum Alloy Valve Body**
Large-diameter integral aluminum alloy valve body offers low flow resistance and high reliability.
- Moisture Removal Efficiency**
High-efficiency desiccant provides strong adsorption capacity and high moisture removal efficiency for stable dew point.
- Electronic Control System**
PLC intelligent control with Chinese/English interface; functions include timed switching, status display, and fault alarms for easy operation and maintenance.
- Operating Energy Saving**
Optimized air flow path minimizes pressure loss and reduces exhaust air consumption.
- Automatic Pressure Equalization**
Automatic pressure equalization valve balances tower pressures before switching, preventing pressure shock and extending the service life of the adsorbent.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 10°C ~ 30°C
(Limit inlet temperature: ≤ 40°C)
- Average outlet dew point: 8% ~ 14%
- Outlet pressure dew point: ≤ -40°C
- Adsorbent: Activated alumina + high-efficiency molecular sieve
- Ambient temperature: 35°C
(2°C ~ 45°C can be used)



TECHNICAL PARAMETER

03 COMPRESSED AIR ADSORPTION DRYER

Compressed air Adsorption Dryer

3.2.1 CH Series Micro-Heat Regenerative Adsorption Dryer



Working Principle

The micro-heat regenerative adsorption dryer adopts temperature-swing adsorption (TSA) technology. It uses a small amount of high-temperature dry air to desorb the moisture adsorbed by the desiccant in one tower. The desorption gas then flows through a portion of the desiccant in the other tower to remove moisture and achieve regeneration. This process is fully automated by the control system, ensuring continuous, stable, and low-dew-point dry air supply. The process consists of two steps: “adsorption” and “regeneration”.

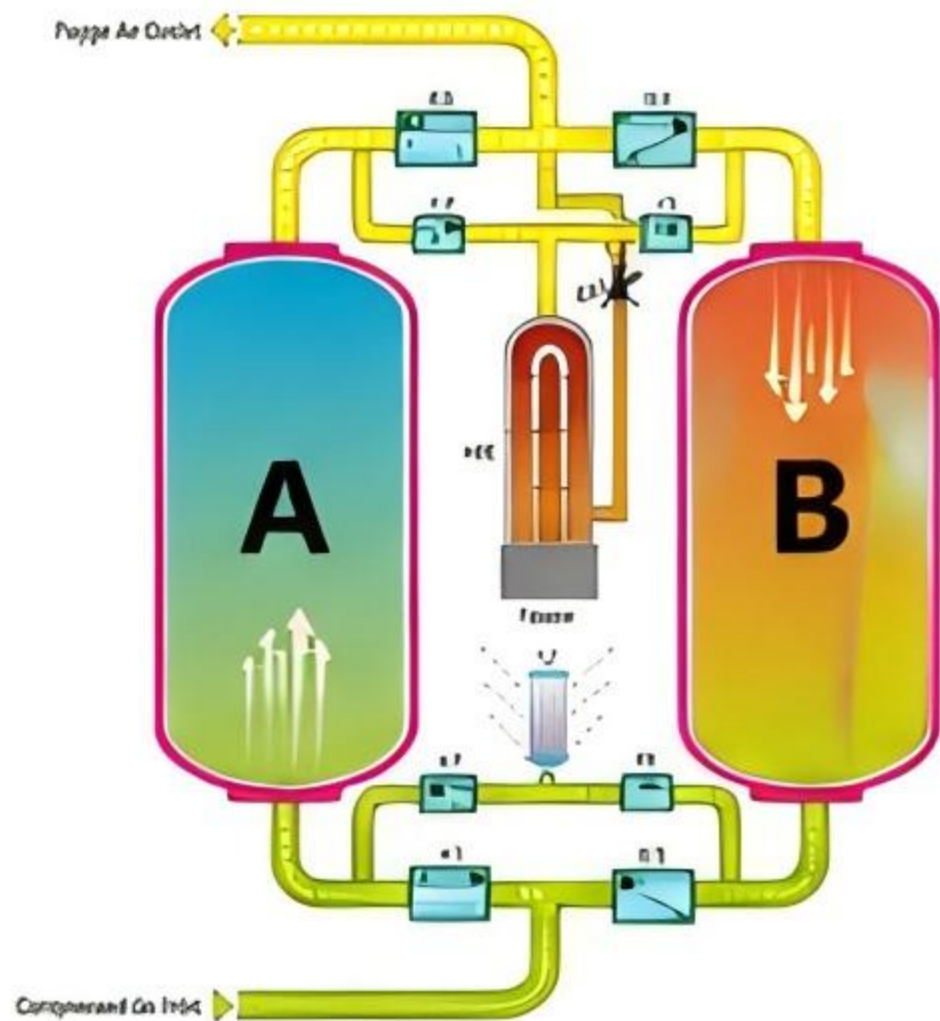
Design Features

- High-efficiency pneumatic valves with reliable performance, fast switching, and long service life;
- Energy-saving regeneration with low consumption and stable performance for long-term operation;
- Advanced electronic program controller with Chinese or English interface, easy operation and maintenance;
- Online dew-point display with high-performance dew-point sensor for real-time monitoring of process parameters;
- Fully automatic operation. When activated, the unit can run automatically without manual intervention, eliminating pressure fluctuations caused by frequent switching and ensuring stable outlet pressure dew point;
- Over-temperature protection to prevent damage to the heater and extend service life.



Operating Conditions and Technical Requirements

- Applicable medium: Compressed air, non-corrosive, non-flammable
- Inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa (other pressure ranges available on request))
- Inlet temperature: 10°C ~ 30°C
(standard inlet temperature: ≤ 40°C)
- Average outlet dew point: -40°C ~ -80°C
- Inlet oil content: ≤ 5 ppm
- Adsorbent: Activated alumina
- Ambient temperature: 2°C ~ 45°C (range for safe operation)
- Power supply: 380 V / 50 Hz



Process Flow Diagram

Technical Parameters

Model	Processing Capacity (m³/min)	Power Supply (V/Hz)	Installed Power Connection	Air Inlet/Outlet Connection	Equipment Weight (kg)	Overall Dimensions (mm) L×W×H
LY-CH10HX	1.5	380/50	0.9	G1"	95	666×520×1692
LY-CH20HX	2.5	380/50	1.7	G1"	125	726×520×1802
LY-CH30HX	3.8	380/50	1.7	G1½"	180	

03 COMPRESSED AIR ADSORPTION DRYER

Compressed air Adsorption dryer

3.2.2 HH Series Micro-Heat Regenerative Adsorption Dryer



Working Principle

The micro-heat regenerative adsorption dryer works based on temperature-swing adsorption (TSA) technology. It uses a small amount of high-temperature dry air to desorb the moisture adsorbed by the desiccant in one tower. The desorption gas then flows through a portion of the desiccant in the other tower to remove moisture and achieve regeneration. This process is fully automated by the control system, ensuring stable operation and continuous supply of low-dew-point dry air.

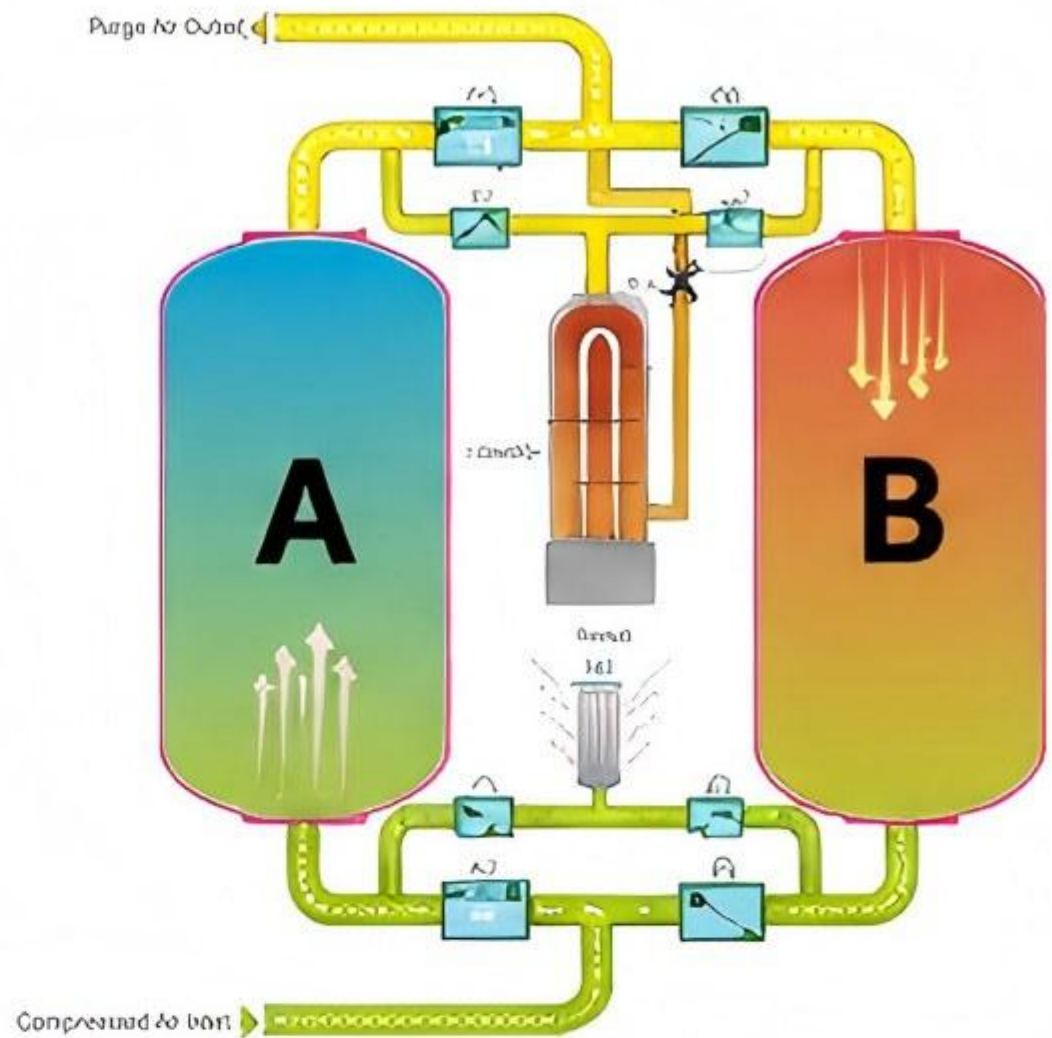
The process consists of two steps: "adsorption" and "regeneration".

Design Features

- High-performance pneumatic valves for reliable operation, fast switching, long service life, and low noise;
- Energy-saving regeneration with low air consumption and stable performance for long-term operation;
- Advanced electronic program controller with Chinese/English interface for easy operation and maintenance;
- Online dew-point display** with high-precision dew-point sensor for real-time monitoring of process parameters;
- Fully automatic operation.** When activated, the unit runs automatically without manual intervention, eliminating pressure fluctuations caused by frequent switching and ensuring stable outlet pressure dew point;
- Over-temperature protection** to prevent damage to the heater and extend service life.

Operating Conditions and Technical Requirements

- Applicable medium: Compressed air, non-corrosive, non-flammable
- Inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa available on request)
- Inlet temperature: 10°C ~ 30°C
(Standard inlet temperature: ≤ 40°C)
- Average outlet dew point: -40°C ~ -80°C
- Inlet oil content: ≤ 5 ppm
- Adsorbent: Activated alumina / Molecular sieve
- Ambient temperature: 2°C ~ 45°C (2°C ~ 45°C for safe operation)
- Power supply: 380 V / 50 Hz



Process Flow Diagram

Technical Parameters

Model	Processing Capacity (m³/min)	Power Supply (V/Hz)	Installed Power (kW)	Air Inlet/Outlet Connection	Equipment Weight (kg)	Overall Dimensions (mm) L×W×H
LY-HH10HX	1.5	380/50	1.7	G1"	125	726×520×1802
LY-HH20HX	2.5	380/50	1.7	G1"	180	840×500×1691
LY-HH30HX						

03 ADSORPTION DRYER

Compressed air adsorption dryer

3.3 M Series Modular Adsorption Dryer



WORKING PRINCIPLE

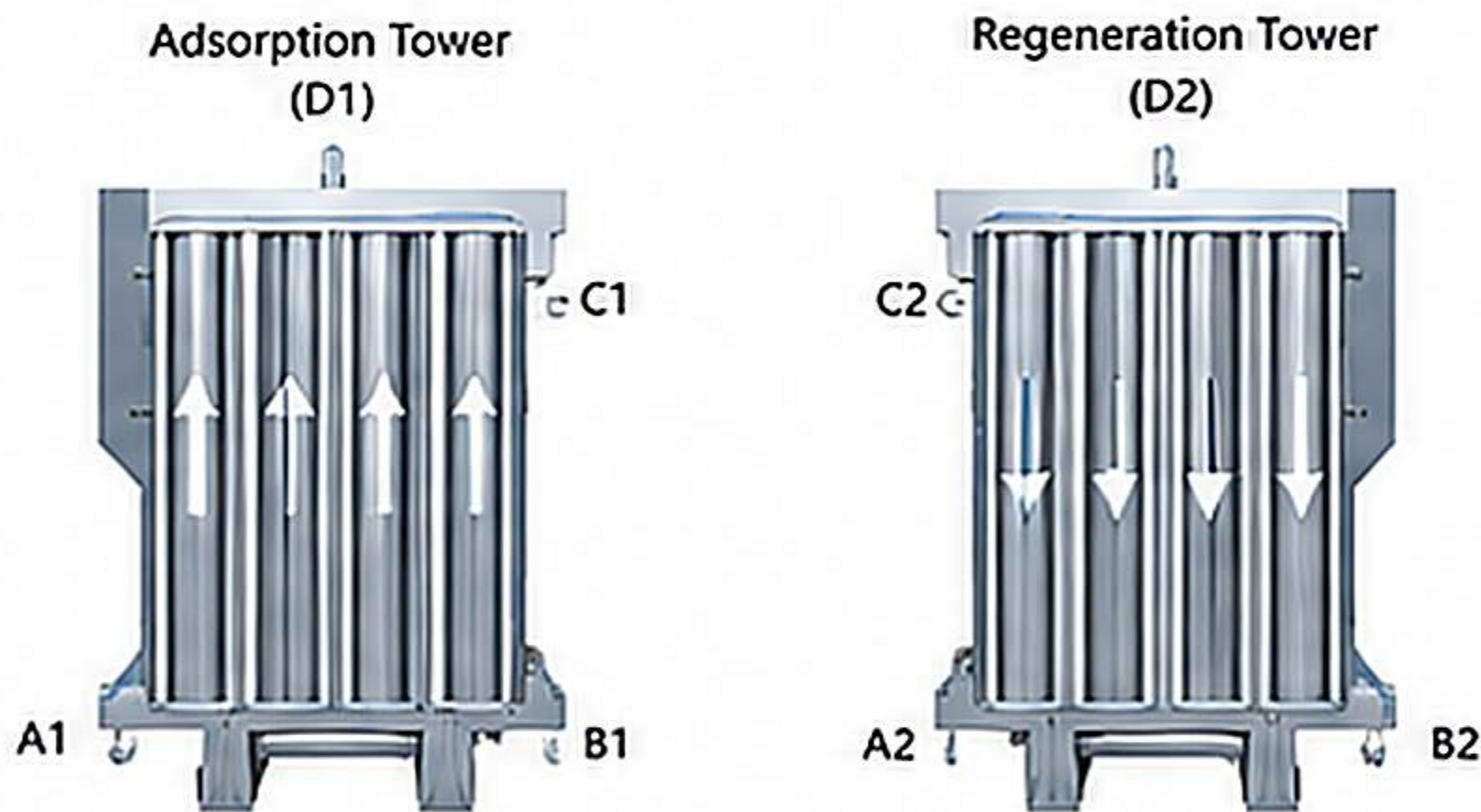
The M series modular adsorption dryer is based on a twin-tower adsorption structure. Desiccant adsorption is used to remove moisture from compressed air. The pressure swing generated by switching the towers adopts a direct purge method, which effectively reduces desiccant loss. This "adsorption and regeneration" cycle ensures continuous production of dry air. The compressed air enters from the bottom of the adsorption tower and flows upward, while the purge gas flows downward. Dry air is discharged from the top for use. The dryer features excellent drying performance, ensuring stable dew point and low desiccant consumption.

DESIGN FEATURES

- **Energy saving:** Air consumption for regeneration 5%–8%.
- **High performance:** High-quality desiccant and efficient diffusers ensure reliable performance.
- **Cost-effective:** Compact size and low investment and maintenance cost.
- **Low environmental impact:** Low noise and zero emissions, protecting the environment.
- **High product quality:** Prevents compressed air contamination, ensuring product quality and extending the service life of equipment.
- **No unattended operation required:** Fully automatic control, no need for on-site operator.
- **Integrated structure:** Integrated air piping and valve assembly for easy installation; widely used in various industrial applications.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 10°C ~ 30°C
(Limit inlet temperature: ≤ 40°C)
- Inlet air temperature: ≤ 15°C
- Outlet pressure dew point: ≤ -20°C (-40°C optional)
- Adsorbent: Activated alumina + high-efficiency molecular sieve
- Ambient temperature: 35°C (2°C ~ 45°C can be used)



- A1. Inlet Valve (A)
- A2. Inlet Valve (B)
- A3. Outlet Valve (A)
- B1. Outlet Valve (B)
- B2. Equalization Valve
- B3. Equalization Valve
- HS. Heater
- SF. Silencer
- A. Adsorption Tower
- B. Regeneration Tower

Schematic Diagram

A (Adsorption): When valve A1 is open, purge valve SF on the adsorption tower closes, and compressed air enters from the bottom (A1) and flows upward to (C1), where moisture is adsorbed. Dry air is discharged from the top (C1) for use.

B (Regeneration): When valve A2 is open, purge valve SF on the regeneration tower opens, and a portion of the dry air at the top (C2) enters from the top (A2), flows downward to (B2), and purges the desiccant to regenerate it.

TECHNICAL PARAMETER

03 COMPRESSED AIR ADSORPTION DRYER

Compressed air adsorption dryer

3.4.1 HRB-E Series Micro-Heat Blower Regenerative Adsorption Dryer



WORKING PRINCIPLE

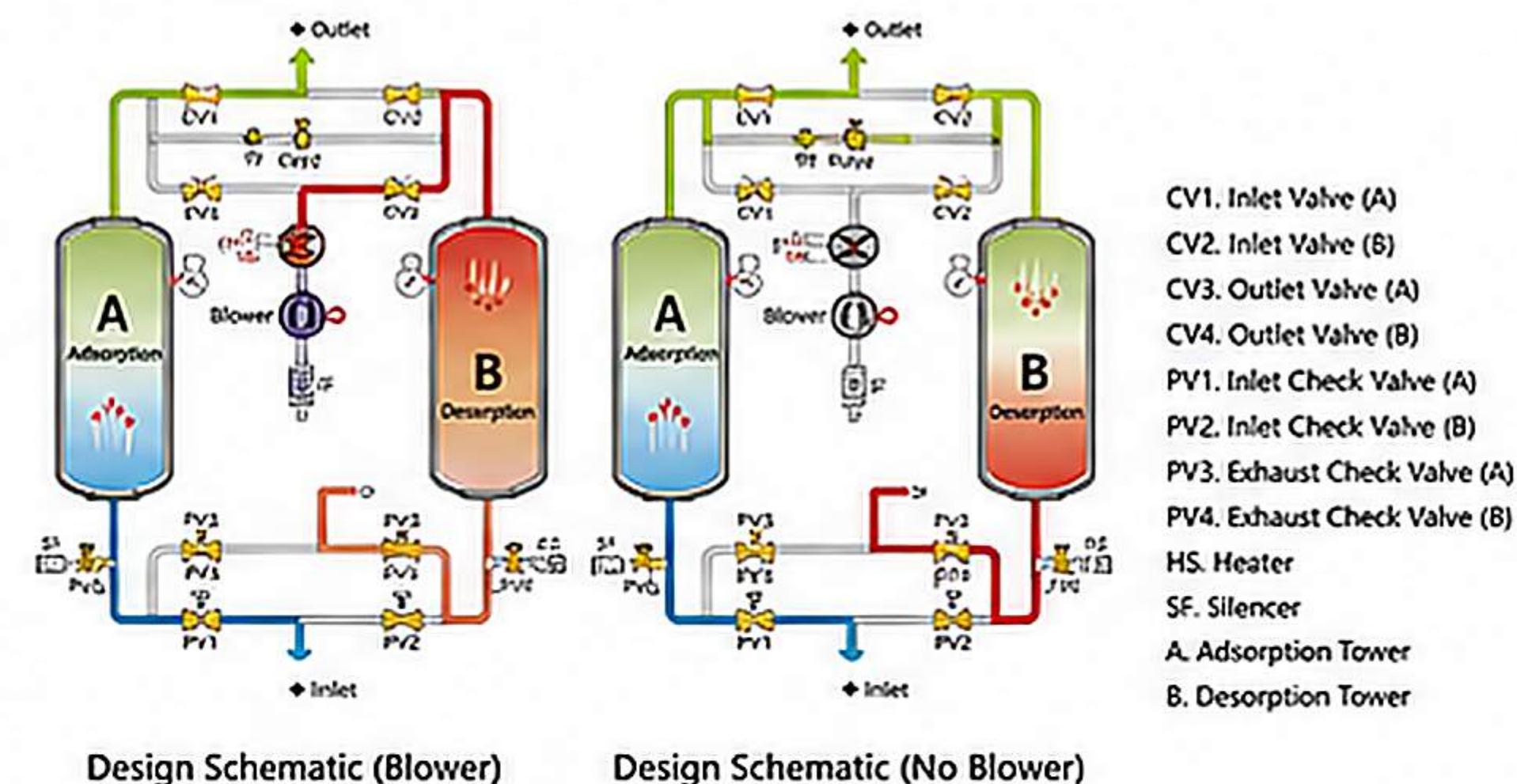
The micro-heat blower regenerative adsorption dryer is based on the principle of a heatless adsorption dryer, with an integrated micro-heat blower. Ambient air is drawn in by the blower, partially used as purge air, and the other part is heated by an electric heater and introduced into the desorption tower as hot dry air. It adsorbs moisture by heating and regenerates the adsorbent. Through continuous switching of the two towers, dried air with low dew point and stable performance is continuously supplied to the system.

DESIGN FEATURES

- Control and communication: Equipped with RS-485 (standard) and supports connection to PLC, SCADA, and IoT platforms.
- Automatic operation: Automatic switching between adsorption and desorption. Adjustable purge air ratio combined with micro-heat regeneration ensures average energy saving $\geq 10\%$.
- Advanced intelligent control: In addition to standard operating mode, it supports energy-saving mode and standby mode. Energy-saving mode can reduce energy consumption $\geq 30\%$.
- Customizable desiccant beds: 20%~30% desiccant filling rate.
- Premium components: High-reliability pneumatic actuated valves, durable and responsive, ensuring long service life.
- 30+ years of control expertise: Specialized for PSA air treatment. The control system adopts micro-heat with blower desorption, and the micro-heat air is used for desorption, which reduces exhaust air volume and lowers air consumption.
- Monitoring functions: Real-time monitoring and display of inlet/outlet air temperature, heater temperature, A/B tower pressure, blower air pressure, dew point temperature (optional), flow, dew point (optional), etc.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 10°C ~ 30°C
(Limit inlet temperature: $\leq 40^\circ\text{C}$)
- Inlet air temperature: $\leq 15^\circ\text{C}$
- Average outlet dew point: 2% ~ 3%
- Outlet pressure dew point: -20°C ~ -40°C (optional)
- Adsorbent: Activated alumina + high-efficiency molecular sieve
- Ambient temperature: 35°C
(2°C ~ 45°C can be used)



TECHNICAL PARAM

03 COMPRESSED AIR ADSORPTION DRYER

Compressed air adsorption dryer

3.4.2 HRB-Z Zero-Purge Blower Regenerative Adsorption Dryer



WORKING PRINCIPLE

The HRB-Z zero-purge blower regenerative adsorption dryer is based on the principle of a blower regenerative adsorption dryer, with an integrated blower for pressurizing the ambient air. The ambient air is heated and introduced into the adsorption tower for desorption to regenerate the adsorbent, and then discharged to the atmosphere through the silencer.

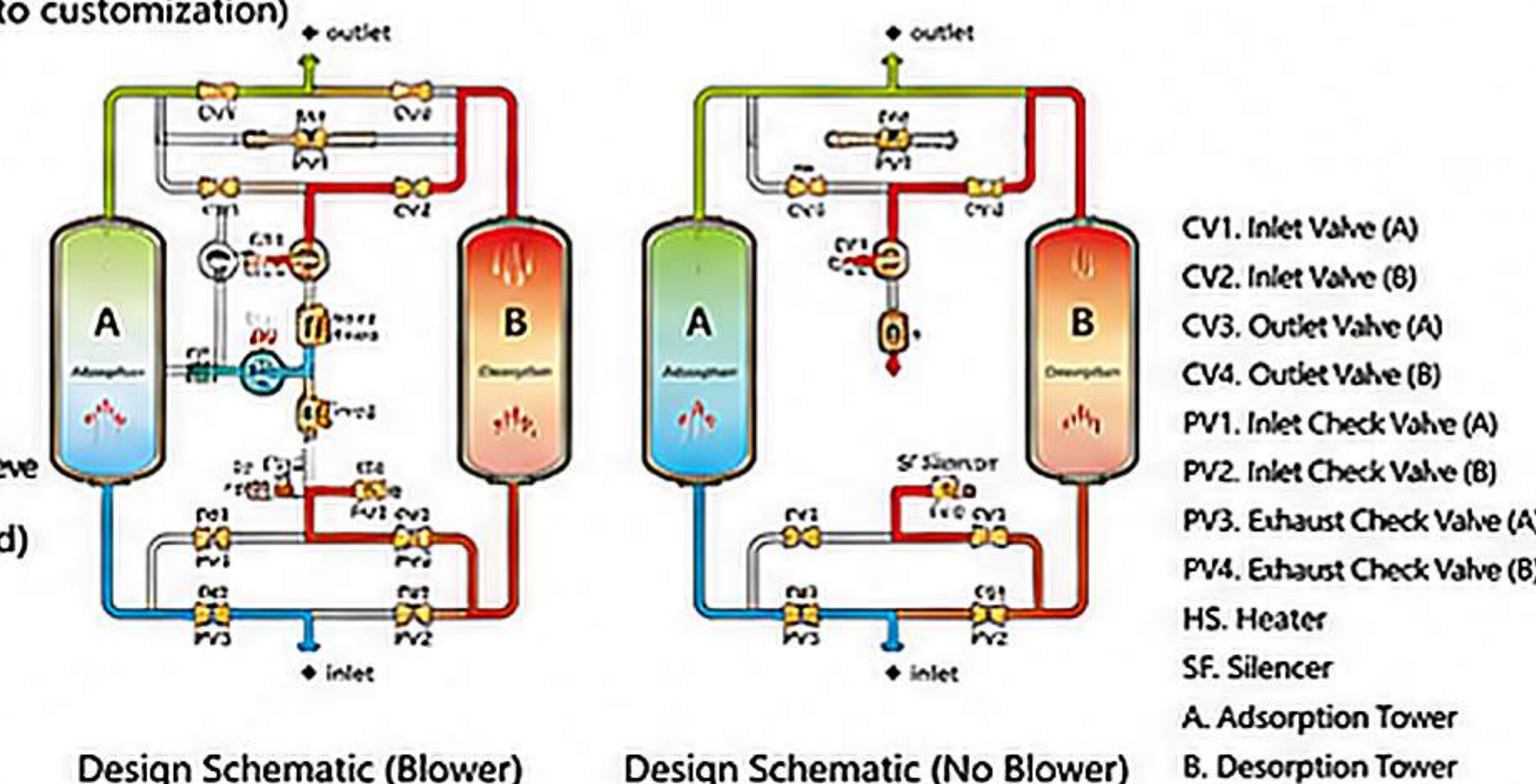
In the zero-purge stage, the blower system controls the adsorption and regeneration switching to reduce air consumption to zero. By adjusting the timing, the dried air with low dew point and the adsorbent can be continuously regenerated, ensuring stable supply of low dew point compressed air.

DESIGN FEATURES

- Communication interface: Standard RS-485 (Modbus), enabling connection to PLC, SCADA and IoT platforms.
- Automatic operation: Automatic switching between adsorption and desorption. The optimal control mode can save more than 10% energy compared with the conventional fixed-cycle mode.
- High efficiency and energy saving: The optimal control mode can save more than 30% energy in the desorption stage.
- High-performance desiccant: 20% filling rate.
- Premium pneumatic valves: High-reliability pneumatic actuated valves, designed with HTFS software for efficient and reliable operation with long service life.
- 30+ years of control expertise: Specialized for PSA air treatment. The control system uses a zero-purge blower design with high air efficiency, reducing exhaust air volume and lowering operating cost.
- Comprehensive monitoring: Real-time monitoring and display of air inlet/outlet temperature, heater temperature, A/B tower pressure, blower air pressure, dew point (optional), flow, dew point (optional), etc.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 10°C ~ 30°C
(Limit inlet temperature: ≤ 40°C)
- Inlet air temperature: ≤ 15°C
- Average outlet dew point: 2% ~ 3%
- Outlet pressure dew point: -20°C ~ -40°C (optional)
- Adsorbent: Activated alumina + high-efficiency molecular sieve
- Ambient temperature: 35°C (2°C ~ 40°C can be used)
- Cooling water temperature: ≤ 32°C
- Cooling water pressure: 0.2 MPa ~ 0.6 MPa



03 COMPRESSED AIR ADSORPTION DRYER

Compressed air adsorption dryer

3.5.1 HOC-E Series Micro-Heat Compression Heat Regenerative Adsorption Dryer



WORKING PRINCIPLE

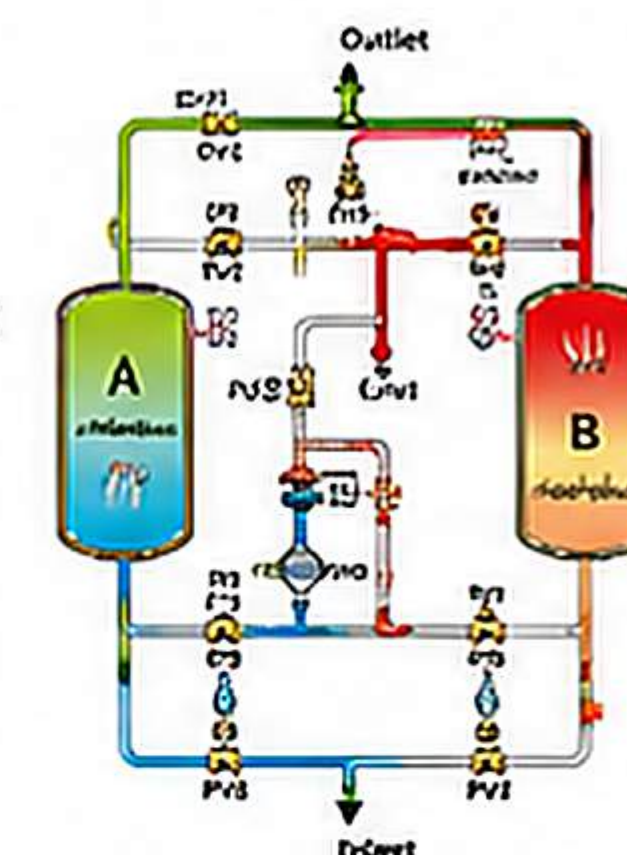
The HOC-E series micro-heat compression heat regenerative adsorption dryer utilizes the heat of the compressor to heat the inlet compressed air and increase the inlet air temperature, enabling more efficient desorption of the adsorbent in the dryer. Due to the addition of a micro-heat system, the adsorbent can be fully desorbed during the regeneration process, minimizing purged air consumption and significantly reducing operating costs.

DESIGN FEATURES

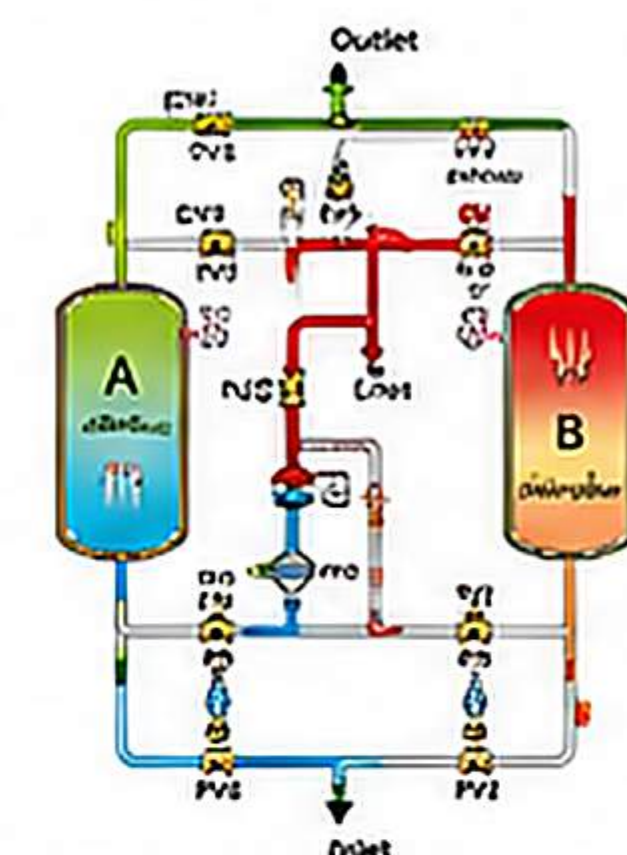
- Communication interface: Standard RS-485 (Modbus) and supports connection to PLC, SCADA, and IoT platforms.
- Energy saving: Driven by EBZ200 multi-stage high-efficiency blower with fixed-cycle control mode, achieving average energy savings of more than 10%.
- High performance: Precision control in adsorption and desorption processes allows 30% more adsorption time.
- High-performance desiccant: 20% higher filling rate.
- Premium components: High-reliability pneumatic actuated valves and HTFS software-designed high-efficiency micro-heat system ensure reliable performance and long service life.
- High-quality welded piping: Aesthetically pleasing.
- Low pressure drop design: Optimized flow distribution reduces pressure drop and minimizes energy consumption.
- Intelligent control: Adjustable parameters include air inlet dew point, heating temperature, regeneration air temperature, A/B tower pressure, blow-down pressure, dew point (optional), etc.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 10°C ~ 30°C
(Limit inlet temperature: 110°C ~ 180°C)
- Annual average ambient temperature: ≤ 33°C
- Outlet pressure dew point: -20°C ~ -40°C (optional)
- Cooling water temperature: ≤ 32°C
- Cooling water pressure: 0.2 MPa ~ 0.6 MPa



Design Schematic (Blower)



Design Schematic (No Blower)

- CV1. Inlet Valve (A)
- CV2. Inlet Valve (B)
- CV3. Outlet Valve (A)
- CV4. Outlet Valve (B)
- PV1. Inlet Check Valve (A)
- PV2. Inlet Check Valve (B)
- PV3. Exhaust Check Valve (A)
- PV4. Exhaust Check Valve (B)

03 COMPRESSED AIR ADSORPTION DRYER

Compressed air adsorption dryer

3.5.2 HOC-Z Zero-Purge Heat Compression Regenerative Adsorption Dryer



WORKING PRINCIPLE

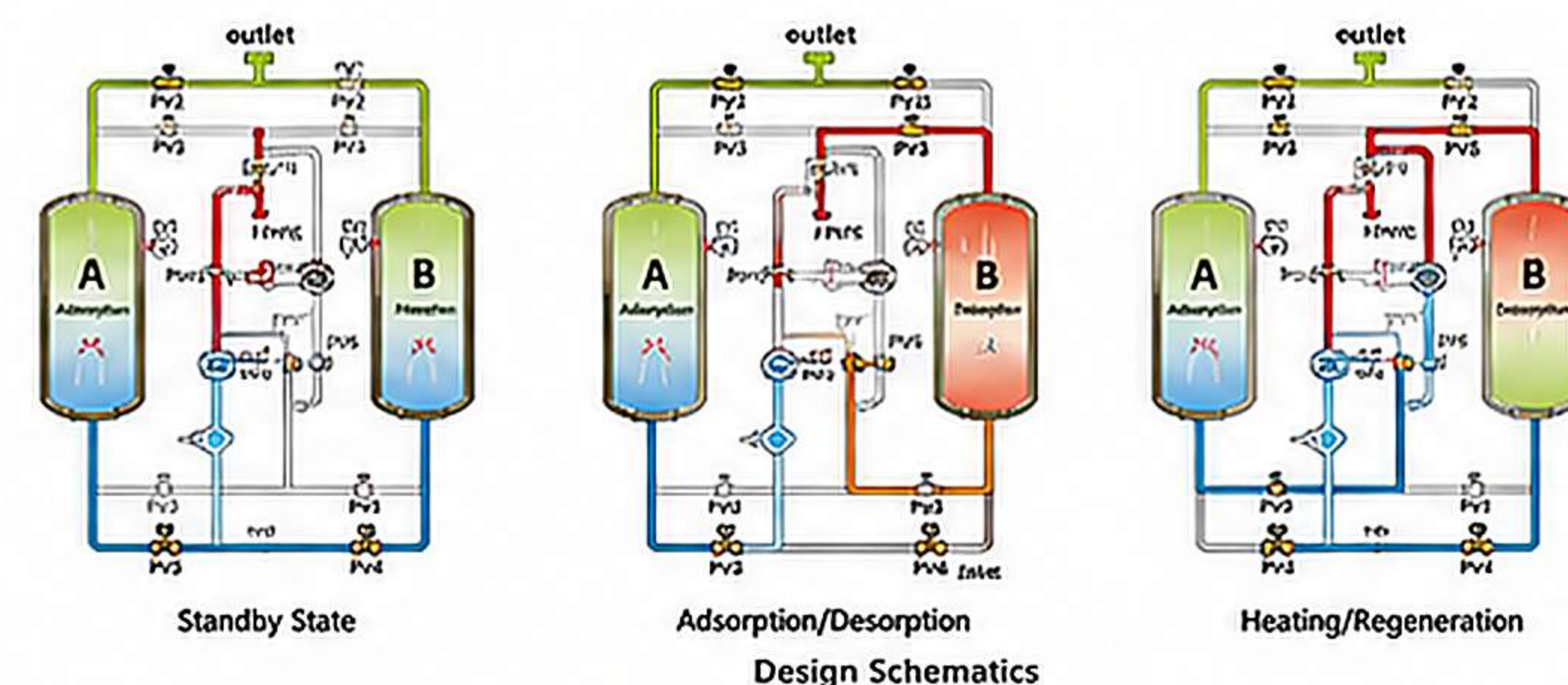
The HOC-Z zero-purge heat compression regenerative adsorption dryer utilizes the heat of the compressor outlet air to increase the adsorbent inlet air temperature and to heat the adsorbent during the adsorption process, thereby enhancing moisture desorption efficiency and achieving zero purge air consumption. Since no purge air and no cooling water are required during the regeneration process, the dryer achieves significant energy savings.

DESIGN FEATURES

- **Intelligent control:** Equipped with instruments to monitor pressure dew point and pressure. Fault alarms enabled.
- **Human-machine interface:** The control system adopts a PLC (Siemens) with RS-485 communication, offering stable and reliable performance.
- **Pneumatic components:** High-quality valves and actuators provide high reliability and long service life.
- **High-efficiency adsorbent:** High-performance molecular sieve with high adsorption capacity and long service life; moisture removal efficiency up to 99%.
- **Automatic operation:** The system automatically regulates the heating temperature and cycle timing of adsorption and desorption, ensuring stable pressure dew point with variations of only 30%~110% of the rated flow.
- **No cooling water required:** No cooling water is needed. Condensation of water vapor is achieved using heat and adsorbent, eliminating the need for cooling water.
- **Zero purge air consumption:** No purge air is used during regeneration, saving energy.
- **Multiple operating modes:** Standard fixed-cycle operation. Optional load adaptive mode can be selected. In load adaptive mode, the system adjusts the heating temperature to enhance safety and reduce energy consumption.
- **Pipeline configuration:** Inlet and outlet pipelines, as well as control valves, are all rigidly connected to reduce leak points.
- **Quality assurance:** The vessels are manufactured in accordance with the pressure vessel standard GB150 and are inspected and tested. Quality certificates are provided.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

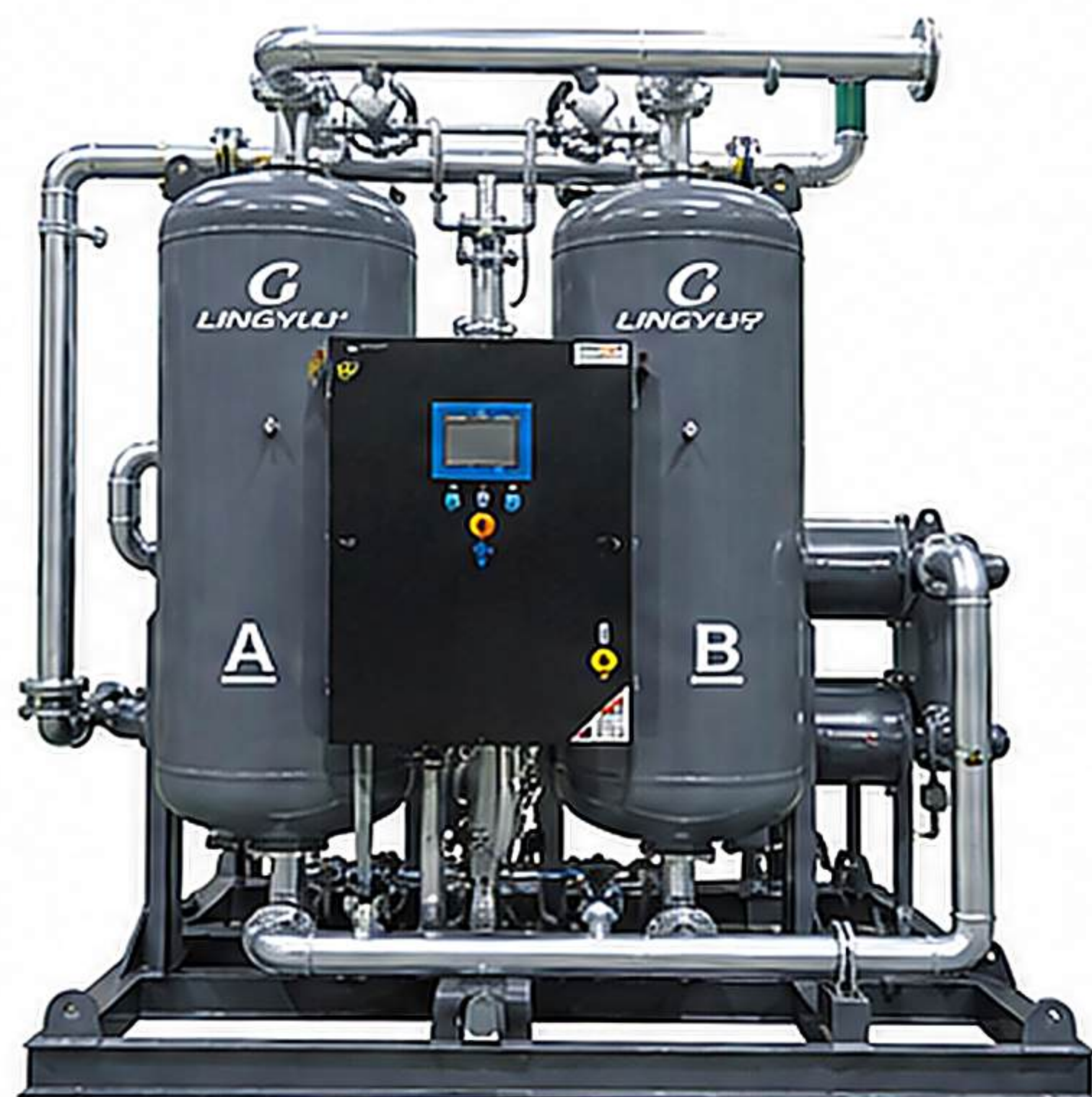
- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa (0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 110°C ~ 180°C (Limit inlet temperature: 120°C)
- Annual average ambient temperature: $\leq 33^{\circ}\text{C}$
- Outlet pressure dew point: $-20^{\circ}\text{C} \sim -40^{\circ}\text{C}$ (optional)
- Cooling water temperature: $\leq 32^{\circ}\text{C}$
- Cooling water pressure: 0.2 MPa ~ 0.6 MPa
- Annual average regeneration air consumption: 0%



04 COMPRESSED AIR COMBINED DRYER

Compressed air combined dryer

4.1 DC Series Combined Dryer



WORKING PRINCIPLE

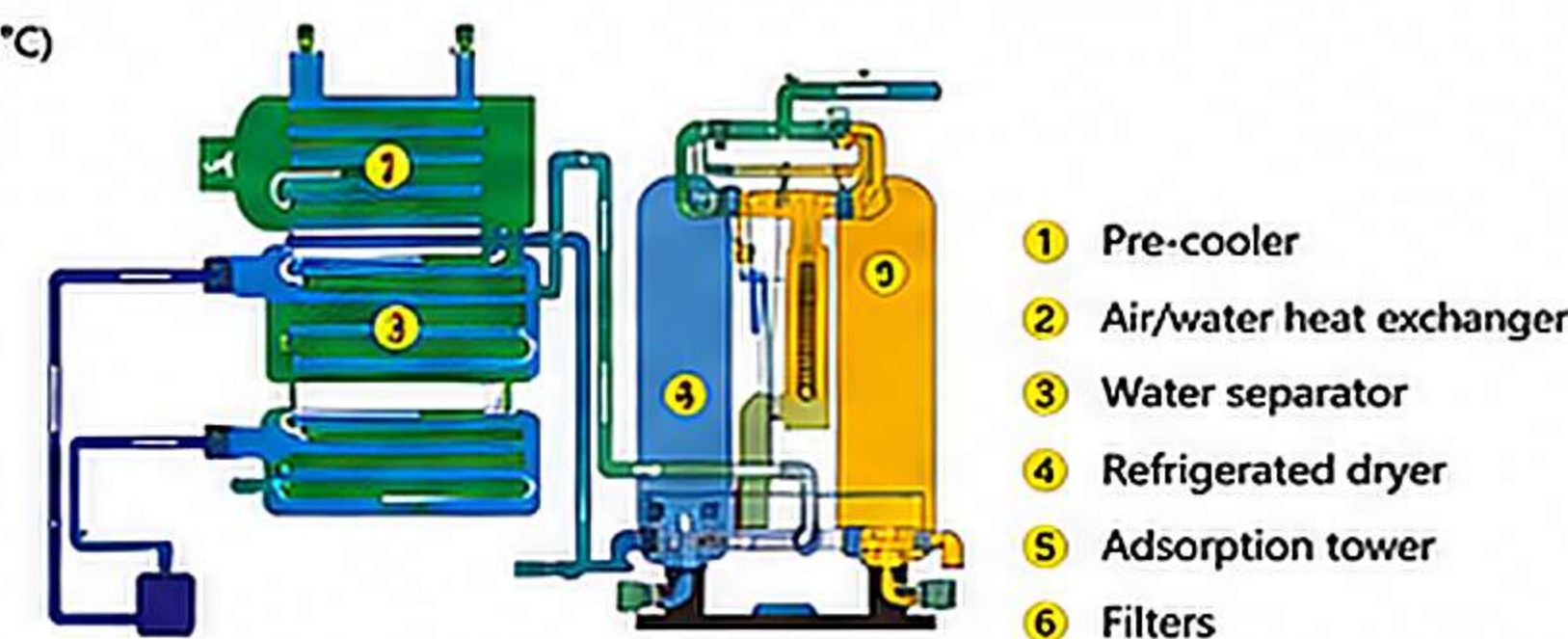
The dryer first removes moisture in the compressed air system by cooling the air, and then the adsorption dryer removes the water vapor from the system. This improves the pressure dew point and ensures a stable dew point. Subsequently, the compressed air enters the adsorption dryer through the air inlet, and the adsorbent removes moisture to further lower the pressure dew point, ensuring the system supplies dry air with a stable, low dew point.

DESIGN FEATURES

- **Advanced integration of cooling and adsorption systems:** By integrating the refrigeration compressor, refrigerated dryer and adsorption dryer, this integrated design eliminates inter-stage piping, minimizing leak points and pressure losses. It enhances creation of a high-quality integrated unit with a smaller footprint, stable and reliable operations, and significant energy savings. The microcomputer control system enables automatic operation monitoring and status display, featuring low power consumption. Adsorption performance is reliable and energy-efficient, providing superior efficiency and lower energy consumption, bringing users higher economic benefits.
- **Skid-mounted integrated design:** Compact and easy to install. Through extensive years of technical R&D, process optimization and equipment modernization, each unit undergoes strict testing before leaving the factory to ensure reliable and superior performance.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 50°C (limit inlet temperature: ≤ 80°C)
- Annual average regeneration air consumption: 0%
- Cooling method: Air-cooled / Water-cooled
- Outlet pressure dew point: ≤ -40°C
- Adsorbent: Activated alumina
- Ambient temperature: 35°C (2°C ~ 45°C can be used)



INSTALLATION SCHEMATIC DIAGRAM

Note: Configuration and pipeline design are subject to specific process requirements and operating conditions.

TECHNICAL PARAMETER DC Series Air-Cooled + CH Series Heatless Adsorption Dryer

Model	Processing Capacity (m³/min)	Rated Power (V/Hz)	Blower Power (kW)	Air Outlet Connection	Equipment Weight (kg)	Dimensions (mm) L x W x H
LY-DC10AHN	1.5	380/50	0.9	G1"	154	1150×680×1692
LY-DC20AHN	2.5	380/50				

04 COMPRESSED AIR COMBINED DRYER

Compressed air combined dryer

4.2 DH Series Combined Dryer



WORKING PRINCIPLE

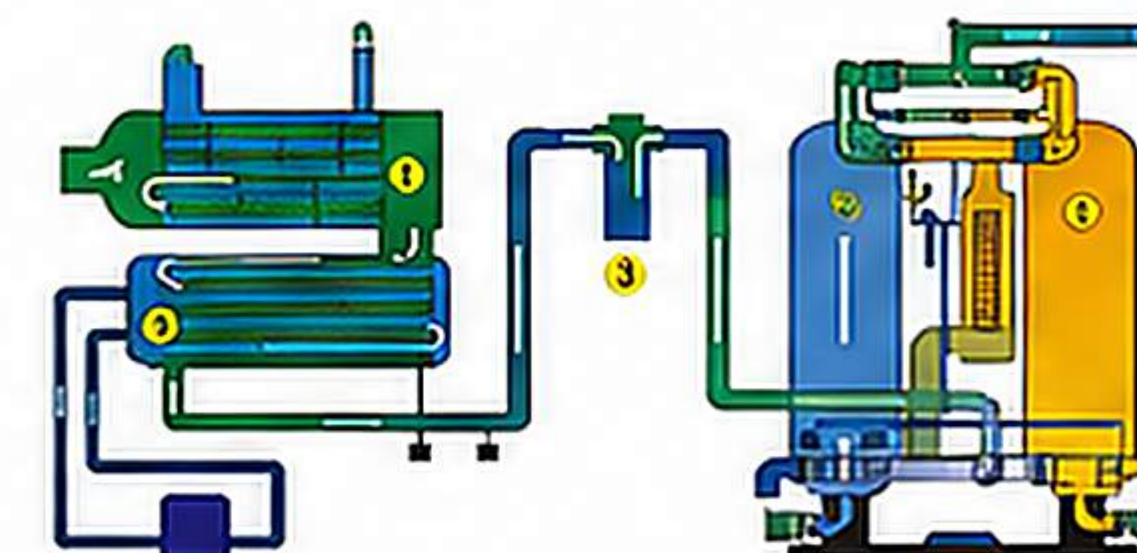
The dryer first removes moisture in the compressed air system by cooling the air, and then the adsorption dryer removes the water vapor from the system. This improves the pressure dew point and ensures a stable dew point. Subsequently, the compressed air enters the adsorption dryer through the air inlet, and the adsorbent removes moisture to further lower the pressure dew point, ensuring the system supplies dry air with a stable, low dew point. The dryer achieves the lowest possible pressure dew point and dry air with lower dew point under the premise of ensuring energy efficiency. The pressure dew point of the compressed air can be precisely adjusted through the control system. Finally, the dryer removes the desorbed moisture and purged air to provide a low dew point and clean compressed air.

DESIGN FEATURES

- **Energy saving:** Uses the dew point difference between the compressor outlet and the dryer outlet to remove moisture, reducing the load of the dryer and extending adsorbent service life. In low load conditions, the combined dryer can automatically switch operating programs to achieve energy saving.
- **Advanced integrated cooling and adsorption system:** The integrated design of the refrigeration compressor, refrigerated dryer and adsorption dryer eliminates inter-stage piping, reduces pressure drop, and improves compressed air quality. High-efficiency components and optimized system integration maximize performance while reducing footprint.
- **State-of-the-art adsorption and control:** The adsorption system is optimally designed with a large adsorption area for high moisture removal efficiency and low pressure drop. The advanced control system provides real-time monitoring, automatic operation, alarm and data display.
- **All-in-one design:** Compact structure, easy installation. Modern manufacturing and extensive testing ensure product quality and reliability.

OPERATING CONDITIONS AND TECHNICAL REQUIREMENTS

- Applicable fluid: Compressed air, non-corrosive and non-flammable gas
- Rated inlet pressure: 0.7 MPa
(0.6 MPa ~ 1.0 MPa allowed. Other pressures subject to customization)
- Rated inlet temperature: 50°C
(Limit inlet temperature: $\leq 80^\circ\text{C}$)
- Annual average regeneration air consumption: 0%
- Cooling method: Air-cooled / Water-cooled
- Outlet pressure dew point: $\leq -40^\circ\text{C}$
- Adsorbent: Activated alumina
- Ambient temperature: 35°C ($2^\circ\text{C} \sim 45^\circ\text{C}$ can be used)



INSTALLATION SCHEMATIC DIAGRAM

Note: Configuration and pipeline design are subject to specific process requirements and operating conditions.

TECHNICAL PARAMETER DH Series Air-Cooled + AH Series Heatless Adsorption Dryer

PARTIAL PROJECTS

Project Owner 1: XX Huayi Co., Ltd. — Grade-1 Compressed Air System for a Compressor Station
(Actual On-site Photo)



Air Flow	6×150 m³/min
Equipment Configuration	D Series High-Efficiency Coalescing Filter + Adsorption Dryer
Project Requirements	Requirement: This project is a grade-1 compressed air system, used for pneumatic conveying and control of instruments and valves. The dew point must be ≤ -40°C, the residual oil content ≤ 0.01 ppm, and the particle size ≤ 1 μm.
Solution Advantages	Customized a combined filtration and drying system to ensure stability and continuous supply of grade-1 compressed air, with the following advantages: ① Low pressure drop and high purification efficiency; ① Stable operation and reliable performance; ① Long service life of filter elements; ① Low operating cost.

Project Owner 2: XX Food Co., Ltd. (Actual On-site Photo)



Air Flow	10×65 m³/min
Equipment Configuration	Carbon Molecular Sieve Nitrogen Generator
Project Requirements	Requirement: The project requires on-site production of nitrogen for food packaging. Nitrogen purity ≥ 99.99%, dew point ≤ -40°C, residual oil content ≤ 0.01 ppm, particle size ≤ 1 μm, oil content ≤ 0.1 mg/m³.
Solution Advantages	A customized nitrogen generator system was provided with the following advantages: ① High nitrogen purity, meeting food-grade standards; ① Fully automated operation, easy to use; ① Energy saving and consumption reduction; ① Stable nitrogen supply, low maintenance cost; ① Modular design for flexible expansion; ① Dual adsorbers for parallel operation to ensure uninterrupted nitrogen supply.

Project Owner 3: XX Optoelectronics Co., Ltd. (Actual On-site Photo)



Air Flow	8×220 m³/min
Equipment Configuration	D Series High-Efficiency Coalescing Filter + Refrigerated Dryer
Project Requirements	Requirement: Used for clean compressed air in precision production. Dew point ≤ 2-10°C, residual oil content ≤ 0.01 ppm, particle size ≤ 1 μm, oil content ≤ 0.1 mg/m³.
Solution Advantages	Combined solution to ensure a stable and clean air supply with the following advantages: ① High purification efficiency, stable dew point control; ① Low pressure drop and energy saving; ① Filter elements made of high-quality materials with long service life; ① Easy installation and maintenance; ① High cost-effectiveness.

CASES



End User New Energy Materials
Equipment Dual-tower heatless air dryer
2 sets (60 m³/min per set)



End User Water Treatment Industry
Equipment Refrigerated dryer
5 sets (45 m³/min per set)



End User Pharmaceutical Co., Ltd.
Equipment Refrigerated dryer
4 sets (28.5 m³/min per set)



End User Chemical Plant
Equipment Heatless dryer
1 set (40 m³/min)



End User New Energy Materials
Equipment Heatless dryer
9 sets (200 m³/min per set)



End User New Energy Industry
Equipment Refrigerated dryer
8 sets (55 m³/min per set)



End User Chemical Plant
Equipment Refrigerated dryer
8 sets (250 m³/min per set)



End User Power Plant
Equipment Refrigerated dryer
2 sets (75 m³/min per set)



End User Automotive
Equipment Refrigerated dryer
5 sets (3 m³/min per set)

① Petrochemical Industry ② New Energy & Automotive ③ Machinery Manufacturing ④ Metallurgical Industry



End User Extra-high Voltage Industry
Equipment Refrigerated dryer
50 sets (50 m³/min per set)



08 OUR SERVICES

Our services

■ LINGYU SERVICES



■ SERVICE CONTENT

- Provide free pre-sales consultation;
- On-site commissioning, maintenance, and upkeep of equipment;
- On-site troubleshooting and customized maintenance solutions.

■ COMPLETE ACCESSORIES

- **Air Treatment Components**
Air filters, regulators, coolers, steam traps, dryers, precision filters, silencers, air tanks, pressure gauges, pipeline filters, condensate drains, fittings, etc.
- **Valve Category**
Valves, solenoid valves, angle seat valves, safety valves, check valves, electric actuators, pneumatic actuators, etc.
- **Other Accessories**
Filter elements, filter housings, pressure vessels, etc.

■ SERVICE INDUSTRIES AND CUSTOMERS

Electronics Industry						
Power Industry						
Home Appliance Industry						
Aviation Industry						
Railway Industry						
Machinery Industry						