

2020Version

Demargo

Environmental protection · energy conservation
high efficiency · innovation

Modular Desiccant Dryer

MODULAR DRYER

德玛戈（上海）节能科技有限公司

Demargo (shanghai)Energy Saving Technology Co.,Ltd.

Modular Adsorption Dryer

Overview

Based on the requirements of compressed air application scenarios and the analysis of the technical characteristics of existing adsorption dryers, the company's R&D team has developed a new generation of modular adsorption dryers and formed a series of products.

This series of dryers adopts a unique design concept and, on the basis of previous experience, incorporates the world's most advanced modular technology, resulting in more stable performance and higher drying efficiency of the adsorption dryers.

The series of products are widely used for drying compressed air in fields such as the pharmaceutical industry, food processing, light industry, breathing air systems, chip production, cutting machine tools, papermaking industry, communication technology, pneumatic control, spraying equipment, laboratories, and sea - level operations.

Principle

The modular adsorption dryer achieves the purpose of drying by adsorbing water vapor through the capillary action of adsorbent materials based on the pressure swing adsorption principle.

Product Features

1) Reasonable structural design and elegant appearance; flexible combination of equipment for large - flow air consumption.
2) The cylinder is made of high - strength aluminum alloy material, ensuring no secondary pollution of gas.
3) Flexible and stable pneumatic valve with reliable operation and long service life.
4) Sufficient filling amount of adsorbent to ensure the stability of the dew point of the outlet air.
5) High - quality muffler to effectively reduce product noise.
6) Optimized program control, with small air flow pulses and stable air pressure without fluctuations.
7) Convenient operation, maintenance and overhaul, and easy installation (no foundation required).



MD Series Modular Adsorption Dryer

Features of MD Series Modular Adsorption Dryer

1.It has multiple groups with a large length - diameter ratio, which can reach up to 12:1 (the maximum of traditional ones is only 5:1).
2.Multi - cavity directional flow distribution enables full adsorption, low pressure drop, with pressure loss less than 0.03 MPa.
3.Directional flow distribution of regeneration gas improves regeneration efficien -cy and reduces the consumption of regeneration gas and the filling amount of adsorbent.
4.The multi-group modular design of adsorption makes the body structure compa -ct and reasonable with a small volume.
5.The adsorption cylinder is made of aluminum alloy (or stainless steel, carbon steel), and the upper and lower gas collecting cavities are made of high - quality aluminum alloy, ensuring no secondary pollution of gas.
6.The volume of a single adsorption cylinder is less than 25 L, so it does not fall into the category of pressure vessels.
7.High - quality and high - efficiency molecular sieve is used as the adsorbent to ensure the stability of the dew point of the outlet compressed air.
8.The valve adopts a combined valve body with independent patent design, and the seal is made of imported materials.
9.The micro - heated type adopts high - efficiency thermal insulation materials and integral thermal insulation, which has low energy consumption and high water removal efficiency of the adsorbent.
10.The controller has a multi - function selection mode to adapt to various working conditions. At the same time, the controller has remote control and communication functions.
11.Installation (foundation - free installation is available), maintenance and overhaul are very convenient, and the maintenance cost is reduced.

Performance and Parameters of MD Seri es Modular Adsorption Dryer

NO.	Technical Performance	Unit	Technical Parameter
1	Working Pressure	MPa	≤1.0(1.6)
2	Regeneration Air Volume		heatless type：≤4～8%；Micro-heated type：≤3～5%
3	Pressure Drop	MPa	≤0.03
4	Inlet Air Temperature	℃	≤45
5	Outlet Air Temperature	℃	≤38
6	Pressure Dew Point	℃	heatless type：−20～−40；Micro-heated type：−20～−70
7	Inlet Oil Content	mg/M³	≤0.1
8	Power Supply	V/Hz	220/50 or 380/50
9	Adsorbent		Molecular Sieve
10	Service Life of Adsorbent	Year	≥2
11	Noise	dB(A)	≤65
12	Start - up Time	min	heatless type：5～15；heated type：30～180
13	Controller Function	heated type	It has step setting, temperature emergency, switching, intelligent solution, start-up/shut down control, exhaust self-control, etc.





Select the processing capacity of the model = $\frac{\text{Actual processing capacity}}{\text{Pressure correction coefficient X Temperature correction coefficient X Dew point correction}}$

Pressure(MPa)	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5	1.6
Pressure Correction Coefficient	0.62	0.75	0.87	1	1.12	1.25	1.37	1.5	1.62	1.75	1.87	2	2.12

Inlet Air Temperature (℃)	20	25	30	35	40	45	50
Temperature Correction Coefficient	1.07	1.06	1.04	1	0.88	0.78	0.55

Pressure Dew Point (℃)	−40	−70
Dew Point Correction Coefficient	1	0.7

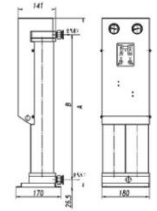
Note: The processing capacity is based on the working condition where the pressure at the inlet of the dryer is 0.7 MPa and the temperature is 35 ℃; for other working conditions, refer to the correction coefficient tables when selecting the model.

Product Selection

Heatless Type A

■ Working Conditions and Technical Indicators

Working Pressure：0.6～1.0MPa
Intake air temperature：0～45℃
Regenerative gas volume：≤4～8%
Intake oil content：≤0.1mg/m³
Dew point of finished gas pressure：−20～−40℃
Desiccant：Activated alumina or molecular sieves
Work cycle：5～15min





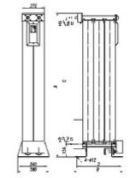
Heatless Type A

Model Specification	Processing Capacity (Nm³/min)	Power Supply (V/Hz)	Inlet/Outlet Diameter	Weight (kg)	Overall Dimension (Length × Width × Height) (mm)
MD-001WD	0.1	220/50	∅4	8	178 X138 X494
MD-002WD	0.2		Rp1/2"	12	230 X230 X447
MD-004WD	0.4			15	230 X230 X627
MD-006WD	0.6			18	230 X230 X877
MD-008WD	0.8			22	230 X230 X1127
MD-010WD	1.2			27	230 X230 X1327

Heatless Type B

■ Working Conditions and Technical Indicators

Working Pressure：0.6～1.0MPa
Intake air temperature：0～45℃
Regenerative gas volume：≤4～8%
Intake oil content：≤0.1mg/m³
Dew point of finished gas pressure：−20～−40℃
Desiccant：Activated alumina or molecular sieves
Work cycle：5～15min





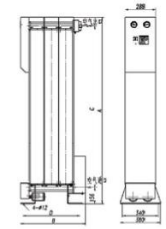
Heatless Type B

Model Specification	Processing Capacity (Nm³/min)	Power Supply (V/Hz)	Inlet/Outlet Diameter	Weight (kg)	Overall Dimension (Length × Width × Height) (mm)
MD-010WD	1.2	220/50	Rp1.5"	40	355 X378 X762
MD-020WD	2.4			56	355 X378 X1262
MD-030WD	3.5			72	355 X378 X1722
MD-060WD	6.5			126	472 X380 X1737
MD-100WD	10.7			180	606 X380 X1737
MD-125WD	12.5		Rp2"	235	740 X380 X1752
MD-150WD	15			290	874 X380 X1752
MD-200WD	20			345	1008 X380 X1752
MD-250WD	25		Rp3"	475	801 X600 X1752
MD-300WD	30			585	935 X600 X1752
MD-400WD	40			700	1069 X600 X1752

Micro - heated Type

■ Working Conditions and Technical Indicators

Working Pressure：0.6～1.0MPa
Intake air temperature：0～45℃
Regenerative gas volume：≤3～5%
Intake oil content：≤0.1mg/m³
Dew point of finished gas pressure：−40～−70℃
Desiccant：Activated alumina or molecular sieves
Work cycle：30～180min





Micro - heated Type

Model Specification	Processing Capacity (Nm³/min)	Power Supply (V/Hz)	Heating power (Kw)	Inlet/Outlet Diameter	Weight (kg)	Overall Dimension (Length × Width × Height) (mm)
MD-010ED	1.2	220/50	0.5	Rp1.5"	50	355 X378 X805
MD-020ED	2.4		0.75		62	355 X378 X1305
MD-030ED	3.5		1		92	355 X378 X1765
MD-060ED	6.5		2		153	482 X380 X1780
MD-100ED	10.7	380/50	3		215	616 X380 X1780
MD-125ED	12.5		4	Rp2"	275	750 X380 X1780
MD-150ED	15		5		340	884 X380 X1780
MD-200ED	20		6		400	1018 X380 X1780
MD-250ED	25		7	Rp3"	535	801 X600 X1780
MD-300ED	30		8		650	935 X600 X1780
MD-400ED	40		9		770	1069 X600 X1780