The important role of compressed air in modern industry

Compressed air is the second largest power source after electric power, and it is also a multi-purpose process gas source. Its application scope covers petroleum, chemical industry, metallurgy, electric power, machinery, light textile, electronics, food, medicine, new energy and other industries.

Air pressure gas takes the atmosphere as its gas source, but the air contains a lot of dust, water vapor, unburned hydrocarbons and bacteria. These pollutants are mixed together to form a harmful corrosive mixture will quickly wear pneumatic equipment, block valves and corrode pipelines

Cause:

◆Air leakage

◆Tools and equipment damage

◆Maintenance cost increase

◆Bad or scrapped products

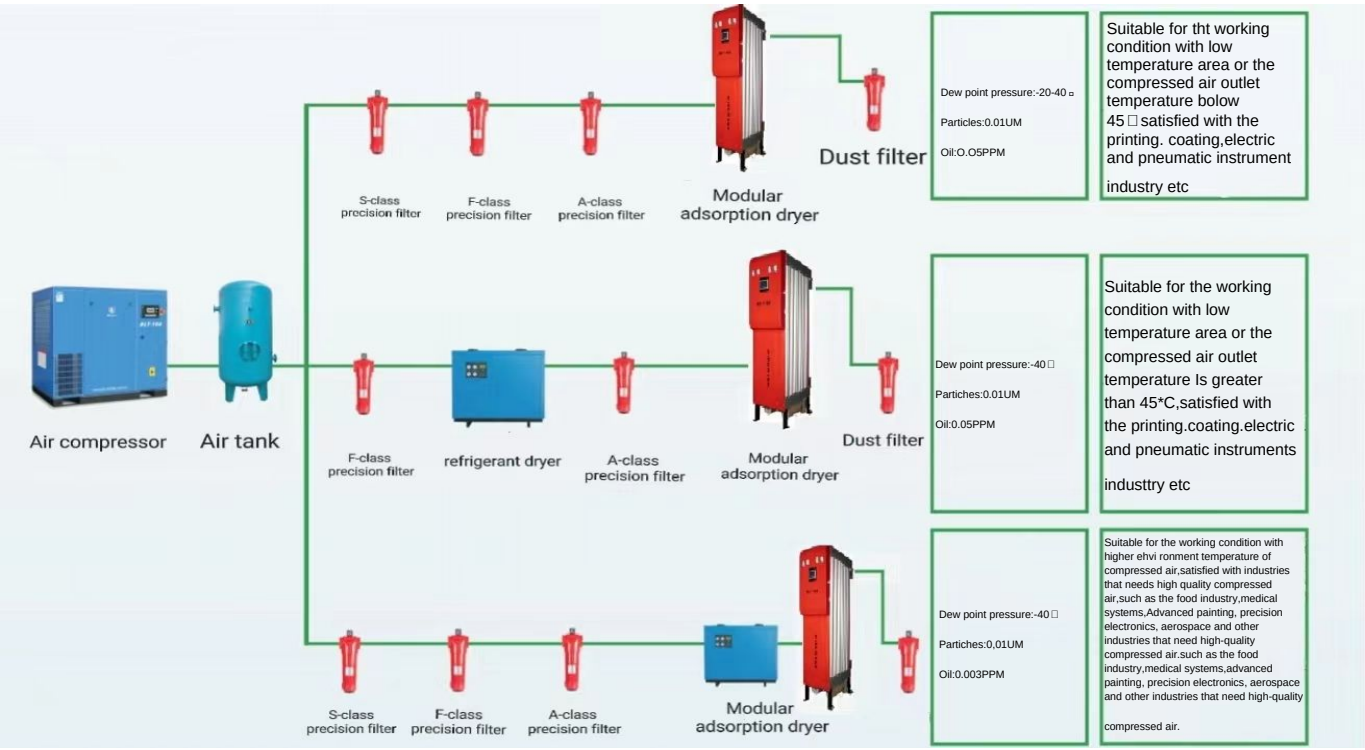
◆And health and safety are threatened.

◆The working environment is affected.

Modern production technology requires higher and higher quality of compressed air, requiring the compressed air system to be dehydrated and dried, which meets the requirements of stable production and excellent products.

Modular adsorption dryer can provide you with clean, dry and high-quality compressed air.

Compressed air purification flow chart



ISO8573.1 standard for the compressed air quality level

The national standard ISO8573.1 have a simple classification standard system for the compressed air quality, that is according to the residual content of three main pollution: dust, water and oil in the compressed air system to divide the quality level.

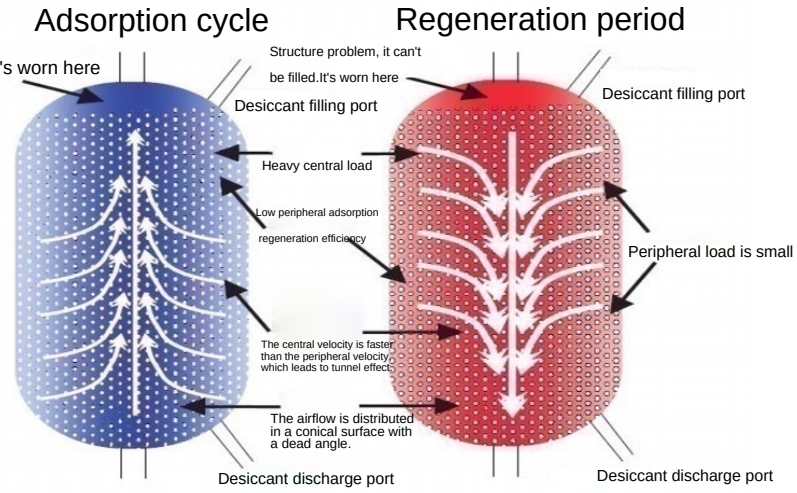
Level	Solid particles			Water	Oil
	The largest particle content for per cubf meter			Pressure dew point °C	Contain oil vapor mg/m^3
	0.1-0.5Molecule	0.5-1Molecule	1-5Molecule		
1	100	1	0	-70	0.01
2	100,000	100	10	-40	0.1
3		100,000	500	-20	1
4			1,000	3	5
5			2,000	7	
6				10	

Comparison of Water Removal Effects of Three Dryers

	Freeze dryer	Double tower adsorption dryer	Modular dryer
Pressure dew point	10~20 ℃	-10~-20 ℃	-40~-70 ℃
Energy consumption	6%	14~25%	8%
Treated water content	According to the gas production rate of 10m3 per minute, 93g of water enters the gas equipment every minute, and 5600g of water enters the gas end every hour, which is about a barrel of large mineral water. Mostly liquid water.	According to the gas production rate of 10m3 per minute, then 10.7g of water enters the gas consumption equipment every minute, and 642g of water enters the gas consumption end every hour, about two bottles of ordinary mineral water. Most of it will condense into liquid water.	According to the gas production rate of 10m3 per minute, 1.7g of water enters the gas supply every minute, and 102g of water enters the gas supply end every hour, with a small mouth cup. They are all gaseous water molecules.
Adsorbent life	/	5000 hours	24000 hours

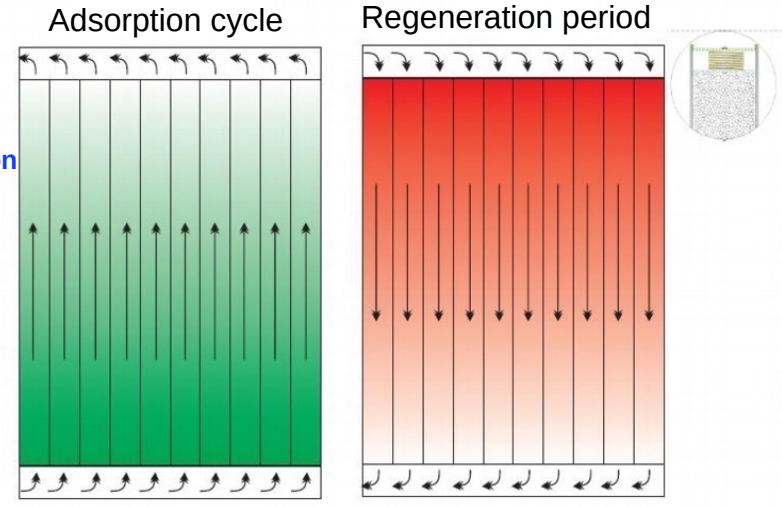
Tower structure

- Uneven air distribution
- Large pressure drop
- Airflow dead angle
- There is a lot of relative movement of adsorbent.

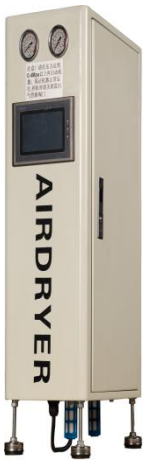


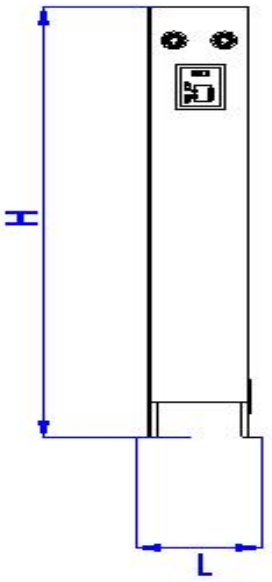
Modular parallel connection

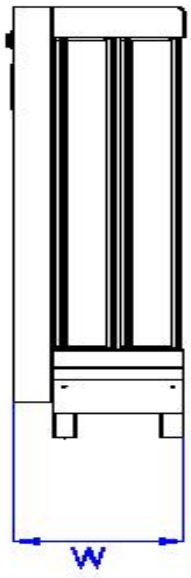
- The airflow distribution is more balanced.
- Lower blood pressure
- Airflow without dead angle
- There is no relative movement of the adsorbent of the pressing device.



AD-S series compressed air dryer (module/module suction dryer)







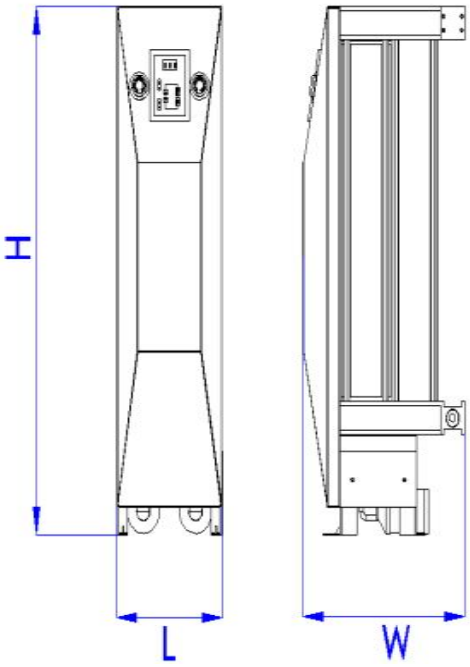
Technical parameters:

Pressure dew point		Rated pressure	Media type	Rated power	Rated voltage	Point pressure loss	Regeneration gas volume
-40°C(Customizable-70°C)		0.45-0.85Mpa	Compressed air	0.1KW	220V/50hz	≤0.015Mpa	5%-8%
Regeneration mode	Medium temperature	Ambient temperature	Control mode/optional control mode			Noise	
Non-thermal type	5C°-50°C	5C°-50°C	Integrated control	Integrated touch screen	Split touch screen	≤65Db	

Model flow:

Model	Standard treatment capacity □m³/min□	Port	Outline dimension(mm)			Weight (kg)	Matching air compressor power
	Pressure:0.7Mpa	IN	Length (L)	Wide (W)	High (H)		
AD-S-02	0.2	1/2″	200	370	660	20	2HP
AD-S-03	0.3	1/2″	200	370	660	25	3HP
AD-S-05	0.65	3/4″～1″	260	350	680	25	5HP
AD-S-10	1.25	3/4″～1″	260	350	1010	36	10HP
AD-S-15	1.75	3/4″～1″	260	350	1260	47	15HP

AD-S series compressed air dryer (module/module suction dryer)



Technical parameters:

Pressure dew point		Rated pressure	Media type	Rated power	Rated voltage	Point pressure loss	Regeneration gas volume
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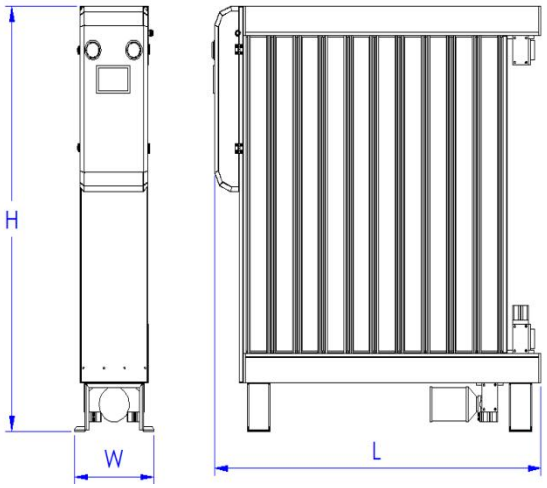
Regeneration mode	Medium temperature	Ambient temperature	Control mode/optional control mode			Noise	
Non-thermal type	5C°-50°C	5C°-50°C	Integrated control	Integrated touch screen	Split touch screen	≤65Db	

Model flow:

Model	Standard treatment capacity □m³/min□	Port	Outline dimension(mm)			Weight (kg)	Matching air compressor power
	Pressure:0.7Mpa	IN	Length (L)	Wide (W)	High (H)		
AD-S-20	2.5	1″	320	405	950	58	20HP
AD-S-30	3.75	1″	320	450	1220	80	30HP
AD-S-40	5	1″	320	580	1220	102	40HP

AD-M series compressed air dryer (module/module suction dryer)



Technical parameters:

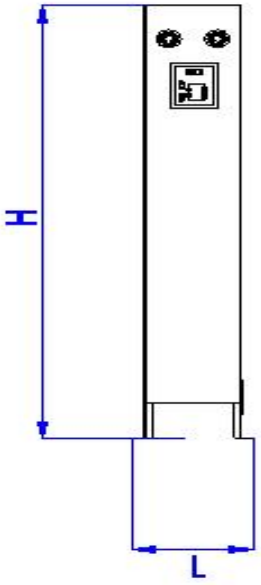
Pressure dew point		Rated pressure	Media type	Rated power	Rated voltage	Point pressure loss	Regeneration gas volume
-40°C(Customizable-70°C)		0.45-0.85Mpa	compressed air	0.1KW	220V/50hz	≤0.015Mpa	5%-8%
Regeneration mode	Medium temperature	Ambient temperature	Control mode/optional control mode			Noise	
Non-thermal type	5C°-50°C	5C°-50°C	Integrated control	Integrated touch screen	programmable logic controller	≤65Db	

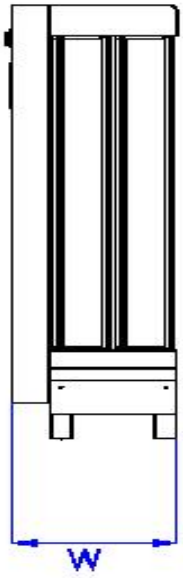
Model flow:

Model	Standard treatment capacity □m³/min□	Port	Outline dimension(mm)			Weight (kg)	Matching air compressor power
	Pressure:0.7Mpa	IN	Length (L)	Wide (W)	High (H)		
AD-M2-3S	6.5	1.5″	660	330	1320	115	40HP
AD-M2-3L	7.5	2″	660	330	1720	145	50HP
AD-M2-4	10	2″	890	330	1720	175	75HP
AD-M2-6	15	2″	1050	330	1720	250	100HP
AD-M2-7	17.5	2″	1190	330	1720	287	125HP
AD-M2-8	20	3″	1310	330	1720	325	150HP
AD-M2-10	25	3″	1570	330	1720	405	175HP
AD-M4-6	30	3″	1050	660	1720	510	175HP
AD-M4-7	35	3″	1190	660	1720	585	200HP
AD-M4-8	40	4″	1310	660	1720	675	250HP

Special module dry for laser cut equipment

AD-M4-10	50	4″	1570	660	1720	825	300-350HP





Technical parameters of special module dryer for laser cutting equipment:

Pressure dew point		Rated pressure	Media type	Rated power	Rated voltage	Point pressure loss	Matching air compressor power
-40°C(Customizable-70°C)		0.45-1.6Mpa	compressed air	0.1KW	220V/50hz	≤0.015Mpa	5%-8%
Regeneration mode	Medium temperature	Ambient temperature	Control mode/optional control mode			Noise	
Non-thermal type	5C°-50°C	5C°-50°C	Integrated control	Integrated touch screen	Split touch screen	≤65Db	

1.6mpa without thermal regeneration, AD-SH series:

Model	Standard treatment capacity □m³/min□	Port	Outline dimension(mm)			Weight (kg)	Matching air compressor power
	Pressure: 1.6Mpa	IN	Length (L)	Wide (W)	High (H)		
AD-SH-10	1.5	3/4″	260	350	680	25	20HP
AD-SH-20	2.5	3/4″	260	350	1010	36	30HP
AD-SH-30	3.8	3/4″	260	350	1260	47	40HP
AD-SH-40	5	1″	320	580	1220	102	50HP

Correction coefficient table and selection example

The rated flow rate is the basis of air compressor selection reference, and with the decrease of operating pressure or the increase of exhaust temperature, it will make

The saturated water content of the dryer increases, so the model selection should be adjusted according to the actual use conditions.

Temperature correction coefficient CX

Admission	° C	20	25	30	35	40	45	50
Temperature	CX	1	1	1	1	0.97	0.88	0.73

Pressure correction coefficient PX

Admission	MPa	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
Pressure	PX	0.60	0.75	0.85	1.00	1.10	1.20	1.30	1.40	1.50	1.75	1.86	1.99	2.11

Dew point correction coefficient CF

Pressure dew point	° C td	-20	-40	-60	-70
	CF	1.1	1.0	0.7	0.6

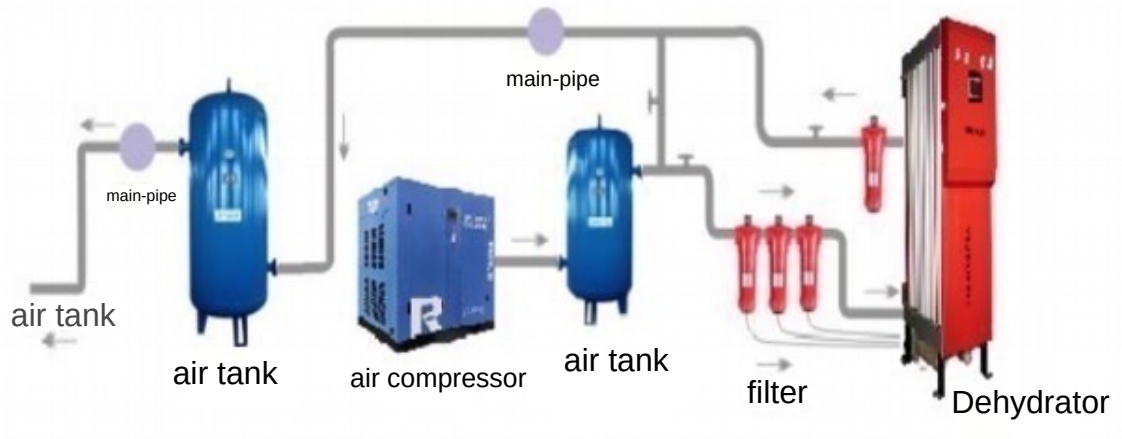
Handling capacity of dryer = machine flow /(CX x PX x CF)

For example, when the air flow rate is 20m³/min, the inlet temperature is 40 C, the inlet pressure is 0.6MPa, and the pressure dew point is 40 C,

The required capacity of the dryer = 20m/min/(0.9x0.85x1.0) = 26.14m/min.

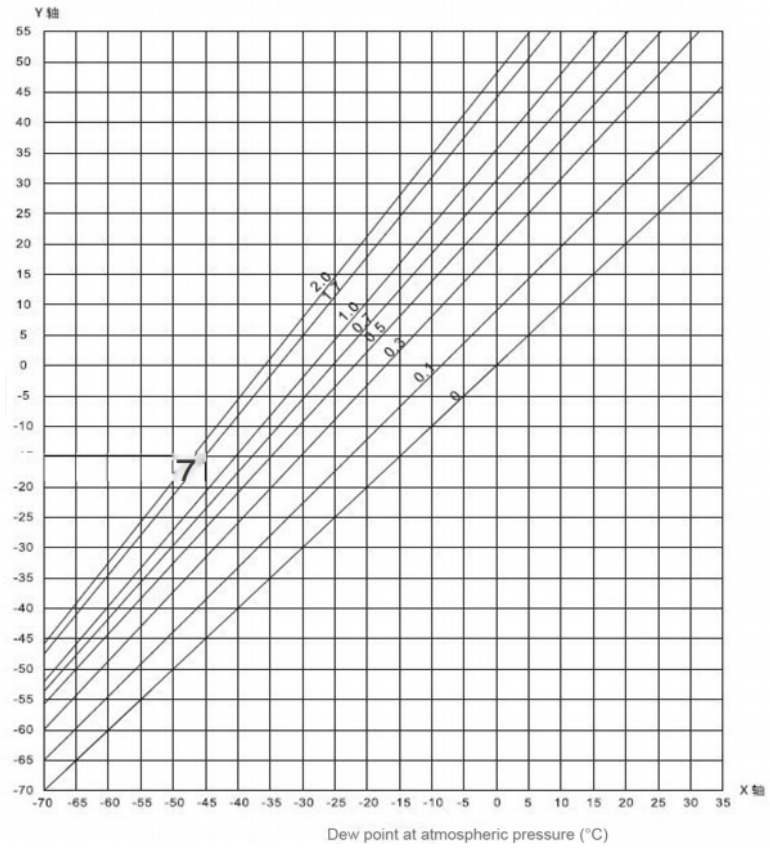
Therefore, under the above conditions, the capacity of the dryer should be 26.14m³/min, so the model with a similar capacity should be AD-M2-10.

System installation diagram



Air water content corresponding reference table and checking method

COMPARISON TABLE						Atmospheric dew point-moisture content relation table			
Dew point (°C)	Moisture content (g/rush)	Dew point (°C)	Moisture content (g/m³)	Dew point (℃)	Moisture content ▫ g/rns ▫	Dew point (° C)	Moisture content (g/rns)	Dew point (° C)	Moisture content (g/rns)
64	153.8	39	48.7	14	12.1	-11	2.19	-36	0.260
63	147.3	38	46.3	13	11.4	-12	2.03	-37	0.236
62	141.2	37	44.0	12	10.7	•13	1.88	-38	0.214
61	135.3	36	41.8	11	10.0	-14	1.74	-39	0.194
60	130.3	35	39.6	10	9.3	-15	1.61	-40	0.176
59	124.7	34	37.6	9	8.8	-16	1.48	-41	0.159
58	119.4	33	35.7	8	8.3	-17	1.37	-42	0.144
57	114.2	32	33.8	7	7.8	-18	1.26	-43	0.130
56	109.2	31	32.1	6	7.3	-19	1.17	-44	0.117
55	104.4	30	30.4	5	6.8	-20	1.07	-45	0.106
54	99.8	29	28.8	4	6.4	-21	0.99	-46	0.095
53	95.4	28	27.2	3	5.9	-22	0.91	-47	0.085
52	91.1	27	25.8	2	5.6	-23	0.84	-48	0.077
51	87.0	26	24.4	1	5.2	-24	0.77	-49	0.069
50	83.1	25	23.1	0	4.8	-25	0.70	-50	0.062
49	79.3	24	21.8	-1	4.5	-26	0.65	-51.1	0.054
48	75.6	23	20.6	-2	4.2	-27	0.59	-53.9	0.040
47	72.3	22	19.4	-3	3.9	-28	0.54	-56.7	0.029
46	68.7	21	18.3	-4	3.7	-29	0.50	-59.4	0.021
45	65.5	20	17.3	-5	3.4	-30	0.45	-62.2	0.014
44	62.4	19	16.3	-6	3.2	-31	0.41	-65.0	0.011
43	59.4	18	15.4	-7	2.9	-32	0.38	-67.8	0.008
42	56.6	17	14.5	-8	2.7	-33	0.34	-70.6	0.005
41	53.8	16	13.6	-9	2.5	-34	0.31	-73.3	0.003
40	51.2	15	12.8	-10	2.4	-35	0.29	--	--



View method

Example:

What is the water content of compressed air with a pressure of 0.7 MPa and a dew point of 2 C?

Steps:

1. Find the corresponding straight line (I)-0.7mpa;
2. Take 2 as the base point in the longitudinal axis (Y). and draw the intersection of the straight line of water and the straight line L;
3. Find the reading with the focus corresponding to the horizontal axis (x) -23

(atmospheric dew point)

4. Find out the corresponding water content value — 0.84g/m3 in the above table (large and dew point water content table)

Modular suction and drying machine

Stable, energy-saving and environmental protection

Dealer