

SD-90X

Fresh Air Duct Cooling Dehumidifier



Technical Agreement

(2021-7-2)

Buyer: DSL (Thailand) Limited.

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A. Model no. and Name

Model no.: SD-90X

Name: Fresh Air Duct Cooling Dehumidifier

B. Requirement and Design

Requirement

Space type: Painting workshop

Space dimensions: L50m x W40m x H10m

Target Humidity: RH45%

Target Temperature: 25°C

CMH: 15000~20000 cubic meter per hour single dehumidifier, total 60000 cubic meters per hour

Special requirement: no inside cycling, outdoor installation with fresh air inlet.

Design

According to the customer's CMH requirements, the CMH of the dehumidifier is determined to be 20,000 cubic meters per hour. According to the requirements of temperature and humidity, the refrigerating capacity is determined to be 40 HP, so the compressor is determined to be 4*10 HP. Due to the large amount of dust and paint particles in the painting workshop, there is no need for internal circulation. It is designed for outdoor installation with fresh air. Considering the dust in the external environment, G4 filter needs to be added in the air inlet. The overall appearance design is based on the compressor, and takes the temperature and humidity requirements as the main parameters. Four sets of 10 HP condensers and dissipation fans and two sets of evaporators are matched to make the best layout size. For details, please refer to the following contents.

C. Working principle and process

Turning on the dehumidifier with pressing the start-up button after power supply and operation parameters have been set, the refrigerating system start to work .

Refrigerant cycle:

High pressure refrigerant liquid enters into the evaporator after throttling by expansion valve. The refrigerant is evaporated as low temperature and low pressure gas by absorbing thermal from air after heat exchange. The low temperature low pressure refrigerant gas is inhaled into the compressor, after compressor compressing, the gas become high temperature high pressure refrigerant gas and get into the condenser. Then the refrigerant gas get into the condenser, after heat dissipation, the refrigerant gas become high pressure refrigerant liquid. Above is a complete cycle of refrigerating after repeating.

Air circling:

Fan make wet air through the filter into the evaporator, cooling by heat exchange, when humid air through the evaporator fins which temperature is much lower than the temperature of air dew point , the moisture in the air will be condensed as liquid and attach on the evaporator fins, with the increasing of the condensate water, the water will drop into the water collector because of gravity. Above is a complete processing of dehumidification and cooling. The dried and cooled air will flow into the room by working of centrifugal fans through the duct.

The dehumidifier is automatically controlled by Micro-computer intelligent system, easy operation with touch screen.

D. Technical Parameters

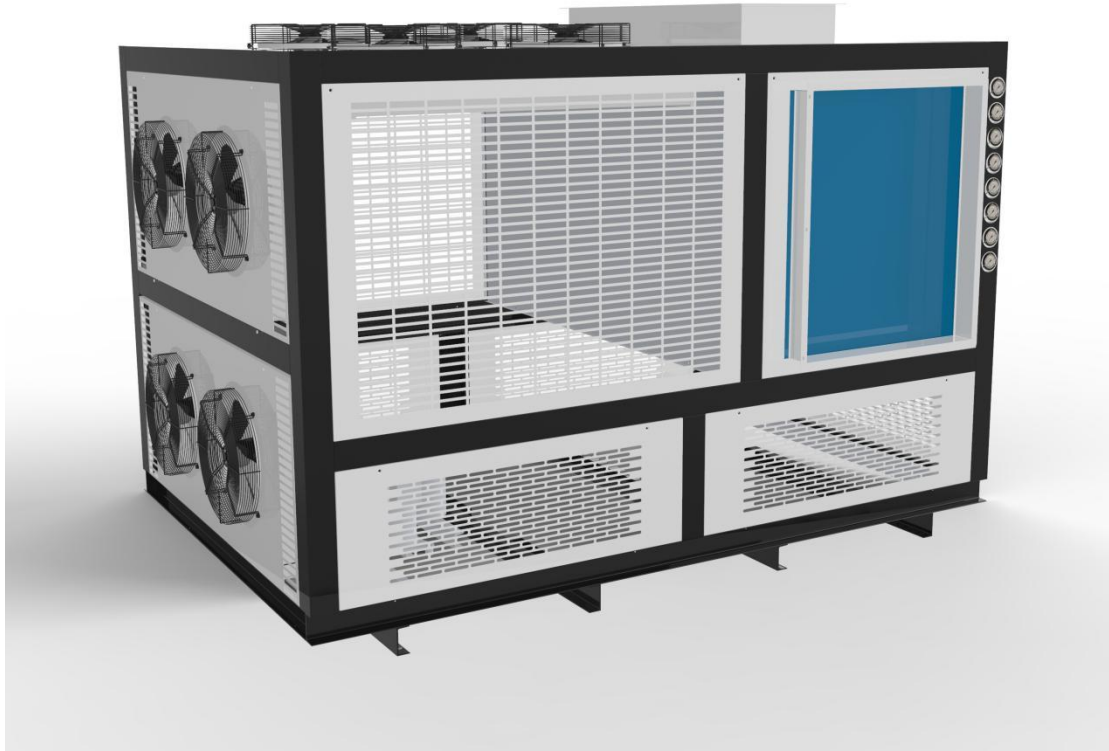
Parameters		Model	SD-90X	
Unit performance	Cooling capacity	kW	120	
		kcal/h	14*10 ⁴	
	Air flow	m ³ /h	20000	
	Margin pressure	Pa	≥200	
	Sound level	dB(A)	≤80	
	Humidity control	%RH	45~95%±3%	
	Temperature	°C	18~30	
	Power supply			380V/-3N/50Hz
	Total power	kW	38.4	
	Total current	A	59	
Refrigerating system	Compressor	Type	All sealed scroll type	
		Qty'	4	
		Power(K	7.46*4	
	Refrigerant	Type	R22	
		Throttlin	Expansion valve	
	Evaporator	Type	Copper tube with aluminum fins	
Ventilation system	Circulating fans	Type	Outer rotor low noise centrifugal	
		Qty'	2	
		Power(K	2.2*2	
	Dissipation fans	Type	Axial flow fan	
		Qty'	4	
		Power(K	0.5*4	
	Filter	Type	G4 filter	
Overall size		L(mm)	3080	
		W(mm)	2100	
		H(mm)	2150	

E. Main parts supplier

Item	Brand	Supplier
Compressor	Panasonic	Panasonic (Dalian) Ltd.
Expansion valve	Emerson	Emerson Electric Co.
Liquid Storage tank	Jusen	Shanghai Jusen Air Compressor Limited
Gas-liquid separator	ALCO	ALCO Valves USA
Drying filter	ALCO	ALCO Valves USA
Condenser	Laishi	Hangzhou Lai's Aluminium Industry Ltd.
Dissipation fan	Weiguang	Hangzhou Weiguang Electronic Co., Ltd.
Evaporator	Lai's	Hangzhou Lai's Aluminium Industry Ltd.
Circulating fan	Luotu	Weifang Luotu Fans Co.,LTd.
Humidity sensor	SHINYEI	SHINYEI JAPAN
Temperature sensor	SHINYEI	SHINYEI JAPAN
G4 filter	JINDUN	Hangzhou Jindun
PLC main board	EAST	Hangzhou Dahuan Technology
Touch screen	EAST	Hangzhou Dahuan Technology
Shell plate and coating	Dahe	Hangzhou Dahe

F. Appearance and packaging

Appearance



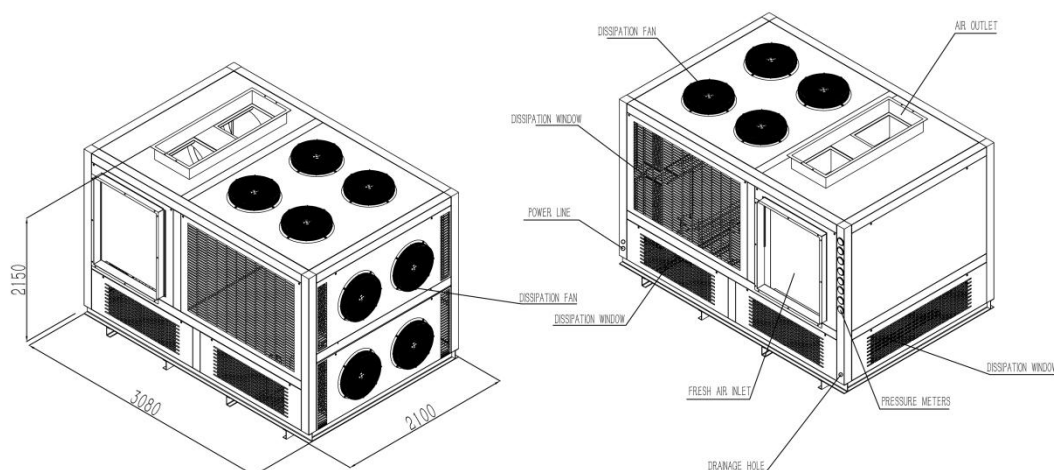
Packaging

Plywood case

G. Quality and after-sale service

Warranty for the machine is one year. Please read the instruction manual carefully before using. We will send spare parts immediately if the quality issue of its self in the warranty time.

H. Technical document



I. Installation and operation

Installation

1. Check the duct of refrigerating system before using, please maintain it if there is damage. Avoid to install the machine in direct sunlight or close to device which will produce heat.
2. To make sure the duct is well sealed in installation, avoid to install the duct more than two 90 degree connect.
3. To built protect object such as canopy to protect machine, the object need to be placed 1.5m~2.0m away from the dissipation fans.
4. To make sure the correct power supply of three phase as 380V 50hz, to make sure it has enough capacity and well ground-connection.

Debugging

1. Check the wires inside electric box if it's fall off or loose before power on.
2. To debug the circulating fans first for working normally, then debug the

compressor and other systems.

3. To debug the refrigerating system according to real condition of environment.

Operation

Button function of touch screen



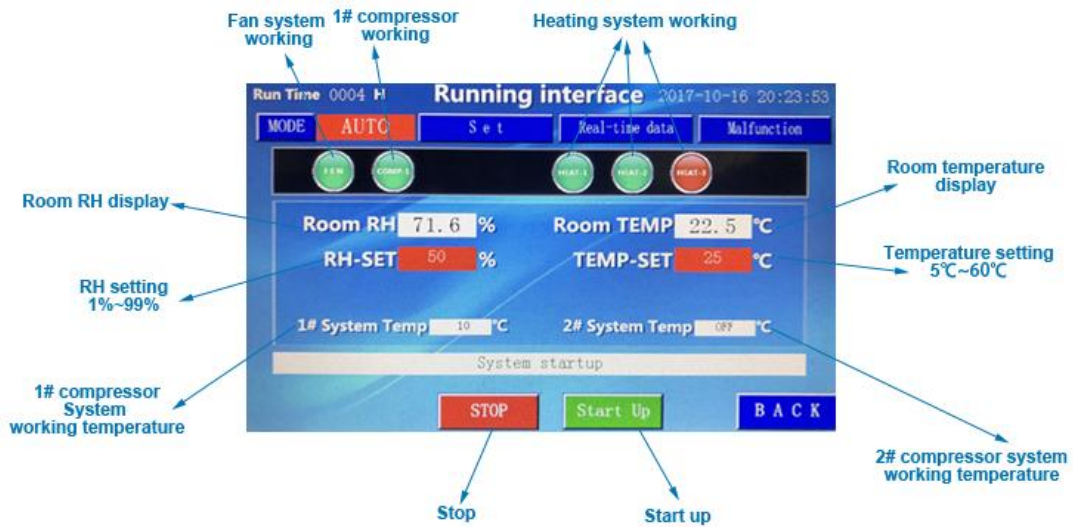
1. "ENTER"

The touch screen will turn on after connecting the power line, press the key to get into option interface.



2. "RUN"

Press the key to get into running interface.



3. "Advance Setting"

Press the key to get into advance setting interface, the data are all finished setting before delivering, please don't change the data if not necessary.

4. "Password"

Press the key to get into password

5. "Start up"

Press the key "Start Up" to power on the machine, green color is represented as power on.

6. Humidity setting

Press the red frame of "RH-SET" to get into humidity setting mode, input the value of target humidity in the pop-up keyboard frame. The dehumidifier will run as dehumidifying mode when the set humidity 5% less than room humidity. Unless, the dehumidifier will stop dehumidifying when the set humidity 5% more than room humidity.

7. Temperature setting

Press the red frame of "TEMP-SET" to get into temperature setting mode, input the value of temperature directly in the pop-up keyboard frame. The dehumidifier will run as cooling mode when the set temperature lower than room temperature. Unless, the dehumidifier will stop cooling when the set temperature higher than room temperature.

8. Date and time setting

Long press the date and time on the right top corner , input date and time in the pop-up keyboard frame. Press "set" to set the time of timed on/off mode.

9. Power off

Press "Stop" to power off the machine

J. Maintenance

ATTN: DO CUT THE POWER LINE BEFORE MAINTAIN THE MACHINE.

1. To have specialist maintain the machine, please do remove the problem of air or oil leakage immediately.
2. To check the machine frequently for normal running
3. To fill the refrigerant in time when the refrigerant pressure meter display low pressure (R22)
4. The machine can be used in the environment of condition 5°C~38°C, RH45%~95%.
5. Default phase or under voltage is strictly prohibited
6. The exhaust pressure of compressor is not allowed to exceed 1.8Mpa when the machine running
7. Please cut the power first and ask the professional specialist to check.

K. Lead time and transportation

30 days after receiving deposit, deliver immediately once receiving the balance payment, transportation by sea from Shanghai China to Leam Chabang Thailand, estimated voyage date is 10~15 days.

L. Trade term

No.	Name	Model no.	Qty	Unit price (CIF Leam Chabang USD)	Amount (CIF Leam Chabang USD)
1	Fresh air duct cooling dehumidifier	SD-90X	3	US\$23,700.0	US\$71,100.0

M. Spare parts

1 set G4 filter

1 set humidity and temperature sensor

1 set PLC board

1 set instruction manual

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