



# Ducted Split Unit

21kW-71.4kW

Vicot Group is a high-tech corporation specialized in R&D, production, sales and service of renewable energy products.

The corporation has almost 2000 staff and nine business divisions and/or centers as following: Solar Thermal Energy Equipment Division, Vacuum Tube Division, Gas Fired Air Conditioning Division, Electrical Air Conditioning Division, Domestic Marketing & Sales Division, Export & Import Division, Administrative & Human Resource Center, Company Management Center and General Manager Office.

Our production base locates in Solar City, Dezhou, China, it covers an area of 150,000 m<sup>2</sup> with modern workshops and office buildings of more than 80,000 m<sup>2</sup>. Annual yield capabilities are as follows: 100,000 electrical AC units; 10,000 gas fired AC units; 200,000 m<sup>2</sup> of collectors; 100,000 pieces of tubes; 5,000 standard sets of solar air conditioning system (20kW/ standard set), 200,000 standard sets of S.A.P central hot water system (10T/ standard set), 10,000 standard sets of S.A.P central distributed heating system (40kW/ standard set) and 500 standard sets of solar boiler system (700kW/ standard set). Designed annual production value reaches RMB 5 billion.

With the mission of "The same breath, energy saving together", the corporation realizes energy saving and environment protection by focusing on effective utilization of solar energy, air source energy, geothermal energy and other renewable energies in cooling, heating and domestic hot water fields, in pursuit of technology innovations in the field of global renewable energy utilization.

After years' practice in geothermal chiller & heat pump, air source chiller and heat pump and floor heating fields, Vicot accumulates rich experience in development and production and reaches a nationally advanced level. With a total investment of RMB 16 million in April 2008, after 3 years' collaboration with more than 20 global universities and research institutes in sequence, Vicot successfully and innovatively launched solar air conditioning system, S.A.P central hot water system, S.A.P central distributed heating system, solar boiler system, having more than 150 patents, large scale production of them has been realized, the past and current scientists and engineers' cherished wish has been realized. It places China at the world top level in solar medium temperature application field, it turns the dream into truth, for solar energy scale application in commercial and industrial field.

In the meantime of developing the technology of world leading new energy product, the corporation is operated with global advanced ERP technique, UPDI\WMS barcode storage system and ABC cost control system. Information, logistics and cash flow are highly integrated, which austere shows its concept of "Quality based on science, Price optimized for customer".



# Contents

Introduction	1
Features	1
Nomenclature	2
Technical specification	3
Dimension	6
Installation	9
Maintenance	14

## Introduction

Ducted Split Unit is a high efficient and energy saving air conditioning system that applicable to hotel, supermarket, office building, factory, entertainment lieu, etc. It combines comfort of central air conditioning with flexibility of split unit. The new design considers the features of modern building, spreading cool/heating air to everywhere of the room equally, to form zero temperature difference. This model occupies less space, integrating duct and indoor decoration, become the upgrade production of central AC and traditional commercial air conditioning.

## Features

### 1. Wide Range, Various Type

VED indoor series provides various specifications to satisfy residential and commercial application, with electrical heater and fan coil unit, to create a comfortable environment for customer the whole year.

### 2. Free Application

High static pressure heads making distant air supply realized, convenient for installation.  
Three-speed drive.  
Horizontal airflow of indoor unit, suitable for ceiling installation.

### 3. Low Noise, Easy Maintenance

Indoor unit can be ceiling-mounted, reducing noise to the lowest level.  
High efficiency, low noise centrifugal fan motor, with sound-absorbing and heat preservation material makes low noise operation realized.  
Simple design provides convenient for maintenance. Maintain any component of indoor unit by removing screws from the both sided of unit.

### 4. Intelligent Control

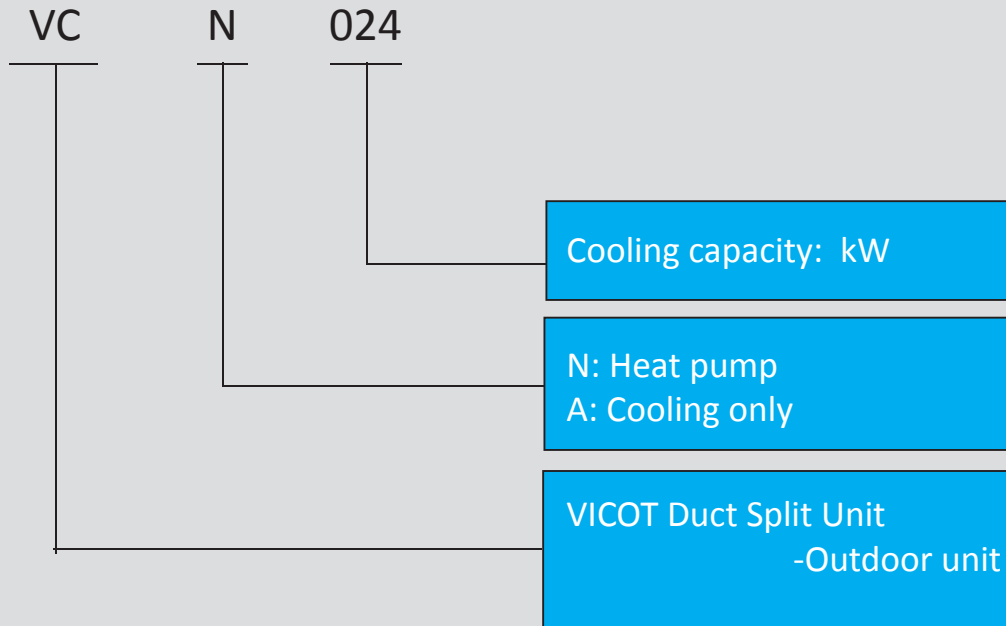
Advanced microcomputer control system with fully automatic control function and protection of high and low pressure, overload, voltage insufficient, phase lack and low temperature, etc.;  
Error alarm and display in controller.

### 5. Excellent Performance

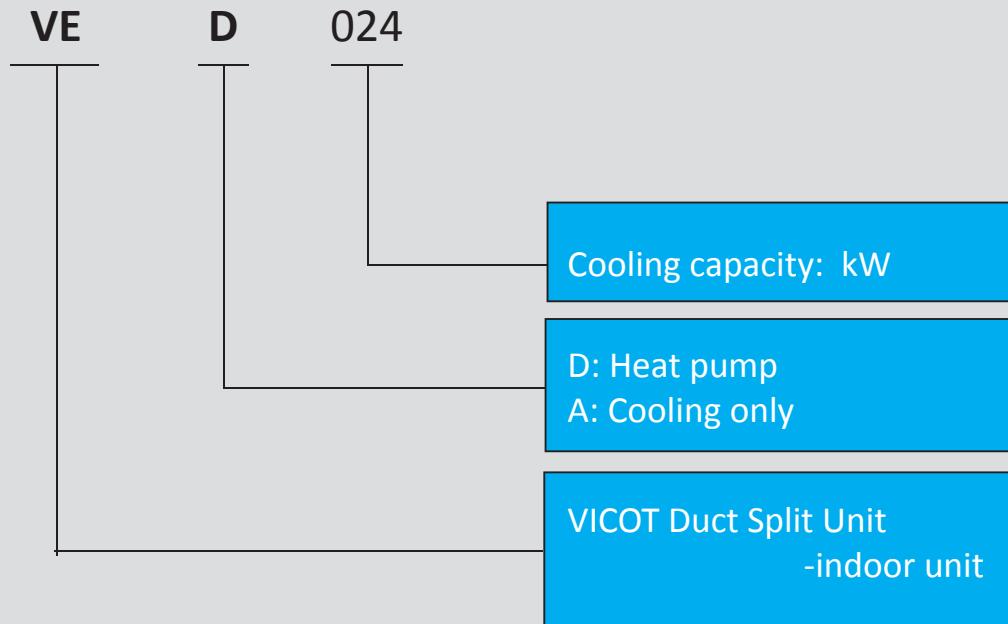
World famous components, strictly tested to match the unit. Adopting multi-blade pitch centrifugal fan coil, high efficiency compressor, controller, motor. etc. Ensure the stable operation, low vibration and noise.

# Nomenclature

## Outdoor Unit



## Indoor Unit



- Introduction
- Features
- Nomenclature
- Tech. spec.
- Dimension
- Installation
- Maintenance

# Technical specification

## Specification-50Hz

Model		Indoor	VED(A)021	VED(A)024	VED(A)028	VED(A)032	VED(A)036	VED(A)048	VED(A)062	VED(A)072
		Outdoor	VCN(A)021	VCN(A)024	VCN(A)028	VCN(A)032	VCN(A)036	VCN(A)048	VCN(A)062	VCN(A)072
Cooling capacity		(R22)kW	21	23.8	27.6	31.4	35.6	47.6	63.5	71.4
		(R407c)kW	20.16	22.85	26.50	30.14	34.18	45.22	60.33	67.83
Heating capacity		(R22)kW	23.1	26.2	30.3	35.4	40.4	55.2	72.8	80.6
		(R407c)kW	22.18	25.15	29.09	33.98	38.78	52.44	69.16	76.57
Power input	Cooling	kW	8.1	8.7	11.2	11.6	13.4	17.7	24.1	26.3
	Heating	kW	7.8	8.4	10.8	11.4	13.1	17.5	23.3	25.5
Current input	Cooling	A	15.8	16.16	20.8	21.53	24.89	32.79	44.74	48.82
	Heating	A	14.9	15.56	20.1	21.09	24.23	32.37	43.23	47.26
Refrigerant	Type		R22/R407c							
	Charge	Kg	2x2.8	2x3.4	2x4.1	2x4.5	2x5.2	9+4.5	2x9.5	2x10.5
Connect Pipe	Method		Welding							
	Liquid	mm	12.7/12.7	12.7/12.7	12.7/12.7	12.7/12.7	12.7/12.7	12.7/15.88	15.88/15.88	15.88/15.88
	Gas	mm	19.05/19.05	19.05/19.05	19.05/19.05	19.05/19.05	19.05/19.05	19.05/28	28/28	28/28
Indoor unit	Air flow	m <sup>3</sup> /h	4400	4400	4400	5800	6400	8700	11640	13000
	ESP	Pa	100	100	100	150	150	200	300	300
Fan	Drive type		Three speed drive				Single speed drive			
Dimension	Outdoor	mm	1120x830x1030	1120x830x1030	1180x960x1130	1180x960x1130	1180x960x1130	1640x880x1130	1840x970x1130	2120x970x1130
	Indoor	mm	1660x915x480	1660x915x480	1660x915x480	1660x915x580	1660x915x580	2065x1160x680	1870x1230x980	1870x1230x1080
Power	Outdoor		380V/3Ph/50Hz							
	Indoor		220V/1Ph/50Hz				380V/3Ph/50Hz			
Noise	Outdoor	dB(A)	60	60	61	61	61	67	67	68
	Indoor	dB(A)	55	55	60	60	61	63	65	66
Weight	Outdoor	Kg	180	190	220	240	250	280	340	460
	Indoor	Kg	95	105	120	150	160	200	230	300
Condensing pipe			G1	G1	G1	G1	G1	G1	G1	G1

- NOTES: 1. Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C; outdoor temperature DB: 35°C, WB: 24°C.  
 Heating conditioning: Indoor temperature DB: 20°C, WB: 15°C; outdoor temperature DB: 7°C, WB: 6°C.
2. The static pressure outside is measured under Nominal Airflow.
3. The data above is obtained from the connection pipe diameter as 7.5m.
4. Nominal air flow is the air flow at high speed status.
5. Using heat pump unit, customer can choose the electric heater

# Technical specification

Introduction

Features

Nomenclature

Tech. spec.

Dimension

Installation

Maintenance

## Specification-60Hz

Model		Indoor	VED(A)021	VED(A)024	VED(A)028	VED(A)032	VED(A)036	VED(A)048	VED(A)062	VED(A)072	
		Outdoor	VEN(A)021	VEN(A)024	VEN(A)028	VEN(A)032	VEN(A)036	VEN(A)048	VEN(A)062	VEN(A)072	
Cooling capacity	(R22)kW		21	23.8	27.6	31.4	35.6	47.6	63.5	71.4	
	(R407c)kW		20.16	22.85	26.50	30.14	34.18	45.22	60.33	67.83	
Heating capacity	(R22)kW		23.1	26.2	30.3	35.4	40.4	55.2	72.8	80.6	
	(R407c)kW		22.18	25.15	29.09	33.98	38.78	52.44	69.16	76.57	
Power input	Cooling	kW	8.3	8.9	11.8	12.2	13.9	18.5	25.1	27.1	
	Heating	kW	7.9	8.5	11.2	12.0	13.6	17.9	24.3	25.9	
Current input	Cooling	A	35.8	40.9	50.2	55.4	60.8	60.3	65.6	79.8	
	Heating	A	34.9	40.2	49.5	54.5	59.8	59.6	64.8	78.8	
Refrigerant	Type		R22/R407c								
	Charge	Kg	2x2.8	2x3.4	2x4.1	2x4.5	2x5.2	9+4.5	2x9.5	2x10.5	
Connect Pipe	Method		welding								
	Liquid	mm	12.7/12.7	12.7/12.7	12.7/12.7	12.7/12.7	12.7/12.7	12.7/15.88	15.88/15.88	15.88/15.88	
	Gas	mm	19.05/19.05	19.05/19.05	19.05/19.05	19.05/19.05	19.05/19.05	19.05/28	28/28	28/28	
Indoor unit	Air flow	m <sup>3</sup> /h	4400	4400	4400	5800	6400	8700	11640	13000	
	ESP	Pa	100	100	100	150	150	200	300	300	
Fan	Drive type		three speed drive					single speed drive			
Dimension	Outdoor	mm	1120x830x1030	1120x830x1030	1180x960x1130	1180x960x1130	1180x960x1130	1640x880x1130	1840x970x1130	2120x970x1130	
	Indoor	mm	1660x915x480	1660x915x480	1660x915x480	1660x915x580	1660x915x580	2065x1160x680	1870x1230x980	1870x1230x1080	
Power	Outdoor		220V/3Ph/60Hz								
	Indoor		220V/3Ph/60Hz								
Noise	Outdoor	dB(A)	60	60	61	61	61	67	67	68	
	Indoor	dB(A)	55	55	60	60	61	63	65	66	
Weight	Outdoor	Kg	180	190	220	240	250	280	340	460	
	Indoor	Kg	95	105	120	150	160	200	230	300	
Condensing pipe			G1	G1	G1	G1	G1	G1	G1	G1	

- NOTES: 1. Cooling conditioning: Indoor temperature DB: 27°C, WB: 19°C; outdoor temperature DB: 35°C, WB: 24°C.  
 Heating conditioning: Indoor temperature DB: 20°C, WB: 15°C; outdoor temperature DB: 7°C, WB: 6°C.  
 2. The static pressure outside is measured under Nominal Airflow.  
 3. The data above is obtained from the connection pipe diameter as 7.5m.  
 4. Nominal air flow is the air flow at high speed status.  
 5. Using heat pump unit, customer can choose the electric heater

# Technical specification

## Specification-T3 working condition

Model		Indoor	VED(A)021	VED(A)024	VED(A)028	VED(A)032	VED(A)036	VED(A)048	VED(A)062	VED(A)072
		Outdoor	VCN(A)021	VCN(A)024	VCN(A)028	VCN(A)032	VCN(A)036	VCN(A)048	VCN(A)062	VCN(A)072
Cooling capacity A		kW(R22)	21	23.8	27.6	31.4	35.6	47.6	63.5	71.4
		kW(R407C)	19.9	22.6	26.2	29.8	33.8	45.2	60.3	67.8
Cooling capacity B		kW(R22)	18.9	21.4	24.8	28.3	32.1	42.8	57.2	64.3
		kW(R407C)	17.9	20.3	23.6	26.9	30.5	40.6	54.6	60.1
Power input	Cooling	kW	8.1	8.7	11.2	11.6	13.4	17.7	24.1	26.3
Current input	Cooling	A	15.8	16.16	20.8	21.53	24.89	32.79	44.74	48.82
Refrigerant	Type		R22/R407c							
	Charge	Kg	2x2.8	2x3.4	2x4.1	2x4.5	2x5.2	9+4.5	2x9.5	2x10.5
Connect Pipe	Method		Welding							
	Liquid	mm	12.7/12.7	12.7/12.7	12.7/12.7	12.7/12.7	12.7/12.7	12.7/15.88	15.88/15.88	15.88/15.88
	Gas	mm	19.05/19.05	19.05/19.05	19.05/19.05	19.05/19.05	19.05/19.05	19.05/28	28/28	28/28
Indoor unit	Air flow	m <sup>3</sup> /h	4400	4400	4400	5800	6400	8700	11640	13000
	ESP	Pa	100	100	100	150	150	200	300	300
Fan	Drive type		Three speed drive				Single speed drive			
Dimension	Outdoor	mm	1120x830x1030	1120x830x1030	1180x960x1130	1180x960x1130	1180x960x1130	1640x880x1130	1840x970x1130	2120x970x1130
	Indoor	mm	1660x915x480	1660x915x480	1660x915x480	1660x915x580	1660x915x580	2065x1160x680	1870x1230x980	1870x1230x1080
Power	Outdoor		380V/3Ph/50Hz							
	Indoor		220V/1Ph/50Hz				380V/3Ph/50Hz			
Noise	Outdoor	dB(A)	60	60	61	61	61	67	67	68
	Indoor	dB(A)	55	55	60	60	61	63	65	66
Weight	Outdoor	Kg	180	190	220	240	250	280	340	460
	Indoor	Kg	95	105	120	150	160	200	230	300
Condensing pipe			G1	G1	G1	G1	G1	G1	G1	G1

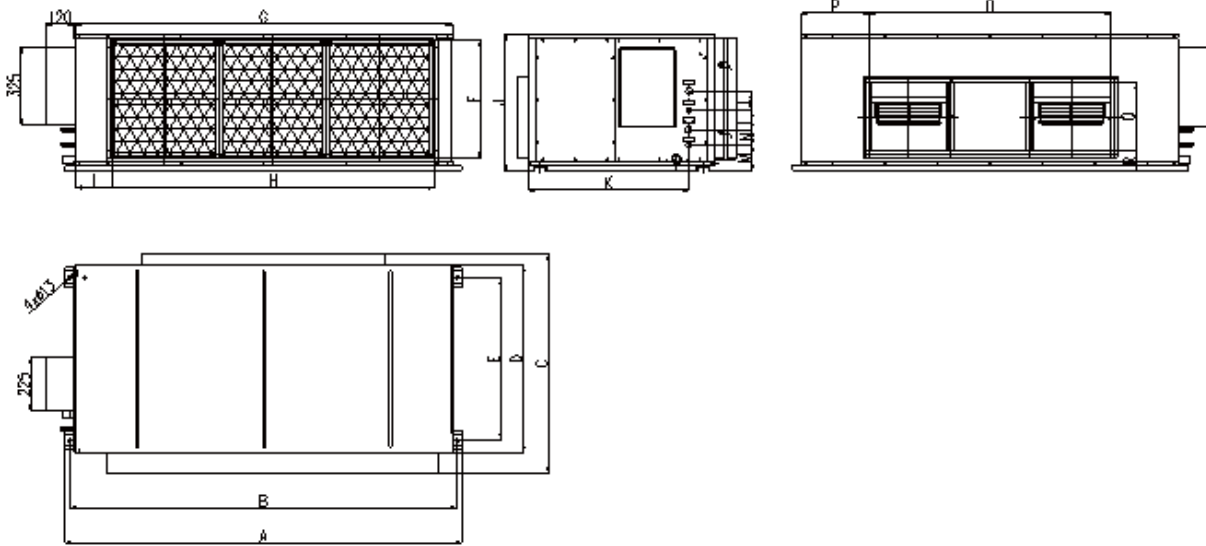
- NOTES: 1. Cooling conditioning A: Indoor temperature DB: 27°C, WB: 19°C; outdoor temperature DB: 35°C, WB: 24°C.  
Cooling conditioning B: Indoor temperature DB: 29°C, WB: 19°C; outdoor temperature DB: 46°C, WB: 24°C.
2. The static pressure outside is measured under Nominal Airflow.
3. The data above is obtained from the connection pipe diameter as 7.5m.
4. Nominal air flow is the air flow at high speed status.



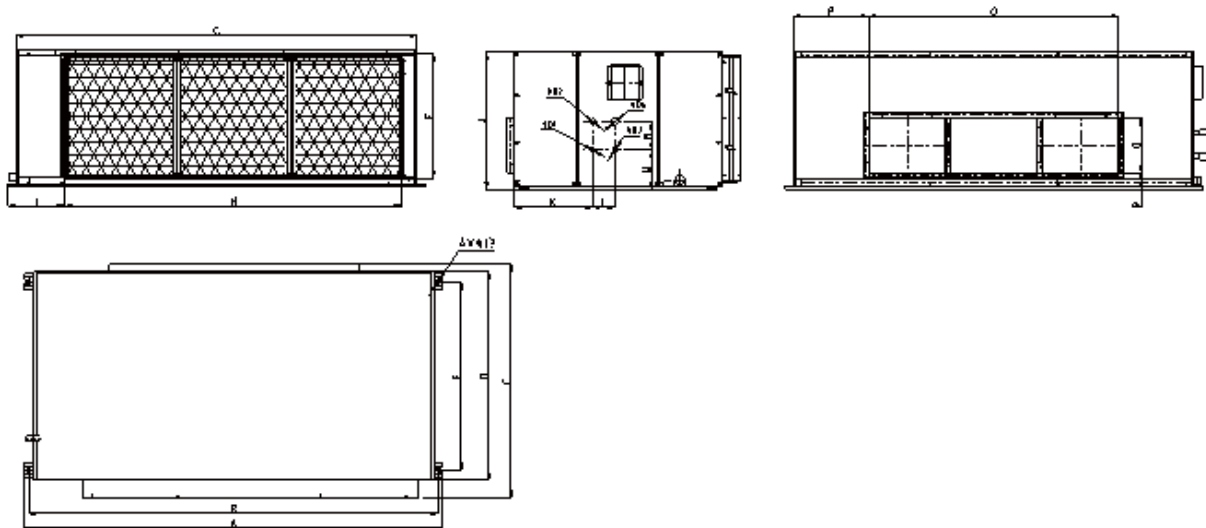
# Dimension

- Indoor Unit

VED(A)021, VED(A)024, VED(A)032, VED(A)036



VED(A)048, VED(A)062, VED(A)072



Introduction

Features

Nomenclature

Tech. spec.

Dimension

Installation

Maintenance

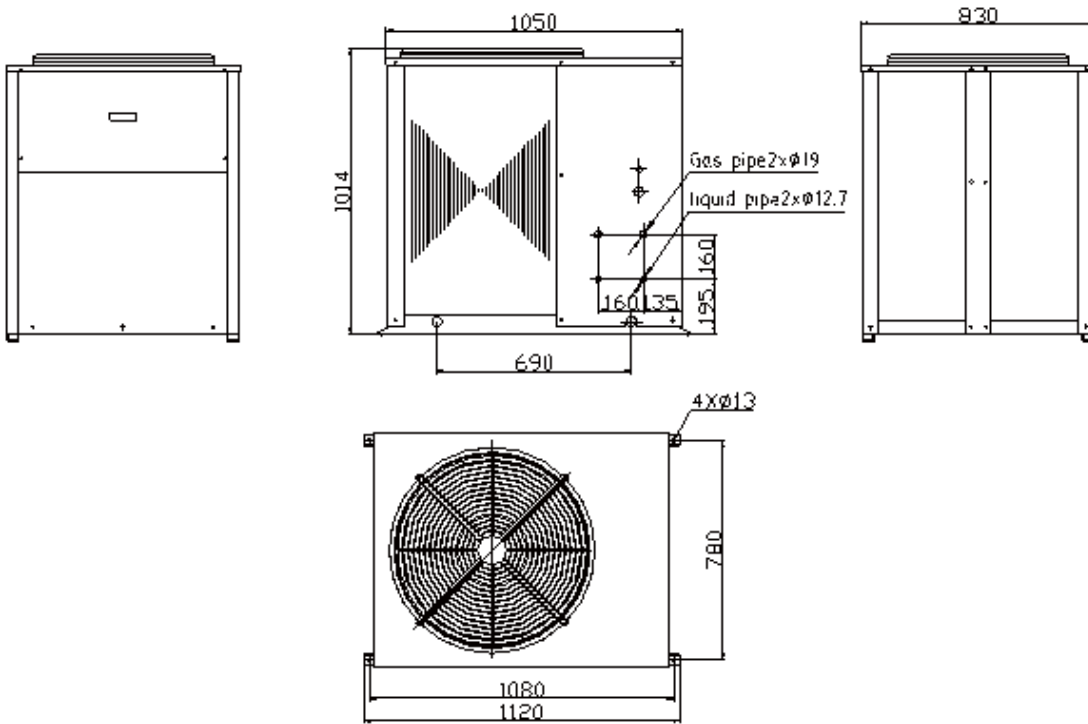
# Dimension

Model	VED(A)021	VED(A)024	VED(A)028	VED(A)032	VED(A)036	VED(A)048	VED(A)062	VED(A)072
A	1660	1660	1660	1660	1660	2065	1870	1870
B	1620	1620	1620	1620	1620	2025	1830	1830
C	915	915	915	915	915	1160	1230	1230
D	780	780	780	780	780	1030	1100	1100
E	680	680	680	680	680	930	1000	1000
F	405	405	405	505	505	607	904	1004
G	1580	1580	1580	1580	1580	1985	1790	1790
H	1358	1358	1358	1358	1358	1668	1458	1458
I	152	152	152	152	152	283	313	313
J	480	480	480	580	580	680	980	1080
K	670	670	670	670	670	390	396	396
L	80	80	80	80	80	110	110	110
M	153	153	153	106	106	195	332	382
N	65	65	65	65	65	140	140	140
O	969	969	1026	1026	1026	1239	1305	1305
P	307	307	283	283	283	373	242	242
Q	237	237	262	262	262	274	406	403
R	60	60	60	80	80	80	89	89
D1	12.7	12.7	12.7	12.7	12.7	12.7	15.88	15.88
D2	19.05	19.05	19.05	19.05	19.05	19.05	28	28
D3	12.7	12.7	12.7	12.7	12.7	15.88	15.88	15.88
D4	19.05	19.05	19.05	19.05	19.05	28	28	28

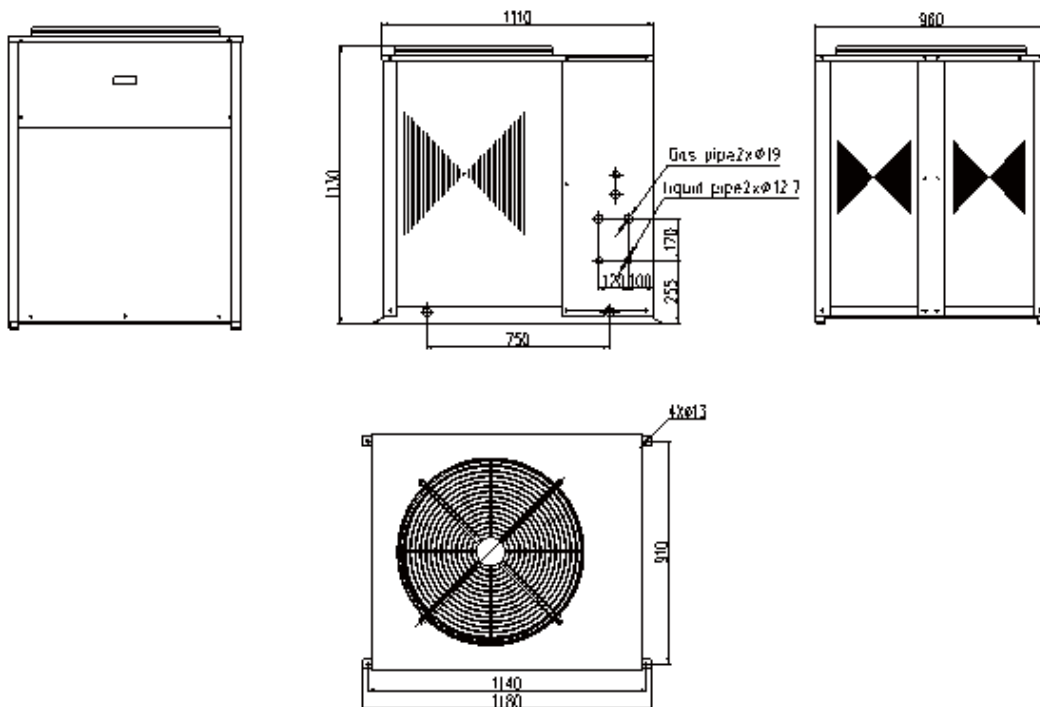
# Dimension

- Outdoor Unit

VCN(A)021, VCN(A)024



VCN(A)028, VCN(A)032, VCN(A)036



Introduction

Features

Nomenclature

Tech. spec.

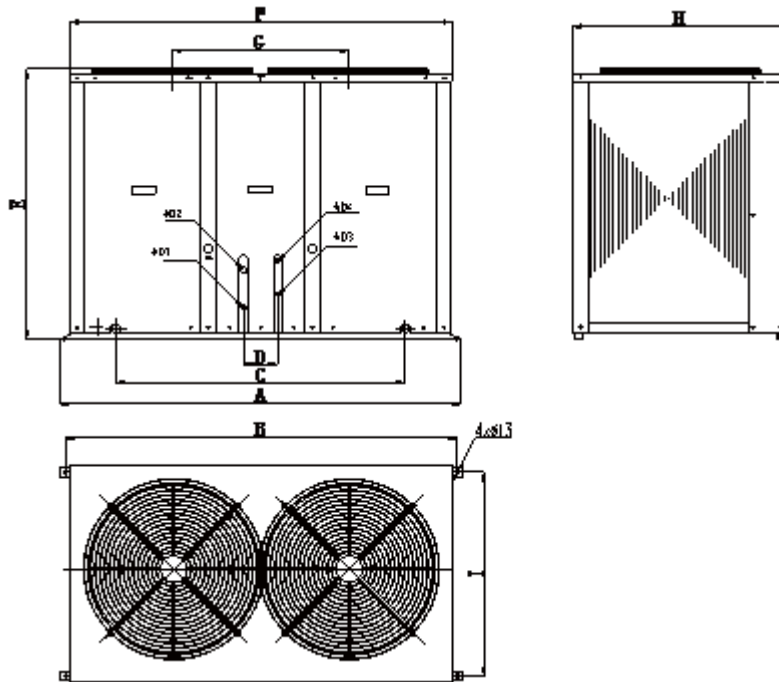
Dimension

Installation

Maintenance

# Dimension

VCN(A)048, VCN(A)062, VCN(A)072

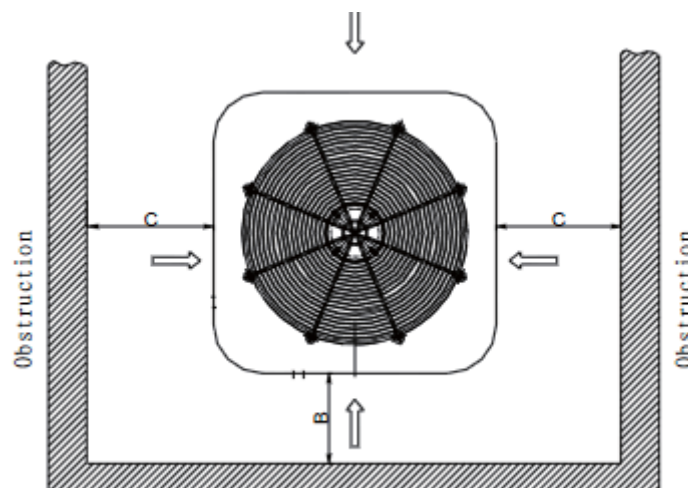
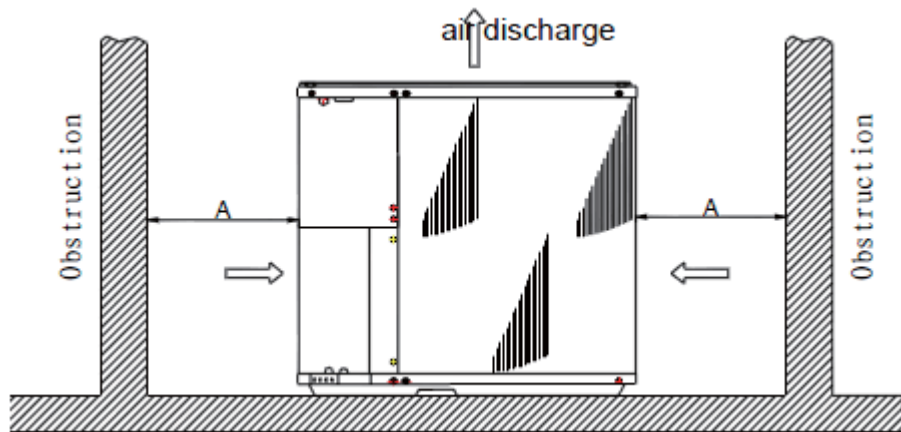


Model	VED(A)048	VED(A)062	VED(A)072
A	1640	1840	2120
B	1600	1800	2080
C	1183	1383	1673
D	160	160	160
E	1130	1130	1130
F	1560	1760	2050
G	715	800	1090
H	880	970	970
I	830	920	920
D1/D3( Liquid pipe )	12.7/15.88	15.88/15.88	15.88/15.88
D2/D4(Gas pipe)	19.05/28	28/28	28/28

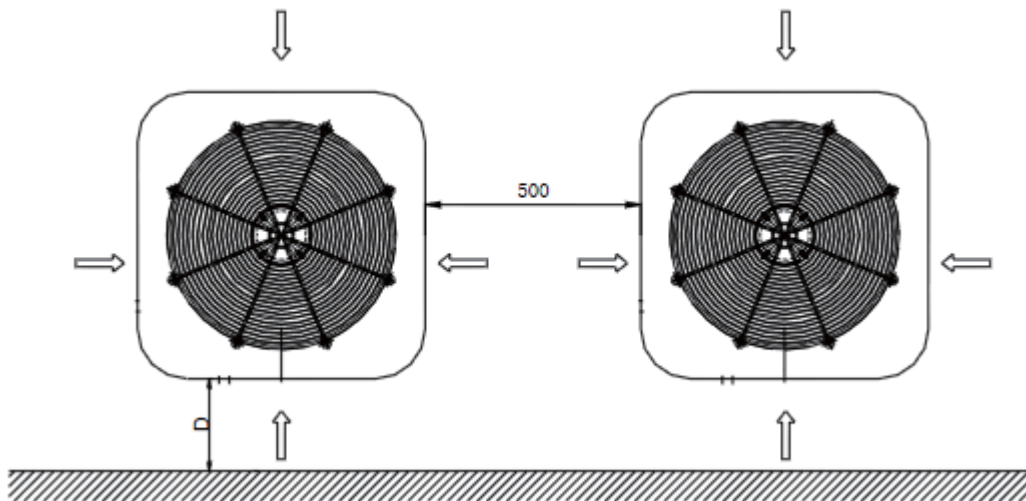
# Installation

## A. Outdoor unit installation

1. The site must ensure the blowing out heat by condenser not be sucked back or suck heat air discharged by other units, ensure enough space for the maintenance.
2. No barrier in the blow in and out pipe to prevent air discharge and suction of the unit.
3. Ventilated, easily get the heat out and get fresh air in.
4. Unit be placed on a solid and horizontal foundation, 50~100mm higher than the ground level, to endure the weight and vibration of unit.
5. Avoid of dirty or smeary place.
6. To satisfy the following room requirements:



# Installation



Model	VED(A)021	VED(A)024	VED(A)028	VED(A)036	VED(A)048	VED(A)062	VED(A)072
A	1000	1000	1000	1000	1500	1500	1500
B	1000	1000	1000	1000	1500	1500	1500
C	1000	1000	1000	1000	1000	1000	1000
D	800	800	800	800	800	800	800

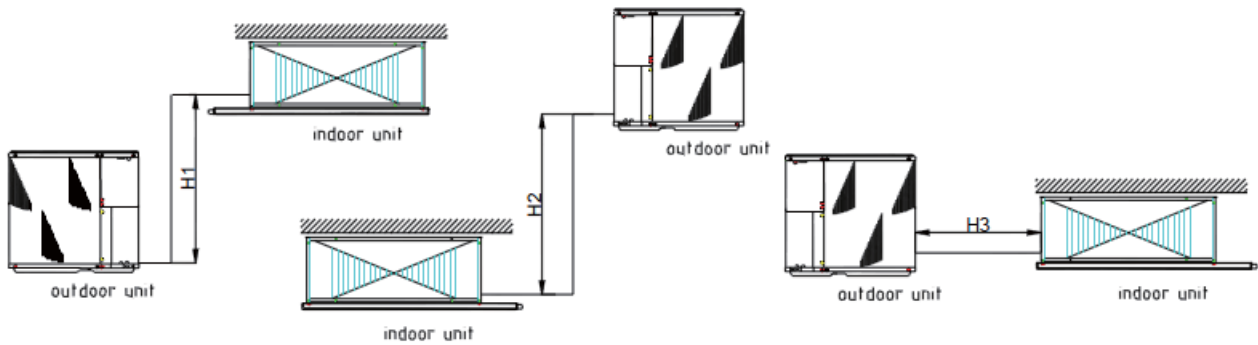
## B. Indoor unit installation

1. Install horizontally to reduce shake, lower noise, and discharge condensing Water fluently.
2. There should be an air seal with 50mm height in the condensate outlet.
3. Leave two check hole at least in the ceiling, the position of check hole should be at the bottom of electric control box and flexible joint, with the size 400X400 for maintenance.

## C. Pipe installation

1. If the pipe between condensing unit and air handler is longer than 7.5m, the unit should be charged refrigerant additionally. Suggest that the pipe is no longer than 7.5m, or cooling capacity would decline.
2. Too many pipe bends could increase the friction of refrigerant and reduce cooling (heating) capacity. So less pipe bends are better.
3. Pipe should be clean, dry and not polluted. Copper pipe should be protected on site to avoid of oxidation.
4. The refrigerant pipe should be vacuumed to get rid of air to ensure the cooling efficiency. It is not suggested to use Freon to get rid of air.
5. In order to improve cooling (heating) efficiency and save energy, pipes should be insulated respectively. Suggest the insulation layer is over 10mm thick.

# Installation



Model	Max.Fall(H1)	Max.Fall(H2)	Max.Connection Pipe H3	Max.bends
VED(A)021	12	15	30	10
VED(A)024	12	15	30	10
VED(A)028	12	15	30	10
VED(A)032	12	15	30	10
VED(A)036	12	15	30	10
VED(A)048	12	15	30	15
VED(A)062	12	15	30	15
VED(A)072	12	15	30	15

## D. Electric Parameters

Model	Indoor unit	VED(A)021	VED(A)024	VED(A)028	VED(A)032	VED(A)036	VED(A)048	VED(A)062	VED(A)072	
	Outdoor unit	VCN(A)021	VCN(A)024	VCN(A)028	VCN(A)032	VCN(A)036	VCN(A)048	VCN(A)062	VCN(A)072	
Outdoor unit										
Wire	Power	380V/3Ph/50Hz								
	Sectional area (mm <sup>2</sup> )	3*6+2*4	3*6+2*4	3*6+2*4	3*6+2*4	3*6+2*4	3*10+2*6	3*16+2*6	3*25+2*16	
	Amounts	1	1	1	1	1	1	1	1	
Indoor unit										
Wire	Power	220/1Ph/50Hz					outdoor unit to indoor unit 380V/3Ph/50Hz			
	Sectional area (mm <sup>2</sup> )	3*2.5	3*2.5	3*2.5	3*2.5	3*2.5	4*2.5	4*2.5	4*2.5	
	Amounts	1	1	1	1	1	1	1	1	

Introduction

Features

Nomenclature

Tech. spec.

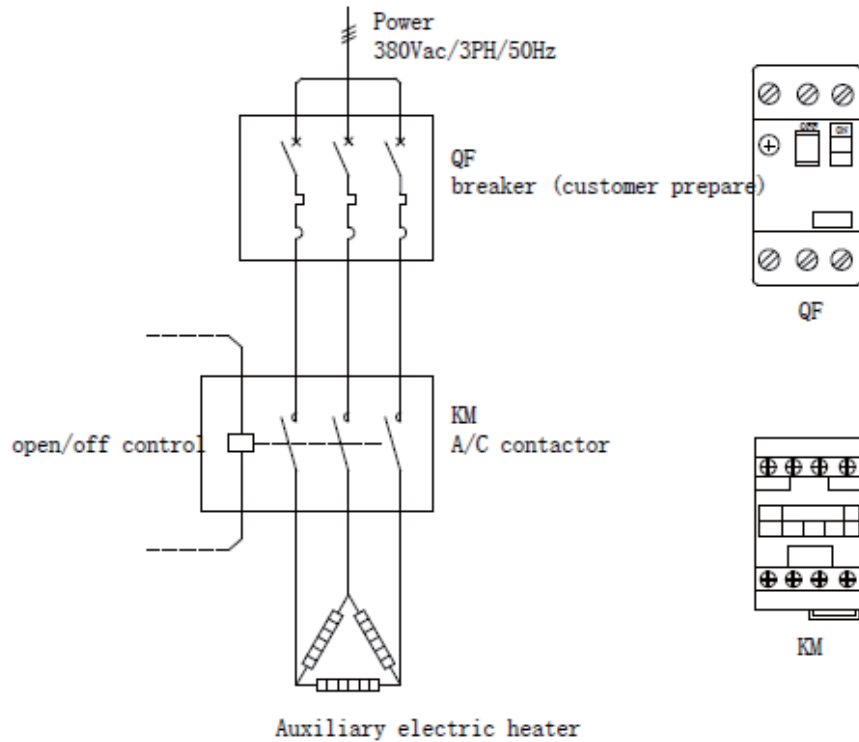
Dimension

Installation

Maintenance

# Installation

When outdoor temperature is lower than  $-6^{\circ}\text{C}$  continually, suggest using the units with auxiliary electric heater or hot water heater, to satisfy the indoor temperature. Auxiliary electric heater wire should not be connected to the outdoor control, connect wire separately.



## Wire Connection

Model		VED(A) 021	VED(A) 024	VED(A) 028	VED(A) 032	VED(A) 036	VED(A) 048	VED(A) 062	VED(A) 072	
Power		380V/3Ph/50Hz								
Wire	Sectional area	30%	6	6	6	6	6	6	16	
		40%	6	6	6	6	6	10	16	16
		50%	6	6	6	6	6	16	16	16
Amount		5	5	5	5	5	5	5	5	

### Note:

1. Auxiliary electric heater is optional
2. Referring to the above electric heater drawing
3. Charge for Circuit breaker, not include in the electric heater.



## Maintenance

1. At first use of every quarter, the units have to go through electric heating for 6-7 hours before it starts.
2. The on/off the units should not exceed four times per hour, otherwise the use life of the units will be reduced.
3. The unit's area should keep clean and tidy. Clean the leaves and trash, etc which attached to the fins.
4. Clean air return filtering net (indoor unit) once three months to guarantee the air quality.
5. Have a regular check at the condensing water and check if it is smooth running. Make sure the running is smooth.
6. If the units stop because of failure, do not start it by force when no reason is found. Contact the agent or Vicot Company on time.
7. All the parameters have been set at the time of the ex-factory of the units. If the customers need to adjust the parameter, please contact the agent or our technicians. Self-adjustment of the parameter is not allowed.



Introduction

Features

Nomenclature

Tech. spec.

Dimension

Installation

Maintenance

# The Same Breath, Energy Saving Together.

## **VICOT AIR CONDITIONING CO., LTD**

Add: Hongdu Road, Dezhou Economic Development Zone, Shandong Province,  
China. Post Code: 253022

Sales Tel: +86-8235 5566/68/76

Fax: +86-8235 7911

Email: [export@vicot.com.cn](mailto:export@vicot.com.cn)

[Http://www.vicot.com.cn](http://www.vicot.com.cn)

2014.01

Vicot reserves the right of modification without prior notice