



# Mini VRF

Full DC Inverter MINI VRF Unit



Powerful



High Efficiency



Comfortable



Stable





## 7.1 Strong power, stable operation

### High efficiency full DC inverter and twin rotary compressor

- ZTVT Mini VRF use full DC inverter twin rotary compressor, which has high- efficiency both for full load condition and partial load condition, also leads to low noise, stable and reliable operation.



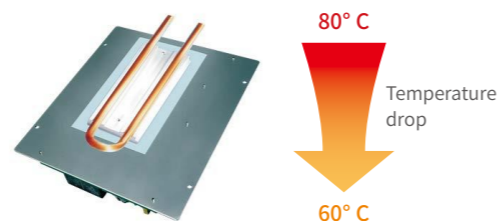
### High efficiency DC fan motor

- The stepless regulation of the fan motor can meet the actual requirement of the capacity output, efficiency of motor is increased up to be 45%, higher efficiency in low speed



### Electrical control box refrigerant cooling technology

- The refrigerant cooling technology can cool the PCBs in high ambient temperature condition, which improves the reliability, efficiency and lifespan of the MINI VRF units.



### Wide operation temperature range

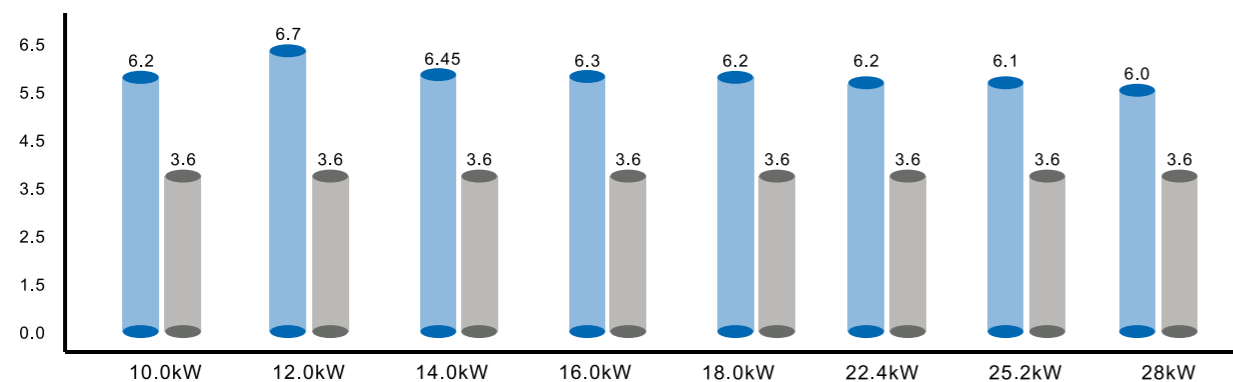
- The Mini VRF can operate under -20°C to ensure the heating demand, operate up to 54°C to make sure the cooling capacity output with high efficiency and stability.

## 7.2 Energy saving and environmental friendly

### IPLV(C) up to 6.7, high energy efficiency

- The ZTVT mini VRF adopts full DC inverter compressor, DC fan motor, high-precision electronic expansion valve to create a durable system and make the system energy efficiency up to 6.7.

IPLV(C) ● ZTVT Mini VRF ● National level 1 energy efficiency standard



## R410A High-efficiency and environmentally friendly refrigerant

- R410A is an HFC refrigerant which does not damage the ozone layer. It is an energy efficient and environmentally friendly refrigerant.
- R410A is non-toxic and is a "non-flammable refrigerant". The composition structure of R410A is not easy to change and very stable.



### RoHS Certification

- The ZTVT mini VRF unit meets the RoHS environmental certification, which is environmental friendly.



## 7.4 Beautiful appearance, upgraded structure design

### Simple and elegant appearance

#### The top panel

No screw design to get high-quality structure and improve the strength, more beautiful

#### The front panel

Double 528mm wind wheel, larger air volume and lower noise.

#### Grille

Grille adopts DOE simulation design, air volume increased more than 7%

#### Footing

High strength foundation with rust - proof, corrosion - proof, more stable and reliable.

#### Right front side plate

Mold forming and integrated design to make sure the strength of the panel

#### Lifting handle

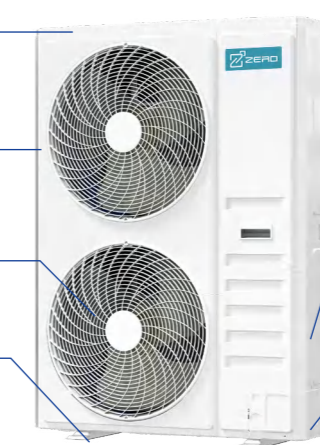
Upgraded handle design, easy to carry

#### Right back plate

The mold is integrally formed and the new designed diffuser improves the heat exchange efficiency.

#### Seal plate

Ensure simple pipe connection.



### Three side direction pipe connection

- The front, side and back of the unit are designed with knock-out holes, copper pipes can be connected from various directions, which is more convenient to do the installation.



Sealing plate is combined with knock-out plate  
Three side pipe connection design  
Different installation options



7.5 Mini VRF Parameters



8~16KW



18 KW



22.4-28 KW

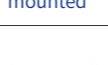
Model			CTVT-CHS 80BX	CTVT-CHS 100BX	CTVT-CHS 120BX	CTVT-CHS 140BX	CTVT-CHS 160BX	CTVT-CHS 180BX	CTVT-CHS 224BX	CTVT-CHS 252BX	CTVT-CHS 280BX
Cooling capacity	Capacity	Btu/h	27000(8000)	34000(10000)	41000(12000)	49000(14000)	54000(16000)	61500(18000)	76000(22400)	86000(25200)	96000(28000)
	Input	kW	2.55	2.75	3.05	4.10	4.80	5.25	7.20	8.25	9.10
	Current	A	11.6	12.5	13.9	18.6	21.8	24.20	11.50	13.20	14.60
	EER	Btu/( W · h)	10.6	12.4	13.4	12.0	11.3	11.7	10.6	10.4	10.5
Heating capacity	Capacity	Btu/h	34000(10000)	42000(12000)	48000(14000)	54000(16000)	61000(18000)	68000(20000)	84000(24500)	92000(26000)	105000(20800)
	Input	kW	2.85	3.05	3.35	3.80	4.70	5.20	7.10	8.00	8.50
	Current	A	13.0	13.9	15.3	17.3	21.4	23.5	11.4	13.6	15.2
	COP	W/W	3.51	3.93	4.18	4.21	3.83	3.85	3.45	3.38	3.62
Outdoor noise level (sound power level)		dB(A)	54	55	56	56	56	55	58	59	61
Refrigerant type/Quantity†	Type		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Charged volume	kg	2.3	2.3	2.3	3.7	3.7	5.6	6.5	6.5	8.5
Design pressure		MPa	4.5/1.5	4.5/1.5	4.5/1.5	4.5/1.5	4.5/1.5	4.5/1.5	4.5/1.5	4.5/1.5	4.5/1.5
Power supply			220-240V ~ 50/60Hz						380-415V 3N ~ 50/60Hz		
Voltage Range		V	198-264V	198-264V	198-264V	198-264V	198-264V	198-264V	340~460	340~460	340~460
Max. Power		kW	6.2	6.2	6.2	7.26	7.26	7200	11000	11500	12000
Max. Current		A	28.2	28.2	28.2	33.0	33.0	33.0	17.6	18.5	19.2
Compressor	Type†		Rotary compressor								
	Freg. Range	hz	15~120	15~120	15~120	15~120	15~120	15~120	15~110	15~110	15~110
Outdoor fan motor	Type		DC motor	DC motor	DC motor	DC motor	DC motor	DC motor	DC motor	DC motor	DC motor
	Qty†		1	1	1	1	1	2	2	2	2
	Output	W	85	85	85	200	200	85×2	160×2	160×2	160×2
	Speed (Hi/Med/Lo)	r/min	850	850	850	700	700	850	860	860	860
Connecting Pipe	Liquid	mm	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
	Gas	mm	5/8"	5/8"	5/8"	5/8"	5/8"	3/4"	7/8"(22.2)	7/8"(22.2)	7/8"(22.2)
Max. height drop (high head)		m	20(20)	20(20)	20(20)	20(20)	20(20)	30(20)	30(20)	30(20)	30(20)
Max.length of connecting indoor unit		m	50	50	50	50	50	120	120	120	120
Net dimensions (W x H x D)	Outdoor	mm	910×803×359			1010×850×410		950×1330×340	1120×1560×400		
	Outdoor	kg	52	52	52	75	75	99	130	130	140
Packing dimensions (W x H x D)	Outdoor	mm	1022×835×480	1022×835×480	1022×835×480	1145×970×535	1145×970×535	1080×1380×430	1250×1721×560	1250×1721×560	1250×1721×560
	Outdoor	kg	55	55	55	87	87	110	145	145	163

Notes:

1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
6. Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.  
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer: only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.

IDU lineup

Series	Type	Model	Capacity range(x100w)																									
			18	22	25	28	32	36	40	45	50	56	63	71	80	90	100	112	125	140	160	220	224	280	335	450	560	
 One-way cassette	Cooling &Heating	CTVT-ECSE(**)BX	●	●		●		●		●	●	●																
 Two-way cassette	Cooling &Heating	CTVT-ECDE(**)BX		●		●		●		●	●	●	●	●														
 Four-way cassette	Cooling &Heating	CTVT-ECFE(**)BX				●		●		●	●	●	●	●	●	●	●	●	●	●								
 Low static pressure duct	Cooling &Heating	CTVT-EDL(*)BX	●	●		●		●		●	●	●	●	●														
 DC inverter duct	Cooling &Heating	CTVT-EDD(**)BX	●	●		●		●		●	●	●	●	●														
 Middle static pressure	Cooling &Heating	CTVT-EDM(**)BX								●	●	●	●	●	●	●	●	●	●	●								
 High static pressure	Cooling &Heating	CTVT-EDH(*)BX												●	●	●	●	●	●	●	●		●	●	●	●	●	
 Wall-mounted	Cooling &Heating	CTVT-EHW(*)BX		●		●		●		●	●	●		●														
 Fresh air duct	Cooling &Heating	CTVT-EFA(*)BX																	●				●		●	●		
 Celilling & Floor	Cooling &Heating	CTVT-EFC(*)BX												●	●	●	●		●	●								



## One-way Cassette



### Recommended places

Living room, dining room, office, lobby, etc

### Technical characteristics



#### High-lift Drain Pump

The drain pump with a 700mm lifting head which is as standard, simplifying installation of the drain pipes.



#### Standard float switch, real-time monitor water level

Equipped with float switch, which will automatically monitor the water level and send alarm when malfunction of drain pump or stuck of drain pipe occurs.



#### Wide-angle air flow

Adopting new type of swing motor, which largely increases the angle of air flow.



#### High ceiling design

Reserves a super high fan speed for high ceiling installation, unit can provide powerful cooling and heating under a more than 3 meters floor height.



#### Slim body

Super slim body with 235mm thickness, less installation area required, capable to match multiple decoration styles.



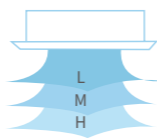
#### Suitable for corner installation, comfortable air flow

Well-designed shape, suitable for corner installation, make sure the air flow and temperature distribution well.



#### Three level fan speeds

High,Mid,Low three fan speed options, can meet the needs of different indoor condition.



### IDU parameters

HP			CTVT-ECSE18BX	CTVT-ECSE22BX	CTVT-ECSE28BX	CTVT-ECSE36BX	CTVT-ECSE45BX	CTVT-ECSE50BX	CTVT-ECSE56BX
Capacity	Cooling	kW	1.8	2.2	2.8	3.6	4.5	5	5.6
	Heating	kW	2.2	2.8	3.2	4	5	5.6	6.3
Power input	Cooling	kW	0.05	0.05	0.05	0.06	0.07	0.07	0.07
	Heating	kW	0.05	0.05	0.05	0.06	0.07	0.07	0.07
Power supply			220V ~ 1N 50Hz						
Current	Cooling	A	0.24	0.24	0.24	0.28	0.31	0.31	0.31
	Heating	A	0.24	0.24	0.24	0.28	0.31	0.31	0.31
Air volume		m <sup>3</sup> /h	510	510	510	680	800	800	800
Noise	H/M/L	dB(A)	39/34/31	39/34/31	39/34/31	40/34/31	42/36/33	42/36/33	42/36/33
Dimension	panel	mm	580×1055	580×1055	580×1055	580×1055	580×1055	580×1055	580×1055
	unit	mm	850×480×235	850×480×235	850×480×235	850×480×235	850×480×235	850×480×235	850×480×235
	packing	mm	1105×645×305	1105×645×305	1105×645×305	1105×645×305	1105×645×305	1105×645×305	1105×645×305
Weight	net	kg	23	23	23	23	23	23	23
	gross	kg	28	28	28	28	28	28	28
Connection pipe	Gas	mm	9.52	9.52	9.52	12.7	12.7	12.7	12.7
	Liquid	mm	6.35	6.35	6.35	6.35	6.35	6.35	6.35
	Connecting way		Screw thread	Screw thread	Screw thread	Screw thread	Screw thread	Screw thread	Screw thread
Water pipe dimension(mm)			φ25						
Controller			Remote/Wired/Central controller						

Notes: 1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length: 5m; Level difference: 0m; Voltage: 230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
6. Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.  
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer; only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.

## Two-way Cassette



### Recommended places

Sitting room, study, dining room, small meeting room, etc

### Technical characteristics



#### High-lift Drain Pump

A drain pump with a 700mm raise height is fitted as standard, simplifying installation of the drain piping.



#### Standard float switch, water level monitor

Equipped with float switch, which will automatically send alarm when malfunction of drain pump or stuck of drain pipe occur.



#### Three-speed adjustment

New winding motor, with scroll fan technology, wider air volume regulation, quieter operation, unique intimate wind gear design. High, medium and low three speed adjustment, strong refrigeration and heating, to create a quiet and comfortable temperature.



#### Ultra-thin body, lightweight design

Ultra-thin body (290mm), requires less installation space, even in the narrow low ceiling, still can be easily installed, more flexible collocation decoration style.



#### Super wide Angle air supply

Panel swing motor system adopts high-precision stepper motor, panel up and down risk control system is more intelligent, to achieve ultra-wide Angle and large range of air supply.



#### Quiet design, quiet and comfortable

Centrifugal wind wheel, axial air inlet, through rotation to form a certain wind pressure, small blade area, large number, uniform air, noise greatly reduced, for you to create a quiet and comfortable environment.



#### High ceiling design, direct air flow to the ground

High ceiling design, suitable for ceiling height up to 3m space.

### IDU parameters

Model		CTVT-ECDE22BX	CTVT-ECDE28BX	CTVT-ECDE36BX	CTVT-ECDE45BX	CTVT-ECDE50BX	CTVT-ECDE56BX	CTVT-ECDE63BX	CTVT-ECDE71BX
Capacity	Cooling(kW)	2.2	2.8	3.6	4.5	5	5.6	6.3	7.1
	Heating(kW)	2.8	3.2	4	5	5.6	6.3	7.1	8
Power input	Cooling(kW)	0.064	0.064	0.064	0.064	0.07	0.07	0.11	0.11
	heating(kW)	0.064	0.064	0.064	0.064	0.07	0.07	0.11	0.11
Power supply		220V ~ 1N 50Hz							
Current	Cooling(A)	0.27	0.27	0.27	0.27	0.31	0.31	0.49	0.49
	heating(A)	0.27	0.27	0.27	0.27	0.31	0.31	0.49	0.49
Air volume	(m <sup>3</sup> /h)	580	580	680	680	850	850	1360	1360
Noise	H/M/L dB(A)	40/35/32	42/36/33	42/36/33	42/36/33	42/38/35	43/38/35	46/39/36	46/39/36
Dimension	Panel(mm)	680×1240	680×1240	680×1240	680×1240	680×1240	680×1240	680×1240	680×1240
	Body (mm)	1140×575×290	1140×575×290	1140×575×290	1140×575×290	1140×575×290	1140×575×290	1140×575×290	1140×575×290
	Packing(mm)	1305×755×370	1305×755×370	1305×755×370	1305×755×370	1305×755×370	1305×755×370	1305×755×370	1305×755×370
Weight	Net(kg)	32	32	32	32	33	33	34	34
	Gross(kg)	38	38	38	38	39	39	40	40
connection pipe	gas (mm)	12.7	12.7	12.7	12.7	12.7	12.7	15.88	15.88
	liquid(mm)	6.35	6.35	6.35	6.35	6.35	6.35	9.52	9.52
	connection way	Screw thread							
Drainage pipe(mm)		φ25							
Controller		Remote/Wired/Central controller							

Notes: 1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length: 5m; Level difference: 0m; Voltage: 230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
6. Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.  
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer; only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.



## Four-way Cassette



### Recommended places

Office, restaurant, supermarket, shopping mall, lobby, etc

## Technical characteristics



### New panel design

Adopt the new design of "porcelain white" color, beautiful and generous, so that the indoor machine panel and the ceiling color more easily integrated, more noble, surround type air supply panel, air supply more comfortable.



### LED digital display

Real-time operating temperature and operation fault clearly display, the operating status of the unit in one hand.



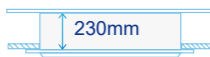
### Four gears, wider air volume adjustment

New winding motor, with scroll fan technology, wider air volume regulation, quieter operation, unique intimate wind gear design. Four speed regulation, strong refrigeration and heating, to create a quiet and comfortable temperature.



### Thin fuselage, saving space

Thin fuselage, the installation space required is small, the unit can be easily installed in a fairly narrow ceiling.



### Standard condensate pump, easy to install

Equipped with advanced high-lift condensate drainage pump, the maximum head up to 1200mm, easy to install drainpipes.



### 360° wide-angle air supply

Comfortable air supply does not leave dead corner, every corner can enjoy cool; Uniform air supply, reduce the temperature difference, keep the indoor temperature comfortable; Air supply is no longer directed single, keep air circulation, air more fresh and healthy.



### Clean sterilization, healthy life

Standard health filter screen, effectively remove large particles in the air, optional silver ion purification module, adsorption of formaldehyde and odor, eliminate germs.



### High efficiency energy saving motor

Adopt high efficiency energy saving motor, motor efficiency can reach 80%, air conditioning energy saving can be increased by more than 20%.



### Ultra low noise

Using the advanced technology of three-dimensional spiral blade design, can reduce the air resistance, realize the machine low noise operation, "quiet" enjoy a comfortable life.



### Standard float switch, timely warning

Standard float switch, when the condensate pump is faulty or the drainpipe is blocked, timely warning, prevent the water tray inside the machine overflow.

## Four-way Cassette

Model			CTVT-ECFE 28BX	CTVT-ECFE 36BX	CTVT-ECFE 45BX	CTVT-ECFE 50BX	CTVT-ECFE 56BX	CTVT-ECFE 63BX	CTVT-ECFE 71BX
Cooling capacity	Capacity	Btu/h(W)	10000(2800)	12000(3600)	15000(4500)	17000(5000)	19000(5600)	21000(6300)	24000(7100)
	Input	W	80	80	80	80	80	100	100
Heating capacity	Capacity	Btu/h(W)	11000(3200)	14000(4000)	17000(5000)	19000(5600)	21000(6300)	24000(7100)	27000(8000)
	Input	W	80	80	80	80	80	100	100
Noise	H/M/L	dB(A)	36/33/32	36/33/32	37/35/33	37/35/33	37/35/33	37/35/33	37/35/33
Design pressure		MPa	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~/50Hz/60Hz/						
Indoor air circulation (Cooling/Heating)		L/S	208	208	236	236	236	333	333
		m³/h	750	750	850	850	850	1200	1200
Connecting Pipe	Liquid	Inches	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"
	Gas	Inches	1/2"	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"
Drainage Pipe		mm	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)
Net dimensions	W x H x D	mm	840×230×840	840×230×840	840×230×840	840×230×840	840×230×840	840×230×840	840×230×840
Net weight		kg	27	27	27	27	27	27	27
Packing dimensions	W x H x D	mm	945×285×945	945×285×945	945×285×945	945×285×945	945×285×945	945×285×945	945×285×945
Gross weight		kg	32	32	32	32	32	32	32
Loading Capacity			1.0HP	1.2HP	1.5HP	1.8HP	2.0HP	2.2HP	2.5HP
Controller			Remote Controller & Wired controller						

Model			CTVT-ECFE 80BX	CTVT-ECFE 90BX	CTVT-ECFE 100BX	CTVT-ECFE 112BX	CTVT-ECFE 125BX	CTVT-ECFE 140BX	CTVT-ECFE 160BX
Cooling capacity	Capacity	Btu/h(W)	27000(8000)	30000(9000)	34000(10000)	38000(11200)	42000(12500)	48000(14000)	55000(16000)
	Input	W	100	150	150	150	150	150	150
Heating capacity	Capacity	Btu/h(W)	30000(9000)	34000(10000)	38000(11200)	42000(12500)	48000(14000)	55000(16000)	62000(18000)
	Input	W	100	150	150	150	150	150	150
Noise	H/M/L	dB(A)	37/35/33	40/38/35	40/38/35	40/38/35	40/38/35	40/38/35	40/38/35
Design pressure		MPa	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Power supply			220-240V~/50Hz/60Hz/						
Indoor air circulation (Cooling/Heating)		L/S	333	500	500	500	500	500	500
		m³/h	1200	1800	1800	1800	1800	1800	1800
Connecting Pipe	Liquid	Inches	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
	Gas	Inches	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Drainage Pipe		mm	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)	32(ID25,OD32)
Net dimensions	W x H x D	mm	840×230×840	840×300×840	840×300×840	840×300×840	840×300×840	840×300×840	840×300×840
Net weight		kg	27	35	35	35	35	35	35
Packing dimensions	W x H x D	mm	945×285×945	945×355×945	945×355×945	945×355×945	945×355×945	945×355×945	945×355×945
Gross weight		kg	32	41	41	41	41	41	41
Loading Capacity			3.0HP	3.2HP	3.6HP	4.0HP	4.5HP	5.0HP	5.5HP
Controller			Remote Controller & Wired controller						

Notes: 1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length: 5m; Level difference: 0m; Voltage: 230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
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7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer: only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.



## Ultra-thin low static pressure Duct



### Recommended places

Office, conference room, hotel room, restaurant, living room, etc

### Technical characteristics



#### Wide range Static Pressure , strong air supply

Static pressure can reach 80pa, duct can be connected for providing comfortable environment suitable air flow to multiple area.



#### Slim body, concealed installation

Super slim body 200mm high, easy for concealed installation, greatly save installation area and capable of matching multiple decoration style.



#### High efficient indoor motor

Using high efficient indoor motor, motor can reach 60% efficiency and save more than 20% energy.



#### High-lift Drain Pump

A drain pump with a 1200mm raise height is fitted as standard, simplifying installation of the drain piping.



#### Ultra low noise

3D indoor fan technology can reduce the resistance of air flow, maximally lower down the noise level, providing a comfortable environment.



#### Multiple upgrades

Comes with PCB, air outlet, noise control and outlook upgrades.



#### Health

Equipped with healthy filter which can effectively kill bacteria viruses and odors of indoor air to provide a healthy and safe indoor environment.



#### Standard float switch, water level monitor

Equipped with float switch, which will automatically send alarm when malfunction of drain pump or stuck of drain pipe occur.

### Specification

Model			CTVT-EDL 18BX	CTVT-EDL 22BX	CTVT-EDL 28BX	CTVT-EDL 36BX	CTVT-EDL 45BX	CTVT-EDL 50BX	CTVT-EDL 56BX	CTVT-EDL 80BX
Static pressure	Standard	Pa	12	12	12	12	12	12	12	30
	Range	Pa	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30
Cooling capacity	Capacity	Btu/h(W)	6000(1800)	7500(2200)	10000(2800)	12000(3600)	15000(4500)	17000(5000)	19000(5600)	27000(8000)
	Input	W	36	36	36	60	82	82	82	136
Heating capacity	Capacity	Btu/h(W)	7500(2200)	9000(2500)	11000(3200)	14000(4000)	17000(5000)	19000(5600)	21000(6300)	30000(9000)
	Input	W	36	36	36	60	82	82	82	136
Noise	H/M/L	dB(A)	32/27/24	32/27/24	32/27/24	35/29/26	39/32/29	39/32/29	39/32/29	41/37/32
	Design pressure	MPa	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~/50Hz/							
Indoor air circulation (Cooling/Heating)	L/S		144	144	144	167	236	236	236	347
	m³/h		520	520	520	600	850	850	850	1250
Connecting Pipe	Liquid	Inches	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"
	Gas	Inches	3/8"	3/8"	3/8"	1/2"	1/2"	1/2"	1/2"	5/8"
Drainage Pipe			25(ID20,OD25)							
Net dimensions			700×200×450							
Net weight			14							
Packing dimensions			865×272×578							
Gross weight			18							
Loading Capacity			0.6HP							
Controller			Remote Controller & Wired controller							

Notes: 1. Specifications are based on the following conditions:

- Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.
- Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.
- Equivalent piping length: 5m; Level difference: 0m; Voltage: 230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.

- Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.
- Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer: only one circle.
- Due to ongoing product development, specifications are subject to change without notice.

## DC Series Slim Duct



### Recommended places

Office, conference room, hotel room, restaurant, living room, etc

### Technical characteristics



#### Dc seven speed wind speed Energy-saving silent operation

DC motor, 7-speed air volume, energy-saving and silent operation. The lowest noise is 22 d B(A).



#### Health filter (optional)

The duct can be equipped with silver ion and activated carbon health filter.



#### Humanized return air mode selection, flexible installation

It is optional to have air inlet form back or bottom with the same size of plate, which will be very flexible and convenient for installation.



#### Built-in drain pump(optional).

The drain pump can lift the condensing water up to 1200mm.



#### Ultra-thin body design, fashion and beautiful

The minimum height of the body is only 200mm, saving space.



#### Standard float switch, timely warning

Standard float switch, when the condensate pump is faulty or the drainpipe is blocked, timely warning, prevent the water tray inside the machine overflow.

### Specification

Model			CTVT-EDD 18BX	CTVT-EDD 22BX	CTVT-EDD 28BX	CTVT-EDD 36BX	CTVT-EDD 45BX	CTVT-EDD 50BX	CTVT-EDD 56BX	CTVT-EDD 63BX	CTVT-EDD 71BX
Static pressure	Standard	Pa	12	12	12	12	12	12	12	20	30
	Range	Pa	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30	0 ~ 30
Cooling capacity	Capacity	Btu/h(W)	6000(1800)	7500(2200)	10000(2800)	12000(3600)	15000(4500)	17000(5000)	19000(5600)	21000(6300)	24000(7100)
	Input	W	24	24	24	40	55	55	55	58	60
Heating capacity	Capacity	Btu/h(W)	7500(2200)	9000(2500)	11000(3200)	14000(4000)	17000(5000)	19000(5600)	21000(6300)	24000(7100)	27000(8000)
	Input	W	24	24	24	40	55	55	55	58	60
Noise	H/M/L	dB(A)	30/27/22	30/27/22	30/27/22	32/28/25	35/32/27	35/32/27	36/33/28	36/33/29	37/34/29
Design pressure		MPa	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~/50Hz      208-230V~/60Hz								
Indoor air circulation (Cooling/Heating)		L/S	131	131	131	147	208	208	236	333	347
		m³/h	470	470	470	530	750	750	850	950	1100
Connecting Pipe	Liquid	Inches	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"
	Gas	Inches	3/8"	3/8"	3/8"	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"
Drainage Pipe		mm	25(ID20,OD25)								
Net dimensions	W x H x D	mm	700×200×450				920×200×450			1300×200×450	
Net weight		kg	17	17	17	17	20	20	20	31	31
Packing dimensions	W x H x D	mm	865×272×578				1085×272×578			1467×272×578	
Gross weight		kg	21	21	21	21	25	25	25	36	36
Loading Capacity			0.6HP	0.8HP	1.0HP	1.2HP	1.5HP	1.8HP	2.0HP	2.2HP	2.5HP
Controller			Remote Controller & Wired controller								

Notes: 1. Specifications are based on the following conditions:

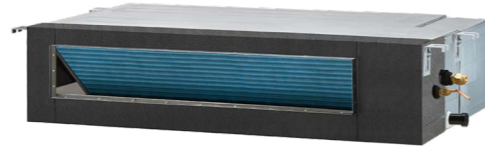
- Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.
- Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.
- Equivalent piping length: 5m; Level difference: 0m; Voltage: 230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.

- Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.
- Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer: only one circle.
- Due to ongoing product development, specifications are subject to change without notice.



## Medium static pressure Duct



### Recommended places

Office, conference room, exhibition hall, restaurant, etc

### Technical characteristics



#### Flexible to adapt to a variety of room structure

It is optional to have air inlet form back or bottom with the same size of plate ,which will be very flexible and convenient for installation.



#### Built-in drain pump(optional).

The drain pump can lift the condensing water up to 1200mm.



#### Ultra-thin body design, fashion and beautiful

The minimum height of the body is only 200mm, saving space.



#### Personalized tuyere

Suitable tuyere can be assembled to make the air conditioning decoration style perfect integration, highlighting the taste of the room.



#### Flexible installation

The factory standard bellows, according to the installation needs, can be adjusted on site under or after the return air, to meet the needs of different installation sites.

### Specification

Model		CTVT-EDM 45BX	CTVT-EDM 50BX	CTVT-EDM 56BX	CTVT-EDM 63BX	CTVT-EDM 71BX	CTVT-EDM 80BX	CTVT-EDM 90BX	CTVT-EDM 100BX	CTVT-EDM 112BX	CTVT-EDM 125BX	CTVT-EDM 140BX	CTVT-EDM160 BX
Static pressure	Standard	Pa	15	15	15	30	30	30	50	50	50	50	50
	Range	Pa	0 ~ 30	0 ~ 30	0 ~ 30	20 ~ 50	20 ~ 50	20 ~ 50	30 ~ 80	30 ~ 80	30 ~ 80	30 ~ 100	30~100
Cooling capacity	Capacity	Btu/h(W)	15000 (4500)	17000 (5000)	19000 (5600)	21000 (6300)	24000 (7100)	27000 (8000)	30000 (9000)	34000 (10000)	38000 (11200)	42000 (12500)	48000 (14000)
	Input	W	110	110	110	160	160	160	330	330	330	390	390
Heating capacity	Capacity	Btu/h(W)	17000 (5000)	19000 (5600)	21000 (6300)	24000 (7100)	27000 (8000)	30000 (9000)	34000 (10000)	38000 (11200)	42000 (12500)	48000 (14000)	55000 (16000)
	Input	W	110	110	110	160	160	160	330	330	330	390	390
Noise	H/M/L	dB(A)	43/33/30	43/33/30	43/33/30	46/37/35	46/37/35	46/37/35	50/44/41	50/44/41	50/44/41	54/46/43	54/46/43
Design pressure		MPa	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~/50Hz/60Hz										
Indoor air circulation (Cooling/Heating)	L/S		250	250	250	306	306	306	472	472	472	611	611
	m³/h		900	900	900	1100	1100	1100	1700	1700	1700	2200	2200
Connecting Pipe	Liquid	Inches	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
	Gas	Inches	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Drainage Pipe		mm	25(ID20,OD25)										
Net dimensions	W x H x D	mm	920×210×570				1140×270×710				1200×300×800		
Net weight		kg	23	23	23	26	26	26	36	36	36	46	46
Packing dimensions	W x H x D	mm	1115×280×690				1345×360×830				1405×390×925		
Gross weight		kg	27	27	27	31	31	31	41	41	41	51	51
Loading Capacity			1.5HP	1.8HP	2.0HP	2.2HP	3.0HP	3.2HP	3.6HP	4.0HP	4.5HP	5.0HP	5.5HP
Controller			Remote Controller & Wired controller										

Notes: 1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
6. Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.  
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.

## High static pressure Duct



### Recommended places

Workshop, hotel, restaurant, shopping mall, ballroom, bar and other large space places

### Technical characteristics



#### Healthy new wind, forest breathing

Easy introduction of outdoor fresh air heating refrigeration and indoor air exchange, keep indoor air fresh, bring you comfortable fresh air.



#### Ultra-thin body design, fashion and beautiful

The minimum thickness of the fuselage is only 380mm, which does not occupy indoor space.



#### Ultra-high static pressure design to meet various space requirements

Maximum static pressure 300Pa, can be long distance multi-point air supply, fully meet the air conditioning needs of different Spaces.



#### Clean sterilization, healthy life

Built-in coarse filter, PP filter screen, optional silver ion purification module, effectively remove large particles in the air, absorb formaldehyde and odor, eliminate germs.



#### Various forms of air outlets, matching with decoration

The indoor unit adopts a hidden installation mode, which can be equipped with appropriate air outlets to perfectly combine the air conditioning.



### Specification

Model		CTVT-EDH 71BX	CTVT-EDH 80BX	CTVT-EDH 90BX	CTVT-EDH 100BX	CTVT-EDH 112BX	CTVT-EDH 140BX	CTVT-EDH 220BX	CTVT-EDH 280BX	CTVT-EDH 450BX	CTVT-EDH 560BX
Static pressure	Standard	Pa	100	100	100	100	100	130	200	200	200
	Range	Pa	50 ~ 130	50~130	50~130	50~130	50 ~ 130	50 ~ 130	100~300	100~300	100~300
Cooling capacity	Capacity	Btu/h (W)	24000 (7100)	27000 (8000)	30000 (9000)	34000 (10000)	38000 (11200)	48000 (14000)	75000 (22000)	95500 (28000)	191100 (56000)
	Input	W	280	280	420	420	420	420	1750	1750	2250
Heating capacity	Capacity	Btu/h (W)	27000(8000)	30000(9000)	34000(10000)	38000(11200)	42000(12500)	55000(16000)	85300 (25000)	105772 (31000)	208132 (61000)
	Input	W	280	280	420	420	420	420	1750	1750	2250
Noise	H/M/L	dB(A)	50/48/46	50/48/46	53/51/49	53/51/49	53/51/49	53/51/49	55/53/51	55/53/51	61/58/56
Design pressure		MPa	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~/50Hz/60Hz								
Indoor air circulation (Cooling/Heating)	L/S		350	350	517	517	561	639	1250	1250	2083
	m³/h		1260	1260	1860	1860	2020	2300	4500	4500	7500
Connecting Pipe	Liquid	Inches	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	12.7mm	12.7mm	12.7mm
	Gas	Inches	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	22.2mm	22.2mm	28.6mm
Drainage Pipe		mm	25(ID20,OD25)							DN25	
Net dimensions	W x H x D	mm	850×380×590			1200×380×590			1366×758×470		1770×758×650
Net weight		kg	49	49	58	58	58	58	120	220	
Packing dimensions	W x H x D	mm	1060×425×695			1410×435×695			1620×975×700		2010×975×910
Gross weight		kg	55	55	64	64	64	64	145	245	
Loading Capacity			2.5HP	3.0HP	3.2HP	3.6HP	4.0HP	5.0HP	8.0HP	10.0HP	20.0HP
Controller			Remote Controller & Wired controller								

Notes: 1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
6. Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.  
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.



## Wall mounted



### Recommended places

Living room, study, reference room, negotiation room and other places

### Technical characteristics



#### Ultra-low silent operation

Adopt large-diameter blade, high-quality plastic-encapsulated motor, and the noise is as low as 27dB(A).



#### Ultra-thin body design, smart and beautiful

The minimum thickness of the unit is only 380mm, which makes installation more convenient.



#### Easy maintenance

The horizontal baffle of the unit is easy to remove for easy cleaning and maintenance.



#### Long-lasting filter design

The long-term filter design makes the air more healthy, reduces the difficulty of maintenance.



#### Wide-angle air supply, more comfortable

The upper and lower wind guide vanes make the airflow comfortable.



### Specification

Model			CTVT-EHW 22BX	CTVT-EHW 28BX	CTVT-EHW 36BX	CTVT-EHW 45BX	CTVT-EHW 50BX	CTVT-EHW 56BX	CTVT-EHW 71BX	CTVT-EHW 80BX
Cooling capacity	Capacity	Btu/h(W)	7500(2200)	10000(2800)	12000(3600)	15000(4500)	17000(5000)	19000(5600)	24000(7100)	27000(8000)
	Input	W	40	40	40	45	45	70	70	70
Heating capacity	Capacity	Btu/h(W)	9000(2500)	11000(3200)	14000(4000)	17000(5000)	19000(5600)	21000(6300)	27000(8000)	30000(9000)
	Input	W	40	40	40	45	45	70	70	70
Noise	H/M/L	dB(A)	38/33/27	38/33/27	38/33/27	42/37/33	42/37/33	44/39/35	44/39/35	44/39/35
Design pressure		MPa	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~50Hz 208-230V~60Hz	220-240V~50Hz 208-230V~60Hz	220-240V~50Hz 208-230V~60Hz	220-240V~50Hz 208-230V~60Hz	220-240V~50Hz 208-230V~60Hz	220-240V~50Hz 208-230V~60Hz	220-240V~50Hz 208-230V~60Hz	220-240V~50Hz 208-230V~60Hz
Indoor air circulation(Cooling/Heating)	L/S		153	153	153	181	181	222	222	222
	m³/h		550	550	550	650	650	800	800	800
Connecting Pipe	Liquid	Inches	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"
	Gas	Inches	1/2"	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"
Drainage Pipe		mm	16	16	16	16	16	16	16	16
Net dimensions	(W x H x D)	mm	910×294×206	910×294×206	910×294×206	910×294×206	910×294×206	1010×315×220	1010×315×220	1010×315×220
Net weight	Indoor	kg	10	10	10	10	10	13	13	13
Packing dimensions	(W x H x D)	mm	977×367×276	977×367×276	977×367×276	977×367×276	977×367×276	1094×386×300	1094×386×300	1094×386×300
Gross weight		kg	12.5	12.5	12.5	12.5	12.5	16	16	16
Loading Capacity			0.9HP	1.0HP	1.2HP	1.5HP	1.8HP	2.0HP	2.0HP	2.0HP
Controller			Remote Controller & Wired controller							

Notes: 1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length: 5m; Level difference: 0m; Voltage: 230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
6. Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.  
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer: only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.

## Celiling & floor



### Recommended places

Living room, study, reference room, negotiation room and other places

### Technical characteristics



#### Ultra-thin Design

Compact design which fits for various room styles.



#### Wide Range of Air Flow

The air supply angle is from 0 to 110°, making the indoor temperature more uniform and more comfortable.



#### Dual Direction of Drainage

Condensing water can be drained both from left and right side.



#### Detachable Plastic Blowers

Universal design ned parts and assemblies applied, which is easy for maintenance.



#### Flexible Installation

Two ways of installation available, ceiling suspended and floor standing.



#### Wire Control (optional)

Wire control is available, especially for hotel rooms, offices, etc.

### Specification

Model			CTVT -EFC 45BX	CTVT -EFC 50BX	CTVT -EFC 56BX	CTVT -EFC 63BX	CTVT -EFC 71BX	CTVT -EFC 80BX	CTVT -EFC 90BX	CTVT- EFC100 BX	CTVT- EFC112 BX	CTVT- EFC125 BX	CTVT- EFC140 BX
Cooling capacity	Capacity	Btu/h (W)	15000 (4500)	17000 (5000)	19000 (5600)	21000 (6300)	24000 (7100)	27000 (8000)	30000(9000)	34000 (10000)	38000(11200)	42000 (12500)	48000 (14000)
	Input	W	102	102	102	149	149	149	158	158	235	235	235
Heating capacity	Capacity	Btu/h (W)	17000 (5000)	19000 (5600)	21000 (6300)	24000 (7100)	27000 (8000)	30000 (9000)	34000 (10000)	38000 (11200)	42000 (12500)	48000 (14000)	55000 (16000)
	Input	W	102	102	102	149	149	149	158	158	235	235	235
Noise	H/M/L	dB(A)	44/42/39	44/42/39	44/42/39	46/44/41	46/44/41	46/44/41	50/48/45	50/48/45	52/50/47	52/50/47	52/50/47
Design pressure		MPa	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~50Hz/										
Indoor air circulation (Cooling/Heating)	L/S		267	267	267	333	333	333	444	444	556	556	556
	m³/h		960	960	960	1200	1200	1200	1600	1600	2000	2000	2000
Connecting Pipe	Liquid	Inches	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
	Gas	Inches	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Drainage Pipe		mm	25(ID20, OD25)										
Net dimensions	W x H x D	mm	1055×675×235						1275×675×235		1635×675×235		
Net weight		kg	24	24	24	25	25	25	29	29	38	38	38
Packing dimensions	W x H x D	mm	1131×753×313						1351×753×313		1711×753×313		
Gross weight		kg	27	27	27	28	28	28	35	35	46	46	46
Loading Capacity			1.5HP	1.8HP	2.0HP	2.2HP	2.5HP	3.0HP	3.2HP	3.6HP	4.0HP	4.5HP	5.0HP
Controller			Remote Controller & Wired controller										

Notes: 1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length: 5m; Level difference: 0m; Voltage: 230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
6. Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.  
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer: only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.



## Fresh Air Processing Unit



### Recommended places

Cinemas, hotels, lobbies, dance halls, bars and other places

### Technical characteristics



#### Healthy Fresh Air

Through the fresh air unit, the outdoor healthy air can be introduced into the room to keep the indoor healthy.



#### Ultra-high static pressure design

The maximum static pressure is 300pa, which can meet long-distance air supply and different space requirements.



#### Control Smart and Lower Cost

The fresh air unit can be controlled independently or connected to the same outdoor unit system with the AC indoor unit, reducing costs and installation space.



#### Simplify air exhaust system

Simplified air supply and exhaust system, stable and reliable.

Note: The sum of the capacity of the processing unit and the indoors should be 50%~100% of the ODU capacity, and the capacity of the fresh air units does not exceed 30%.

### Specification

Model			CTVT-EFA155BX	CTVT-EFA280BX	CTVT-EFA450BX	CTVT-EFA560BX
Static pressure	Standard	Pa	196	200	300	300
	Capacity	Btu/h(W)	48000(14000)	95500(28000)	153000(45000)	191000(56000)
Cooling capacity	Input	W	420	1100	1550	2250
	Capacity	Btu/h(W)	34000(10000)	68000(20000)	95500(28000)	133000(39000)
Heating capacity	Input	W	420	1100	1550	2250
	H/M/L	dB(A)	45	53	56	60
Noise						
Design pressure		MPa	4.1	4.1	4.1	4.1
Power supply			220-240V~50Hz/60Hz			
Indoor air circulation (Cooling/Heating)		L/S	569	833	1111	1667
		m <sup>3</sup> /h	2050	3000	4000	6000
Connecting Pipe	Liquid	Inches	3/8"	1/2"	1/2"	1/2"
	Gas	Inches	5/8"	1"	9/8"	9/8"
Drainage Pipe		mm	25(ID20,OD25)			
Net dimensions	W x H x D	mm	1200×380×590	1366×470×758	1770×650×758	1770×650×758
Net weight		kg	58	120	220	220
Packing dimensions	W x H x D	mm	1410×435×695	1620×930×975	2035×1170×975	2035×1170×975
Gross weight		kg	60	145	245	245
Loading Capacity			5HP	10HP	15HP	20HP
Controller			Remote Controller & Wired controller			

Notes: 1. Specifications are based on the following conditions:  
2. Cooling: Indoor temperature 27°C DB/19°C WB, and outdoor temperature 35°C DB/24°C WB.  
3. Heating: Indoor temperature 20°C DB/15°C WB, and outdoor temperature 7°C DB/6°C WB.  
4. Equivalent piping length: 5m; Level difference: 0m; Voltage: 230V.

5. Sound Level: Indoor unit sound pressure level, measured at a point 1.5m downward from the unit center.  
6. Outdoor unit sound pressure level, measured at a point 1.0m in front of the unit.  
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer: only one circle.  
8. Due to ongoing product development, specifications are subject to change without notice.

## Energy Recovery Ventilation



### Recommended places

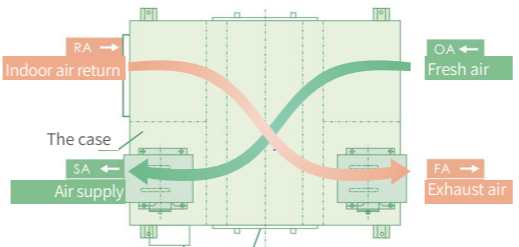
Cinemas, hotels, lobbies, dance halls, bars and other places

### Technical characteristics



#### Healthy Fresh Air

Two-way heat exchange technology solves the problem of indoor exhaust air, independent circulation, without any pollution.



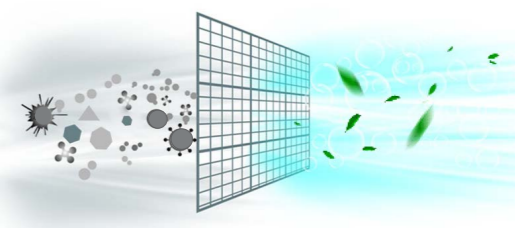
#### Big air volume and low energy consumption

Using high-efficiency heat exchangers, the energy exchange recovery rate is more than 70%.



#### Health

The unit is equipped with a professional fresh air filter to ensure that the air is dust-free, and customers can choose a high-efficiency filter.



#### Easy Maintenance

The filter chip can be repaired by opening the access door, which is simple and efficient.

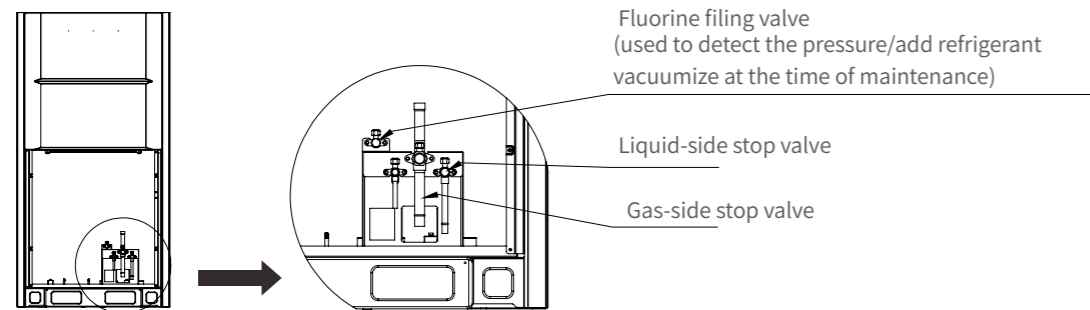
### Specification

Model	Air volume (m <sup>3</sup> /h)	ESP(Pa)	Power supply	Motor power input		Summer		Winter		Air volume range (m <sup>3</sup> /h)	Noise dB(A)	Dimension W×D×H(mm)
				input(KW)	Qty.(Pers)	T.E.(%)	E.E.(%)	T.E.(%)	E.E.(%)			
CTVT-2Q-D	200	75	220V ~1N 50Hz	0.05	2	70	60	70	63	150~200	42	850×900×400
CTVT-3Q-D	300	75		0.065	2	70	62	70	65	200~300	42	850×900×400
CTVT-4Q-D	400	75		0.1	2	70	62	70	65	350~400	44	850×900×400
CTVT-5Q-D	500	75		0.12	2	70	62	70	65	450~500	46	850×900×400
CTVT-6Q-D	600	75		0.15	2	70	63	70	67	500~600	46	850×900×400
CTVT-8Q-D	800	80	380V ~3N 50Hz	0.18	2	70	60	70	63	700~800	52	1040×1200×500
CTVT-10Q-D	1000	80		0.18	2	70	60	70	64	900~1000	52	1040×1200×500
CTVT-15Q-D	1500	120		0.25	2	70	62	70	67	1000~1500	55	1200×1200×500
CTVT-20Q-D	2000	220		0.32	2	70	62	70	69	1600~2000	57	1200×1200×500
CTVT-25Q-D	2500	200		0.45	2	70	62	70	67	2100~2500	57	1300×1500×600
CTVT-30Q-D	3000	200		0.55	2	70	61	70	65	2600~3000	57	1400×1600×620
CTVT-40Q-D/S	4000	200		0.8	2	70	62	70	69	3100~4000	58	1600×1700×700
CTVT-50Q-D/S	5000	210		1.1	2	70	61	70	64	4100~5000	60	1600×1700×700
CTVT-60Q-D/S	6000	320		1.8	2	70	60	70	62	5100~6000	61	1700×1400×1600
CTVT-80Q-D/S	8000	500		2.2	2	70	64	70	69	7100~8000	64	2000×1600×1800
CTVT-100Q-D/S	10000	480		3.0	2	70	63	70	69	9100~10000	66	2200×1600×1800
CTVT-120Q-D/S	12000	580		4.0	2	70	64	70	67	11000~12000	68	2500×1600×1900
CTVT-160Q-D/S	16000	500		5.5	2	70	64	70	67	15000~16000	68	2800×1800×2000

Note: The above data is the test value of standard refrigeration condition, and the inlet and outlet air value is 1:1.

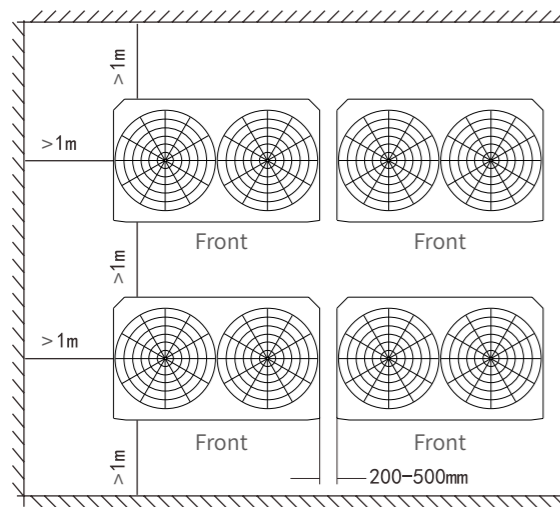


## Location of refrigerant pipes

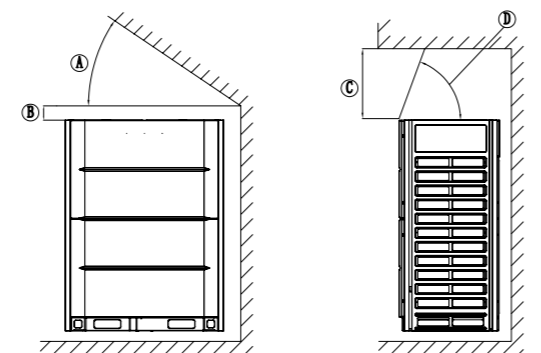


## Installation space for ODU

- The space shown in the figure needs to be reserved for the installation of the ODU, and the power supply equipment should be installed separately.



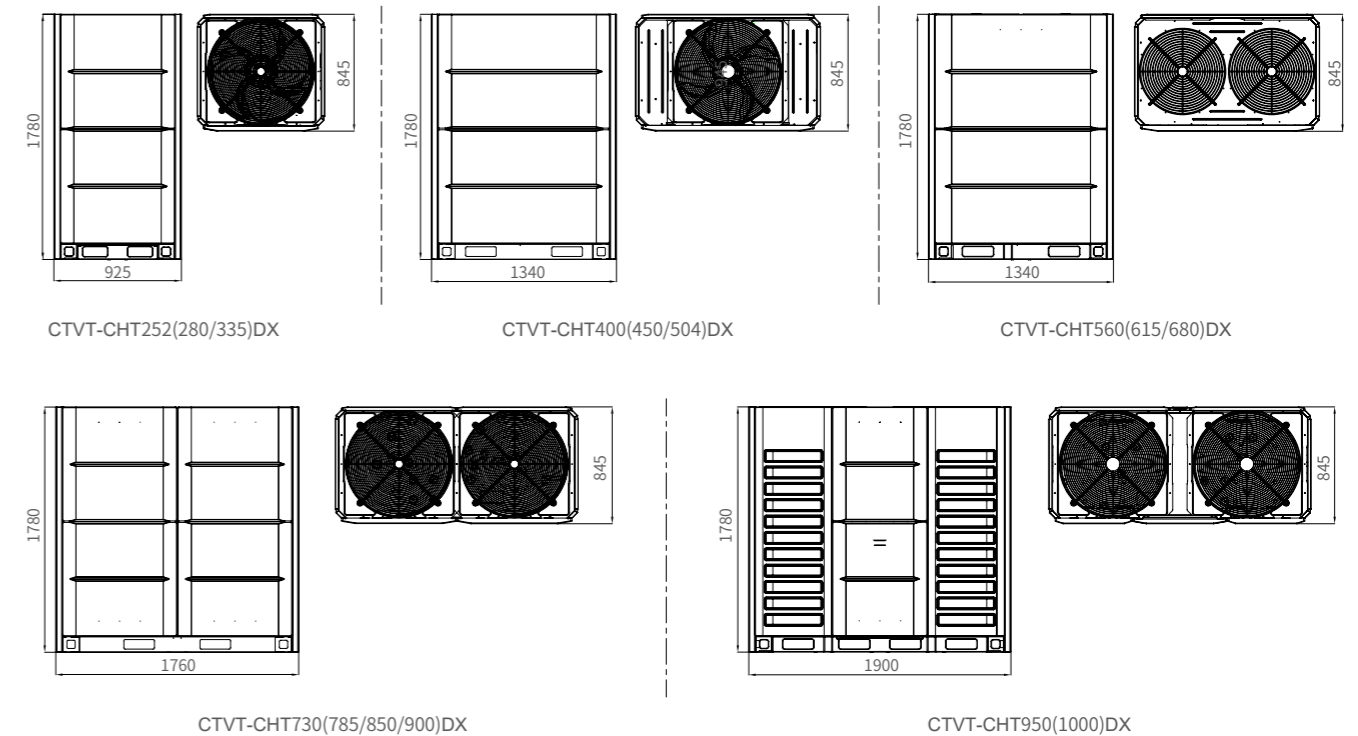
- To ensure the heat dissipation of the outdoor unit, there should be no obstacles above the outdoor unit. If it cannot be avoided, a deflector should be installed.



- A More than 45°
- B More than 300mm
- C More than 1000mm
- D Guide plate

- If there are stacks around the outdoor unit, the height should be less than 800mm from the top of the outdoor unit. If it is less than the size, a mechanical exhaust device must be installed.

## Dimension of ODU

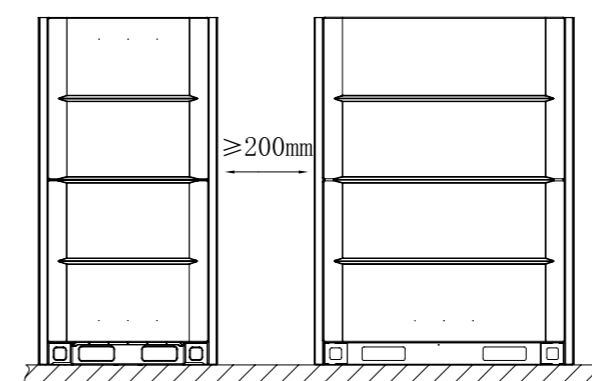
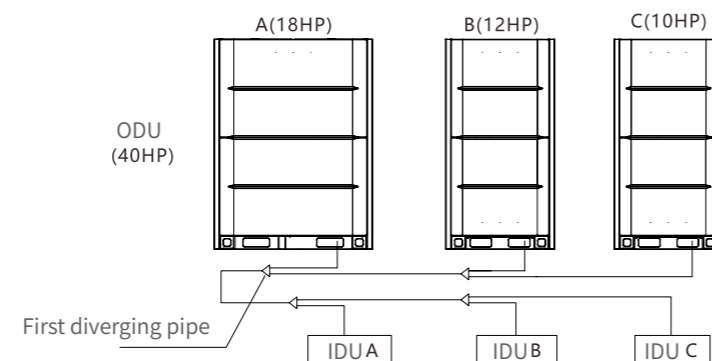


## Requirements for ODU installation

- A shock absorber or shock pad should be installed between the unit and the foundation.
- The unit and the foundation should be released tightly, otherwise there will be a lot of noise and vibration.
- The outdoor unit must be grounded reliably.
- It is forbidden to open the valves of the liquid pipe, gas pipe and oil balance pipe of the unit before commission.
- The installation should ensure that there is enough space for maintenance.

## Arrangement sequence of ODU

- When a system has more than two outdoor units, it is necessary to install the units as the followings:  
The outdoor units are arranged in descending order (for example, in the right picture, ODU capacity A ≥ ODU capacity B ≥ ODU capacity C) and the ODU A should install at the branch pipe.



Model	A	B
CTVT-CHT252(280/335)DX	724	725
CTVT-CHT400(450/504)DX	1141	725
CTVT-CHT560(615/680)DX	1141	725
CTVT-CHT730(785/850/900)DX	1561	725
CTVT-CHT950(1000)DX	1700	725

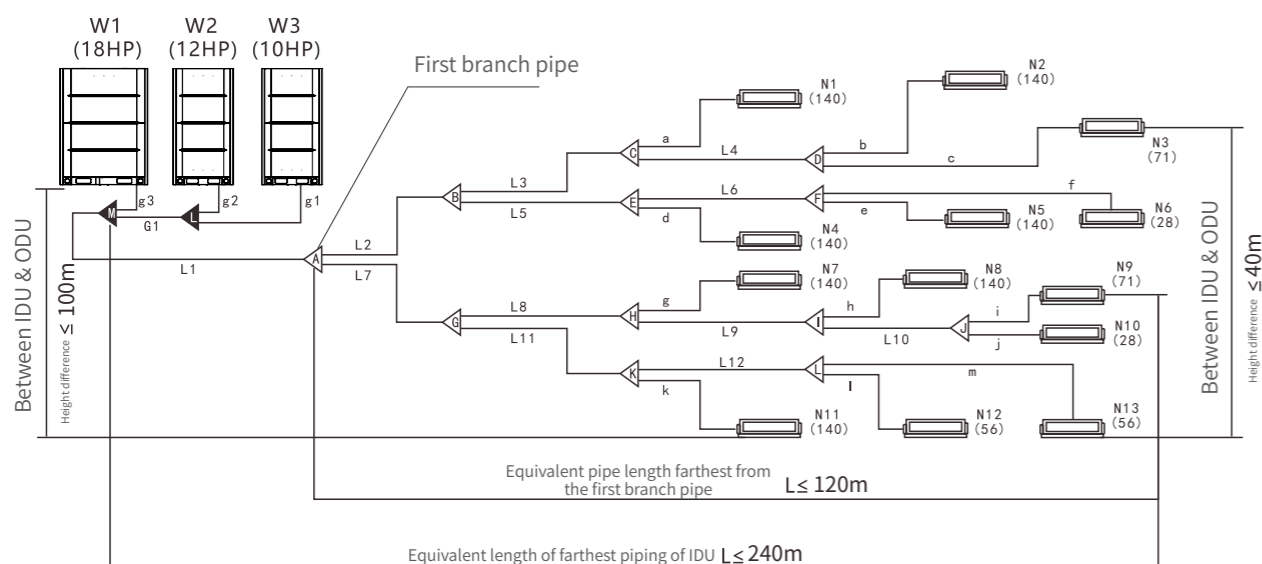


## Design of refrigerant piping

## Refrigerant pipe length and height

			Admissible value	Pipes
Length of supporting pipe	Total length of Refrigerant pipes (Total extended length)		1100m	$L1+(L2+L3+L4+L5+L6+L7+L8+L9+L10+L11+L12) \times 2+a+b+c+d+e+f+g+h+i+j+k+l+m$
	Length of the farthest supporting pipe(L)	True length	220m	L1+L7+L8+L9+L10+i
		Equivalent length	240m	
		Length of the supporting pipe furthest from the first branch pipe(L)*		120m
Height	Height difference between indoor and outdoor units (H)	ODU up	100m	
		ODU down	110m	
	Height between indoor units (h)		40m	

\* Note: Refer to relevant technical documents or consult technical person

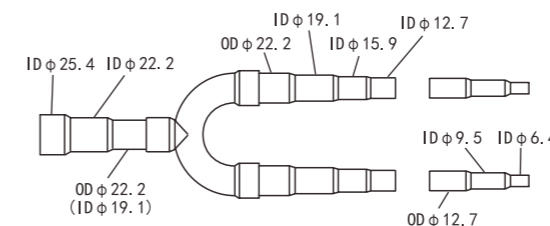


## Branch pipe specifications

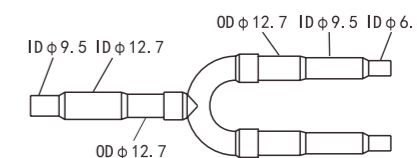
Assembly	Include parts	Assembly	Include parts
CTVT-BY01 Branch pipe parts	G01、L01	CTVT-BY05 Branch pipe parts	G04、L03
CTVT-BY02 Branch pipe parts	G02、L01	CTVT-BY06 Branch pipe parts	L01、L01
CTVT-BY03 Branch pipe parts	G02、L02	CTVT-BY07 Branch pipe parts	L01、L02
CTVT-BY04 Branch pipe parts	G03、L02	CTVT-BY08 Branch pipe parts	G05、G02

## Branch pipe specifications

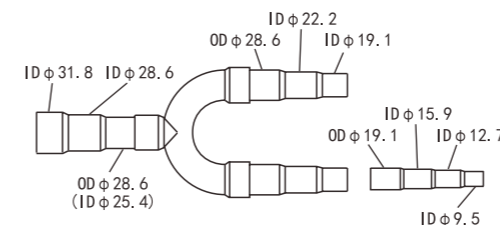
G01:  $(\phi 25.4 - \phi 19.1) \text{---} 2 \times (\phi 22.2 - \phi 6.4)$



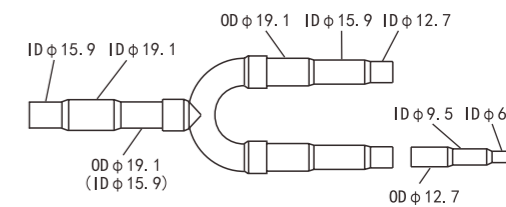
L01:  $(\phi 9.5 - \phi 12.7) \text{---} 2 \times (\phi 12.7 - \phi 6.4)$



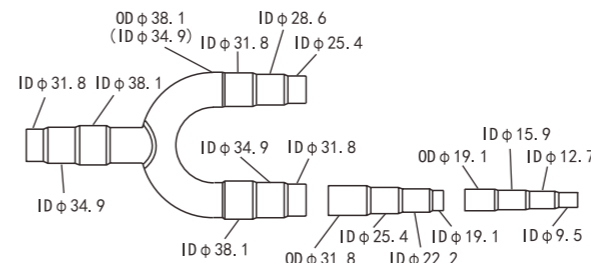
G02:  $(\phi 31.8 - \phi 25.4) \text{---} (\phi 28.6 - \phi 19.1) + (\phi 28.6 - \phi 9.5)$



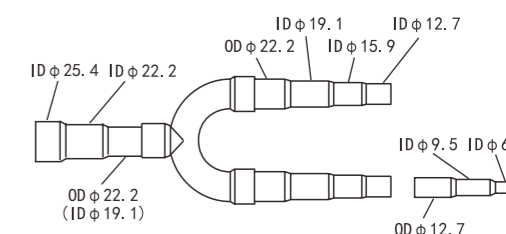
L02:  $(\phi 15.9 - \phi 19.1) \text{---} (\phi 19.1 - \phi 12.7) + (\phi 19.1 - \phi 6.4)$



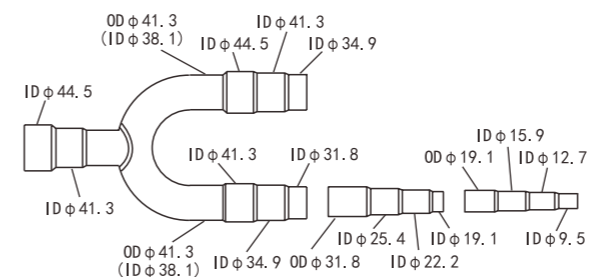
G03:  $(\phi 31.8 - \phi 38.1) \text{---} (\phi 34.9 - \phi 25.4) + (\phi 38.1 - \phi 9.5)$



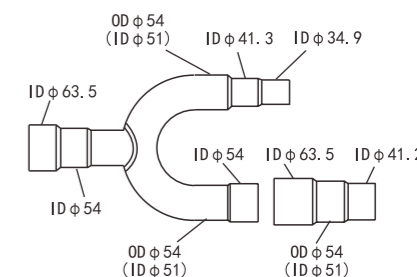
L03:  $(\phi 19.1 - \phi 25.4) \text{---} (\phi 22.2 - \phi 12.7) + (\phi 22.2 - \phi 6.4)$



G04:  $(\phi 41.3 - \phi 44.5) \text{---} (\phi 44.5 - \phi 34.9) + (\phi 41.3 - \phi 9.5)$



G05:  $(\phi 54 - \phi 63.5) \text{---} (\phi 41.3 - \phi 34.9) + (\phi 63.5 - \phi 41.3)$

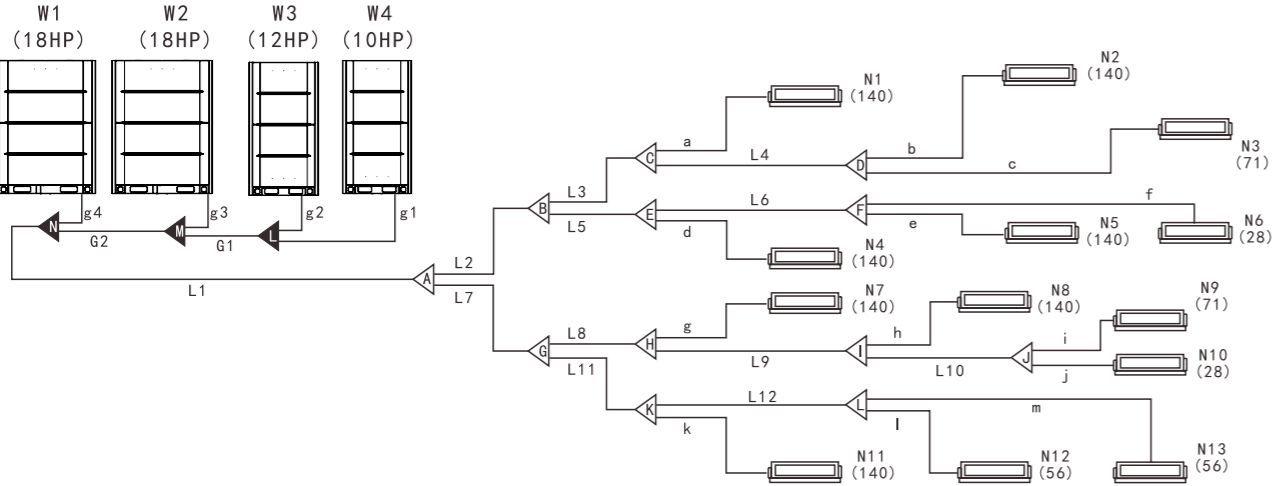




## Piping classification

### Allowable length and height difference of refrigerant piping

Name of supporting pipe	Connection position of supporting pipe	Assembly
Main pipe	Pipe between the outdoor unit and the first branch	L1
Main pipe of indoor unit	Pipe behind the first indoor branch which do not connect to indoor unit	L2,L3,L4,... L12
Slave pipe of indoor unit	Pipes between the branch and indoor unit	a,b, c, d,... m
Indoor unit branch assembly	Pipes to the master pipe and slave pipes	A, B, C,D,E,F,G,H, I,J,K,L
Outdoor unit branch assembly	Pipes to the outdoor unit and main pipe	L,Mg
Outdoor unit connecting pipe	Pipe between outdoor and outdoor branch	1,g2, g3, g4, G1, G2



### Pipe dimension of indoor unit(NO.: a,b,c,d,... m)

Indoor Unit Model	Gas side	Liquid side
Capacity: 1800~2200W	φ9.52 (flared nut)	φ6.35 (flared nut)
Capacity: 2800~5600W	φ12.7 (flared nut)	φ6.35 (flared nut)
Capacity: 6300~14000W	φ15.9 (flared nut)	φ9.52 (flared nut)

### IDU main piping and branch pipe assembly(Number: L2,L3,L4...L12,A,B,C...L)

Capacity of downstream Indoor unit A(×100w)	Dimension of Master pipe (Gas/Liquid)	Applicable brance pipe (Gas/Liquid)	A(×100w)	Dimension of master pipe (Gas/Liquid)	Applicable brance pipe (Gas/Liquid)
A < 63	φ12.7/φ6.35	CTVT-BY06(L01/L01)	63 ≤ A < 168	φ15.9/φ9.52	BY07(L02/L01)
168 ≤ A < 224	φ19.1/φ9.5	CTVT-BY07(L02/L01)	224 ≤ A < 330	φ22.2/φ12.7	BY01(G01/L01)
330 ≤ A < 470	φ25.4/φ12.7	CTVT-BY01(G01/L01)	470 ≤ A < 710	φ28.6/φ15.9	BY03(G02/L02)
710 ≤ A < 1040	φ31.8/φ19.1	CTVT-BY03(G02/L02)	1040 ≤ A < 1540	φ38.1/φ19.1	BY04(G03/L02)
1540 ≤ A < 1800	φ41.2/φ22.2	CTVT-BY05(G04/L02)	1800 ≤ A < 2500	φ44.5/φ25.4	BY05(G04/L03)
2500 ≤ A	φ54.0/φ28.6	CTVT-BY08(G05/G02)			

## Diameter of outer connecting pipe

### ODU stop valve port diameter(Number: g1,g2,g3,g4)

Model	Gas	Liquid
CTVT-CHT252(280/335/400)DX	φ25.4 (welding)	φ12.7 (welding)
CTVT-CHT450(504/560/615/680)DX	φ28.6 (welding)	φ15.8 (welding)
CTVT-CHT730(785/850/900/)DX	φ31.8 (welding)	φ19.1 (welding)
CTVT-CHT950(1000)DX	φ34.9 (welding)	φ19.1 (welding)

### ODU Main pipe and branch pipes

Capacity of Outdoor unit	Main equivalent length of all piping less than 90m		Main equivalent pipe length more than 90m	
	Gas pipe/Liquid pipe	First branch of indoor unit (Gas side/liquid side)	Gas pipe/liquide pipe	First branch of indoor unit (Gas side/Liquid side)
8 ~ 12HP	φ25.4/φ12.7	CTVT-BY01 Prats (G01/L01)	φ28.6/φ12.7	CTCT-BY02 Prats (G02/L01)
14 ~ 16HP	φ28.6/φ12.7	CTVT-BY02 Prats (G02/L01)	φ28.6/φ15.9	CTVT-BY03 Prats (G02/L02)
18 ~ 24HP	φ28.6/φ15.9	CTVT-BY03 Prats (G02/L02)	φ31.8/φ19.1	CTVT-BY03 Prats (G02/L02)
26 ~ 32HP	φ31.8/φ19.1	CTVT-BY03 Prats (G02/L02)	φ34.9/φ19.1	CTVT-BY04 Prats (G03/L02)
34 ~ 36HP	φ34.9/φ19.1	CTVT-BY04 Prats (G03/L02)	φ38.1/φ22.2	CTVT-BY04 Prats (G03/L02)
38 ~ 42HP	φ34.9/φ19.1	CTVT-BY04 Prats (G03/L02)	φ38.1/φ22.2	CTVT-BY04 Prats (G03/L02)
44 ~ 48HP	φ38.1/φ19.1	CTVT-BY04 Prats (G03/L02)	φ41.2/φ22.2	CTVT-BY05 Prats (G04/L03)
50 ~ 54HP	φ38.1/φ19.1	CTVT-BY04 Prats (G03/L02)	φ41.2/φ22.2	CTVT-BY05 Prats (G04/L03)
56 ~ 66HP	φ41.2/φ22.2	CTVT-BY05 Prats (G04/L03)	φ44.5/φ22.2	CTVT-BY05 Prats (G04/L03)
68 ~ 72HP	φ41.2/φ22.2	CTVT-BY05 Prats (G04/L03)	φ44.5/φ25.4	CTVT-BY05 Prats (G04/L03)
74 ~ 84HP	φ44.5/φ22.2	CTVT-BY05 Prats (G04/L03)	φ50.8/φ25.4	CTVT-BY08 Prats (G05/G02)
86 ~ 96HP	φ50.8/φ25.4	CTVT-BY08 Prats (G05/G02)	φ54.0/φ28.6	CTVT-BY08 Prats (G05/G02)
98 ~ 108HP	φ54.0/φ28.6	CTVT-BY08 Prats (G05/G02)	φ63.0/φ28.6	CTVT-BY08 Prats (G05/G02)

Remark:

1. Please select the main pipe diameter of the outdoor unitfollow the above table. If the main pipe is larger , choose the main pipe according to larger one.
2. If the system is more than 108HP,please consult technical personnel.



## Electrical system and installation

### Electrical wiring precautions

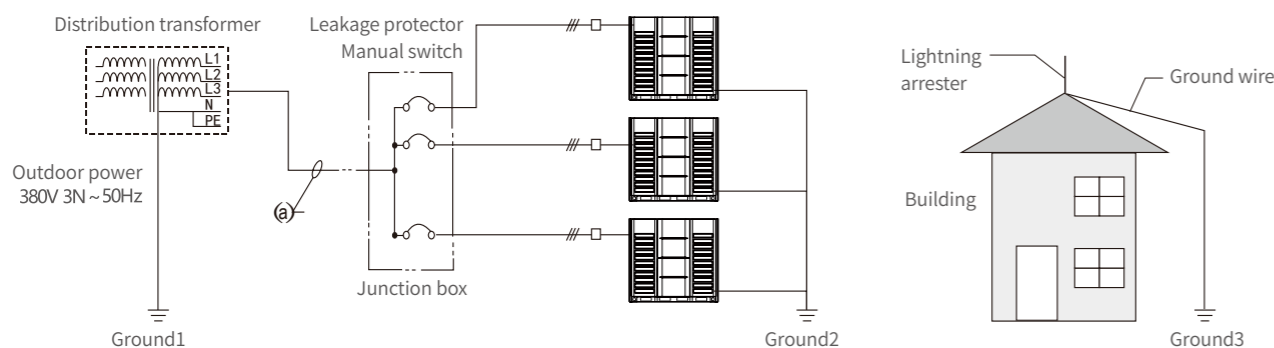
- Please design the dedicated power supply for IDU and ODU separately.
- The power supply should be equipped with a leakage protector and a manual switch.
- The power supply, leakage protector and manual switch of the IDU connected to the same ODU are required to be universal. (Please use the same circuit for the IDU power supply of the same system. And it must be turned on and off at the same time, otherwise it will seriously affect the service life of the system, and unpredictable situations may occur.)
- Please integrate the IDU and ODU connection wiring system and refrigerant piping system into the same system.
- In order to reduce interference, it is recommended to use two-core shielded cables for the signal cables of the IDU and ODU. Please do not use multi-core cables without shielding.
- During installation, the communication line and the power line must not be intertwined, and must be routed separately, and the minimum distance should be greater than 20CM, otherwise the communication of the unit may be abnormal.
- Power wiring must be entrusted to professional electricians.

### ODU power wiring

Model	Power supply	Minimum wire diameter current (A)	Copper core PVC insulated wire BVV(mm <sup>2</sup> )	Copper core XLPE insulated wire YJV(mm <sup>2</sup> )	Manual switch (A) capacity	Leakage protector
CTVT-CHT250DX	380V 3N ~ 50Hz	19.5	4.0X5	4.0X5	32	< 100mA 0.1sec
CTVT-CHT280DX	380V 3N ~ 50Hz	21.6	4.0X5	4.0X5	32	
CTVT-CHT330DX	380V 3N ~ 50Hz	24.9	6.0X5	4.0X5	32	
CTVT-CHT400DX	380V 3N ~ 50Hz	26.5	6.0X5	4.0X5	32	
CTVT-CHT450DX	380V 3N ~ 50Hz	32.2	10.0X5	6.0X5	40	
CTVT-CHT500DX	380V 3N ~ 50Hz	34.0	10.0X5	6.0X5	40	
CTVT-CHT560DX	380V 3N ~ 50Hz	41.8	16.0X5	10.0X5	50	
CTVT-CHT615DX	380V 3N ~ 50Hz	42.9	16.0X5	10.0X5	50	
CTVT-CHT680DX	380V 3N ~ 50Hz	45.5	16.0X5	10.0X5	50	
CTVT-CHT730DX	380V 3N ~ 50Hz	46.0	16.0X5	10.0X5	50	
CTVT-CHT785DX	380V 3N ~ 50Hz	48.0	16.0X5	10.0X5	50	
CTVT-CHT850DX	380V 3N ~ 50Hz	56.8	25.0X3+16.0X2	16.0X5	63	
CTVT-CHT900DX	380V 3N ~ 50Hz	57.0	25.0X3+16.0X2	16.0X5	63	
CTVT-CHT950DX	380V 3N ~ 50Hz	63.8	25.0X3+16.0X2	16.0X5	80	
CTVT-CHT1000DX	380V 3N ~ 50Hz	64.0	25.0X3+16.0X2	16.0X5	80	

Remark : 1.The wire diameter and continuous length in the table are applicable to a maximum distance of 20 meters. If the power wiring exceeds 20 meters and the voltage drop exceeds the range of 2%, please choose a wire diameter with a larger cross-sectional area.  
2.The selection of the power cord is based on the ambient temperature of 40° C.  
3.The wire current carrying capacity in the attached table is only for the user's reference. The actual interception capacity of the wire varies depending on the type and length of the cable, the way of pipe penetration, and the actual laying environment, and the correction factor is different.

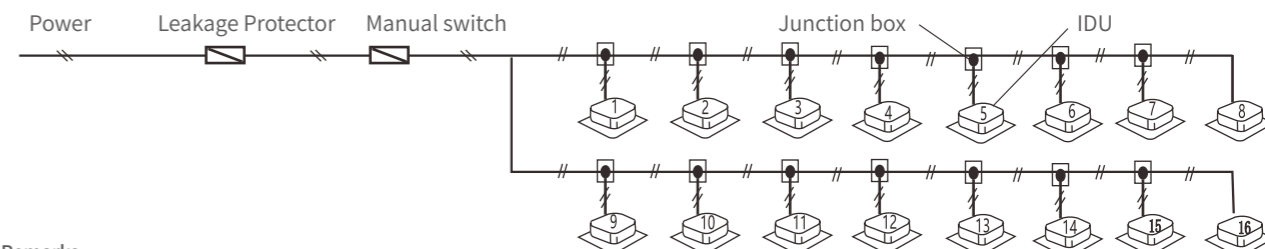
### ODU power connection



### IDU power wiring

Model	Power supply	Minimum wire diameter(mm <sup>2</sup> )			Manual switch		Leakage protector
		Dimensions (Continuous Length)	Dimensions (Continuous Length)	Ground wire	Capacity	Fuse	
All IDU Model	90-140Q8 125-140F2 125-140F5	2.5 (30m)	4.0 (50m)	φ1.6mm	30	15	20A、 30mA < 0.1sec
	Other model						

Remarks: The wiring diameter and continuous length in the table indicate that the voltage drop is within 2%. When the continuous wiring length exceeds the value in the table, please follow the relevant regulations to select the wire diameter.



Remarks:

1. Please use the refrigerant piping system, the indoor unit-indoor unit room, and the indoor unit-outdoor unit connection signal line as the same system.
2. All the internal units in the same system must be powered in a unified manner, and some internal units cannot be cut off, otherwise the unit will fail.
3. When the power cable and the signal cable are parallel, please put the wires into their respective wire ducts, and leave a suitable distance between the wires. (Distance between power cables: 300mm below 10A, 500mm below 50A)
4. When multiple outdoor units are connected in parallel, the main outdoor unit must be set. (Refer to the settings of the DIP switch)

### Control system and installation

- Signal lines must be shielded. Using other wires may cause signal interference and cause malfunction.
- The shielding nets of all shielded wires are connected to each other and finally connected to the sheet metal ground at one point.
- It is forbidden to bundle signal wires, refrigerant pipes, power wires, etc. together. When the power line and the signal line are laid in parallel, they should be kept at a distance of more than 300mm to prevent the signal source from being disturbed.
- Signal lines cannot form a closed loop.
- The signal line has no polarity, and there is no need to distinguish it when wiring.v

### IDU and ODU signal line wiring

- Please use two-core shielded wire (  $\geq 0.75\text{mm}^2$  ) for the signal cable of indoor and outdoor units, without polarity. The signal cable of indoor and outdoor units should be connected as far as possible from the end of the outdoor unit.

ODU(Host) ODU(Slave1) ODU(Slave2) ODU(Slave3)

